City of Rochester
Local Waterfront Revitalization Program

Amended LWRP
Adopted:
City of Rochester City Council, October 18, 2017
Approved:
NYS Secretary of State, Rossana Rosado, August 17, 2018
Concurred:
U.S. Office of Coastal Management, October 11, 2019

Amended LWRP
Adopted:
City of Rochester City Council, March 22, 2011
Approved:
NYS Secretary of State, Cesar A. Perales, December 15, 2011
Concurred:
U.S. Office of Ocean and Coastal Resource Management, July 12, 2012

Original LWRP
Adopted:
City of Rochester Council, September 13, 1990
Approved:
NYS Secretary of State, Gail S. Shaffer, November 23, 1990
Concurred:
U.S. Office of Ocean and Coastal Resource Management, January 28, 1991

This Local Waterfront Revitalization Program (LWRP) has been prepared and approved in accordance with provisions of the Waterfront Revitalization of Coastal Areas and Inland Waterways Act (Executive Law, Article 42) and its implementing Regulations (19 NYCRR 601). Federal concurrence on the incorporation of this Local Waterfront Revitalization Program into the New York State Coastal Management Program as a routine program change has been obtained in accordance with provisions of the U.S. Coastal Zone Management Act of 1972 (P.L. 92-583), as amended, and its implementing regulations (15 CFR 923). The preparation of this program was financially aided by a federal grant from the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Office for Coastal Management, under the Coastal Zone Management Act of 1972, as amended. [Federal Grant No. NA-13-NOS-4190165]. The New York State Coastal Management Program and the preparation of Local Waterfront Revitalization Programs are administered by the New York State Department of State, Office of Planning, Development & Community Infrastructure, 99 Washington Avenue, Suite 1010, Albany, New York 12231-0001.

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office for Coastal Management
Silver Spring Metro Center, Building 4
1305 East-West Highway
Silver Spring, Maryland 20910

OCT 1 1 2019

Sarah Crowell
Division Director
Office of Planning and Development
New York Department of State
One Commerce Plaza 99 Washington Avenue
Albany, NY 12231-0001

Dear Ms. Crowell:

Thank you for the New York Department of State's July 17, 2019 (received July 23, 2019)[1] request for approval of the incorporation of the City of Rochester Local Waterfront Revitalization Plan (LWRP) into the New York Coastal Management Program. You requested that the changes described below be incorporated as routine program changes (RPCs), pursuant to Coastal Zone Management Act (CZMA) regulations at 15 C.F.R. part 923, subpart H, and the National Oceanic and Atmospheric Administration (NOAA) Office for Coastal Management's *Program Change Guidance* (July 1996).

Based on our review of the submission, we concur with the qualifications stated below, that the changes are RPCs. We approve the incorporation of the City of Rochester LWRP, including the enforceable policies described therein, as part of the New York Coastal Management Program. Federal Consistency will apply to the approved changes to enforceable policies only after public notice of this approval is published pursuant to 15 C.F.R. § 923 .84(b)(4).[2] Please include in the public notice the list of changes and qualifications provided in this letter, and send a copy of the notice to the Office for Coastal Management.

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[1] In accordance with Section 306(e) of the CZMA, the decision due date was August 22, 2019 unless an extension was warranted. The review of this program change approval request was extended to October 11, 2019.
[2] *See also* the Office for Coastal Management's *Addendum to the July 1996 Program Change Guidance* (November 2013), https://coast.noaa.gov/czm/consistency/policy/.

CHANGES APPROVED

Table of Changes to the New York Coastal Management Program Approved by the Office for Coastal Management, October 11, 2019 NY-2019-1			
Name/Description of State or Local Law/Regulation/Policy/Program Authority	State/Local Legal Citation	Date Adopted by State	Date Effective in State
MODIFIED:			
City of Rochester LWRP.	Art. 42 of NYS Executive Law	8/17/2018	8/17/2018
City of Rochester LWRP, Section 3, Waterfront Revitalization Policies. These contain the enforceable policies of the LWRP for CZMA review purposes.	Art. 42 of NYS Executive Law	8/17/2018	8/17/2018

QUALIFICATIONS

As a standard qualification applying to all approval of enforceable policies, states may not incorporate enforceable policies by reference. If an approved enforceable policy refers to another statute, regulation, policy, standard, guidance, or other such requirement or document. the referenced policy itself must be submitted to and approved by the Office for Coastal Management as an enforceable policy in order to be applied under the federal consistency review provisions of the CZMA. Therefore, no referenced policy in these approved enforceable policies may be applied for federal consistency unless that policy has been separately approved by the Office for Coastal Management.

For CZMA review purposes, the enforceable policies of the LWRP are only those enumerated bold-faced policy and sub-policy statements within Section 3. The explanatory text may not be used as a basis for issuing an objection under the state's CZMA authority.

As with other New York Coastal Management Program LWRPs, the City of Rochester contains in Section 6 a list of Federal Actions and Programs Likely to Affect LWRP Implementation. This listing is not applicable for CZMA review purposes.

PUBLIC AND FEDERAL AGENCY COMMENTS

The Office for Coastal Management received no comments on this RPC submission.

Thank you for your cooperation in this review. Please contact Randall Schneider at (240) 533-0809, if you have any questions. For future correspondence regarding these program changes, please refer to the file number assigned to this action, NY-2019-1.

Sincerely,

Joelle Gore
Chief, Stewardship Division

STATE OF NEW YORK
DEPARTMENT OF STATE
ONE COMMERCE PLAZA
99 WASHINGTON AVENUE
ALBANY, NY 12231-0001
WWW.DOS.NY.GOV

ANDREW M. CUOMO
GOVERNOR

ROSSANA ROSADO
SECRETARY OF STATE

August 17, 2018

Honorable Lovely A. Warren
Mayor
City of Rochester
City Hall, Room 307A
30 Church Street
Rochester, NY 14614

Dear Mayor Warren:

I am pleased to inform you that I have approved the amendment to the City of Rochester Local Waterfront Revitalization Program (LWRP), pursuant to the Waterfront Revitalization of Coastal Areas and Inland Waterways Act.

Everyone who participated in the preparation of the LWRP Amendment is to be commended for developing such a comprehensive management program that promotes the balanced preservation, enhancement, and utilization of valuable waterfront resources along Lake Ontario, Genesee River, Erie Canal, Densmore Creek and Irondequoit Creek. Congratulations on a job well done.

I am notifying all State agencies that I have approved the amendment to the Rochester LWRP and advising them that agency activities must now be undertaken in a manner consistent, to the maximum extent practicable, with the LWRP.

The approved amendment to the Rochester LWRP will be available on the website of the Department of State, at http://www.dos.ny.gov/opd/programs/WFRevitalization/LWRP_status.html.

If you have any questions, please contact Barbara Kendall, the LWRP Coordinator within the Office of Planning, Development & Community Infrastructure, at (518) 473-8928.

Sincerely,

Rossana Rosado
Secretary of State

Enclosure: Approval Certificate

City of Rochester

City Clerks Office

Certified Ordinance

Rochester, N.Y., _____

TO WHOM IT MAY CONCERN:

I hereby certify that the following is a true copy of an ordinance which was duly passed by the Council of the City of Rochester on **October 17, 2017** and **Approved** by the Mayor of the City of Rochester, and was deemed duly adopted on **October 18, 2017** in accordance with the applicable provisions of law.

Ordinance No. 2017-329

Accepting the City's Draft Local Waterfront Revitalization Program amendment as complete and ready for 60-day regulatory review and authorizing submission of the accepted Local Waterfront Revitalization Program to the New York State Department of State

WHEREAS, the City of Rochester Local Waterfront Revitalization Program (LWRP) was adopted in September 1990 and amended in March 2011; and

WHEREAS, the City of Rochester has prepared a Draft LWRP Amendment and amendments to the City's Waterfront Consistency Review Ordinance in cooperation with the New York State Department of State in accordance with the provisions of NYS Executive Law, Article 42; and

WHEREAS, the Draft LWRP Amendment and amendments to the City's Waterfront Consistency Review Ordinance have been prepared under the guidance of the City of Rochester Department of Neighborhood and Business Development, in coordination with the established Waterfront Advisory Committee; and

WHEREAS, the Mayor of the City of Rochester, as lead agency, determined that the proposed LWRP Amendment would not have a significant adverse environmental impact and filed a Negative Declaration Notice of Determination of No Significant Effect on the Environment in accordance with the requirements of the State Environmental Quality Review Act and Part 617 of the implementing regulations of Article 8 of the New York State Environmental Conservation Law; and

NOW, THEREFORE, BE IT ORDAINED, by the Council of the City of Rochester as follows:

Section 1. The Council hereby accepts the City of Rochester draft LWRP Amendment, inclusive of a Harbor Management Plan as complete and ready for public review and the Draft LWRP shall be submitted to the New York State Department of State for 60-day review by State, federal, regional agencies, and others pursuant to the provisions of Article 42 of the NYS Executive Law and the Law's implementing regulations at 19 NYCRR Parts 600-603 (hereinafter "60-day review period").

Section 2. If no substantial revisions are necessary to address comments received during the 60-day review period, the City of Rochester LWRP Amendment and Waterfront Consistency Review Ordinance is hereby adopted and authorized for submission to the New York State Secretary of State for approval, pursuant to the provisions of Article 42 of the NYS Executive Law and the Law's implementing regulations at 19 NYCRR Parts 600-603.

Section 3. The City of Rochester Manager of Planning in the Department of Neighborhood and Business Development, is authorized to work with the New York State Department of State to revise the draft LWRP Amendment as necessary to address non-substantial comments received during the 60-day review period.

Section 4. This ordinance shall take effect immediately.

Passed by the following vote:

Ayes - President Scott, Councilmembers Clifford, Conklin, Haag, McFadden, Miller, Ortiz, Patterson, Spaull – 9.

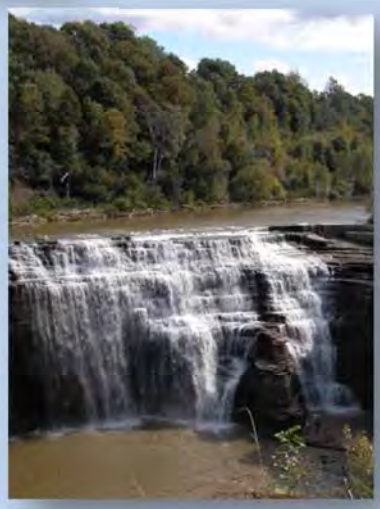
Nays - None - 0.

Attest Hazel Washington

City Clerk









City of Rochester
Local Waterfront Revitalization Program

City of Rochester
Local Waterfront Revitalization Program
amendment

Prepared by the City of Rochester:
Office of Planning
Department of Neighborhood and Business Development

With assistance from:
Ingalls Planning and Design
Steinmetz Planning Group
Don Naetzker, Consultant
Bergmann Associates, P.C.

and the
Environmental Health Sciences Center,
University of Rochester Medical Center

This document was prepared with funding provided by the
New York State Department of State
Under Title 11 of the Environmental Protection Fund

Lovely A. Warren, Mayor

Bayé Muhammad, Commissioner, Department of Neighborhood and Business Development
Dorraine Kirkmire, Manager of Planning

Doug Benson, Associate City Planner (Project Manager)
Marguerite Parrino, Principal Staff Assistant
Josh Artuso, Senior GIS Analyst/City Planner
Kevin Kelley, Senior City Planner
Marshall Allen, Planning Intern

Local Waterfront Revitalization Program
Waterfront Advisory Committee

Joann Beck	City Landscape Architect
Rochelle Bell	Monroe County Department of Planning
Hannah Blake	Erie Canal Heritage Commission
Bill Collins	Maplewood Neighborhood Association
John Curran	PLEX Neighborhood Association
Amy DeGaetano	New York State Department of State
Richard Desarra	Rochester Cycling Alliance
Jim Farr	City Parks Department
Tom Frey / Gay Mills	Genesee Land Trust
Glenn Gardner	Charlotte Resident
Tom Goodwin	Monroe County Planning Department / Fisheries Advisory Board
Mark Gregor	City Environmental Quality Division
Tom Haley	New York State Department of Environmental Conservation
Larry Henninger	Town Planner, Town of Irondequoit
Rosemary Jonientz	Rochester Environmental Commission
Katrina Korfmacher	University of Rochester
Terry Lattimore	Rochester Gas and Electric
Greg Marshall	Visit Rochester
Colleen McCarthy	University of Rochester
Paul Minor	Sector 6, Neighborhood Planning Committee
George Moses	“14621” Neighborhood Association
John Page	South Wedge Planning Committee
Mike Parker	Charlotte Community Association
Dave Rinaldo	Monroe County Parks Department
Lynette Robinson	Neighborhood Resident
Victoria Schmitt	Sam Patch Canal Boat Tours
Dave Watson	City Planning Commission

City of Rochester
Local Waterfront Revitalization Program
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City of Rochester
Local Waterfront Revitalization Program

"Three Great Waterways"



Lake Ontario **Genesee River** **Erie Canal**

City of Rochester
Local Waterfront Revitalization Program

A. PREFACE

This document is the second amendment to the City of Rochester Local Waterfront Revitalization Program (LWRP) originally adopted by the Rochester City Council and approved by the New York State Department of State in 1990. The first amendment to the City of Rochester LWRP, approved in 2011, did not modify the LWRP boundary approved in 1990. This second amendment expands the LWRP boundary and the inland portion of the State's coastal area, as described in Section 1.

This document was prepared by the City of Rochester Bureau of Planning and Zoning, with assistance from Ingalls Planning and Design, Steinmetz Planning Group and Don Naetzker, waterfront planning consultant. This document was prepared with funding provided by the New York State Department of State under Title 11 of the Environmental Protection Fund.

This document includes the Harbor Management Plan for the Port of Rochester prepared by Bergmann Associates, P.C., under the direction of the City of Rochester Division of Environmental Management.

This document also includes, as an appendix, the Executive Summary of the Health Impact Assessment (HIA) or "Healthy Waterways Project" conducted by the Environmental Health Sciences Center at the University of Rochester Medical Center. Building on the collaboration with the "Healthy Waterways Project", the city, its consultants and the Waterfront Advisory Committee developed and highlighted potential health impacts and benefits of the LWRP during various public outreach and community engagement activities that were part of the plan development process. These efforts resulted in an LWRP document which demonstrates the importance of managing and protecting waterfront resources and development in a way that maintains and promotes health goals and outcomes for diverse neighborhoods, community groups, recreational users and other stakeholders.

B. WATERFRONT VISION

"The City of Rochester's three great waterways and their unique assets and resources are a world-class attraction that enhances the quality of life for residents and visitors, preserves and protects the environment, encourages economic investment and is integrated into the fabric of our community."

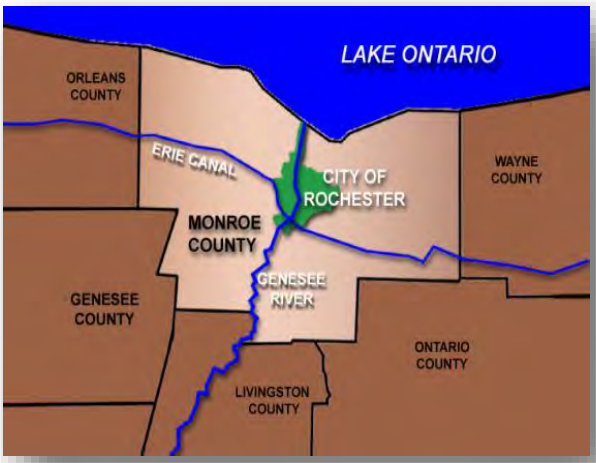
C. WATERFRONT GOALS

City of Rochester has identified the following six goals, reflected in the LWRP:

- "PROMOTE CONNECTIVITY AND ACCESSIBILITY" - Provide convenient and inviting linkages that connect waterfront attractions, services and amenities to each other and to the surrounding neighborhoods.
- "ENCOURAGE SUSTAINABILITY" - Protect and enhance the natural resources and habitats associated with the waterfront for the use and enjoyment of current and future generations.
- "DEVELOP FOUR-SEASON DESTINATION ATTRACTIONS" - Enhance the experience of waterfront visitors and travelers to increase tourism throughout the year.
- "ENCOURAGE APPROPRIATE INVESTMENT" - Leverage private water-oriented and water-dependent investment and foster job creation that supports our local economy.
- "PRESERVE COMMUNITY CHARACTER" – Identify and preserve the historic, natural, cultural and scenic resources along our waterfront while enhancing and protecting our neighborhoods.
- "CREATE A HEALTHY PLACE TO LIVE, WORK AND PLAY" - Promote waterfront physical activity, safety and access in support of the health and well-being of all neighborhood, city and regional residents and visitors.

The city will work to realize this vision and these goals in a manner that capitalizes on and strengthens the unique characteristics of Lake Ontario, the Genesee River and the Erie Canal. See Figure 1&2 for the LWRP study area geographic context.

FIGURES 1&2: LWRP LOCAL AND REGIONAL CONTEXT







Aerial Photograph – Genesee Valley Region
Lake Ontario, Genesee River, Erie Canal
and City of Rochester



Genesee River Gorge and High Falls
from the Pont de Rennes Pedestrian Bridge

Center City, Rochester

Section 1: LWRP Boundary



LWRP BOUNDARY

OVERVIEW

The LWRP boundary established in the city's 1990 LWRP included the city's Lake Ontario waterfront and the Genesee River shoreline from the Lake south to the Middle Falls dam. This second LWRP amendment expands the State's coastal area to include the entire Genesee River, Erie Canal, and Densmore Creek shorelines within the city boundary as well as the eastern portion of Tryon Park located east of Route 590, connected to the Irondequoit Bay and Creek Significant Coastal Fish and Wildlife Habitat. The LWRP boundary is shown in Figure 3.

LWRP BOUNDARY DESCRIPTION

The "spine" of the city's LWRP boundary follows the Genesee River within the city, from Lake Ontario south to the Erie Canal. The boundary also includes Durand-Eastman Park which, while technically contiguous to the city via Culver Road, is remotely located from the city proper. This park is located on Lake Ontario and is surrounded on three sides by the Town of Irondequoit. The boundary also includes the Densmore Creek "right-of-way" which runs from the northeast corner of the City of Rochester, in a northeasterly direction, to Irondequoit Bay. Other portions of the city's LWRP study area are adjacent to the towns of Greece, Irondequoit, Gates, Chili and Brighton.

The city's northern LWRP boundary follows the Lake Ontario shoreline. This boundary runs from the Rochester/Greece municipal line on the west near Greenleaf Road, to the Rochester/Irondequoit municipal boundary located just east of the U.S. Coast Guard Station, on the east bank of the Genesee River. This section of the LWRP boundary includes the mouth of the Genesee River and the Port of Rochester site at Lake Ontario.

The western boundary of this LWRP begins at the western edge of the city's Lake Ontario shoreline and proceeds south following the Rochester/Greece municipal boundary to the Lake Ontario State Parkway (LOSP). The boundary then heads east along the southern edge of the parkway to Lake Avenue. The boundary continues south along Lake Avenue to State Street and follows the western edge of the public ROW as to include the entire ROW. The LWRP boundary continues south along State Street to Main Street, crosses Main Street, and then continues south along Exchange Street and follows the western edge of the public ROW.

At the intersection of Exchange Blvd. and Ford Street, the LWRP boundary heads west along the southern edge of Ford Street to S. Plymouth Ave. At S. Plymouth Ave., the boundary heads south along S. Plymouth Ave. to Brooks Avenue following the western edge of the public ROW. At the Brooks Avenue intersection, the boundary continues west on Brooks to Genesee Street, then heads south along Genesee Street to Vixette Street following the northern edge of the public ROW.

The boundary follows Vixette Street to Scottsville Road. The boundary then follows Scottsville Road to Kingsboro Road. It then proceeds northwest along Kingsboro Road and Genesee Park Boulevard to Brooks Avenue following the northeast edge of the public ROW as to include both sides of the street(s). At Brooks Avenue, the boundary turns west and proceeds to Westfield Street. At Westfield, the boundary heads northwest along Westfield to Chili Avenue following the northeastern edge of the public ROW. At Chili Avenue, the boundary turns west and proceeds to the active Rochester and Southern Railroad rail line. It then follows that rail line in a generally northerly direction, crossing West Avenue and Interstate Route 490 to Ferrano Street. At Ferrano Street, the boundary proceeds west to Colfax Street, and then proceeds north to Emerson Street. At Emerson, the boundary turns west and proceeds to Lee Road, and then turns south to the New York State Department of Transportation parcel adjacent to the Erie Canal. The boundary follows the northern edge of that parcel to the City of Rochester municipal boundary. The LWRP boundary then follows the City of Rochester / Town of Gates / Town of Chili municipal boundaries in a southeasterly direction, along the western edge of the canal. The entire western portion of the Erie Canal within the City of Rochester is, therefore, included within the LWRP boundary.

At the intersection of Scottsville Road and the Erie Canal, the LWRP boundary follows the City of Rochester / Town of Chili / Town of Brighton municipal boundaries in a southerly and then easterly direction around Genesee Valley Park and then heads north again back to the Erie Canal. The boundary then follows the southern edge of the Erie Canal east to the City of Rochester / Town of Brighton municipal line. The entire eastern portion of the Erie Canal within the City of Rochester is, therefore, included within the LWRP boundary. The boundary continues to follow the city line north to Westfall Road then proceeds west along Westfall Road and Westmoreland Drive to Kendrick Road following the northern edge of the public ROW.

At Kendrick Road, the LWRP boundary goes generally north to Elmwood Avenue following the eastern edge of the public ROW. The boundary then proceeds east along

Elmwood Avenue to Mt. Hope Avenue following the southern edge of the public ROW.

The LWRP boundary proceeds north along Mt. Hope Avenue to the intersection with South Avenue following the eastern edge of the public ROW. The boundary then proceeds along South Avenue to Main Street. At Main Street, the boundary follows St. Paul Street north, crosses the Route 104 Expressway, and then continues to follows St. Paul Boulevard north to the City of Rochester / Town of Irondequoit municipal line following the eastern edge of the public ROW.

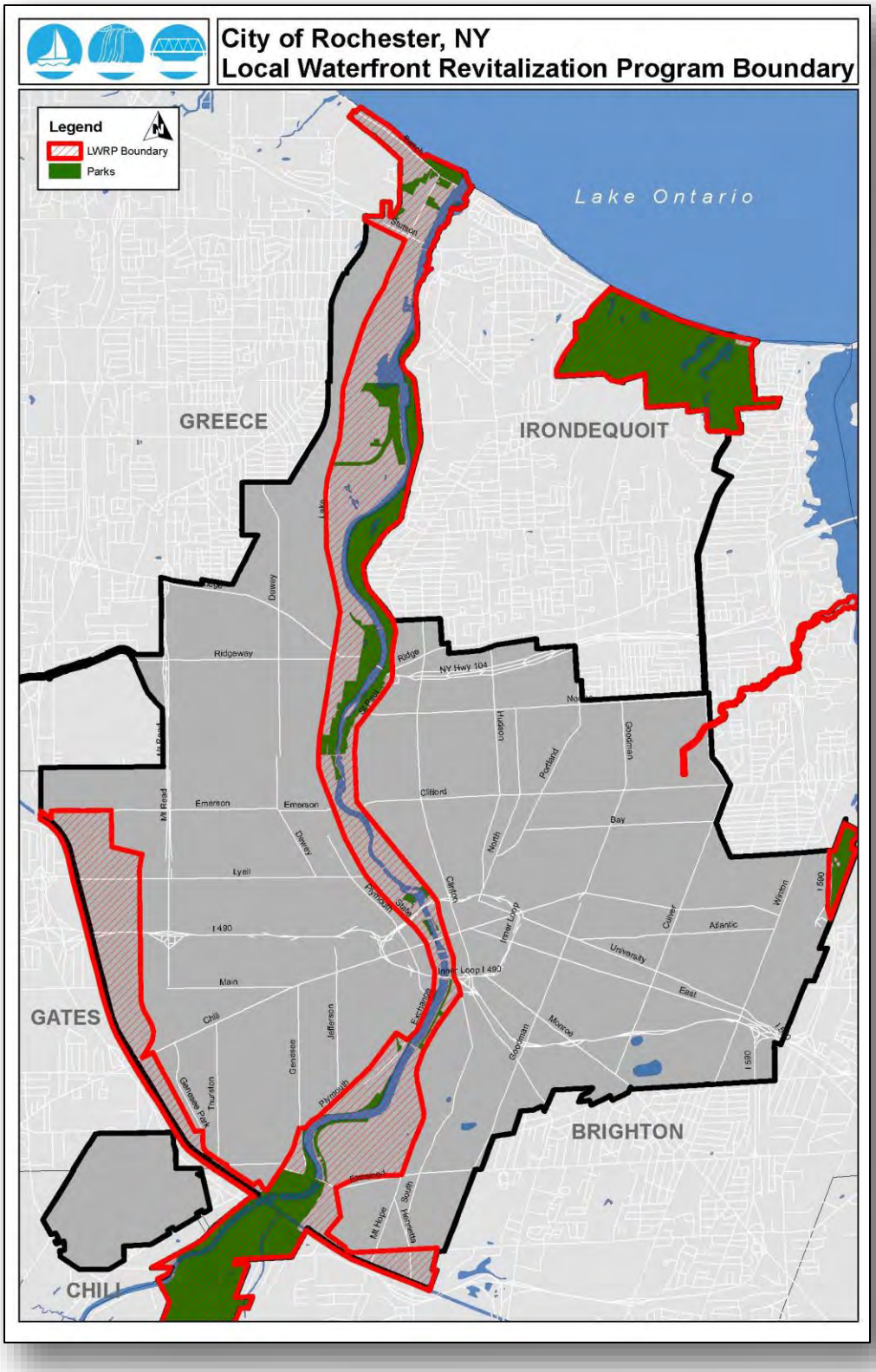
At the intersection of St. Paul Boulevard and Long Acre Road, the LWRP boundary picks up the City of Rochester / Town of Irondequoit municipal line and follows that line north, roughly parallel to the abandoned Conrail tracks which are located along the eastern bank of the Genesee River. The eastern boundary of the city's LWRP continues north along the Rochester/Irondequoit municipal line to the Lake Ontario shoreline. The boundary terminates just east of the mouth of the Genesee River at Lake Ontario, near the U.S. Coast Guard Station.

The LWRP boundary for Durand-Eastman Park includes the shoreline of Lake Ontario on the north. The LWRP boundary begins at the western edge of the park's Lake Ontario shoreline and proceeds south, east and then north again to the Lake Ontario shoreline, exactly following the City of Rochester / Town of Irondequoit municipal line. On the west, the boundary runs roughly parallel to Oakridge Drive in the town, to an area near the intersection of Oakridge Drive and Scotch Lane. The boundary the heads east, following the city/town line, then turns south near where Kings Highway enters the park. At this point, the boundary turns east again, near Rainbow Drive in the town, jogging slightly south to Durand Drive. The boundary then heads north, to an area just north of Park Road in Irondequoit, then heads east, parallel to Park road, and continues to Culver Road. The boundary follows Culver Road north to Havenwood Drive, and then heads east to an area just west of Birch Hills Drive. The boundary then turns north, and continues to the Lake Ontario shoreline where it terminates to the west of Scenic View Drive.

Rochester's LWRP boundary also includes a portion of Tryon Park, which is located on the east side of the City, near Irondequoit Creek and adjacent to Ellison Park. Tryon Park is situated to the east of the Route 590 Expressway, north of Browncroft Boulevard. The LWRP boundary for Tryon Park includes the City of Rochester / Town of Irondequoit municipal line on the north and the City of Rochester / Town of Brighton municipal line on the east. The boundary on the west is the Route 590 Expressway.

Rochester's LWRP boundary also includes Densmore Creek (approximately 2.2 miles of shoreline) as it flows from the northeast corner of the City of Rochester east under the Route 590 Expressway to its outfall in Irondequoit Bay. The actual creek bed is part of a narrow right-of-way that varies in width, is within the legal city limits and is primarily owned by the City of Rochester. The creek acts as a natural drainage corridor within a larger watershed for storm water runoff flowing to Irondequoit Bay. The LWRP boundary follows the city-owned Densmore Creek right-of-way within the city limits from its beginnings on Greenland Drive in a northeast direction under Culver Road and the Route 590 Expressway down a natural drainage gulley to Irondequoit Bay. Although the right-of-way is technically within the legal limits of the City of Rochester, properties adjacent to the creek bed are primarily within the Town of Irondequoit.

FIGURE 3: LWRP BOUNDARY



RATIONALE FOR EXPANDING THE LWRP BOUNDARY

This section describes the rationale for the expansion of the city's original Local Waterfront Revitalization Program (LWRP) boundary. In order to adequately describe this boundary, three distinct planning "considerations" are presented below that help explain the nature and extent of the city's waterfront planning issues and that ultimately determine the specific location and extent of the city's LWRP boundary. These considerations include:

- Regional and local context
- Local boundary criteria
- Focus areas

REGIONAL AND LOCAL CONTEXT

Contextual issues that influence the planning and design of Rochester's waterfront occur at two levels; the regional context of the Lake Ontario watershed and Finger Lakes Region, and the local context of the Greater Rochester Metropolitan Area and local water resources (Lake Ontario, Genesee River and Erie Canal). Major regional issues that are critical to the planning, development and promotion of Rochester's waterfront include:

- Location of regional population centers
- Existing and proposed regional visitor destinations and attractions
- Regional transportation systems and physical connections
- Regional marketing connections and synergies
- Location of regional waterway, watershed and hydrologic systems

Major local issues that are critical to the planning, development and promotion of Rochester's waterfront include:

- Location of neighborhoods and neighborhood centers
- Existing and proposed local visitor destinations and attractions
- Local transportation systems and physical connections
- Location of local waterway, watershed and hydrologic systems

Regional transportation and marketing connections will help to establish Rochester as a gateway to Lake Ontario, the Finger Lakes and the Genesee Region. Local transportation and thematic connections will help to develop the critical mass of resources and destinations that will attract visitors and that will be recognized locally as a major quality of life asset. Major existing vehicular connections, existing and potential trail

connections and other potential infrastructure connections are included in the planning boundary for improving transportation and in some cases in the LWRP boundary.

It is important to clearly identify the LWRP boundary as this boundary serves as the legal basis for determining where consistency provisions apply. In addition, projects located within the LWRP boundary which advance LWRP implementation may be eligible for funding through the State's Environmental Protection Fund Local Waterfront Revitalization Program.

The original LWRP boundary, described in the original LWRP approved in 1990 and in its amendment approved in 2011, included waterfront lands within the City of Rochester adjacent to Lake Ontario and the Genesee River south from the lake to the Middle Falls area near Ravine Avenue. Changes to that original boundary were proposed in this LWRP Update to address opportunities for developing unified streetscapes and to consider broader neighborhood impacts on waterfront planning.

This LWRP expands the original LWRP boundary to include the entire sections of the Genesee River and the Erie Canal that are located within the city's limits, based upon the following criteria:

(a) Boundaries should typically be aligned with physical or cultural features of the land such as roadways and railroad tracks. Boundaries should also follow municipal boundaries, property lines or topographic features where appropriate.

(b) Land areas should be included that will likely be directly affected by waterfront development, programming and preservation.

(c) Land areas visually connected to the waterfront should be included.

(d) Streets that are likely to have waterfront related streetscape or land use recommendations should have properties on both sides of the street included. In cases where the boundary includes only properties on a single side of the street, the boundary extends to the edge of the ROW across that street, as to include both sides of the “public realm” of any such street.

(e) Transportation corridors that may serve as connections between waterfront elements should be included.

(f) LWRP boundaries of adjacent municipalities should be recognized and considered in drawing Rochester's boundaries and in reviewing LWRP recommendations.

FOCUS AREAS

The LWRP Waterfront Advisory Committee (WAC) and City Planning staff identified three focus areas within the new boundary that demanded a more in-depth planning and design analysis due to the nature and characteristics of their unique waterfront "environments" and the extent of current capital projects and private development initiatives within those areas. These focus areas are shown in Figures 4- 6.

- **Focus Area #1: Lake Ontario waterfront** (approximately 1.7 miles of shoreline)
- **Focus Area #2: Genesee River waterfront** (approximately 13.5 miles of shoreline)
- **Focus Area #3: Erie Canal waterfront** (approximately 6 miles of shoreline)



FOCUS AREA DESCRIPTIONS

The boundaries of the three LWRP Focus Areas are shown in Figures 4, 5, and 6. The Lake Focus Area includes all of the Lake Ontario shoreline in the City of Rochester, including Durand-Eastman Park, Densmore Creek and Tryon Park and the Charlotte neighborhood from the shoreline south to the O'Rourke Bridge. The River Focus Area includes the Genesee River and gorge, between Lake Avenue, State Street, and Exchange Boulevard on the west and St. Paul Boulevard, South Avenue and Mt. Hope Avenue on the east, running from the O'Rourke Bridge south to the Court Street Dam. The Canal Focus Area includes the Genesee River from the Frederick Douglass / Susan B. Anthony Bridge south past the Erie Canal to the southern limit of the city at Genesee Valley Park, as well as both legs of the Erie Canal from the park west to the city boundary with the Towns of Greece and Gates, and east to the city boundary with the Town of Brighton.

FIGURE 4: LWRP FOCUS AREA #1
(LAKE ONTARIO WATERFRONT)

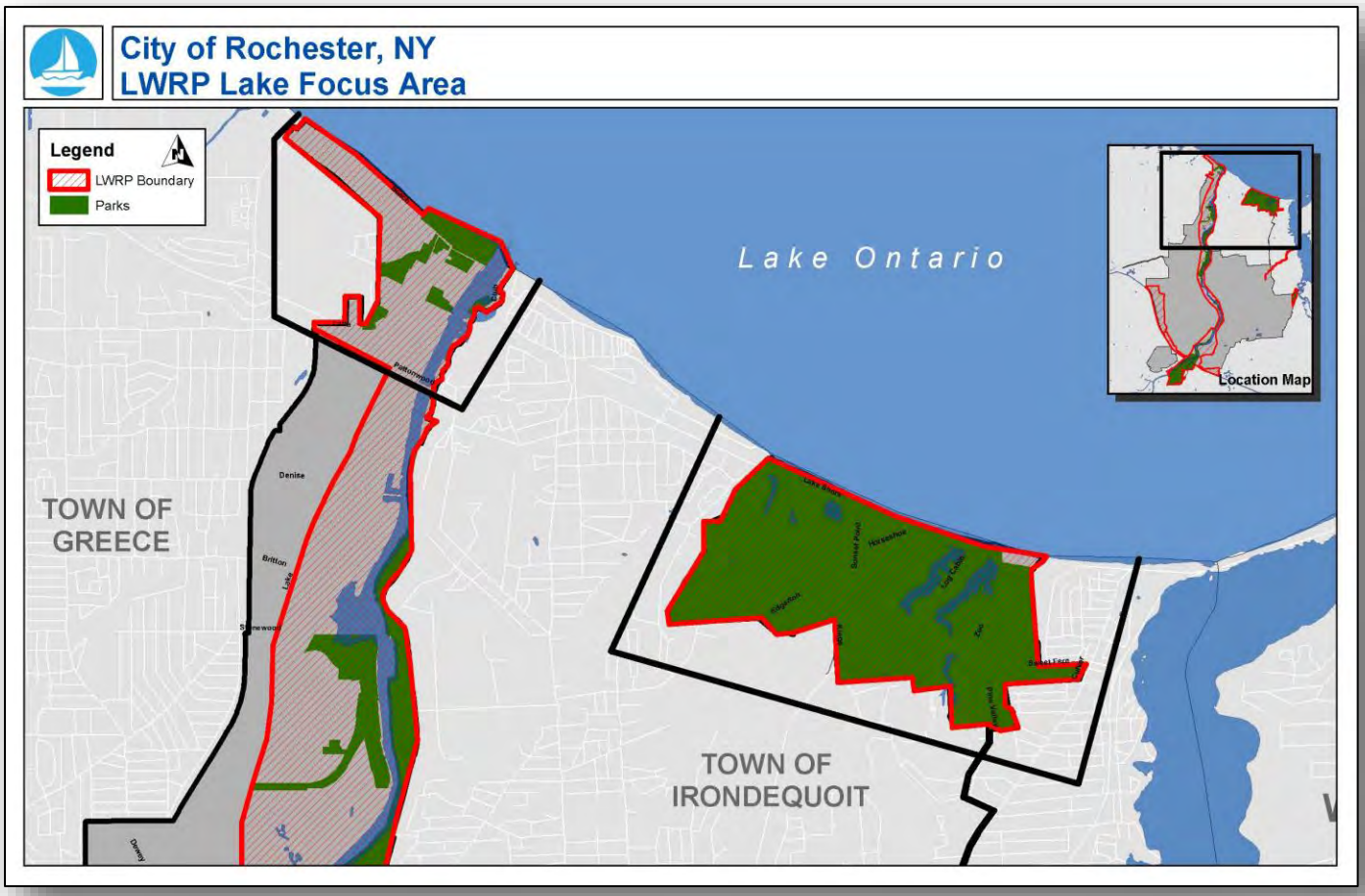


FIGURE 4, continued: LWRP FOCUS AREA #1 (LAKE ONTARIO WATERFRONT)

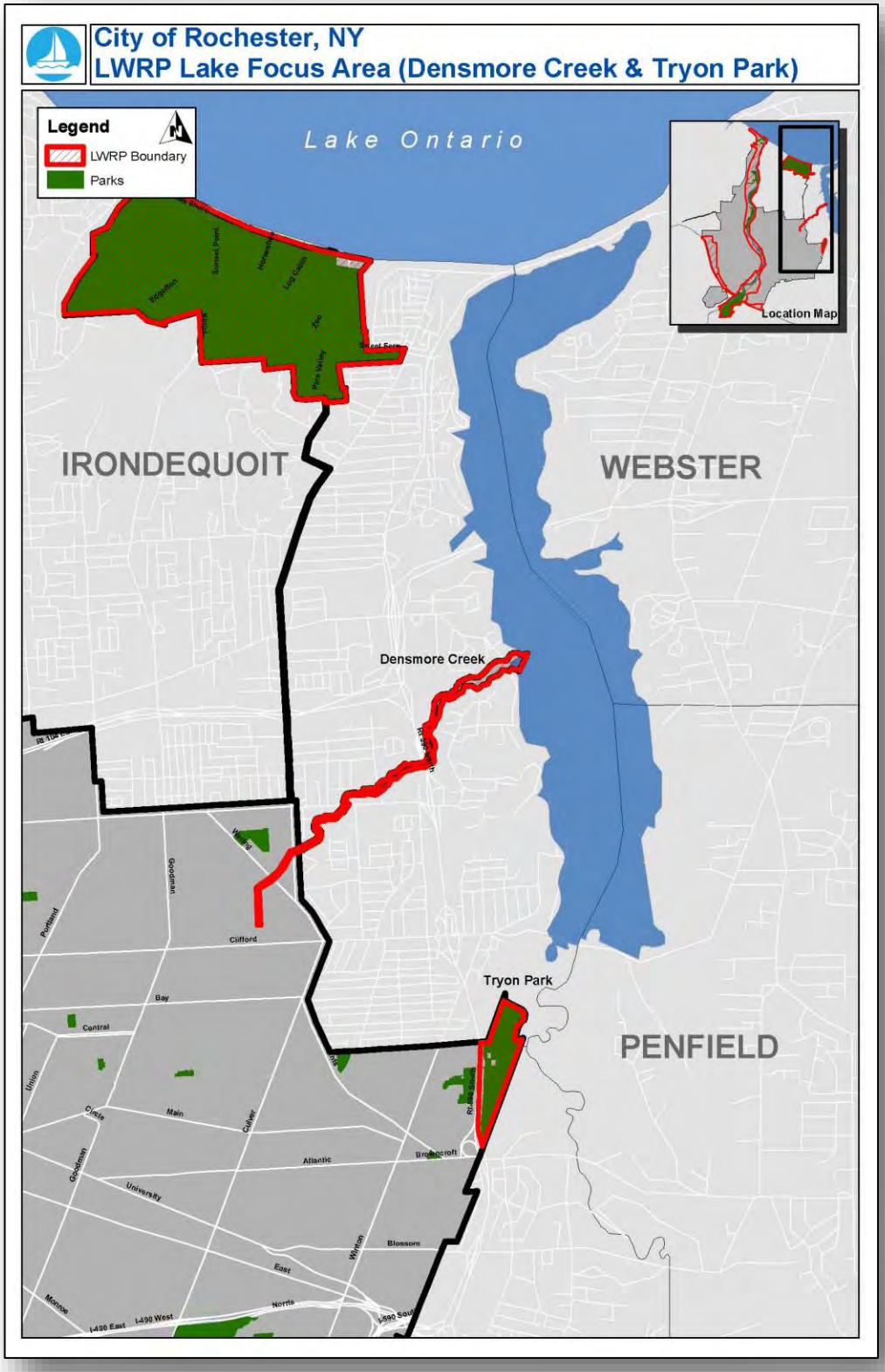


FIGURE 5: LWRP FOCUS AREA #2
(GENESEE RIVER WATERFRONT)

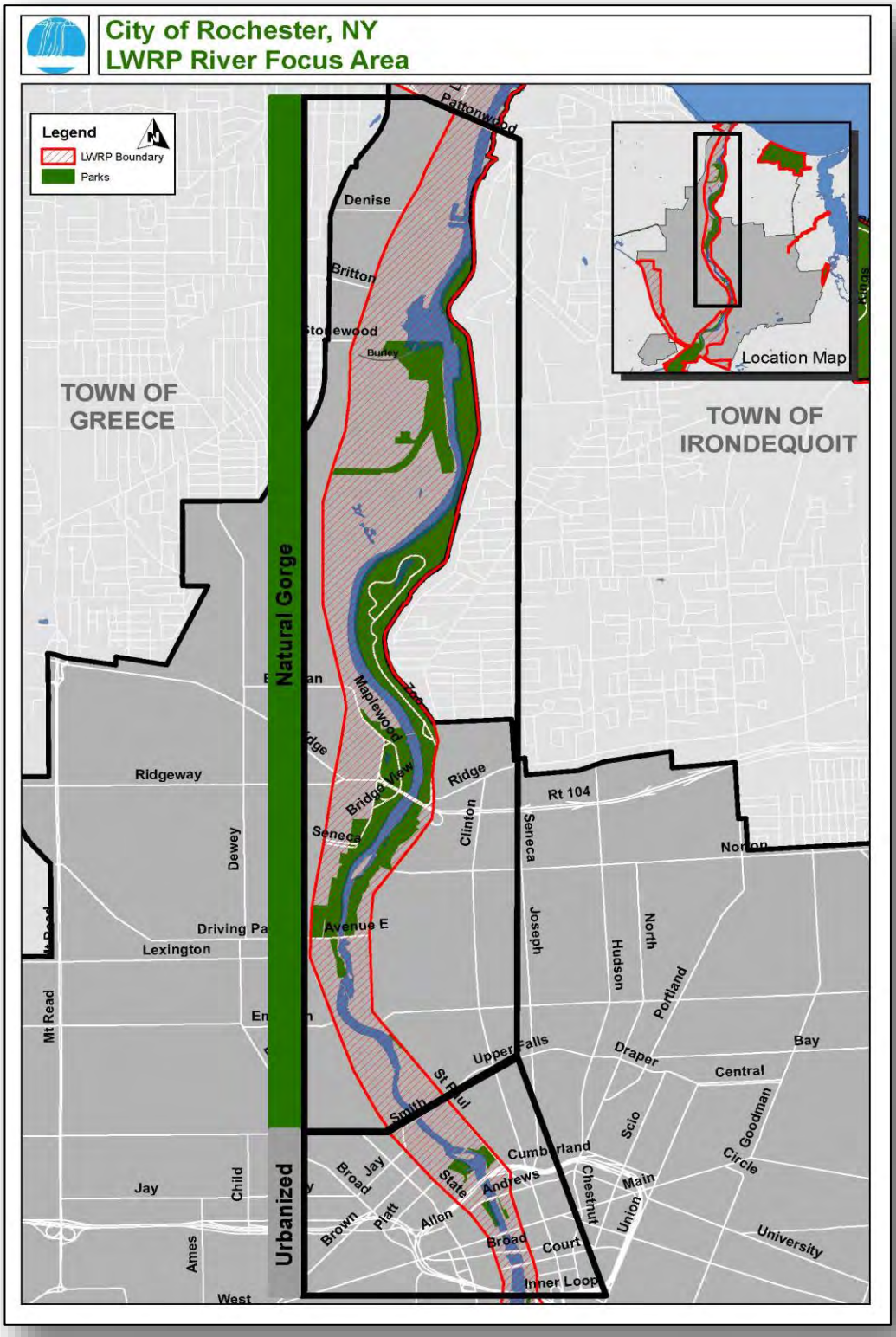
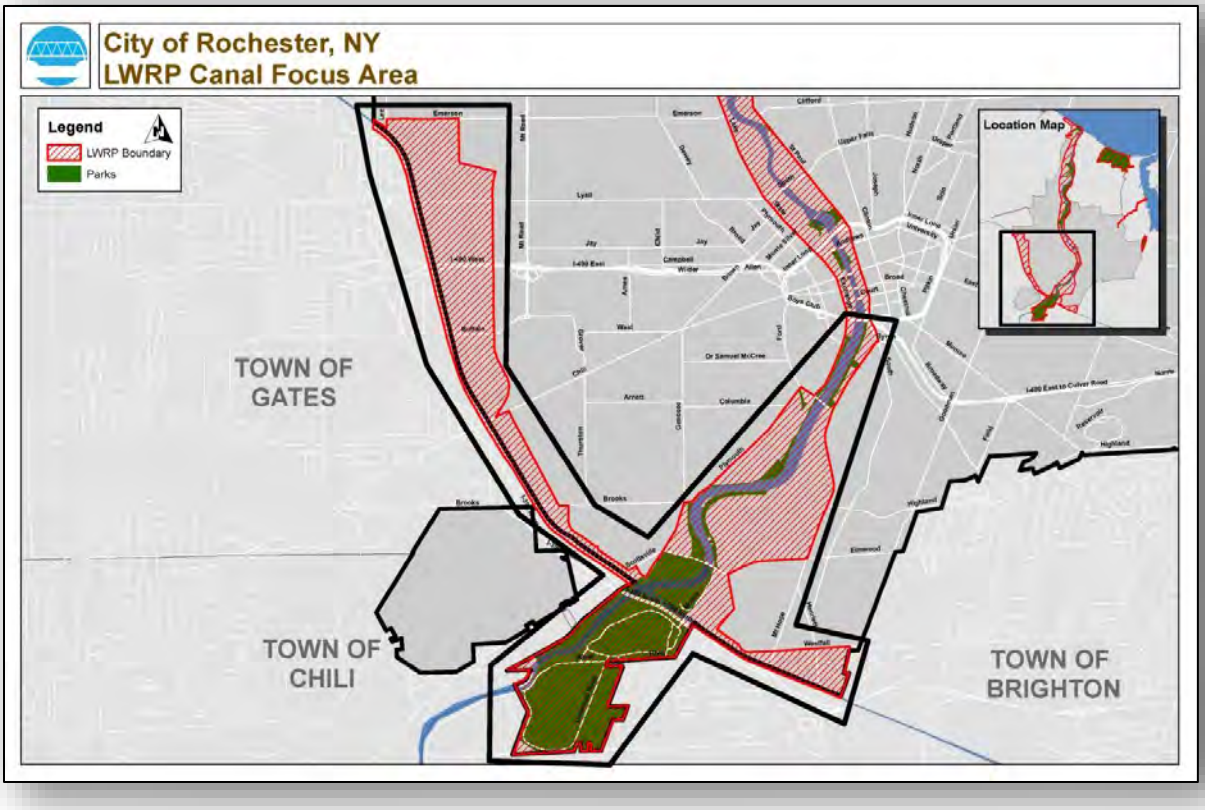


FIGURE 6: LWRP FOCUS AREA #3
(ERIE CANAL WATERFRONT)



Section 2: LWRP Inventory and Analysis



A. COMMUNITY PROFILE

LOCATION

Rochester is the third largest city in New York State and is located on the southern shore of Lake Ontario, between Buffalo and Syracuse. The Genesee River flows northward through the center of the city to the lake. The New York State Canal System's Erie Canal runs along the southern edge of the city, in a generally east-west direction. To the east of the city is Irondequoit Bay which was the pre-glacial outlet of the Genesee River to Lake Ontario. The city is connected to the New York State Thruway via Interstate Routes 390 and 490.



POPULATION

Rochester is at the center of a larger metropolitan region which includes Monroe County and the counties of Wayne, Ontario, Livingston, Orleans and Genesee. According to the 2010 Census, Monroe County had a population of 744,344 people and contained 300,422 households, while the city had a population of 210,565 people and contained 87,027 households. As with many cities located in the northeastern United States, Rochester's population declined between 1960 and 2010.

According to the 2010 Census, approximately 9.0% of Rochester's population was 65 years old or older. According to the 2008-2012 American Community Survey (ACS) almost 31.6% of the population lived below the poverty level. The per capita income for the city was $18,757 per capita, as compared to a per capita income of $28,240 per capita in Monroe County.

Based on 2010 figures, the city's housing stock consists primarily of one and two-family units. Thirty-eight percent of the city's occupied housing units are owner-occupied while 62% are renter-occupied. The median sale price of a single-family home in the city was $75,000 in 2014 (source: Greater Rochester Association of Realtors).

EMPLOYMENT

Rochester has traditionally been an area of relatively stable employment. As of 2014, the major employers in the city are University of Rochester/Strong Memorial Hospital; Wegmans Food Markets Inc.; Rochester General Health System (ViaHealth); Xerox Corporation; and, Unity Health Systems. Refer to the table below for a more complete list. According to the Bureau of Labor Statistics, Rochester's unemployment rate for March 2017 was 4.5% compared to the national rate of 4.5%.

ROCHESTER, NEW YORK
TOP 10 PRINCIPAL PRIVATE-SECTOR EMPLOYERS IN THE ROCHESTER AREA
(DATA AS OF 2014 AND COMPARED TO 2004)

Employers	2014			2004		
	Employees (1)	Rank	Percentage of Total Employment (2)	Employees (1)	Rank	Percentage of Total Employment (2)
University of Rochester/Strong Memorial Hospital	22,500	1	4.30%	13,400	2	2.52%
Wegmans Food Markets Inc.	13,582	2	2.59%	5,579	4	1.05%
Rochester General Health System (ViaHealth)	8,200	3	1.56%	4,434	5	0.83%
Xerox Corporation	6,300	4	1.20%	8,600	3	1.62%
Unity Health System	5,500	5	1.05%	3,012	6	0.57%
Monroe County Government	4,549	6	0.86%	-	-	-
Paychex	3,877	7	0.74%	-	-	-
Lifetime Healthcare Cos. Inc.	3,587	8	0.68%	3,000	7	-
Rochester Institute of Technology	3,274	9	0.62%	2,668	8	0.50%
Eastman Kodak Company	2,300	10	0.43%	20,600	1	3.87%

(1) Source: Rochester Democrat and Chronicle - 2014 article
(2) Employment source: www.labor.state.ny.us average non-farm employment data as of 12/31/14
Includes Monroe, Genesee, Livingston, Ontario, Orleans and Wayne counties

B. HISTORICAL DEVELOPMENT

OVERVIEW

Water has always been important to the economic development of Rochester. The Genesee River falls and rapids have been a source of relatively cheap, accessible power throughout the history of the city. The river and the access it provided to Lake Ontario have also been the key to establishing shipping as an industry in this area. Early settlements which were the forerunners of the City of Rochester all began in this area because of the proximity to the Genesee River and Lake Ontario. Rochesterville, located where downtown is today, was established around the waterpower of the Genesee River but became a boomtown when the Erie Canal opened in 1823. Water power and water transportation were the basis for Rochester's existence and growth.

EARLY ROCHESTER'S WATERFRONT

The abundance of fish and game drew the Seneca Indians to the shore of the Genesee River in the years prior to the arrival of the white man. In 1789, Indian Allen, attracted by the potential energy source of the rapids and falls, built the first mill in the area. This was the first white settlement in what is now Rochester's central business district (CBD). It was not a permanent settlement, however, and lasted only a year. Three years later, in 1792, another settlement sprang up on the river. William Hincher, his wife, and their eight children settled at the mouth of the Genesee River on the site of Rochester's present day port. This settlement eventually became known as the Village of Charlotte. In 1797, Gideon King and Zadock Granger settled King's Landing, later known as Hanford's Landing, on the west shore of the river, at the current site of Eastman Kodak Company's treatment plant for Eastman Business Park. This area became an important shipping settlement.

The Village of Carthage was established on the east bank of the river in 1817. While Hanford's Landing and Carthage competed for shipping commerce from Lake Ontario, Colonel Nathaniel Rochester and several partners bought a 100 acre tract of land south of the Upper Falls. Their tract was the nucleus of the Village of Rochesterville which was chartered in 1817.

As a result of the completion of the Erie Canal in 1823 and Rochester's new link with the Hudson River, the city's population boomed, growing from 5,400 in 1826 to 50,000 by 1860. The river was crucial to this development, as a source of power to run the many saw mills and flour mills. Schooners bringing wheat from Canada could navigate up the river to the Lower Falls. The milled flour would then be shipped to New York City via the canal system. The shipping industry on the lake soon flourished, making the Port of Rochester one of several important ports on the Great Lakes for both trade and shipbuilding.

The river and the lake have also provided significant recreational opportunities during the city's history. In the l9th Century, side wheelers and other excursion boats evolved into a popular past time, with scheduled day trips departing regularly from Glen House near the Lower Falls. As time went on, other large boats provided excursions along the lake and to Canada.





Top – Historic Erie Canal through downtown Rochester

Left – Historic City of Rochester Map and Genesee River

The Village of Charlotte was a major tourist destination from the late l880's to approximately 1915. An amusement park, several hotels and resort facilities were developed in Charlotte and attracted many visitors and summer residents to the area. The beach area in Charlotte became known as the "Coney Island of the West" during this time.

As other forms of transportation and power began to be developed, the importance of the Erie Canal, the Genesee River and Lake Ontario to the city began to decline. The Erie Canal could not compete for bulk transportation shipping against the railroads and then trucking. Despite two canal enlargements, the final one in the first decade of the twentieth century, canal shipping has all but disappeared. Over the years, dumping of industrial waste and municipal sewage into the canal, river and lake resulted in a decline in the use of the lake and river as a recreational resource.

WATERFRONT REDISCOVERY

During the last 35 years, the Genesee River, Lake Ontario and the Erie Canal have been rediscovered by city residents. As a result of stricter environmental controls, the efforts of

private industry and completion of several major public works projects, the water quality of the river and lake have improved significantly. Because of this, the city's water resources can once again be enjoyed and appreciated. These areas provide opportunities for hiking, sightseeing, fishing, swimming and boating, all within the city limits. The river has been stocked with trout and salmon, and sport fishing has been revitalized. Ontario Beach Park was reopened for public bathing in the late l970's. The reopening of the beach as well as last 40+ years of waterfront investments, including the Genesee Riverway Trail, new public marinas, parks, and fishing access have fostered a new appreciation of and interest in Rochester's water resources among city residents.

GEOLOGIC HISTORY

The City of Rochester rests on the Erie-Ontario Lowland, a relatively flat-lying plain, at an altitude of about 500 feet above mean sea level (M.S.L.). The principal geologic features within the LWRP boundary are the old and more recent courses of the Genesee River, and the ridge or former shore of glacial Lake Iroquois. The high point of land in the area, now known as Ridge Road, is the southern edge of the giant Lake Iroquois, which was the last of a series of glacial lakes which once covered the entire Great Lakes Basin.

Before the last glacier retreated roughly 10,000 years ago, the Genesee River flowed in a more easterly course, through what is now Irondequoit Bay, before emptying into the Ontario River, a westward flowing river which predates Lake Ontario. As the glacier retreated, the course was shifted near the Town of Mendon to its present course. The modern course carved out the three waterfalls within Rochester and the steeply sloped river gorge which begins just north of downtown Rochester and continues on to Lake Ontario. Elevations in this area range from about 490 feet above sea level at the Upper Falls, to 250 feet above sea level at Lake Ontario.

The Genesee River gorge in Rochester exposes the preglacial rock record and provides a unique resource for geologic study. Between the Upper Falls and the Lower Falls (a distance of about 1.5 river miles), the rock strata or layers date back approximately 400 million years and include a classic section of Silurian aged rock. At least 200 species of marine fossils have been identified along this stretch of river, indicating that this area was once part of an inland sea.

The oldest rock in this area is the Queenston Formation, which forms the base layer or stratum. The next stratum is about 50 feet thick and is known as the Grimsby Formation or Red Medina Sandstone. This rock is used extensively as building material throughout the Rochester area. Other distinctively colored strata include the nearly white Thorold Sandstone

or Kodak formation, which separates underlying red shale from a 20 foot exposure of green Maplewood Shale. These two strata can be viewed about halfway up the west side of the gorge from the Rochester Gas and Electric Company (RG&E) service road just north of the Lower Falls. The Kodak Formation forms the cap rock, or hard layer at the top of the Lower Falls. Reynales Limestone, the next stratum, is about 17 feet thick and caps the Middle Falls, providing a base for the floodgates located there. At the Upper Falls, the Gorge walls expose an 85 foot layer of dark blue-grey Rochester Shale capped by 20 feet of grey Lockport Dolomite Limestone. The gorge is listed in several New York State geological field guides, and is used for geology trips by schools, colleges and museums in the region.

C. EXISTING LAND AND WATER USES

OVERVIEW

The City of Rochester's Local Waterfront Revitalization Program area includes a variety of land uses within an approximately 5,520 acre, or 8.6 square-mile area, accounting for approximately 23% of the total land area of the city. See table below.

The predominant land use within the LWRP boundary is residential, accounting for approximately 65%. Commercial uses account for approximately 15% of the study area while parks and open space account for approximately 14%. There is about 1% of industrial land use, while the remainder is used for transportation and / or utility purposes. There are no agricultural uses that exist within the boundary. The following table summarizes the distribution of land uses within the study area:

LAND USES BY TYPE WITHIN THE LWRP BOUNDARY

Land Use	# of Parcels	Overall %
Residential	2503	65%
Commercial	591	15%
Industrial	56	1%
Parks / Open Space	523	14%
Public / Semi-Public	97	3%
Transportation / Utilities	19	1%
Other	48	1%
TOTAL	**3837**	**100%**

GENERAL DESCRIPTION

Lake Shoreline

The majority of the city's frontage on Lake Ontario is within public parkland. Ontario Beach Park is located at the mouth of the Genesee River and contains approximately 2,100 feet of lake frontage. Park facilities include a bathhouse, a large public beach area, a bandstand and several picnic pavilions. Durand-Eastman Park, located several miles to the east, contains over 7,600 feet of lake frontage, including public beach. The park also includes trails, a public golf course, and the Van E. Lare Wastewater treatment plant. The remaining lake frontage within the LWRP boundary is in residential use and includes the 4,000 feet of shoreline to the west of Ontario Beach Park.

Northern LWRP Study Area

The areas in the northernmost stretch of the City south of Ontario Beach Park and along the Genesee River are characterized by two to four-story residential and mixed-use buildings. The waterfront from Lake Ontario to the beginning of the wetlands just south of Genesee Marina is characterized by intensive marina and boating activity and related development. Within this area the river is channeled between several large marinas and yacht clubs.

Genesee River Gorge

The portion of the river from Genesee Marina south to the Middle Falls is characterized by densely-wooded steep slopes and the absence of significant shoreline development. Seneca Park, which includes the Seneca Park Zoo, ball fields, and passive recreational facilities, occupies most of the eastern river bank and upland area. The western bank includes Maplewood Park, Lower Falls Park as well as cemeteries and open space. Almost all of the four miles of waterfront, from the Middle Falls north to the Turning Basin, are utilized as parkland or cemeteries.

The steep banks of the Genesee River gorge exceeds 200 feet in depth in some areas. Located within this gorge, near the Lower Falls, is the Station 5 RG&E hydroelectric power plant. In this area, the Veteran's Memorial Bridge carries Route 104 over the Genesee River. Just north of this bridge is a pedestrian bridge, constructed as part of the Combined Sewer Overflow Abatement Program, which offers spectacular views of the river gorge.

Further north, at Hanford's Landing on the west bank, Eastman Kodak Company operates a wastewater treatment plant. The uplands in this area contain residences, Kodak facilities, and a former seminary that has been converted to senior living.

The only existing commercial shipping activity on the river is conducted by Essroc Cement Corporation. Essroc's cement is shipped in on a freighter, usually the *Stephen B. Roman*, or if

the water depth is insufficient for the freighter, the cement is shipped on a barge powered by tug boats. The *Stephen B. Roman* is a 488-foot long cement carrier that travels up the river from the lake, stopping at the company's docking facilities on the west bank of the river, at the southern terminus of the federal navigation channel.

Downtown/High Falls

Downtown Rochester, including the High Falls area, is highly urbanized with commercial, high-density residential and industrial uses dominating the waterfront.

The High Falls area, which includes the Brown's Race Historic District, is the subject of ongoing revitalization into a mixed-use district. This area is identified by the steep river gorge and the 90' High Falls waterfall. The river in this area is fast moving and would not be considered navigable.

The land uses within downtown between the Inner Loop Bridge and the Frederick Douglas/Susan B. Anthony Memorial Bridge is predominantly hotel, office, commercial, public plaza and institutional, with a recent influx of residential units. The river's edge is characterized by hard-surfaced plazas and parks, and medium to high density development. The waterway is fast moving and shallow with significant fluctuations in flow.

Canalized River

The section of the Genesee River from the Court Street Dam to the confluence of the east-west Erie Canal is dominated by the Genesee Riverway Trail on both sides of the river, mixed land uses, a vacant brownfield, the University of Rochester, and Genesee Valley Park. The northern section has concrete flood walls on both sides of the river which restrict physical access, and in some cases, visual access to the water. The waterway is maintained for navigation by the New York State Canal Corporation from May through November. The Court Street Dam controls the water elevation of the river. There are three formalized access points for car-top boating in this area: Corn Hill Landing, Brooks Landing, and Genesee Waterways Center in Genesee Valley Park.

Erie Canal

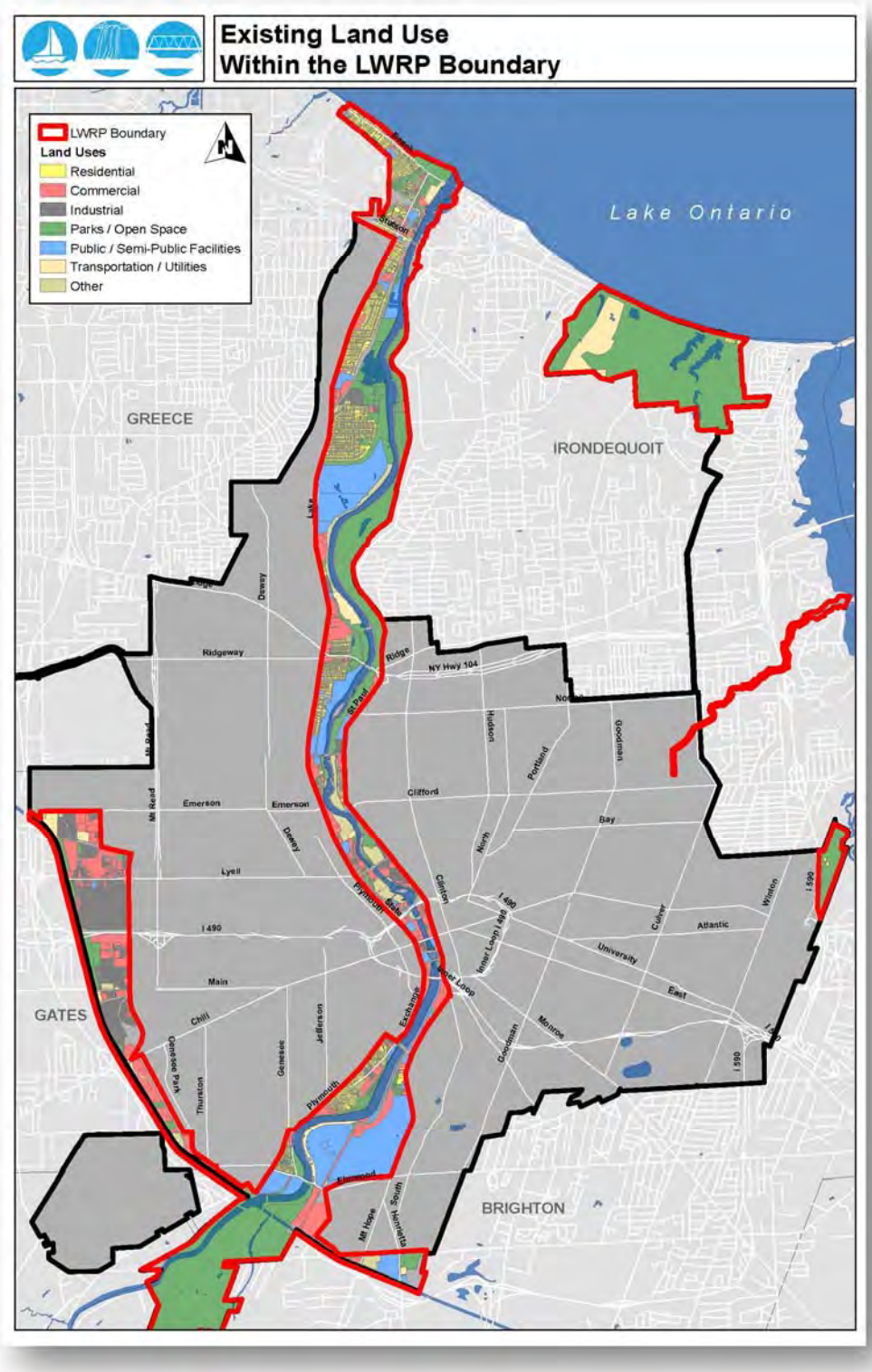
The east-west section of the Erie Canal runs along the City of Rochester’s southern municipal line and is shared with the Towns of Brighton, Chili, Gates and Greece. Land uses along this section vary from parkland to heavy industrial. The eastern portion of the canal is paralleled on the south side by Interstate-390 for much of its length, and has institutional uses along much of the north side. The central section of the canal runs through the Olmsted designed Genesee Valley Park and then by the Greater Rochester International Airport. The western section of the canal exists in a deep (20'-30') rock cut below heavy industrial uses and tank

farms. The New York State Canal Commission owns a strip of land, of varying width, on both sides of the canal. This portion of land is generally undeveloped and wooded. The waterway is maintained for navigation by the New York State Canal Corporation from May through November.

Southern Genesee River

The City of Rochester's municipal boundary parallels the Genesee River for approximately one mile south of the Erie Canal confluence. This section of river is predominantly Genesee Valley Park on both sides of the river. The west side of the river also contains the City's fire training academy. The waterway is navigable but is not maintained or marked. No recorded channel location or depths are kept.

FIGURE 7: LWRP EXISTING LAND USE



WATER-DEPENDENT USES

Water-dependent uses along the river and canal primarily involve recreational activities such as swimming, boating and fishing. The river is navigable by power boats and sail boats for the five miles from Lake Ontario to the Lower Falls area and in the canalized section south of the Court Street Dam area. The river has a mature warm water fish population with trout and salmon runs in the spring and fall. The lakeshore area supports water-dependent recreational uses such as boating and fishing. Public bathing is permitted at Ontario Beach Park and at Durand-Eastman Park.

There are several water-dependent industrial uses located along the river. Rochester Gas and Electric has several hydroelectric plants that are actively generating power. Eastman Kodak Company operates a wastewater treatment plant that is dependent on the river for power as well as for processing water. The Essroc Cement Corporation is dependent on the river for receiving shipments of raw material.

The University of Rochester power plant relies on the Canal/River for cooling.

In summary, existing water-dependent uses are located in several areas within the city's LWRP boundary. These uses include:

- The Essroc Cement Corporation
- Eastman Kodak's wastewater treatment facility
- RG&E's series of hydroelectric power plants
- Water level control at the Court Street Dam
- Public and private marinas, boat slips and docks
- The City of Rochester Boat Launch
- Beaches located at Ontario Beach Park and Durand-Eastman Park
- Power plant cooling at the University of Rochester
- Fishing the entire length of the waterway
- Fishing charters
- Sailing schools in the harbor
- Rowing and paddling
- Recreational power boating
- On-water public safety and regulatory uses, such as the Coast Guard, Customs and Border Patrol, Sheriff, Rochester Police, and Rochester Fire Department

WATER-ENHANCED USES

Water-enhanced recreational uses along the lake and river primarily include picnicking, hiking, walking, biking, and bird watching. The Genesee Lighthouse, which was built in 1822, provides the public with an historical perspective and education of the waterfront.

Existing water-enhanced uses are also located within the city's LWRP boundary. These uses include:

- Public parks (Ontario Beach Park, Durand-Eastman Park, Turning Point Park, Seneca Park, Maplewood Park, Lower Falls Park, Crossroads Park, Charles Carroll Park, Genesee Valley Park, and the Genesee Riverway Trail)
- Lodging in downtown and near the airport
- Entertainment and commercial uses in Charlotte, downtown, including High Falls and Corn Hill, Brooks Landing and other various locations in neighborhoods along the corridor
- Housing in Charlotte, along the rim of the gorge, downtown and along the Erie Canal
- The University of Rochester

EXISTING ZONING DISTRICTS

Figure 8 illustrates the zoning districts within the LWRP boundary. Both the Marina (M-D) and Harbortown Village (H-V) districts govern the area in and around the Port of Rochester and the neighborhood of Charlotte. The intent of these districts is to preserve and protect the waterfront mixed-use environment while promoting public access, encouraging tourism and allowing for a variety of water-dependent and water-enhanced uses such as boat docking facilities, public promenades, hotels, fishing areas, etc.

Moving south along Lake Avenue, the zoning district designations allow for a mix of low and medium-density residential (R-1 & R-2) and an expansive amount of open space (O-S), particularly adjacent to the Genesee River gorge. There is an industrial area (M-1) along Boxart Street in the area of Turning Point Park.

The area south of Route 104 contains a mix of low and medium-density residential districts intermixed with commercially-zoned nodes along Lake Avenue, while open space lines either side of the river gorge. The existing zoning designations allow for greater levels of intensity for commercial (C-2 & C-3) and some industrial (M-1) uses.

The portion of the study area within downtown is governed by the Center City District (CCD), a form-based code intended to foster a vibrant, safe, twenty-four-hour Center City by

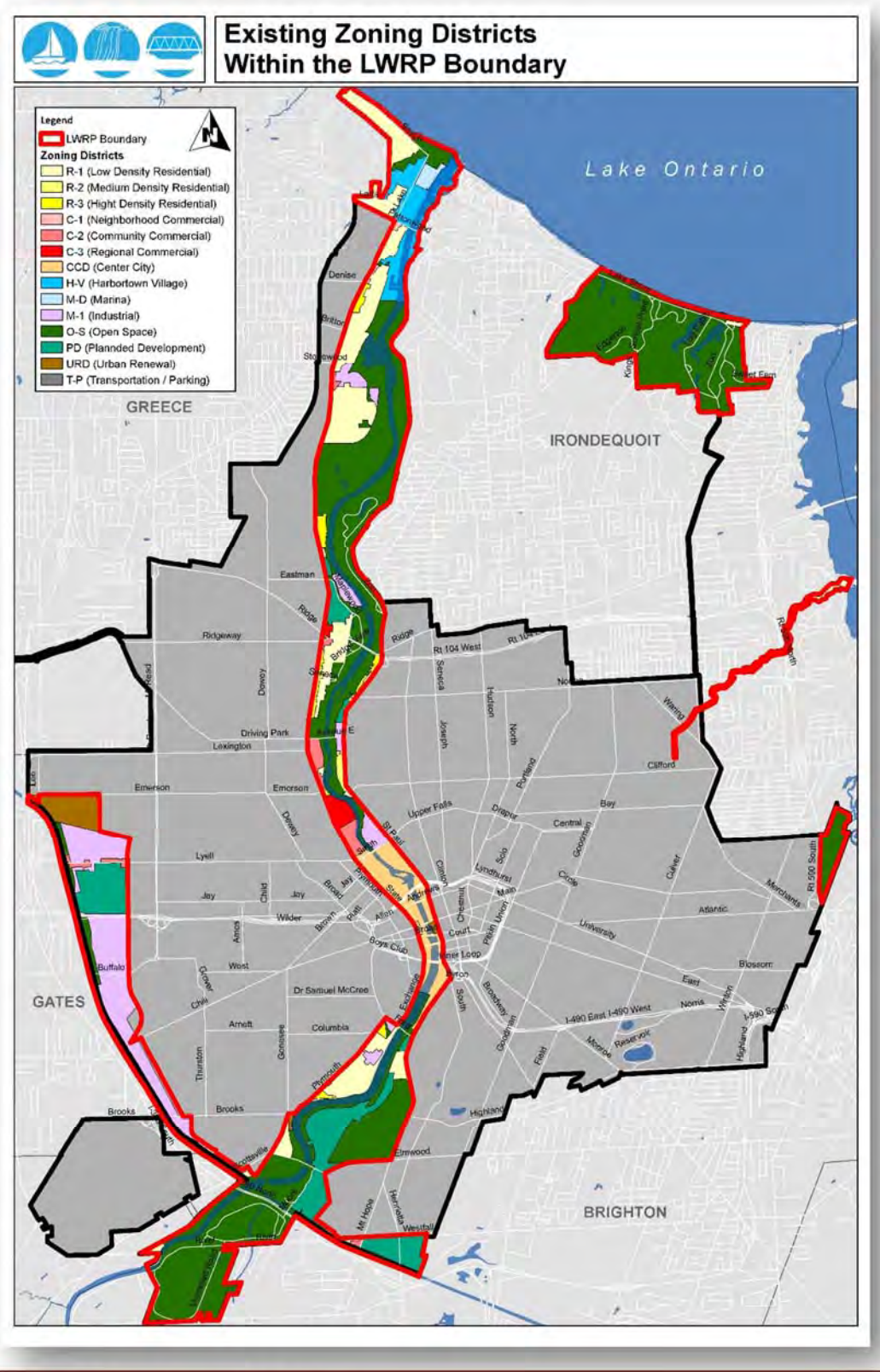
encouraging residential development while retaining and further developing a broad range of commercial, office, institutional, public, cultural, and entertainment uses and activities. The regulations are intended to define and promote Center City as the anchor for the region and encourage the utilization of the Genesee River as a principle feature of downtown.

The zoning designations for the land adjacent to the river south of downtown allow for a mix of low and medium-density residential, limited commercial, and open space (as Mt. Hope Cemetery and Genesee Valley Park are located within this area). Two planned development districts (PD), with specific regulations for major development sites (University of Rochester -PD #10 and City Gate PD #11) also cover a substantial portion of this area.

The western portion of the study area along the Erie Canal is primarily zoned for Industrial uses (M-1) and also contains its own planned development district (PD #9) for Canal Side Business Center, a mixed-use industrial and office complex, as well as a portion of an urban renewal district (Mt. Read URD), also home to several industrial uses.

In other areas of the study area, Durand Eastman Park and Tryon Park are zoned open space (O-S), while the land adjacent to Densmore Creek is primarily zoned for low density residential (R-1).

FIGURE 8: LWRP EXISTING ZONING DISTRICTS



WATER SURFACE USE

Rochester's waterways are used for a variety of recreational, commercial, industrial, and institutional purposes. The following specific uses occur in specific locations or throughout the waterway corridor:

- Swimming
- Power boating in Lake Ontario, the navigable portion of the river and in the canal
- Recreational sail boating on Lake Ontario
- Sail boarding on Lake Ontario
- Jet skiing
- Hand powered watercraft including rowing, canoeing and kayaking throughout the corridor
- Tour/cruise boat industry on the canal, the mouth of the river and Lake Ontario
- Cargo shipping in the northern navigable portion of the river and on Lake Ontario
- Fishing in the entire corridor
- Fishing charters
- Hydroelectric generation along the river
- Cooling at the University of Rochester
- Wastewater treatment

DEVELOPMENT AND OPPORTUNITY SITES

While development is largely controlled by market conditions, there are development or redevelopment sites that benefit from being along Rochester's waterways. These sites include:

Northern LWRP Study Area

- City-owned land adjacent to new public marina
- The former train depot on River Street
- City-owned land between the termination of Petten Street and the river edge
- Vacant and underutilized sites along Lake Avenue
- Underutilized parcel owned by the City on the east side of the river just south of the O'Rorke Bridge
- Vacant space within the Ontario Beach Park bathhouse

Downtown/High Falls

- Vacant and underutilized sites along Lake Avenue
- Underutilized industrial and commercial area on Cliff Street
- Former RG&E Beebee Station site
- RG&E Station 5 site
- RG&E Property on Andrews Street/Front St
- Former Bausch and Lomb Glassworks Site
- RG&E Site (next to Glassworks)
- Vacant and underutilized sites along St. Paul St
- City-owned land at Exchange St/Court St
- Broad Street Aqueduct

Erie Canal/Canalized River

- Urban Development Site/Infill Development at 151 Mt. Hope Avenue
- Former Vacuum Oil Site in the area of Flint St and Exchange St
- University of Rochester Surplus Lands
- Standard Builders Supply/Scottsville Road Infill
- Western Canal Industrial Area

MAJOR LAND OWNERS

Refer to Figure 9 for a map showing the parcels of land in and adjacent to the LWRP boundary that are owned by the following major entities.

City of Rochester

City of Rochester owns approximately 2,500 acres of land within the LWRP boundary. Among the largest areas owned and controlled by the city are Durand Eastman Park (836 acres), Ontario Beach Park (58 acres), Port of Rochester (20 acres), Turning Point Park (100 acres), Riverside Cemetery (113 acres), Seneca Park (301 acres), Maplewood Park (104 acres), Mt. Hope Cemetery (192 acres), west bank of the river south of Ford St (23 acres), Genesee Valley Park (672 acres) and Tryon Park (69 acres). The remaining city-owned land consists of smaller pocket parks, trails and scattered lots throughout the LWRP boundary.

Rochester Gas & Electric

Rochester Gas & Electric, with a long history of harnessing the river current to generate hydro-electric power, owns approximately 40 parcels along the river gorge north of downtown, totaling approximately 132 acres.

University of Rochester

The University of Rochester River Campus is situated on a total of 73 parcels and occupies approximately 280 acres of land within and directly adjacent to the LWRP boundary.

Eastman Kodak

Eastman Kodak owns 8 parcels within the boundary, totaling approximately 59 acres. Eastman Business Park, a large manufacturing and industrial complex, is located across Lake Avenue, just west of the LWRP boundary. That site contains 23 parcels totaling approximately another 311 acres.

Genesee Brewery

The Genesee Brewery, producers of Genesee Beer is located on the east side of the river gorge near High Falls and owns 37 parcels in all, totaling approximately 29 acres.

Holy Sepulchre Cemetery

Owned by the Catholic Church, this cemetery is partially located within the LWRP boundary. Approximately 53 acres is within the LWRP, overlooking the river gorge.

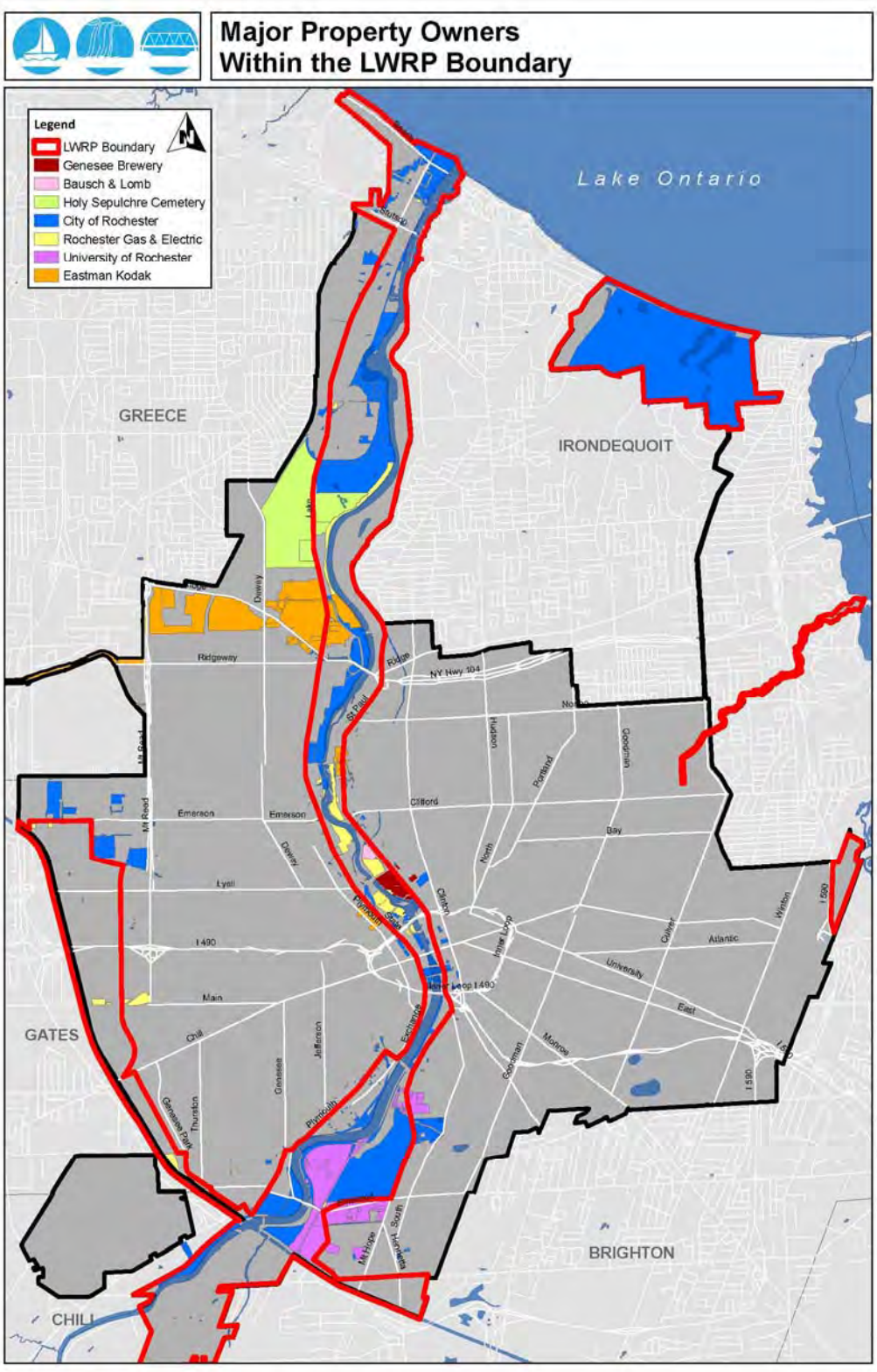
Bausch and Lomb

This 8-acre vacant industrial site is former glass factory of the Bausch and Lomb Company.

Additional persons, corporations, organizations or municipalities that are important landowners along Rochester's waterways and are key stakeholders in the redevelopment of the corridor include:

- Town of Irondequoit
- U.S. Coast Guard
- New York State
- Shumway Marine
- Genesee Marina
- Rochester Yacht Club in Charlotte
- Genesee Yacht Club in Charlotte
- Essroc Cement Corporation just south of Turning Point Park
- Time Warner Cable / Spectrum Communications
- Morgan Development
- John K and Associates
- DHD Ventures
- Food Link

FIGURE 9: LWRP MAJOR PROPERTY OWNERS



LIMITATIONS TO DEVELOPMENT

Flood Hazard Areas

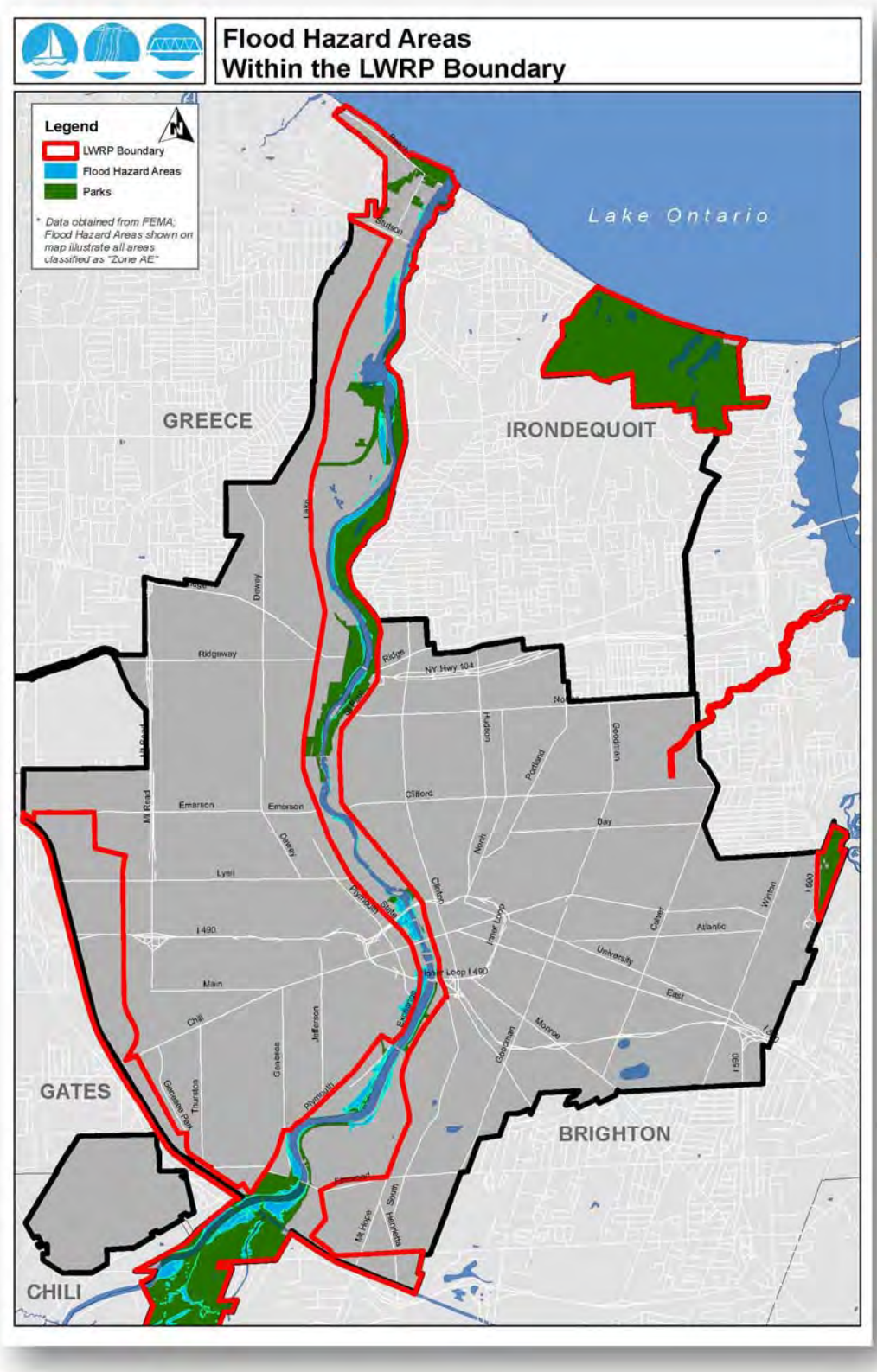
The 100 year flood plains (see Figure 10) of the lake, river and canal are mapped by the Federal Emergency Management Authority (FEMA). Because of the deep gorge section of the river, the water control of the canal, and the construction of the Mt. Morris Dam upstream in Mt. Morris (approximately 37 miles south of Rochester), the flood plain has minimal impacts on developable sections of waterfront areas within the City of Rochester.

Within the northern section of the "canalized" Genesee River, flood walls were built in the early to mid-1900's to limit flood impacts to this area. However, when FEMA last updated the official flood hazard maps in 2008, it was determined that deterioration of the river wall along the west bank was severe enough that a potential breech was possible in an extreme weather event. Consequently, some areas within the Corn Hill Neighborhood were identified as a potential flood hazard area and therefore designated as "Zone AE".

A study of the west river wall was recently completed and it is expected that repairs / replacements to the deteriorated sections of the wall will mitigate any potential flood hazards to this area in the future. Once repairs are complete, the City will file a Letter of Map Amendment (LOMA) to remove areas in Corn Hill from the flood plain maps.

Although the majority of remaining land within the LWRP boundary is outside the 100-year flood plain ("Zone X"), other potential flood hazard areas ("Zone AE") within the boundary include portions of Genesee Valley Park, the Vacuum Oil Brownfield Opportunity Area (BOA) site, the Andrews Street Site / Brown's Race area on the west side of the river in downtown, and areas along the west river bank just north and south of Turning Point Park.

FIGURE 10: LWRP FLOOD HAZARD AREAS



Coastal Erosion Hazard Areas

Rochester's Lake Ontario shoreline is a coastal erosion hazard area designated by NYS as shown on maps prepared by the NYSDEC entitled, *Coastal Erosion Hazard Area Map, City of Rochester,* dated August 29, 1988. These maps are on file in the City Clerk's Office at City Hall, and show the boundaries of natural protective features and structural hazard areas within the LWRP. At the time of this plan, these maps are being updated by NYSDEC.

These maps indicate that the shoreline area north of Beach Avenue from the city/Town of Greece municipal boundary east to Welland Street is eroding at a rate of approximately 1.5 feet per year. The shoreline area from Welland Street east to Clematis Street is eroding at approximately 1.0 feet per year. The shoreline area contained within Ontario Beach Park has been designated as a natural protective feature. The shoreline area within Durand-Eastman Park from the western park boundary to Sunset Point Road has also been designated as a natural protective feature. The shoreline area that runs from Sunset Point Road east for approximately 1,100 feet is eroding at approximately 1.0 feet per year. Certain portions of the Lake Ontario shoreline within the boundaries of the LWRP are eroding at approximately 1.5 feet per year.

A natural protective feature is defined as a nearshore area, beach, bluff, primary dune, secondary dune, or wetland, and the vegetation thereon. A structural hazard area is defined as those shore lands, other than natural protective features, subject to erosion and located landward of shorelines having an average annual recession rate of 1 foot or more per year. The inland boundary of a structural hazard area is calculated by starting at the landward limit of a bluff and measuring along a line which is perpendicular to the shoreline a horizontal distance which is 40 times the long-term average annual recession rate.

Erosion outside the Coastal Erosion Hazard Area

Genesee River levels will be higher as a result of higher lake levels, and the gorge may, therefore, suffer from increased shoreline erosion. Heavy motorized boat activity in the river can accelerate erosion of sensitive soils found along the steeply sloped banks of the gorge. Wetlands provide some protection from erosion for the riverbanks in the lower gorge. Lake level fluctuations resulting from the IJC Plan 2014 will increase the effectiveness of the wetland functions.

Siltation and dredging

Siltation, caused by bank and sheet erosion, construction activities, and some farming practices, significantly affect water quality. Turbid water is visually unattractive and destroys stream habitats by changing the natural water environment. Silt covers and retains sewage

wastes and other organic materials, which, through the process of decomposition, depletes the supply of dissolved oxygen in the water resulting in the killing of fish as well as water insect populations. Turbid water can also negatively impact fish spawning.

Bank erosion, a major factor in siltation, occurs partly because of natural wave action and surface runoff as well as from the wash created by powerboats on the river. A speed limit in the river of 6 mph has been set by the Coast Guard as a safety measure and as a means to protect riverbanks from serious erosion.

Dredging activities in the lower Genesee River are monitored and permitted by the Army Corps of Engineers and the NYSDEC. Most ongoing dredging is maintenance dredging and does not disturb insitu sediments that may negatively impact water quality.

Both the NYSDEC and the Monroe County Health Department (MCHD) operate water quality monitoring stations in Lake Ontario and the Genesee River. NYSDEC's three surveillance stations are located: (1) north of the O'Rorke Bridge along the west bank of the river at River Street, (2) approximately two miles south of the O'Rorke Bridge at Boxart Street, and (3) on the east bank of the river between RG&E's Station 5 power plant and Driving Park Avenue. The MCHD maintains several stations in the lake and along the river and has increased the frequency of data collections since 1972.

Water and Sewer

Water service is provided primarily by the Rochester Water Bureau. Most locations within the LWRP area have potential access to this utility. Available water pressure and flow would have to be checked in the vicinity of any proposed development as part of normal feasibility review.

The existing sanitary and storm sewer system provides extensive coverage of the LWRP area. The sewers are under the jurisdiction of the Rochester Pure Waters District. Service is available throughout the majority of the project with some exceptions. The most notable exception to coverage is the river gorge area where most locations would require pump and force main facilities. Constructing force mains up gorge side slopes would increase project costs and in some cases would not be permitted. Alternately, those existing roadways that provide access to the bottom of the gorge could be used as a corridor for utilities.

In summary, water and sanitary service exists throughout the LWRP area. A site by site analysis would be required to determine the feasibility and costs of connection.

Hazardous waste sites and storage of toxic materials

The mission of NYSDEC's Division of Environmental Remediation is to protect public health and the environment of the State of New York by: preventing releases to the environment through the regulation of petroleum and chemical bulk storage, hazardous waste, and radiation facilities; and responding to, investigating, and remediating releases of contaminants that have occurred.

Generators of hazardous wastes, or those companies, institutions, government agencies, and other facilities which produce hazardous wastes in their operations, are required to obtain permits and report regularly to the NYSDEC and USEPA on their activities under State and federal law.

Residual contamination left by prior commercial and industrial practices contributes to blight and vacancy in the city. The NYSDEC monitors, regulates, and initiates site remediation, including many sites within the LWRP. Below is a list of NYSDEC site remediation programs, followed by a table of remedial sites in the LWRP.

Voluntary Cleanup Program - Under the Voluntary Cleanup Program, a volunteer, usually the site owner, performs remedial activities pursuant an approved work plan. The volunteer remediates the site, under the oversight of the NYSDEC and the New York State Department of Health (DOH), to a level which is protective of public health and the environment for the present or intended use of the property. When the volunteer completes work, a release from liability from the NYSDEC is provided. This program has been replaced by the Brownfield Cleanup Program described below.

State Superfund Program – This program is an enforcement program whose goal to identify and characterize suspected inactive hazardous waste disposal sites and to ensure that those sites which pose a significant threat to public health or the environment are properly addressed.

Brownfield Cleanup Program - This program offers tax credits for site cleanup and redevelopment (tangible property credit) of brownfield sites accepted into the program. Redevelopment credits may be increased depending on the cleanup level obtained, whether it is in an EN-Zone or Brownfield Opportunity Area and the end use of the site.

Resource Conservation and Recovery (RCRA) - The RCRA program regulates facilities that actively manage hazardous waste with a goal of achieving soil cleanup levels that eliminate risks to public health and the environment.

NYSDEC REMEDIAL SITES WITHIN / PARTIALLY WITHIN THE LWRP		
Site	**Address**	**Program**
RGE - West Station	254 Mill Street	Voluntary Cleanup Program
CSXT - Rochester NY	480 River Street	Voluntary Cleanup Program
Brewer Street	Foot of Brewer Street	Voluntary Cleanup Program
Barthelmes Manufacturing Site	15 Cairn Street	Voluntary Cleanup Program
RG&E - Beebee Station	254 Mill Street	Voluntary Cleanup Program
RGE - Front St.	Front and Andrews Streets	Voluntary Cleanup Program
RGE - East Station	Suntru Street	Voluntary Cleanup Program
Rochester Fire Academy	1190 Scottsville Road	State Superfund Program
Chevron USA Tank Farm	837 Buffalo Road	State Superfund Program
Valeo Former GM - Delco Chassis Facility	1555 Lyell Avenue	State Superfund Program
Former Raeco Products	24 Spencer Street	State Superfund Program
Former Rochester Metal Etching Company	100 Lake Avenue	State Superfund Program
Old Rochester City Landfill - Pattonwood	Pattonwood Drive	State Superfund Program
Genesee Scrap and Tin Baling Corporation	80 Steel Street	State Superfund Program
McKee Road Industrial Dump	West side of McKee Road	State Superfund Program
Mill Street Drums	208 Mill Street	State Superfund Program
River Park Commons - Townhouses	205-405 Mt. Hope Avenue	Brownfield Cleanup Program
River Park Commons - Tower	185 Mt. Hope Avenue	Brownfield Cleanup Program
Olindo's Import Foods, Inc.	1510 Lyell Avenue	Voluntary Cleanup Program
Portion of Former Vacuum Oil Refinery	Cottage St/Riverview Pl/Violetta St/S Plymouth	Brownfield Cleanup Program
Vacuum Oil Refinery	22 Flint Street / 936 Exchange Street	Brownfield Cleanup Program
AmeriPride-Glendale Park	14 Glendale Park	Brownfield Cleanup Program
5 & 15 Flint Street Site	5 & 15 Flint Street	Brownfield Cleanup Program
Olin Corporation - Chemicals Group	100 McKee Road	State Superfund Program
Rochester Gas & Electric - Brooks Ave.	755 Brooks Ave	Resource Conservation and Recovery
Miljo Corp.	295 McKee Rd	State Superfund Program
Lighthouse Pointe Inland	Pattonwood Drive	Brownfield Cleanup Program
Barthelmes Manufacturing Site	15 Cairn Street	Brownfield Cleanup Program
Volunteers of America Back Lot Site	214 Lake Avenue	Brownfield Cleanup Program
Genesee Marina	118 Petten Street	Brownfield Cleanup Program
Lighthouse Pointe Riverfront	Pattonwood Drive	Brownfield Cleanup Program
50-68 McKee Road (ARM Expansion)	50-68 McKee Road	Voluntary Cleanup Program
Howard and Bowen	631 Colfax Street	State Superfund Program

Topography

Topographic conditions offer limitations to development in several areas of the City's waterfront. Significant portions of greater than 15% slope exist in the gorge and falls sections of the river. In fact, much of that area has slopes that exceed 1' vertical to 1' horizontal.

The vertical elevation difference between river level and the top of the gorge in the area of the Lower Falls is generally greater than 70' and can be as much as 100'. In the downtown area much of the street level is located 20' to 30' above river level. In the canal cut section the canal bank is cut stone with vertical heights of 15' to 25'.

Wetlands

Wetlands in the city are primarily located along the river and the lake within existing parks. Therefore, they would not pose a limitation to development. However, within the Vacuum Oil brownfield site on the west bank of the canalized portion of the river, wetlands identified on the National Wetland Inventory are present. These wetlands will be an important consideration as the site is positioned for redevelopment. The city is working with the Army Corps of Engineers on possible mitigation planning to allow for development.

Transportation

Development in Rochester, in general, is not typically limited by traffic issues. The Charlotte area, however, experiences traffic congestion during the most popular summer special events. This congestion is caused by traffic volumes, combined with the bottleneck nature of traveling in an area with substantial bodies of water that limit traffic circulation options. Mitigation options that have been identified and implemented are remote parking options connected to the Rochester Transit Service bus system, and an integrated communication system to better manage traffic in the beach area and better direct the community to remote parking options.

Local, State and Federal Laws

Local laws limit development, especially in a waterfront area, for the purposes of protecting the natural environment and preserving and providing for public access. Local zoning is the front line for furthering these purposes. State and federal laws restrict development of wetlands, filling and altering of navigable waterways, and other actions potentially impacting the environment.

Local laws and regulations relevant to the City's LWRP are summarized below.

LOCAL WATERFRONT REVITALIZATION PROGRAM RELEVANT LAWS AND REGULATIONS

ZONING DISTRICTS

MARINA (MD) DISTRICT

PRIMARY LWRP AREAS

Port Authority Site
East and west river banks (from Lake to Denise Road Area)
Portions of the River Street Site

SUMMARY OF REGULATIONS

Permits water-related recreation and commercial development; Minimum waterfront setbacks are required. Special permit required for uses within 100 feet of river.

OPEN SPACE (OS) DISTRICT

PRIMARY LWRP AREAS

Public parkland
Genesee River Gorge
Riverside Cemetery

SUMMARY OF REGULATIONS

Regulations restrict development to parks, cemeteries, and outdoor recreation facilities. Special permit required for many uses.

HARBORTOWN VILLAGE (HVD) DISTRICT

PRIMARY LWRP AREAS

Area along Lake Avenue and River Street north of Stutson Street

SUMMARY OF REGULATIONS

Mandates architectural and aesthetic design standards (Harbortown Village) for new development; reviewed by Director of Zoning.

SITE PLAN REVIEW PROCEDURES

PRIMARY LWRP AREAS

All LWRP areas

SUMMARY OF REGULATIONS

Regulations require review of site plan designs for virtually all development or rehabilitation in city; includes criteria for review of plans.

ENVIRONMENTAL REVIEW PROCEDURES

PRIMARY LWRP AREAS

All LWRP areas for "Type 1" and "Unlisted" Actions

SUMMARY OF REGULATIONS

SEQR / Chapter 48 require detailed environmental review for all "Type 1" and "Unlisted" actions. Review requires identification of proposed mitigating measures. Type I actions include development in sensitive environmental areas in shore zone.

LWRP CONSISTENCY LAW

PRIMARY LWRP AREAS

All LWRP areas for "Type 1" and "Unlisted" actions

SUMMARY OF REGULATIONS

Regulations require a consistency review for all "Type 1" and "Unlisted" actions to determine compliance with LWRP policies and goals.

Navigable Water

The location and depth of navigable water affects the site development potential of on-water developments. The Genesee River is navigable from Lake Ontario to the south for approximately 5 miles. At the southern end of Seth Green Island, below the Rt. 104 bridge, the river channel's depth is approximately 8' to 10' and is essentially the limit of most navigation. The channel depth drops off considerably along the western side of Seth Green Island to a 4' or 5' depth and eventually to 2' to 3' as you approach the Driving Park Bridge. South of the Driving Park bridge to the Court Street dam is shallow, inconsistent in depth, fast moving and contains several major waterfalls. The area of the river is only navigable to specialized craft in very specific locations. Many safety concerns for boating use of this section of the river exist.

The Erie Canal / Genesee River from the city's southern municipal boundary to the Court Street Dam is navigable during the operating season of Erie Canal. The New York State Canal Corporation maintains navigable channels and infrastructure.

Land Use Conflicts

Land use compatibility is a development consideration and potential constraint. Residential neighborhoods and sensitive natural areas exist within the waterways corridor and should have appropriate transitional edges or buffer areas.

Heavy industrial uses and major transportation infrastructure such as oil tanks and active rail lines may impact or limit development potential or design.

Historic/Archaeological Sites

Historic and archaeological sites exist within the waterways corridor and can pose development or design limitations. These same sites can also offer design and development opportunities. Refer to Section E. for more information on these sites.

D. CONNECTIONS AND TRANSPORTATION

STREET NETWORK

The transportation network within the city's LWRP boundary involves an extensive system of existing streets, and roads and highways that are operated and maintained by the city, county and New York State (See Figure 11). Major and minor arterials and principal collector streets within the LWRP include Lake Avenue, St. Paul Street, Ridge Road West, the Lake Ontario State Parkway (LOSP), Beach Avenue, Stutson Street, Lakeshore Boulevard and Driving Park Avenue. The jurisdictions for operation and maintenance vary between the City of Rochester, The County of Monroe and the New York State Department of Transportation. The primary routes and jurisdictions are listed below:

LOCAL WATERFRONT REVITALIZATION PROGRAM TRANSPORTATION ROUTES

Focus Area / Route	Jurisdiction	Functional Class
Lake Focus Area: Charlotte and Durand-Eastman		
Beach Avenue	City	Local Collector
Lake Avenue (Ridge Road West to LOSP)	City	Principle Arterial
Lake Avenue (North of Parkway)	City	Minor Arterial
Lake Ontario State Parkway (LOSP)	New York State	Principle Freeway
Stutson Street (and Bridge)	City and County	Minor Arterial
St. Paul Boulevard	City	Minor Arterial
NYS Rt. 104 (Veteran's Memorial Bridge)	New York State	Principle Freeway
Driving Park Blvd. (and Bridge)	City	Minor Arterial
Lakeshore Boulevard	County	Minor Arterial
River Focus Area: High Falls		
Bausch Street (Pedestrian Bridge)	City	Minor Arterial
State Street (South of Lyell Avenue)	City	Minor Arterial
Inner Loop	New York State	Principle Freeway
Andrews Street (and Bridge)	City	Minor Arterial
Main Street (and Bridge)	City	Minor Arterial
Broad Street (and Bridge)	City	Minor Arterial
Court Street (and Bridge)	City	Minor Arterial
River Focus Area / Canal Focus Area: Center City, South River and Erie Canal		
South Avenue	City	Minor Arterial
I-490 (Troop-Howell Bridge)	New York State	Principle Freeway
Exchange Boulevard	City	Minor Arterial
Mt. Hope Avenue	City	Minor Arterial
Ford Street (and Bridge)	City	Minor Arterial
Plymouth Avenue	City	Minor Arterial
Wilson Blvd.	City and U of R	Local Collector
Elmwood Avenue (and Bridge)	City	Minor Arterial
Moore Drive	County	Park Road
Scottsville Road (383) (and bridge)	New York State	Minor Arterial
Brooks Avenue (and bridge)	City	Minor Arterial
I-390	New York State	Principle Freeway
Kendrick Road	City	Local Collector
West Henrietta Road (and bridge) Rt. 15	New York State	Minor Arterial
East Henrietta Road (and bridge) Rt. 15A	New York State	Minor Arterial
Clinton Avenue South (and bridge)	County	Minor Arterial
Winton Road (and bridge)	County	Minor Arterial

AIRPORTS

The Greater Rochester International Airport is located near the intersection of the Erie Canal and the Genesee River. Existing transportation links to the airport include I-390, Brooks Avenue, Chili Avenue and Scottsville Road.

ERIE CANAL

The majority of the boats using the Erie Canal are for recreational use. A docking area in Corn Hill Landing was built in 1991. This facility includes 15 boat slips and docking for a canal cruise boat. A component of the Brooks Landing development, located on the waterfront near the intersection of Plymouth Avenue and Genesee Street, was public waterfront improvements including a waterfront promenade, public plaza, boat dock and trail improvements. These public improvements were completed in 2015.



CORN HILL LANDING ON THE GENESEE RIVER / ERIE CANAL

MULTI-PURPOSE TRAILS

Heritage Trail

The Erie Canal Heritage Trail is a partially existing multi-purpose trail extending from Albany to Buffalo along the Erie Canal corridor. The trail is completed through the Rochester area.

Genesee Greenway Trail

The Genesee Greenway Trail is a multi-purpose trail running south from Genesee Valley Park to Letchworth State Park along the former Genesee Valley Canal alignment.

Genesee Riverway Trail

The Genesee Riverway Trail, which parallels the Genesee River from Genesee Valley Park to Charlotte, provides approximately 20 miles of recreational trail and alternative transportation options. It offers pedestrian access to the river, its scenic gorge, three waterfalls, eight pedestrian bridges and many parks, including four historic parks designed by Frederick Law Olmsted. The trail links nine historic districts and individual landmarks including the 1842 Erie Canal Aqueduct and the 1822 Lake Ontario Lighthouse. The trail serves the University of Rochester and a host of other city attractions, services, and neighborhoods.

El Camino Trail

The El Camino: Butterhole-Seneca Park Trail is a multi-use pedestrian trail that was adapted from an old railroad line. The 2.25-mile trail runs from Mill Street in High Falls all the way to the Seneca Park pedestrian bridge where it connects with the Genesee Riverway Trail. The Trail provides a safe, continuous pedestrian and bicycle route accessible to citizens from all walks of life that links key destinations in the city.

Seaway Trail

An integral part of the New York State Seaway Trail is located within the city's LWRP boundary. This section of the trail includes the Lake Ontario State Parkway, Stutson Street and Lakeshore Boulevard. The Seaway Trail is a mixed-use, shared right-of-way recreation corridor which runs for approximately 474 miles from the New York/ Pennsylvania border to Massena, New York. The Seaway Trail has been designated a National Recreation Trail and will be the initial element of a proposed Great Lakes trail system to run from Grand Portage, Minnesota to the New England seaboard. There is a potential to develop loops or linkages to existing and proposed recreation/tourism facilities in the city from the Seaway Trail via informational signage, brochures and marketing.

BUS

The Regional Transit Service (RTS), the city's sole public transit provider of bus service provides public bussing in the Greater Rochester area. RTS has approximately thirty-eight

routes that serve eight counties in the Genesee-Finger Lakes Region. Of the 38 routes, 34 (or 89%) traverse the study area in some way and include a total of 207 bus stops within the boundary. The transit service also operates a new Transit Center in the downtown area of the city.

BICYCLES

An ongoing effort of the City of Rochester is to make bicycling easier throughout the City and especially along the waterfront. The City's Bicycle Master Plan project was completed in January 2011. The plan's recommendations will serve as a framework for the city's future investment in bicycle infrastructure. In recent years, the City of Rochester has expanded its bike lane program to encourage the use of alternate forms of transportation by providing dedicated space along the roads for bicyclists as well as racks, lockers and other bicycle amenities at several of the city-owned downtown parking garages. In 2016 a new bicycle parking shelter, complete with a fix-it station, was installed the Port of Rochester. At present, there is over 10 miles of dedicated bike lanes within the study area boundary. In Spring 2017, phase I of a bike share system will be implemented and operational, with a total of twenty five (25) docking stations and approximately 250 bikes, some of which may be located adjacent to the Genesee Riverway Trail within the LWRP boundary. Additional phases and expansion of the bike share network throughout the City and beyond are possible in the future as demand increases.

WATERCRAFT

Lake Ontario, the Genesee River and the Erie Canal provide opportunities for commercial boating/shipping as well as recreational boating.

RAILROADS

The following ***active*** rail lines within or adjacent to the LWRP boundary include:

1. Rochester & Southern tracks that run along the western limits of the Greater Rochester International Airport property. These tracks are currently used for freight deliveries south to Genesee Junction and beyond.
2. A CONRAIL mainline crossing over the Genesee River just south of High Falls. The only connection to this line is to the Amtrak Station located approximately 1,000 feet east of the river. Otherwise, trains that use this line are typically traveling at posted speeds with no planned stops.

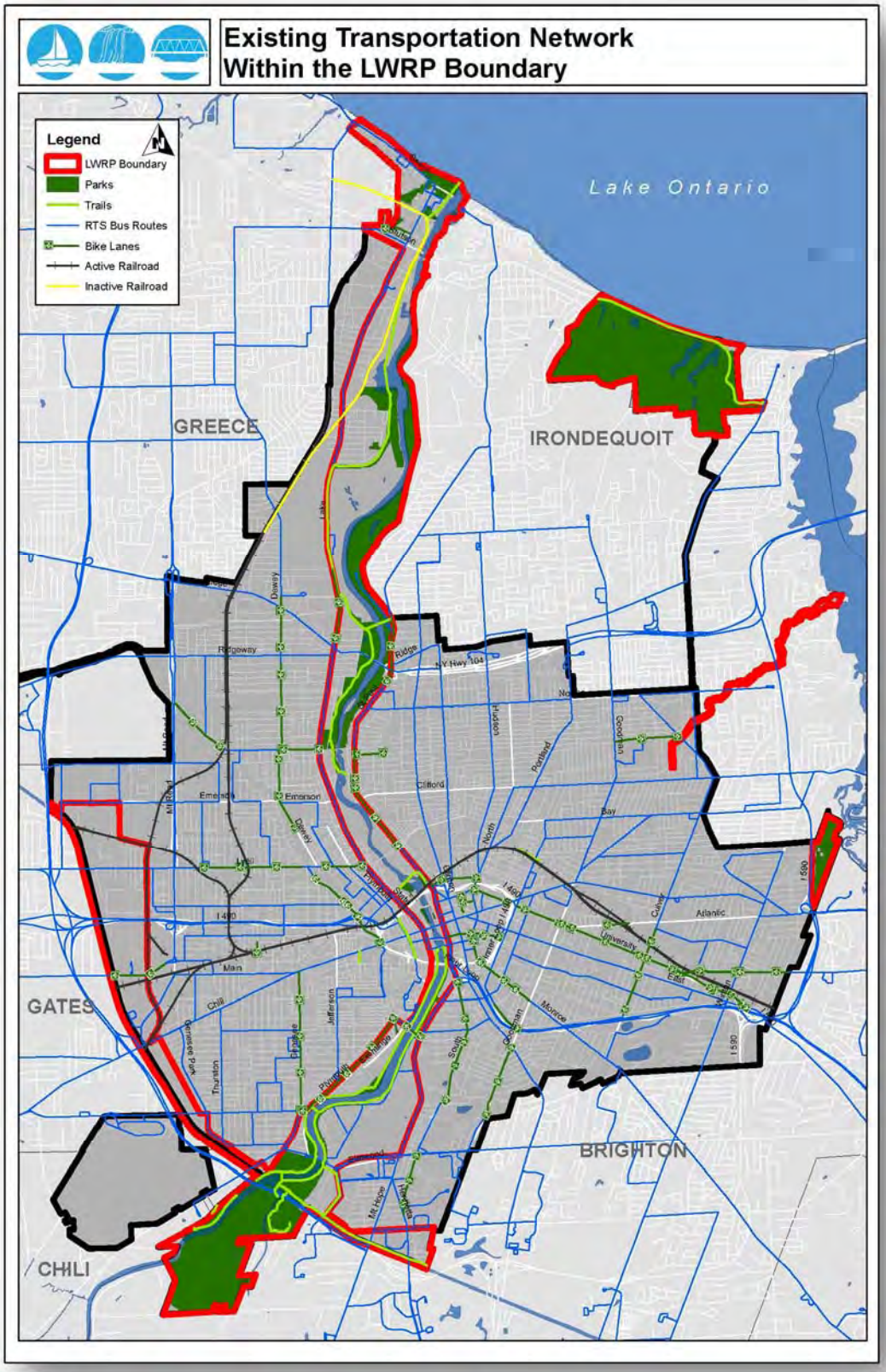
The following ***inactive*** rail lines within or adjacent to the LWRP boundaries include:

1. A three (3) mile corridor, formerly known as the B&O Charlotte Line, that extends from the mainline near Stonewood Avenue to the CONRAIL tracks leading to Russell Station.
2. CONRAIL tracks that extend north to Charlotte and eventually to Russell Station.

The following ***abandoned*** former rail rights of way within or adjacent to the LWRP boundary include:

1. A seven (7) mile corridor formerly known as the NYC Beebee Running Track, that extends from Vincent/State St. north, heads east and crosses the river then heads north through the City (a portion of which was converted to the El Camino Trail) and continues north through the Town of Irondequoit.
2. A roughly two (2) mile corridor, formerly known as the New York State Railways (and later the Rochester Subway System) that extends from Driving Park Avenue south near the intersection of Broad & Brown Streets.
3. A roughly five (5) mile corridor, formerly known as the Erie RR Attica Line, that extends from Brighton Henrietta Town Line Road to the University of Rochester campus and heads west across a bridge over the Genesee River (which has since been converted to the Erie-Lackawanna Pedestrian Bridge in 2012 as part of a “Rails to Trails” project).

FIGURE 11: LWRP EXISTING TRANSPORTATION NETWORK



E. EXISTING DESTINATIONS AND ASSETS

PARKS

Recreation opportunities within the LWRP boundary are provided at a number of public parks (See Figure 12). The following list identifies some of the major waterfront parks and their special features within the LWRP.

Durand-Eastman Park (965 Acres):

Location: On Lake Ontario, west of Irondequoit Bay and east of the Genesee River; the park can be entered from Lakeshore Boulevard and Kings Highway.

Facilities: Hiking, bridle, and cross-country ski trails; 7 picnic shelters; playground area; winter warming shelter and riding stable; l8-hole golf course, golf clubhouse with food concession and pro shop; parking permitted on park roads. The park contains the Frank E. Van Lare Wastewater Treatment Plant which processes sanitary and storm sewage collected from a large portion of Monroe County.

Special features: Steep wooded slopes; valleys; scenic vistas; small lakes and ponds; botanical collections. Portions of the park make up part of the Monroe County Arboretum. Spring flowering trees and spectacular fall foliage colors make this park an area of exceptional beauty. Unique topography and soils permit the growing of plants not native to the area.

Development Opportunities: Development of a bathhouse to support the swimming use.

Ontario Beach Park (39 acres):

Location: Northern-most portion of the city; on Lake Ontario, at the mouth of the Genesee River; park can be entered from Lake and Beach Avenues.

Facilities: Public beach; bathhouse; 6 picnic shelters; food concession stand; outdoor performance pavilion; ice-skating rink; historic carousel; parking areas for approximately 1,500 cars on the port site to the south and within an area south of Beach Avenue and west of Lake Avenue; soccer field and 2 softball fields located in an area to the south, along Estes Street.

Special features: One of the best natural sand beaches on Lake Ontario; supervised swimming areas; boat launch on the Genesee River; antique Dentzel Carousel designated as a City of Rochester Historic Landmark. It is estimated that over 800,000 people visit the park each year.

Development Opportunities: Enhancement of beach area; rehabilitation of bathhouse and pier; redesign of existing bandstand; improvements to circulation; coordination with events and facilities on Port of Rochester site and at new marina.

Turning Point Park (100 acres)

Location: West bank of the Genesee River, just south of the Turning Basin; park can be entered from Lake Avenue via Boxart Street; park borders Riverside Cemetery to south.

Facilities and Special features: Turning Point Park is designated as a natural area that contains passive recreational facilities such as several walking trails, including a 2,968 foot land based trail that utilizes an old railroad bed to transition from the top of the bank to the river's edge, a 3,572 feet long boardwalk / bridge that spans over the turning basin as well as another 3,406 feet land based trail through Turning Point Park North and the adjacent Genesee Marina. The park also contains an eco-friendly rain garden that uses natural vegetation as sediment filters to capture pollutants from storm water runoff prior to it reaching the river. The park can be entered from Lake Avenue via Boxart Street and is solely owned, operated and maintained by the City of Rochester.

Maplewood Park and Rose Garden (14 acres)

Location: West side of the Genesee River, from Driving Park Avenue north to Hanford Landing Road; rose garden located at the intersection of Lake Avenue and Driving Park Avenue; park can be entered from Driving Park Avenue, Maplewood Avenue, Maplewood Drive, and Bridge View Drive as well as from various pedestrian trails.

Facilities and Special Features: Maplewood Park contains passive recreational areas that include picnicking and strolling areas. In addition, the park contains one of the largest rose gardens in the country that features over 3,000 different varieties of rose bushes. Each June during peak bloom time, the Rose Festival celebrates both the neighborhood and the park with a parade, music, gorge tours, garden tours, children's activities, arts and crafts, and tours of historic homes in the area. Several overlooks within the park provide spectacular views of the river gorge. Maplewood Park is owned and operated by the city.

Development Opportunities: Improved access to gorge for hiking and fishing.

Lower Falls Park (3 acres)

Location: West bank of the Genesee River south of the Driving Park Bridge, near the Maplewood YMCA and accessed from Driving Park Avenue via Hastings Street.

Facilities and Special Features: Spectacular views of Lower Falls and river gorge. Remains of various historic structures are evident in some areas. The park features a public art sculpture known as "The Seat of Remembering and Forgetting" that depicts the faces and hands of the community's youth.

Seneca Park (297 acres)

Location: Eastern bank of the Genesee River, north and south of the Veteran's Memorial Bridge; park can be entered from St. Paul Street, just north of Route 104 (Ridge Road East).

Facilities and Special features: Seneca Park, originally designed by world renowned landscape architect Frederick Law Olmsted, contains 297 acres and is located on the east bank of the Genesee River, north and south of the Veterans Memorial Bridge. It provides recreational opportunities that include three picnic shelters, the Wegman Lodge, playgrounds, hiking trails, open fields, a large pond and the Seneca Park Zoo. In addition, the park contains steep wooded slopes along the river bank, wetlands, and spectacular views of the Genesee River gorge. The park is owned by the city and, through an inter-municipal agreement, Monroe County is responsible for its maintenance and operation.

Development Opportunities: Enhancement of Olmsted Plan; improved access to river gorge for hiking and fishing; rehabilitation of zoo and public pool.

Seth Green Park (2.3 acres/part of Seneca Park)

Location: Eastern bank of the Genesee River; enter from St. Paul Street at Norton Street and runs north to Seneca Towers.

Facilities and Special features: A "Switchback trail" on steep wooded slopes along river provide spectacular views of Veteran's Memorial Bridge and the river gorge and leads to fishing spots.

Development Opportunities: Improved fishing access.

High Falls (Triphammer Park, Granite Mills Park, Pont de Rennes Bridge)

Location: High Falls/Brown's Race Historic District.

Special Features: A panoramic view of the river gorge and High Falls. Within an Urban Cultural Park that celebrates Rochester's earliest industrial area. The Pont de Rennes pedestrian bridge was created in 1982 from what was the Platt Street Bridge (1891), an 858-foot-long, truss bridge. Looking out over the gorge, you can see rock formations of shale, limestone and sandstone, with bands of iron ore. Authentic ruins of the old Granite Flour Mill's foundation (circa 1850) and millstone from the Moseley and Motley Milling Company. A unique archaeological park, the Triphammer Forge site provides a good view of the layers of history found in Brown's Race.

High Falls Terrace Park (2 acres)

Location: 305-365 St. Paul Street

Facilities and Special Features: Passive open space with trails connecting to the Genesee Riverway Trail offer spectacular views of the river gorge, High Falls, and the Brown's Race Historic District across the river.

Charles Carroll Park/Genesee Crossroads Park (4 acres)

Location: Along the river in downtown Rochester just south of the Andrews Street bridge to the Main Street Bridge.

Facilities and Special Features: Benches and picnic areas. Amphitheater. Sisters Cities Pedestrian Bridge. Walkway along the river offering views of the river, downtown, and trees and landscaping in an otherwise built-up urban environment.

Genesee Gateway Park/Erie Harbor Park: (6 acres)

Location: On the east bank of the river between the Frederick Douglas/Susan B. Anthony Memorial Bridge and the Ford Street Bridge.

Facilities and Special Features: The Genesee Riverway Trail offers spectacular views of downtown and Corn Hill. The park comprises a small playground, basketball courts, excellent fishing locations, and car-top boat launch (equipped to handle canoes, kayaks, etc.).

Genesee Valley Park (800 acres)

Location: At confluence of the Genesee River and the Erie Canal.

Facilities and Special Features: This historic Olmsted-designed park offers a golf course, the Genesee Waterways Center, hiking trails, a swimming pool, an indoor ice skating rink, and picturesque views of the historic canal bridges.

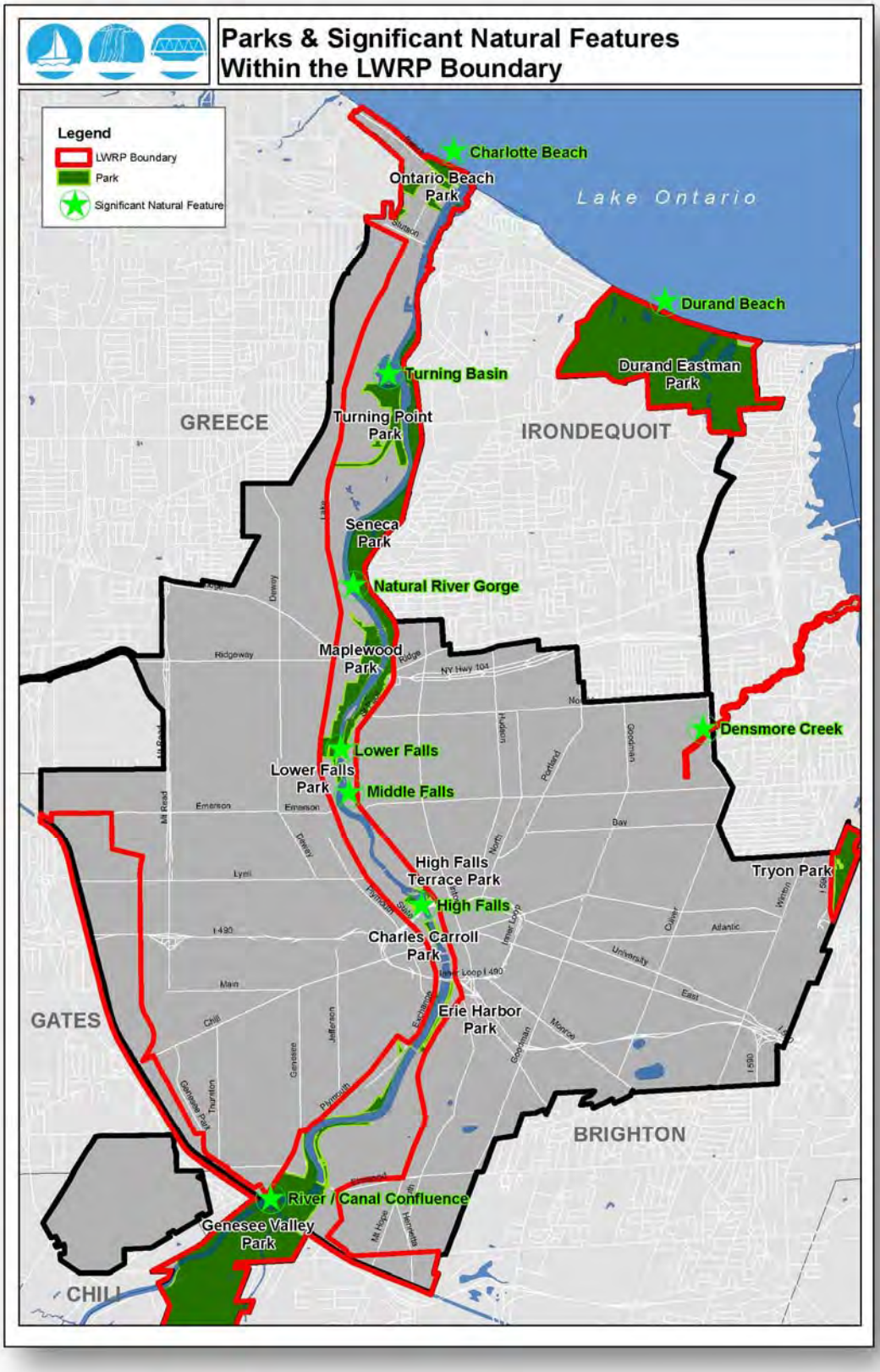
Tryon Park (82 acres)

Location: Adjacent to Irondequoit Creek and southwestern edge of the Irondequoit Creek wetlands, just south of Irondequoit Bay; park can be entered via Tryon Park Road.

Facilities and Special Features: The park offers hiking trails, steep wooded slopes, wetlands, and scenic overlooks.

Development Opportunities: Enhancement of scenic views; new hiking and biking trails.

FIGURE 12: LWRP PARKS AND NATURAL FEATURES



BOAT LAUNCHES

Motorized/trailerd boats: The port area has a number of public and private marinas and yacht clubs that offer a total of approximately 1,000 boat slips. Refer to the Port of Rochester Harbor Management Plan in Appendix I for more information on boating in the Rochester harbor. A City-owned public boat launch at the Port of Rochester offers a four-lane boat launch for trailered boats. The launch is operated through the Port of Rochester Marina.

Car-top boats: The City offers several locations for launching a car-top (e.g., kayaks, canoes) boat from within the LWRP. These locations include Durand-Eastman Park, Turning Point Park, Genesee Gateway Park, Corn Hill Landing, Brooks Landing, and the Genesee Waterways Center.

FISHING ACCESS SITES

The east and west piers at the mouth of the river are often used for fishing and provide direct public access to the river. The piers have been improved by the USACE and are generally in good condition. Fishing access is also provided at the scenic Genesee River Fishing Access Site, run by New York State DEC, located at the end of St. Paul Boulevard, across the river from the Port of Rochester. It features parking and benches, and is open year-round. A newly constructed fishing access site is located at the former CSX railroad swing bridge abutment just south of the public boat launch at the Port of Rochester.

The Lower Gorge of the Genesee River is one of Western New York State's most productive sport fisheries for trout and salmon. A fishing access point, located off of Seth Green Drive, south of the intersection with St. Paul Boulevard, is open from 6 a.m. to 7 p.m. There is no west side access in the Lower Falls Area.

Several fishing charters operate out of the Port of Rochester that offer excellent fishing opportunities, especially for Salmon.

TRAILS

See section entitled MULTI-PURPOSE TRAILS above.

CEMETERIES

While not officially designated as parkland, Riverside Cemetery and Holy Sepulture Cemetery, located just south of Turning Point Park on the west bank of the river, also offer passive recreation opportunities such as hiking, biking and bird watching.

HISTORIC RESOURCES

Because Rochester began and grew along the Genesee River, there are many historic resources within the city's LWRP (See Figure 13). These include archaeological sites, a local Preservation District, local, state and national landmarks, and a number of properties eligible for landmark designation.

In 1986, the Rochester Museum and Science Center prepared the Cultural Resources Inventory for the City of Rochester LWRP. This report identified 21 known archaeological sites, seven historic Euro-American archaeological sites, two landmarks listed on the National and State Registers of Historic Places, and three locally-designated landmarks. In April, 1987, the Beach Avenue Preservation District was designated, pursuant to the city's zoning ordinance.

The Genesee Lighthouse, at 70 Lighthouse Street, is perhaps one of the most historically significant sites within the LWRP and gives an indication of the wealth of resources in this area of Rochester. The site is listed on the National and State Registers of Historic Places, is a local landmark, and contains the remains of the first light keeper's house (c. 1822), was the site of the cabin of the first permanent Euro-American settler in what was to become Rochester, and contains evidence of American Indian occupation.

Based on information from the New York State Historic Preservation Office (SHPO), properties, districts and landmarks listed on the National and State Registers of Historic Places that are located within or partially within the LWRP boundary include:

- Genesee Lighthouse - 70 Lighthouse Street
- "Shingle-side" (house) - 476 Beach Avenue
- Saint Bernard's Seminary – 2260 Lake Avenue
- Seneca Park East and West – 2222 St. Paul Boulevard
- Maplewood Historic District
- Teoronto Block Historic District
- Brown's Race Historic District
- St. Paul – North Water Streets Historic District
- Andrews Street Bridge (Andrews St. at Genesee River)
- Chamber of Commerce – 55 St. Paul Street
- Reynold's Arcade – 16 E. Main Street
- Main Street Bridge (Main St. at Genesee River)
- Wilder Building – 1 E. Main Street
- Arcade Mill – 26-32 Aqueduct Street

- Central Trent Bank Building – 44 Exchange Boulevard
- Former Erie Canal Aqueduct – (Broad Street at Genesee River)
- Rundel Memorial Library – 115 South Avenue
- Court Street Bridge – (Court Street at Genesee River)
- Lehigh Valley Railroad Station – 99 Court Street
- Court / Exchange Building – 144 Exchange Boulevard
- Old Stone Warehouse – 1 Mt. Hope Avenue
- Mt. Hope / Highland Historic District
- Arvine Heights Historic District
- Erie Canal (Barge Canal) (statewide designation)

Additional local landmarks and preservation districts designated by the City of Rochester include:

- Ontario Beach Carousel - Ontario Beach Park
- Genesee Lighthouse - 70 Lighthouse Street
- Beach Avenue Preservation District

Based on information from SHPO, the majority of the land within the LWRP boundary is also deemed archaeologically sensitive. This means that proposed future development must be carefully analyzed for potential impacts on known or potential archeological sites through the city's environmental and consistency review processes. The State Historic Preservation Office and the Rochester Museum and Science Center (RMSC) should be contacted directly regarding these analyses in order to provide more specific data, surveys or other information about potential archeological sites and impacts.

Examples of specific historic Euro-American archaeological sites within the LWRP boundary include:

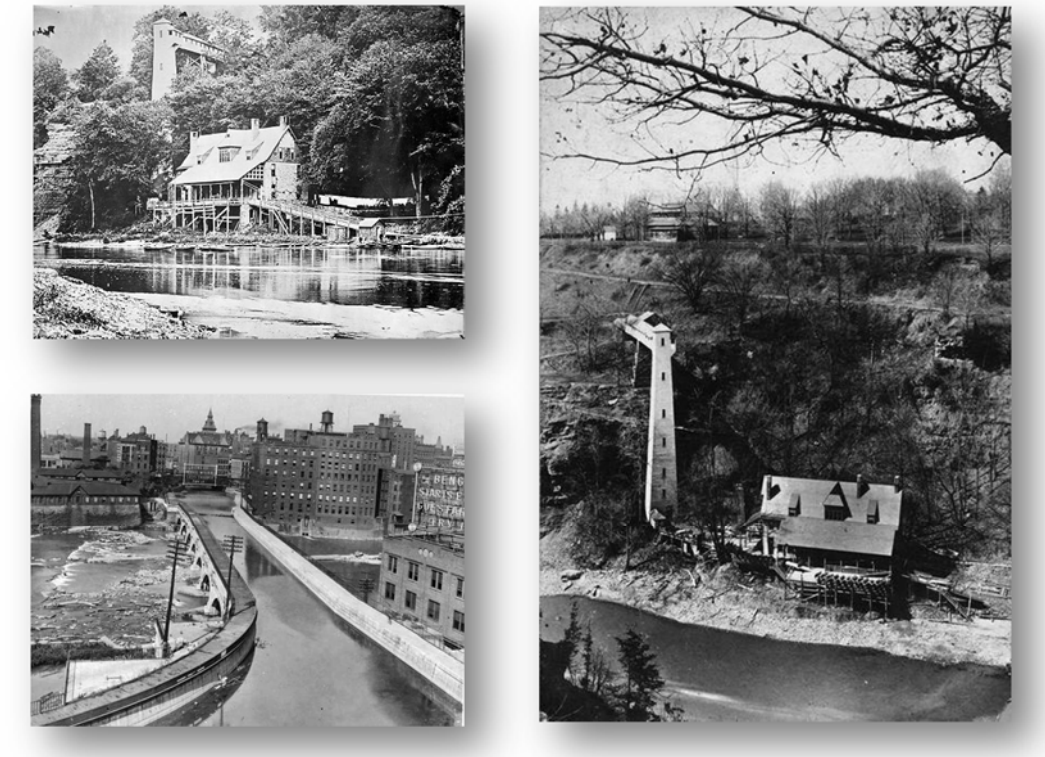
- Genesee Lighthouse Historic Site
- Lower Falls Mill and Industrial Site
- Carthage-Brewer's Dock Historic Site
- Carthage Flats Mill and Industrial Site
- Glen House Historic Site
- King's-Hanford's Landing Historic Site
- Kelsey's-Buell's Dock

Additional historic archaeological sites include:

- Twenty-one sites as identified by the Rochester Museum and Science Center. The RMSC should be contacted for more detailed information.

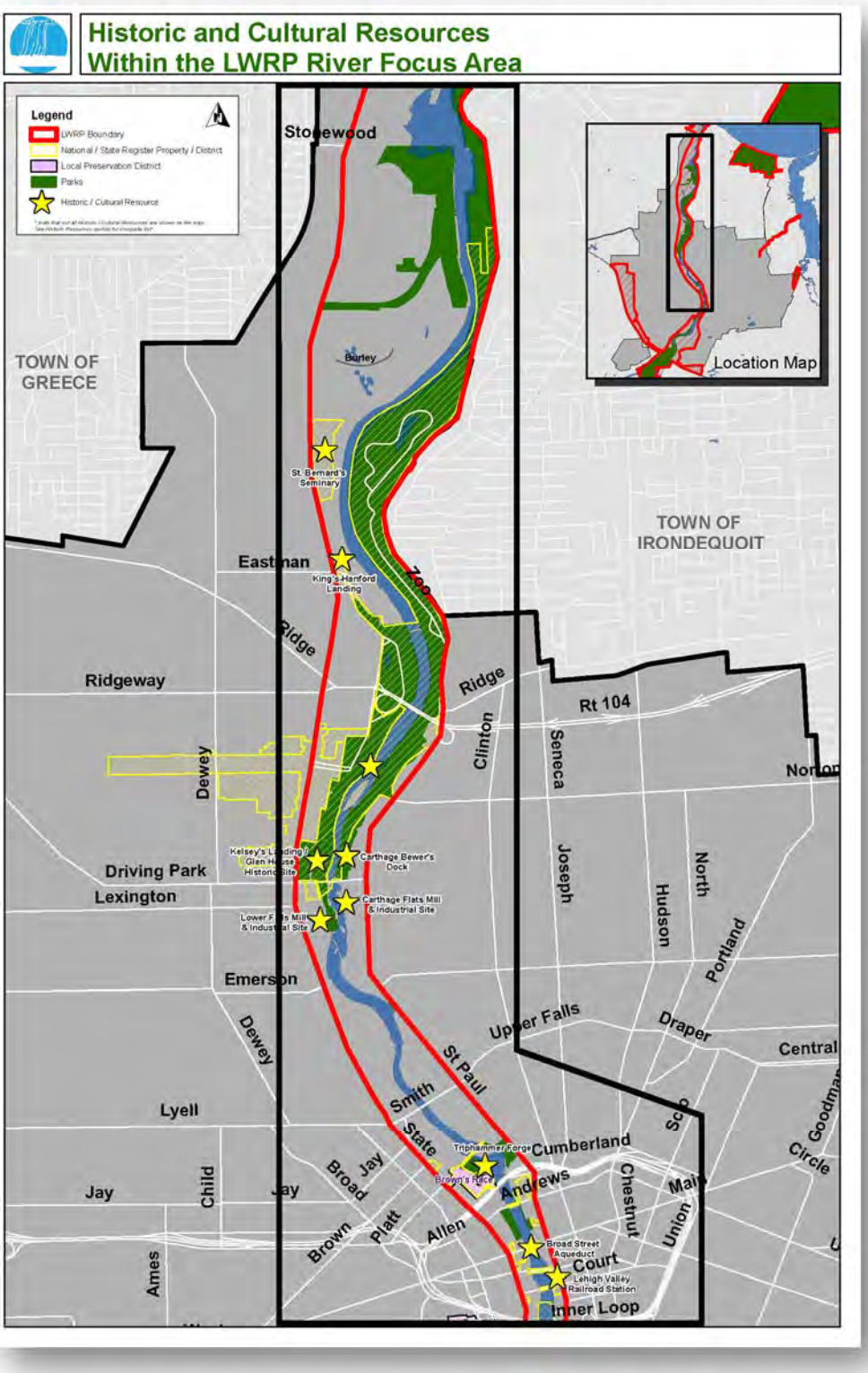
Additional historic districts and resources adjacent to the corridor include:

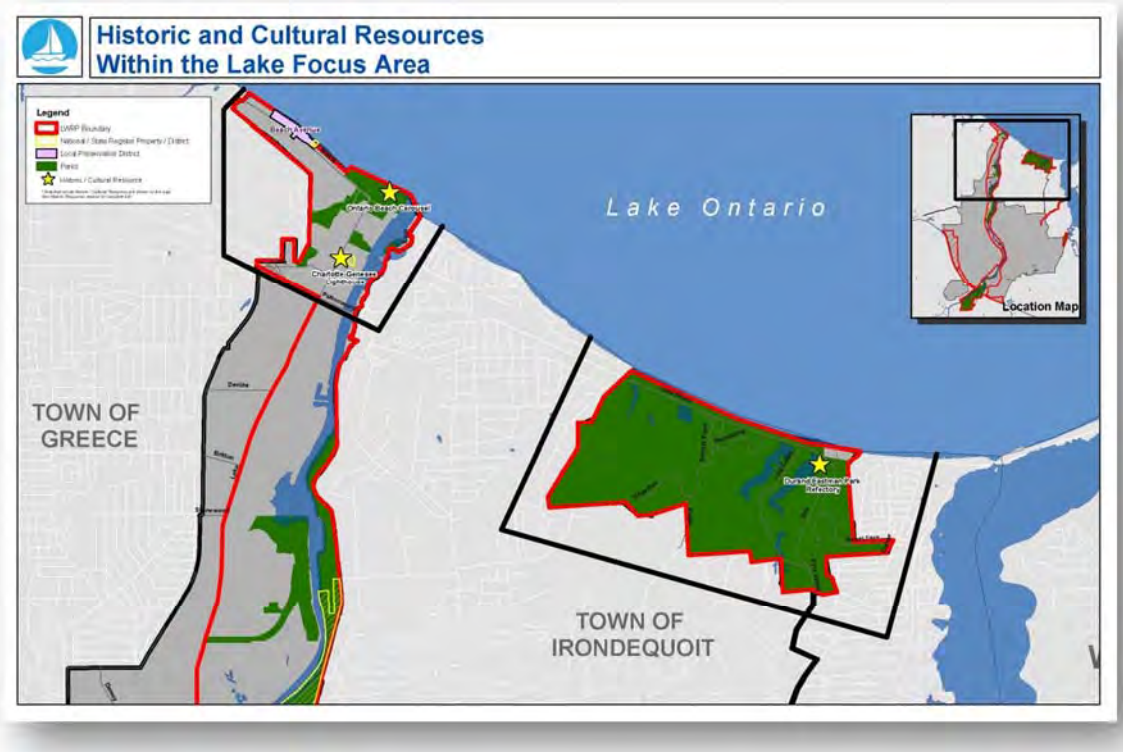
- Cascade Historic District
- Corn Hill Historic District
- Mt. Hope Historic District and Cemetery
- Warner Castle and Highland Park
- Campbell-Whitesley House
- Historic Erie Canal and Trolley Beds
- Genesee Valley Canal
- Ellwanger Gardens

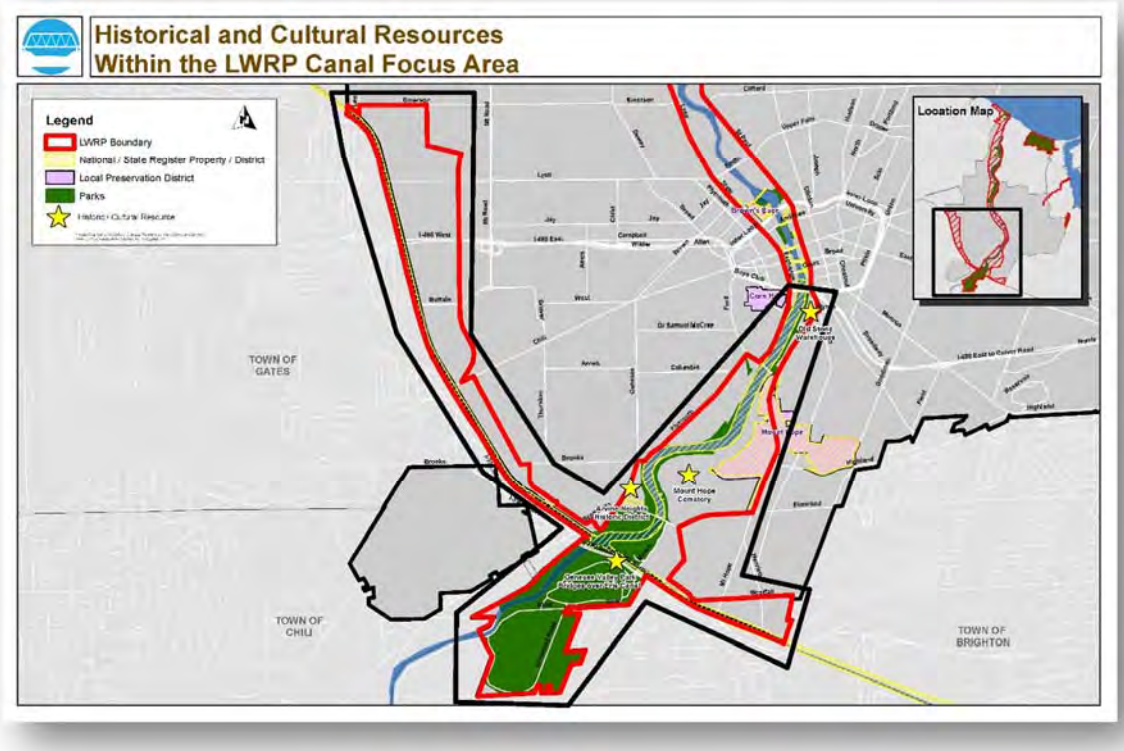


Examples of LWRP Historic/Culturally Significant Sites
Top left / right: The former Glen House Historic Site – Genesee River near Driving Park Bridge
Bottom left: Erie Canal Aqueduct in downtown Rochester

FIGURE 13: HISTORIC AND CULTURAL RESOURCES




Historic and Cultural Resources
Within the Lake Focus Area
Legend
LWRP Boundary
National / State Register Property / District
Local Preservation District
Parks
Historic / Cultural Resource
Lake Ontario
Location Map
TOWN OF
GREECE
TOWN OF
IRONDEQUOIT


Historical and Cultural Resources
Within the LWRP Canal Focus Area
Legend
LWRP Boundary
National / State Register Property / District
Local Preservation District
Parks
Historic / Cultural Resource
Location Map
TOWN OF
GATES
TOWN OF
CHILI
TOWN OF
BRIGHTON

MUSEUMS

Many museums and interpretive centers exist within the waterway corridor or within close proximity to the corridor including the following:

- Strong Museum
- Center at High Falls
- Eastman House
- Rochester Museum and Science Center
- Memorial Art Gallery
- Susan B. Anthony House
- Charlotte Lighthouse Museum
- former Marine Discover Center Display
- Campbell-Whittlesey House

CIVIC/INSTITUTIONAL BUILDINGS AND PLACES

Civic and institutional buildings and places that exist within the waterway corridor or that are in close proximity include:

- Frontier Field
- Capelli Stadium
- Rochester Riverside Convention Center
- Rochester War Memorial
- Rundell Memorial Library
- University of Rochester
- Rochester Institute of Technology
- Monroe Community College
- Strong Hospital
- Highland Hospital
- Greater Rochester International Airport

HISTORIC PARKS

The 2009 A Survey of Rochester's Historic Parklands surveyed 61 park sites greater than or equal to 50 years old or that otherwise have historic significance, and evaluated their National Register (NR) eligibility. The following parks fall within the LWRP boundary and were identified in the study:

Park / Site	Current Designation Status
Carthage Drive Mall	Contributing feature in historic district / NR designation
Charlotte Cemetery / Ira Jacobson Cemetery	None
Durand Eastman Park	None
Browns Race	Local Designation. National Register designation
Genesee Valley Park	None
Granite Mills Park (Browns Race)	Contributing feature in Historic District. Local Designation. National Register designation
Kings Landing Cemetery	Contributing feature in Historic District. National Register designation
Lower Falls Park	Contributing feature in Historic District. National Register designation
Maplewood Park	Contributing feature in Historic District. National Register designation
Mt. Hope Cemetery	Contributing feature in Historic District. Local Designation. National Register designation
Ontario Beach Park	Carousel is an individually designated local landmark
Pont de Rennes Bridge	Contributing feature in Historic District. Local Designation. National Register designation
Riverside Cemetery	None
Seneca Park	Contributing feature in Historic District. Local Designation. National Register designation
Seneca Parkway Mall	Contributing feature in Historic District. Local Designation. National Register designation
Seth Green Park	Contributing feature in Historic District. National Register designation
Triphammer Park	Contributing feature in Historic District. Local Designation. National Register designation

For detailed information on the individual parks, refer to Section on PARKS

F. NATURAL RESOURCES

WATER QUALITY

The Genesee River accumulates and transports a variety of pollutants to Lake Ontario. Water quality in the lower river has degraded over the years because of the dumping of industrial wastes and untreated sewage into the river. According to the Monroe County Health Department (MCHD), the combination of combined sewer overflows, Eastman Kodak Company waste discharges and connections with the Barge Canal have significantly contributed to the pollution of the Genesee River. Because of improvements to the city's sewer systems and the upgrading of Eastman Kodak's King's Landing waste treatment plant which now removes silver and other chemicals from plant waste water discharges, river water quality has begun to improve. Small amounts of cadmium used in the photographic process still collect in river sediment, however, and can constitute a health problem when the river is dredged causing these toxic metal particles to become suspended in water. The NYSDEC is currently investigating elevated levels of toxic sediments in the lower Genesee and the toxicity of Kodak discharges.

The Monroe County Pure Waters Agency (MCPWA) was formed in 1967 to consolidate and improve municipal sanitary waste discharges. The Rochester Pure Waters District, one of five county sewer districts, operates and maintains treatment facilities, interceptor sewers and a collection system which serve the entire city. A network of sewer interceptors and new overflow tunnels collects sewage, stores it during periods of high storm water runoff, and then directs it to the Frank E. Van Lare Treatment Plant in Durand-Eastman Park for secondary treatment. Five chlorination stations also serve the city.

FISHERIES AND HABITAT

The Genesee River flows north through the City of Rochester and is one of four major New York State tributaries of Lake Ontario. The large size of the Genesee, and the fact that much of the river corridor is essentially undisturbed, make it one of the most important fish and wildlife habitats in the Great Lakes Plain ecological region of New York State. However, water pollution and extensive alteration of the lower channel have reduced the environmental quality of the river.

The New York State Department of State (NYSDOS) has designated almost six and one-half miles of the river as a "coastal fish and wildlife habitat of state-wide significance". This habitat area extends from the mouth of the river at Lake Ontario to the Lower Falls, just south of the Driving Park Bridge. The Lower Falls is a natural impassable barrier to fish. The lower river area received a rating of 54, which is well above the 15.5 threshold for designation as a

significant coastal fish and wildlife habitat. The rating system was based on five criteria: ecosystem rarity; species vulnerability; human use; population level of species present; and replaceability. A more detailed habitat narrative, the coastal fish and wildlife habitat rating form, and a location map is included in Appendix IV.

The Genesee River is a highly productive warmwater fisheries habitat which supports concentrations of many residents and Lake Ontario based fish species. Among the more common resident species are small mouth bass, brown bullhead, northern pike, channel catfish, walleye, carp and white sucker. Lake-run species found in the Genesee River include white bass, yellow perch, white perch, smelt, bowfin, sheepshead, rock bass and American eel. These fish populations are supplemented by seasonal influxes of large numbers of trout and salmon. In the spring (late February - April), steel head (lake-run rainbow trout) and brown trout run up the river, and lake trout occur at the river's mouth. In fall (September - November), concentrations of coho and Chinook salmon, brown trout and steel head are found throughout the river during their spawning runs. The salmon concentrations in the Genesee River are among the largest occurring in Lake Ontario tributaries, and are largely the result of an ongoing effort by NYSDEC to establish a major salmon fishery in the Great Lakes through stocking.

The Genesee River provides an important recreational fishery, attracting anglers from throughout New York State and beyond. Its location within the City of Rochester results in very heavy fishing pressure from residents of the metropolitan area. Major fishing areas along the river include the river mouth at Lake Ontario, and the riverfront between Seth Green Park and Lower Falls.

WILDLIFE HABITAT

Wildlife along the river and shore zone is not well documented. It appears to be limited to those species that can inhabit a relatively narrow riparian corridor, and are somewhat tolerant of human activities in adjacent areas. Possible or confirmed breeding bird species include mallard, wood duck, red-tailed hawk, spotted sandpiper, belted kingfisher, red-winged blackbird, swamp sparrow and various woodpeckers and woodland passerine birds. Other species occurring in the area include beaver, deer, squirrel, skunk, raccoon, muskrat, northern water snake and painted turtle. The steep slopes of the gorge and the wooded areas of Durand-Eastman Park provide refuge for many types of wildlife.

FRESHWATER WETLANDS

Wetlands, also commonly referred to as swamps, marshes, bogs, etc. are areas saturated by surface or ground water sufficient to support distinctive vegetation adapted for life in

saturated soil conditions. Wetlands serve as natural habitat for many species of plants and animals and absorb the forces of flood and tidal erosion to prevent loss of upland soil. There are several of these environmentally critical areas throughout the LWRP study area.

Durand Eastman Park, located on the south shore of Lake Ontario, contains several small lakes, all of which are classified as DEC wetland areas.

Other concentrations of wetland areas are located along the banks of the Genesee River near Turning Point Park as well as through the southern portion of Genesee Valley Park.

The terminus of both Densmore and Irondequoit Creeks where they empty into Irondequoit Bay also contain sensitive wetland areas that are characterized by tall cattails and marshland along the western shoreline of the bay and provide critical habitats for a variety of wildlife.

Wetlands are valuable fish and wildlife habitats and serve as nesting and breeding areas for many migratory species as well as spawning and nursery areas for many species of fish. Wetlands also provide flood and storm water retention capacity by slowing runoff and temporarily storing water, thus protecting downstream areas from flooding.

In recognition of the benefits of wetlands, New York State enacted the Freshwater Wetlands Act (Article 24 of the Environmental Conservation Law). Wetlands encompassing 12.4 acres or more are protected (See Figure 14), as are smaller areas having unusual local significance such as supporting a rare or endangered species. Any filling or alteration of a wetland or within a 100 foot buffer zone immediately surrounding the wetland requires a permit from the NYSDEC.

Wetlands are classified into four categories. Class I wetlands are the most valuable and least disturbed, while Class IV wetlands are the least valuable. State-designated wetlands within the city's LWRP, and the state classification category of each, are listed below.



Right - Wetland area located at outlet of Densmore Creek at Irondequoit Bay

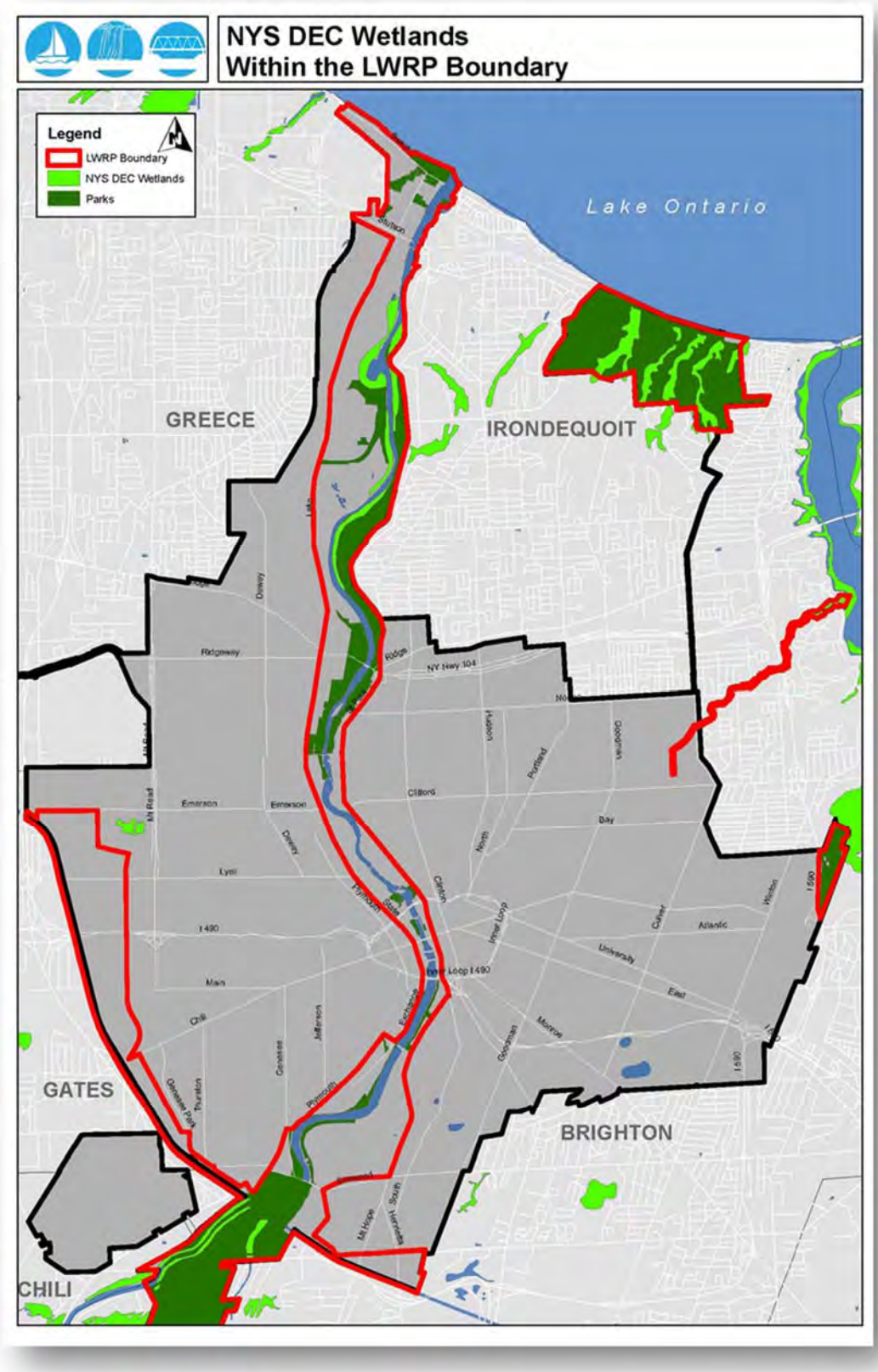
STATE DESIGNATED WETLANDS WITHIN THE LWRP (12.4 acres or greater)

State Code	State Class	Location
RH-6	II	River, NE, north of Rattlesnake Point
RH-8	II	River, NW, below Riverside Cemetery
RH-9	II	River, NE, Turning Point Park and northward
RH-20	I	River, NE, Seneca Park
RH-21	II	River, NE, Seneca Park and northward
RH-2	II	River, SW, Genesee Valley Park
RH-3	I	River, SE, Genesee Valley Park
RH-4	I	River, SE Genesee Valley Park
RH-12	I	Durand-Eastman Park
RH-13	I	Durand Lake, D-E Park
RH-14	I	Eastman Lake, D-E Park
RH-15	I	Durand-Eastman Park
RH-16	I	Durand-Eastman Park
PN-1	I	TRYON Park (small portion of Ellison Park wetlands)

The U.S. Fish and Wildlife Service (USFWS), a branch of the U.S. Department of the Interior, regulates all wetlands listed on the National Wetland Inventory. This inventory classifies wetlands first by the ecological system present. In Rochester, this is usually riverine (in or adjacent to a river) or palustrine (poorly drained or swampy area). Some lacustrine (in or adjacent to a lake) wetlands are found in and adjacent to Durand and Eastman Lakes in Durand-Eastman Park. Further classifications include open water areas, emergents (vegetation which is rooted under the water with parts of the plant extending up out of the water), shrub/scrub areas, and forested areas. Common examples of emergent vegetation in Rochester are cattails and purple loose strife. Vegetation found in shrub/scrub areas includes alder, buttonbush and dogwoods. In forested wetland areas within Rochester, willows, red and silver maples and red ash are likely to be found.

Projects that impact a federally-designated wetland impose requirements upon federal agencies and federally-assisted projects, as well as requiring permits through the USACE.

FIGURE 14: LWRP NYS DEC WETLANDS



VISUAL QUALITY

Overview

Rochester's coastal area has a variety of unique natural features including waterfalls, a river gorge, small river islands, forests, wetlands, and intersecting waterways. Several breathtaking views and vistas are found throughout the city's LWRP area and enhance the city's urban environment.

Description

The beach and port area dominate the land use pattern in the northern portion of the city's waterfront revitalization area and contribute to the overall visual quality of that area. Views of the lake and river from within the park, the piers, along the trail, and along the boardwalk on the east side of the port terminal building are stunning and publicly accessible. Improvements to the overall character of the area could be made along Lake Avenue where underutilized/dilapidated land uses detract from the aesthetics of the area.

Moving south from the port along the river, several spectacular views exist along the Genesee Riverway Trail and from within public parks. Several vacant properties along St. Paul Street, on the eastern side of the river, also offer panoramic views and vistas of the river gorge and the western riverbank. Seneca Park, located along the river's eastern bluff, provides an excellent view of the river's wetlands and wooded slopes. Seneca and Maplewood Parks are connected via the CSOAP pedestrian bridge which crosses the river and provides spectacular views of the river gorge. Areas within Turning Point Park provide spectacular views of the river and the Turning Basin, as well as the wetland areas along the eastern bank. A trail connects the parking lot on Boxart Street in Turning Point Park to the Genesee Riverway Trail which continues north over a bridge that spans the turning basin of the Genesee River and continues on through the Port of Rochester to the Lake.

Additional scenic views and vistas of Lake Ontario and various ponds and valleys exist in Durand-Eastman Park. Hiking trails through natural wooded areas provide a variety of scenic opportunities.

Views of the river, University of Rochester campus, the downtown skyline, and the natural resources of Genesee Valley Park can be seen from the riverbank in the canalized portion of the river.

Scenic views and vistas of Irondequoit Creek, Irondequoit Bay and the adjacent wetlands exist in Tryon Park.

While there are many scenic resources within the LWRP, the following is a list of what has been identified as the most significant viewsheds within the LWRP boundary (see Figure 15).

(1) Ontario Beach Park Terminus from Lake Avenue
(2) Charlotte Lighthouse from the grounds of the lighthouse
(3) Turning Point Park/Turning Basin from the Genesee Riverway Trail boardwalk
(4) Durand-Eastman Beach from the shoreline
(5) Genesee River Gorge and Seneca Park from the CSOAP Pedestrian Bridge
(6) Lower Falls from Seth Green Park
(7) Lower Falls from Lower Falls Park
(8) High Falls from the Pont De Rennes Pedestrian Bridge
(9) Ford Street Bridge/City Skyline from the Genesee Riverway Trail southwest bank
(10) University of Rochester River Campus/City Skyline from Erie-Lackawanna Pedestrian Bridge
(11) River/Canal Confluence and Olmstead Bridges from Genesee Valley Park

FIGURE 15: LWRP SIGNIFICANT VIEWSHEDS



AIR QUALITY

At the current time, Rochester's air quality is not known to be a significant problem and meets all national air quality standards.

G. FOCUS AREA SUMMARIES

See Section 1 for a discussion of the origin of the Focus Areas. Refer to Figure 16 below for Focus Area maps.

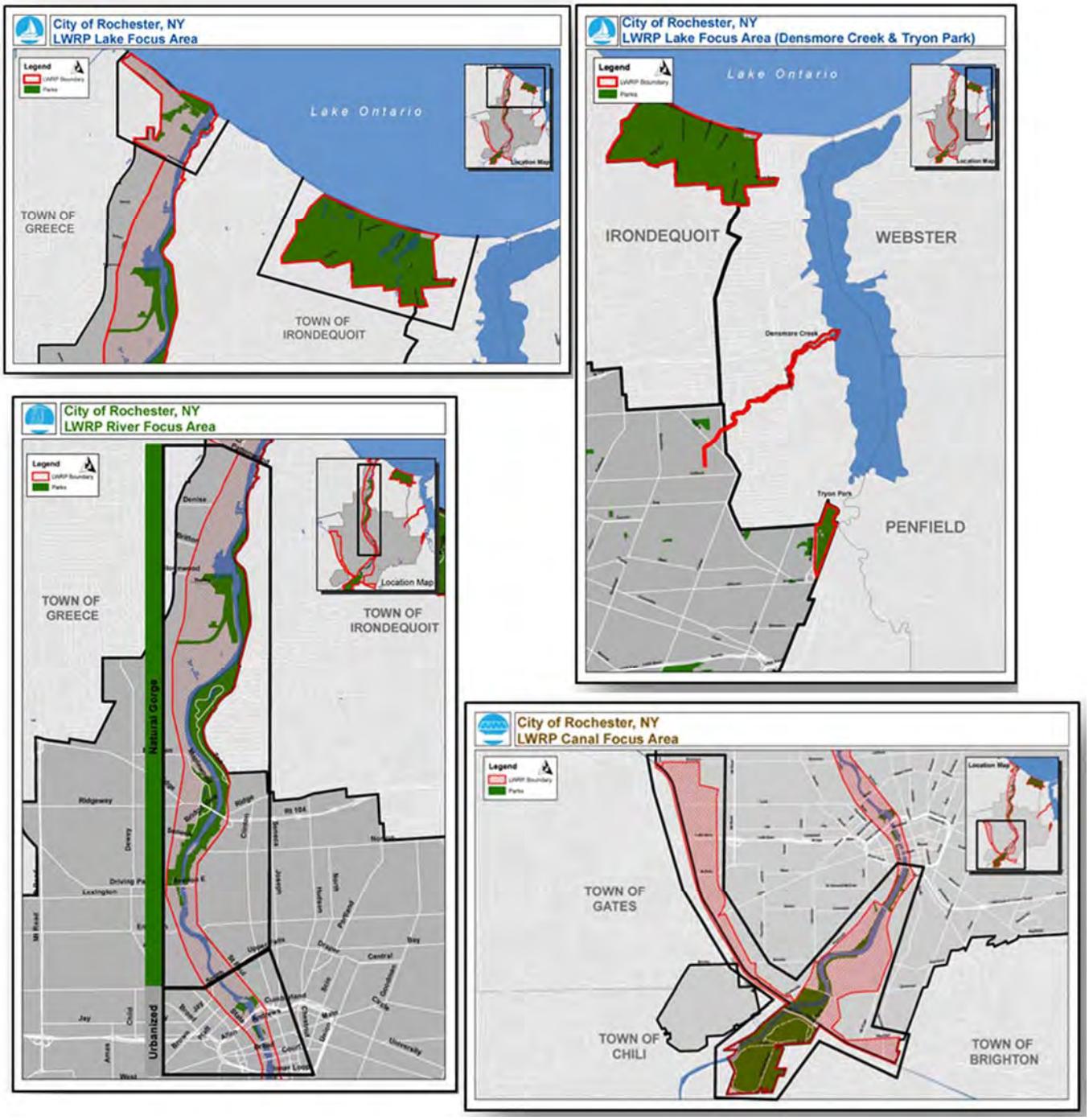
LAKE FOCUS AREA

Included in the boundary of the Lake Focus Area are the City's two main lake front areas; the Port of Rochester, Ontario Beach Park, the mouth of the Genesee River south to the O'Rorke Bridge, and Durand Eastman Park.

Also included in the lake focus area are Densmore Creek and Tryon Park because of their connection to Irondequoit Bay. These areas are broken out into sub-zones which are described in more detail below. Densmore Creek originates in the northeast section of the City at which point it is primarily underground. It begins to flow above ground east of Culver Road near the City of Rochester/Town of Irondequoit municipal boundary. The creek flows through the Town of Irondequoit, albeit the creek bed itself, comprised of over 80 parcels most of which are city owned, is within the city limits. The creek is approximately 4 miles long, out falling into Irondequoit Bay.

Tryon Park, located at the City's most easterly boundary (bordered by the Town of Irondequoit to the north and west and the Town of Brighton to the south and east), is approximately 82 acres and is situated near the western shoreline of Irondequoit Bay.

FIGURE 16: LWRP FOCUS AREAS



RIVER FOCUS AREA

The River Focus Area boundary includes the area between Lake Avenue/State Street on the west and the city municipal boundary/St. Paul Boulevard on the east, beginning from the O'Rorke Bridge to the north, south to the Frederick Douglas/Susan B. Anthony Memorial Bridge that carries Interstate 490 over the river.

Due to the distinctly different characteristics of this stretch of river, the focus area was further divided into two sub-zones. The majority of the river focus area is primarily characterized by undeveloped steep wooded slopes along each bank of the river and therefore is referred to as the "natural gorge" sub-zone. The area south of Smith St. is distinctly different in nature, as the land adjacent to the river is much more developed. This "urbanized" sub-zone of the focus area begins south of the Smith Street Bridge and includes the High Falls area and downtown Rochester.



View from Lower Falls Park within the "natural gorge" sub-



Aerial view of the "urbanized" sub-zone where the Genesee River flows through downtown Rochester

CANAL FOCUS AREA

The Erie Canal primarily runs northwest along the southern municipal border of the City of Rochester, a portion of which includes a north-south section of the Genesee River which is considered to be a part of the original canal system. The boundary of this portion of the Canal

Focus Area from the Frederick Douglas/Susan B. Anthony Memorial Bridge south to the City municipal border with the towns of Chili and Brighton. Mount Hope Avenue serves as the eastern boundary of this portion while Exchange Boulevard and Plymouth Avenue serve as the western boundary.

Along the east-west section of the canal, east of its intersection with the Genesee River, the Canal Focus Area is bounded by the City/Town of Brighton municipal boundary to the south and east and Westfall Road to the north. The portion west of the intersection with the Genesee River is bounded by the City/Town of Gates/Chili municipal boundaries to the south and west, Emerson Street to the north, and a series of railroads and streets forming its eastern boundary. The Canal Focus Area encompasses all of Genesee Valley Park. The portions are described below in detail as sub-zones.



Aerial view of western portion of the Erie Canal



Aerial view of Genesee Valley Park at the confluence of the Erie Canal and Genesee River

H. FOCUS AREA SUB-ZONE SUMMARY

DESCRIPTIONS OF LWRP SUB-ZONES

The three focus areas were further subdivided into 21 sub-zones by the Waterfront Advisory Committee. The sub-zone numbering system was developed going north to south from the Lake Ontario shoreline along the Genesee River corridor through the city and south to the Erie Canal. The numbering system was based on several criteria including known and accepted city neighborhood boundaries, unique geographic areas, related land uses and/or other major physical characteristics or features of the city's waterfront. As examples, the numbering system accounted for the variety of different land use areas within the Port area and the Charlotte neighborhood, the variety of natural features within the boundary including parks, open spaces, steep slopes, upland areas, beaches, creeks and watersheds, the variety of geologic features along the river and canal corridors and the variety of dominant land uses within the boundary such as downtown (Center City). Figure 17 below provides a map that displays the sub-zones.

(1a) Durand Beach

LWRP sub-zone 1a (Durand Beach) is part of Durand-Eastman Park, located on the shore of Lake Ontario. Although it is owned by the City of Rochester, Durand Beach is surrounded by the Town of Irondequoit on the east and west sides and can be accessed from Lakeshore Boulevard, St. Paul Boulevard or Kings Highway. In 2006, the City reopened the beach for public swimming after it had been prohibited for decades. The beach boasts over 5,000 feet of sandy waterfront that is a major destination in the summer months. Durand Beach offers opportunities for swimming, walking and biking trails, picnicking, and other passive recreation with breathtaking views of Lake Ontario.



(1b) Durand-Eastman Park

LWRP sub-zone 1b is the 965-acre Durand-Eastman Park, located on the shore of Lake Ontario. The park is surrounded by the Town of Irondequoit on the east and west sides and can be accessed from Lakeshore Boulevard, St. Paul Boulevard or Kings Highway.

(1c) Beach Avenue

LWRP sub-zone 1a (Beach Avenue) is a residential area in the Charlotte Neighborhood just west of Ontario Beach Park along the southern shore of Lake Ontario. This area consists primarily of single-family homes of various sizes. Elevations in this area slowly increase moving west to approximately 10 to 20 feet above the lake level, creating steep slopes and bluffs along the lake shore.

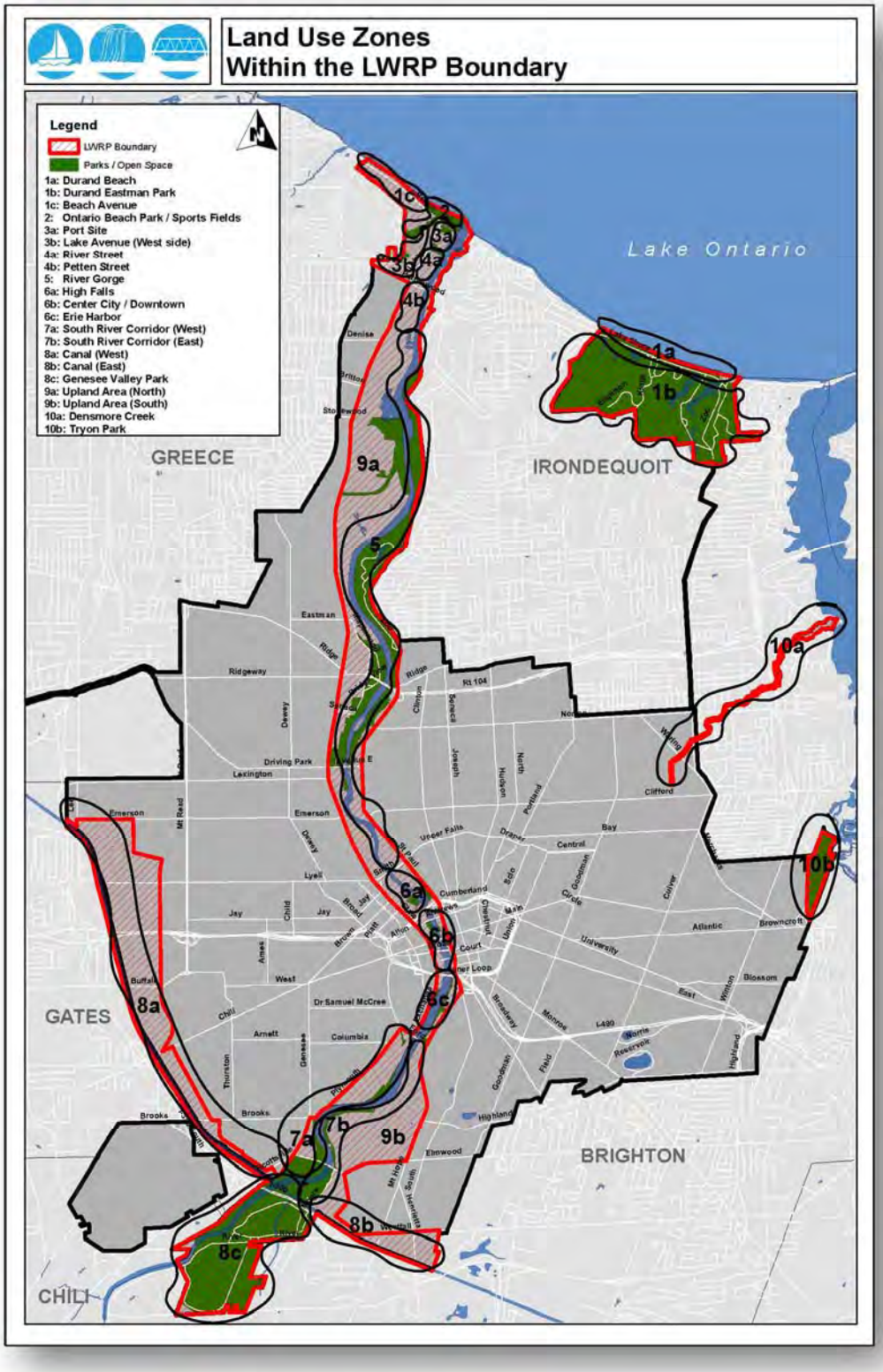
(2) Ontario Beach Park

LWRP sub-zone 2 is located on the shore of Lake Ontario at the mouth of the Genesee River in the Charlotte neighborhood and includes Ontario Beach Park. This city-owned park is 39 acres and features one of the best natural sand beaches on Lake Ontario. The park is accessed by Lake and Beach Avenues. Recreational facilities in the park include the beach and bathhouse, supervised swimming, a soccer field, two softball fields, an outdoor performance pavilion and concession stand. There is also the 2,365 ft. west pier that originates in the park and is a popular area for walking, biking and fishing. The park is zoned Open Space (OS) District and, through an inter-municipal agreement, Monroe County is responsible for its maintenance and operation.

(3a) Port of Rochester

LWRP sub-zone 3a is located at the mouth of the Genesee River, directly south of Ontario Beach Park. It currently contains a port terminal building that features several restaurants, offices, and special event space. Public parking to support the terminal building uses is located just north of the building. The Port of Rochester Marina includes a marina basin with 84 boat slip; a public promenade; broadside docking along the dock wall adjacent to the Port Terminal Building; a 4-lane boat launch; and, boater amenities, including a boater facility building (rest rooms, showers, laundry, etc.), a pump-out station, and appropriate utility connections including Wi-Fi, electricity and water. A city-owned vacant development parcel lies west of the Port of Rochester Marina and is bound by North River Street Corrigan Street, Portside Drive, and Lake Avenue.

FIGURE 17: LWRP LAND USE ZONES (SUB-ZONES)



(3b) Lake Avenue West

LWRP sub-zone 3b is located between the west side of Lake Avenue and the City municipal border, south of Beach Avenue and north of the Lake Ontario State Parkway. This area contains a mix of retail, bars and restaurants that complement Ontario Beach Park, the Port of Rochester, and other area attractions that are in close proximity. Single and multi-family housing is also located within this sub-zone, particularly on the side streets off Lake Avenue.



(4a) River Street

Sub-zone 4a, located immediately adjacent to the river, south of the Port of Rochester, has a unique neighborhood character that results from its topography, architecture and the small commercial establishments found throughout this area. It also includes an abandoned historic railroad station that has development potential. This area contains the Charlotte - Genesee Lighthouse which served as a beacon for shipping vessels on Lake Ontario until 1881 and is now designated as a historic landmark and listed on the National Register of Historic Places. The City-owned facilities and amenities in this area include: the River Street Marina, a public marina with approximately 50 boat slips (50 additional slips at this marina are located in sub-zone 4b); a pedestrian promenade; scenic overlook; and, connection to the Genesee Riverway Trail. There are vacant industrial facilities, such as the former Tapecon site which presents a unique opportunity for redevelopment in this area.

(4b) Petten Street

LWRP sub-zone 4b is located south of the O'Rorke Bridge between the east side of Lake Avenue and the Genesee River, to approximately Denise Road. This area is primarily characterized by single-family residential dwellings closer to Lake Avenue and a large private marina, Genesee Marina, along the west bank of the river. There is also a large, city-owned parking lot adjacent to the river just south of the O'Rorke Bridge that serves the River Street Marina and provides parking for the Genesee Riverway Trail system.

(5) Natural Gorge

Sub-zone 5 includes ample open space and several critical environmental areas within the LWRP boundary such as steep slopes, wetlands, floodplains, fish and wildlife habitats, and scenic views and vistas. This sub-zone comprises the entire Genesee River Gorge from the southern point of the Genesee Marina to the Smith Street Bridge on the south and includes Turning Point Park, Riverside Cemetery, Seneca Park, Maplewood Park, and Lower Falls Park as well as three large water-dependent uses of an industrial nature.



Adjacent to the park is an industrial site that is home to ESSROC Corp., a cement production company. Dry cement is received from the Stephen B. Roman, a large cargo ship that docks along the west bank of the Genesee River, within Turning Point Park. The cement is then piped to a processing facility located a short distance away, within an M-1 Manufacturing District. This use is water-dependent although the site is not located immediately adjacent to the river.



The second industrial site located within this sub-zone is located on the west bank of the river, just north of Maplewood Park. The site is owned by Eastman Kodak Company and is used for a wastewater treatment facility that services operations in Eastman Business Park, across Lake Avenue to the west. The site is zoned M-1 Manufacturing District and is accessed via the Hanford's Landing and Maplewood Drive. To the west of the treatment plant, across Bridgeview Drive are several surface parking lots that were formally used for Eastman Kodak employees. The parking lots, which are no longer in use, are zoned as a Planned Development District

(PD#12) which is a customized zoning district for Eastman Business Park. This area is underutilized and represents an opportunity for future re-development or expansion for the business park.



The third and final major industrial site within this sub-zone is located on the west bank of the river, just south of the Driving Park Bridge and is zoned Open Space (O-S). The site is owned by Rochester Gas & Electric Corporation (RG&E) and is used for the Station 5 hydroelectric power plant. This plant generates electricity using hydropower produced by the Middle Falls Dam. Water is diverted from the dam and piped via a tunnel to the power plant. Access to the plant is from Seth Green Drive to the north. The area around the plant, adjacent to the river, provides exceptional fishing opportunities. In 2007, a new 2,200 ft. segment of the Genesee River Trail system was constructed in this area, including a pedestrian bridge that sits atop the Middle Falls Dam and provides an east-west connection across the river within the gorge.

The site of Riverside Cemetery contains 95 acres and is located on the west bank of the Genesee River, just south of Turning Point Park and east of Lake Avenue. Almost 80% of the site is characterized by heavily wooded areas along the river, with open lawn areas adjacent to the eastern edge of the existing burial sites. The entire cemetery is located within the Lower Genesee Basin.



(6a) High Falls

Sub-zone 6 is High Falls, including the Brown's Race Historic District, bounded by the Smith Street Bridge on the north, the inner loop bridge on the south, State Street on the west and St. Paul Boulevard on the east. Located just outside of downtown Rochester, this area is characterized by cobblestone streets and historic 19th century buildings that overlook the gorge and High Falls, a 96 foot waterfall, one of the only

urban waterfalls in the country. Rochester Gas & Electric (RG&E), the local utility company, owns several properties in High Falls. Due to its proximity to the river and waterfall, RG&E utilizes the current of the water by diverting it to a raceway where it enters a rack house and is used to generate electricity. This area is the home of the former power generating plant, Beebee Station, which was demolished in 2016 and the site remains closed to the public. A large grassy open space, also owned by RG&E, is located within the gorge near the base of the waterfalls.

(6b) Center City

Sub-zone 6b is located within downtown Rochester, also commonly referred to as "Center City", and is bounded by the Inner Loop Bridge on the north, the Frederick Douglas/Susan B. Anthony Memorial Bridge on the south, State/Exchange St. on the west and St. Paul/South Avenue on the east. This sub-zone is characterized by high- density development consisting of office and residential buildings, hotels, retail, restaurants, the Rochester Riverside Convention Center, Rundel Memorial Library, and several public open spaces adjacent to the river.



(6c) Corn Hill / South Wedge

Sub-zone 6c is located just south of downtown Rochester, bounded by the Frederick Douglas/Susan B. Anthony Memorial Bridge on the north, Exchange Street on the west, Mt. Hope Avenue on the east and Ford Street on the south. This area is primarily characterized by medium and high-density residential dwellings. On the east bank of the river, the Erie Harbor apartment and townhouse complex, as well as the neighboring Hamilton high-rise apartment building, occupies a substantial segment of the sub-zone. The Genesee Gateway Park surrounds this housing complex and connects the river to the adjacent residential areas of the South Wedge Neighborhood. North of this area, the headquarters of Time Warner Cable/Spectrum is located on the east side of the river, just south of Interstate 490. Cornhill Landing, a mixed-use complex is located across the river on the west side and is adjacent to access to the Genesee Riverway Trail and connects to the adjacent Corn Hill Neighborhood. This is also the site of the Corn Hill harbor where canal tour boats have historically docked.

(7a) South River Corridor –West

Sub-zone 7a is located along the west side of the river in the area bounded by Ford Street to the north, Plymouth Avenue on the west and the confluence of the river and canal on the south. This area contains a mix of low and high-density residential dwellings, including student housing for the University of Rochester. This area also contains a large former industrial brownfield area formerly occupied by Vacuum Oil Works, a petroleum refinery. This is the site of the Vacuum Oil Brownfield Opportunity Area (BOA) that was officially designated by the NYS Secretary of State in April 2015. See below for a more complete discussion of BOA and the Vacuum Oil BOA, specifically.

The Erie-Lackawanna Rail to Trail Bridge over the Genesee River links the PLEX neighborhood with the University of Rochester and functions as a conduit for students traveling north-south to/from destinations in the Corn Hill neighborhood and Center City.



(7b) South River Corridor – East

Sub-zone 7b is located along the east bank of the river in the area bounded by Ford Street to the north and the Erie Canal on the south. The 154-acre University of Rochester River Campus occupies a significant portion of land within this area. Uses within the college campus include various educational buildings, student housing dormitories and athletic facilities. A portion of Genesee Valley Park and segments of the Genesee Riverway Trail also fall within this sub-zone and contain several picnic pavilions and open space areas providing outdoor recreation opportunities.

(8a) Canal – West



Sub-zone 8a is located along the southern municipal boundary of the City of Rochester and includes the Erie Canal and adjacent lands to the north and east, west of its intersection with the Genesee River. This area is characterized by a diverse mix of uses including a concentration of low and medium-density residential dwellings mostly in the southern portion, scattered commercial nodes throughout, and a substantial amount of land at the northern portion used for heavy industrial operations. This section of canal exists in a deep rock cut, approximately 20-30' below the adjacent land above, limiting access to the water. The New York State Department of Transportation owns a strip of land with varying widths along either side of the Canal and is generally undeveloped and wooded. There is an existing pedestrian trail along the south and west edge of the canal in the Towns of Gates and Chili. This section of canal is maintained by the NYS Canal Corporation from May through November.

(8b) Canal – East



Sub-zone 8b is located along the southern municipal boundary of the City of Rochester and includes the Erie Canal and adjacent lands on the north, east of its intersection with the Genesee River. This area is characterized by a mix of uses ranging from high-density student housing on the University of Rochester campus near Kendrick Road, Administrative offices for Monroe County, and Monroe Community Hospital. Development at "City Gate" which is located on the canal near the intersection of Interstate 390 and E. Henrietta Road, is ongoing featuring Costco and several small restaurants, and open space. The New York Department of Transportation owns a strip of land of varying widths along either side of this portion of the canal. The elevation of the land adjacent to the canal in this

section varies and a lock is located just west of Kendrick Road allowing boats to continue along the canal.

(8c) Genesee Valley Park

Sub-zone 8c is located at the southernmost point of the City and is almost entirely composed of Genesee Valley Park. Designed by renowned landscape architect Frederick Law Olmsted, the city-owned park, maintained by Monroe County, contains three intersecting waterways, Red Creek, the Genesee River and the Erie Canal. The park also features roughly 800 acres of open space, sports fields, trails, biking paths, playgrounds, picnic pavilions as well as canoe and fishing access at various locations along the river and canal. There are also two golf courses within the park as well as the Genesee Waterways Center and a multi-purpose recreational facility with an indoor ice rink and an outdoor swimming pool.

(9a) Upland Area – North

Sub-zone 9a includes all upland areas adjacent to sub-zone 5 located in the northern part of the LWRP boundary. This area is primarily characterized by low and medium-density residential dwellings with neighborhood-scale commercial nodes located at key intersections along Lake Avenue.

(9b) Upland Area – South

Sub-zone 9b includes upland areas adjacent to the south river corridor-east subzone 7b. A significant portion of this area is the historic Mt. Hope Cemetery, a 196-acre site with rolling hills and a diversified forest of trees, creating an arboretum that shades thousands of monuments, including those of significant historical local figures. This area also contains a high-density senior living facility and a small number of low and medium-density residential homes along the west side of Mt. Hope Avenue.

(10a) Densmore Creek

Sub-zone 10a is Densmore Creek which is a tributary that originates underground at a drainage ditch in a residential area in the northeast part of the city. It carries storm water from the City of Rochester through what eventually becomes an above grade creek bed east of Culver Road. The creek bed is made up of over 80 separate parcels, some of which are privately owned, the remainder being owned by the City. The creek bed is within “city limits,” but is surrounded by the Town of Irondequoit as it meanders towards its eventual outfall into Irondequoit Bay. The land adjacent to the above grade portion of Densmore Creek is characterized by natural wooded slopes and a 25-foot waterfall.

(10b) Tryon Park

Sub-zone 10b, the portion of Tryon Park within the city l, is located at the city's most easterly boundary and is bordered by the Town of Irondequoit to the north and west and the Town of Brighton to the south and east. Tryon Park is approximately 82 acres and is situated near the southwestern shoreline of Irondequoit Bay. The park is largely undeveloped and is characterized by wooded slopes, natural scenic areas and marshland adjacent to Irondequoit Creek which meanders through the park and empties into the bay.



I. EXISTING WATERFRONT PLANS, PROJECTS AND INITIATIVES

As the region's waterfronts continue to gain popularity for recreation and development, planning becomes increasing important. Plans have been produced by the City of Rochester, neighboring municipalities, other governmental agencies, and special interest groups to address varying issues and geographic areas of our waterways. The following list includes the substantive purposes of the plans and their relationship to the city's Local Waterfront Revitalization Program.

LOCAL PLANS AND INITIATIVES

City of Rochester: Local Waterfront Revitalization Program (LWRP)

Background: The city's first LWRP was adopted in 1990 and amended in 2011 and includes planning/project recommendations for the land areas adjacent to the northern portion of the Genesee River and the portion of Lake Ontario coastline that is within the city limits. This plan's boundary extends from Middle Falls, north to the river's mouth at Lake Ontario.

Relevant Recommendations: There are many recommendations from the plan that are still relevant today.

- Improve pedestrian circulation and safety

- Improve the existing parking area
- Enhance the local streetscapes
- Increase boater services and construct new marina basin
- Develop landside housing, entertainment and hotel uses adjacent to marina
- Implement Marina District design regulations
- Develop water dependent/enhanced uses at Port Authority Site and Train Station
- Relocate the boat launch

South Wedge Planning Committee: South Wedge Revitalization and Northern Gateway Study

Background: The South Wedge Planning Committee prepared a revitalization strategy in 1996 which provides land use and project recommendations. The study covered the area known as the South Wedge Neighborhood.

Relevant Recommendations: All the recommendations from the plan are relevant today:

- Develop South Wedge Landing (located south of Troup Howell) proposed as major landing that may support a higher intensity of visitor amenities and act as a major destination
- Develop Alexander Street Landing this would allow water dependent/enhanced uses to be developed by the private sector
- Develop Gregory Street Landing (north of Ford Street Bridge) could act as a "check-in" site and information center for arriving visitors
- Proposed neighborhood arboretum
- Water sports viewing areas
- Boat docking
- Pedestrian bridge across the river
- Mt. Hope streetscape improvements

Healthy Waterways: A Health Impact Assessment of Rochester's LWRP

Background and Overview: Healthy Waterways was a Health Impact Assessment (HIA) of Rochester's LWRP. The goal of the Healthy Waterways Project was to positively influence health outcomes by assessing how the LWRP may affect key determinants of health in Rochester. Four health determinants were selected for assessment based on stakeholder input and direct connection to the health outcomes of concern: Physical Activity, Water Quality, Health-Supportive Resources and Physical Safety. The study also assessed each health determinant's relationship to waterfront development, the current status of that

health determinant and evidence of its impacts on specific health outcomes, and then made recommendations for improvement (see Appendix II).

As a result of their research, the HIA focused on five types of waterfront changes addressed in the LWRP: waterfront trails, beach redevelopment and management, built environment, water-based recreation and storm water management. Appendix II contains a summary of the study's findings and recommendations for each of these elements.

Green Infrastructure Rapid Assessment Plan – Densmore Creek Watershed (2013)

In 2010, Densmore Creek and two other minor tributaries were added to the New York State Department of Environmental Conservation's (NYSDEC) Water body Inventory/Priority Water bodies List. This list is updated every two years by the NYSDEC who must consider a restoration strategy to reduce the input of the specific pollutant(s) that cause "impairments" or restrict a listed water body's use. Pollutants noted on the list for Densmore Creek are oxygen demand, urban runoff and phosphorous from municipal sources.

As a result, and due to limited funding, a method was devised to quickly evaluate this watershed for storm water retrofit potential. It is anticipated that implementation of the retrofit projects identified in this study will help to reduce the impairment level.

Overall, 62 retrofit project sites were identified and ranked within the following two project categories:

1) New storm water ponds, upgrades to existing storm water ponds and adding storm water storage to existing drainage channels.
2) Green Infrastructure (GI) – this category was divided and ranked by where a GI project might be installed and includes:
    a) Public Rights of Ways;
    b) Older Residential Neighborhoods;
    c) Other Locations (such as areas with large impervious surfaces).

Vacuum Oil – South Genesee River Corridor BOA Step 3 Implementation Strategy

The City of Rochester is preparing an Implementation Strategy for the Vacuum Oil Brownfield Opportunity Area (BOA). The plan is being spearheaded by the City of Rochester through the Department of Environmental Services, with funding provided by the New York State Department of State and technical assistance from the New York State Department of Environmental Conservation. The Vacuum Oil BOA was officially designated by the NYS

Secretary of State in April 2015. Designation is contingent on a nomination process that appropriately reflects community priorities, presents an attainable and realistic plan to promote redevelopment, and is consistent with the applicable provisions of the General Municipal Law, Article 18 - C, Section 970-r. Developers, property owners and others with projects and properties located within a designated BOA will be eligible to access additional Brownfield Cleanup Program tax incentives and receive priority and preference for State grants to develop projects aimed at transforming dormant and blighted areas in their communities and putting them back into productive use. The master plan for the Vacuum Oil BOA prioritizes public parks, open space and trails that will create connections to and from the Genesee River with the PLEX neighborhood, aiming to create a unique waterfront destination. The Vacuum Oil BOA Implementation Strategy will provide targeted guidance on housing issues, zoning modifications, redevelopment strategies for sites of strategic importance, and a redevelopment plan for the Genesee River waterfront within the BOA. There are six primary objectives of the Vacuum Oil BOA Implementation Strategy:

1) Create market-based strategies to revitalize the former Vacuum Oil Works site and the residential areas within the PLEX neighborhood;
2) Undertake regulatory and design standards updates in support of community revitalization;
3) Create a waterfront master plan that reconnects the PLEX neighborhood with the Genesee River waterfront;
4) Prepare a preliminary design of parks and open space improvements to support the residential neighborhoods;
5) Perform environmental investigations to inform future remedial activities for strategic sites; and
6) Conduct the preliminary design of critical vehicular and pedestrian infrastructure to aid future revitalization and investment.

The successful realization of these objectives will accomplish the following:

- increase housing diversity and supply within the downtown and waterfront areas;
- improve the quality of design and community identity within the BOA;
- provide attractive, healthy and sustainable neighborhoods for children to play and families to enjoy;
- extend revitalization from the former Vacuum Oil Works site and waterfront into the residential neighborhoods to South Plymouth Avenue; and

- begin the revitalization of the PLEX neighborhood as a unique, safe and viable waterfront community within the City of Rochester.

The entire length of the Genesee River within the BOA is under public control, further improving opportunities for public access to the waterfront. The location of the BOA and existing ownership patterns offer the opportunity for a unique waterfront destination catering to both families and college students. Further, the Study Area's rich industrial and cultural history can become a theme for neighborhood revitalization by leveraging interpretive opportunities with public realm improvements.

LYLAKS BOA Nomination Study (2014)

The Lyell-Lake-State Street (LYLAKS) Revitalization Strategy was sponsored by the City of Rochester through the Department of Environmental Services, with funding provided by the New York State Department of State and technical assistance from the New York State Department of Environmental Conservation. This strategy was developed for the LYLAKS BOA, which was officially designated by the NYS Secretary of State in April 2015, along with the Vacuum Oil BOA discussed above. Again, designation is contingent on a nomination process that appropriately reflects community priorities, presents an attainable and realistic plan to promote redevelopment, and is consistent with the applicable provisions of the General Municipal Law, Article 18 - C, Section 970-r. Developers, property owners and others with projects and properties located within a designated BOA will be eligible to access additional Brownfield Cleanup Program tax incentives and receive priority and preference for State grants to develop projects aimed at transforming dormant and blighted areas in their communities and putting them back into productive use. The LYLAKS BOA encompasses approximately 602 acres of land located west of the Genesee River immediately north of Downtown Rochester. This BOA expands around two primary corridors – Lyell Avenue which runs east to west and Lake Avenue/State Street which runs north to south. The BOA comprises 2,800 parcels, and although most parcels are residential, the BOA also contains a diverse mix of commercial, industrial and public open space properties. As land use within the BOA has shifted over time from predominantly industrial uses to residential and recreational uses, contamination issues linger long after the intensive industrial uses have disappeared.

Through comprehensive public engagement, a vision for the BOA was proposed that succinctly describes where the community sees itself in the future. The vision statement of the LYLAKS BOA is shaped and supported by a set of six guiding principles that set the framework for revitalization strategies within the BOA. Each principle is supported by a series

of key objectives that transform the community vision into measurable, achievable goals for revitalization.

Principle 1*: Attract New Businesses & Support Existing Industries to Promote Job Growth*
Principle 2*: Improve Housing & Neighborhoods*
Principle 3*: Improve the Quality of Life*
Principle 4*: Branding & Marketing*
Principle 5*: Encourage Redevelopment on Brownfield Sites*
Principle 6*: Engage Residents in Revitalization Activities*

Aqueduct Master Plan (May, 2009)

The City of Rochester undertook a planning process to develop a master plan for the Historic Erie Canal Aqueduct and adjoining Broad Street Corridor. The Master Plan creates a vision for the future of the district through rediscovering its past and its essence: the Genesee River and the Erie Canal. The plan establishes the Broad Street Corridor as a significant public realm enhanced and defined by water creating a new distinctive identity for the district. The Master Plan calls for the transformation of the Broad Street Corridor from a primarily vehicular use to an amenity enhanced concourse of water, open space and enhanced streetscapes.

To be known as the Canal District, this revitalized area of the city will embrace and celebrate its historic heritage by connecting the district and the city more directly with the Genesee River. The master plan calls for the removal of the roadway addition of the 1920's and 1970's leaving the original 1842 structure to cross the Genesee River. The canal raceway would be restored to once again contain water. This re-watered canal crossing the river will re-establish the presence and importance of the Erie Canal in downtown and become the welcoming and defining gesture of the Canal District. The Broad Street Corridor will continue the historic Erie Canal theme toward the west with a series of water features such as fountains in the central portion of the district and a larger water basin at the western end of the district.

The master plan recommendations link the public realm improvements to private development initiatives. It supports the continuation of Main Street as the primary retail street within the center city; thus re-establishing the historic spine of Rochester retailing. Retail opportunities will include a local high-visibility restaurant, a relocated visitors' bureau and shop, bike rentals and watercraft rentals to be used in the re-watered Aqueduct. The initial retail phase will connect the Canal District across the Aqueduct and connect the Four Corners District with the Canal District along Exchange Boulevard. Retail is also recommended

at the newly formed Aqueduct Commons and along the block of Exchange Boulevard from Main Street to the re-watered Aqueduct.

Erie Harbor Park Master Plan (2010)

The area referred to as Erie Harbor Park flanks the Johnson-Seymour Raceway, a mill race located on the east bank of the Genesee River in the heart of downtown Rochester. The raceway dates back to the early 1800's and continues to function today as the primary source of flow for coolant for the Central Library's air conditioning units. This mill race was one of the first private capital works undertaken in Monroe County, and dates back to 1817 when it was opened by Elisha Johnson to serve his milling operations. A dam that predates the current Court Street Dam allowed water to flow into the Johnson and Seymour Raceway from the Genesee River. By 1820, an oil mill, saw mill, paper mill, and flower mill could be found along the race, and by 1855, there were at least six flour mills using water power from the race. The Rochester, Fitzhugh, and Carroll Raceway mirrored the Johnson and Seymour, on the western bank of the Genesee River, and have since been filled in, making the Johnson and Seymour the only remaining raceway from Rochester's early industrial days that still flows in downtown.

The goals set forth for the Erie Harbor Park Planning and Preliminary Design project were established by the City of Rochester, and confirmed and/or enhanced during the public process, which included two public meetings. The goals were used throughout the project when creating initial concepts, evaluating them, and ultimately getting to a preferred alternative. They are:

1. Enhance the Erie Harbor Park public open space and waterfront.
2. Improve access from South Avenue and Woodbury Boulevard to accommodate safer pedestrian and potential vehicular access to the site.
3. Extend the Genesee Riverway Trail along the site's waterfront to promote increased utilization of the public waterfront and the larger regional trail network.
4. Provide park signage, trail way-finding, and explore interpretive opportunities to educate the public of the site's industrial history.
5. Explore the potential for a portion of the site to yield a mixed-use development that incorporates commercial and retail uses.
6. Consider the goals outlined in the master plan for Rochester's Historic Canal District which include the potential to re-water the original course of the Erie Canal which ran through downtown, including the Erie Harbor Park site.

Phase 1 was completed in 2014. Phase 2 and 3 are scheduled for 2017-2018 and 2018-2019, respectively.

"GardenAerial" Project

The "GardenAerial" project is intended to transform the immediate area of the rim of the Genesee Gorge at High Falls, creating an exciting new public green space and trail destination at the very birthplace of Rochester. The project is a multi-phased construction project in the heart of downtown Rochester.

Pedestrian access and structural feasibility studies were completed in 2015 to prepare assets and circulation pathways. Construction of the Flour Garden (in Browns Race) was completed in 2016. Trail improvements on the East side (near Genesee Brewery) will begin in 2017.

Phase 2 includes design and construction of a new pedestrian bridge across the top of High Falls and a downtown connection "system" – thus completing a 3/4 mile hub trail around the rim of the Gorge. It will also include the possible re-adaptation, reprogramming, reconstruction of Hydro-power Station #4, the oldest extant hydroelectric station in the city of Rochester. These architecturally stunning additions to High Falls will finally give residents and visitors breathtaking access and "up close" engagement with the river and the falls for the first time in over a century.

Phase 3 will include the creation of a stunning arboretum, floating high above the Genesee Gorge on the Pont de Rennes Bridge, an urban greenway, a new "garden" in the sky. It also hopes to include the construction of a new, environmentally friendly public Winter Garden and Horticultural Genetic Specimen Bank on the east side of the gorge — a stunning new venue with a panoramic view of the falls and gorge.

Genesee Valley Park West Master Plan (2015)

Genesee Valley Park, one of three original parks in the Rochester Park System, was designed by Frederick Law Olmsted and constructed in the 1890s. The southwest quadrant of the park was designed for active play and water sports. The Erie Canal was routed through the park (1905-1923) and the park was expanded to include former railroad and Genesee Valley Canal lands. The Genesee Waterways Center (GWC), a non-profit organization, promotes canoeing, kayaking, rowing and sculling in the Rochester region. In addition to whitewater kayaking at Lock 32 in Pittsford, the GWC leases the Genesee Valley Park boathouse from the City.

The City, in partnership with the GWC, obtained a NYS Department of State Environmental Protection Fund grant to conduct a master plan for this section of Genesee Valley Park. The master plan process included the following: inventory and analysis of the park's current conditions including the boathouse, pool and ice rink complex, ball fields, tennis courts, vehicular and pedestrian circulation, lodge, play equipment, scenic vista/viewshed and vegetation analysis; historic landscape analysis; a hydro-geological study of Genesee River shoreline along the immediate project area; alternative schematic designs for an expanded/new boathouse and the park as a whole; recommendations for historic landscape treatment(s); cost estimates; recommended implementation strategies and funding sources; management and operation recommendations; public input sessions; and a recommended master plan.

Existing park conditions were analyzed and the following guiding principles have been incorporated into the master plan:

- Park features and infrastructure should contribute to and enhance the park's role as a multi-modal crossroads.
- Rethink spatial organization of park features that are no longer constrained by past limitations.
- Renew park ties with its significant history and re-establish visual ties between east and west.
- Modernize building facilities to meet current and future demand.
- Re-prioritize and enhance sports fields, playground and picnic areas.
- Establish a local benchmark of how park land should interface with the river, include green infrastructure and enhance the ecological recreation experience.
- Plan circulation and facilities infrastructure to promote both the neighborhood and the regional draw.
- Respond to the growing health care and fitness crisis by focusing on wellness and developing new public-private partnerships.
- Plan facilities and programming to accommodate multi-generational, multi-purpose, and long-term recreation trends.
- Focus on exceptional experience and attraction to the park over perceived demand and recreation "standards."
- Limit and mitigate physical and visual impacts from adjacent development and non-park infrastructure.

REGIONAL AND STATEWIDE PLANS AND INITIATIVES

New York State: Canal Recreationways Plan

Background: The New York State Canal Recreationways Commission prepared a statewide strategy for revitalizing the Erie Canal.

Overview: The plan includes land use recommendations, project proposals and marketing recommendations. The Canal Corridor replaces this plan. The recommendations are the same for the Rochester area.

The Seaway Trail, Inc.: Seaway Trail Master Plan

Background: The Seaway Trail, Inc. has established a master plan for the development of the Seaway Trail scenic byway running along the Lake Erie, Lake Ontario and St. Lawrence Seaway shorelines.

Overview: This plan looks at enhancing the entire trail system. Monroe County's Seaway Trail Communities Plan calls for more specific recommendations for Rochester and our surrounding area.

J. LWRP INVENTORY IMPLICATIONS (SWOT ANALYSIS)

Throughout the public participation process, there were several occasions where people were able to comment on the Strengths, Weaknesses, Opportunities and Threats (SWOT) for all of the focus areas as well as boundary wide. Below is a summary of these comments.

BOUNDARY WIDE

Overall, people believe that the entire LWRP area has much to offer. It is rich in history, diverse and unique and has many tourist attractions. The waterfront is close to Toronto as well as to the Finger Lakes. However, most people agreed that the waterfront area lacked promotional and marketing efforts; adequate signage and wayfinding; and, coordinated oversight and management. There was also concern regarding the often poor water quality that results in too many days of the beaches being closed to swimming.

Regarding the future potential of the corridor, people saw many opportunities. If water quality could be improved and oversight and management of the harbor be coordinated, then the waterfront could flourish. Improvements to view sheds, trails and wayfinding would also help to enhance the waterfront experience. However, some of the obstacles that people saw standing in the way of these improvements include lack of funding for projects, perception of crime and safety issues at the lake, environmental remediation costs and continued water pollution.

FOCUS AREA 1 – LAKEFRONT

People view the lakefront as "the front" to the City. It allows for both passive and active recreation in the way of picnicking, swimming and boating. It also provides scenic views and vistas of both the lake and the river. It has historic features as well as modern ones. However, along with these positives come some negative impacts. There is a great deal of traffic congestion at the lake and not enough adequate parking, although people believe that what parking is available is located too close to the lakefront. There is also concern over coastal and beach erosion, and the continued problem of poor water quality.

Regarding the future potential of the lakefront, people saw the port development to be a huge asset which will include the relocation of the boat launch, a new marina and a Harbor Management Plan. With this development might come other opportunities including a ferry service, water taxis, and possibly the creation of off-site parking with a shuttle or trolley service. However, with these improvements might come some negative impacts, including continued traffic congestion and parking issues; loss of the Charlotte "village" character; destruction of view sheds from increased development, and a lack of a market for new development.

FOCUS AREA 2 – RIVERFRONT (NATURAL)

The greatest strength of this area of the riverfront is its scenic views of the gorge and the lower and middle falls. The greatest obstacles as seen by participants are the physical barriers inherent in Lake Avenue and St. Paul Street as well as the vacant industrial land.

Regarding the future potential of this area of the riverfront, people saw many opportunities to increase the public access to the gorge. Suggestions include creating a plateau area on Lake Avenue; making trail connections that go across the river; and, creating tourist attractions and educational tours. The greatest obstacles to some of these suggestions are funding, the limited access to the gorge itself, and the possible encroachment and/or destruction of natural habitats.

FOCUS AREA 2 – RIVERFRONT (URBAN)

The greatest asset of this area is its proximity to downtown with a captive audience of thousands of people on daily basis. Given this close proximity, many of the features of this area are within walking distance from downtown, e.g. High Falls, Pont de Rennes, the historic Aqueduct, etc. However, this proximity is not without its challenges. For example there is a lack of physical access to the water and obstructed view sheds. These impediments cause disruptions to the trail system and leave it disconnected along the waterfront. There is also a lack of amenities along this area of the waterfront, e.g. lighting, trash removal, etc.

Regarding the future potential of this area of the riverfront, people viewed this area as having great potential given that some projects are currently underway (GardenAerial and LYLAKS BOA) and others are receiving closer looks (Beebee Station Redevelopment Site, Aqueduct Redevelopment potential, Festival Site Opportunities, etc.). However, lack of funding for major projects and the costs associated with environmental remediation continue to be significant obstacles.

FOCUS AREA 3 – CANAL

One of the greatest assets of this area is its existing trail system. The canal provides easy access for boaters, bicyclists and pedestrians. It is near Genesee Valley Park, the University of Rochester and major expressways for easy vehicle access. However, there are still many areas along the canal that lack physical access to the water due to topography. There is also a lack of neighborhood connections to the canal that, coupled with the industrialization of canal land, have proven to be major obstacles.

Regarding the future potential of the canal, there are many projects underway or in development stages that will greatly enhance this area including the University of Rochester Master Plan; the Genesee Valley Park redevelopment, and the Vacuum Oil BOA. There is also the potential to develop canal boat tours and to create new canal landings for increased access. However, there are still formidable obstacles to maximizing the canal including convoluted access patterns, the encroachment of commercial and industrial uses along the canal, and as with almost all of the areas along the waterfront, the extensive costs associated with environmental remediation.

SUMMARY OF LWRP INVENTORY SWOT ANALYSIS: CURRENT STRENGTHS, WEAKNESSES BY FOCUS AREA

Focus Area	*CURRENT*	
	Strengths	**Weaknesses**
Boundary Wide	Proximity to Toronto / other cities Proximity to Finger Lakes Many tourist attractions Confluence of 3 great waterways Genesee River Trail Natural river habitats / resources Historic sites / river history Olmstead parks Diversity / character of waterfront Unique, inter-connected history of waterfronts	Lack of promotion and marketing Lack of public awareness of assets River trail gaps Lack of adequate signage/wayfinding Lack of trail connections to nghbhds Water quality / pollution Lack of management/coordination Siltation / erosion Definition of "navigation channel" Accumulation of brush/debris/driftwood Overlapping / unclear agency responsibilities
Focus Area 1 – Lakefront	Scenic views and vistas of lake/river Historic resources / Lighthouse Public beach and swimming areas Unique parks and open space Wetlands / habitats Passive recreation Marinas / docks / boat slips "Front door" to city Charlotte village "sense of place"	Traffic congestion Lack of adequate parking Poor beach water quality Lack of amenities at Durand Too much parking near waterfront Water surface use conflicts Lack of transient boat slips Wave surge problems Lack of boater amenities Coastal / beach / bluff erosion
Focus Area 2 – Riverfront (natural)	Scenic views and vistas of gorge Historic parklands Almost continuous public ownership Fishing access Lower and Middle Falls Wetlands / habitats	Lake Avenue as a physical barrier St. Paul Street as a physical barrier Topography / steep gorge Vacant industrial land
Focus Area 2 – Riverfront (urban)	Adjacent to downtown Historic Aqueduct / other resources High Falls / Pont de Rennes Views / panoramas of river Heritage Trail / Genesee River Trail	Lack of physical access to water Obstructed view sheds Lack of trail connections along river Lack of trail connections to river Lack of riverfront festivals/events Lack of river lighting Lack of bridge/trail lighting Lack of fountains / water elements Tree/ice/trash removal from river
Focus Area 3 – Canal	Boat/bike/ped connections to E+W Confluence of river and canal Genesee Valley Park Near expressways for vehicle access Easy bike/pedestrian access Existing canal trail Crew/canoe/kayak access "Front door" to city U of R riverfront park / trail	No physical access to water in many locations Topography along canal Lack of neighborhood connections to canal/river Industrialization of canal land Lack of river overlooks Condition of Genesee river wall Potential flooding Debris/siltation in river

SUMMARY OF LWRP INVENTORY SWOT ANALYSIS: FUTURE OPPORTUNITIES, THREATS BY FOCUS AREA

Focus Area	*FUTURE*	
	Opportunities	**Threats**
Boundary Wide	Rapid Transit – Bus Connections – Light Rail? Improvements to water quality Preserve/enhance view sheds Contiguous river trail: canal to lake Harbor management / coordination Seaway Trail connections Abandoned rail lines Utilize assets to improve health Coordinated wayfinding system Upgrades to Olmsted parks Historic interpretation	Lack of adequate access to water Lack of funding for projects Perception of crime / lack of safety Pollution Poor development practices Lack of development design controls Stagnant population and economy RGE project impacts Environmental remediation costs Demographic shifts
Focus Area 1 – Lakefront	Port development Phase I and II West side - Lake Avenue redeveloped Relocation of boat launch Ferry service at Port Harbor use controls and oversight Water taxi Development of off-site / remote parking Bus shuttle / trolley / jitney Reuse of CSX rail line	Continued traffic / parking issues Lack of market for redevelopment Loss of village character Development densities Destruction of view sheds Reduced dredging? Northeast storms / wave surge Gentrification? Business failures from competition
Focus Area 2 – Riverfront (natural)	New public access to gorge RGE / St. Paul development site Lake Avenue plateau area Trail connections across river New amenities in public parks Zip line possibilities Educational tours / activities	Limited access to natural gorge Habitat encroachment / destruction Runoff / pollution Degradation of water quality
Focus Area 2 – Riverfront (urban)	GardenAerial Project High Falls as tourist attraction Waterfront Eco-District in High Falls Festival site opportunities Aqueduct redevelopment potential Public access to gorge area Zip line possibilities Tie new MCC Campus to High Falls Water taxi Beebee Station redevelopment site LYLAKS BOA redevelopment Public art / wall therapy along river Educational tours / activities	Poor design aesthetics along river Lack of water-oriented land uses Lack of water-dependent land uses Lack of funding for major projects Environmental remediation costs
Focus Area 3 – Canal	New canal landings for access Expand canal as "front door" to city New kayak/canoe/crew opportunities GVP redevelopment U of R master plan BOA redevelopment plan / west river Canal tour boats River wall upgrade with open space Trail enhancements	Encroachment of commercial uses Encroachment of industrial uses Lack of water-oriented uses Poor design of adjacent land uses Convoluted access patterns on canal Lack of open space near canal Underutilized land Environmental remediation costs Siltation / erosion

K. ADDITIONAL LWRP PLANNING AND DEVELOPMENT ISSUES

The following additional LWRP planning and development issues were identified by the Waterfront Advisory Committee, three focus groups, citizens and stakeholders during the public input process:

1. Rochester has "Three Great Waterways" that are connected to many of our communities' historical, natural and recreational assets. However, the benefits of these waterways and all its associated assets have not been fully utilized by our community.

   The majority of our city's historical, natural resources and recreational assets are located within our waterfront corridor. For example to the north we have the Charlotte Light House, yacht clubs, Ontario Beach Park, "The Gorge" (Seth Green Island, Lower Falls and Middle Falls, Seneca Park and the Zoo), Turning Point Park, Historic Maplewood Neighborhood and Park. Closer to downtown we have the High Falls Entertainment District, Frontier Field, Riverside Convention Center, hotels on the waterfront, the historic Broad Street Aqueduct, riverside parks and the Blue Cross Arena (War Memorial). Moving further south, we have the Historic Corn Hill Neighborhood, a world class flat water racing course, Genesee Valley Park and the Erie Canal and trail.

2. The second largest industry in New York State is tourism. Water, entertainment, sports, cultural destinations and family are the major attractions for the leisure tourist. Rochester's tourism industry is mostly made of people attending business meetings and conventions. However, there is a great opportunity for our city to increase its tourism industry by focusing more on leisure tourism. Recent statistics indicate that the bulk of the visitors (approximately 50%) are transient business persons here on a business trip. Convention/meeting visitors comprised approximately 29% of visitors, with leisure visitors making up about 21%.

   Tourism in the United States today has its most significant impact when it focuses on the family. One hour west of Rochester and two hours southeast of Rochester are two entertainment visitor attractions that bring 12 million visitors to one area, Niagara Falls, and 300,000 to the second area, Corning, New York. The Niagara Falls visitor connection is particularly valuable to Rochester. The primary market for these two locations is families. Both locations bring their customers into Monroe County as they pass through either on the New York State Thruway or State Highway 390, representing a potential visitor market.

3. Rochester is experiencing signs of urban revitalization within our "Center City". However, we are within a regional setting of slow growth or marginal decline in overall economic development and population.

   Many exciting recent developments are breathing life into Rochester's downtown. Some examples of this urban revitalization are; the Midtown Plaza site redevelopment, Sibley Building redevelopment, new Transit Center, Frontier Field, renovated War Memorial, the new Bausch and Lomb Library, High Falls Mixed-Use District, and new residential infill development.

   Upstate New York is a still a national island of slow growth or decline in economic strength and population. The healthy United States economy is mirrored by improved conditions in New York City, in the Mid-west, and in New England. Rochester could be a leader in catching the New York State economy up to the rest of the country through a well-coordinated, innovative economic and tourism development strategy that capitalizes on our incredibly unique waterfront resources and assets.

4. Many American cities have turned to entertainment as a strategy to attract people to downtown. Entertainment, as an economic strategy, has been primarily focused in large cities with other entertainment resources already in place and with a tourism market of some capacity in place, e.g., Boston and Baltimore. This tourism base, along with a large local population base, attracts national businesses willing to invest significant private dollars in a downtown, e.g., a Rouse Corporation.

   For Rochester to compete against other cities for visitors, it must determine how to compete locally to bring suburbanites back to the downtown and must determine how to compete in a unique way for the outside tourist to see Rochester as a viable destination compared to other cities. Rochester's "Three Great Waterways" (Lake Ontario, Genesee River and Erie Canal) are a key component to that overall tourism development strategy.





The Genesee River looking north through downtown Rochester

Section 3: LWRP Policies



A. WATERFRONT VISION

"The City of Rochester's three great waterways and their unique assets and resources are a "world-class" attraction that enhances the quality of life for residents and visitors, preserves and protects the environment, encourages economic investment and is integrated into the fabric of our community."



Lake Ontario / Genesee River



Genesee River



Genesee River / Erie Canal

B. WATERFRONT GOALS

To achieve this vision, the City of Rochester has identified the following six goals:

- "PROMOTE CONNECTIVITY AND ACCESSIBILITY" - Provide convenient and inviting linkages that connect waterfront attractions, services and amenities to each other and to the surrounding neighborhoods.
- "ENCOURAGE SUSTAINABILITY" - Protect and enhance the natural resources and habitats associated with the waterfront for the use and enjoyment of current and future generations.
- "DEVELOP FOUR-SEASON DESTINATION ATTRACTIONS" - Enhance the experience of waterfront visitors and travelers to increase tourism throughout the year.
- "ENCOURAGE APPROPRIATE INVESTMENT" - Leverage private water-oriented and water-dependent investment and foster job creation that supports our local economy.
- "PRESERVE COMMUNITY CHARACTER" – Identify and preserve the historic, natural, cultural and scenic resources along our waterfront while enhancing and protecting our neighborhoods.
- "CREATE A HEALTHY PLACE TO LIVE, WORK AND PLAY" - Promote waterfront physical activity, safety and access in support of the health and well-being of all neighborhood, city and regional residents and visitors.

The city will work to realize this vision and these goals in a manner that capitalizes on and strengthens the unique characteristics of Lake Ontario, the Genesee River and the Erie Canal.

C. WATERFRONT POLICIES

The Local Waterfront Revitalization Program (LWRP) policies and sub-policies (collectively referred to as “policies”) presented in this chapter consider the economic, environmental, and cultural characteristics of a community's waterfront. The policies represent a balance between economic development and preservation that will permit beneficial use of and prevent adverse effects on coastal resources. They also represent the enforceable policies of the New York State Coastal Management Program for the waterfront area subject to this LWRP. The policies are comprehensive and reflect the community’s concerns; and they will be enforced through use of State laws and authorities, and local laws and regulations. The policies are the basis for Federal and State consistency determinations for activities affecting the waterfront area. While the policies are enforceable as a matter of state and local law however, for reviews conducted under the federal Coastal Zone Management Act, the explanatory text for each policy is for explanatory purposes only.

The policies are organized under eleven categories: waterfront development, fish and wildlife, flooding and erosion, general, public access, recreation, historic and scenic, agriculture, energy and ice management, water and air, and wetlands (Figure 18). Policies highlighted in yellow are not applicable to the City of Rochester.

FIGURE 18: LWRP POLICY CATEGORIES

Policy Category	Policy Number	Policy Description
Waterfront Development	1	Restore, revitalize and redevelop deteriorated waterfront areas
	2	Facilitate water-dependent uses adjacent to coastal waters
	3	Develop major ports of the state
	4	Strengthen smaller harbor areas with traditional uses and activities
	5	Encourage waterfront development in areas with essential infrastructure
	6	Expedite permit procedures for waterfront development
Fish and Wildlife	7	Protect and/or restore significant fish and wildlife habitats
	8	Protect fish and wildlife from pollutants
	9	Increase recreational access to fish and wildlife resources
	10	Develop commercial finfish, shellfish and crustacean resources
Flooding and Erosion	11	Minimize damage to development from flooding and erosion
	12	Protect natural protective features (beaches, dunes, etc.)
	13	Design erosion protection structures for a 30-year life
	14	Undertake development in a manner which limits erosion and flooding
	15	Protect natural coastal processes (beach replenishment)
	16	Use public funds for erosion protection where benefits outweigh costs
	17	Use non-structural measures to minimize flood and erosion damage
General	18	Balance major actions along the waterfront with vital public interests
Public Access	19	Protect, maintain and increase public access to water-related recreational facilities
	20	Provide public access to the foreshore that is compatible with adjacent land uses
Recreation	21	Promote water-dependent and water-enhanced recreation
	22	Include water-related recreation in new development, where appropriate

**Highlighted policies are not applicable*

FIGURE 18: LWRP POLICY CATEGORIES

Historic and Scenic	23	Protect, enhance and restore historic resources
	24	Prevent impairment of scenic resources of state-wide significance
	25	Protect, restore and enhance scenic resources of local significance
Agriculture	26	Preserve and protect agricultural lands within the shore zone
Energy / Ice	27	Site energy facilities based on a need for shore zone location and environmental impacts
	28	Develop environmentally sound ice management practices
	29	Development of offshore uses and resources, including renewable energy resources.
Water and Air	30	Enforce national water quality standards
	31	If necessary, modify water quality standards based on LWRP policies
	32	Encourage the use of innovative sanitary waste disposal systems
	33	Use best management practices to control storm water runoff and combined sewer overflows
	34	Limit waste disposals from vessels to protect fish and wildlife habitats
	35	Undertake dredging and disposal of spoils in a manner consistent with state regulations and habitat protection
	36	Minimize hazardous waste spills into coastal waters
	37	Use best management practices to minimize soil erosion
	38	Protect the quality and quantity of surface and ground water supplies
	39	Protect water supplies from hazardous waste disposal impacts
	40	Reduce effluent discharge from power and industrial facilities
	41	Maintain national and state air quality standards
	42	If necessary, modify Clean Air Act regulations based on LWRP policies
	43	Reduce generation of acid rain precursors from waterfront development
Wetlands	44	Preserve and protect tidal / freshwater wetlands

**Highlighted policies are not applicable*

POLICY 1 **Restore, revitalize and redevelop deteriorated and underutilized waterfront areas for commercial, industrial, cultural, recreational and other compatible uses.**

POLICY 1A *Redevelop the following vacant and underutilized land, structures and areas to include a mix of water-enhanced and water-dependent entertainment, commercial and recreational uses:*

1. *the former port authority site and new marina at the mouth of the Genesee River*
2. *lands in the vicinity of River Street, adjacent to the west bank of the Genesee River*
3. *land on the east side of the Genesee River north of Rattlesnake Point adjacent to land designated as a Waterfront Development District in the Town of Irondequoit's Local Waterfront Revitalization Program*
4. *lands near the intersections of Driving Park Blvd. and Lake Avenue and Driving Park and St. Paul Blvd.*
5. *lands near the intersection of Norton Street and St. Paul Blvd.*
6. *land north of the Pont de Rennes pedestrian bridge, south of the abandoned Conrail bridge and between State Street and St. Paul Blvd. in the High Falls area including the former Beebee Station site, RG&E properties north of the Bausch Street Bridge on the east side of the River, Bausch & Lomb properties on the east side of the River and the abandoned Conrail right of way in that area*
7. *the former Rochester Gas & Electric Andrews Street property*
8. *the Broad Street aqueduct and library underground area*
9. *the land south of Court Street and north of I-490 on both sides of the Genesee River*
10. *the land south of I-490 and north of the Frederick Douglass / Susan B. Anthony Bridge on both sides of the Erie Canal/Genesee River*
11. *lands near the intersection of Flint Street and Exchange Street*
12. *lands near the intersection of South Plymouth Avenue and Brooks Avenue*
13. *land south of the Erie Canal/Genesee River crossing between Scottsville Road and the Genesee River*
14. *lands at the crossing of Brooks Avenue over the Erie Canal near*

the Airport

15. *lands at the crossing of Chili Avenue over the Erie Canal*
16. *lands at the crossing of Lyell Avenue over the Erie Canal*
17. *Additional underutilized lands and parking lots within the downtown and High Falls areas*

POLICY 1B *Redevelop the following vacant, underutilized and potentially enhanced areas to include a limited and appropriate mix of specialty retail, restaurant and lodging (bed & breakfast) to provide visitor interest and services:*

1. *the area west of Lake Avenue, north of the existing Conrail lines, east of the park and south of Beach Avenue*
2. *the area in the vicinity of Alexander Street and Gregory Street in the South Wedge from South Avenue to the Genesee River*
3. *Scottsville Road just north of the Erie Canal to the intersection of Genesee Street*
4. *Brooks Avenue between the Erie Canal and the Genesee River*

POLICY 1C *Upgrade and infill existing commercial streetscapes with a mix of commercial, residential and office uses, with an emphasis on first floor commercial uses, in the following areas:*

1. *Lake Avenue north of the Lake Ontario State Parkway*
2. *Lake Avenue south of Hanford Landing Road*
3. *State Street*
4. *Exchange Blvd. north of South Plymouth Avenue near the Corn Hill Landing*
5. *Plymouth Avenue from I-490 to Platt Street*
6. *Mount Hope Avenue*

POLICY 1D *Develop lands along the Erie Canal on the west side of the city for water-enhanced industrial and light industrial uses as well as mixed-use development.*

POLICY 1E *Continue to rehabilitate and enhance public amenities and beach areas at Durand-Eastman Park to support appropriate water-oriented recreational uses.*

POLICY 1F *Promote and encourage the continued redevelopment and improvement of various recreational facilities at city parks, including Durand-Eastman Park, Ontario Beach Park, Turning Point Park, Seneca Park, Maplewood Park, Lower Falls Park, Charles Carroll Park, Genesee Crossroads Park, Gateway Park, and Genesee Valley Park.*

POLICY 1G *Pursue the purchase of abandoned railroad rights-of-way as appropriate and as they become available within the LWRP boundary in order to develop and promote future water-enhanced transportation, recreation and development opportunities.*

POLICY 1H *Continue to promote and enhance, in conjunction with the New York State Canal Corporation and local developers, Corn Hill Landing and related waterfront areas into a major mixed use harbor zone with a public promenade and other public amenities.*

POLICY 1I *Continue to encourage the development of the "GardenAerial" pedestrian trail node project and related trail connections and access improvements into, within and through the High Falls District.*

POLICY 1J *Continue to encourage the development of an "eco-district" concept within the High Falls area of the Genesee River Gorge in order to promote environmental sustainability, redevelopment of vacant industrial lands and brownfield areas, green energy and green infrastructure initiatives and improved access to the river gorge.*

POLICY 1K *Promote waterfront access improvements and the redevelopment of underutilized and vacant waterfront industrial land and brownfield areas within the Vacuum Oil Brownfield Opportunity Area (BOA) and Lyell/Lake/State or "LYLAKS" Brownfield Opportunity Area (BOA).*

POLICY 1L *Encourage the redevelopment of the Broad Street Aqueduct and surrounding properties within the Broad Street corridor for new development, public open space and amenities and improved pedestrian access to the Genesee River within Center City Rochester.*

POLICY 1M *Support the creation of new "front doors" to the City of Rochester on Lake Ontario and the Erie Canal that are located at the Port Site (Charlotte harbor area) and at the Corn Hill Landing area near downtown Rochester; support, promote and market water-enhanced and water-dependent uses and projects in these locations to facilitate increased local and regional tourism, visitation and economic development.*

Explanation of Policies

The waterfront areas along Lake Ontario and the Genesee River are among the most important recreational, aesthetic and economic resources in the region. To restore, revitalize and redevelop deteriorated and underutilized waterfront areas, uses or activities appropriate for the waterfront revitalization area based on their water and recreation-oriented characteristics should be encouraged. These areas could include railroad rights-of-way adjacent to the water that are or will become abandoned and that should be coordinated directly with the appropriate railroads (i.e., CSX) and the preferential rights process.

Several significant development opportunity areas have been identified within the LWRP boundary. These sites have been identified in the sub-policy statements. When an action is proposed to take place in these opportunity areas, the following guidelines will be used:

1. Priority should be given to uses which are dependent on a location adjacent to the water;
2. The action should enhance existing and anticipated uses;
3. The action should serve as a catalyst to private investment in the area;
4. The action should improve the deteriorated condition of a site, and should, at a minimum, not cause further deterioration;
5. The action must lead to development which is compatible with the character of the area, with consideration given to scale, architectural style, density and intensity of use, and the cultural, economic and historical characteristics of the adjoining communities;
6. The action should have the potential to improve the existing economic base of the community, and, at a minimum, must not jeopardize this base;
7. The action should improve and accommodate physical and visual public access to the water, and must not adversely affect the visual character of the waterfront;
8. The action should have the potential to improve the potential for multiple uses

of the site; and,

9. The action should promote or encourage healthy communities and active lifestyles and should incorporate Crime Prevention through Environmental Design (CPTED) principles as much as possible.

The zoning and design standards and guidelines associated with the City's Marina District and Harbor-Village District will be used to ensure that deteriorated and underutilized areas are developed appropriately within the Charlotte area of the LWRP boundary.

POLICY 2 Facilitate the siting of water dependent uses and facilities on or adjacent to coastal waters.

POLICY 2A Existing water dependent uses will be maintained.

POLICY 2B Water dependent uses on critical waterfront lands that support Rochester's entertainment, recreation, transportation and economic development goals will be prioritized, especially on the first floor of buildings. These lands could include:

1. *City owned land on River Street*
2. *City owned land on the east side of the Genesee River, south of the O'Rorke Bridge*
3. *City owned land on the west side of the Genesee River in the Corn Hill area*
4. *City and State owned land at the Erie Canal and Genesee River crossing near Scottsville Road*

Explanation of Policies

Because of the location of sensitive environmental features in the shore zone and the general competition for waterfront locations of various types of land uses, there is a limited amount of waterfront land that is actually suitable for development within the LWRP boundary. The development of waterfront areas has not always been based upon whether or not the particular land use actually requires a specific location on the waterfront. This policy recognizes that water-dependent uses and activities should have priority over non-water-dependent uses in terms of development within the shore zone. In order to ensure that water-dependent uses can be located and developed in

waterfront locations, undertaking, funding, or approving non-water-dependent actions or activities when such actions or activities conflict with the development of water-dependent uses or would pre-empt the reasonably foreseeable development of water-dependent uses should be avoided.

A water dependent use is an activity which can only be conducted on, in, over or adjacent to a water body because such activity requires direct access to that water body, and which involves, as an integral part of such activity, the use of the water. Water-dependent uses should be located on the ground floor of buildings in order to facilitate ease of access to the water and to take advantage of their direct relationship with actual water activities. The following uses and facilities are considered water dependent:

1. Uses which involve the transfer of goods (i.e., shipping activities at the ESSROC Cement Facility just south of the Turning Basin);
2. Recreational activities requiring access to coastal waters (i.e., fishing, boating, and swimming);
3. Navigational structures (i.e., lighthouses and piers);
4. Boat and ship service and storage facilities (i.e., marinas and boat yards);
5. Flood and erosion control structures (i.e., river bulkheads and beach groins);
6. Uses which rely upon transportation of raw materials or products on water when such transportation would be difficult on land (i.e., cement plants);
7. Uses which require large amounts of cooling or processing water (i.e., power plants and waste treatment plants);
8. Scientific and educational activities requiring access to coastal waters (i.e., maritime museum); and
9. Facilities that support or enhance water dependent uses.

Existing water dependent uses located within the LWRP boundary include various commercial, industrial and shipping activities, a waste treatment plant, a hydroelectric power plant, marinas and other fishing and boating facilities, as well as certain miscellaneous recreational uses. These uses and activities are scattered throughout the waterfront area and are, in some instances, located adjacent to sensitive environmental areas. Marinas and related fishing and boating facilities are concentrated at the northern end of the Genesee River, near Lake Ontario.

Potential water dependent uses that may be developed include cruise ship docking, ferry terminals, water taxi landings, hire boat operations, boat racing and training

facilities, boat launching facilities, transient marine docking, and display ships, among possible others.

Existing municipal zoning district regulations and procedures, the local site plan review process, as well as the inter-municipal review and coordination of waterfront activities have determined the location, nature and extent of existing water-dependent uses in the shore zone. These procedures and regulations were developed, in part, to control and promote appropriate water-dependent uses along the lake and river.

When an action is proposed, the following guidelines will be used:

1. Water-dependent uses should be matched with compatible sites or locations in order to reduce conflicts between competing uses, to protect coastal resources, and to address impacts on the real estate market;
2. Water-dependent uses should be sited with consideration to the availability of public infrastructure including sewers, water, access and transportation;
3. Water-dependent uses should be compatible with surrounding land uses;
4. Underutilized, shoreline sites should be given special consideration for water-dependent uses; and
5. Water-dependent uses should be sited with consideration to increasing demand, long-term space needs and the possibility of future expansion.

POLICY 3 **Further develop the State's major ports of Albany, Buffalo, New York, Ogdensburg and Oswego as centers of commerce and industry, and encourage the siting, in these port areas, including those under the jurisdiction of State public authorities, of land use and development which is essential to, or in support of, the waterborne transportation of cargo and people.**

Explanation of Why Policy Is Not Applicable

This policy is not applicable to the city's LWRP because Rochester is not one of the major ports listed.

POLICY 4 Strengthen the economic base of smaller harbor areas by encouraging the development and enhancement of those traditional uses and activities which have provided such areas with their unique maritime identity.

Explanation of Policy

This policy recognizes that the traditional activities occurring in and around numerous smaller harbors throughout the State's coastal area contribute much to the economic strength and attractiveness of these harbor communities. Thus, efforts of State agencies shall center on promoting such desirable activities as recreational and commercial fishing, ferry services, marinas, historic preservation, cultural pursuits, and other compatible activities which have made smaller harbor areas appealing as tourist destinations and as commercial and residential areas. Particular consideration will be given to the visual appeal and social benefits of smaller harbors which, in turn, can make significant contributions to the State's tourism industry.

The following guidelines shall be used in determining consistency:

1. The action shall give priority to those traditional and/or desired uses which are dependent on or enhanced by a location adjacent to the water.
2. The action will enhance or not detract from or adversely affect existing traditional and/or desired anticipated uses.
3. The action shall not be out of character with, nor lead to development which would be out of character with, existing development in terms of the area's scale, intensity of use, and architectural style.
4. The action must not cause a site to deteriorate, e.g., a structure shall not be abandoned without protecting it against vandalism and/or structural decline.
5. The action will not adversely affect the existing economic base of the community, e.g., waterfront development designed to promote residential development might be inappropriate in a harbor area where the economy is dependent upon tourism and commercial fishing.
6. The action will not detract from views of the water and smaller harbor area, particularly where the visual quality of the area is an important component of the area's appeal and identity.
7. In applying the above guidelines the information in harbor management plans being developed by local governments pursuant to Article 42 of the Executive Law and local laws that would implement them shall be considered.

POLICY 5 **Encourage the location of development in areas where public services and facilities essential to such development are adequate.**

POLICY 5A *Promote and encourage appropriate water-oriented development in focused and appropriate locations including:*

1. *Charlotte Harbor area*
2. *High Falls area and Genesee River Gorge*
3. *Center City area (Central Business District)*
4. *Canal Harbor area*
5. *proposed Airport Landing area*
6. *West Side Canal industrial area*

POLICY 5B *Promote and encourage appropriate small scale water-oriented development in locations which support the goals of the LWRP but which have development limitations including:*

1. *the Genesee River gorge south of Charlotte and north of High Falls including the Maplewood and 14621 neighborhoods*
2. *along the Genesee River south of Ford Street Bridge and north of Genesee Valley Park*
3. *along the Erie Canal east of Genesee Valley Park*
4. *along the Erie Canal west of the proposed Airport Landing area*

Explanation of Policies

New development proposed within the LWRP boundary should be adequately serviced by existing or upgraded public services and facilities. Almost all major development areas within the LWRP boundary are currently serviced by adequate public services and facilities including vehicular access, storm and sanitary sewers, as well as electric, gas and water lines. If a given area is not currently serviced by adequate public services and facilities, upgrades, extensions or connections to existing systems are usually possible. The specific development proposals outlined in POLICY 1 should involve an analysis of existing public services and facilities in the areas proposed for development, as well as possible rehabilitation or upgrading of those services and facilities as a part of the actual implementation of the development project.

In assessing the adequacy of an area's infrastructure and public services, the following

points shall be considered:

1. Whether or not streets and highways serving the proposed site can safely accommodate the peak traffic generated by the proposed development;
2. Whether or not the development's water needs can be met by the existing water system;
3. Whether or not wastes generated by the development can be handled by sewage disposal systems;
4. Whether or not energy needs of the proposed development can be accommodated by existing utility systems;
5. Whether or not stormwater runoff from the proposed site can be accommodated by on-site and/or off-site facilities; and
6. Whether or not schools, police and fire protection, and health and social services are adequate to meet the needs of any expected increase in population resulting from the proposed development.

POLICY 6 Expedite permit procedures in order to facilitate the siting of development activities at suitable locations.

POLICY 6A Encourage environmentally sensitive waterfront development and design.

Explanation of Policy

This policy recognizes the need for efficient and uncomplicated permit approval procedures for development activities proposed within the LWRP boundary. The local permit review and approval process should not be designed to restrict or impede development applications or proposals. The city has developed a permit review and approval system which includes coordination with other local and state agencies and eliminates unnecessary or duplicative levels of review.

Site plan review is coordinated by the City Bureau of Buildings and Zoning as are requests for zoning variances, re-zonings and subdivision approval. Environmental impacts and other areas of special concern for proposed development are considered early in the review process and are investigated in conjunction with the City Bureau of Planning and Zoning as well as the city's Environmental Commission. The entire process is characterized by reasonable timetables and deadlines, relatively simple paper work, and specific but uncomplicated development review standards. A developer's handbook has also been prepared by the city. This handbook allows developers to become aware of permit procedures and requirements and shows them how to obtain all necessary paper work at one location and at one time. Where necessary and appropriate, special considerations for development activities proposed within the LWRP boundary should be included in the city permit review and approval procedures in order to further simplify those requirements.

State agencies and local governments should make every effort to coordinate their permit procedures and regulatory programs for waterfront development, as long as the integrity of the regulations' objectives is not jeopardized. Also, efforts should be made to ensure that each agency's procedures are synchronized with those of other agencies within a given level of government. Legislative and/or programmatic changes should be made, if necessary, to accomplish this.

POLICY 7 **Significant coastal fish and wildlife habitats will be protected, preserved, and, where practical, restored so as to maintain their viability as habitats.**

POLICY 7A *Protect and preserve the Genesee River in order to maintain its viability as a fish and wildlife habitat of statewide significance.*

Explanation of Policy

Habitat protection is recognized as fundamental to assuring the survival of fish and wildlife populations. Certain habitats are critical to the maintenance of a given population and, therefore, merit special protection. Such habitats exhibit one or more of the following characteristics:

(1) They are essential to the survival of a large portion of a particular fish or wildlife population (e.g. feeding grounds, nursery areas);
(2) They support populations of rare and endangered species;
(3) They are found at a very low frequency within a coastal region;
(4) They support fish and wildlife populations having significant commercial and/or recreational value; and
(5) They would be difficult or impossible to replace.

A habitat impairment test is used for any activity that is subject to consistency review under federal and State laws, or under applicable local laws contained in an approved local waterfront revitalization program. If that proposed action is subject to consistency review, and the action would affect a significant coastal fish and wildlife habitat, then the habitat protection policy applies, whether the proposed action is to occur within or outside the designated area.

The specific habitat impairment test that should be met is as follows:
In order to protect and preserve significant habitat, land and water uses or development shall not be undertaken if such actions would:

--destroy the habitat; or
--significantly impair the viability of a habitat.

Habitat destruction is defined as the loss of fish or wildlife use through direct alteration, disturbance, or pollution of a designated area, or through the indirect effects of these

actions on a designated area. Habitat destruction may be indicated by changes in vegetation, substrate, or hydrology, or increases in runoff, erosion, sedimentation, or pollutants.

Significant impairment is defined as reduction in vital resources (e.g., food, shelter, living space) or change in environmental conditions (e.g., temperature, substrate, and salinity) beyond the tolerance range of an organism. Indicators of a significantly impaired habitat focus on ecological alterations and may include, but are not limited to, reduced carrying capacity, changes in community structure (food chain relationships, species diversity), reduced productivity and/or increased incidence of disease and mortality.

The tolerance range of an organism is not defined as the physiological range of conditions beyond which a species will not survive at all, but as the ecological range of conditions that supports the species' population or has the potential to support a restored population, where practical. Either the loss of individuals through an increase in emigration or an increase in death rate indicates that the tolerance range of an organism has been exceeded. An abrupt increase in death rate may occur as an environmental factor falls beyond a tolerance limit (a range has both upper and lower limits). Many environmental factors, however, do not have a sharply defined tolerance limit, but produce increasing emigration or death rates with increasing departure from conditions that are optimal for the species.

The range of parameters which should be considered in applying the habitat impairment test includes:

1. Physical parameters, such as living space circulation, flushing rates, tidal amplitude, turbidity, water temperature, depth (including loss of littoral zone), morphology, substrate type, vegetation, structure, erosion and sedimentation rates;
2. Biological parameters, such as community structure, food chain relationships, species diversity, predator/prey relationships, population size, mortality rates, reproductive rates, behavioral patterns and migratory patterns; and
3. Chemical parameters, such as dissolved oxygen, carbon dioxide, acidity, dissolved solids, nutrients, organics, salinity, and pollutants (heavy metals, toxics and hazardous materials).

Significant coastal fish and wildlife habitats are evaluated, designated and mapped

pursuant to the Waterfront Revitalization and Coastal Resources Act (Executive Law of New York, Article 42). The New York State Department of Environmental Conservation (DEC) evaluates the significance of coastal fish and wildlife habitats, and following a recommendation from the DEC, the Department of State designates and maps specific areas.

NYSDOS has designated the Genesee River as a significant coastal fish and wildlife habitat area of state-wide significance within the LWRP boundary. The Genesee River habitat is a major tributary of Lake Ontario, located in the city. The habitat includes a six and one-half mile long segment of the river, extending from Lake Ontario to the Lower Falls, which is a natural impassable barrier to fish.

The large size of this river and the fact that much of the river corridor is essentially undisturbed makes this one of the most important potential fish and wildlife habitats in the Great Lakes Plain ecological region. Resident species such as small mouth bass, brown bullhead and northern pike, and lake run species such as white bass and yellow perch are supplemented by seasonal influxes of large numbers of trout and salmon. The river provides throughout New York State and beyond. Although the seasonal salmonid runs attract the greatest number of fishermen to the area, the river also supports an active warm water fishery. Wildlife use of the river appears to be limited to those species that can inhabit a relatively narrow riparian corridor, and are somewhat tolerant of human activities in adjacent areas.

Any activity that substantially degrades water quality, increases temperature or turbidity, reduces flows, or increases water level fluctuations in the Genesee River would affect the biological productivity of this area. Important species of fish and wildlife would be adversely affected by water pollution, such as chemical contamination (including food chain effects), oil spills, excessive turbidity, and waste disposal. Continued efforts should be made to improve water quality in the river, which is primarily dependent upon controlling discharges from combined sewer overflows, industrial point sources, ships, and agricultural lands in the watershed.

The existing navigation channel should be dredged between mid-May and mid-August or between mid-November and early April in order to avoid impacts on the habitat use by migrating salmonids. Activities that would affect the habitat above the navigation channel should not be conducted during the period from March through July in order to protect warm water fish habitat values. New dredging (outside the existing navigation channel) would likely result in the direct removal of warm water fish habitat values and

should be thoroughly reviewed for potential impacts on habitat. Contaminated dredge spoils should be deposited in upland containment areas. Barriers to fish migration, whether physical or chemical, would have significant effects on fish populations within the river, and in adjacent Lake Ontario waters. Installation and operation of water intakes could have a significant impact on fish concentrations, through impingement of juveniles and adults, or entrainment of eggs and larval stages. Elimination of wetland habitats (including submergent aquatic beds), and further human encroachment into the river channel, would severely reduce its value to fish and wildlife. Existing areas of natural vegetation bordering the river should be maintained for their value as cover, perching sites, and buffer zones.

The water quality of the river and lake has continued to improve over the past several years. Both currently support a significant variety of fish species. Among the fish found within the LWRP boundary are American Eel, Northern Pike, Goldfish, Carp, White Channel Catfish, White Perch, White Bass, Rock Bass, Small Mouth Bass, Black-eyed Crappie and Walleye. Additionally, the river is the site of significant spawning runs for a variety of fish including the Chinook and Coho Salmon, as well as the Brown and Steelhead Trout. Preservation of lake and river wetland areas is an important element of the city's program to preserve and protect fish habitats within the LWRP boundary.

Habitat protection efforts can also benefit human health. Development should include or should be retrofitted to include green infrastructure features such as permeable pavement, rain barrels, and bio-retention in order to improve stormwater control and reduce risks for water-borne disease. Bat or barn swallow boxes can be promoted near retention ponds and other standing water to help control insect/pest populations. Durand-Eastman Park, Turning Point Park, Seneca Park, Maplewood Park, as well as most of the river gorge, function as a natural wildlife habitat area. Durand-Eastman Park contains a significant wild deer population as well as wetland areas that provide habitats for several fish and wildlife species. Bullock's Woods in Turning Point Park is a large, heavily wooded area that also provides habitat for several species of wildlife. Redevelopment activities within these parks which will preserve and protect their significance as wildlife habitats should be encouraged.

The standards and guidelines in the city's environmental review procedures will be used to ensure that locally significant fish and wildlife habitat areas within the LWRP boundary are protected. Development actions within 100 feet of the river and lake, within areas zoned as open space, in heavily wooded areas, and within state-designated freshwater wetlands are Type I actions under the City's Environmental Quality Review

Ordinance, since these locations have been designated as critical environmental areas. Type I actions require a complete environmental impact review. As part of this review, a project's impacts on fish and wildlife habitat areas would be determined and addressed, and mitigation measures could be proposed, if required, to protect those areas from adverse impacts.

Activities most likely to affect significant coastal fish and wildlife habitats include the draining of ponds and wetlands, the filling of wetlands or shallow areas of streams, lakes and bays, grading of land, clear cutting, dredging and excavation, dredge spoil disposal, physical alteration of shore areas, and the introduction, storage or disposal of pollutants in upland areas or landfills.

POLICY 8 Protect fish and wildlife resources in the coastal area from the introduction of hazardous wastes and other pollutants which bio-accumulate in the food chain or which cause significant sub-lethal or lethal effects on those resources.

Explanation of Policy

Hazardous wastes are unwanted by-products of manufacturing processes and are generally characterized as being flammable, corrosive, reactive, or toxic. More specifically, hazardous waste is defined in Environmental Conservation Law [s27-0901.3] as "a waste or combination of wastes which because of its quantity, concentration, or physical, chemical or infectious characteristics may: (a) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; or (b) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed or otherwise managed. A list of hazardous wastes has been adopted by DEC (6 NYCRR Part 371).

The handling, storage, transport, treatment and disposal of the materials included on the hazardous waste list adopted by NYSDEC and USEPA are strictly regulated in New York State to prevent their entry or introduction into the environment, particularly into the state's air, land and waters. Such controls should minimize possible contamination and bio-accumulation of these wastes in the state's coastal fish and wildlife resources at levels that would cause mortality or create physiological and behavioral disorders.

"Other pollutants" are those conventional wastes, generated from point and non-point sources, and not identified as hazardous wastes but controlled through other state and local laws such as the Monroe County Sewer Use Law.

The following state laws enforce this policy:

1. Industrial Hazardous Waste Management Act; Environmental Conservation Law (Article 27, Title 9)
2. State Pollutant Discharge Elimination System; Environmental Conservation Law (Article 17, Title 8)
3. State Certification; Federal Water Pollution Control Act (Section 401)
4. Toxic Substances Monitoring Program; Conservation Law (Article 17)
5. Substances Hazardous to the Environment; Conservation Law (Article 37)
6. Solid Waste Management; Environmental Conservation Law (Article 27, Title 7)
7. Control of Pollution Injurious to Fish and Shellfish; Environmental Conservation Law (Article 13-0345 and Article 17-0503)
8. Stream Pollution Prohibited; Environmental Conservation Law (Article 11-0503)
9. Oil Spill Prevention, Control and Compensation; Navigation Law (Article 12)
10. Siting of Major Steam/Electric Generating Facilities; Public Service Law (Article VIII)
11. Sanitary Code; Public Health Law (Article 3)

The city and Monroe County are participating in a Combined Sewer Overflow Abatement Program (CSOAP) which has reduced combined storm and sanitary sewer discharges in many areas of the city. This project involves the construction of several large underground holding tunnels which will convey sewage and stormwater, collected after major rainfalls, to the Frank E. VanLare Treatment Plant located in Durand-Eastman Park. Prior to the construction of these tunnels, large volumes of

combined sewage and stormwater that occurred after major rainfalls in the area flowed directly into the river and lake without being treated. This sewage contributed to pollution problems in the river and lake and the destruction of fish and wildlife species. The completion of the underground holding tunnels has eliminated a major source of pollution discharge into the river and lake and has improved aquatic habitats for the area.

Eastman Kodak Company operates a large waste treatment facility on the western bank of the river, opposite Seneca Park. This treatment plant handles sewage and waste from Eastman Business Park located on Lake Avenue and Ridge Road West. This treatment plant also helps to preserve existing fish species in the river and lake by eliminating the dumping of otherwise harmful or toxic substances into the water.

The city has participated, along with other governmental agencies, in the development of a Remedial Action Plan (RAP) for the Rochester Embayment. A RAP is an agreement among federal, state, and local governments, with the support of area citizens, on a plan to restore the water quality and beneficial uses of the waters of the Area of Concern. The Rochester Embayment RAP includes an implementation plan that is intended to improve the water quality of Lake Ontario and all of the waterways that flow into it, including the Genesee River. The implementation of the RAP for the Rochester Embayment will help to protect fish and wildlife resources from the introduction of hazardous wastes and other pollutants.

As noted under POLICY 7, promotion of green infrastructure can also improve water quality and protect fish and wildlife resources. These improvements will have long term benefits in terms of human health via cleaner drinking water and consumption of wild fish and game. Developers and agencies should be encouraged to consult with the Monroe County Department of Public Health opportunities to protect and improve water quality through future waterfront revitalization activities.

POLICY 9 **Expand recreational use of fish and wildlife resources in coastal areas by increasing access to existing resources, supplementing existing stocks and developing new resources.**

POLICY 9A *Encourage recreational fishing opportunities and public access to other wildlife resources within Durand-Eastman Park, Turning Point Park, Seneca Park, Maplewood Park and Lake Ontario, by providing or improving vehicular and pedestrian access to the waterfront.*

POLICY 9B *Provide appropriate access for recreational boating activities (including hand carry boat launching facilities) along the lake, river and canal and at key riverfront parks and other neighborhood locations along the waterfront corridor.*

Explanation of Policies

Increasing public access to existing fish and wildlife resources located within the LWRP boundary is an important objective of the city's LWRP. As the water quality of the river and lake has improved over the past several years, sport fishing has become a significant local recreational activity in the Rochester metropolitan area. The river is a major fall fishery for Chinook salmon and serves as a focus for salmon fishing. Late in the summer, the Eastern-Southern Lake Ontario (ESLO) Sport Fishing Derby is held on Lake Ontario. This event also generates substantial local interest and participation.

There are few well-developed public access points along the river for fishermen. The primary access points for fishing along the river include the base of the Lower Falls, which can be accessed by a RG&E service road on the east bank, the east and west piers located on Lake Ontario at the mouth of the river, as well as waterfront areas within Turning Point Park. In addition, fishermen also access the Lower Falls area from steep and unsafe trails along the west bank of the river. The use of these trails by the public is not condoned or promoted.

Development and expansion of recreational fishing opportunities and public access to other wildlife resources at several public parks located within the LWRP boundary should be encouraged. Expansion of recreational fishing opportunities should involve provision of direct public access to the shoreline for fishermen as well as boaters. Improvements will include the development of parking areas, access trails, fishing piers, wharves and boating facilities in appropriate areas within the parks. Provisions for

increased public access to other wildlife resources located within these parks would include the rehabilitation or construction of hiking trails, pedestrian paths, overlooks and shelters.

Additionally, public safety issues should be a critical component in the development of recreational access and access points along the waterfront. Public safety infrastructure should include safety railings, ladders (where appropriate), signage about drowning and injury risk, water-quality information and educational material about fish consumption advisories.

The development of a public boat launch facility along the eastern bank of the Genesee River, just south of the O'Rorke Bridge, should be promoted to improve and expand recreational fishing opportunities for boaters on the Genesee River and Lake Ontario.

POLICY 9 suggests that state and local actions within the LWRP boundary should balance the continued maintenance and protection of fish and wildlife resources with increased public access to and recreational use of those resources. The control of fish stocking within the river or lake is coordinated by the NYSDEC. When appropriate, the state is encouraged to continue and expand its fish stocking program and the completion of studies concerning habitat maintenance and improvement. Stocking programs should be directed towards areas where known habitats will support and enhance increased fish populations.

The following additional guidelines should be considered by local, state and federal agencies as they determine the consistency of their proposed action with the above policy:

1. Consideration should be made as to whether an action will impede existing or future utilization of the state's recreational fish and wildlife resources;
2. Efforts to increase access to recreational fish and wildlife resources should not lead to over utilization of that resource or cause impairment of the habitat;
3. The impacts of increasing access to recreational fish and wildlife resources should be determined on a case-by-case basis, consulting the significant habitat narrative (see POLICY 7) and/or conferring with a trained fish and wildlife biologist; and
4. Any public or private sector initiatives to supplement existing stocks or develop new resources must be done in accordance with existing state law.

POLICY 10 **Further develop commercial finfish, shellfish and crustacean resources in the coastal area by encouraging the construction of new or improvement of existing on shore commercial fishing facilities, increasing marketing of the state's seafood products, and maintaining adequate stocks and expanding aquaculture facilities.**

Explanation of Why Policy Is Not Applicable

This policy is not applicable to the city's LWRP because there are no commercial finfish, shellfish and crustacean resources located within Rochester's LWRP boundary.

POLICY 11 **Buildings and other structures will be sited in the coastal area so as to minimize damage to property and the endangering of human lives caused by flooding and erosion.**

POLICY 11A *Discourage development along the top of the riverbank, on the steep slopes within the river gorge, within designated coastal erosion hazard areas, or in any other areas experiencing or susceptible to erosion.*

POLICY 11B *Maintain flood control facilities along the canalized section of the Genesee River necessary to achieve flood protection and avoid losses to physical and visual access to the river.*

POLICY 11C *Encourage the use of green infrastructure techniques to reduce storm water runoff, erosion and flooding problems throughout the waterfront area.*

Explanation of Policies

This policy recognizes the importance of regulating development in critical environmental areas such as erosion hazard areas and floodplains within the local waterfront revitalization boundary. Erosion hazard areas which have been identified by New York State include the shore zones along Beach Avenue and within Ontario Beach Park and a major portion of Durand-Eastman Park. The beach areas contained within these parks are considered natural protective features (see Policy 12). Floodplain areas are those areas identified as flood hazards on the Flood Insurance

Maps filed with the City of Rochester. All of these areas contain physical features or conditions that naturally limit development and that may also enhance aesthetic or wildlife resources within the shore zone. Unregulated development in these areas could cause severe erosion and flooding problems, loss of property and other valuable resources, as well as potential loss of life.

Flood control walls currently exist along the Genesee River from downtown south to the University of Rochester River Campus and beyond. These walls are in various states of deterioration, restrict physical access, and in some cases, visual access to the river. The West River Wall Master Plan (2015) provides flood protection recommendations that supports the city's objectives to improve physical and visual access to the Genesee River from Corn Hill Landing to Ford Street Bridge. This document is provided in Appendix V.

Much of the land within the LWRP boundary that is designated as a floodplain or an erosion hazard area, or that contains steep slopes in excess of 15%, is in public ownership and is zoned as open space. The city's Open Space District regulates development in these critical environmental areas by limiting the types of uses and activities permitted. Lands zoned for open space within the LWRP boundary will remain in their natural state and will contribute to the enhancement and protection of other features in the waterfront area.

City Zoning Code regulations require a special permit for development located within a designated floodplain. This permit is reviewed and approved by the City Planning Commission following a public hearing. The special permit can only be approved if the applicant demonstrates, among other items, that the proposed development will be constructed above the base flood elevation at the particular location and that the development will not cause or increase flooding in the area or within the floodway in general. The standards and guidelines which should be used to evaluate development in flood hazard areas are included in Chapter 56 of the City Code. These standards and guidelines deal with such issues as anchoring of structures, appropriate construction materials, provision of utility service, etc.

In addition to the zoning regulations cited above, the city's site plan review procedures should be followed to help ensure that proposed development activities do not cause or contribute to erosion and/or flooding problems within the LWRP boundary. Setback, lot size, and construction considerations, as well as the need for erosion control measures on site, can be identified and evaluated during this review process.

Existing environmental review procedures and regulations should also be utilized to ensure that steep slopes and other areas prone to erosion as well as floodplain areas are protected within the LWRP boundary. Development proposed within 100 feet of the river and lake, within areas zoned as open space, in heavily wooded areas, within state-designated freshwater wetlands, and areas with a slope of 15% or greater are Type I actions under the City's Environmental Quality Review Ordinance, because these locations have been designated as critical environmental areas. Actions in these areas should require a complete environmental impact review. As a part of this review, a project's potential impacts on erosion, drainage and flooding problems would be determined and addressed, and mitigating measures, if required, could be proposed in order to protect those areas from adverse development impacts.

"Green infrastructure" refers to a set of practices designed to minimize runoff and increase on-site infiltration of stormwater. The City of Rochester and Monroe County Departments of Environmental Services should be consulted regarding requirements and opportunities to maximize green infrastructure and protect human health through improved water quality and reduced flooding.

POLICY 12 Activities or development in the coastal area will be undertaken so as to minimize damage to natural resources and property from flooding and erosion by protecting natural protective features including beaches, dunes, barrier islands and bluffs.

Explanation of Policy

The natural beach areas located along the shoreline of Lake Ontario and included within the LWRP boundary are considered to be critical environmental areas that need to be preserved and protected. These beach areas have been identified as natural protective features on the State Coastal Erosion Hazard Map. This policy will apply to these specific areas. Portions of the city's inland coastal areas, including residential development located along Beach Avenue and recreational facilities located in Ontario Beach Park and Durand-Eastman Park, are protected from flooding and serious erosion by this sensitive beach area. Excavation and certain other development activities conducted on these fragile natural features could lead to their weakening or destruction and, consequently, to a loss of their protection of other coastal areas.

Primary dunes will be protected from all encroachments that could impair their natural

protective capacity. Other natural protective features (the beach areas identified on the revised New York State coastal erosion hazard map and located along Beach Avenue and within Ontario Beach Park and a major portion of Durand-Eastman Park) will also be protected from all encroachments that could impair their natural protective capacity. New coastal erosion hazard area maps and regulations, as promulgated by the New York State Department of Environmental Conservation (NYSDEC) and as applicable within the city's LWRP boundary, will be utilized to help ensure protection of these features.

The need to review and regulate development on or near the beach areas, and in near shore areas and on underwater lands, to the extent they are within the city's municipal boundaries, is recognized, in order to minimize damage to property and other resources from lake flooding and erosion from high wave action.

The standards and guidelines in the city's environmental review procedures and Coastal Erosion Hazard Area Ordinance will be used to ensure that beach areas prone to erosion and flooding are protected within the LWRP boundary. Development actions proposed within 100 feet of Lake Ontario are Type I actions under the City's Environmental Quality Review Ordinance, since these areas have been designated as critical environmental areas. Such actions will require a complete environmental impact review. As a part of this review, a project's potential impacts on erosion, drainage and flooding problems would be determined and addressed, and mitigating measures, if required, could be proposed in order to protect those areas and surrounding development from adverse environmental impacts.

POLICY 13 **The construction or reconstruction of erosion protection structures shall be undertaken only if they have a reasonable probability of controlling erosion for at least thirty years as demonstrated in design and construction standards and/or assured maintenance or replacement programs.**

Policy 13A *Promote the maintenance of the east and west piers located on Lake Ontario at the mouth of the Genesee River, and continue to monitor and evaluate the efficiency of the existing erosion protection structure within the river.*

Explanation of Policies

This policy should apply to structures designed to reduce or prevent erosion such as a groin, jetty, seawall, revetment, breakwater, artificial beach nourishment project, pier extensions or other similar types of erosion protection or control structures. Constructing and maintaining erosion protection structures within the LWRP boundary may be appropriate to reduce documented erosion problems if these structures are properly designed and constructed to prevent damage or destruction to public or private property, natural protective features, and other natural resources. The possibility of permitting the development of such structures that fail to provide adequate protection due to improper design, construction and/or maintenance, or that are otherwise inadequate to do the job they were intended to do should be avoided. Such a situation would only cause erosion problems to continue or worsen.

The standards and guidelines in the city's environmental and site plan review procedures should be used to ensure that erosion protection structures constructed within the LWRP boundary will have a reasonable probability of controlling erosion for at least thirty years and will be properly designed and maintained. Construction of such structures require site plan review and approval by the city as well as an environmental impact review because it will be located within 100 feet of the lake. Such activities are Type I actions under the City's Environmental Quality Review Ordinance, since the 100 foot "buffer" area has been identified as a critical environmental area. As a part of the environmental review, a project's potential impacts on erosion would be determined and addressed, and the ability of the structure to control erosion for the thirty year period, based on design and maintenance standards, could be evaluated.

The review of the development of erosion control structures should ensure that:

1. Long-term maintenance programs developed for the structure will include specifications for normal maintenance of degradable materials and the periodic replacement of removable materials;
2. All material used in the structure will be durable and capable of withstanding inundation, wave impacts, weathering and other effects of storm conditions; and
3. The construction, modification or restoration of the structure will not have adverse impacts on natural protective features or other natural resources.

The maintenance of the east and west piers located on the lake and river is promoted and encouraged. The west pier provides some erosion protection from high wind and wave action for beach areas to the west and has probably contributed to the deposition of additional material and the creation of a larger beach area for Ontario Beach Park. In addition, the USACE should investigate a significant surge problem near the outlet of the Genesee River and evaluate the need for and design of an erosion control structure to be built within the river to eliminate this problem (see LWRP Section VI, Part 3).

If erosion problems develop at the Durand-Eastman Park beach, then the construction of groins in this area to control that erosion should be considered. As noted in the LWRP, waterfront recreational facilities located within Durand-Eastman Park are proposed for significant redevelopment and/or rehabilitation. The development of such erosion protection features should be evaluated in terms of their overall costs and benefits as well as environmental impacts.

POLICY 14 **Activities and development, including the construction or reconstruction of erosion protection structures, shall be undertaken so that there will be no measurable increase in erosion or flooding at the site of such activities or development, or at other locations.**

Explanation of Policy

Erosion and flooding are processes which occur naturally along almost all areas of the shoreline. However, there are many types of development activity that can increase the amount or severity of coastal flooding and/or erosion. These activities include:

1. the construction of such things as groins and impermeable docks which block off-shore currents and sediment transport to adjacent shore lands, thus increasing their rate of recession;
2. improper shoreline development;
3. improper construction and/or maintenance of erosion protection structures; and
4. the failure to maintain good drainage or to restore land after construction which would increase run-off and contribute to the erosion and weakening of nearby shore lands.

Such activities must be properly reviewed and regulated so that they do not contribute to erosion or flooding problems within the site or at other locations.

The standards and guidelines in the city's environmental and site plan review procedures should be used to ensure that development proposed within the LWRP boundary, including the construction of erosion protection structures, will not cause or contribute to erosion or flooding problems. Development actions proposed within 100 feet of the lake are Type I actions under the City's Environmental Quality Review Ordinance, since these areas have been designated as critical environmental areas. Actions in these areas should require a complete environmental impact review. As a part of this review and the site plan review process, a project's potential impacts on erosion, drainage and flooding problems would be identified and addressed, and necessary mitigating measures could be implemented in order to protect those areas and surrounding development from adverse environmental impacts.

POLICY 15 Mining, excavation or dredging in coastal waters shall not significantly interfere with the natural coastal processes which supply beach materials to land adjacent to such waters and shall be undertaken in a manner which will not cause an increase in erosion of such land.

Explanation of Policy

Coastal processes, including the movement of beach materials by water, and any mining, excavation or dredging in near shore or offshore waters which change the supply and net flow of such materials, can deprive shore lands of their natural regenerative powers. Such mining, excavation and dredging should be accomplished in a manner so as not to cause a reduction of supply, and thus an increase of erosion, to such shore lands.

The NYSDEC regulates dredging, mining and excavation activities in shoreline and wetland areas. These regulations are comprehensive in design and intent and address actions according to their potential to interfere with the natural coastal processes which supply beach materials, as well as the potential for increasing erosion.

POLICY 16 **Public funds shall only be used for erosion protective structures where necessary to protect human life, and new development which requires a location within or adjacent to an erosion hazard area to be able to function, or existing development; and only where the public benefits outweigh the long term monetary and other costs including the potential for increasing erosion and adverse effects on natural protective features.**

Explanation of Policy

Public funds are used for a variety of purposes along the city's shorelines. This policy recognizes the need for the protection of human life and the need for investment in existing or new development which requires a location near the coastal area or in adjacent waters in order to function. However, it also recognizes the adverse impacts of such activities and development on the rates of erosion and on natural protective features and requires that careful analysis be made of such benefits and long term costs prior to expending public funds.

Public funds should not be invested in the construction, rehabilitation, modification or maintenance of erosion protection structures for new or proposed development which is strictly "private" in nature. The need for and the construction of additional erosion protection structures designed to further reduce or eliminate river surge problems within the Genesee River will continue to be investigated.

POLICY 17 **Nonstructural measures to minimize damage to natural resources and property from flooding and erosion shall be used whenever possible.**

POLICY 17A *Discourage development along the top of the riverbank, on the steep slopes within the gorge adjacent to the Genesee River, within designated coastal erosion hazard areas, or in any other areas experiencing or susceptible to erosion.*

Explanation of Policies

This LWRP policy promotes the use of non-structural techniques and/or management measures to prevent damage to natural resources and property from flooding and erosion. The policy suggests that such measures as structure siting, flood proofing and elevation of buildings, the reshaping and vegetation of slopes, the provision of drainage systems to reduce run-off that may weaken slopes, and the retention of existing vegetation should be incorporated into the early planning and review of any project. Such measures over other "structural" and more complicated techniques are to be encouraged, and the existing site plan and environmental review processes are the best means of doing this.

This policy recognizes both the potential adverse impacts of flooding and erosion upon development and upon natural protective features in the coastal area as well as the costs of protection against those hazards which structural measures entail.

Non-structural measures shall include, but not be limited to, the following measures:

1. Within identified coastal erosion hazard areas:

    a. use of minimum setbacks;
    b. strengthening of coastal landforms by such means as: planting appropriate vegetation on dunes and bluffs; reshaping bluffs to achieve an appropriate angle of repose so as to reduce the potential for slumping and to permit the planting of stabilizing vegetation; and installing drainage systems on bluffs to reduce runoff and internal seepage of waters which erode or weaken the landforms.

2. Within identified flood hazard areas:

a. avoidance of risk or damage from flooding by the siting of buildings outside the hazard area; and
b. flood-proofing of buildings or maintenance of their elevation above the base flood level.

This policy shall apply to the planning, siting and design of proposed activities and development, including measures to protect existing activities and development. To ascertain consistency with the policy, it must be determined if any one, or a combination of non-structural measures would afford the degree of protection appropriate both to the character and purpose of the activity or development and to the hazard. If non-structural measures are determined to offer sufficient protection, then consistency with the policy would require the use of such measures, when possible.

In determining whether or not non-structural measures to protect against erosion or flooding will afford the degree of protection appropriate, an analysis, and, if necessary, other materials such as plans and sketches of the activity or development, the site and the alternative protection measures should be prepared to allow an assessment to be made.

Much of the area within the LWRP boundary, that has been identified as being within the Genesee River or Lake Ontario floodplain or that contains steep slopes in excess of 15% and thus subject to serious erosion problems, is in public ownership and is zoned for open space use. Development activities in these critical environmental areas are regulated by limiting the types of uses and activities permitted. The extensive use of this regulation within the LWRP boundary helps assure that damage to natural resources and property resulting from flooding and erosion will be minimized.

The standards and guidelines found in the city's environmental, special permit, and site plan review procedures will be applied in evaluating and promoting non-structural erosion and flood protection measures for development proposed within the LWRP boundary. Development proposed within areas zoned as open space or within 100 feet of the lake or river are Type I actions under the City's Environmental Quality Review Ordinance. Such actions will require a complete environmental impact review in which the need for and use of non-structural means of erosion and flood protection proposed for the project will be evaluated. The special permit review process used to review and approve applications for development within designated floodplain areas should also be used to ensure that structures are flood-proofed, located above the base flood

elevation, or setback an appropriate distance from the floodplain boundary. The site plan review process considers erosion, drainage, and flood control/protection measures and should also be used to promote planting of vegetation to control drainage and erosion problems.

POLICY 18 To safeguard the vital economic, social and environmental interests of the state and of its citizens, proposed major actions in the coastal area must give full consideration to those interests, and to the safeguards which the state has established to protect valuable coastal resource areas.

Explanation of Policy

This policy recognizes that valuable coastal resource areas contained within the city's LWRP boundary should be developed and protected for all the citizens of the state. Proposed major actions undertaken within the LWRP boundary are appropriate only if they do not significantly impair or diminish valuable coastal features and resources and do not conflict with the vital economic, social and environmental interests of the state and its citizens. Proposed major actions undertaken by the city, county, state or federal government that would affect natural resources, water levels and flows, hydroelectric power generation, shoreline damage or recreational facilities, should take into account the social, economic, environmental and health interests of the state and all its citizens.

POLICY 19 **Protect, maintain and increase the levels and types of access to public water-related recreation resources and facilities.**

POLICY 19A *Maintain, facilitate or improve public access to waterfront recreational resources and facilities through existing public parks along the Genesee River and Lake Ontario.*

POLICY 19B *Promote and encourage development of an improved public transportation system to and through waterfront parks and destinations.*

POLICY 19C *Promote and encourage increased public access for fishing through the continued maintenance of the east and west piers on Lake Ontario, at the mouth of the Genesee River.*

POLICY 19D *Accommodate physical and visual public access to the water in private developments where possible through appropriate development incentives and site plan review criteria.*

POLICY 19E *Promote the extension of the Genesee Riverway Trail to connect the existing Lower Falls Park, Middle Falls Dam , vacant RG&E property near Smith Street and St. Paul Street and the Genesee River gorge within the High Falls area.*

Explanation of Policies

This policy recognizes the need to increase public access to waterfront resources and facilities while considering the impacts of such access and ensuring the protection of sensitive environmental features, historic areas, and fragile fish and wildlife habitats. Priority will be given to improving physical access to existing coastal recreational sites as well as those under development and to improving the ability of residents to get to those areas via the public transportation system.

Improved public access to the shore zone and to recreational resources and facilities that are part of the six public parks located within the LWRP boundary will be promoted and, possibly, further developed. Waterfront resources and facilities should be fully utilized by all the public in accordance with reasonably anticipated public recreation needs and the protection of historic and natural resources. In providing such access, priority shall be given to public beaches, boating facilities, fishing areas and parks.

The development of a user friendly and themed public transportation system throughout the waterway corridor, including to Durand-Eastman Park, the Seabreeze area and the Braddocks Bay area should be investigated. Establishment of a special bus route to and through the park, particularly during periods of peak park use, should be encouraged.

The development of a public boat launch facility along the eastern bank of the river, south of the O'Rorke Bridge, should be evaluated. The boat launch would provide increased public access to the river for boating, sailing and fishing.

The following guidelines will be used in determining the consistency of a proposed action with this policy:

1. The existing access from adjacent or proximate public lands or facilities to public water-related recreation resources and facilities shall not be reduced, nor shall the possibility of increasing access in the future from adjacent or proximate public lands or facilities to public water-related recreational resources and facilities be eliminated, unless in the latter case, estimates of future use of these resources and facilities are too low to justify maintaining or providing increased public access or unless such actions are found to be necessary or beneficial by the public body having jurisdiction over such access as the result of a reasonable justification of the need to meet systematic objectives.

2. Proposed projects to increase public access to public water-related recreation resources and facilities shall be analyzed according to the following factors:

    a. The level of access to be provided should be in accordance with estimated public use. If not, the proposed level of access to be provided shall be deemed inconsistent with this policy.
    b. The level of access to be provided shall not cause a degree of use which would exceed the physical capacity of the resource or facility. If this were determined to be the case, then the proposed level of access shall be deemed inconsistent with this policy.
    c. The state will not undertake or fund any project which increases access to a water-related resource or facility that is not open to all members of the public.
    d. Public access (both visual and physical) to the waterfront should be increased for people of all abilities and income levels. Priority should be given to equitable physical access to the water.

POLICY 20 **Access to the publicly-owned foreshore and to lands immediately adjacent to the foreshore or the water's edge that are publicly-owned shall be provided and it shall be provided in a manner compatible with adjoining uses.**

POLICY 20A *Public access to the waterfront should be encouraged as part of the development of water-oriented or water-enhanced mixed-use facilities as appropriate within private development sites.*

POLICY 20B *Develop a comprehensive pedestrian trail system that will provide public access to the river, along property located on the east and west banks of the river, from Genesee Valley Park to Lake Ontario, and on at least one side of the Erie Canal the entire length of the canal within Rochester's municipal boundary. Prioritization of trail segment development should include criteria that focus on potential health impacts and benefits.*

POLICY 20C *Increase access to the Genesee River gorge area through the development of a system of river overlooks, hiking and biking trails, switchback trails, pedestrian paths and excursion rides.*

POLICY 20D *Negotiate the development of public access to the riverfront through private property where feasible.*

POLICY 20E *Promote interconnectivity between waterfront resources, amenities and neighborhoods through improved multi-modal access (roads, paths, trails as well as visual access linking neighborhoods to the waterfront.*

POLICY20F *Develop improvements to and amenities for the Genesee Riverway Trail system that includes public water fountains, restrooms, security lighting, additional signage and markings, bike racks and exercise infrastructure to increase trail usage.*

Explanation of Policies

Public access to publicly owned areas of the shore zone should be provided where the provision of such access is feasible and would require only minimal facilities and where it will not endanger sensitive environmental features, historic areas, and fish and wildlife habitats or be incompatible with adjacent land uses. Guidelines 1 and 2 under Policy 19

will be used in determining the consistency of a proposed action with this policy.

As part of the mixed-use, water-oriented development at the Port Authority, River Street, Corn Hill Landing and other sites, public access to the waterfront should be maintained and enhanced. Agencies should ensure that the provision of this access will be compatible with adjacent land and water uses proposed for the sites and the character and needs of adjacent neighborhoods. This access will take the form of a major riverfront promenade or pedestrian trail, marinas, boat docks, riverfront restaurants and a riverfront park that are coordinated with other development proposed for the area. Continued maintenance of the east and west piers and facilities within Ontario Beach Park is also included in the plans.

Public access to and through the river gorge is, in most places, dangerous, not well defined and of limited use. Existing trails are difficult to follow and not always walkable. With the exception of the existing county boat launch at the Port Authority site, and the existing canoe launch in Turning Point Park, very little formal, guaranteed public access is available.

Projects which increase public access to the gorge should be encouraged where feasible. A pedestrian trail system could be developed within the gorge that would link major waterfront resources and facilities. While much of the land within the river gorge is publicly owned, most of the areas that offer the best access to the river shoreline are in private ownership. Therefore, establishment of public access to recreational facilities through private development where feasible should be encouraged. The development of this access would be completed in a manner which ensures preservation of sensitive environmental features and wildlife habitats and does not exceed the carrying capacity of the area.

POLICY 21 **Water-dependent and water-enhanced recreation will be encouraged and facilitated and will be given priority over non-water-related uses along the coast.**

POLICY 21A *Facilitate development of marinas, boat docks and launching ramps, fishing access and other water-dependent and water-enhanced recreational uses in waterfront zoning districts, particularly at the Port Authority site, the River Street site, at Corn Hill Landing, at the South Wedge Landing and at the proposed Airport Landing.*

POLICY 21B *Develop new and expanded water-dependent or water-enhanced recreational uses at Ontario Beach park, Durand Eastman park, Turning Point Park, Seneca Park, the proposed Genesee River Falls Park, at Gateway Park, and at Genesee Valley Park.*

Explanation of Policies

The development of water-dependent and water-enhanced recreational uses in appropriate locations along the lake and river is the main focus of the city's LWRP. Because of the limited availability of coastal lands and resources in the region, priority should be given to development of recreational uses within the shore zone which are water-dependent, are enhanced by a coastal location and which increase public access to the waterfront. In facilitating such activities, priority should be given to areas where access to the recreation opportunities of the coast can be provided by new or existing public transportation services and to those areas where the use of the shore is severely restricted by existing development.

Water-related recreation includes such things as boating and fishing facilities, pedestrian and bicycle trails, picnic areas, scenic overlooks and passive recreational areas that take advantage of coastal scenery. These water-dependent uses should be promoted and encouraged within both public and private development projects. Such development should only occur where water-related recreational uses are consistent with the preservation and enhancement of important coastal resources and within the carrying capacity of the resource to accommodate the particular activity or use. Boating facilities should, where appropriate, include parking, park-like surroundings, and restroom and pump-out facilities.

Redevelopment plans for the port site and River Street area, which encourage

development of water-dependent and water-related recreational facilities, have been prepared and will be promoted. Priority to such uses will be given within the context of any development plan which is finally implemented for these areas.

Unique opportunities exist within the six public parks located along the lake and the river to promote and provide water-oriented recreational uses as well as public access to the shore zone. Development of water-oriented recreational facilities that are part of these parks will be promoted, encouraged and supported. Public access to the waterfront will be improved and appropriate water-oriented recreational uses will be located in the waterfront areas in each park. These uses could include pedestrian trails, fishing access, boat docking facilities, boat launching ramps and cartop boat launch facilities, and swimming.

Opportunities for "linkage" of areas along the lake and river through development of linear pedestrian trails will be investigated. Such opportunities exist along the east and west banks of the river gorge, near Turning Point Park. The siting or design of new public or private development which would result in a barrier to the recreational use of the shore zone or which would damage sensitive environmental areas or conflict with anticipated public demand for such development will be discouraged. Public transportation service to water-oriented recreational facilities will be a major priority.

Information regarding estimated demand for water-dependent and water-enhanced recreational uses such as boat slips, launching facilities, etc. is provided in Section II: Inventory and Analysis. This information can provide the basis for determining the need for and potential locations of water-related recreational facilities. Higher priority should be given to locating and developing water-dependent recreational development over those which are only enhanced by or do not require a coastal location.

Additionally, a public outreach and media campaign to increase local and regional awareness of the Genesee River Trail, particularly among waterfront and low-income communities, should be encouraged and developed.

POLICY 22 **Development when located adjacent to the shore will provide for water-related recreation whenever such use is compatible with reasonably anticipated demand for such activities, and is compatible with the primary purpose of the development.**

POLICY 22A *Facilitate development of a mix of water-related recreational uses at all identified redevelop sites and park locations.*

POLICY 22B *Encourage private property owners and industrial facilities to develop or improve public access to the waterfront and to provide certain types of passive recreational uses within the shore zone.*

POLICY 22C *Ensure that development of water-related recreational uses are appropriately located and designed for people of all abilities and income levels.*

Explanation of Policies

There are several areas within the city's LWRP boundary that could accommodate water-related recreational uses, in conjunction with mixed-use or multiple-use facilities. Most of these areas are underutilized sites that should be encouraged to develop as mixed-use facilities which include water-oriented recreation. The following types of development can generally provide water-related recreation as a multiple use:

1. Parks
2. Highways
3. Power plants
4. Sewage treatment facilities
5. Mental health facilities
6. Hospitals
7. Schools and universities
8. Nature preserves
9. Large residential subdivisions containing 50 units or more
10. Shopping centers
11. Office buildings

Development proposals located adjacent to the shore, should be evaluated to determine whether or not they should be considered for or required to incorporate recreational uses. Whenever a proposed development is consistent with other LWRP

policies and would, through the provision of water-oriented recreation and other multiple uses, significantly increase public use and enjoyment of the shore zone, such development should be encouraged to locate adjacent to the shore. In general, some form of recreational use should be accommodated, unless there are compelling reasons why such recreation would not be compatible with the development, or a reasonable demand for public use cannot be foreseen.

Appropriate recreation uses which do not require any substantial additional construction shall be provided at the expense of the project sponsor provided the cost does not exceed 2% of the total project cost.

In determining whether compelling reasons exist which would make recreation inadvisable as a multiple use, safety considerations should reflect the recognition that some risk is acceptable in the use of recreational facilities.

There are several opportunities for development of water-related recreational uses and improvement of public access to the shore zone that are located within existing industrial facilities. An example of such an opportunity would be the improvement of public vehicular and pedestrian access, down Seth Green Drive, to the RG&E Station 5 Power Plant on the west bank of the river, just north of the Driving Park Bridge. Improvement of public access in this location would greatly enhance the area's use by fishermen. Development of a fish cleaning station could also be considered.

There are several other areas within the LWRP boundary that provide significant vistas of the river gorge. Some of these areas are also within privately-owned industrial facilities. Negotiating public access and development of such facilities as overlooks and rest areas within these areas is considered to be a major priority with the city.

POLICY 23 **Protect, enhance and restore structures, districts, areas or sites that are of significance in the history, architecture, archeology or culture of the state, its communities or the nation.**

POLICY 23A *Identify, protect and restore significant historic structures located within the LWRP boundary.*

POLICY 23B *Redevelop the River Street site and other proposed development areas in a manner which is compatible with and complements the architectural character and integrity of existing structures in the area.*

POLICY 23C *Identify and protect archaeologically and historically significant sites located within the LWRP boundary, through the continued development of master plans and designs for the public parks located along the lake, the river and the canal.*

POLICY 23D *Promote and encourage development that emphasizes the historic and cultural history of the waterfront as it relates to current waterfront communities.*

Explanation of Policies

This policy recognizes the need for and places a high priority on the identification and preservation of structures, sites and districts within the LWRP boundary that are significant in terms of the history, architecture, archaeology or culture of the state or the nation. Historic surveys have identified and located structures which are listed on the National Register of Historic Places, which are potential nominations to the national register, or which may have local historic significance and should be classified as local landmarks. The city works closely with NYS Office of Parks, Recreation and Historic Preservation in the continued preservation of historic resources.

Redevelopment plans within the LWRP boundary should consider architecturally and historically significant structures and facilities in the area and should be designed to protect and enhance these resources.

Developers doing work in areas which have been identified within the river gorge as being significant archeological sites should contact the NYS Office of Parks, Recreation and Historic Preservation to determine appropriate construction and mitigation

measures. All practicable means to protect structures, districts, areas or sites that are of significance in the history, architecture, archeology or culture of the state or nation shall include any techniques, measures, or controls required to prevent a significant adverse change to such structures, districts, areas or sites.

This policy should not be construed to prevent the construction, reconstruction, alteration, or demolition of any building, structure, earthwork, or component thereof of a recognized historic, cultural or archeological resource which has been officially certified as being imminently dangerous to the public health, safety or welfare.

POLICY 24 Prevent impairment of scenic resources of statewide significance.

Explanation of Why Policy Is Not Applicable

This policy is not applicable to the City's LWRP because scenic resources of state-wide significance have not yet been identified within Rochester's LWRP boundary.

POLICY 25 Protect, restore or enhance natural and man-made resources which are not identified as being of statewide significance, but which contribute to the scenic quality of the coastal area.

POLICY 25A *Protect and enhance the aesthetic quality of the Genesee River Gorge, as a natural resource of local significance, through general clean-up of the river banks and removal of debris.*

POLICY 25B *Enhance scenic views and vistas within the Genesee River corridor, along the Erie Canal and along Lake Ontario, through the development of scenic overlooks, viewing areas, and pedestrian trails, and through the preservation of the natural aesthetic qualities of these areas.*

Explanation of Policies

This policy recognizes the importance of restoring and preserving natural and man-made resources within the LWRP boundary that contribute to the scenic quality of the river and lake. Activities which could degrade scenic qualities of these areas include modification of natural features and the removal of vegetation.

The standards and guidelines associated with the city's site plan review, zoning standards and environmental review procedures will be used to ensure that proposed private development does not interfere with, but rather enhances, existing natural or man-made resources that contribute to the scenic quality of the lake and river.

Much of the area within the river gorge contains steep slopes in excess of 15%, is in public ownership and is zoned for open space uses. The city's Open Space Zoning District limits and regulates development activities in this critical environmental area. Lands zoned for open space within the LWRP boundary will remain substantially in their natural state and will contribute to enhancement and preservation of the scenic qualities of the gorge.

Maintenance plans and measures to clean up the riverfront area and steep slopes within the gorge, in order to enhance their visual qualities, will be promoted and encouraged. The development of trails, overlooks and viewing areas, in and around the public parks located on the river, will be promoted and encouraged in order to provide increased viewing opportunities of the gorge area for park visitors.

The following siting and facility-related guidelines are to be used to achieve this policy, recognizing that each development situation is unique and that the guidelines will have to be applied accordingly. Guidelines include:

1. Siting structures and other development such as highways, power lines and signs back from shorelines or in other inconspicuous locations to maintain the attractive quality of the shoreline and to retain views to and from the shore;
2. Clustering or orienting structures to retain views, save open space and provide visual organization within a development;
3. Incorporating sound, existing structures (especially historic buildings) into the overall development scheme;
4. Removing deteriorated or degraded elements;
5. Maintaining or restoring the original land form, except when changes screen unattractive elements or add appropriate interest;
6. Maintaining or adding vegetation to provide interest, encourage the presence of wildlife, blend structures into the site, and obscure unattractive elements, except when selective clearing removes unsightly, diseased or hazardous vegetation and when selective clearing creates views of coastal areas;
7. Using appropriate materials, in addition to vegetation, to screen unattractive elements; and

8. Using appropriate scales, forms and materials to ensure that buildings and other structures are compatible with and add interest to the landscape.

POLICY 26 Conserve and protect agricultural lands in the state's coastal area.

Explanation of Why Policy Is Not Applicable

This policy is not applicable to the city's LWRP because there are no agricultural lands within Rochester's LWRP boundary.

POLICY 27 Decisions on the siting and construction of major energy facilities in the coastal area will be based on public energy needs, compatibility of such facilities with the environment, and the facility's need for a shorefront location.

POLICY 27A *Evaluate existing energy facility sites for other uses, if and when such sites are abandoned, in consideration of public energy needs, the site's compatibility with adjacent uses, and the need for a shorefront location.*

Explanation of Policies

A determination of public need for energy is the first step in the process for siting new facilities. The directives for determining this need are set forth in the New York State Energy Law. With respect to transmission lines, Article 7 and 10 of the State's Public Service Law requires additional forecasts and establishes the basis for determining the compatibility of these facilities with the environment and the necessity for a shorefront location. With respect to electric generating facilities, environmental impacts associated with siting and construction will be considered by one or more State agencies or, if in existence, an energy siting board. The policies derived from these proceedings are entirely consistent with the general coastal policies derived from other laws, particularly the regulations promulgated pursuant to the Waterfront Revitalization of Coastal Areas and Inland Waterways Law. The Law is used for the purposes of ensuring consistency with the State Coastal Management Program and this Local Waterfront Revitalization Program.

In consultation with the city, the NYSDOS will comment on State Energy Office policies and planning reports as may exist; present testimony for the record during relevant proceedings under State law; and use the SEQR law and NYSDOS regulations to ensure

that decisions on other proposed energy facilities (other than those certified under the Public Service Law) which would impact the waterfront area are made consistent with the policies and purposes of this LWRP.

Energy facilities that currently exist within the LWRP boundary include the RG&E Station 5 Power Plant, the adjacent Middle Falls Dam, the High Falls Hydro Plant, and the Court Street Dam Hydro Plant. It is anticipated that these facilities and uses will continue at their present locations for the foreseeable future. If RG&E does abandon any of the sites, an evaluation of the best reuse for the properties will be made which acknowledges the need for compatibility with the surrounding environment and the need for a shorefront location.

POLICY 28 Ice management practices shall not interfere with the production of hydroelectric power, damage significant fish and wildlife and their habitats, or increase shoreline erosion or flooding.

Explanation of Why Policy Is Not Applicable

This policy is not applicable to the city's LWRP because ice management practices are not currently undertaken within Rochester's LWRP boundary. Should such practices be undertaken in the future in order to maintain navigation, an assessment must be made of their impacts upon fish and wildlife habitats, flood levels and damage, rates of shoreline erosion damage, and upon natural protective features. Following such an examination, adequate methods of avoidance or mitigation of such potential effects must be utilized if the proposed action is to be implemented.

POLICY 29 **The development of offshore uses and resources, including renewable energy resources, shall accommodate New York's long-standing ocean and Great Lakes industries, such as commercial and recreational fishing and maritime commerce, and the ecological functions of habitats important to New York.**

Explanation of Policy

The science of ecosystem connections between the coastal zone and offshore areas is increasingly better understood. The offshore environment is an ongoing focus of policy development at national, regional, and state levels. Within this context, New York seeks to accommodate longstanding offshore industries, such as commercial and recreational fishing and maritime commerce, while at the same time ensuring the ecological functioning of habitats important to New York, as the State considers the need for new offshore resource development and uses to occur.

New York will continue to review and analyze federal licensing and permitting activities for federal consistency. Proponents of offshore activities should use available offshore data to identify and reduce the potential effects on New York's coastal resources, activities and uses. Project proponents should consider the compatibility with, and seek to accommodate, the existing presence of resources, activities and uses that are important to the coastal area of New York State.

In addition to the development of energy resources and the siting of energy facilities, offshore uses of particular concern to New York State because of their potential effects on State coastal uses and resources include, but are not limited to: fisheries management; aquaculture; sand and gravel mining; military readiness training and related exercises; changes or upgrades to established navigation patterns and infrastructure, including the re-routing of existing navigation lanes and the location, placement or removal of navigation devices which are not part of the routine operations under the Aids to Navigation (ATON) program; the identification of interim or permanent open-water dredged material disposal sites; the intentional submergence of vessels and other structures, including for the purpose of creating artificial reefs; the creation of human-made islands, tidal barriers, or the installation of other fixed structures; scientific research activities; and exploration and identification of potential resources for extraction, such as biopharmaceutical products.

In its review of proposed activities, licenses, permits, lease sales and plans in New York State coastal waters, the Department of State works with state and federal agencies to considers a number of factors, including but not limited to: the potential effects upon maritime traffic, including navigational safety leading into and from New York's ports; the potential for increased port development and economic activity; aspects of national security; the effects on important finfish, crustaceans, shellfish, seabirds, marine mammals, and other wildlife populations and their spawning, wintering, and foraging habitats and migrating corridors; impacts on biological communities and biodiversity; ecological functioning of ecosystems; economic and other effects upon commercial and recreational fishing activities; impacts upon tourism and public recreational resources and opportunities along the coasts and offshore; the potential for geo-hazards; water quality; and overall effects on the resilience of New York's coastal uses and resources.

Of special significance, New York State recognizes the need to develop energy resources, particularly those that contribute to achieving the State's energy goals, including greenhouse gas reduction. It also recognizes that any energy development may have reasonably foreseeable effects on existing coastal uses and resources. Among the various energy resources under consideration for development are those which may be found in offshore waters within the state's territorial limit.

The State encourages the responsible development of renewable energy resources. Wind, wave, and water current resources located offshore New York are an increasing focus of development interest, which may continue to grow as projects become more technologically feasible. Offshore renewable wind energy development is a use which depends on the utilization of resources found in coastal waters. The State recognizes offshore projects directly interconnected to the New York electrical grid as qualifying for eligibility as a dependent use at the same level as though the facility were located within the State.

POLICY 30 Municipal, industrial, and commercial discharge of pollutants, including but not limited to, toxic and hazardous substances, into coastal waters will conform to State and National water quality standards.

Explanation of Policy

Municipal, industrial and commercial discharges include "end-of-pipe" discharges into surface and groundwater as well as plant site runoff, leaching, spillages, sludge and other waste disposal, and drainage from raw materials storage sites. Regulated industrial discharges include those that directly empty into receiving coastal waters and those which pass through municipal treatment systems before reaching the State's waterways.

The Monroe County Health Department currently monitors the water quality of discharges of less than 1,000 gallons per day into the river and lake. The NYSDEC currently monitors discharges of more than 1,000 gallons per day into the river and lake. These monitoring activities will be supported and encouraged to ensure that discharges into the lake and river comply with State and federal water quality standards.

The entire shoreline of Lake Ontario as well as the Genesee River is considered to be a critical environmental area under the city's existing site plan and environmental review procedures. Because of this, the impacts on water quality of stormwater runoff and/or effluent discharge from development sites is evaluated and mitigating measures required if environmental impacts such as degradation of water quality should occur.

POLICY 31 State coastal area policies and management objectives of approved local Waterfront Revitalization Programs will be considered while reviewing coastal water classifications and while modifying water quality standards; however, those waters already over-burdened with contaminants will be recognized as being a development constraint.

Explanation of Policy

Pursuant to the Federal Clean Water Act of 1977 (PL 95-217), New York State has classified its coastal and other waters in accordance with the consideration of best usage in the interest of the public, and has adopted water quality standards for each class of waters. These classifications and standards are review able at least every three years for possible revision or amendment, and will be reviewed by the State in light of the adopted LWRP.

The Genesee River has been classified as having "B" water quality. No bodies of water within the city's LWRP boundary are currently classified as "limiting segments". This classification should be considered when promoting contact recreation (swimming and boating). Efforts should be made to educate residents and visitors about potential threats to health from bacterial pollution. Efforts to maintain and improve current classification of waters within the LWRP boundary (for example, the algae pump at Ontario Beach Park and bacterial filter at Durand Beach) should be supported and enhanced.

As noted in POLICY 30, the shorelines of the lake and river are considered to be critical environmental areas under the city's site plan and environmental review procedures. Because of this, the impacts on water quality of stormwater runoff and/or effluent discharge from development sites is evaluated and mitigating measures can be required if adverse environmental impacts such as the serious degradation of water quality should occur. Achievement and maintenance of a water quality level in the Genesee River and Lake Ontario, which enables the widest possible recreational use while protecting important wildlife habitats, is considered a priority. The intent of the city's LWRP is to maintain the water quality of the lake and river by controlling stormwater runoff and effluent discharge from development sites as well as from vessels.

POLICY 32 **Encourage the use of alternative or innovative sanitary waste systems in small communities where the costs of conventional facilities are unreasonably high given the size of the existing tax base of these communities.**

Explanation of Why Policy Is Not Applicable

This policy is not applicable to the city's LWRP because the city already maintains conventional sanitary facilities and new development may only be approved were connections to the sanitary system are feasible.

POLICY 33 **Best management practices will be used to ensure the control of storm water runoff and combined sewer overflows draining into coastal waters.**

POLICY 33A *Develop and promote new drainage control measures and initiatives to improve water quality and reduce stormwater runoff into and through the Densmore Creek watershed.*

Explanation of Policy

The city and Monroe County constructed a Combined Sewer Overflow Abatement Program (CSOAP) which has reduced combined storm and sanitary sewer discharges in many areas of the city. This project involved the construction of several large underground holding tunnels which convey sewage and stormwater, collected after major rainfalls, to the Frank E. VanLare Treatment Plant located in Durand-Eastman Park. Prior to the construction of these tunnels, large volumes of combined sewage and stormwater that occurred after major rainfalls in the area flowed directly into the river and lake without being treated. This sewage contributed to pollution problems in the river and lake and the destruction of fish and other wildlife species. The completion of the underground holding tunnels has eliminated a major source of pollution discharge into the river and lake and has helped preserve existing stocks of fish in the area. City storm and sanitary sewer systems should be inspected to identify and promote improvements to maintain and enhance the existing water quality in the river and lake. The improvements will be based on accepted best management practices for stormwater runoff and drainage control.

As noted in POLICY 30, the shorelines of the lake and river are considered to be critical environmental areas under the city's site plan and environmental review procedures. Because of this, the impacts on water quality of stormwater runoff and effluent discharge from development sites is evaluated and mitigating measures can be required if adverse environmental impacts such as the serious degradation of water quality should occur. Achievement and maintenance of a water quality level in the Genesee River and Lake Ontario, which enables the widest possible recreational use while protecting important wildlife habitats, is considered a priority. Green infrastructure techniques and best stormwater management practices should be used throughout the boundary as appropriate to ensure that water quality standards are maintained or exceeded.

POLICY 34 Discharge of waste materials into coastal waters from vessels subject to state jurisdiction will be limited so as to protect significant fish and wildlife habitats, recreational areas and water supply areas.

Explanation of Policy

This policy promotes and encourages the control or prohibition of discharges of waste materials from vessels into coastal waters, in order to protect significant fish and wildlife habitats, recreational resources and water supply areas. Counties in New York State may regulate such activity under Section 46 of New York State Navigation Law. Lake Ontario was designated as a No-Discharge Zone in 2011. A No Discharge Zone designation means that it is illegal for boaters to discharge on-board sewage into the designated waterbody. This includes treated sewage, as well as untreated sewage. Boaters must instead dispose of their sewage at pump out stations. In addition, all relevant building, sanitary and health codes that apply to the discharge of sewage, waste and other pollutants in local waters will be enforced.

The discharge of sewage, garbage, rubbish and other solid and liquid materials from watercraft and marinas into the State's waters is regulated. Priority will be given to the enforcement of this law in areas such as shellfish beds and other significant habitats, beaches and public water supply intakes, which need protection from contamination by vessel wastes. Also, specific effluent standards for marine toilets have been promulgated by the U.S. Department of Transportation. To that end, the provision of adequate pump-out facilities for existing and proposed marina facilities will be required in the City of Rochester.

POLICY 35 Dredging and filling in coastal waters and disposal of dredged material will be undertaken in a manner that meets existing State permit requirements, and protects significant fish and wildlife habitats, scenic resources, natural protective features, important agricultural lands, and wetlands.

Explanation of Policy

Dredging is often essential for waterfront revitalization and development, maintenance of navigation channels at sufficient depths, pollutant removal as well as addressing other coastal management needs. Such dredging projects may, however, adversely affect water quality, fish and wildlife habitats, wetlands and other important coastal resources. Often these adverse effects can be minimized through careful design and timing of the dredging operation and proper siting of the dredge spoil disposal site.

The NYSDEC will issue dredging permits if it has been demonstrated that the anticipated adverse effects of such operations have been reduced to levels which satisfy State dredging permit standards set forth in regulations developed pursuant to the Environmental Conservation Law (Articles 15, 24, 25 and 34), and are consistent with policies pertaining to the protection of coastal resources.

Storage and disposal of wastes on land may raise residents' concerns about exposure to toxic pollutants in the sediment. Any such disposal should use best management practices. Plans for disposal duration and monitoring should be communicated to and reviewed by residents and community groups.

POLICY 36 Activities related to the shipment and storage of petroleum and other hazardous materials will be conducted in a manner that will prevent or at least minimize spills into coastal waters; all practicable efforts will be undertaken to expedite the cleanup of such discharges; and restitution for damages will be required when these spills occur.

Explanation of Policy

See policy 39 for the definition of hazardous materials.

The following regulations implement and address this policy:

1. Oil Spill Prevention, Control and Compensation; Navigation Law (Article 12)
2. Penalties and Liabilities for Spills of Bulk Liquids; Environmental Conservation Law (Article 71-1941)
3. Transportation Law; (Article 2, Section 14-F)

These measures are considered adequate for the city. All activities within the LWRP boundary which are subject to this policy shall also comply with state and federal regulations.

Petroleum product storage occurs along the banks of the Erie Canal west of the Genesee River crossing. These uses should be considered pre-existing non-conforming uses within the waterfront boundary. No waterborne transportation of petroleum products or hazardous materials occurs on the Genesee River or Erie Canal at this time.

POLICY 37 Best management practices will be utilized to minimize the non-point discharge of excess nutrients, organics and eroded soils into coastal waters.

Explanation of Policy

This policy recognizes the need to control the non-point discharge of excess nutrients, organics and eroded soils into local coastal waters. However, a major portion of the area contained within the LWRP boundary is serviced by storm and sanitary sewers which do not outfall to the river or lake without adequate sewage treatment. Remaining areas of natural forest and woodland do not contribute significantly to non-point discharge of excess nutrients, organics or eroded soils into the river and lake.

As noted in POLICY 30, the shorelines of the lake and river are considered to be critical environmental areas under the city's site plan and environmental review procedures. Because of this, the impacts on water quality of stormwater runoff, erosion, and/or effluent discharge from development sites is evaluated and mitigating measures can be required if adverse environmental impacts such as the serious degradation of water quality should result. Soil erosion control practices and surface drainage control techniques will be evaluated or may be required based on accepted best management practices (BMP's), and as a result of the site plan and environmental review processes. Standards to be used in this evaluation are contained in Section 108 of the Administrative Procedures for the Issuance of Site Preparation Permits and are based on two documents: *Guidelines for Erosion and Sediment Control in Urban Areas of New York State* and *Best Management Practices for Stormwater Runoff Management.* Generally, the *NY Standards and Specifications for Erosion and Sediment Control* is the guiding document used for this locally. Green infrastructure techniques and stormwater control features should be promoted in new and retrofitted development.

The achievement and maintenance of a water quality level in the river and lake that enables the widest possible recreational use while protecting important wildlife habitats is considered a priority.

POLICY 38 The quality and quantity of surface water and groundwater supplies will be conserved and protected, particularly where such waters constitute the primary or sole source of water supply.

Explanation of Policy

The city consumes between 40 and 49 million gallons of water each day. The city's primary source of water is through the Upland Watershed which includes Hemlock and Canadice Lakes in Ontario, Livingston and Steuben Counties. Hemlock Lake is about seven miles long, a little more than a half-mile wide, and up to 90 feet deep. Canadice Lake, lying parallel and to the east of Hemlock Lake, is about three miles long, one-third mile wide and up to 95 feet deep. In 2010, the City sold 7000 acres of watershed property surrounding these lakes to New York State. Protection of the watershed property is in accord with the New York State Open Space Conservation Plan. Access to the property is strictly regulated by New York State Department of Environmental Conservation. The city also gets some of its water supply from Lake Ontario through the Monroe County Water Authority (MCWA). The majority of the area within the city's LWRP boundary receives its water from Lake Ontario and the MCWA.

Six management objective are used to ensure water quality in the Upland Watershed:

1. Maintain city-owned property around the lakes as undeveloped;
2. Enforce rules and regulations to protect the watershed from environmental hazards;
3. Maintain recreational activities around the lakes that are compatible with conservation and water quality;
4. Plan forest management to enhance forest quality and to control erosion;
5. Manage water levels, wetlands, fish stocking and the use of local roads; and
6. Support an investment sufficient to practice good husbandry.

The city relies on the MCWA to monitor and maintain the quality of water received from Lake Ontario. Standards to achieve this policy goal will be enforced.

POLICY 39 **The transport, storage, treatment and disposal of solid wastes, particularly hazardous wastes, within coastal areas will be conducted in such a manner so as to protect groundwater and surface water supplies, significant fish and wildlife habitats, recreation areas, important agricultural land and scenic resources.**

Explanation of Policy

Solid wastes include sludge from air or water pollution control facilities, demolition and construction debris, and industrial and commercial wastes. Solid waste management facilities include resource recovery facilities, sanitary landfills, and solid waste reduction facilities. These definitions are based on the New York State Solid Waste Management Act (Environmental Conservation Law, Article 27).

Hazardous wastes are unwanted by-products of manufacturing processes generally characterized as being flammable, corrosive, reactive, or toxic. More specifically, hazardous waste is defined in the New York State Environmental Conservation Law (Section 27-0901 (3)) as "waste or combination of wastes which because of its quantity, concentration, or physical, chemical or infectious characteristics, may: (1) cause, or significantly contribute to an increase in mortality, or an increase in serious irreversible or incapacitating reversible illness; or (2) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed or otherwise managed." A list of hazardous wastes has been adopted by the NYSDEC (6 NYCRR Part 371).

There is currently no active transport, storage, treatment or disposal of hazardous wastes within the city's LWRP boundary. In addition, no activity is proposed or will occur within the waterfront revitalization area that will produce such hazardous or solid wastes, as defined in the Environmental Conservation Law, Article 27. Government standards regarding disposal of such wastes, when required, will be met.

POLICY 40 Effluent discharge from major steam electric generating and industrial facilities into coastal waters will not be unduly injurious to fish and wildlife and shall conform to state water quality standards.

Explanation of Policy

A number of factors must be considered when reviewing a proposed site for facility construction. One of these factors is that the facility cannot discharge any effluent that will be unduly injurious to the propagation and protection of fish and wildlife, the industrial development of the state, the public health and public enjoyment of the receiving waters. The effects of thermal discharges on water quality and aquatic organisms will be considered by State agencies or, if applicable, a siting board when evaluating an applicant's request to construct a new electric generating facility.

The RG&E Station 5 Power Plant located on the east bank of the river near the Driving Park Bridge, the Eastman Business Park Industrial Waste Treatment Plant located on the west bank of the river, just north of the Veteran's Memorial Bridge, and the University of Rochester Steam Heating Plant are facilities within the LWRP boundary that are the types of uses described in this policy. All activities within the city's waterfront which are subject to this policy shall comply with appropriate local, state and federal regulations to ensure that existing water quality standards are met and that appropriate disposal methods are used.

POLICY 41 Land use or development in the coastal area will not cause national or state air quality standards to be violated.

Explanation of Policy

The city's LWRP incorporates the air quality policies of and programs for the State prepared by the NYSDEC, pursuant to the Clean Air Act and State laws regulating air quality. The requirements of the Clean Air Act are the minimum air quality control standards applicable within the coastal area.

Existing and proposed land uses within the city's LWRP boundary will be restricted to residential, recreational and marine-related and/or supporting commercial facilities. None of these uses are likely to produce significant degradation of air quality in the area. The NYSDEC has jurisdiction over the monitoring of air quality to ensure that the provisions of the Federal Clean Air Act are being met. Monitoring activities will continue.

POLICY 42 Coastal management policies will be considered if the state reclassifies land areas pursuant to the prevention of significant deterioration regulations of the federal clean air act.

Explanation of Policy

The policies of the State Coastal Management Program and Rochester LWRP concerning proposed land and water uses and the protection and preservation of special management areas will be taken into account prior to any action to change prevention of significant deterioration land classifications in coastal regions or adjacent areas. In addition, the NYSDOS will provide the NYSDEC with recommendations for proposed prevention of significant deterioration land classification designations, based upon State Coastal Management and Rochester LWRP policies.

POLICY 43 Land use or development in the coastal area must not cause the generation of significant amounts of acid rain precursors: nitrates and sulfates.

Explanation of Policy

The New York State Coastal Management Program incorporates the State's policies on acid rain. Therefore, the Coastal Management Program will assist in the State's efforts to control acid rain. These efforts to control acid rain will enhance the continued viability of coastal fisheries, wildlife, agricultural, scenic and water resources.

POLICY 44 Preserve and protect tidal and freshwater wetlands and preserve the benefits derived from these areas.

Explanation of Policy

This policy recognizes the need to preserve and protect freshwater wetlands located within the LWRP boundary and consider this to be a major priority within the context of other LWRP policies. For the purposes of this policy, freshwater wetlands include marshes, swamps, bogs and flats that support aquatic and semi-aquatic vegetation, as well as other wetlands as defined in the New York State Freshwater Wetlands Act and the New York State Protection of Waters Act. Benefits derived from the protection of such wetland areas include maintenance of fish and wildlife habitats, improvement of surface water quality, control of erosion and drainage, protection of groundwater supplies, and provision of recreational opportunities.

Over the past several years, many existing wetland areas within the LWRP boundary have been transferred to public ownership through historic donations, as well as through actual acquisition and purchase by the city. Additional purchases of wetland areas along the river are being investigated; these would, if completed, result in all such areas being in public ownership and controlled by the city or Monroe County, as well as the NYSDEC.

The standards and guidelines contained in the city's environmental review procedures and regulations will be used to ensure that wetlands as well as surrounding areas are preserved and protected within the LWRP boundary. Development actions proposed within 100 feet of the river and lake and within areas zoned as open space, which

include all significant wetland areas along the river and lake, are Type I actions under the city's Environmental Quality Review Ordinance, since these locations have been designated as critical environmental areas. Actions in these areas will require a complete environmental impact review. As a part of this review, a project's potential impacts on existing fish and wildlife habitat areas and other wetland features would be determined and addressed and mitigating measures, if required, could be proposed in order to protect these areas from adverse development impacts. All wetlands within the LWRP boundary are applicable to this policy.

Section 4: LWRP Proposed Land/Water Uses and Projects



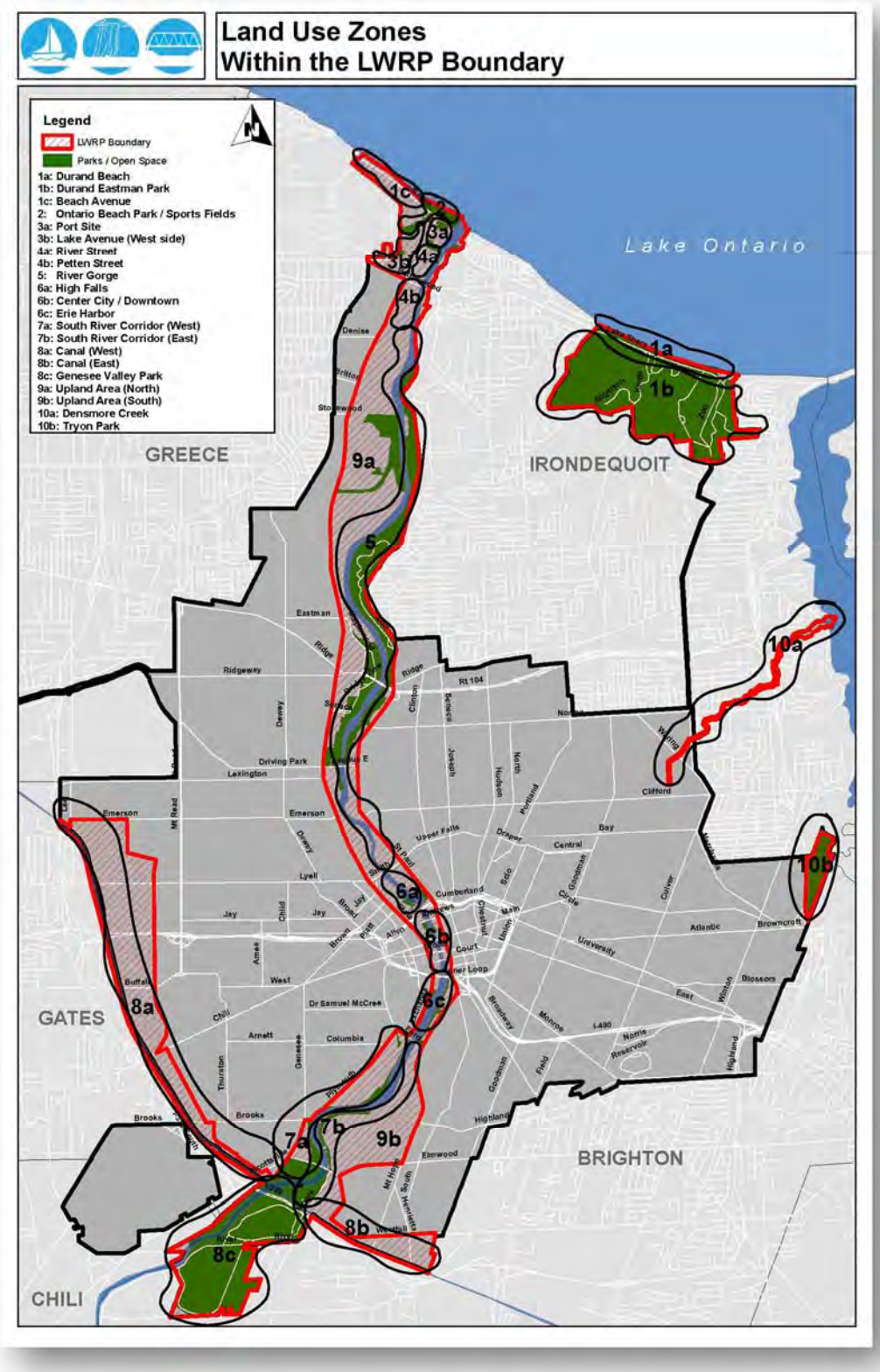
A. RECOMMENDED FUTURE LAND USES

FOCUS AREAS AND SUBZONES

Due to the uniqueness of Rochester's waterfront, the three main focus areas that encompass the LWRP boundary (Lake, River, & Canal) were divided into a total of twenty one smaller geographic sub-zones that share common characteristics, the boundaries of which are typically defined by both natural and / or man-made features. An accompanying map that illustrates the following sub-zone delineations can be found in Figure 19:

Focus Area	Subzone Number and Name	
Lake Ontario	1a	Durand Beach Lakefront
Lake Ontario	1b	Durand Eastman Park
Lake Ontario	1c	Beach Avenue Lakefront
Lake Ontario	2	Ontario Beach Park and Open Space
Lake Ontario	3a	Port of Rochester site
Lake Ontario	3b	Lake Avenue (west side)
Lake Ontario	4a	River Street
Genesee River	4b	Petten Street
Genesee River	5	River gorge (Turning Point Park to Smith St. Bridge)
Genesee River	6a	High Falls
Genesee River	6b	Center City / Downtown
Erie Canal	6c	Erie Harbor
Erie Canal	7a	South River Corridor (west side)
Erie Canal	7b	South River Corridor (east side)
Erie Canal	8a	Canal (west)
Erie Canal	8b	Canal (east)
Erie Canal	8c	Genesee Valley Park
Genesee River	9a	Upland Area (north)
Erie Canal	9b	Upland Area (south)
Lake Ontario	10a	Densmore Creek
Lake Ontario	10b	Tryon Park

FIGURE 19: LWRP FUTURE LAND USE SUBZONES
(see matrix for land use categories and recommendations)



LAND USE MATRIX OVERVIEW

Based on general land characteristics, geographic features and current development patterns found within the LWRP boundary, a wide range of potential land uses and activities was developed by city planning staff with input from the Waterfront Advisory Committee (WAC). Once a comprehensive list of potential uses and activities was created, a set of criteria was established to ensure that only the most appropriate recommended land uses were included in the sub-zone matrix.

The following criterion was used to produce the final list of uses and activities that were ultimately included in the matrix:

- Was the proposed land-use realistic in terms of current land use patterns, development trends and projected needs in the proposed locations?
- Was the proposed use appropriate in terms of its relationship to the physical features, environmental constraints, and other determinants of the suitability of land for development at the proposed location?
- Did the proposed use concentrate development in a location that includes adequate public infrastructure and services?
- Did the proposed use in the proposed location allocate adequate space for existing and future water-dependant uses and reduce or avoid conflicts between water-dependant and non water-dependant uses?
- Did the proposed use in the proposed location help maintain or increase public access to the shoreline?
- Did the proposed use in the proposed location minimize, reduce or eliminate the potential for loss of human life and property damage as a result of erosion and flooding?
- Did the proposed use in the proposed location help to protect or enhance important natural, historic cultural or scenic resources?

Based on discussions between city staff and the WAC about the criteria and other considerations mentioned above, the following list of generic land and water uses and related activities was established:

(1) Boat docks and slips

(2) Pump-out facilities
(3) Marinas / Marine related support
(4) Fishing areas
(5) Swimming areas
(6) Car-top boat access
(7) Festivals / events / outdoor entertainment venue
(8) Parking
(9) Cargo shipping
(10) Passenger Vessels
(11) Water related retail support
(12) Housing (single family)
(13) Housing (multi-family)
(14) Public walkways and trails
(15) Passive recreation (picnicking, etc.)
(16) Active recreation
(17) Hotel, boatel, bed & breakfast
(18) Commercial / general retail
(19) Restaurants
(20) Bars / nightclubs
(21) Field Sports
(22) Power generating facilities
(23) Manufacturing
(24) Museums / aquariums / zoo
(25) Offices
(26) Water treatment facilities
(27) Colleges / universities
(28) Viewsheds
(29) Urban wild / storm water management / green infrastructure

A matrix containing the above land and water uses and the twenty one individual sub-zones areas was developed. The WAC, as well as community stakeholders who attended the various focus group meetings completed the matrix using the criteria above to identify what they thought would be the most appropriate land uses in each of the respective sub-zones.

Based on a comprehensive review of all completed matrices collected at the various meetings, and further discussions of the criteria listed above, City staff and the WAC identified the most appropriate recommended uses and activities for each sub-zone

which are color coded by Focus Area. The completed matrix illustrates the most appropriate uses for each sub-zone (see Figure 20). Land uses and activities that complement existing development patterns and character of each respective sub-zone and those that provide an opportunity to implement recommendations from competed plans and studies were designated as being high priority and are indicated with a red "X" on the matrix.

Sub-zones 1a, 1b, 1c, 2, 3a, 3b, 4a, 10a and 10b (shaded in blue on the matrix) represent the Lake Focus Area which consists of the northern portion of the Charlotte Neighborhood, Ontario Beach Park, Durand Eastman Park and Beach as well as the areas around Densmore Creek and Tryon Park. Sub-zones 4b, 5, 6a, 6b and 9a (shaded in green on the matrix) represent the River Focus Area which include areas within and adjacent to the "natural" river gorge such as Turning Point Park, Riverside Cemetery, Maplewood Park, Lower Falls Park, as well as the "urbanized" areas of the High Falls District and downtown Rochester. Sub-zones 6c, 7a, 7b, 8a, 8b, 8c and 9b (shaded in brown on the matrix) represent the Canal Focus Area which is consists of the "canalized" portion of the Genesee river and adjacent land south of downtown, including Corn Hill Landing, the University of Rochester River Campus, Brooks Landing, Genesee Valley Park as well as the segments of the Erie Canal east and west of its confluence with the river.

The land use matrix (Figure 20) represents the basic elements of the proposed future land use plan for areas within the City's LWRP boundary, and reflects a consensus on appropriate types of development and activity for each sub-zone. While some uses are general in nature, others are more site-specific. The information contained in the matrix was used to help guide the selection of appropriate project recommendations that are presented later in this section.

FIGURE 20:
LWRP FUTURE LAND USE CATEGORIES BY FOCUS AREA / SUBZONES

POTENTIAL LWRP LAND USES	LAKE FOCUS AREA								
	1a	1b	1c	2	3a	3b	4a	10a	10b
(1) Boat Docks and Slips					X		X		
(2) Pump-Out Facilities					X				
(3) Marinas / Marina Related Support					X		X		
(4) Fishing Areas	X	X		X	X				
(5) Swimming Areas	X			X					
(6) Car-Top Boat Access	X								
(7) Festivals / Events / Outdoor Entertainment	X	X		X	X				
(8) Parking	X	X		X	X	X	X		X
(9) Cargo Shipping									
(10) Passenger Vessels (water taxis, excursion vessels)					X		X		
(11) Water-related Retail Support					X				
(12) Housing (single-family)			X			X	X		
(13) Housing (multi-family)					X	X	X		
(14) Public Walkways and Trails	X		X	X	X	X	X	X	X
(15) Passive Recreation (picnicking, etc.)	X	X		X	X				X
(16) Active Recreation				X					X
(17) Hotel, Boatel, Bed and Breakfast	X				X				
(18) Commercial, General Retail					X	X	X		
(19) Restaurants					X	X	X		
(20) Bars / Nightclubs						X	X		
(21) Field Sports	X			X					
(22) Power Generating Facilities									
(23) Manufacturing									
(24) Museums, Aquariums, Zoo					X		X		
(25) Offices					X	X	X		
(26) Water Treatment Facilities		X							
(27) Colleges / Universities					X				
(28) Viewsheds	X	X	X	X	X	X	X	X	X
(29) Urban Wild / Storm Water / Green Infrastructure	X	X			X			X	
	(X = Appropriate Use) (X = High Priority)								

FIGURE 20, Continued:
LWRP FUTURE LAND USE CATEGORIES BY FOCUS AREA / SUBZONES

POTENTIAL LWRP LAND USES	RIVER FOCUS AREA				
	4b	5	6a	6b	9a
(1) Boat Docks and Slips	X				
(2) Pump-Out Facilities					
(3) Marinas / Marina Related Support	X				
(4) Fishing Areas		X			
(5) Swimming Areas					
(6) Car-Top Boat Access		X			
(7) Festivals / Events / Outdoor Entertainment			X	X	
(8) Parking	X		X	X	X
(9) Cargo Shipping		X			
(10) Passenger Vessels (water taxis, excursion vessels)	X				
(11) Water-related Retail Support		X	X	X	
(12) Housing (single-family)			X		X
(13) Housing (multi-family)	X		X	X	X
(14) Public Walkways and Trails	X	X	X	X	X
(15) Passive Recreation (picnicking, etc.)	X	X	X	X	
(16) Active Recreation		X			X
(17) Hotel, Boatel, Bed and Breakfast			X	X	X
(18) Commercial, General Retail			X	X	X
(19) Restaurants	X		X	X	
(20) Bars / Nightclubs			X	X	
(21) Field Sports					X
(22) Power Generating Facilities			X	X	
(23) Manufacturing				X	X
(24) Museums, Aquariums, Zoo		X	X	X	X
(25) Offices	X		X	X	X
(26) Water Treatment Facilities		X			
(27) Colleges / Universities			X		
(28) Viewsheds	X	X	X	X	X
(29) Urban Wild / Storm Water / Green Infrastructure	X	X	X		X
	(X = Appropriate Use)			(X = High Priority)	

FIGURE 20, Continued:
LWRP FUTURE LAND USE CATEGORIES BY FOCUS AREA / SUBZONES

POTENTIAL LWRP LAND USES	CANAL FOCUS AREA						
	6c	7a	7b	8a	8b	8c	9b
(1) Boat Docks and Slips	X	X	X		X	X	
(2) Pump-Out Facilities	X	X	X		X		
(3) Marinas / Marina Related Support	X	X	X		X	X	
(4) Fishing Areas	X	X	X	X	X	X	
(5) Swimming Areas							
(6) Car-Top Boat Access	X	X	X		X	X	
(7) Festivals / Events / Outdoor Entertainment	X	X	X			X	
(8) Parking	X	X	X	X	X	X	X
(9) Cargo Shipping				X	X		
(10) Passenger Vessels (water taxis, excursion vessels)	X	X					
(11) Water-related Retail Support	X	X	X	X	X	X	
(12) Housing (single-family)	X	X	X				X
(13) Housing (multi-family)	X	X	X		X		
(14) Public Walkways and Trails	X	X	X	X	X	X	X
(15) Passive Recreation (picnicking, etc.)	X	X	X	X	X	X	X
(16) Active Recreation	X	X	X	X	X	X	
(17) Hotel, Boatel, Bed and Breakfast	X	X	X		X		
(18) Commercial, General Retail	X	X	X	X			
(19) Restaurants	X	X	X	X	X		
(20) Bars / Nightclubs	X						
(21) Field Sports	X	X	X			X	
(22) Power Generating Facilities	X						
(23) Manufacturing				X			
(24) Museums, Aquariums, Zoo		X	X		X		
(25) Offices	X	X					
(26) Water Treatment Facilities							
(27) Colleges / Universities			X				
(28) Viewsheds	X	X	X	X	X	X	X
(29) Urban Wild / Storm Water / Green Infrastructure		X	X			X	
	(X = Appropriate Use) (X = High Priority)						

RECOMMENDED FUTURE LAND USES BY FOCUS AREA

The following section describes the major development themes and appropriate future land uses for each of the 3 focus areas. LWRP areas of potential future land use change are shown in Figure 21 and in more detail on the section 1-6 maps below.

Lake Focus Area Recommended Land / Water uses:

The high priority recommended future land uses for the Lake Focus Area include boat docks / slips (marina) and marine related support such as pump out facilities and water related retail, docking accommodations for larger passenger excursion vessels, festivals, events & outdoor entertainment and a hotel/boatel/bed & breakfast at the Port of Rochester. Re-development of the former TapeCon site into mixed use that includes residential, retail and office space would complement and enhance recent investments made to the River St. area.

Public trails and walkways, fishing and swimming areas, public open space, parks, beaches and other water dependant / water enhanced uses that capitalize on the natural scenic beauty of the Lake are also considered high priority uses that provide opportunities for passive recreation, public access to the waterfront and the protection of significant viewsheds and vistas at various locations throughout the focus area.

Water treatment facilities are listed as an appropriate use, specifically within the western portion of Durand Eastman Park because of the presence of the existing VanLare Treatment Plant and the likelihood that this use will remain at this location for the foreseeable future.

The recommended high priority uses are consistent with existing adjacent land uses and align with recommendations from various plans and studies that have been prepared for areas within the Lake Focus Area.

The existing regulations of the Open Space district that govern Ontario and Durand parks and beaches as well as the Harbortown Village and Marina Zoning Districts that govern the Lake Avenue area and Port of Rochester site not only permit, but more importantly, promote and encourage all of these types of uses.

River Focus Area Recommended Land / Water uses:

The high priority recommended future uses identified for the River Focus Area include boat docks / slips (marinas) and marine related support such as pump out facilities and water related retail to complement the existing concentration of docking facilities located in and around the Port of Rochester. Other recommended future land uses recognize that a sizeable portion of the natural gorge area should remain undeveloped, but that public access to and through the area should be improved.

The following uses were identified as being appropriate to achieve this and include fishing areas, car top boat access (for launching of canoes, kayaks and other small vessels), public walkways and trail connections, opportunities for passive recreation such as picnicking (at various locations), venues for festivals / events and other forms of outdoor entertainment (sub-zones 5, 6a, 6b & 6c), water enhanced retail and restaurant establishments, as well as protection of significant view sheds and vistas throughout the focus area.

These land uses promote waterfront recreation, preserve and enhance sensitive environmental areas and other important natural features, do not conflict with existing land use patterns, and promote and encourage access and usage of the waterfront. These uses can be developed through the implementation of the Genesee Riverway Trail system and recommendations from the Seneca Park Master plan as well as the High Falls Pedestrian Access Study (currently underway).

Other future land uses deemed appropriate were museums, aquariums and similar type regional destinations that compliment the historic and geologic history of the river gorge (sub-zone 6a - High Falls). Use of green infrastructure and environmentally friendly storm water management practices were also identified as being important for areas throughout the focus area, particularly for areas in and adjacent to the gorge.

Recommendations for the buildable portions of the upland area promote land uses that enhance and are compatible with well established development patterns in areas that aren't directly adjacent to the river / gorge. Land uses deemed appropriate include water related commercial support facilities such as bait and tackle shops, boating or fishing supply stores and other neighborhood scaled retail establishments that serve nearby residents. Single family infill housing was also identified as an appropriate land use in the upland area, complementing the predominantly residential nature of this area. The existing zoning designations in place for this area currently allow for these types of uses (low and medium density residential with scattered commercial nodes at key intersections along Lake Avenue).

Treatment facilities, specifically at the location of the existing Kodak water treatment plant on the west side of the gorge just north of Route 104, were also considered to be appropriate, as it is likely that this use will remain there for the foreseeable future.

Canal Focus Area Recommended Land / Water uses:

The high priority recommended uses for the Canal Focus Area include boat docks and slips, marine related support facilities (ex. pump out stations, shore power, etc.), marine

related retail, and car top boat access at specific landings / locations along the canal (including the canalized portion of the river).

Recommended uses for areas directly adjacent to the water include public walkways and trails that create new and/ or strengthen existing connections between adjacent residential neighborhoods and the waterfront; open space to provide opportunities for both passive and active recreation and field sports as well designated fishing areas were also deemed to be of high priority for this area (sub-zones 7a, 7b, and 8b).

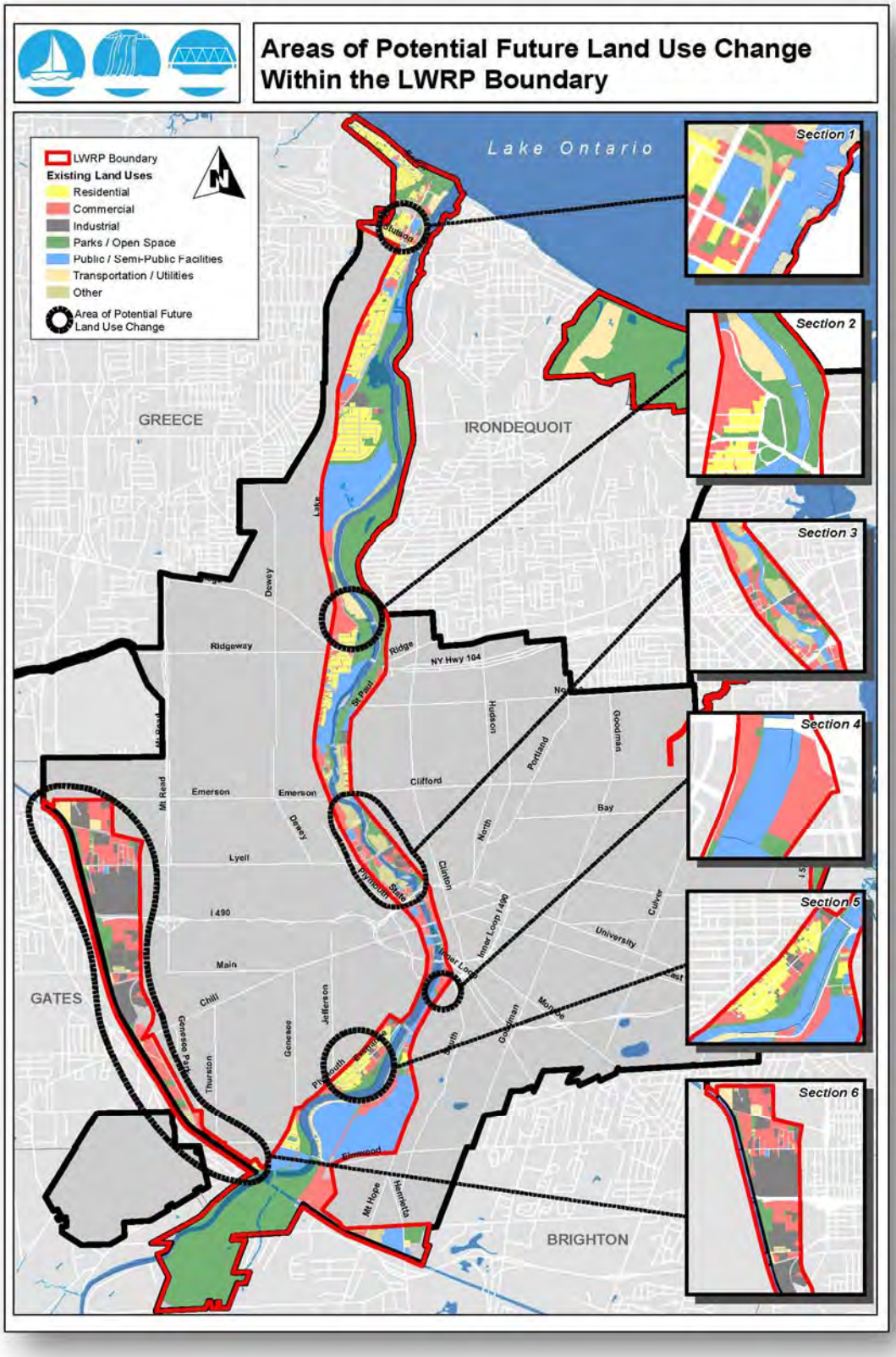
High priority land uses for the upland area (sub-zone 9b) includes single family housing to complement existing residential where appropriate, public walkways and trails and open space to provide opportunities for passive recreation.

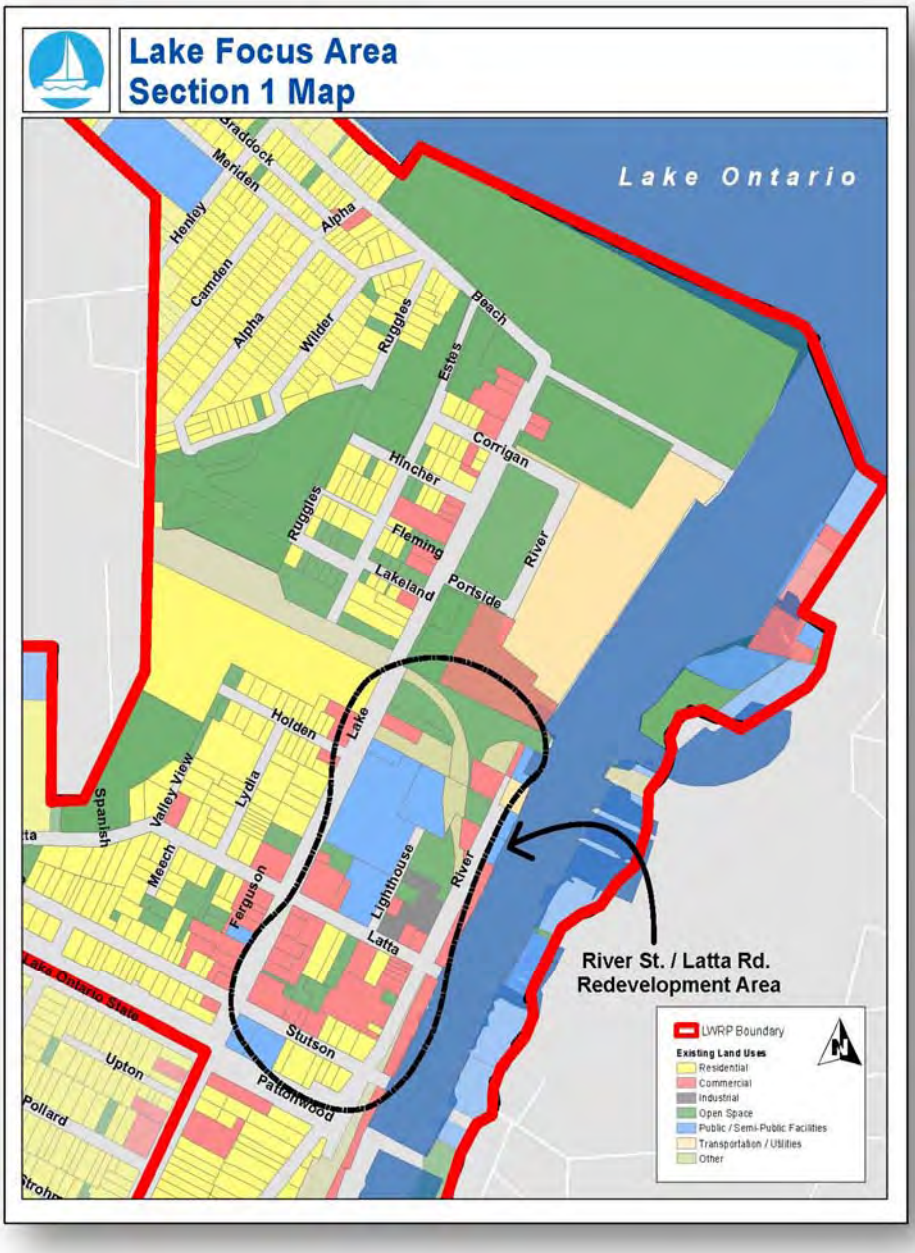
All of the recommended uses that have been identified as being a high priority promote waterfront recreation, encourage public access to the waterfront, preserve and enhance sensitive environmental areas and other natural features, do not conflict with existing land use patterns and are consistent with various plans and studies that have been undertaken for this area in the past several years such as the Genesee Valley Park West Master Plan, the Vacuum Oil BOA[1] plan, and the West River Wall Study.

The existing Open Space district regulations that govern much of the land adjacent to the canal permit, encourage and promote these types of uses. The Planned Development District that regulates the University of Rochester River Campus also permits athletic and recreational uses adjacent to the canalized portion of the river.

[1] In April 2015, the NYS Secretary of State officially designated the Vacuum Oil - South Genesee River Corridor Brownfield Opportunity Area (BOA). Designation is contingent on development of a nomination process that appropriately reflects community priorities, presents an attainable and realistic plan to promote redevelopment, and is consistent with the applicable provisions of the General Municipal Law, Article 18 - C, Section 970-r. Developers, property owners and others with projects and properties located within a designated BOA will be eligible to access additional Brownfield Cleanup Program tax incentives and receive priority and preference for State grants to develop projects aimed at transforming dormant and blighted areas in their communities and putting them back into productive use.

FIGURE 21: LWRP AREAS OF POTENTIAL FUTURE LAND USE CHANGE





SECTION 1 MAP

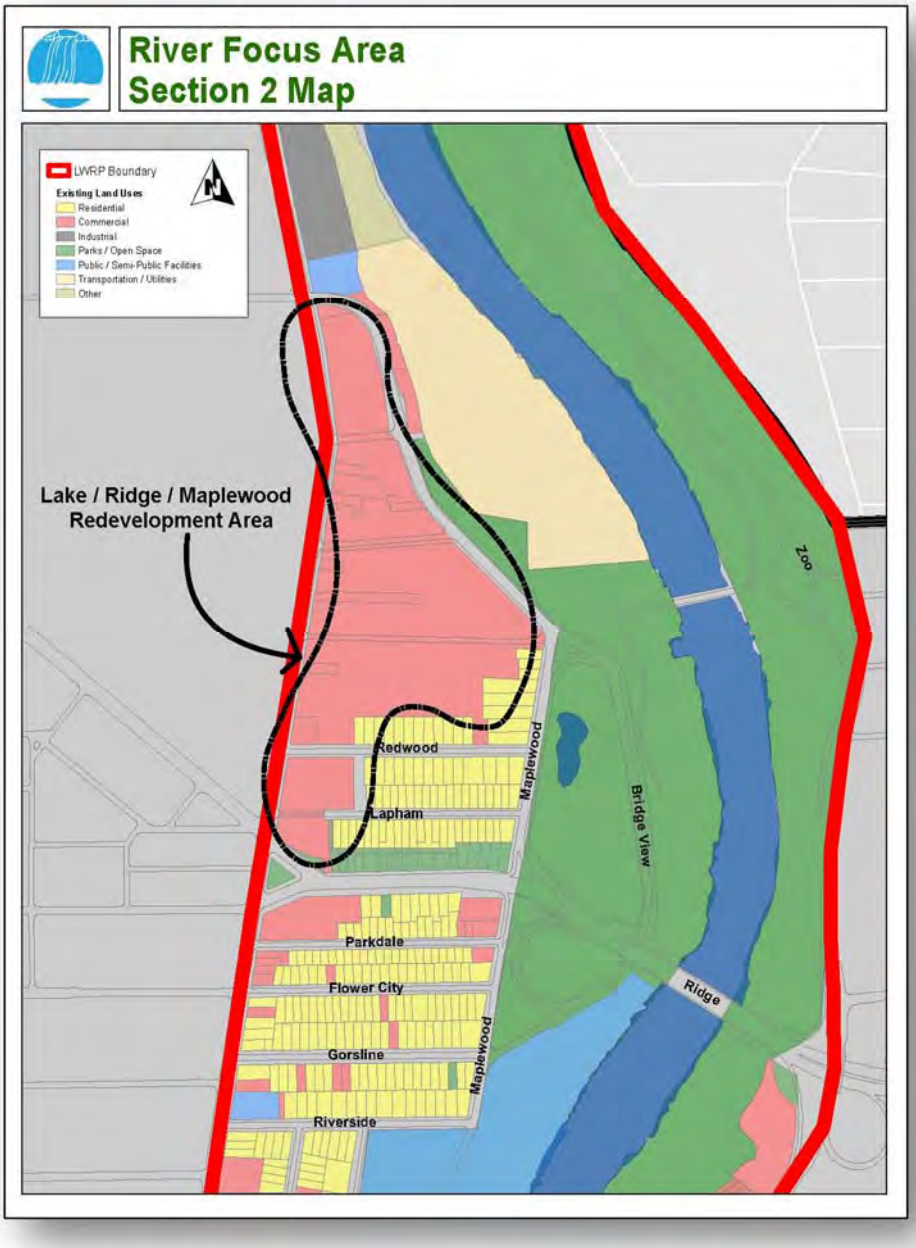
RIVER ST. / LATTA RD. REDEVELOPMENT AREA

PROPOSED FUTURE LAND USES:

- Boat Docks and Slips
- Marina Related Retail Support
- Community Parking
- Housing
- General Commercial
- Water Related Mixed-Use

RELATED LWRP PROJECTS:

- Enhancements to Genesee Lighthouse (#8)
- Water Enhanced Development on River Street (#9)
- Parking/Land Use Improvements at River/Latta (#10)



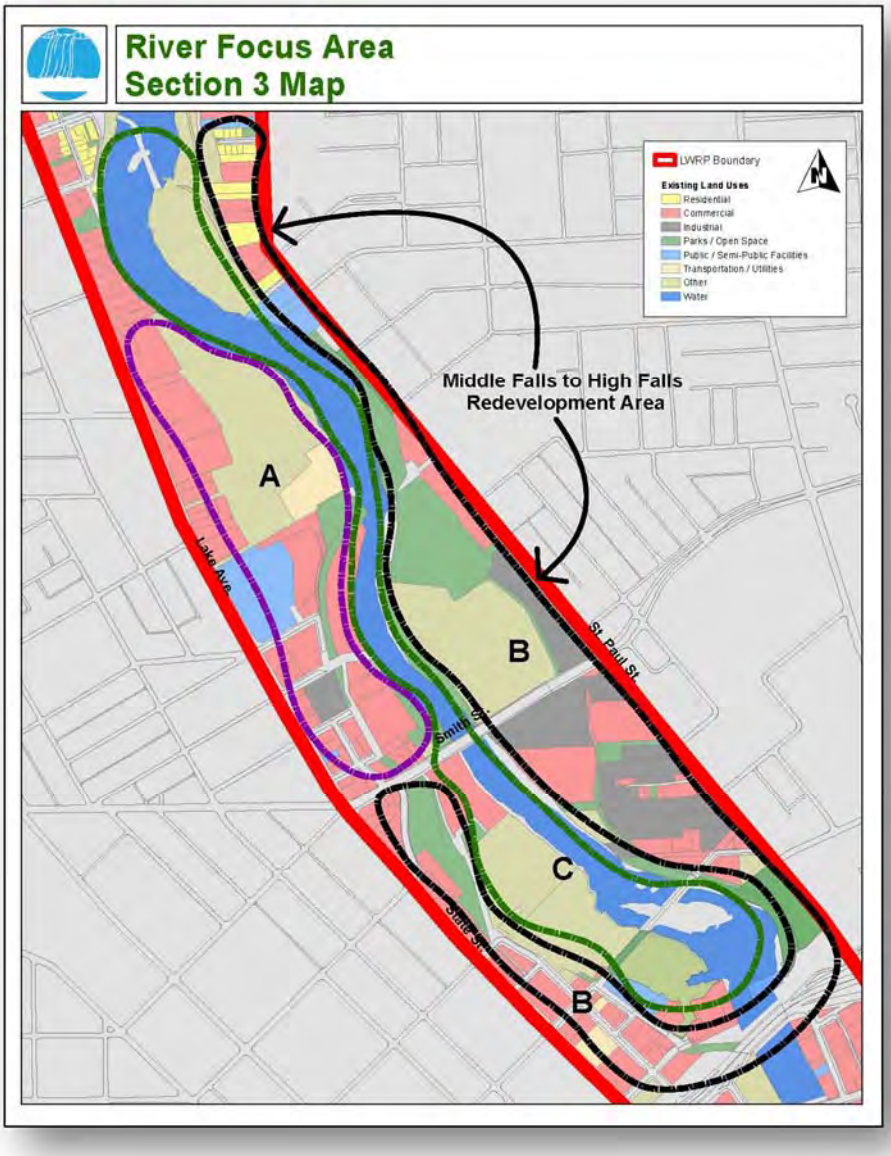
SECTION 2 MAP
LAKE AVE. / RIDGE RD. / MAPLEWOOD DR.
REDEVELOPMENT AREA

PROPOSED FUTURE LAND USES:

- Housing
- Public Walkways and Trails
- Active/Passive Recreation
- Mixed-Use
- Open Space

RELATED LWRP PROJECTS:

- Eastman Business Park Redevelopment and Eastman Trail (#14)
- King's Landing Cemetery Master Plan (#15)



SECTION 3 MAP
MIDDLE FALLS TO HIGH FALLS REDEVELOPMENT AREA

PROPOSED FUTURE LAND USES FOR "A" AND "B":

- Public Walkways and Trails
- Housing
- Hotel/Bed and Breakfast
- General Commercial
- Restaurants/Bars/Nightclubs
- Mixed-Use

RELATED LWRP PROJECTS FOR "A" AND "B":

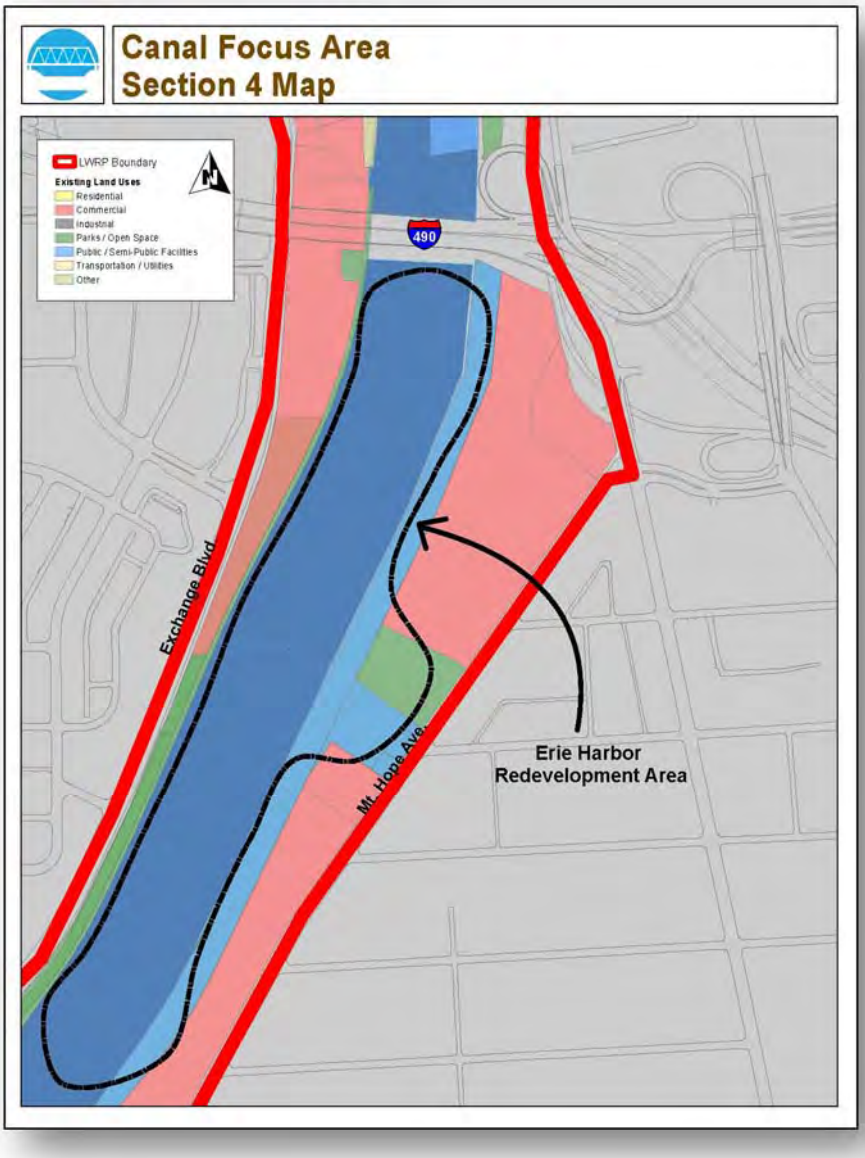
- Rehab Running Track Bridge for Trail Use (#19)
- Master Plan - Lower Falls to High Falls (#20)
- Brewery Trail North (#22)
- Garden Aerial Trail / Eco-District at High Falls (#24)

PROPOSED FUTURE LAND USES FOR "C":

- Public Walkways and Trails
- Active/Passive Recreation
- Open Space
- Urban Wild
- Green Infrastructure
- Mixed-Use
- Power Generating Facilities

RELATED LWRP PROJECTS FOR "C":

- Site Remediation along River Gorge (#21)
- Pont de Rennes (#23)
- Garden Aerial Trail and access improvements (#24)



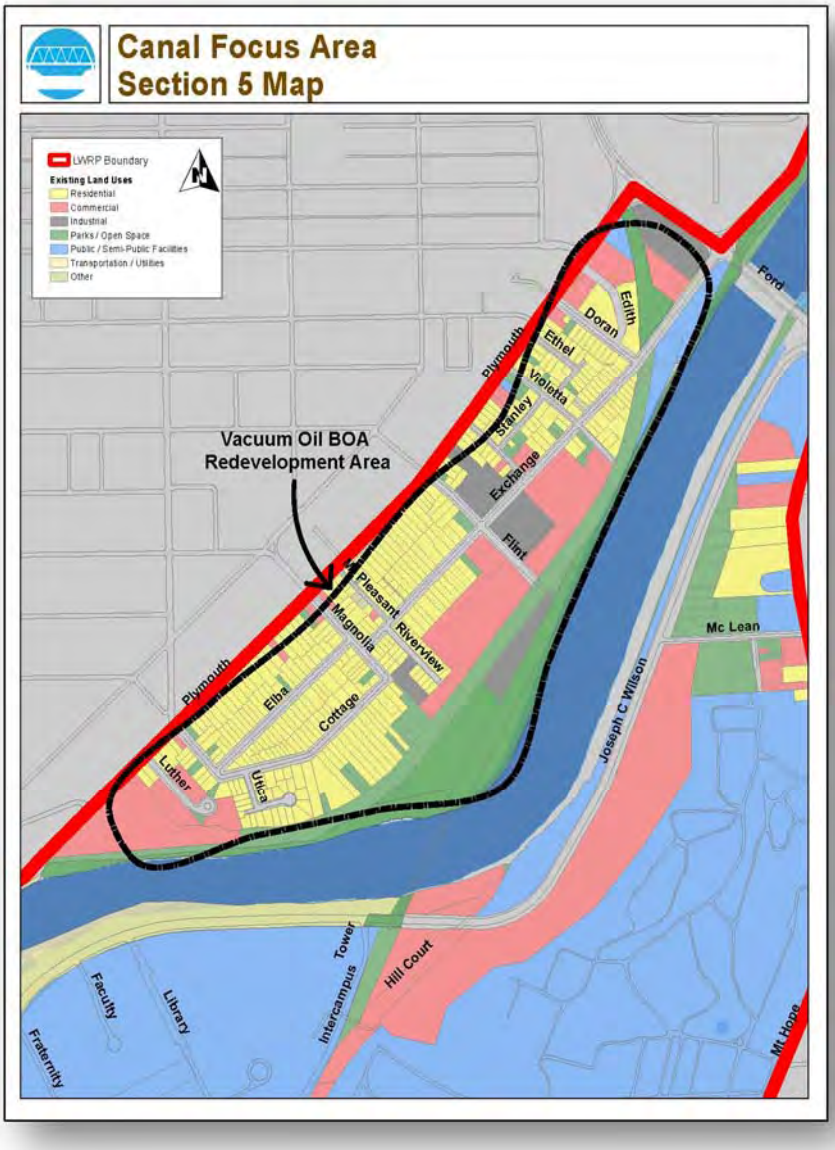
SECTION 4 MAP
ERIE HARBOR REDEVELOPMENT AREA

PROPOSED FUTURE LAND USES:

- Boat Docks and Slips
- Marina Related Retail Support
- Festivals/Outdoor Entertainment
- Water Taxi
- Water Related Retail Support
- Public Walkways and Trails
- Housing
- Active/Passive Recreation
- Restaurants/Bars/Nightclubs

RELATED LWRP PROJECTS:

- Pedestrian Bridge – Corn Hill to South Wedge (#40)
- South River Corridor Master Plan (#41)
- South Wedge Access Improvements (#42)
- 151 Mt. Hope Avenue: Mixed-Use Development / Spectrum Site Redevelopment (#43 and #44)
- Genesee Gateway Park Improvements (#45)
- West River Wall / Exchange Street Improvements (#46 and #47)



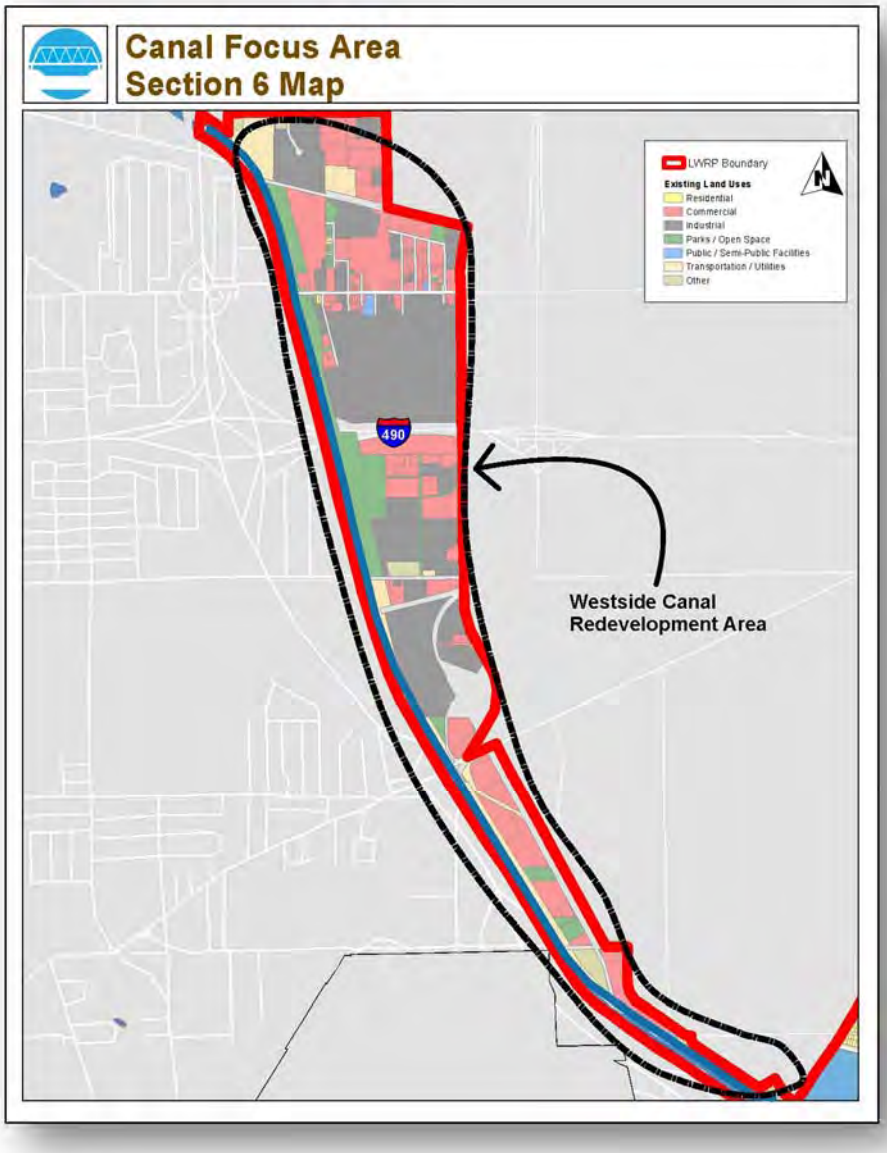
SECTION 5 MAP
VACUUM OIL BOA
REDEVELOPMENT AREA

PROPOSED FUTURE LAND USES:

- Boat Docks and Slips
- Car Top Boat Access
- Festivals/Outdoor Entertainment
- Fishing
- Water Related Retail Support
- Multi-Family Housing
- Public Walkways and Trails
- Active/Passive Recreation
- Open Space
- Mixed-Use

RELATED LWRP PROJECTS:

- Implement Vacuum Oil BOA Projects (#48)



SECTION 6 MAP
WESTSIDE CANAL REDEVELOPMENT AREA

PROPOSED FUTURE LAND USES:

- Fishing
- Cargo Shipping
- Water Related Retail Support
- Public Walkways and Trails
- Active/Passive Recreation
- General Commercial
- Manufacturing

RELATED LWRP PROJECTS:

- Erie Canal Landings and Gateways (#50)
- Westside Canal Parkway and Trail (#54)

B. PROJECT RECOMMENDATIONS BY FOCUS AREA AND SUBZONE

The following section describes more than sixty major project recommendations proposed within the LWRP boundary as illustrated in the matrix (Figure 22) and the maps in Figures 23-25 for each of the focus areas and subzones. Several important or significant projects from the "Proposed Projects List" are further detailed and described in the maps and graphics below. High priority projects are denoted with a red symbol (✷).

Project Recommendations Overview

An internal task force comprised of City staff from multiple bureaus and departments was assembled to establish an inventory of all known projects located within the LWRP boundary as well as to identify new project ideas and opportunities.

The initial list of projects was presented to and discussed with the WAC to obtain their input and feedback and to identify any other potential projects and ideas that could be included in the LWRP. The refined list was then put on display at each of the focus group meetings to provide an opportunity for interested stakeholders to comment, provide feedback and gauge the level of support for the range of potential projects. New project ideas and recommendations received at the focus group meetings and from the online interactive map and survey were also incorporated into the list of potential projects. The list was then categorized into three groups: "current", "proposed", or "future".

Projects categorized as being "current" include physical projects that have secured funding and will commence and/or are currently under construction as well as plans/studies that are or will be underway in the near future. The list of current LWRP projects is contained in Section 2: Inventory and Analysis.

"Proposed" projects include ideas or recommendations that are contained in existing plans and studies, are somehow related to an existing development/re-development project or initiative or are considered to be the next phase of implementation for a multifaceted project. "Proposed" projects generally build off of prior public infrastructure investments / improvements and large scale private development projects and therefore are considered to have a high likelihood of being pursued and funded in the future.

"Future" projects include longer term "big ideas" and concepts that need more definitive planning and investigation to determine their feasibility, identification of potential external partners and/or funding sources, etc.

Project types indicated in Figure 23 are as follows:

PS	=	Planning Study
IT	=	Infrastructure/Transportation
IE	=	Infrastructure/Environmental
IR	=	Infrastructure/Recreational
PD	=	Private Development
O	=	Other



GENESEE RIVER GORGE AT HIGH FALLS

FIGURE 22: LWRP PROPOSED PROJECTS LIST

LAKE FOCUS AREA					
PROJECT NUMBER AND NAME (✸ = high priority)	SUB-ZONE	PROJECT DESCRIPTION	Type of Project	PROJECT TIMEFRAME	Applicable LWRP Policy Numbers
				Proposed / Future	
1. Continue to Improve Beach Water Quality at Durand Beach and Ontario Beach (Charlotte)	1a, 1b	• Continue the development of stormwater treatment technologies to improve the quality of runoff from the watershed areas surrounding Durand-Eastman Park • Coordinate with Monroe County and US Army Corp of Engineers on additional strategies	IE	Proposed	25, 30, 33, 38
✸ 2. Durand Beach Bathhouse	1a	• Design and construct a bathhouse to include restrooms, changing facilities, lifeguard offices, equipment storage and concessions • Parking, vehicular and pedestrian circulation, signage, picnic facilities, car top boat launch and related recreational amenities may also be incorporated	IR	Proposed	19, 25
✸ 3. Implement the Action Plan for the Port of Rochester Harbor Management Plan	2, 3a, 4a	• See Appendices for more detailed list of projects and actions	IE / IT / IR	Proposed	11, 13, 16
✸ 4. Port Marina Development (Phase 2)	3a	• Develop land-side parcels • Expand Marina	IT / IR / PD	Future	1, 2, 5, 19, 20, 21, 22
5. Mixed-Use Redevelopment along Lake Avenue	3b	• Create new mixed-use redevelopment and infill along the west side of Lake Avenue north of railroad tracks	PD	Future	1, 5
6. Reuse CSX ROW for Trail connections and/or Transit Use	3b	• Develop additional beach trail connections along CSX ROW • Identify opportunities for public parking on adjacent sites • Preserve for future transit corridor to connect Port area with downtown, U of R	IT	Proposed	1, 19
7. Develop Remote Parking and Shuttle/Circulator	3b	• Identify and create remote parking lots for Port with Trail Connections and institute shuttle service for major events or seasonal Port area transit circulator service	IT	Proposed	1, 19
8. Continue Enhancements to Genesee Lighthouse	3a	• Historic restoration of the Lighthouse Site • Establish connection to Genesee Riverway Trail	O	Future	23, 24, 25
9. Water-Enhanced Redevelopment on River Street	4a	• Facilitate new development along River Street • Support the Museum/Visitor Center for the Lighthouse • Improve pedestrian connections to the former railroad station to enable its reuse	PD	Future	1, 2, 5, 19, 20

FIGURE 22, Continued: LWRP PROPOSED PROJECTS LIST

LAKE FOCUS AREA						
PROJECT NUMBER AND NAME (* = high priority)	SUB-ZONE	PROJECT DESCRIPTION	Type of Project	PROJECT TIMEFRAME		Applicable LWRP Policy Numbers
				Proposed	Future	
10. **Parking/Land Use Improvements at River/Latta**	4a	• Develop new parking and land use improvements in the River Street / Latta Road area	IT			1, 5, 19, 20

FIGURE 22, Continued: LWRP PROPOSED PROJECTS LIST

RIVER FOCUS AREA						
PROJECT NUMBER AND NAME (✸ = high priority)	SUB-ZONE	PROJECT DESCRIPTION	Type of Project	PROJECT TIMEFRAME		Applicable LWRP Policy Numbers
				Proposed	Future	
11. Turning Point Park Improvements	5	• Maintain green infrastructure improvements and visitor enhancements at Turning Point Park • Establish river access • Fortify boardwalk with materials that are more sustainable and suitable to long-term maintenance	IR / IE			1, 19, 20, 21, 44
12. Genesee Riverway Trail from O'Rorke Bridge to Seneca Park	5	• Acquire land and establish an extension of the riverway trail on the east side of the river • Coordinate with Town of Irondequoit • Support creation of a NY State Park at Rattlesnake Point	IR / IT			19, 21, 25
13. Genesee Riverway Trail Improvements from Turning Point Park to Maplewood Drive	9a	• Extend, realign, and enhance the trail network per the recommendations of the Urban Trail Linkages Study	IT / IR			19, 21, 25
✸ 14. Eastman Business Park Redevelopment and Eastman Trail	5	• Support the redevelopment proposed at the Eastman Business Park • Incorporate Eastman Trail concept	PD			1, 2, 5, 19
15. King's Landing Cemetery Master Plan	9a	• Identify strategies for preserving and enhancing this historic pioneer cemetery	O			23
16. Seth Green / Carthage Landing Improvements	5	• Develop fishing and access improvements to the Genesee River Gorge near lower Seth Green Drive	IR			9, 21, 22
17. Maplewood Park Improvements	5	• Enhance and improve the Maplewood Rose Garden • Develop permanent access from the park into the river gorge, including universally accessible connections between Maplewood and Lower Falls Parks	IR			1, 19, 21
18. Reclaim City Park on Carthage Drive (to Driving Park)	5	• Carthage Drive Park Improvements	IR			1, 19, 21
✸ 19. Rochester Running Track Bridge	5	• Rehab the former rail bridge for trail use including connections to the Genesee Riverway and El Camino Trails, High Falls and St. Paul Quarter, including improvements to Cliff Street	IT / IR			1, 19, 21

FIGURE 22, Continued: LWRP PROPOSED PROJECTS LIST

RIVER FOCUS AREA						
PROJECT NUMBER AND NAME (✶ = high priority)	SUB-ZONE	PROJECT DESCRIPTION	Type of Project	PROJECT TIMEFRAME		Applicable LWRP Policy Numbers
				Proposed	Future	
✶ 20. Genesee Falls Park Master Plan – Lower Falls to High Falls	5, 6a	• Develop and implement a plan for the gorge area, including parkland, improved water access, and supportive private development on adjacent sites	PS			1, 19, 20, 21, 22, 25
21. Site Remediation along River Gorge	5, 6a	• Remediate environmental impacts at several important development sites along the Genesee River Gorge (including East Station, West Station, Beebee Station, Bausch & Lomb Site and Front Street) in preparation for redevelopment	IE			1, 2, 8, 36, 39
✶ 22. Brewery Trail North	6a	• Develop new eastside river trail spur and overlook from Pont de Rennes north along the former railroad trestle through the Genesee Brewery Site	IT			1, 19, 21
✶ 23. Pont de Rennes	6a	• Repair and maintenance of pedestrian bridge • Enhance public space and amenities on the bridge	IT / IR			19, 25
✶ 24. GardenAerial Trail and EcoDistrict at High Falls	6a	• Support implementation of Greentopia's EcoDistrict Plan to address green infrastructure • Develop GardenAerial Trail Loop and other access improvements	PS / IT / IE			1, 2, 7, 8, 33
✶ 25. RG&E Front Street Site Private Development and River Promenade	6b	• Encourage private development for water-oriented uses and a new waterfront promenade • Opportunity for Public-Private Partnership	PD / IT / IR			1, 19, 20
✶ 26. Andrews Street to Main Street Waterfront Revitalization	6b	• Charles Carroll Park Plaza (west side) renovation • Sister Cities Bridge accessibility • Genesee Crossroads Park (east side) renovation • Replace leaking parking garage roof • Enhanced connectivity to State Street and St. Paul Street, engage adjacent properties	IR			1, 2, 5, 19, 25

FIGURE 22, Continued: LWRP PROPOSED PROJECTS LIST

RIVER FOCUS AREA						
PROJECT NUMBER AND NAME (✸ = high priority)	SUB-ZONE	PROJECT DESCRIPTION	Type of Project	PROJECT TIMEFRAME		Applicable LWRP Policy Numbers
				Proposed	Future	
✸ 27. Downtown Riverfront Programming	6a, b	• Continue to incorporate accent lighting on bridges, buildings, and river features (rapids, falls, surface, etc.) • Establish strategically placed fountains in public spaces • Explore opportunities for creative installations/features in the river to enhance the river's visual interest and its draw for events • Develop programming for water-oriented events	O			1, 19, 21, 25
✸ 28. Main Street Streetscape Redesign	6b	• Continue the phased implementation of Main Street's "Road diet" with enhanced bicycle/pedestrian amenities, wayfinding signage, and playful/art installations	IT			19, 23, 25
✸ 29. Main Street Bridge Park	6b	• Create expanded public space along Main Street Bridge linking Aqueduct Park, Convention Center Terrace, and Charles Carroll Plaza • Potential opportunities include public art, gardens, and event spaces	IR / IT			19, 23, 25
✸ 30. Establish a Downtown/ Riverfront Management Entity	6a, b, c	• Focused on downtown and the river corridor immediately north and south of downtown • Explore options for various organizational structures • Possible functions could include those of a Local Development Corporation, Development Authority, and/or Business Improvement District, such as development, harbor management, river-oriented infrastructure, marketing, business recruitment, and programming	O			1, 2, 5, 19, 21, 23, 25
✸ 31. Aqueduct Street / Basin Street Revitalization	6b	• Reconstruct and enhance Aqueduct Street and adjacent streets at historic Childs Basin	IT			1, 19, 21, 25
32. Reuse of Erie Canal Aqueduct and Adjacent Former Subway Tunnel	6b	• Determine future reuse of this unique, abandoned infrastructure	O			1, 23, 25

FIGURE 22, Continued: LWRP PROPOSED PROJECTS LIST

RIVER FOCUS AREA						
PROJECT NUMBER AND NAME (✸ = high priority)	SUB-ZONE	PROJECT DESCRIPTION	Type of Project	PROJECT TIMEFRAME		Applicable LWRP Policy Numbers
				Proposed	Future	
✸ 33. Genesee Riverway Trail Completion through Center City	6b	• Complete engineering and design phases to provide continuous connectivity from Court St to Pont de Rennes, both sides of the river, to include and link riverfront projects • Identify design solution for providing pedestrian access between downtown and High Falls	IT / IR			1, 19, 20, 21, 25
✸ 34. Rochester Heritage Trail Phase II	6b	• Complete improvements to the Heritage Trail • Design of media, events, and programming	IT			1, 19, 23, 25
✸ 35. Riverside Convention Center Expansion and Terrace Improvements	6b	• Expand and enhance the convention center, including a public riverfront walkway connecting Main Street and Broad Street	IT			1, 19
✸ 36. Rundel Library Terrace Improvements	6b	• Replace deteriorated riverfront terrace and subsurface supporting infrastructure • Incorporate public space amenities such as public art, fountains, playful installations, and river engagement on north, east, and south terraces • Incorporate future opportunity for subway tunnel / aqueduct access	IT / IR			1, 19, 23, 25
✸ 37. Blue Cross Arena Modernization	6b	• Various enhancements to building amenities, including stronger engagement with river and riverfront terrace	O			5, 19, 25
✸ 38. Court Street / Exchange Blvd. Private Development Site	6b	• Redevelop this site in a manner that enhances the riverfront, trail, and adjacent street vibrancy	PD			1, 19
✸ 39. Riverfront Skate Park	6c	• Design and construct a riverfront skate park • Potential location on NYSDOT land adjacent to 103 Court St	IR			1, 19, 21

FIGURE 22, Continued: LWRP PROPOSED PROJECTS LIST

CANAL FOCUS AREA						
PROJECT NUMBER AND NAME (✸ = high priority)	SUB-ZONE	PROJECT DESCRIPTION	Type of Project	PROJECT TIMEFRAME		Applicable LWRP Policy Numbers
				Proposed	Future	
✸ 40. Corn Hill to South Wedge Pedestrian Bridge	6c	• Develop a new pedestrian connection from Corn Hill to South Wedge either via a new structure or attached to I-490 bridge	IT			1, 19, 20, 21
41. South River Corridor Master Plan	6c, 7a, 7b, 8c	• Identify more detailed opportunities to connect water-oriented uses, increase recreational uses, and promote water-enhanced development. • Particular focus on Erie Harbor (Ford Street to Court Street Dam)	IR / IT			1, 2, 5, 7, 9, 11, 12, 14, 19, 21, 22, 23, 25
✸ 42. South Wedge Access Improvements	6c	• Improve connections between South Wedge neighborhood, Genesee Riverway Trail, and downtown, including access at Spectrum site and improvements to South Ave underpass	IT / IR			5, 19
43. Redevelopment of Spectrum Site	6c	• Work with private landowners to identify water-oriented redevelopment opportunities, if and when Spectrum begins to divest in portions of the site	PD			2, 5, 19
✸ 44. 151 Mt. Hope Avenue Private Development Site	6c	• Redevelop this site in a manner that enhances the Mt. Hope Ave corridor, Genesee Riverway Trail, and Genesee Gateway Park • Consider opportunities to provide river-oriented recreational activities connected to other riverfront sites	PD / IR			1, 19, 21
✸ 45. Genesee Gateway Park Improvements	6c	• Develop various water-enhanced and public access improvements on the east side of Genesee River • Should complement future development at 151 Mt. Hope Ave	IR / IT			1, 19, 21
46. West River Wall Improvements	6c	• Continued alterations to the West River Wall and riverway trail between Corn Hill and Vacuum Oil site	IE / IT			1, 11, 13, 14, 19
✸ 47. Exchange Blvd at West River Wall	6c	• Streetscape enhancements north of Ford Street, complementing riverfront development and access points	IT			5, 19
48. Implement Vacuum Oil BOA Projects (Refer to the VOBOA Revitalization Strategy and Implementation Plan)	7a	• Complete various public infrastructure, parkland and river access improvements	IT / IE / PD			1, 2, 5, 19, 20, 21, 22, 33

FIGURE 22, Continued: LWRP PROPOSED PROJECTS LIST

CANAL FOCUS AREA						
PROJECT NUMBER AND NAME (✸ = high priority)	SUB-ZONE	PROJECT DESCRIPTION	Type of Project	PROJECT TIMEFRAME		Applicable LWRP Policy Numbers
				Proposed	Future	
49. Implementation of Mt. Hope Cemetery Master Plan	9b	• Framework for long-term maintenance, preservation, and improvements to the historic cemetery	O			23, 25
50. Erie Canal Landings and Gateway	8a, b	• Develop new landings at key locations (the river/canal junction) • Trailhead access and canal landings	IR			1, 19, 21
51. Lehigh Valley Trail Extension	7b	• Work with U of R to complete connection between Lehigh Valley Trail and Genesee Riverway Trail along former rail line paralleling Intercampus Drive	IR / IT			19
52. Implementation of Genesee Valley Park West Master Plan	7a, 8c	• Framework for long-term maintenance, preservation, and improvements to the historic park	IR / IT			2, 5, 19, 21, 23, 25
✸ 53. Genesee Valley Park Bridge Improvements	8a, c	• Restore three Olmsted canal bridges and improve trail connections and access	IT			1, 19, 20, 21
54. Westside Canal Parkway and Trail	8a	• Develop a new Westside Erie Canal Parkway and Trail to improve industrial / public access and re-orient development to the canal	IT / IR			1, 19, 20, 21

FIGURE 22, Continued: LWRP PROPOSED PROJECTS LIST

CORRIDOR WIDE						
PROJECT NUMBER AND NAME (✸ = high priority)	SUB-ZONE	PROJECT DESCRIPTION	Type of Project	PROJECT TIMEFRAME		Applicable LWRP Policy Numbers
				Proposed	Future	
55. Harbor Management Plan Organizational Structure	N/A	• Port Area (See Appendix for HMP) • Remaining Harbor Areas	O			1, 2, 6, 18, 35
56. Waterfront Programming, Promotion and Marketing	N/A	• Port Area (See Appendix for HMP) • Remaining Harbor Areas • Amenities, installations, etc. that encourage more waterfront and trail usage	O			1, 2
✸ 57. Dredging	N/A	• Port Area (see Appendix for HMP) • Remaining Harbor Areas	IE			35
58. Storm Water Remediation	N/A	• Develop storm water remediation projects to reduce run-off to river • Continued development of green infrastructure	IE			33
✸ 59. Genesee Riverway Trail and Erie Canalway Trail System	N/A	• Improve and expand the existing city-wide trail system • Enhance and expand trail spurs and other neighborhood access • Develop a system-wide Master Plan to identify opportunities for filling in additional gaps and enhancing existing segments	PS / IT / IR			1, 19, 20, 21
60. Genesee River Natural Resource Planning and Projects	N/A	• Master plan for water quality and ecosystem enhancement in the river corridor and implementation of various stormwater, forest management, riparian habitat, scenic resource management and restoration projects	PS / IE			1, 11, 19, 25, 33, 37, 38, 39
61. Develop Waterfront Legislation	N/A	• Review and update Coastal Erosion Hazard Area and Map • Develop Eco-District Regulations	PS			12, 13, 14, 15
			PS			1, 2, 33

Several important or significant projects from the "Proposed Projects List" are further detailed and described in the maps and graphics below. The legend for those maps is shown below along with a legend for the project funding captions contained in the text.

LEGEND FOR PROJECT DESCRIPTION MAPS



LEGEND FOR
PROJECT FUNDING INFORMATION

CIP = Capital Improvement Program
GF = Grant Funding (State and/or Federal)
OB = City Operating Budget
PD = Private Development Funding

Lake Focus Area / Sub-Zone 3a



Project Number

#4



Project Recommendation Highlights:

(Project #4) Port of Rochester Marina Development Phase II

Lake Focus Area / Sub-Zone 3a Project Recommendation Highlights:

(Project #4) Port of Rochester Marina Development Phase II

Focus Area: Lake	Project Status: Proposed	Funding Source: CIP, GF, PD

Location: Subzone 3a - Lake Avenue at Beach Avenue (Port of Rochester Site)

Description/Components: Phase I of the Port of Rochester Public Marina and Mixed Use Development Project (Port Redevelopment Project) is essentially complete and involved creation of a marina basin and public promenade constructed in two phases; installation of broadside docking along the Terminal Dock Wall adjacent to the Port Terminal Building; construction of new or realignment of existing streets and infrastructure; enhancement of pedestrian and bicycle access with new trails and sidewalks including extension of the Genesee Riverway Trail from its terminus at Latta Road north to Ontario Beach Park; creation of two new public overlooks to the waterfront; creation of new zoning regulations for the Port of Rochester Site; and prepartions for sale/lease of city-owned land for private development.

Future public and private development of the site (Phase II and beyond) should be based on a series of development and design objectives that were proposed by city staff and then reviewed and affirmed by the residents of Charlotte and other community stakeholders at a variety of community meetings and workshops. These objectives address major LWRP goal and policy statements described in Section 3 and create a development framework within which all projects, actions and activities proposed on the site will be reviewed and evaluated through the city's LWRP consistency review legislation and procedures. The objectives address recommended uses and projects for the stie and are listed below.

(1) Maintain and enhance local use and enjoyment of the site, and connect it to Ontario Beach Park, the Genesee River and Lake Ontario:

a) relate and connect new development to existing neighborhood land uses, features and amenities
b) connect streets, neighborhoods, districts and amenities to each other and to the river and lake

c) establish and/or maintain public access to and along the waterfront
d) preserve local open space, recreational facilities and other public amenities
e) maintain significant views and vistas to and from the lake and the river and to and from the Genesee Lighthouse along streets, sidewalks and trails

(2) Develop the site in a way that maximizes city tax revenues and other important revenue streams:

a) create development parcels and a phased development approach that satisfies reasonable market demand and maximizes investment return potential while preserving a village character and scale
b) encourage the development of a small-scale, private ferry service using existing infrastructure when feasible
c) utilize existing public infrastructure where feasible
d) utilize existing public infrastructure and facilities to create revenue streams where appropriate and feasible

(3) Encourage the use and development of the site as a waterfront tourist destination through appropriate water-dependent and/or water-enhanced uses and public amenities:

a) enhance the public marina with transient slips and amenities
b) develop specialty retail or unique retail experiences in appropriate locations
c) establish a village atmosphere or design character on the site
d) create a visitors / information center and link it to the Seaway Trail
e) establish a critical mass of uses, attractions and amenities to attract visitors
f) develop and design the site as an entrance or gateway into the city / region
g) create public spaces to accommodate festivals and events that compliment the beach, park, marina and other development
h) encourage the development of a small-scale, private ferry service using existing infrastructure when feasible
I) create at least one destination attraction (recreational or entertainment oriented)
j) establish a directional signage system to guide visitors and tourists

k) develop a hotel, boatel and/or bed and breakfast facility on or near the site

(4) Improve pedestrian circulation, safety and enjoyment on the site:

a) complete a river front promenade with connections to the existing Genesee River trail
b) establish a comprehensive pedestrian / visitor signage system
c) connect streets, neighborhoods, districts, trails and amenities to each other and to the river and lake
d) create a significant pedestrian experience at the north end of Lake Avenue at the park
e) develop Lake Avenue and River Street as the major pedestrian spines of the area
f) connect the site to River Street, the Turning Basin and the parks and river gorge to the south with appropriate trail development.

(5) Create a 4-season character and functionality on the site:

a) develop a significant public space or venue that can be programmed for 4-season uses
b) create public spaces to accommodate festivals and events that compliment the beach, park and marina and other development
c) establish a year-round residential population base
d) develop an appropriate mix of recreational, entertainment and retail uses
e) create at least one destination attraction (recreational or entertainment oriented)
f) create a visitors / information center and link it to the Seaway Trail

(6) Encourage an appropriate mix of land uses, public amenities and development that facilitate the creation of a village scale and character on the site:

a) develop an appropriate mix of land and building uses (in horizontal and vertical relationships) that takes advantage of proximity to the lake, river, park and other amenities and encourages ground floor activities and relationships to the street
b) establish an appropriate village scale, massing, density and aesthetic for buildings (heights, facades, dormers, roof lines and construction materials)

c) create buildings with street level window storefronts, awnings and pedestrian- scale signs and lighting
d) establish a consistent public streetscape design theme with pedestrian-scale details
e) develop a comprehensive signage system (directional and historic/interpretive)
f) create a unique pedestrian experience along Lake Avenue and River Street
g) establish a year-round, residential population base on the site

(7) Develop alternative means of transportation to, from and through the site and the broader Charlotte neighborhood:

a) encourage the establishment of a multi-modal terminal (ferry, bus, car rental, taxi, bike, shuttle) on or near the site
b) develop a system of off-site, remote parking lots for major events
c) develop a shuttle system to move visitors from remote lots to the site
d) establish a village people mover (i.e., jitney, carriage rides, water taxi) to move people to/from attractions and parking
e) investigate acquisition of the CSX right-of-way (if feasible) for use as access to remote lots, additional parking and/or other means of internal circulation and vehicular/pedestrian movement
f) develop walking trails and bike paths to and through the site

(8) Protect/enhance waterfront recreational, historic and cultural resources on or near the site:

a) preserve and enhance the Genesee Charlotte Lighthouse and connect it, physically and visually, with surrounding development and amenities
b) preserve and enhance the Robach Community Center, Dentzel Carousel, and Genesee River Pier and riverwalk
c) establish additional attractions / amenities within Ontario Beach Park and the beach itself to encourage and promote public use and enjoyment in accordance with appropriate plans and studies

(9) Preserve and enhance business activity on the site and in the broader Charlotte neighborhood:

a) preserve and enhance the existing commercial corridor along Lake Avenue as the Charlotte Harbortown Village Main Street

b) create new infill mixed-use development along the east side of Lake Avenue, on the site
c) develop new commercial/retail opportunities on the site that complement existing commercial development along Lake Avenue
d) develop new mixed use development along River Street that creates an exciting new waterfront ambience
e) develop street intersections within the site that include ground floor retail/commercial uses and facilitate pedestrian activity
f) develop specialty retail or unique retail experiences in appropriate locations

(10) Utilize the waterfront portion of the site for water-dependent and/or water-enhanced uses:

a) develop a river front trail system connecting the site with River Street, the Turning Basin and the parks and river gorge to the south
b) complete a river front promenade and connect it to other waterfront trail systems
c) encourage the development of a waterfront resource center or similar facility along the river
d) develop other public boat launches at appropriate locations along the river and near the site that allow access for trailered and car-top boats

(11) Develop the site as a water gateway into Rochester, Monroe County and the Genesee/Finger Lakes Region:

a) establish a multi-modal terminal (ferry, bus, car rental, taxi, bike, shuttle)
b) establish a directional signage system to guide visitors and tourists
c) establish a village people mover (i.e., jitney, carriage rides, water taxi) to move people to/from attractions and parking
d) develop a public marina with transient slips and amenities
e) encourage the development of a small-scale, private ferry service using existing infrastructure when feasible
f) develop public boat launches at appropriate locations along the river and near the site that allow access for trailered and car-top boats
g) develop a hotel, boatel and/or bed and breakfast facility on or near the site

(12) Develop the site in a way that minimizes negative environmental and neighborhood impacts, adequately addresses housing, commercial and boating market demand issues and does not create additional significant parking, access or circulation problems:

a) locate site development in areas that can accommodate that development to minimize environmental impacts, preserve open space, public access and amenities and maintain significant views to and from the lake and river
b) develop an appropriate mix of transportation options to, within and through the site
c) maintain public access to and along the waterfront and connect new development and the surrounding neighborhood to the water as much as possible
d) create development parcels and a phased development approach that satisfies market demand and maximizes investment return potential
e) balance parking demand needs with protection of environmentally sensitive areas and concerns for site walkability and safe pedestrian movement
f) preserve local open space, recreational facilities and other public amenities

(13) Improve water quality at Ontario Beach Park in order to enhance the development capacity and viability of the site:

a) continue to monitor, research and document the specific causes of and factors influencing the water quality problems at Ontario Beach
b) maintain an appropriate mitigation system to improve beach water quality and enhance public access to the water for swimming based on Army Corps of Engineers recommendations

(14) Preserve and enhance significant views and vistas within and through the site:

a) locate buildings and structures on the site in a manner that preserves, protects and enhances existing significant views, vistas or panoramas of the Genesee River, Ontario Beach Park and the Genesee Lighthouse
b) create view sheds from Lake Avenue to the river along streets, trails or public open spaces

(15) Maintain and enhance public safety throughout the site by providing adequate security amenities or features and by designing trails, open spaces, public and private development, parking areas and marina dock spaces to include adequate lighting and identifiable defensible space elements.

(16) Enhance the public marina on the site in a way that creates appropriate development parcels surrounding the basin and leverages private development interest in the site:

a) enhance the public walkway and public access around the basin as well as open spaces or public space features and amenities
b) develop a marina focal point or icon to draw attention to the site and serve as a public marker for the marina, and as a gateway for the Charlotte community and the City of Rochester itself.
c) develop a river front docking area that encourages and promotes cruise ship and charter fishing activity
d) provide appropriate marina amenities and services adjacent to the basin
e) encourage the development of a small scale private ferry service (without vehicular ferry service) if market demand exists and utilize the existing terminal and dock space along the pier or within the new basin to accommodate this activity

(17) Encourage the development of a small-scale, private ferry service on the site (without vehicular service), utilizing a portion of the existing terminal building, parking and queuing areas and other public infrastructure. If a ferry service is not developed, encourage appropriate alternatives for the re-use of the ferry terminal building such as an inter-modal terminal or visitor's center.

(18) Encourage a higher and better use of land side development parcels and opportunities on the site by pursuing the relocation of the Monroe County Parks Maintenance Facility off the site, to a building and parcel of land appropriate for such use, that minimizes adverse impacts and is located in an area conducive to the efficient conduct of the activities and functions associated with that facility.

(19) Encourage a higher and better use of land side development parcels and opportunities on the site by pursuing the reconfiguration of all or a portion of the City Boat Launch Facility (4 ramps) in its approximate existing location or by relocating the facility off the site in a manner and

location consistent with launch ramp demand, appropriate design and engineering considerations and minimal adverse environmental and traffic impacts.

(20) Pursue development of a Natural Resource Center and/or permanent Great Lakes Research Facility on the site, either within a portion of the existing terminal building or in a stand-alone facility, adjacent to the Genesee River and/or public marina.

(21) Investigate the acquisition and development of the CSX right-of-way for potential parking, circulation and access if that land becomes available and that option is determined to be feasible.

(22) Develop remote parking areas and shuttle systems to satisfy long-term peak demand during major events, festivals or other activities on the site.

(23) Preserve and protect Ontario Beach Park and all existing remaining designated parkland areas (including associated parking) and replace parkland lost to development through required New York State parkland alienation procedures.

(24) Develop the site as a mixed-use, waterfront village community that includes appropriate public amenities and attractions and a strong residential component built around the public marina facility.

(25) Preserve and enhance existing viable businesses and development in the area immediately to the west of the site, fronting along Lake Avenue, in a way that leverages further private development of the site and enhances the overall Main Street character of Lake Avenue.

(26) Create an urban design environment or character within the site that:

a) relates building first floors to streets with high levels of transparency, prominent and clearly identifiable entrances and appropriate design details
b) establishes a regular rhythm of windows and bays over building facades
c) terminates the tops of buildings with a combination of recessed wall planes, cornices, roof forms and other architectural details
d) locates parking to the rear of buildings and at the center of blocks
e) maintains waterfront views and vistas down side streets to the river and north on Lake Avenue to the lake

f) incorporates building architectural styles or details that reflect the area's waterfront history and that complement the lighthouse, bath house, carousel and other historic design details from Ontario Beach Park

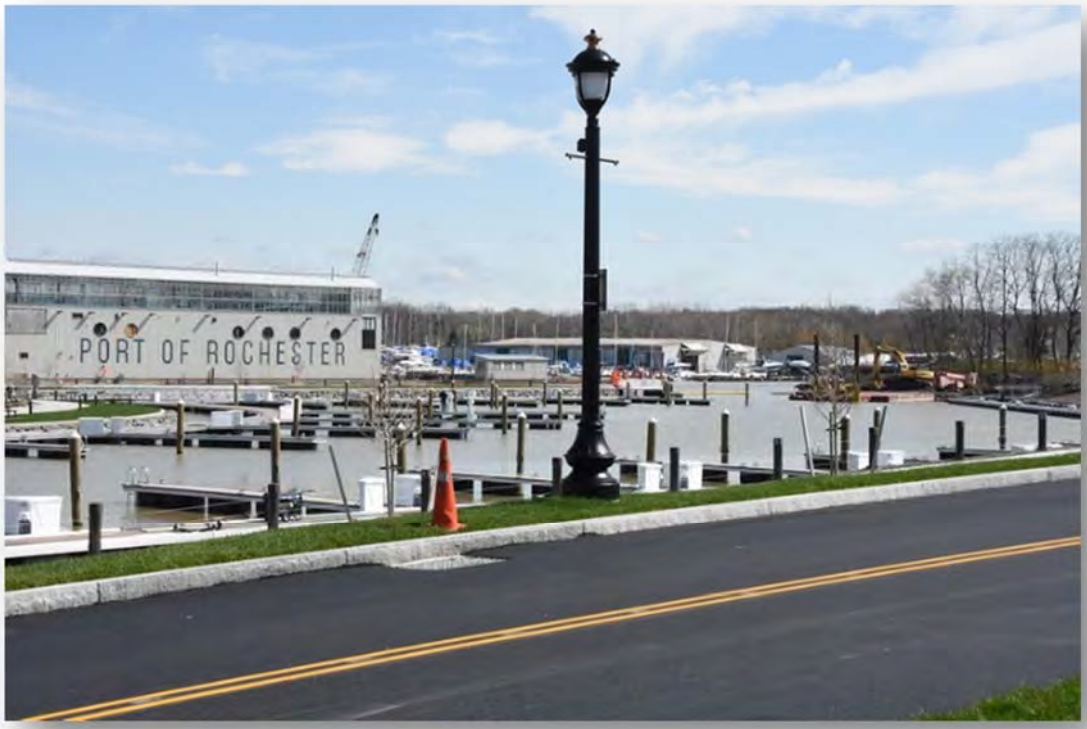
g) incorporates appropriate design elements that reflect an historic amusement park / Ontario Beach Park / maritime theme and identifies a specific waterfront design icon that can be used and repeated in public spaces and featured in building architectural details and styles

h) enhances pedestrian movement to and from the lake and the river through wide sidewalks, pedestrian scale street furniture, lighting and signage, prominent landscaping and street trees and other design elements

I) develops public pocket parks, open spaces and landscaped areas throughout the site to maintain a park like ambience and provide for public functions/activities within development

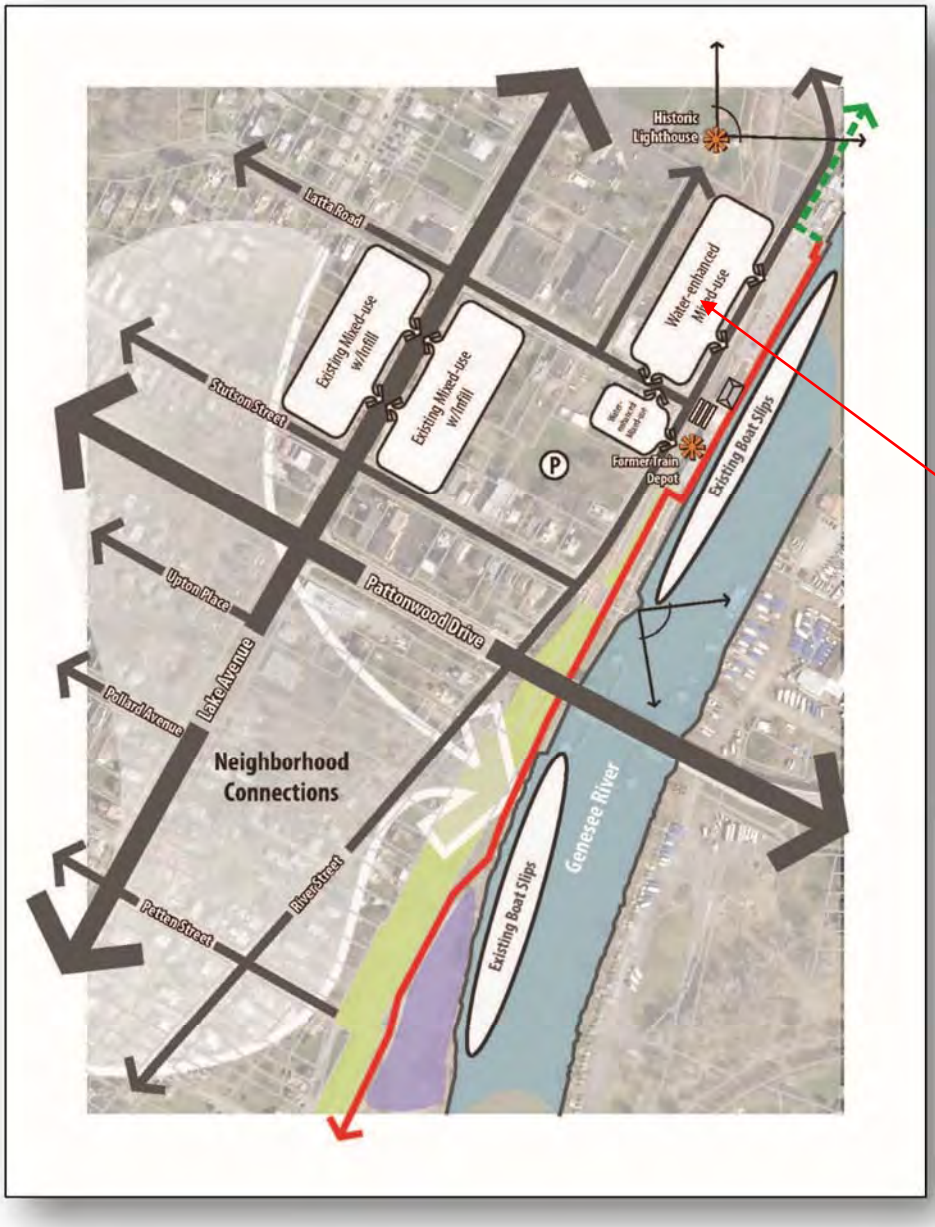
j) utilizes specific design elements such as landscaping, paving materials, signage and lighting to create gateway experiences for pedestrians, motorists and boaters at major water and land-side entryways into the site

Phase II of the planned public improvements includes expansion of the marina, and potential relocation of the public boat launch and the Ontario Beach Park labor operations center. The City's investment in Phase II will be predicated upon the pace of overall private investment, future market demand for the parcels made available for development and demonstrated interest within the development community. Although the marina expansion will require the relocation of the boat launch facility, the timing of these three components is uncertain, and it is unknown whether they would be undertaken together as a single project or as multiple projects over time.



Port of Rochester / Marina Redevelopment Project

Lake Focus Area / Sub-Zone 4a



Project Number

#9



Project Recommendation Highlights:

(Project #9) Water Enhanced Development on River Street at Latta Road

Lake Focus Area / Sub-Zone 4a Project Recommendation Highlights:

(Project #9) Water-Enhanced Redevelopment on River Street at Latta Road

Focus Area: Lake	Project Status: Future	Funding Source: CIP, GF, PD

Location: Sub-zone 4a – River Street at Latta Road (former TapeCon site)

Description/Components:

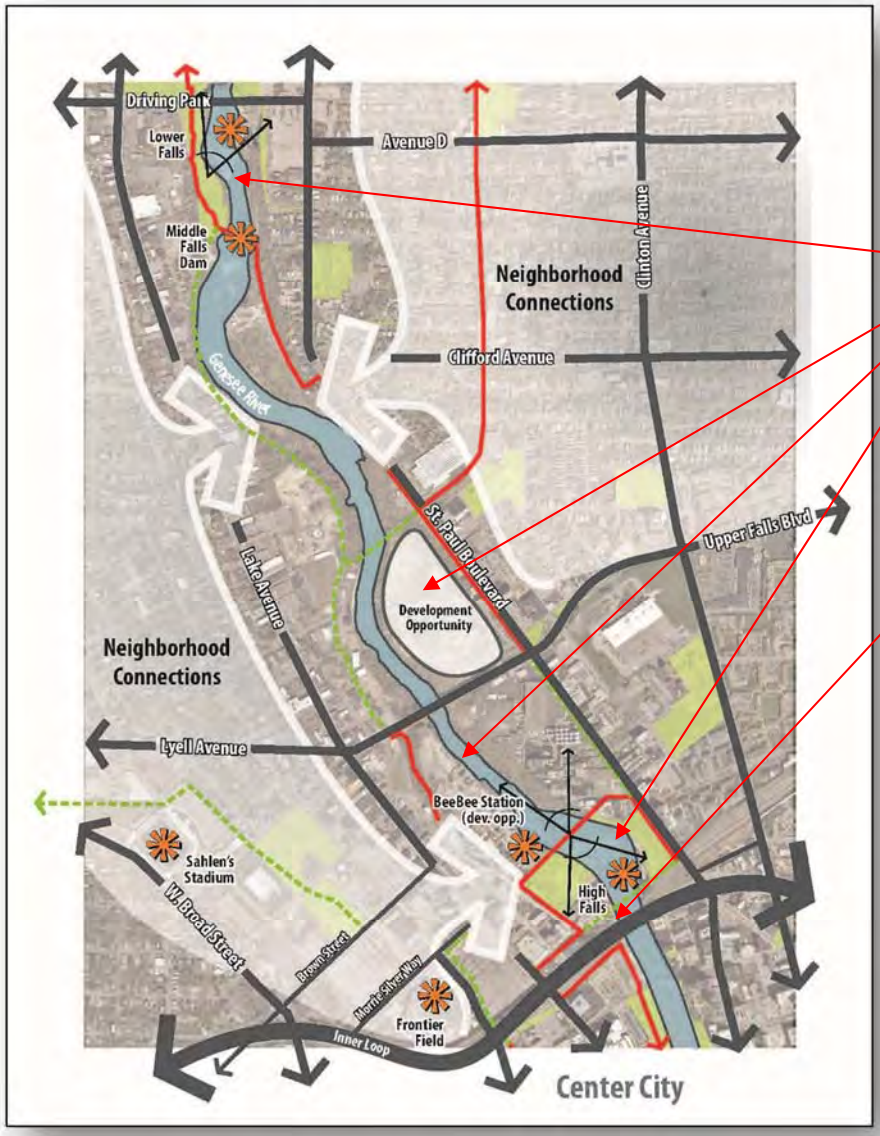
The River Street / Latta Road area, adjacent to the river in the Charlotte Neighborhood, is characterized by a mix of commercial, residential and water oriented uses and offers scenic views of the harbor area. Recent infrastructure investments by the City include construction of a waterfront promenade and installation of docking and boat slips along the west bank of the river. A scenic overlook with historical interpretive signage was built at the location of the former Stutson Street Bridge abutment, all in keeping with the "nautical" theme and existing character of the area.

Although a significant portion of the area consists of small parcels, several potential future redevelopment opportunities exist. In 2013 TapeCon Inc., a printing company located on River Street made the decision to relocate their Rochester operations and staff to a larger headquarters in Buffalo. As a result of that move, the 2.3 acre site represents a prime opportunity for water-enhanced development.

In addition to the former TapeCon site, there are a few sizeable undeveloped parcels that could potentially be used for a community parking lot to serve the various existing and potential future uses, providing needed to customers and visitors alike. Any future development shall be consistent with the objectives identified by the community through a variety of past visioning and planning efforts and include:

- Preservation of historic assets (i.e. Charlotte Genesee Lighthouse, former U.S. Customs House)
- Preserving and enhancing public access to the waterfront
- Encouraging vibrant commercial activity
- Development of neighborhood branding / identity / marketing themes
- Design standards that complement the existing character of the area
- Development of mixed-use water-oriented development including housing

River Focus Area / Sub-Zone 6a



Project Number

#20

#24



Project Recommendation Highlights:

(Project #20) Master Plan – "Genesee Falls Park" (Lower Falls to High Falls)
(Project #24) "GardenAerial", Access Improvements and Eco-District

River Focus Area / Sub-Zones 5, 6a Project Recommendation Highlights:

(Project #20) Master Plan – "Genesee Falls Park" (Lower Falls to High Falls)

Focus Area: River	Project Status: Proposed	Funding Source: OB, GF

Location: Sub-zones 5, 6a – Lower Falls to High Falls, between Lake Avenue and St. Paul Street

Description/Components:

This project involves the completion of a master plan (planning, land use and environmental design study) for a potential "Genesee Falls Park" and includes the area bounded by Lake Avenue on the west, St. Paul Street on the east, Lower Falls on the north and High Falls on the south. The area includes the Genesee River Gorge (non-urbanized section), extensive open space areas, vacant land (current and former RG&E and Bausch and Lomb properties) as well as some underutilized and/or deteriorated industrial buildings and spaces.

The master plan study would examine the potential for creating an extensive and unique natural river gorge park and environmental protection zone within the heart of the City of Rochester that would be developed as a seamless component of the Genesee River Gorge itself and connected to surrounding city neighborhoods. The potential new river park would incorporate the existing Lower Falls Park, Middle Falls Dam area, and High Falls / gorge area as well as several important existing components and new connections of the Genesee River Trail system. The potential park would be complemented by existing and future water-oriented uses.

Specifically, the planning study will look at the potential for reusing the former Bausch and Lomb and RG&E properties within the river gorge (north of the Smith Street Bridge and at the former Beebee Station) for park and open space uses to include new passive recreational facilities and a Genesee River Trail connection across the river using several existing pylons just south of the Smith Street Bridge. The master plan would also investigate preservation of important view sheds in the area as well as new physical and visual connections to the river and to existing open space and trail areas within the gorge.

PROJECT #20 - "GENESEE FALLS PARK" MASTER PLAN



Master Plan Study Area
"Genesee Falls Park"
Middle to High Falls Zone
Showing potential trail connection
across Genesee River (in yellow)



Master Plan Study Area
"Genesee Falls Park"
Potential new open space areas (a)
and trail connections across river (b)

(Project #24) "GardenAerial", Access Improvements and Eco-District

Focus Area: River	Project Status: Proposed	Funding Source: CIP, GF, OB, PD

Location: Sub-zone 6a – High Falls District between State St. and St.Paul St. and Smith Street and the Inner Loop.

Description/Components: The GardenAerial is a bold and visionary capital project that will transform the High Falls Gorge of the Genesee into a world-class showcase of sustainable and sensitive development in harmony with the natural beauty and ecology of the Gorge. Proposed development will feature urban greenways, parks, trails and public access to the river and its many amenities along with re-use and rehabilitation of the land, water and the built environment. Set to become part of New York State's first Eco-District, the GardenAerial project will provide working examples of sustainable practices, zero-net energy usages, total materials management and a respect for the natural environment.

Phase 1, under way now, will create and prepare new trails and gardens on the east and west sides of the gorge. Trail improvements on the East side (near Genesee Brewery) as well as the initial construction work on the Flour Garden (at Browns Race) were completed in 2015. Pedestrian access and structural feasibility studies were also completed to prepare assets and circulation pathways for Phase 2 of the project.

Phase 2, includes design and construction of a new pedestrian bridge across the top of High Falls and a downtown connection "system" – thus completing a 3/4 mile hub trail around the rim of the Gorge. It will also include the possible re-adaptation, re-programming, reconstruction of Hydropower Station #4, the oldest extant hydroelectric station in the City of Rochester. Phase 3 will include the creation of a stunning arboretum, floating high above the Genesee Gorge on the Pont de Rennes Bridge - an urban greenway, or new "garden in the sky".

Key components of the overall project include:

- GardenAerial trail node and loop around High Falls river gorge
- Development of a new pedestrian bridge across the Genesee River at High Falls
- Triphammer Mill site redevelopment and access improvements into gorge
- "Sunken Garden" project in former Brown's Race raceway

- Access improvements into High Falls District from downtown
- Access improvements into High Falls district from neighborhoods
- Access improvements into river gorge from upper gorge rim
- Development of new open space areas and river access within lower gorge
- Development of new passive and active recreational uses within the river gorge at High Falls
- Development of an “eco-district” to include the High Falls area
- Redevelopment and rehabilitation of the Pont de Rennes as part of the GardenAerial trail node concept
- Redevelopment of the eastern terminus of the Pont de Rennes as a new pedestrian plaza and public space venue
- Access and circulation Improvements at High Falls Park
- Potential re-creation of the High Falls sound and light show



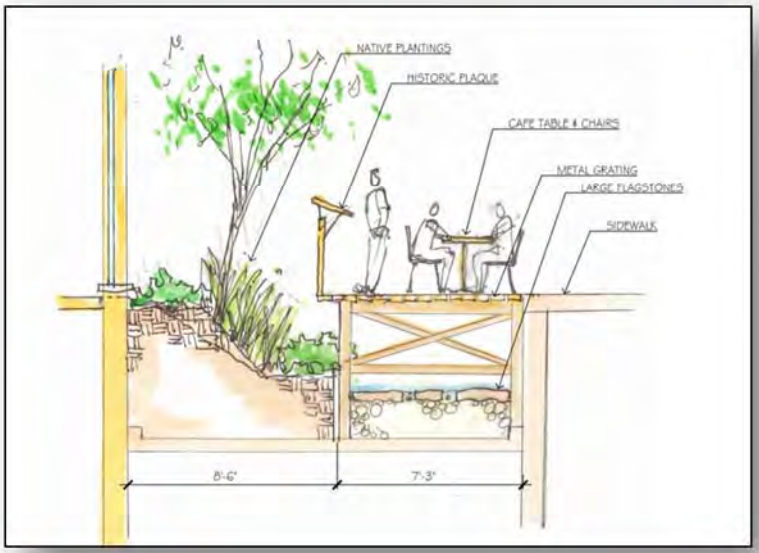
PROJECT #24 - “GARDEN AERIAL” TRAIL NODE/LOOP



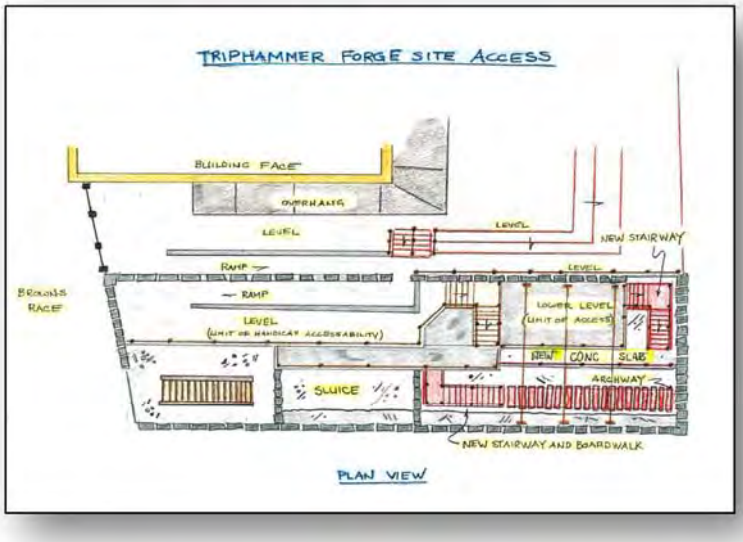
"GardenAerial" Trail Node Concept and Phasing



"GardenAerial"
Trail Node Urban Park Concept



"GardenAerial"
"Sunken Garden" / Raceway Concept



Triphammer Mill Site
Access Improvements
Schematic Site Plan



Triphammer Mill Site
Access Improvements
Into river gorge



Potential High Falls Eco-District
Planning Study Area







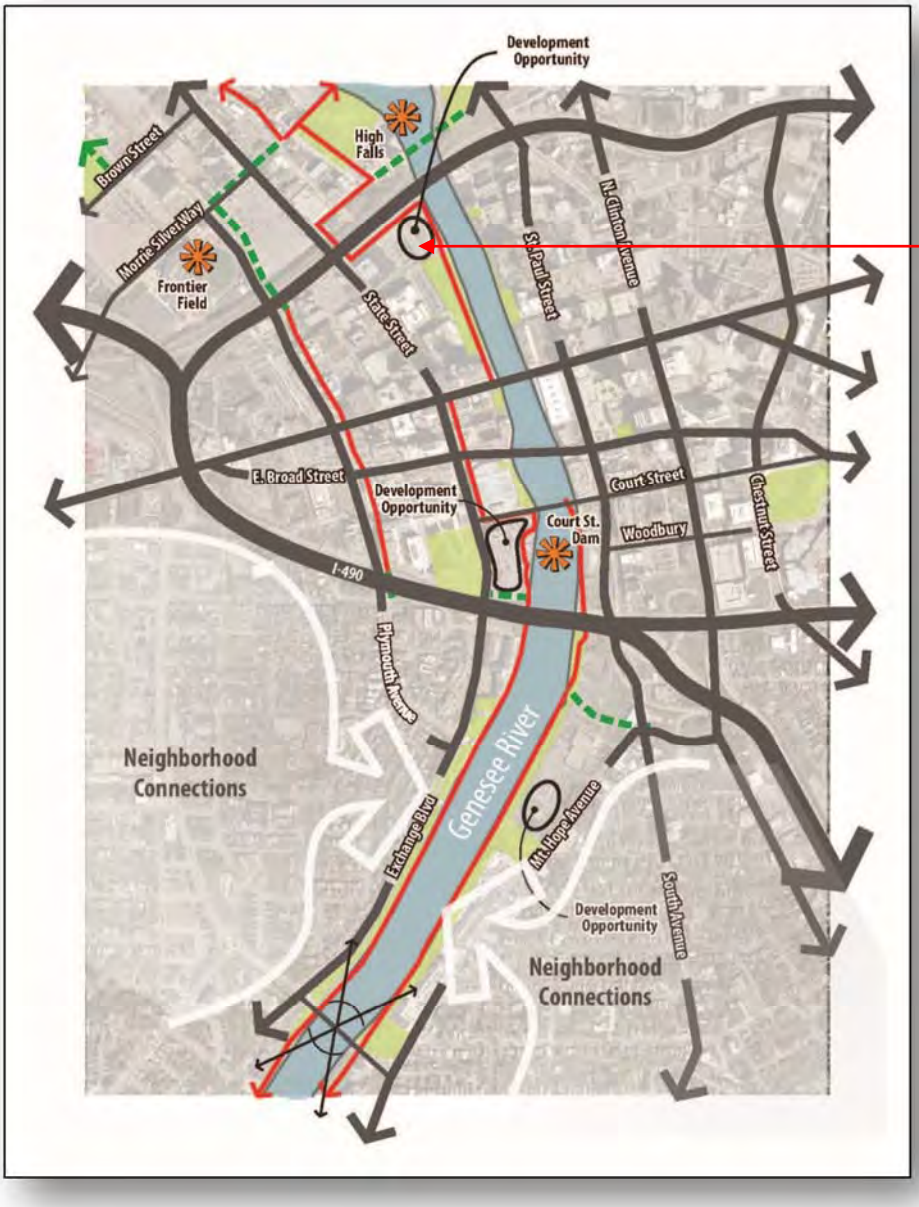
High Falls Access Improvements and Development Concepts:

A High Falls Conceptual Access Plan showing existing trail segments, proposed trail improvements and connections, key assets, resources and destinations and important nodes of activity.

B Genesee River Gorge Conceptual Access Plan showing existing trail segments, key trail / access issues and improvements, key connections and linkages, important nodes of activity and viewsheds.

C GardenAerial Conceptual Design Plan showing key project elements and components including location of new pedestrian bridge at High Falls and other access improvements.

River Focus Area / Sub-Zone 6b



Project Number

#25



Project Recommendation Highlights:

(Project #25) Front Street Development and River Promenade

River Focus Area / Sub-Zone 6b Project Recommendation Highlights:

(Project #25) RG&E Front Street Improvements / Promenade

Focus Area: River	Project Status: Proposed	Funding Source: CIP, PD

Location: Sub-zone 6b - Andrews Street west of the Genesee River and north of Charles Carroll Park

84 Andrews Street is a 1.7 acre site owned by Rochester Gas & Electric (RG&E) and is located in downtown Rochester along the west bank of the Genesee River just south of the Inner Loop. In 2000, the three story structure formerly occupied by RG&E was demolished and since then, the site has undergone extensive environmental remediation. As of 2017, the site remains undeveloped and underutilized, yet represents a significant opportunity and is proposed for future water-enhanced mixed use development.

The site, which is directly adjacent to the river has the potential to provide a critical link to the downtown portion of the Genesee Riverway Trail System, which currently runs a block west of the river through this area. A public riverside promenade will be incorporated into any potential development on the site to provide a connection between the historic High Falls District on the north to Charles Carroll Park and other points south.

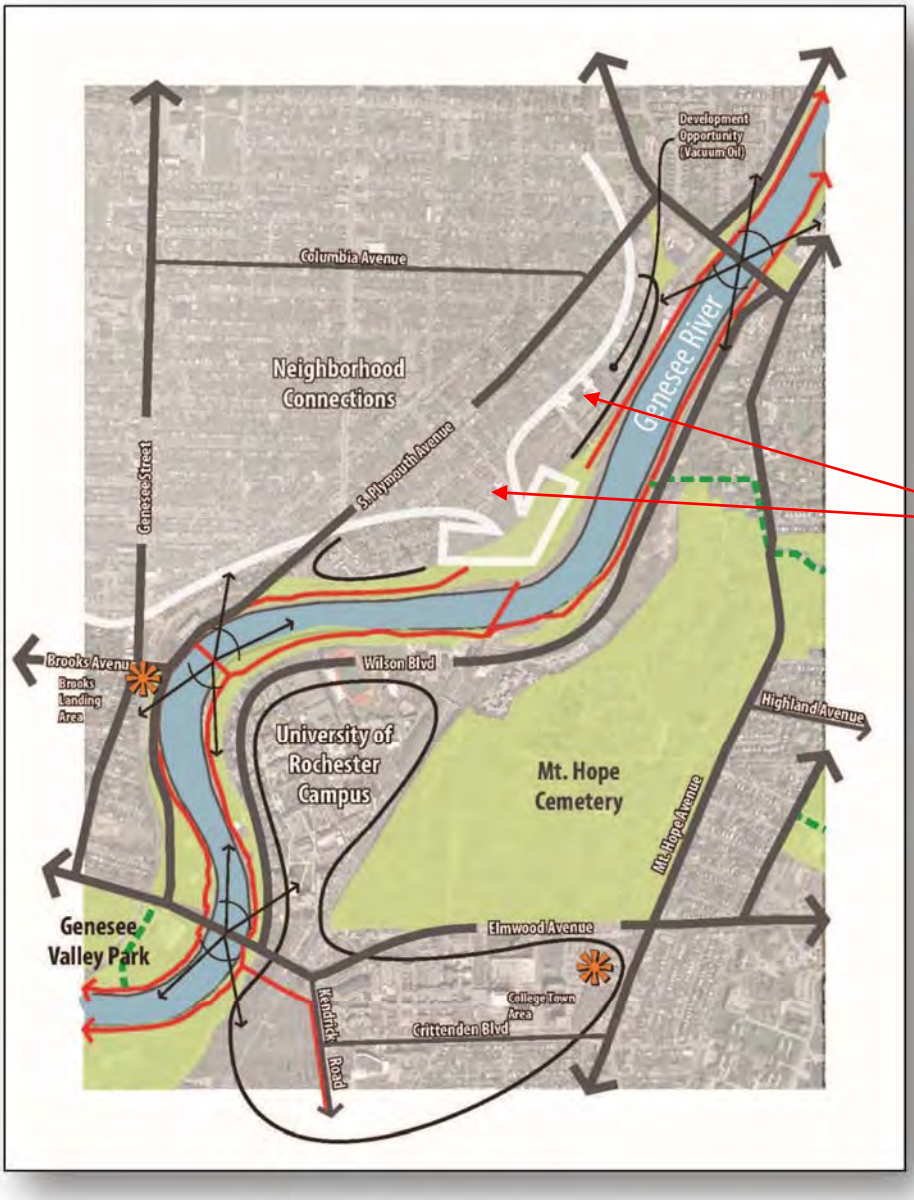
Genesee Crossroads - Charles Carroll Park, located in the heart of Center City, offers beautiful scenic views of the Genesee River and surrounding downtown skyline and is directly related to the proposed redevelopment of the Andrews Street RG&E site. The park itself is located directly above a partially below-grade parking garage (Genesee-Crossroads). The two tiered park contains a large plaza, several alcoves with seating, a large open grassy area as well as shaded tree-lined paths adjacent to the river. There is also a pedestrian bridge (Sister Cities) that connects the park to the east side of the river.

The parking garage below the park is in need of structural repairs and roof improvements which are currently under design and expected to be completed by 2018. The construction work associated with the repairs to the parking garage will directly

impact the park above and therefore provides an opportunity for upgrades and improvements to the aging park itself.

As part of the parking garage and park improvement project, the feasibility of incorporating various enhancements into the programmed space at Charles Carroll Plaza will be explored. Connections to the Andrews Street Site directly to the north could provide a continuous riverside public promenade and provide a critical link to this section of the Genesee Riverway Trail system downtown. Improved connections to State Street to the west and St. Paul Street to the east will also be developed to further enhance public awareness of and access to the park.

Canal Focus Area / Sub-Zone 7a



Project Number

#48



Project Recommendation Highlights:

(Project #48) Vacuum Oil BOA Project Implementation

Canal Focus Area / Sub-Zone 7a Project Recommendation Highlights:

(Project #48) Vacuum Oil BOA Project Implementation

Focus Area: Canal	Project Status: Proposed	Funding Source: CIP, GF, PD

Location: Sub-zone 7a – West bank of the Genesee River between Ford Street on the north and Plymouth Avenue on the west

Description/Components:

The Vacuum Oil BOA[2] is located in the southwest quadrant of the City. It is approximately 148 acres characterized by brownfield sites within the former Vacuum Oil petroleum refinery site. The primary community revitalization objectives to be achieved by this planning project include:

a) a market-based strategies to revitalize the former Vacuum Oil Works site and the residential areas within the PLEX neighborhood;
b) recommendations for regulatory updates and design standards to support community revitalization;
c) a waterfront master plan that reconnects the PLEX neighborhood with the Genesee River waterfront;
d) environmental investigations to inform future remedial activities for strategic sites;
e) preliminary design of critical vehicular and pedestrian infrastructure to aid future revitalization and investment.

The successful realization of these objectives will accomplish the following:

- increase housing diversity and supply within the BOA;
- improve the quality of design and community identity within the BOA;

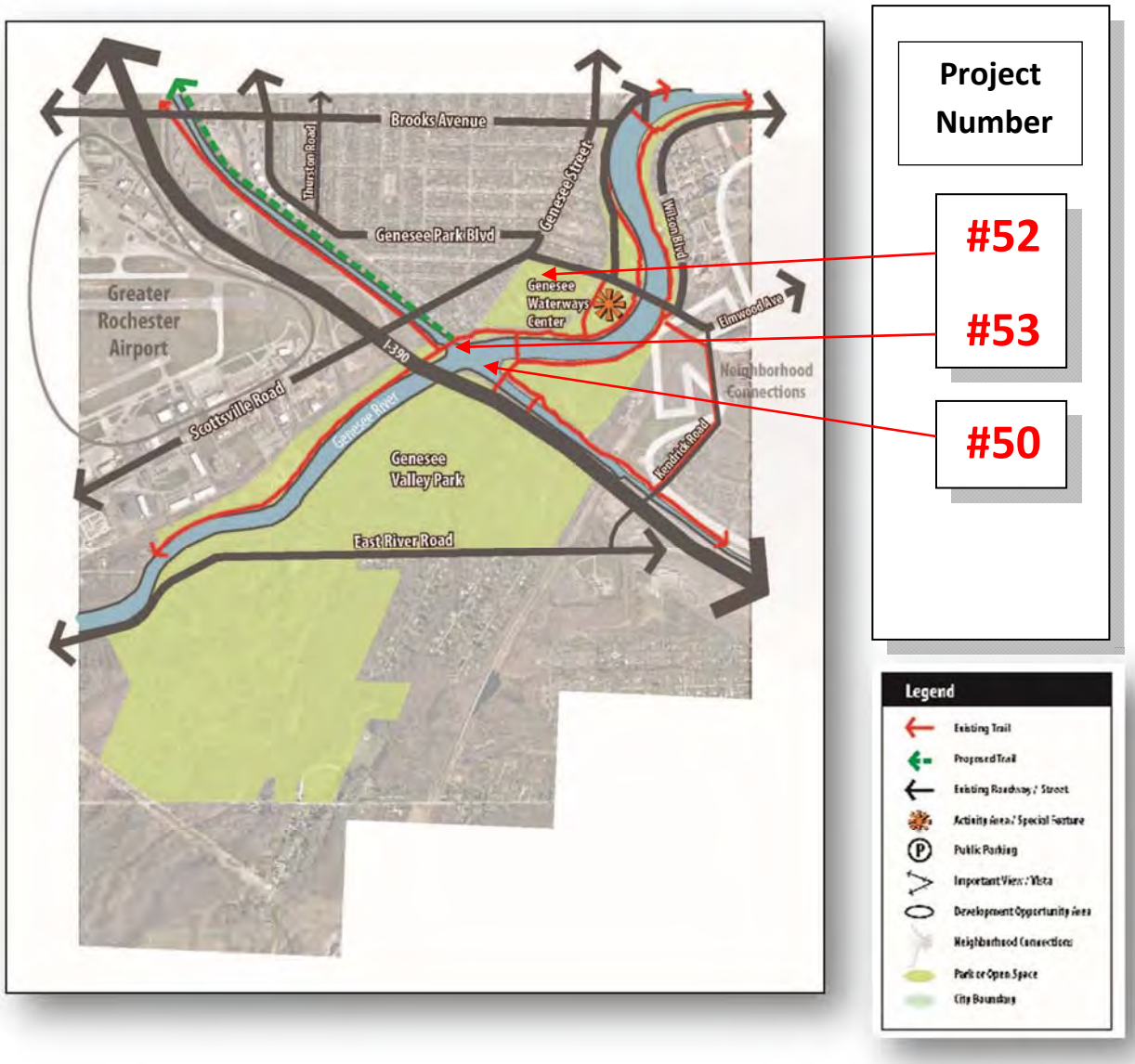
[2] In April 2015, the NYS Secretary of State officially designated the Vacuum Oil - South Genesee River Corridor Brownfield Opportunity Area (BOA). Designation is contingent on a development of a nomination process that appropriately reflects community priorities, presents an attainable and realistic plan to promote redevelopment, and is consistent with the applicable provisions of the General Municipal Law, Article 18 - C, Section 970-r. Developers, property owners and others with projects and properties located within a designated BOA will be eligible to access additional Brownfield Cleanup Program tax incentives and receive priority and preference for State grants to develop projects aimed at transforming dormant and blighted areas in their communities and putting them back into productive use.

- provide attractive, healthy and sustainable neighborhoods for children to play and families to enjoy;
- extend revitalization from the former Vacuum Oil Works site and waterfront into the residential neighborhoods, including South Plymouth Avenue; and
- begin the revitalization of the PLEX neighborhood as a unique, safe and viable waterfront community within the City of Rochester.



Vacuum Oil BOA
Conceptual Land Use and
Redevelopment Plan

Canal Focus Area / Sub-Zones 8a, 8c



Project Recommendation Highlights:

(Project #50) Erie Canal Landings and Gateway

(Project #52 / #53) Genesee Valley Park West Master Plan and Bridge / Infrastructure Improvements

Canal Focus Area / Sub-Zones 8a, 8b, 8c Project Recommendation Highlights:

(Project #50) Erie Canal Landings and Gateway

Focus Area:	Project Status:	Funding Source:
Canal	Future	CIP, GF

Location: Sub-zone 8a, 8b – Various locations at Genesee River / Erie Canal confluence

Description/Components:

Develop new canal landings for canoes, kayaks and other hand-carried watercraft to access the Erie Canal and Genesee River at the canal/river confluence within Genesee Valley Park. Develop a major new river/canal "gateway" at the confluence which identifies and locates Genesee Valley Park, Downtown Rochester, Corn Hill Landing at the Erie Harbor and the southern Genesee River. Develop new trailhead access points with pedestrian trail connections to appropriately sized parking areas, the Genesee Riverway Trail and to adjacent neighborhoods.

(Project #52 / #53) Genesee Valley Park Master Plan and Bridge / Infrastructure Improvements

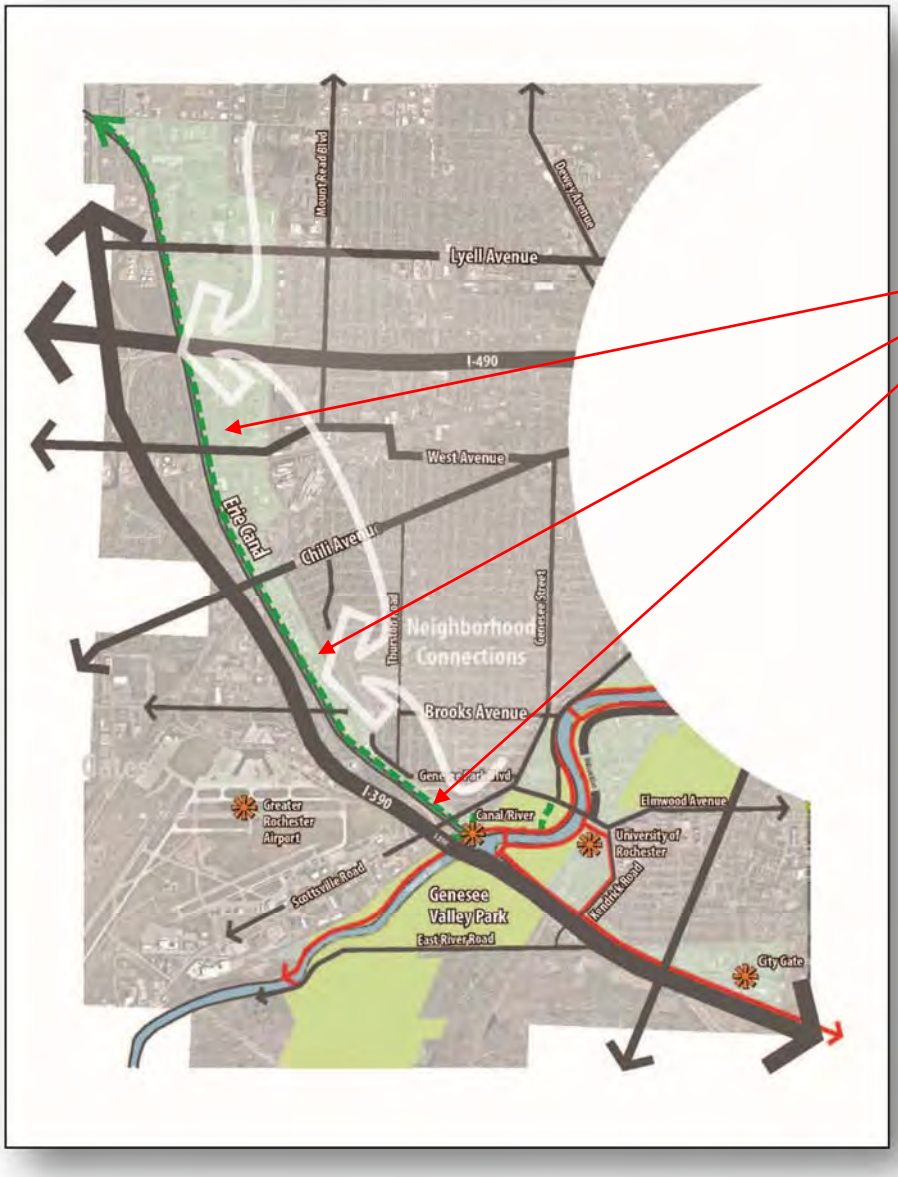
Focus Area:	Project Status:	Funding Source:
Canal	Proposed	CIP, SG, FG

Location: Sub-zone 8a, 8c – Genesee Valley Park and the Erie Canal

Description/Components:

Restore three Olmstead canal bridges within Genesee Valley Park and improve trail connections and pedestrian / bicycle access to those bridges. Incorporate the rehabilitated bridges and surrounding areas into other general infrastructure and landscaping improvements undertaken within Genesee Valley Park.

Canal Focus Area / Sub-Zone 8a



Project Number

#54



Project Recommendation Highlights:

(Project #54) Westside Canal Parkway and Trail

Canal Focus Area / Sub-Zone 8a Project Recommendation Highlights:

(Project #54) Westside Canal Parkway and Trail

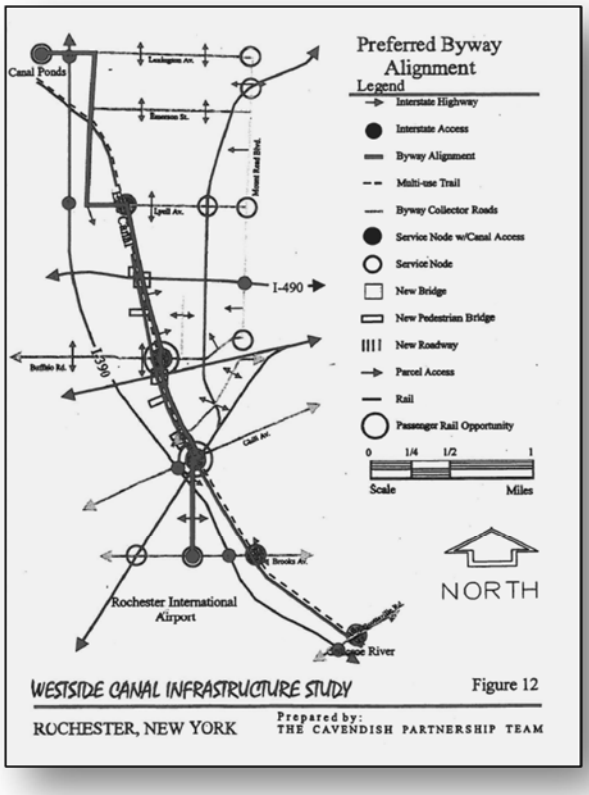
Focus Area: Canal	Project Status: Future	Funding Source: CIP, GF, PD

Location: Sub-zone 8a – Westside Erie Canal adjacent to the Town of Gates/Greece

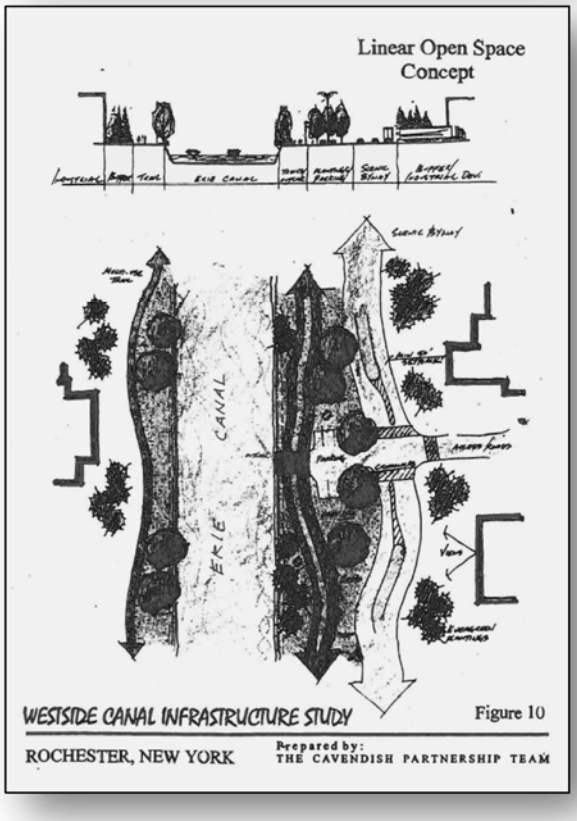
Description/Components:

The western section of the Erie Canal is adjacent to an established industrial corridor within the City of Rochester that also extends into the Towns of Chili, Gates, and Greece. This area is primarily characterized by large industrial complexes, business parks and associated industrial uses that often act as visual barriers and restrict public access to the Canal. There are also several vacant and underutilized sites in the area that provide an opportunity for future infrastructure and public access improvements adjacent to the Canal.

The objective of this project is to investigate, identify and implement a redevelopment strategy that supports existing industrial uses by improving internal circulation of the area by way of an "Industrial Parkway" paralleling the Erie Canal that would also provide public and visual access to the water. The parkway would serve dual functions to better define circulation & improve the overall image of the area using an Erie Canal theme (making it more marketable for development), while also serving as a recreation and public access corridor. It would include trailhead parking, multi-purpose trails, canal overlooks with historic interpretations and a high level of landscaping, signage, lighting and other safety improvements. The Westside Canal Parkway and Trail project will identify locations for commercial development within the industrial corridor to support existing industrial uses, create connections to the neighborhoods and stronger connections to the Canal itself.

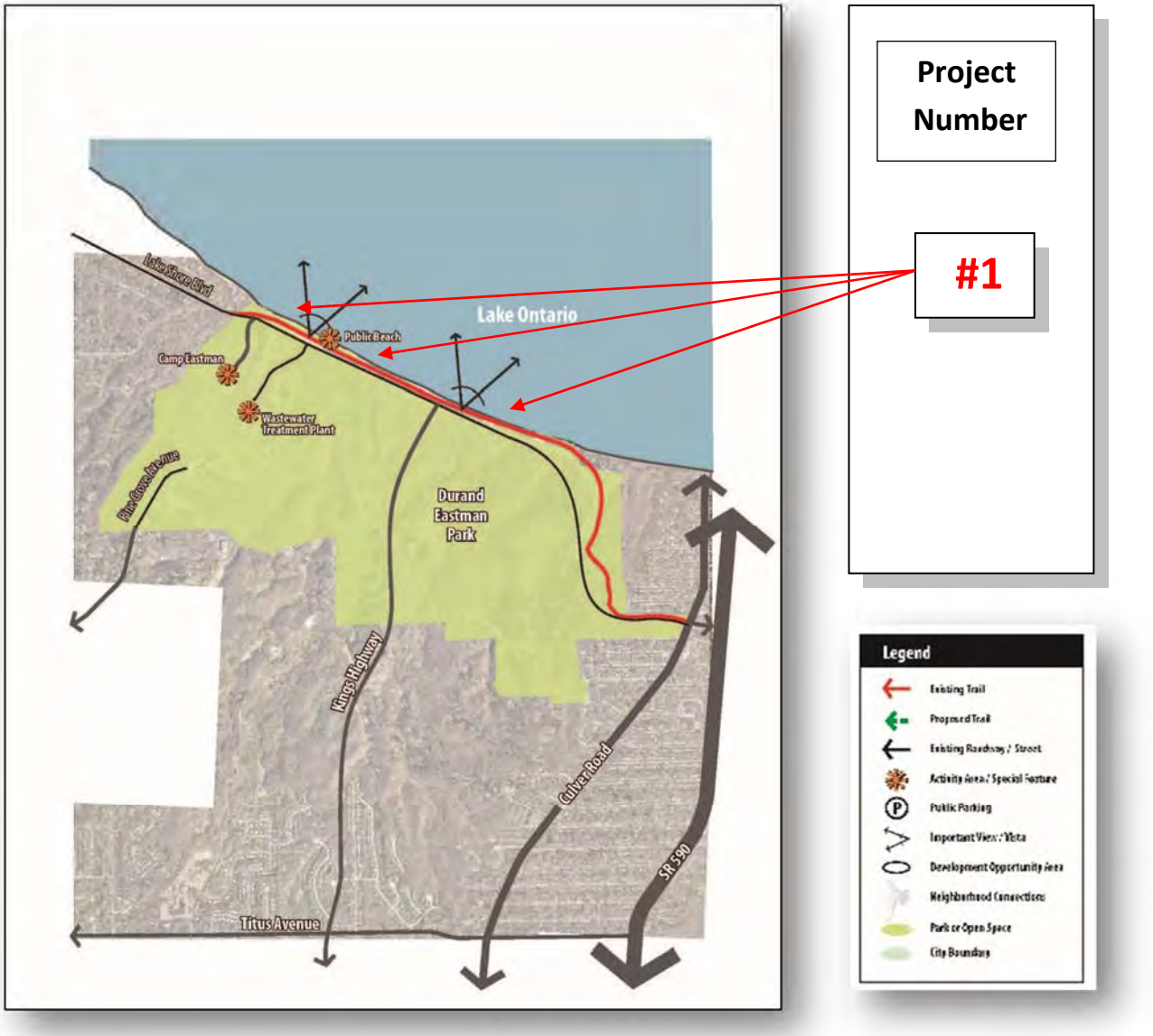


Westside Canal Parkway and Trail
Potential Byway Alignment



Westside Canal Parkway and Trail
Conceptual Linear Open Space Development

Lake Focus Area / Sub-Zones 1a, 1b



Project Recommendation Highlights:

(Project #1) Improve Durand-Eastman Beach Water Quality (and Ontario Beach)

Lake Focus Area / Sub-Zones 1a, 1b Project Recommendation Highlights:

(Project #1) Improve Durand-Eastman Beach Water Quality

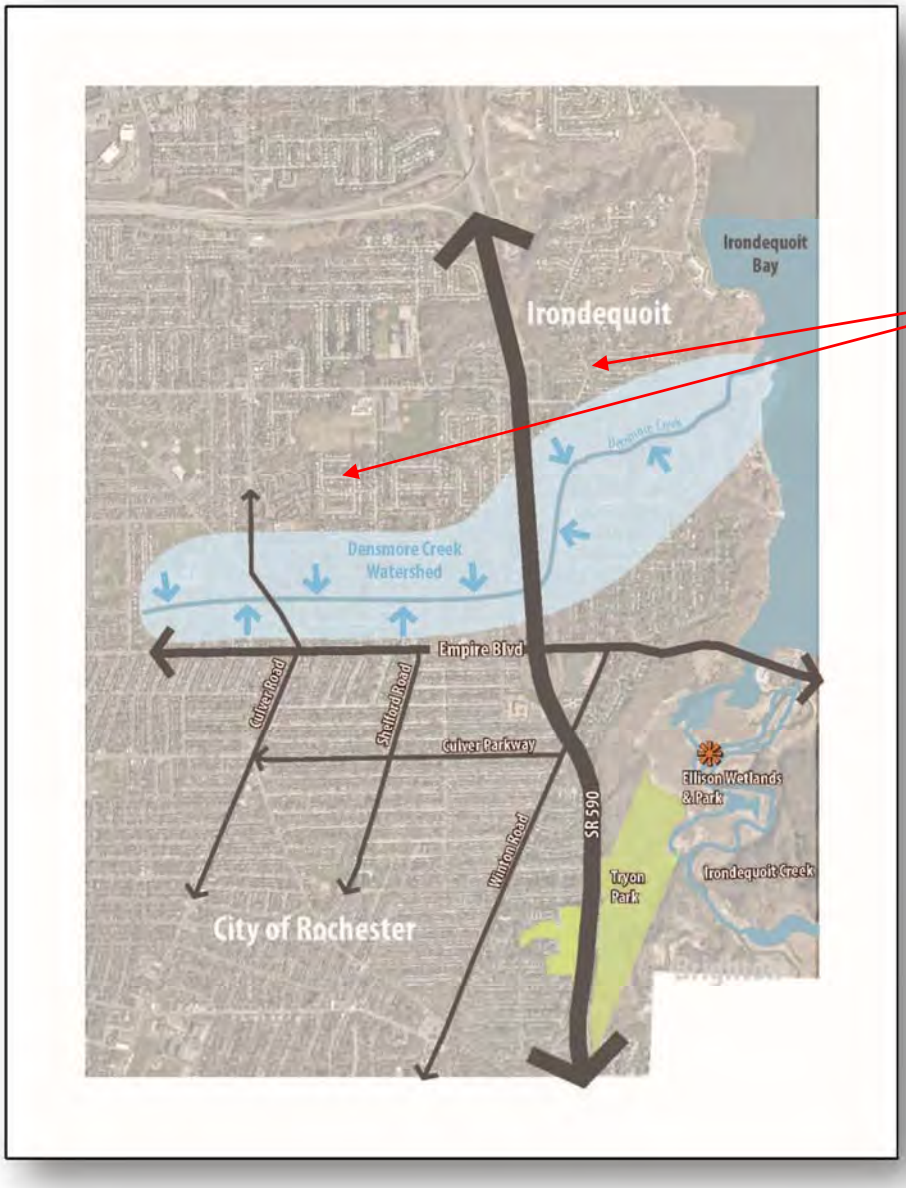
Focus Area: Lake	Project Status: Proposed	Funding Source: CIP, GF

Location: Sub-zone 1a, 1b – Lake Ontario Shoreline at Durand-Eastman Park

Description/Components:

Develop new storm water treatment technologies (including green infrastructure projects such as rain gardens, algae control "sponges", etc.) to improve the water quality of runoff from the watershed areas surrounding Durand-Eastman Park that flow into Lake Ontario. This project will improve the overall water quality of the Durand-Eastman Beach and allow the beach to remain open more frequently during summer months. It will also improve the general water quality of the various ponds and drainage areas located within Durand-Eastman Park which may help to improve local fishing conditions and enhance other important wildlife resources and habitat areas.

Lake Focus Area / Sub-Zones 1a, 10a, 10b



Project Number

#60



Project Recommendation Highlights:

(Project #60) Genesee River Natural Resource Protection Planning Study - Storm Water Remediation (Focused and Corridor-Wide)

Lake Focus Area / Sub-Zones 1a, 10a, 10b Project Recommendation Highlights:

(Project #60) Genesee River Natural Resource Protection Planning Study - Storm Water Remediation (Focused and Corridor-Wide)

Focus Area:	Project Status:	Funding Source:
Lake	Future	CIP, GF

Location: Sub-zones 1a, 10a, 10b – Various locations within the LWRP boundary as well as corridor-wide

Description/Components:

Develop a master plan, in conjunction with Monroe County and the NYSDEC , for water quality and eco-system enhancements within the Genesee River / LWRP corridor in order to improve water quality, reduce storm water runoff, protect and enhance significant environmental resources and habitat areas and promote environmentally sustainable development. Implement various storm water, forest management, riparian habitat, scenic resource management and environmental restoration projects throughout the LWRP boundary.

Target the Densmore Creek watershed for specific storm water remediation projects and environmental protection efforts in order to improve Irondequoit Bay water quality, protect and improve fishing and swimming access and wildlife habitat areas and restore other critical environmentally sensitive areas.

Corridor-Wide Project Recommendation Highlights:

(Project #59) Genesee Riverway Trail and Erie Canalway Trail System

Focus Area: Corridor-Wide	Project Status: Proposed	Funding Source: CIP, GF, OB

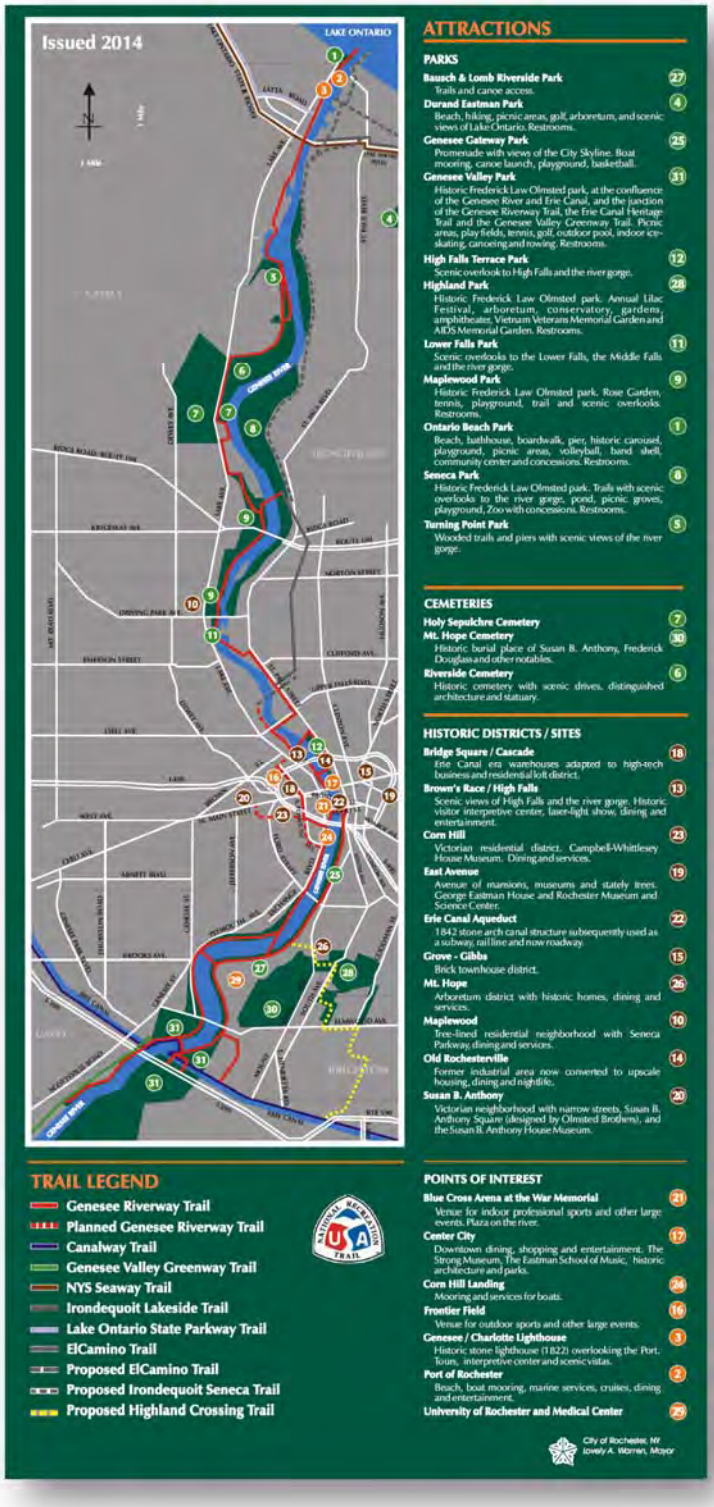
Location: Corridor-wide (projects throughout the LWRP boundary)

Description/Components:

The Genesee Riverway Trail is a multi-use trail and greenway linking the Riverway's vast array of recreational, historical, and cultural attractions, diverse neighborhoods and other trail systems including the Seaway, Erie Canalway, and Genesee Valley Greenway Trails.

The Riverway Trail is intended for walking, running, bicycling, skating, skiing and other non-motorized uses and provides access to the river from canoeing, kayaking, rafting, fishing, bird watching, etc. In some locations, the trail parallels both sides of the river, while in other sections it crosses the Genesee using the river's many bridges, including the six pedestrian only structures. With 24 miles of paved trail, the system is nearly complete. However, there are some missing segments or portions that are not directly adjacent to the river, particularly in downtown.

This project seeks to plan and implement additional trail segments and neighborhood trail connections to provide a continuous Genesee River trail system from Genesee Valley Park and the Erie Canal all the way north to Lake Ontario. A key portion of this new trail development will be a connection from High Falls south to Court Street along both sides of the river to include and link key riverfront projects and development sites (utilizing the RG&E Andrews St. Site, Charles Carroll Park, Riverside Convention Center, etc.). Another key component will be potential trail crossings of the Genesee River north and south of the Smith Street Bridge utilizing existing bridge pylons and an existing abandoned railroad bridge.



Genesee River Trail System Map showing key trail segments and alignments, key attractions along the trail, connections to the existing transportation network and relationships to major city parks and open space areas.

FIGURE 23: LWRP LAKE FOCUS AREA PROJECT RECOMMENDATIONS

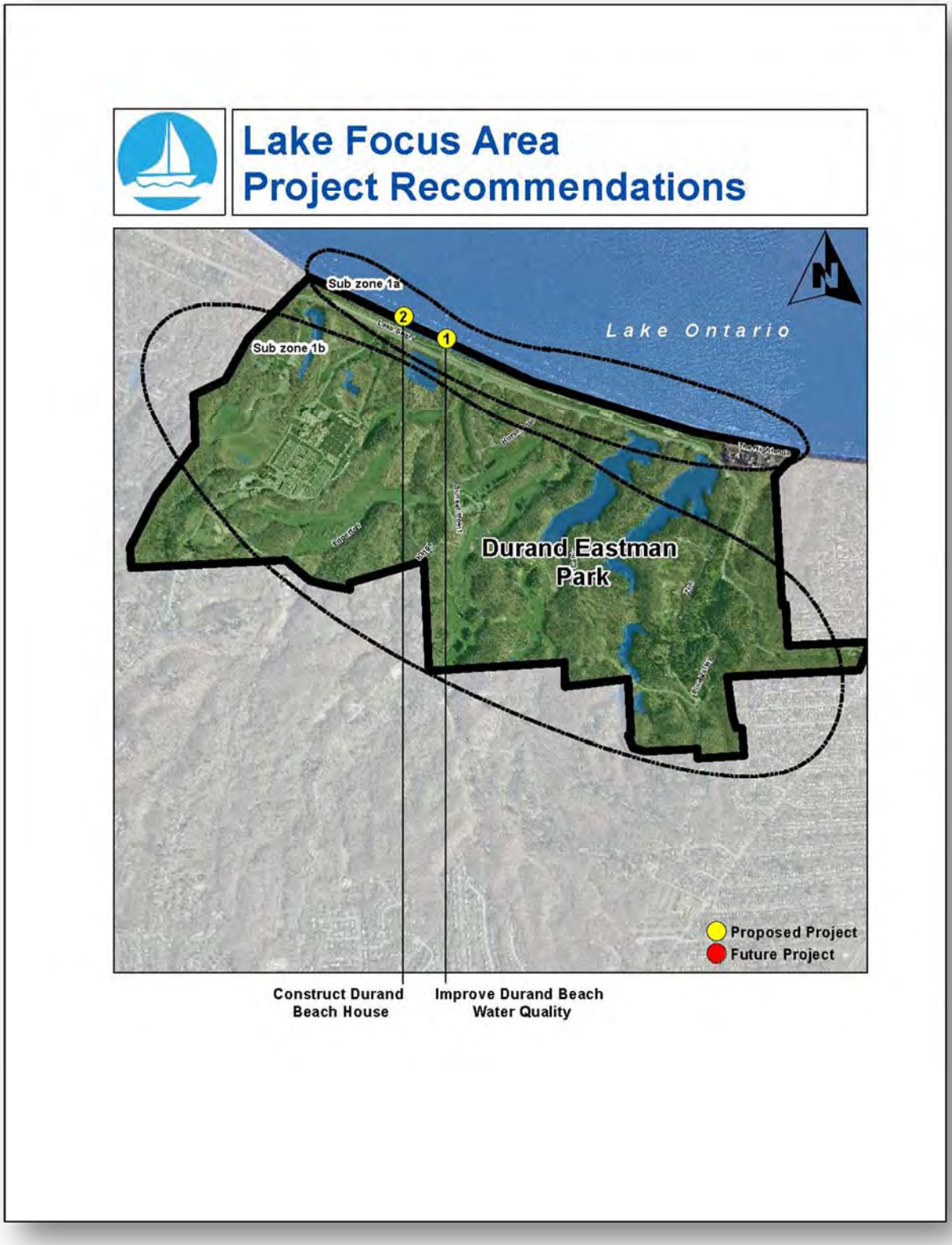


FIGURE 23, Continued: LWRP LAKE FOCUS AREA PROJECT RECOMMENDATIONS



FIGURE 24: LWRP RIVER FOCUS AREA PROJECT RECOMMENDATIONS

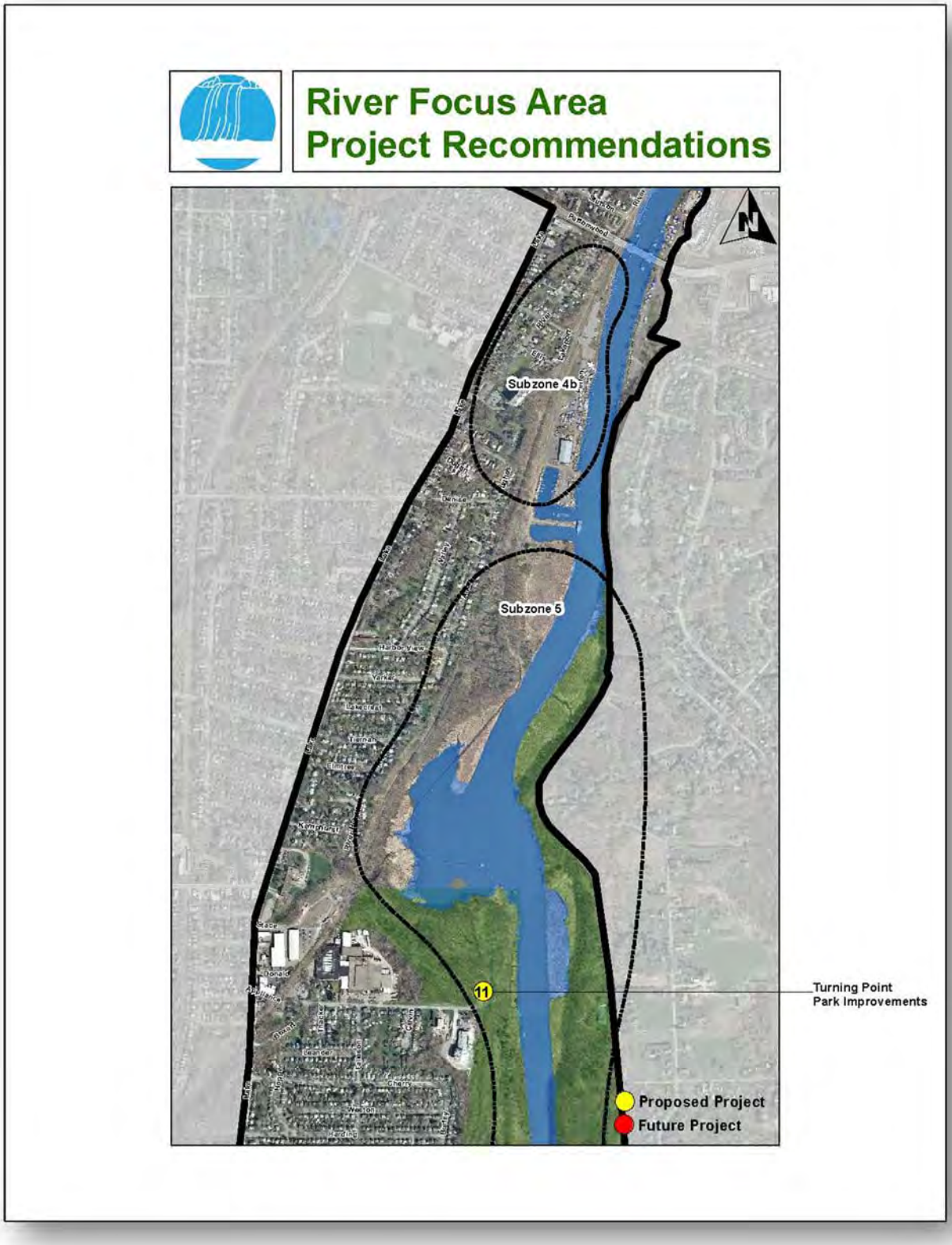


FIGURE 24, Continued: LWRP RIVER FOCUS AREA PROJECT RECOMMENDATIONS

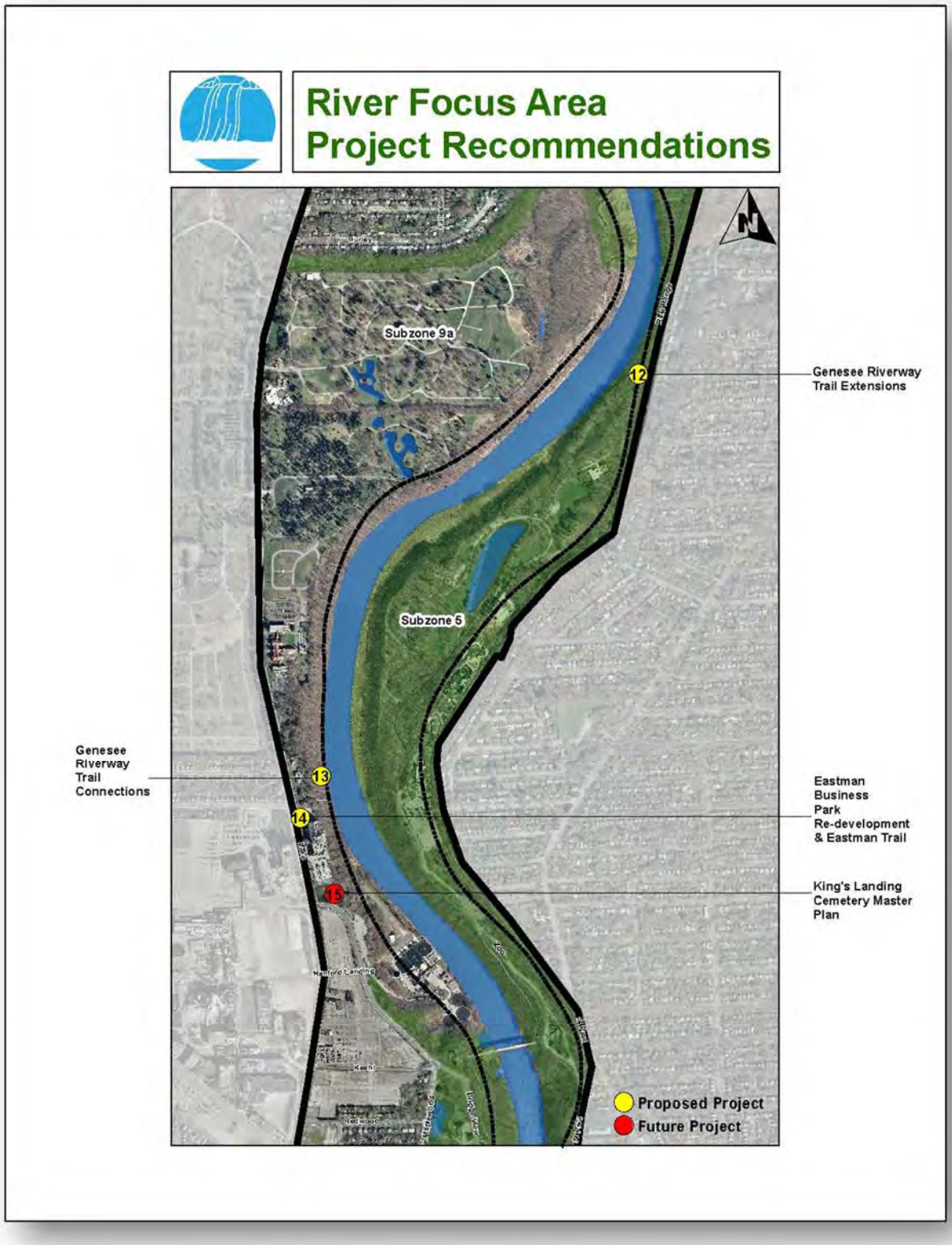


FIGURE 24, Continued: LWRP RIVER FOCUS AREA PROJECT RECOMMENDATIONS

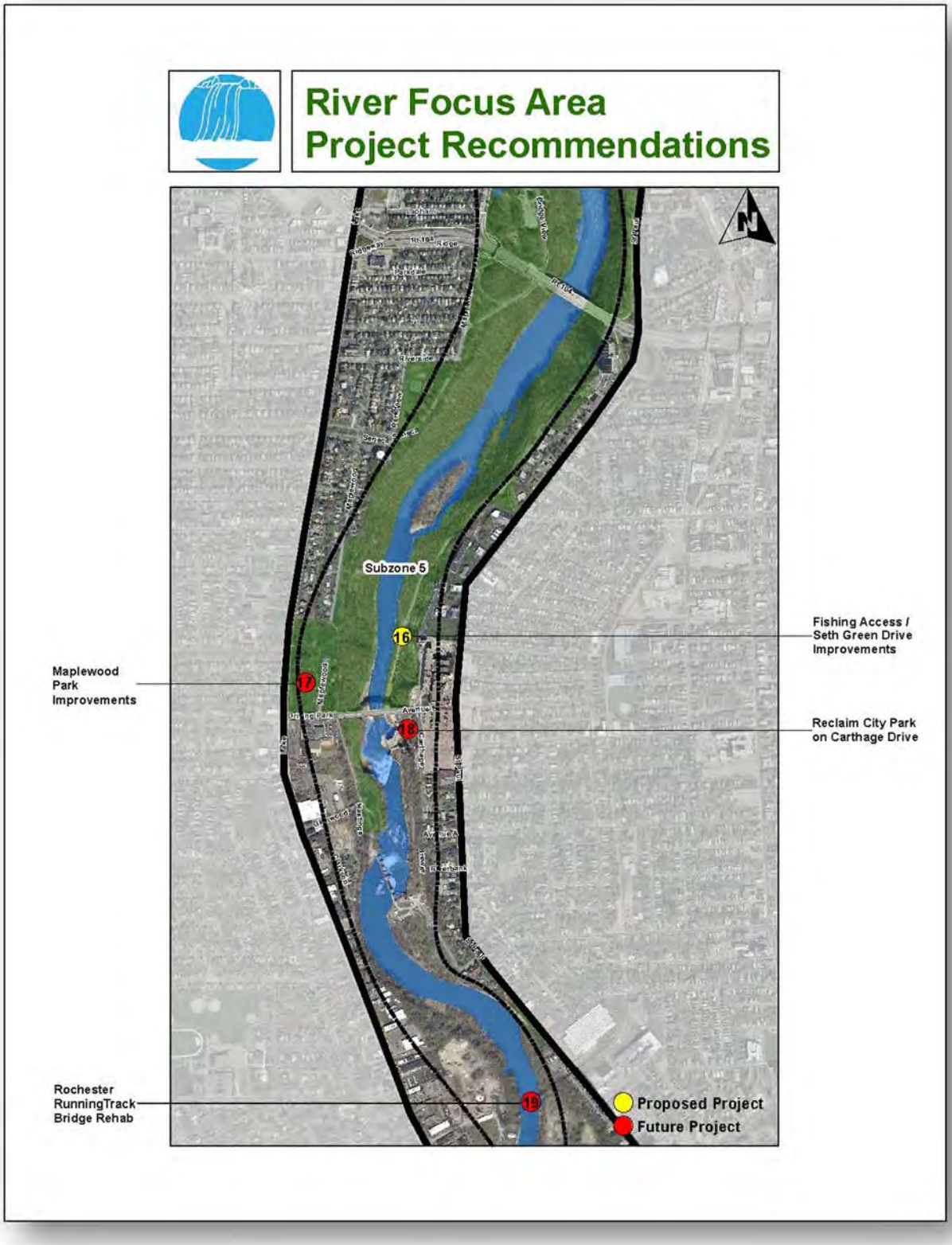


FIGURE 24, Continued: LWRP RIVER FOCUS AREA PROJECT RECOMMENDATIONS

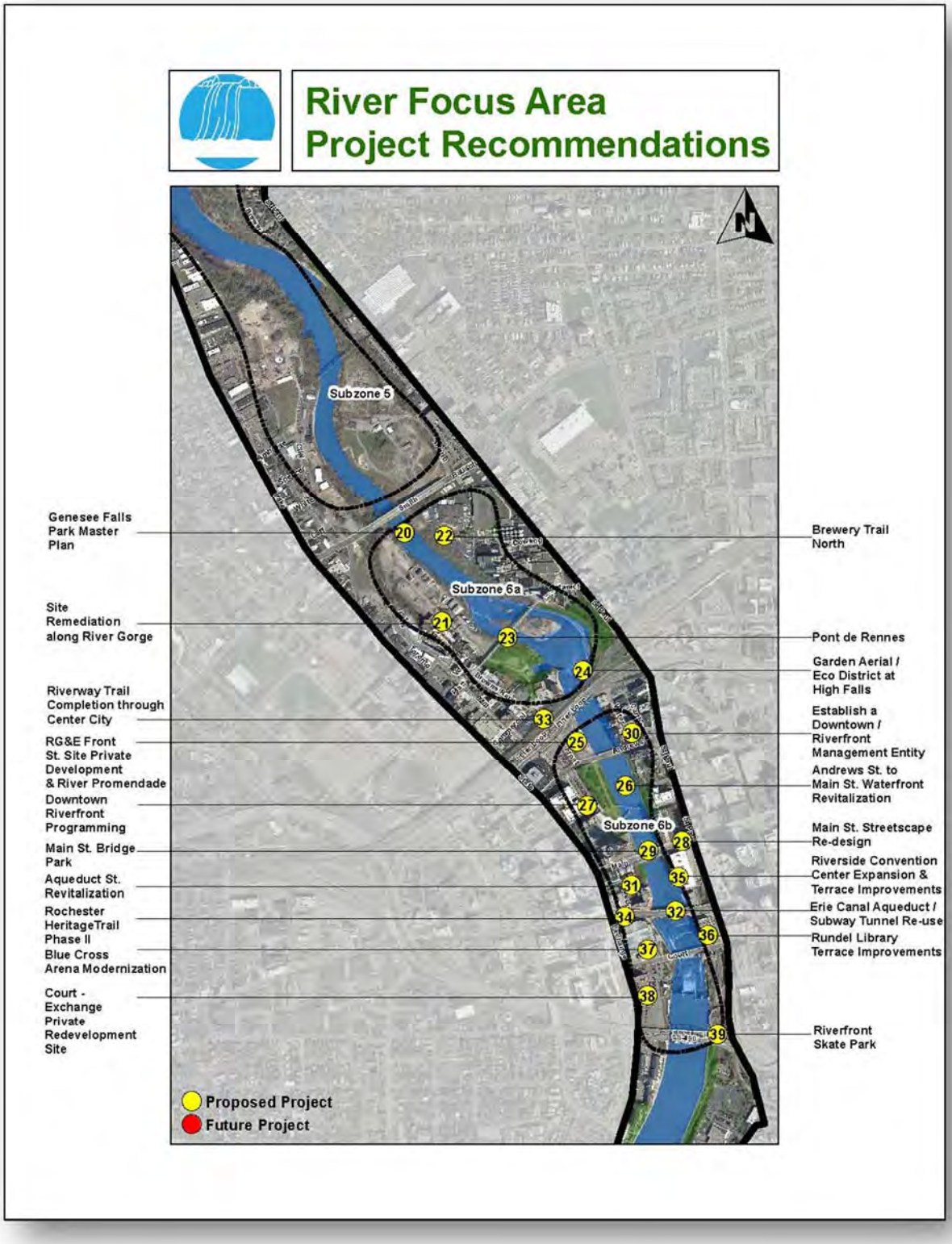


FIGURE 25: LWRP CANAL FOCUS AREA PROJECT RECOMMENDATIONS

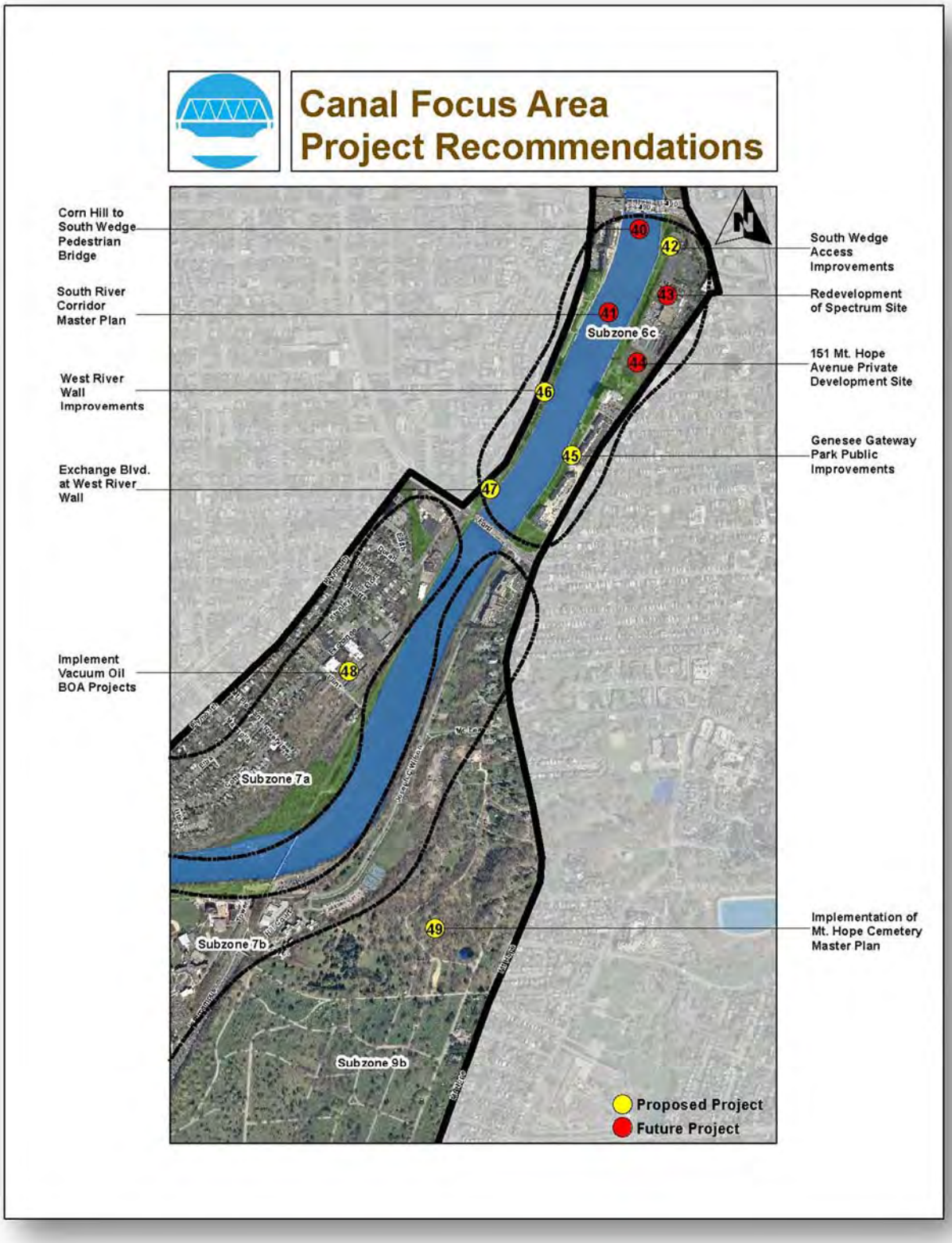


FIGURE 25, Continued: LWRP RIVER FOCUS AREA PROJECT RECOMMENDATIONS

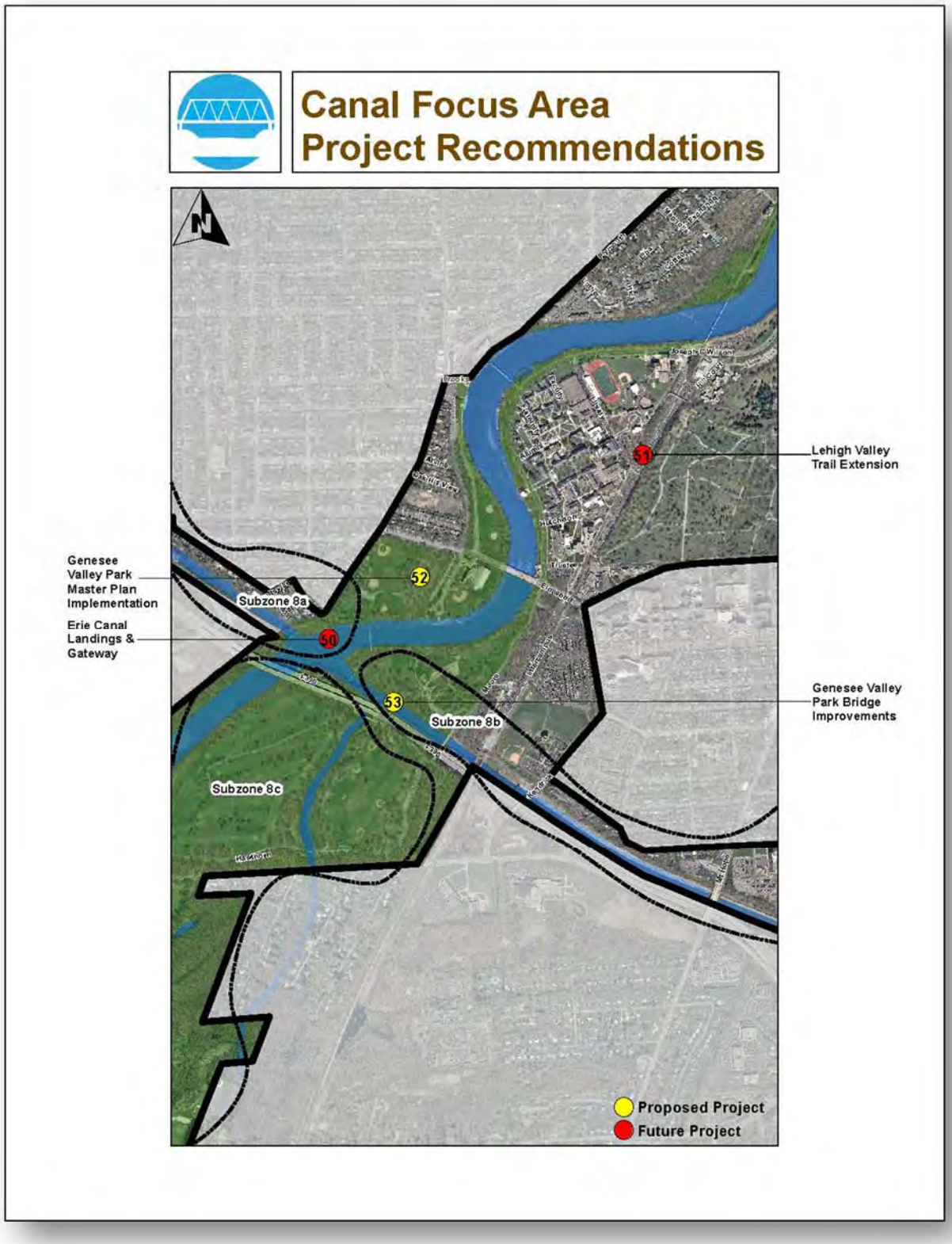
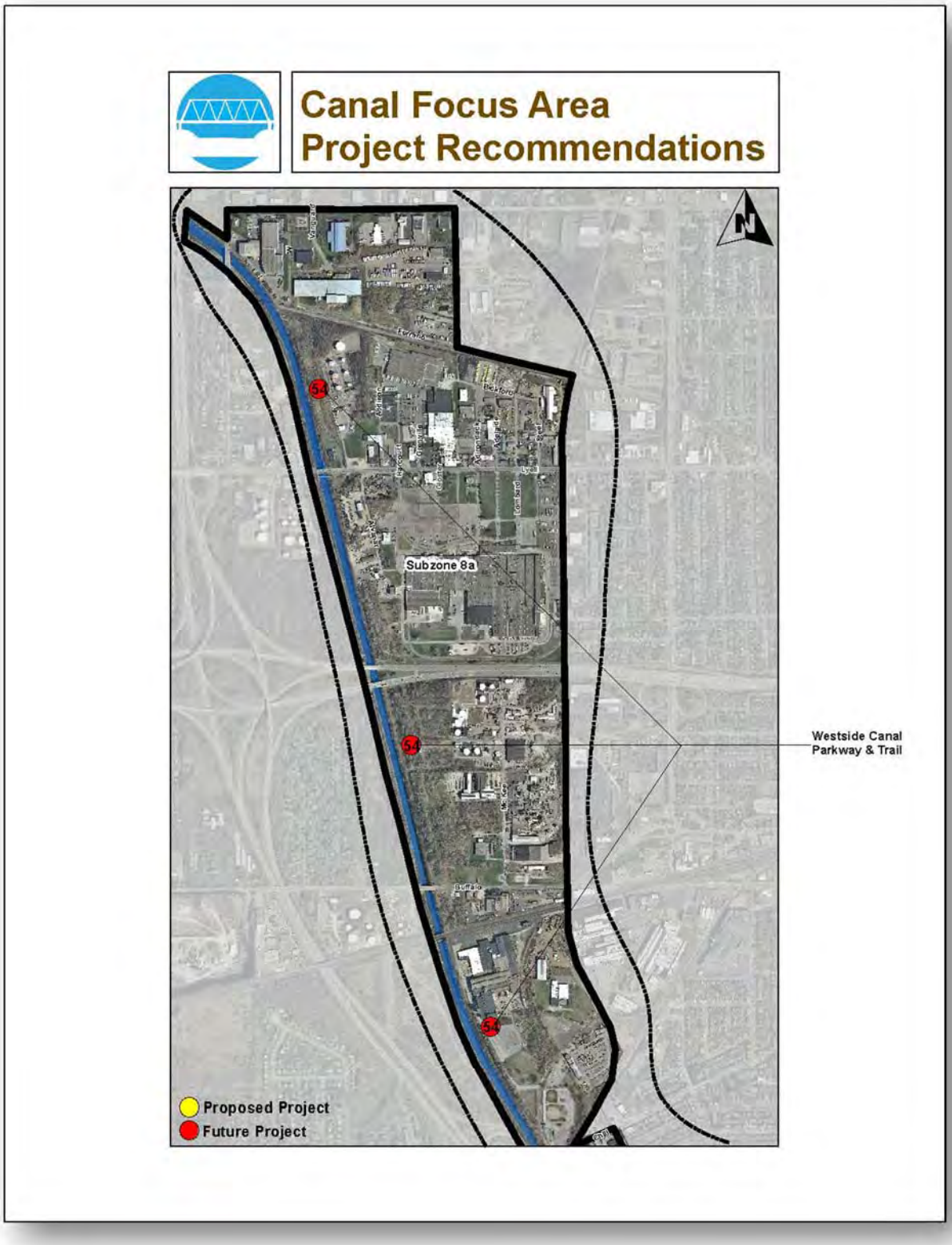


FIGURE 25, Continued: LWRP RIVER FOCUS AREA PROJECT RECOMMENDATIONS



Section 5: LWRP Implementation Techniques



A. TECHNIQUES FOR LOCAL IMPLEMENTATION

The City has identified the local techniques and actions needed to ensure implementation and to achieve the objectives embodied in the policies, uses and projects recommended in the LWRP. Such techniques and actions are grouped in this Section as follows:

- Existing Waterfront Plans, Project and Initiatives;
- Local Laws and Regulations;
- Local Management Structure;
- Financial Resources.

EXISTING WATERFRONT PLANS, PROJECTS AND INITIATIVES

The City of Rochester and other local agencies and organizations have prepared several planning documents which address issues, projects and geographic areas for the area's waterways. The objectives and strategies contained in these plans will also assist in achieving the policies and goals of Rochester's LWRP. Below is a list of these plans (a more detailed summary of these plans is contained in Section 2: Inventory and Analysis):

- *1990 Local Waterfront Revitalization Program (LWRP)*
- *South Wedge Planning Committee: South Wedge Revitalization and Northern Gateway Study*
- *City of Rochester: Trails Master Plan*
- *City of Rochester: Parks Master Plans*
- *Monroe County: Seaway Trail Tourism Development Plan*
- *New York State: Erie Canal Corridor Plan: Finger Lakes Region of the Erie Canal*
- *Monroe County: Waterfront Recreation Opportunities Study*
- *Genesee Greenway, Inc.: Genesee Greenway Project*
- *Healthy Waterways: A Health Impact Assessment of Rochester's LWRP*
- *Green Infrastructure Rapid Assessment Plan – Densmore Creek Watershed (2013)*
- *Vacuum Oil BOA Implementation Strategy*
- *LYLAKS BOA Draft Nomination Study (2014)*
- *Aqueduct Master Plan (May, 2009)*
- *Erie Harbor Park Master Plan (2010)*
- *GardenAerial Project*
- *Genesee Valley Park West Master Plan (2015)*

LOCAL LAWS AND REGULATIONS NECESSARY TO IMPLEMENT THE LWRP

Several local land use and development controls are in place in the City to guide future land use and development activities, and thus, in part implement the LWRP.

ENVIRONMENTAL REVIEW ORDINANCE (CHAPTER 48)

This chapter is enacted pursuant to Article 8 of the New York Environmental Conservation Law and 6 NYCRR Part 617, State Environmental Quality Review (SEQR) regulations. The basic purpose of this chapter is to incorporate consideration of environmental factors into the existing decision-making processes of City government at the earliest possible time. It is the intent of this chapter that all agencies of City government conduct their affairs with an awareness that they are stewards of the air, water, land and living resources and that they have an obligation to protect the environment for the use and enjoyment of this and all future generations. No decision to carry out, approve or fund any action subject to review pursuant to this chapter shall be made by any unit of City government until there has been full compliance with all applicable requirements of this chapter. Chapter 48 requires all Type 1 Actions, in accordance with SEQR or Chapter 48, be referred to the Rochester Environmental Commission. The Commission serves primarily in an advisory role in city government. They review and comment upon a Type 1 projects and draft environmental impact statements. The Commission also acts as the Coastal Erosion Hazard Board of Review (see Coastal Erosion Hazard Law, Chapter 43A below).

CITY OF ROCHESTER ZONING CODE (CHAPTER 120)

The existing Zoning Code contains a Center City Riverfront District, a Harbortown Village District and a Marina District. All of which are intended to preserve the existing character of the waterfront; promote development compatible with the waterfront; improve visual and physical access to the waterfront, and encourage tourism and public gathering. There is also an Open Space District in the Zoning Code which preserves and enhances Rochester's open spaces and recreational areas by protecting these natural amenities and restricting development that does not respect these environmentally sensitive areas. Rochester recognizes the value and importance of the resources for City and regional residents and, therefore, strictly limits the development of these areas. Each of these districts is identified on the City's Official Zoning Map, and each specifically lists permitted, specially permitted and prohibited uses.

Currently, no changes to these districts are being recommended, as they were created with the LWRP in mind. However, the Zoning Code regulations that pertain to properties along the waterfront will continue to be monitored and updated if necessary.

In addition to the individual district regulations cited above, the Zoning Code regulates activities along the waterfront as follows:

120-157, City-wide design guidelines, the following provision implements the policies of the LWRP

G. Encourage and promote the design of buildings, sites, signs and public spaces along the waterfront that protects, enhances and strengthens these areas as well

as significant recreational, environmental, historic, scenic and cultural resources.

120-158, City-wide design standards, the following provisions implement policies of the LWRP.

F. Waterfront views or vistas.

(1) Site development, including the construction of buildings, structures or signs, shall not unnecessarily interfere with or obstruct significant, identified views or vistas of (or from) the Genesee River, Lake Ontario or the Erie Canal from the street or significant designated landscape features beyond existing conditions and as listed in the City of Rochester's Local Waterfront Revitalization Program (LWRP).

(2) The proposed design and arrangement of the building, structure or use shall provide for public pedestrian and visual access to and along the waterfront.

SITE PLAN REVIEW PROCEDURES (CHAPTER 120-191D)

The City's Zoning Code requires Minor Site Plan Review for projects within 100 feet of the Genesee River and the project review can be elevated Major Site Plan Review if the project is classified as a Type 1 Action, in accordance with SEQR/Chapter 48. A Major Site Plan Review is a higher level review and requires the project to be reviewed by the City's Project Review Committee (PRC) which includes broad city agency representation

WATERFRONT CONSISTENCY REVIEW ORDINANCE (CHAPTER 112)

The purpose of this Ordinance is to protect the public health, safety and general welfare in the City of Rochester by providing a framework for governmental agencies to review actions proposed within the boundaries of the City's LWRP. This will allow agencies to consider the policies and purposes contained in the City's LWRP when reviewing applications for actions or when directly approving, undertaking or funding agency actions located in the waterfront area. The framework will also ensure that such actions are consistent, to the maximum extent practicable, with said policies and purposes.

Whenever a proposed action is located in the Local Waterfront Area (LWA), an agency shall, prior to approving, funding or undertaking the action, make a determination that it is consistent, to the maximum extent practicable, with the applicable LWRP policy standards and conditions set forth herein.

Whenever an agency receives an application for approval or funding of an action or as early as possible in the agency's undertaking of a direct action to be located in the LWA, the applicant or, in the case of a direct action, the agency shall prepare a Coastal Assessment Form (CAF) to assist with the consistency review. Prior to making its

determination, the agency shall solicit and consider the recommendation of the Commissioner of the City of Rochester Department of Neighborhood and Business Development or his or her designee regarding the consistency of the proposed action by referring a copy of the completed CAF to the Commissioner within 10 days of its submission to or completion by the agency.

After referral from an agency, the Commissioner shall consider whether the proposed action is consistent, to the maximum extent practicable, with the LWRP policy standards and conditions set forth in herein. The Commissioner may require the applicant to submit all completed applications, CAFs and any other information or documentation deemed to be necessary in order to make the consistency determination. The Commissioner shall render his or her written recommendation to the agency within 10 working days following the submission by the applicant of the required information, unless extended by mutual agreement of the Commissioner and the applicant or, in the case of a direct action, the agency. The recommendation shall indicate whether, in the opinion of the Commissioner, the proposed action is consistent, to the maximum extent practicable, or inconsistent with one or more of the applicable LWRP policy standards or conditions. The recommendation shall state the manner and extent to which any inconsistency affects the LWRP policy standards and conditions. The Waterfront Consistency Review Ordinance and its Coastal Assessment Form are included in Appendix III.

FLOOD DAMAGE PREVENTION (CHAPTER 56)

It is the purpose of this chapter to promote the public health, safety, and general welfare and to minimize public and private losses due to flood conditions in specific areas by provisions designed to:

(1) Regulate uses which are dangerous to health, safety and property due to water or erosion hazards or which result in damaging increases in erosion or in flood heights or velocities;

(2) Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;

(3) Control the alteration of natural floodplains, stream channels, and natural protective barriers which are involved in the accommodation of floodwaters;

(4) Control filling, grading, dredging and other development which may increase erosion or flood damages;

(5) Regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards to other lands; and

(6) Qualify for and maintain participation in the National Flood Insurance Program.

The Commissioner of Neighborhood and Business Development or his/her designee is the appointed Local Administrator to implement this chapter by granting or denying floodplain development permits in accordance with its provisions. In areas of special flood hazard, it is unlawful to occupy or to permit the use or occupancy of any building or premises until a certificate of compliance has been issued by the Local Administrator stating that the building or land conforms to the requirements of this chapter.

COASTAL EROSION HAZARD LAW (CHAPTER 43A)

The City of Rochester assumes the responsibility to implement and administer a coastal erosion management program within its boundaries pursuant to Article 34 of New York State Environmental Conservation Law. To this end, this law is enacted to:

A. Establish standards and procedures for minimizing and preventing damage to structures from coastal flooding and erosion and to protect natural protective features and other natural resources.

B. Regulate in coastal areas subject to coastal flooding and erosion, land use and development activities so as to minimize or prevent damage or destruction to man-made property, natural protective features or other natural resources and to protect human life.

C. Regulate new construction or placement of structures in order to place them a safe distance from areas of active erosion and the impacts of coastal storms to ensure that these structures are not prematurely destroyed or damaged due to improper siting, as well as to prevent damage to natural protective features and other natural resources.

D. Restrict public investment in services, facilities or activities which are likely to encourage new permanent development in erosion hazard areas.

E. Regulate the construction of erosion protection structures in coastal areas subject to serious erosion, to assure that when the construction of erosion protection structures is justified, their construction and operation will minimize or prevent damage or destruction to man-made property, private and public property, natural protective features and other natural resources.

SITE PREPARATION AND STORMWATER POLLUTION PREVENTION (CHAPTER 39)

Land disturbance activities and associated increases in impervious cover alter the hydrologic response of local watersheds and increase storm water runoff rates and volumes, flooding, stream channel erosion, and sediment transport and deposition. This storm water runoff contributes to increased quantities of water-borne pollutants. Storm

water runoff, soil erosion and nonpoint source pollution can be controlled and minimized through the regulation of storm water runoff from development sites.

The purpose of these regulations is to safeguard public health, protect property, prevent damage to the environment and promote the public welfare by guiding, regulating, and controlling the design, construction, use, and maintenance of any development or other activity which disturbs or breaks the topsoil or results in the movement of earth on land in the City of Rochester. It seeks to meet those purposes by achieving the following objectives:

(1) Require land disturbance activities to conform to the substantive requirements of the New York State Department of Environmental Conservation State Pollutant Discharge Elimination System (SPDES) general permit for construction activities or as amended or revised;

(2) Meet the requirements of minimum measures 4 and 5 of the SPDES general permit for storm water discharges from municipal separate storm water sewer systems (MS4s), Permit No. GP-02-02 or as amended or revised;

(3) Minimize increases in storm water runoff from land disturbance activities in order to reduce flooding, siltation, increases in stream temperature, and stream bank erosion and maintain the integrity of stream channels;

(4) Minimize increases in pollution caused by storm water runoff from land disturbance activities which would otherwise degrade local water quality;

(5) Minimize the total annual volume of storm water runoff which flows from any specific site during and following development to the maximum extent practicable; and

(6) Reduce storm water runoff rates and volumes, soil erosion and nonpoint source pollution, wherever possible, through storm water management practices and to ensure that these management practices are properly maintained and eliminate threats to public safety.

The Commissioner of Neighborhood and Business Development or legal representative is the authority having jurisdiction for the purpose of administering these regulations. The City Engineer is the legal representative of the Commissioner for the purposes of site work within the right-of-way.

MANAGEMENT STRUCTURE FOR IMPLEMENTING THE LWRP

All State and Federal actions proposed within the City of Rochester Waterfront Revitalization Area shall be reviewed in accordance with guidelines established by the New York State Department of State. The Guidelines for Notification and Review of State Agency Actions Where Local Waterfront Revitalization Programs are in Effect and Procedural Guidelines for Coordinating NYSDOS and LWRP Consistency Review of Federal Agency Actions are included in the appendix VI.

With the City of Rochester's substantial commitment to and investment in its waterfront areas (lake, river, canal) over the past 15-20 years, the city needs a strong and effective local management structure to oversee public infrastructure investments and projects, advocate for its harbor areas, protect environmental resources, support existing businesses and pursue new water-related economic development opportunities. The components of the proposed LWRP management structure include:

a. The City Council is the City's legislative and policymaking body. As such, Council shall be the primary agency responsible for overall management of the LWRP. Rochester City Council has the authority to approve and fund, or secure funding for, specific improvements necessary to implement the LWRP.
b. The Manager of Planning shall be the chief contact person to receive notification on behalf of the city from the State and Federal agencies planning actions in the Local Waterfront Revitalization Program area.
c. Coordination of the review of proposed actions for consistency with the LWRP will be undertaken by the City agency that receives an application for funding or approval or intends to directly undertake action. The receiver of the application will prepare or cause to be prepared a Coastal Assessment Form which will be referred to the Commissioner of the City's Department of Neighborhood and Business Development or his or her designee. The Commissioner or the designee will prepare consistency recommendations to the referring City agencies.
d. The City of Rochester Division of Planning will maintain, and make available to the public, a copy of the LWRP for use during normal business hours. This Division will also provide training to city staff and the public about the consistency review process.
e. An internal city coordinating committee or team will convene to develop waterfront plans, infrastructure projects and other waterfront issues and concerns. Community stakeholders, who will be identified based on the type of proposed plan/project and the location, will be brought into the team planning and discussions. Furthermore, the Project Advisory Committee and the Rochester Environmental Commission will be engaged in all Type 1 projects and plans along or impacting the waterfront.

FINANCIAL RESOURCES

Implementation of Rochester's LWRP will come from the following sources: Grant Funding; Capital Improvement Program Funds; the City's Operating Budget; and, private development funds. Using these various funding sources, the city will undertake public infrastructure projects at various locations throughout the LWRP boundary which will improve public access to the shore zone and to the water itself, promote water-dependent and water-enhanced uses along Lake Ontario, the Genesee River and the Erie Canal, promote tourism and economic development, and generally contribute to the revitalization of the city's important waterfront areas.

Grant Funding

The City of Rochester will continue to apply for both State and Federal Grants to help implement the projects outlined in the LWRP. At the State level, the City will continue to use the Consolidated Funding Application (CFA) to seek out various funding opportunities from the following resources available in NYS:

- Empire State Development
- NYS Canal Corporation
- NYS Energy Research and Development Authority
- Environmental Facilities Corporation
- Parks, Recreation and Historic Preservation
- Department of State
- Department of Environmental Conservation
- Council on the Arts

At the federal level, the Unified Planning Work Program (UPWP) and the Transportation Improvement Program (TIP) help fund the Long Range Transportation Plan (LRTP) for the area. The UPWP programs federally-funded transportation planning activities that further develop the policies and actions contained in the LRTP into concept-level projects and programs. The UPWP allocates funding for both specific planning projects and on-going programmatic activities. The UPWP must be updated at least every two years, and it identifies and schedules the specific transportation improvements in the region that will receive federal funding over the next four-to-five years.

The TIP identifies and schedules the specific transportation improvements in the region that will receive federal funding over the next four-to-five years. Projects included in the TIP emerge from infrastructure needs identified by member agencies, which are typically informed by recommendations developed through UPWP-funded initiatives.

The TIP must be updated at least every four years.

Available funding opportunities from both the UPWP and the TIP will continue to be explored to help implement transportation projects associated with the LWRP.

Capital Improvement Program Funds

The Capital Expense budget finances the construction or reconstruction of facilities and services, the acquisition and replacement of vehicles and equipment, and certain other projects and improvements that provide benefits over a multi-year period. To plan for capital expenditures over a period of years and to ensure that equipment replacement and building renovations are made when economically feasible and needed, a Capital Improvement Program (CIP) is prepared anticipating capital investments and their proposed sources of funding for a five year period.

City's Operating Budget

Administrative costs associated with the day-to-day administration of the LWRP as well as any future plans and studies are taken into account during the City's annual budget process. A separate line item for Professional Fees is identified each year to cover some of the costs associated with hiring consultants and technicians to assist in completing plans and studies, which include those for the waterfront. In addition, administrative costs associated with consistency reviews, site plan reviews and any other reviews associated with implementing LWRP projects are also included in the city's budget.

Private Development Funds

Private development funds will also play a major role in completing the proposed projects identified in the LWRP. At the Port of Rochester, for example, the development parcel at 4752 Lake Avenue will be privately developed.

B. SUMMARY OF LWRP POLICY IMPLEMENTATION TECHNIQUES

The following chart connects the above implementation techniques with the LWRP policies they implement.

SUMMARY OF KEY LOCAL IMPLEMENTAION TECHNIQUES WHICH IMPLEMENT LWRP POLICIES

IMPLEMENTATION TECHNIQUES	RELEVANT LWRP POLICIES
City Zoning Code Open Space District	1, 2, 7, 9, 11, 12, 17, 21, 25
City Zoning Code Marina District	1, 2, 9, 20, 21, 22
City Zoning Code Overlay-Harbor Town Design District	1, 23
City Zoning Code, including Site Plan Review Procedures	1, 5, 7, 8, 11, 12, 13, 14, 17, 18, 19, 22, 23, 25, 27, 30
City Code Chapter 48, Environmental Review Process	8, 11, 12, 13, 14, 17, 18, 19, 23 25, 27, 30, 31, 33, 35, 37, 44
City Flood Damage Prevention Code	11, 17
City Consistency Review Ordinance	7, 8, 11, 12, 13, 14, 17, 18, 19, 25, 27, 30, 31, 33, 35, 37, 44



Genesee River at the Erie Canal Harbor from the Ford Street Bridge

Section 6: LWRP State and Federal Actions and Programs Likely to Affect Implementation



State and federal actions will affect and be affected by implementation of the LWRP. Under State Law and the U.S. Coastal Zone Management Act, certain State and federal actions within or affecting the local waterfront revitalization area must be consistent, or consistent to the maximum extent practicable, with the enforceable policies and purposes of the LWRP. This consistency requirement makes the LWRP a unique, intergovernmental mechanism for setting policy and making decisions, and helps to prevent detrimental actions from occurring and future options from being needlessly foreclosed. At the same time, the active participation of State and federal agencies is also likely to be necessary to implement specific provisions of the LWRP.

6.1. STATE ACTIONS AND PROGRAMS WHICH SHOULD BE UNDERTAKEN IN A MANNER CONSISTENT WITH THE LWRP

Pursuant to the State Waterfront Revitalization of Coastal Areas and Inland Waterways Act (Executive Law, Article 42), the Secretary of State notifies affected State agencies of those agency actions and programs that are to be undertaken in a manner consistent with approved LWRPs. The following list of State actions and programs is that list. The State Waterfront Revitalization of Coastal Areas and Inland Waterways Act requires that an LWRP identifies those elements of the program that can be implemented by the local government, unaided, and those that can only be implemented with the aid of other levels of government or other agencies. Such statement shall include those permit, license, certification or approval programs; grant, loan subsidy or other funding assistance programs; facilities construction, and planning programs that may affect the achievement of the LWRP.

OFFICE FOR THE AGING

1.0 Funding and/or approval programs for the establishment of new or expanded facilities providing various services for the elderly.

DEPARTMENT OF AGRICULTURE AND MARKETS

1.00 Agricultural Districts Program

2.00 Rural Development Program

3.00 Farm Worker Services Program

4.00 Permit and approval programs:

- 4.01 Custom Slaughters/Processor Permit
- 4.02 Processing Plant License
- 4.03 Refrigerated Warehouse and/or Locker Plant License

5.00 Farmland Protection Implementation Grant

6.00 Agricultural Nonpoint Source Abatement and Control Program

DIVISION OF ALCOHOLIC BEVERAGE CONTROL/ STATE LIQUOR AUTHORITY

1.00 Permit and Approval Programs:

- 1.01 Ball Park - Stadium License
- 1.02 Bottle Club License
- 1.03 Bottling Permits
- 1.04 Brewer's Licenses and Permits
- 1.05 Brewer's Retail Beer License
- 1.06 Catering Establishment Liquor License
- 1.07 Cider Producer's and Wholesaler's Licenses
- 1.08 Club Beer, Liquor, and Wine Licenses
- 1.09 Distiller's Licenses
- 1.10 Drug Store, Eating Place, and Grocery Store Beer Licenses
- 1.11 Farm Winery and Winery Licenses
- 1.12 Hotel Beer, Wine, and Liquor Licenses
- 1.13 Industrial Alcohol Manufacturer's Permits
- 1.14 Liquor Store License
- 1.15 On-Premises Liquor Licenses
- 1.16 Plenary Permit (Miscellaneous-Annual)
- 1.17 Summer Beer and Liquor Licenses
- 1.18 Tavern/Restaurant and Restaurant Wine Licenses
- 1.19 Vessel Beer and Liquor Licenses
- 1.20 Warehouse Permit
- 1.21 Wine Store License
- 1.22 Winter Beer and Liquor Licenses
- 1.23 Wholesale Beer, Wine, and Liquor Licenses

OFFICE OF ALCOHOLISM AND SUBSTANCE ABUSE SERVICES

1.00 Facilities, construction, rehabilitation, expansion, or demolition or the funding of such activities.

2.00 Permit and approval programs:

- 2.01 Certificate of approval (Substance Abuse Services Program)

3.00 Permit and approval:

- 3.01 Letter Approval for Certificate of Need
- 3.02 Operating Certificate (Alcoholism Facility)
- 3.03 Operating Certificate (Community Residence)

3.04 Operating Certificate (Outpatient Facility)

3.05 Operating Certificate (Sobering-Up Station)

COUNCIL ON THE ARTS

1.00 Facilities construction, rehabilitation, expansion, or demolition or the funding of such activities.

2.00 Architecture and environmental arts program.

OFFICE OF CHILDREN AND FAMILY SERVICES

1.00 Facilities construction, rehabilitation, expansion, or demolition or the funding of such activities.

2.00 Homeless Housing and Assistance Program.

3.00 Permit and approval programs:

3.01 Certificate of Incorporation (Adult Residential Care Facilities)

3.02 Operating Certificate (Children's Services)

3.03 Operating Certificate (Enriched Housing Program)

3.04 Operating Certificate (Home for Adults)

3.05 Operating Certificate (Proprietary Home)

3.06 Operating Certificate (Public Home)

3.07 Operating Certificate (Special Care Home)

3.08 Permit to Operate a Day Care Center

DEPARTMENT OF CORRECTIONS AND COMMUNITY SUPERVISION

1.0 Facilities construction, rehabilitation, expansion, or demolition or the funding of such activities.

DORMITORY AUTHORITY OF THE STATE OF NEW YORK

1.00 Financing of higher education and health care facilities.

2.00 Planning and design services assistance program.

EDUCATION DEPARTMENT

1.00 Facilities construction, rehabilitation, expansion, demolition or the funding of such activities.

2.00 Permit and approval programs:

2.01 Certification of Incorporation (Regents Charter)

2.02 Private Business School Registration

2.03 Private School License

2.04 Registered Manufacturer of Drugs and/or Devices

2.05 Registered Pharmacy Certificate

2.06 Registered Wholesale of Drugs and/or Devices

2.07 Registered Wholesaler-Repacker of Drugs and/or Devices

2.08 Storekeeper's Certificate

3.00 Administration of Article 5, Section 233 of the Educational Law regarding the removal of archaeological and paleontological objects under the waters of the State.

OFFICE OF EMERGENCY MANAGEMENT

- hazard identification,
- loss prevention, planning, training, operational response to emergencies,
- technical support, and disaster recovery assistance.

EMPIRE STATE DEVELOPMENT/ EMPIRE STATE DEVELOPMENT CORPORATION

1.00 Preparation or revision of statewide or specific plans to address State economic development needs.

2.00 Allocation of the state tax-free bonding reserve.

ENERGY RESEARCH AND DEVELOPMENT AUTHORITY

1.00 Issuance of revenue bonds to finance pollution abatement modifications in power-generation facilities and various energy projects.

2.00 New Construction Program – provide assistance to incorporate energy-efficiency measures into the design, construction and operation of new and substantially renovated buildings.

3.00 Existing Facilities Program – offers incentives for a variety of energy projects

DEPARTMENT OF ENVIRONMENTAL CONSERVATION

1.00 Acquisition, disposition, lease, grant of easement, and other activities related to the management of lands under the jurisdiction of the Department.

2.00 Classification of Waters Program; classification of land areas under the Clean Air Act.

3.00 Facilities construction, rehabilitation, expansion, or demolition or the funding of such activities.

4.00 Financial assistance/grant programs:

4.01 Capital projects for limiting air pollution

4.02 Cleanup of toxic waste dumps

4.03 Flood control, beach erosion, and other water resource projects

4.04 Operating aid to municipal wastewater treatment facilities

4.05 Resource recovery and solid waste management capital projects

4.06 Wastewater treatment facilities

6.00 Implementation of the Environmental Quality Bond Act of 1972, including:

(a) Water Quality Improvement Projects

(b) Land Preservation and Improvement Projects including Wetland Preservation and Restoration Projects, Unique Area Preservation Projects, Metropolitan Parks Projects, Open Space Preservation Projects, and Waterways Projects.

7.00 Marine Finfish and Shellfish Programs

9.00 Permit and approval programs

Air Resources

9.01 Certificate of Approval for Air Pollution Episode Action Plan

9.02 Certificate of Compliance for Tax Relief – Air Pollution Control Facility

9.03 Certificate to Operate: Stationary Combustion Installation; Incinerator; process, exhaust or Ventilation System

9.04 Permit for Burial of Radioactive Material

9.05 Permit for Discharge of Radioactive Material to Sanitary Sewer

9.06 Permit for Restricted Burning

9.07 Permit to Construct; a Stationary Combustion Installation; Incinerator; Indirect Source of Air Contamination; Process, Exhaust or Ventilation System

Construction Management

9.08 Approval of Plans and Specifications for Wastewater Treatment Facilities

Fish and Wildlife

9.09 Certificate to Possess and Sell Hatchery Trout in New York State

9.10 Commercial Inland Fisheries Licenses

9.11 Fishing Preserve License

9.12 Fur Breeder's License

9.13 Game Dealer's License

9.14 Licenses to breed Domestic Game Animals

9.15 License to Possess and Sell Live Game

9.16 Permit to Import, Transport and/or Export under Section 184.1 (11-0511)

9.17 Permit to Raise and Sell trout

9.18 Private Bass Hatchery Permit

9.19 Shooting Preserve Licenses

9.20 Taxidermy License

9.21 Permit – Article 15, (Protection of Water) – Dredge and Deposit Material in a Waterway

9.22 Permit – Article 15, (Protection of Water) – Stream Bed or Bank Disturbances

9.23 Permit – Article 24, (Freshwater Wetlands)

Hazardous Substances

9.24 Permit to Use Chemicals for the Control or Elimination of Aquatic Insects

9.25 Permit to Use Chemicals for the Control or Elimination of Aquatic Vegetation

9.26 Permit to Use Chemicals for the Control or Elimination of Undesirable Fish

Lands and Forest

9.27 Certificate of Environmental Safety (Liquid Natural Gas/Liquid Petroleum Gas)

9.28 Floating Object Permit

9.29 Marine Regatta Permit

9.30 Navigation Aid Permit

Marine Resources

9.31 Digger's Permit (Shellfish)

9.32 License of Menhaden Fishing Vessel

9.33 License for Non Resident Food Fishing Vessel

9.34 Non Resident Lobster Permit

9.35 Marine Hatchery and/or Off Bottom Culture Shellfish Permits

9.36 Permits to Take Blue Claw Crabs

9.37 Permit to Use Pond or Trap Net

9.38 Resident Commercial Lobster Permit

9.39 Shellfish Bed Permit

9.40 Shellfish Shipper's Permits

9.41 Special Permit to Take Surf Clams from Waters other than the Atlantic Ocean

9.42 Permit – Article 25, (Tidal Wetlands)

Mineral Resources

9.43 Mining Permit

9.44 Permit to Plug and Abandon (a non-commercial, oil, gas or solution mining well)

9.45 Underground Storage Permit (Gas)

9.46 Well Drilling Permit (Oil, Gas and Solution Salt Mining)

Solid Wastes

9.47 Permit to Construct and/or operate a Solid Waste Management Facility

9.48 Septic Tank Cleaner and Industrial Waste Collector Permit

Water Resources

9.49 Approval of Plans for Wastewater Disposal Systems

9.50 Certificate of Approval of Realty Subdivision Plans

9.51 Certificate of Compliance (Industrial Wastewater Treatment Facility)

9.52 Letters of Certification for Major Onshore Petroleum Facility Oil Spill Prevention and Control Plan

9.53 Permit Article 36, (Construction in Flood Hazard Areas)

9.54 Permit for State Agency Activities for Development in Coastal Erosion Hazards Areas

9.55 Permit for State Agency Activities for Development in Coastal Erosion Hazards Areas

9.56 State Pollutant Discharge Elimination System (SPDES) Permit

9.57 Approval – Drainage Improvement District

9.58 Approval – Water (Diversions for Power)

9.59 Approval of Well System and Permit to Operate

9.60 Permit – Article 15, (Protection of Water) – Dam

9.61 Permit – Article 15, Title 15 (Water Supply)

9.62 River Improvement District Permits

9.63 River Regulatory District approvals

9.64 Well Drilling Certificate of Registration

9.65 401 Water Quality Certification

10.00 Preparation and revision of Air Pollution State Implementation Plan.

11.00 Preparation and revision of Continuous Executive Program Plan.

12.00 Preparation and revision of Statewide Environmental Plan.

13.00 Protection of Natural and Man-made Beauty Program.

14.00 Urban Fisheries Program.

15.00 Urban Forestry Program.

16.00 Urban Wildlife Program.

ENVIRONMENTAL FACILITIES CORPORATION

1.0 Financing program for pollution control facilities for industrial firms and small businesses.

DEPARTMENT OF FINANCIAL SERVICES (DEPARTMENT OF BANKING)

1.00 Permit and approval programs:

- 1.01 Authorization Certificate (Bank Branch)
- 1.02 Authorization Certificate (Bank Change of Location)
- 1.03 Authorization Certificate (Bank Charter)
- 1.04 Authorization Certificate (Credit Union Change of Location)
- 1.05 Authorization Certificate (Credit Union Charter)
- 1.06 Authorization Certificate (Credit Union Station)
- 1.07 Authorization Certificate (Foreign Banking Corporation Change of Location)
- 1.08 Authorization Certificate (Foreign Banking Corp. Public Accommodations Office)
- 1.09 Authorization Certificate (Investment Company Branch)
- 1.10 Authorization Certificate (Investment Company Change of Location)
- 1.11 Authorization Certificate (Investment Company Charter)
- 1.12 Authorization Certificate (Licensed Lender Change of Location)
- 1.13 Authorization Certificate (Mutual Trust Company Charter)
- 1.14 Authorization Certificate (Private Banker Charter)
- 1.15 Authorization Certificate (Public Accommodation Office – Banks)
- 1.16 Authorization Certificate (Safe Deposit Company Branch)
- 1.17 Authorization Certificate (Safe Deposit Company Change of Location)
- 1.18 Authorization Certificate (Safe Deposit Company Charter)
- 1.19 Authorization Certificate (Savings Bank Charter)
- 1.20 Authorization Certificate (Savings Bank DeNovo Branch Office)
- 1.21 Authorization Certificate (Savings Bank Public Accommodations Office)
- 1.22 Authorization Certificate (Savings and Loan Association Branch)
- 1.23 Authorization Certificate (Savings and Loan Association Change of Location)
- 1.24 Authorization Certificate (Savings and Loan Association Charter)
- 1.25 Authorization Certificate (Subsidiary Trust Company Charter)
- 1.26 Authorization Certificate (Trust Company Branch)
- 1.27 Authorization Certificate (Trust Company – Change of Location)
- 1.28 Authorization Certificate (Trust Company Charter)
- 1.29 Authorization Certificate (Trust Company Public Accommodations Office)
- 1.30 Authorization to Establish a Life Insurance Agency
- 1.31 License as a Licensed Lender
- 1.32 License for a Foreign Banking Corporation Branch

OFFICE OF GENERAL SERVICES

1.00 Administration of the Public Lands Law for acquisition and disposition of lands, grants of land and grants of easement of land under water, issuance of licenses for removal of materials from lands under water, and oil and gas leases for exploration and development.

2.00 Administration of Article 4 B, Public Buildings Law, in regard to the protection and management of State historic and cultural properties and State uses of buildings of historic, architectural or cultural significance.

3.00 Facilities construction, rehabilitation, expansion, or demolition.

4.00 Administration of Article 5, Section 233, Subsection 5 of the Education Law on removal of archaeological and paleontological objects under the waters of the State.

5.00 Administration of Article 3, Section 32 of the Navigation Law regarding location of structures in or on navigable waters.

6.00 Section 334 of the State Real Estate Law regarding subdivision of waterfront properties on navigable waters to include the location of riparian lines.

DEPARTMENT OF HEALTH

1.00 Facilities construction, rehabilitation, expansion, or demolition or the funding of such activities.

2.00 Permit and approval programs:

- 2.01 Approval of Completed Works for Public Water Supply Improvements
- 2.02 Approval of Plans for Public Water Supply Improvements.
- 2.03 Certificate of Need (Health Related Facility except Hospitals)
- 2.04 Certificate of Need (Hospitals)
- 2.05 Operating Certificate (Diagnostic and Treatment Center)
- 2.06 Operating Certificate (Health Related Facility)
- 2.07 Operating Certificate (Hospice)
- 2.08 Operating Certificate (Hospital)
- 2.09 Operating Certificate (Nursing Home)
- 2.10 Shared Health Facility Registration Certificate

DIVISION OF HOMES AND COMMUNITY RENEWAL and its subsidiaries and affiliates

1.00 Facilities construction, rehabilitation, expansion, or demolition or the funding of such activities.

2.00 Financial assistance/grant programs:

- 2.01 Federal Housing Assistance Payments Programs (Section 8 Programs)

2.02 Housing Development Fund Programs

2.03 Neighborhood Preservation Companies Program

2.04 Public Housing Programs

2.05 Rural Initiatives Grant Program

2.06 Rural Preservation Companies Program

2.07 Rural Rental Assistance Program

2.08 Special Needs Demonstration Projects

2.09 Urban Initiatives Grant Program

2.10 Urban Renewal Programs

3. 00 Preparation and implementation of plans to address housing and community renewal needs.

OFFICE OF MENTAL HEALTH

1.00 Facilities construction, rehabilitation, expansion, or demolition or the funding of such activities.

2.00 Permit and approval programs:

2.01 Operating Certificate (Community Residence)

2.02 Operating Certificate (Family Care Homes)

2.03 Operating Certificate (Inpatient Facility)

2.04 Operating Certificate (Outpatient Facility)

DIVISION OF MILITARY AND NAVAL AFFAIRS

1.0 Preparation and implementation of the State Disaster Preparedness Plan.

NATURAL HERITAGE TRUST

1.0 Funding program for natural heritage institutions.

OFFICE OF PARKS, RECREATION, AND HISTORIC PRESERVATION (including Regional State Park Commission)

1.00 Acquisition, disposition, lease, grant of easement, or other activities related to the management of land under the jurisdiction of the Office.

2.00 Facilities construction, rehabilitation, expansion, or demolition or the funding of such activities.

3.00 Funding program for recreational boating, safety, and enforcement.

4.00 Funding program for State and local historic preservation projects.

5.00 Land and Water Conservation Fund programs.

6.00 Nomination of properties to the Federal and/or State Register of Historic Places.

7.00 Permit and approval programs:

- 7.01 Floating Objects Permit
- 7.02 Marine Regatta Permit
- 7.03 Navigation Aide Permit
- 7.04 Posting of Signs Outside State Parks

8.00 Preparation and revision of the Statewide Comprehensive Outdoor Recreation Plan and the Statewide Comprehensive Historic Preservation Plan and other plans for public access, recreation, historic preservation or related purposes.

9.00 Recreation services program.

10.00 Urban Cultural Parks Program.

11.00 Planning, construction, rehabilitation, expansion, demolition or the funding of such activities and/or projects funded through the Environmental Protection Fund (Environmental Protection Act of 1993) or Clean Water/Clean Air Bond Act of 1996.

OFFICE FOR PEOPLE WITH DEVELOPMENTAL DISABILITIES

1.00 Facilities construction, rehabilitation, expansion, or demolition or the funding of such activities.

2.00 Permit and approval programs:

- 2.01 Establishment and Construction Prior Approval
- 2.02 Operating Certificate Community Residence
- 2.03 Outpatient Facility Operating Certificate

POWER AUTHORITY OF THE STATE OF NEW YORK

1.00 Acquisition, disposition, lease, grant of easement, and other activities related to the management of land under the jurisdiction of the Authority.

2.00 Facilities construction, rehabilitation, expansion, or demolition.

ROCHESTER-GENESEE REGIONAL TRANSPORTATION AUTHORITY (regional agency)

1.00 Acquisition, disposition, lease, grant of easement and other activities related to the management of land under the jurisdiction of the Authority.

2.00 Facilities construction, rehabilitation, expansion, or demolition or the funding of such activities.

3.00 Increases in special fares for transportation services to public water-related recreation resources.

NEW YORK STATE SCIENCE AND TECHNOLOGY FOUNDATION

1.00 Corporation for Innovation Development Program.

2.00 Center for Advanced Technology Program.

DEPARTMENT OF STATE

1.00 Appalachian Regional Development Program.

2.00 Coastal Management Program.

2.10 Planning, construction, rehabilitation, expansion, demolition or the funding of such activities and/or projects funded through the Environmental Protection Fund (Environmental Protection Act of 1993) or Clean Water/Clean Air Bond Act of 1996.

3.00 Community Services Block Grant Program.

4.00 Permit and approval programs:

4.01 Billiard Room License

4.02 Cemetery Operator

4.03 Uniform Fire Prevention and Building Code

STATE UNIVERSITY CONSTRUCTION FUND

1.0 Facilities construction, rehabilitation, expansion, or demolition or the funding of such activities.

STATE UNIVERSITY OF NEW YORK

1.00 Acquisition, disposition, lease, grant of easement, and other activities related to the management of land under the jurisdiction of the University.

2.00 Facilities construction, rehabilitation, expansion, or demolition or the funding of such activities.

DEPARTMENT OF TRANSPORTATION

1.00 Acquisition, disposition, lease, grant of easement, and other activities related to the management of land under the jurisdiction of the Department.

2.00 Construction, rehabilitation, expansion, or demolition of facilities, including but not limited to:

(a) Highways and parkways

(b) Bridges on the State highways system

(c) Highway and parkway maintenance facilities

(d) Rail facilities

3.00 Financial assistance/grant programs:

3.01 Funding programs for construction/reconstruction and reconditioning/preservation of municipal streets and highways (excluding routine maintenance and minor rehabilitation)

3.02 Funding programs for development of the ports of Albany, Buffalo, Oswego, Ogdensburg and New York

3.03 Funding programs for rehabilitation and replacement of municipal bridges

3.04 Subsidies program for marginal branch lines abandoned by Conrail

3.05 Subsidies program for passenger rail service

4.00 Permits and approval programs:

4.01 Approval of applications for airport improvements (construction projects)

4.02 Approval of municipal applications for Section 18 Rural and Small Urban Transit Assistance Grants (construction projects)

4.03 Approval of municipal or regional transportation authority applications for funds for design, construction and rehabilitation of omnibus maintenance and storage facilities

4.04 Approval of municipal or regional transportation authority applications for funds for design and construction of rapid transit facilities

4.05 Certificate of Convenience and Necessity to Operate a Railroad

4.06 Highway Work Permits

4.07 License to Operate Major Petroleum Facilities

4.08 Outdoor Advertising Permit (for off premises advertising signs adjacent to interstate and primary highway)

4.09 Real Property Division Permit for Use of State Owned Property

5.00 Preparation or revision of the Statewide Master Plan for Transportation and sub-area or special plans and studies related to the transportation needs of the State.

6.00 Water Operation and Maintenance Program Activities related to the containment of petroleum spills and development of an emergency oil spill control network.

DIVISION OF YOUTH

1.0 Facilities construction, rehabilitation, expansion, or demolition or the funding for approval of such activities.

6.2 FEDERAL ACTIVITIES AFFECTING LAND AND WATER USES AND NATURAL RESOURCES IN THE COASTAL ZONE OF NEW YORK STATE

Note: This LWRP's list of the federal agency activities is identical to the most recent version of the Table 3 list in the New York State Coastal Management Program as approved by the federal Office of Ocean and Coastal Resources Management on May 7, 2017. Please contact the New York State Department of State, Office of Planning and Development, at (518) 474-6000, for any updates to New York State Coastal Management Program Table 3 federal agency activities list that may have occurred post-approval of this LWRP.

This list has been prepared in accordance with the consistency provisions of the federal Coastal Zone Management Act and implementing regulations in 15 CFR Part 930. It is not exhaustive of all activities subject to the consistency provisions of the federal Coastal Zone Management Act, implementing regulations in 15 CFR Part 930, and the New York Coastal Management Program. It includes activities requiring:

1. the submission of consistency determinations by federal agencies;
2. the submission of consistency certifications by entities other than federal agencies; and
3. the submission of necessary data and information to the New York State Department of State, in accordance with 15 CFR Part 930, Subparts C, D, E, F and I, and the New York Coastal Management Program.

I. Activities Undertaken Directly by or on Behalf of Federal Agencies

The following activities, undertaken directly by or on behalf of the identified federal agencies, are subject to the consistency provisions of the Coastal Zone Management Act, its implementing regulations in 15 CFR Part 930, Subpart C, and the New York Coastal Management Program.

Department of Commerce, National Marine Fisheries Service:

- Fisheries Management Plans

Department of Defense, Army Corps of Engineers:

- Proposed authorizations for dredging, channel improvement, breakwaters, other navigational works, erosion control structures, beach replenishment, dams or flood control works, ice management practices and activities, and other projects with the potential to impact coastal lands and waters.
- Land acquisition for spoil disposal or other purposes.
- Selection of open water disposal sites.

Department of Defense, Air Force, Army and Navy:

- Location, design, and acquisition of new or expanded defense installations (active or reserve status, including associated housing, transportation or other facilities).
- Plans, procedures and facilities for handling or storage use zones.
- Establishment of impact, compatibility or restricted use zones.

Department of Energy:

- Prohibition orders.

General Services Administration:

- Acquisition, location and design of proposed federal government property or buildings, whether leased or owned by the federal government.

Department of Interior, Fish and Wildlife Service:

- Management of National Wildlife refuges and proposed acquisitions.

Department of Interior, National Park Service:

- National Park and Seashore management and proposed acquisitions.

Department of Interior, Bureau of Ocean Energy Management

- OCS lease sale activities including tract selection, lease sale stipulations, etc.

Department of Homeland Security, Coast Guard:

- Location and design, construction or enlargement of Coast Guard stations, bases, and lighthouses.
- Location, placement or removal of navigation devices which are not part of the routine operations under-the Aids to Navigation Program (ATON).
- Expansion, abandonment, designation or anchorages, lightering areas or shipping lanes and ice management practices and activities.

Department of Transportation, Federal Aviation Administration:

- Location and design, construction, maintenance, and demolition of Federal aids to air navigation.

Department of Transportation, St. Lawrence Seaway Development Corporation:

- Acquisition, location, design, improvement and construction of new and existing facilities for the operation of the Seaway, including traffic safety, traffic control and length of navigation season.

Department of Transportation, Federal Highway Administration:

- Highway construction

II. Federal Licenses and Permits and Other Forms of Approval or Authorization

The following activities, requiring permits, licenses, or other forms of authorization or approval from federal agencies, are subject to the consistency provisions of the Coastal Zone Management Act, its implementing regulations in 15 CFR Part 930, Subpart D, and the New York Coastal Management Program.

Department of Defense, Army Corps of Engineers:

- Construction of dams, dikes or ditches across navigable waters, or obstruction or alteration of navigable waters required under Sections 9 and 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 401, 403).
- Establishment of harbor lines pursuant to Section 11 of the Rivers and Harbors Act of 1899 (33 U.S.C. 404, 405).

- Occupation of seawall, bulkhead, jetty, dike, levee, wharf, pier, or other work built by the U.S. pursuant to Section 14 of the Rivers and Harbors Act of 1899 (33 U.S.C. 408).
- Approval of plans for improvements made at private expense under USACE supervision pursuant to the Rivers and Harbors Act of 1902 (33 U.S.C. 565).
- Disposal of dredged spoils into the waters of the U.S., pursuant to the Clean Water Act, Section 404 (33 U.S.C. 1344).
- All actions for which permits are required pursuant to Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).
- Construction of artificial islands and fixed structures in Long Island Sound pursuant to Section 4 (f) of the River and Harbors Act of 1912 (33 U.S.C.).

Department of Energy, Federal Energy Regulatory Commission:

- Licenses for non-federal hydroelectric projects and primary transmission lines under Sections 3 (11), 4 (e) and 15 of the Federal Power Act (16 U.S.C. 796 (11), 797 (11) and 808).
- Orders for interconnection of electric transmission facilities under Section 202 (b) of the Federal Power Act (15 U.S.C. 824 a (b)).
- Certificates for the construction and operation of interstate natural gas pipeline facilities, including both pipelines and terminal facilities under Section 7 (c) of the Natural Gas Act (15 U.S.0 717 f (c)).
- Permission and approval for the abandonment of natural gas pipeline facilities under Section 7(b) of the Natural Gas Act (15 U.S.C. 717 f (b)).

Department of Energy, Economic Regulatory Commission:

- Regulation of gas pipelines, and licensing of import or export of natural gas pursuant to the Natural Gas Act (15 U.S.C. 717) and the Energy Reorganization Act of 1974.
- Exemptions from prohibition orders.

Environmental Protection Agency:

- NPDES permits and other permits for Federal installations, discharges in contiguous zones and ocean waters, sludge runoff and aquaculture permits pursuant to Sections 401, 402, 403, 405, and 318 of the Federal Grater Pollution Control Act of 1972 (33 U.S.C. 1341, 1342, 1343, and 1328).
- Permits pursuant to the Resources Recovery and Conservation Act of 1976.
- Permits pursuant to the underground injection Control program under Section 1424 of the Safe Water Drinking Water Act (42 U.S.C. 300 h-c).
- Permits pursuant to the Clean Air Act of 1976 (42 U.S.C. 1857).

Department of Interior, Fish and Wildlife Services:

- Endangered species permits pursuant to the Endangered Species Act (16 U.S.C. 153 (a)).

Department of Interior, Bureau of Ocean Energy Management:

- Permits to drill, rights of use and easements for construction and maintenance of pipelines, gathering and flow lines and associated structures pursuant to 43 U.S.C. 1334, exploration and development plans, and any other permits or authorizations granted for activities described in detail in OCS exploration, development, and production plans.
- Permits required for pipelines crossing federal lands, including OCS lands, and associated activities pursuant to the OCS Lands Act (43 U.S.C. 1334) and 43 U.S.C. 931 (c) and 20 U.S.C. 185.

Surface Transportation Board:

- Authority to abandon railway lines (to the extent that the abandonment involves removal of trackage and disposition of right-of-way); authority to construct railroads; authority to construct slurry pipelines.

Nuclear Regulatory Commission:

- Licensing and certification of the siting, construction, and operation of nuclear power plants, pursuant to Atomic Energy Act of 1954, Title II of the Energy Reorganization Act of 1974 and the National Environmental Policy Act of 1969.

Department of Transportation:

- Construction or modification of bridges, causeways or pipelines over navigable waters pursuant to 49 U.S.C. 1455.
- Permits for Deepwater Ports pursuant to the Deepwater Ports Act of 1974 (33 U.S.C. 1501).

Department of Transportation, Federal Aviation Administration:

- Permits and licenses for construction, operation or alteration of airports.

III. Federal Financial Assistance to State and Local Governments

The following activities, involving financial assistance from federal agencies to state and local governments, are subject to the consistency provisions of the Coastal Zone Management Act, its implementing regulations in 15CFR Part 930, Subpart F, and the New York Coastal Management Program. When these activities involve financial assistance for entities other than State and local governments, the activities are subject to the consistency provisions of 15 CFR Part 930, Subpart C.

Department of Agriculture

10.068 Rural Clean Water Program

10.409 Irrigation, Drainage, and Other Soil and Water Conservation Loans

10.410 Low to Moderate Income Housing Loans

10.411 Rural Housing Site Loans

10.413 Recreation Facility Loans

10.414 Resource Conservation and Development Loans

10.415 Rural Rental Housing Loans

10.416 Soil and Water Loans

10.418 Water and Waste Disposal Systems for Rural Communities

10.419 Watershed Protection and Flood Prevention Loans

10.422 Business and Industrial Loans

10.423 Community Facilities Loans

10.424 Industrial Development Grants

10.426 Area Development Assistance Planning Grants

10.429 Above Moderate Income Housing Loans

10.430 Energy Impacted Area Development Assistance Program

10.901 Resource Conservation and Development

10.902 Soil and Water Conservation

10.904 Watershed Protection and Flood Prevention

10.906 River Basin Surveys and Investigations

Department of Commerce

11.300 Economic Development - Grants and Loans for Public Works and Development Facilities

11.301 Economic Development - Business Development Assistance

11.302 Economic Development - Support for Planning Organizations

11.304 Economic Development - State and Local Economic Development Planning

11.305 Economic Development - State and Local Economic Development Planning

11.307 Special Economic Development and Adjustment Assistance Program - Long Term Economic Deterioration

11.308 Grants to States for Supplemental and Basic Funding of Titles I, II, III, IV, and V Activities

11.405 Anadromous and Great Lakes Fisheries Conservation

11.407 Commercial Fisheries Research and Development

11.417 Sea Grant Support

11.427 Fisheries Development and Utilization Research and Demonstration Grants and Cooperative Agreements Program

11.501 Development and Promotion of Ports and Intermodal Transportation

11.509 Development and Promotion of Domestic Water-borne Transport Systems

Department of Housing and Urban Development

14. 112 Mortgage Insurance - Construction or Substantial Rehabilitation of Condominium Projects

14. 115 Mortgage Insurance - Development of Sales Type Cooperative Projects

14. 117 Mortgage Insurance - Homes

14. 124 Mortgage Insurance - Investor Sponsored Cooperative Housing

14. 125 Mortgage Insurance - Land Development and New Communities

14. 126 Mortgage Insurance - Manages ant Type Cooperative Projects

14. 127 Mortgage Insurance - Mobile Home Parks

14. 218 Community Development Block Grants/Entitlement Grants

14. 219 Community Development Block Grants/Small Cities Program

14. 221 Urban Development Action Grants

14. 223 Indian Community Development Block Grant Program

Department of the Interior

15.400 Outdoor Recreation - Acquisition, Development and Planning

15.402 Outdoor Recreation - Technical Assistance

15.403 Disposal of Federal Surplus Real Property for Parks, Recreation, and Historic Monuments

15.411 Historic Preservation Grants-In-Aid

15.417 Urban Park and Recreation Recovery Program

15.600 Anadromous Fish Conservation

15.605 Fish Restoration

15.611 Wildlife Restoration

15.613 Marine Mammal Grant Program

15.802 Minerals Discovery Loan Program

15.950 National Water Research and Development Program

15.951 Water Resources Research and Technology - Assistance to State Institutes

15.952 Water Research and Technology-Matching Funds to State Institutes

Department of Transportation

20.102 Airport Development Aid Program

20.103 Airport Planning Grant Program

20.205 Highway Research, Planning, and Construction Railroad Rehabilitation and Improvement - Guarantee of Obligations

20.309 Railroad Rehabilitation and Improvement – Guarantee of Obligations

20.310 Railroad Rehabilitation and Improvement - Redeemable Preference Shares

20.506 Urban Mass Transportation Demonstration Grants

20.509 Public Transportation for Rural and Small Urban Areas

General Services Administration

39.002 Disposal of Federal Surplus Real Property

Community Services Administration

49.002 Community Action

49.011 Community Economic Development

49.013 State Economic Opportunity Offices

49.017 Rural Development Loan Fund

49.018 Housing and Community Development (Rural Housing)

Small Business Administration

59.012 Small Business Loans

59.013 State and Local Development Company Loans

59.024 Water Pollution Control Loans

59.025 Air Pollution Control Loans

59.031 Small Business Pollution Control Financing Guarantee

Environmental Protection Agency

66.001 Air Pollution Control Program Grants

66.418 Construction Grants for Wastewater Treatment Works

66.426 Water Pollution Control - State and Area-wide Water Quality Management Planning Agency

66.451 Solid and Hazardous Waste Management Program Support Grants

66.452 Solid Waste Management Demonstration Grants

66.600 Environmental Protection Consolidated Grants Program Support

66.800 Comprehensive Environmental Response, Compensation and Liability (Superfund)

Note: Numbers refer to the Catalog of Federal Domestic Assistance Programs, 1980 and its subsequent updates.

6.3. STATE AND FEDERAL ACTIONS AND PROGRAMS LIKELY TO AFFECT IMPLEMENTATION

Part 6.3 provides a more focused and descriptive list of the immediately preceding Parts 6.1 and 6.2 listing under this LWRP Section, entitled "State and Federal Actions and Programs Likely to Affect Implementation". It is recognized that a State and federal agency's ability to undertake these listed actions is subject to a variety of factors and considerations; that the consistency provisions of the approved LWRP may not apply; and, that the consistency requirements cannot be used to require a State or federal agency to undertake an action it could not undertake pursuant to other provisions of law. Reference should be made to Section III, Section IV, and Section V, which discuss the City of Rochester's local goals and policies, proposed projects, and local implementation techniques, including State and federal assistance needed to implement the approved LWRP.

The majority of future land uses and projects proposed in the city's LWRP can be implemented as described in Section V, Implementing Techniques. However, several projects proposed in the plan will require additional federal and State assistance and coordination. These projects include such things as dredging of the river, environmental remediation of various sites within the LWRP boundary, development of transportation infrastructure improvements within the boundary (roads, bridges and trails) and improvements or modifications to the Genesee River flood wall. The various federal and State agencies which will be involved in this assistance and coordination are listed below, along with a description of the type of assistance required.

I. State Actions and Programs

DEPARTMENT OF ENVIRONMENTAL CONSERVATION

- Funding assistance with planning studies and/or design and construction of projects targeted to control the erosion of steep slopes within the Genesee River Gorge and waterfront area.
- Review and approval for septic system installation and replacement in areas without public septic systems of the waterfront, within the city's LWRP boundary.
- Implement and administer Article 24 of the State's Environmental Conservation Law for designated wetlands areas as described in Section II, Inventory and Analysis.
- Map, adopt, and administer the State's Section 505 Coastal Erosion Control legislation.
- Technical assistance, review, and approval of waterfront development plans for docks, wharves, piers, breakwalls, etc.
- Technical assistance, review, and approval of public access improvements within the City of Rochester's waterfront areas, including but not limited to the Genesee River Gorge.

DIVISION OF HOMES AND COMMUNITY RENEWAL

- Funding and technical assistance with revitalization efforts in the subzones within the City's LWRP boundary that have been identified for future residential and/or mixed-use development (see Section IV, Uses and Projects).

ENVIRONMENTAL FACILITIES CORPORATION

- Funding assistance for the planning, design and construction of sewer extensions or other improvement projects within the city's LWRP boundary.

DEPARTMENT OF STATE

- Funding and technical assistance for LWRP implementation of various planning, design and construction projects, as outlined in Section IV of this Program.
- Funding assistance through the Environmental Protection Fund for waterfront development projects and public infrastructure improvements within the city's LWRP boundary including the new Genesee Falls Park, Phase II of the Port marina development and the redevelopment of the Erie Canal Aqueduct.
- Funding and technical assistance through the Brownfield Opportunity Area (BOA) Program for properties within the city's LWRP boundary that have also been included within the Vacuum Oil BOA, LYLAKS BOA or the 14621 BOA.

NEW YORK STATE ENERGY RESEARCH AND DEVELOPMENT AUTHORITY

- Funding and technical assistance with energy efficiency studies and projects.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION

- Provide physical improvements to city streets and arterials which will improve circulation and access for pedestrians and bicyclists and implement the city's "Complete Streets" policy.
- Provide traffic calming improvements to city streets and arterials within the LWRP boundary as identified and approved by the city's Traffic Control Board.
- Funding and technical assistance for the design and construction of the Westside Canal Parkway and Trail.

EMPIRE STATE DEVELOPMENT CORPORATION

- Assistance, as needed, for the preparation of economic feasibility studies for the reuse of various deteriorated and underutilized structures connected with the siting or improvement of public facilities and with other revitalization efforts within the city's LWRP boundary.

OFFICE OF GENERAL SERVICES

- Prior to any development occurring in the water or on the immediate waterfront, OGS will be contacted for a determination of the State's interest in underwater or formerly underwater lands and for authorization to use and occupy such lands.

OFFICE OF PARKS, RECREATION, AND HISTORIC PRESERVATION

- Funding assistance for the planning, design and construction of expansion or improvement projects at various city parks including Ontario Beach Park, Seneca Park, Maplewood Park and Genesee Valley Park.
- Funding approval under programs such as the Land and Water Conservation Fund and the Clean Water / Environmental Protection Fund for development of or improvements to waterfront parkland and trails.
- Funding, as needed, for the development of the new Genesee Falls Park concept and new physical access and pedestrian circulation improvements into and through the High Falls District and Genesee River Gorge.
- Provide funding assistance to the City of Rochester for the planning, development, construction, major renovation, or expansion of existing and planned recreational facilities located in or

adjacent to waterfront areas including city parks, open space areas and other waterfront attractions or facilities.

II. Federal Actions and Programs

FEDERAL HIGHWAY ADMINISTRATION

- Funding and technical assistance for the design and construction of improvements to various city streets and arterials within the LWRP boundary for traffic calming and improved circulation / access for pedestrians and bicyclists.
- Funding and technical assistance for the design and construction of the Westside Canal Parkway and Trail.

DEPARTMENT OF COMMERCE

- Funding and technical assistance for economic development projects within the High Falls District, the Port of Rochester site and Rochester's Center City (Erie Canal Aqueduct).

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

- Funding assistance for community projects through the Community Development Block Grant (CDBG) program.

SMALL BUSINESS ADMINISTRATION

- Funding and technical assistance for local businesses along the waterfront to stimulate economic development, with particular attention to waterfront businesses and attractions adjacent to or near the Port of Rochester site and new marina.

US ARMY CORPS OF ENGINEERS (USACE)

- Funding and technical assistance for the design and construction of potential dredging, wave surge and navigation improvements within the Genesee River, particularly at the mouth of the river and adjacent to the Port of Rochester.

Section 7: LWRP Local Commitment and Public Participation



A. LWRP ADVISORY COMMITTEES

The LWRP is the statement of land use and development policy for the city's waterfront areas. It was last prepared by the City Planning Office and adopted by City Council in 1990. As this LWRP Update expands the boundary of this plan to include all of the city's waterfront areas along Lake Ontario, the Genesee River and the Erie Canal, the City recognized the importance of direct public participation in this effort, much as it did during the development of the 1990 plan.

To this end, the city established a Waterfront Advisory Committee (WAC) to oversee the update process. The WAC was comprised of representatives from the City of Rochester, Monroe County, Town of Irondequoit, the Canal Corporation, state and federal agencies, property owners, major institutions, community organizations, neighborhood associations and other waterfront stakeholders. The committee met six times between March 2013 and March 2014 where they identified diverse waterfront issues, opportunities and assets as well as helped to determine the scope of the study area. They also and provided invaluable guidance and feedback to the city and its consultants throughout the study.

In addition to the WAC, ad-hoc focus groups were also formed to engage the public and waterfront stakeholders in the project and to solicit community input on and support for potential waterfront development recommendations. Focus Group meetings included community and neighborhood groups representing areas within the Rochester waterfront. Leaders discussed the LWRP process with the Charlotte Community Association (CCA), Team Charlotte, a planning sub-committee of CCA, and Sector 4. Other meetings included the High Falls area hosted by "Friends of the GardenAerial. "

Key findings for the focus group meetings include:

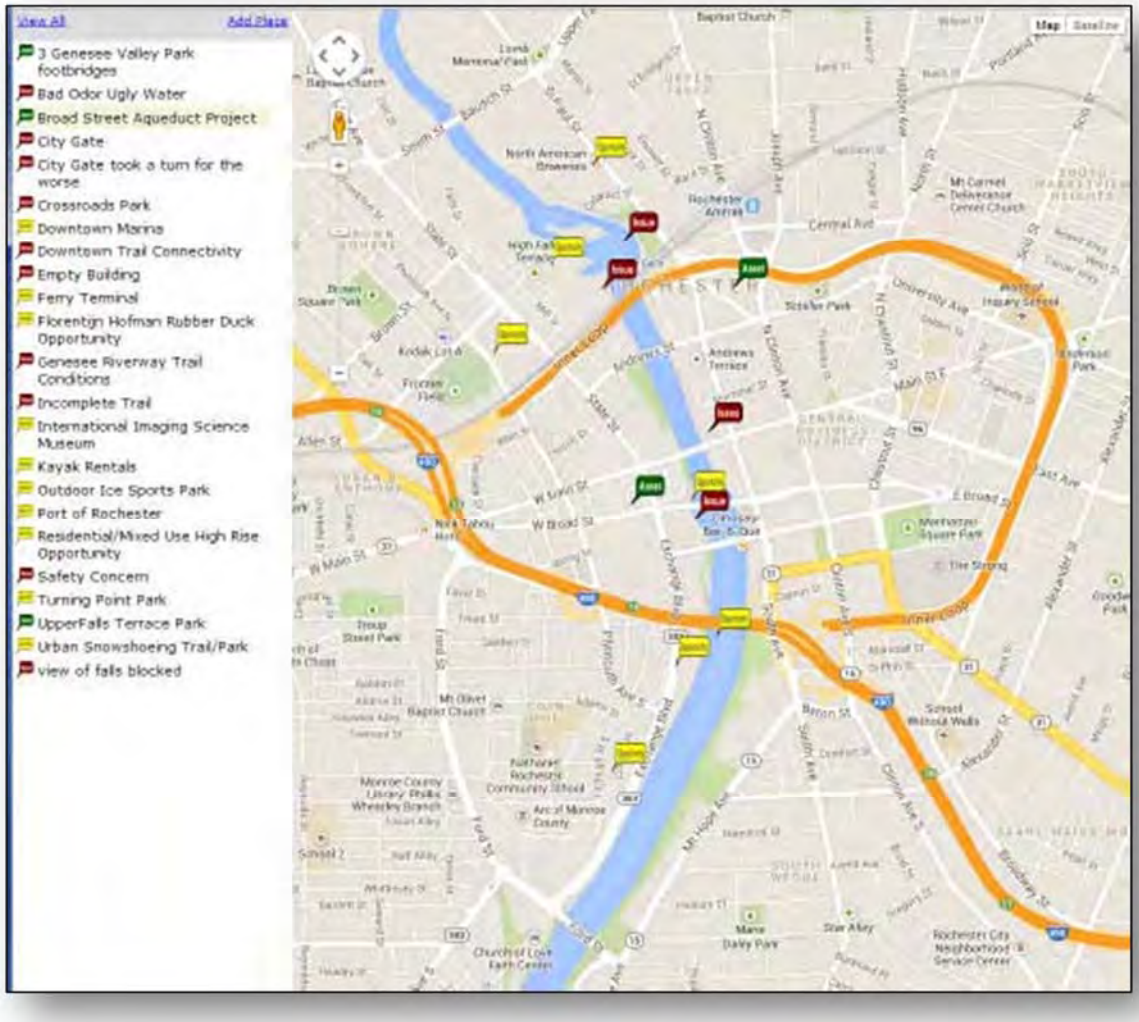
- High Falls area respondents agree that a great waterfront is about access to a natural setting.
- Charlotte participants were very concerned with the effects of traffic, parking and other car-related issues on the neighborhood.

B. LWRP PUBLIC INPUT: WEB-BASED TOOLS

In addition to the WAC and the focus groups, an LWRP Update web page was established on the city's website to facilitate public understanding of the project and collect community input and feedback on waterfront issues and project recommendations. Understanding the power of the web, project leaders broadened public participation in the LWRP Update with three web-based tools. The tools included a collaborative map, a web survey and a general comments form. Each tool offered participants unique ways to contribute to the project.

The online collaborative map allowed anyone with web access to add a geographically-specific comment. It collected issues, opportunities and assets 24 hours a day and appeared online during the public participation process, from June 2013 through February 2014. The online collaborative map gleaned 23 comments from participants.

Below is a screenshot of the collaborative map that was online depicting the downtown area:

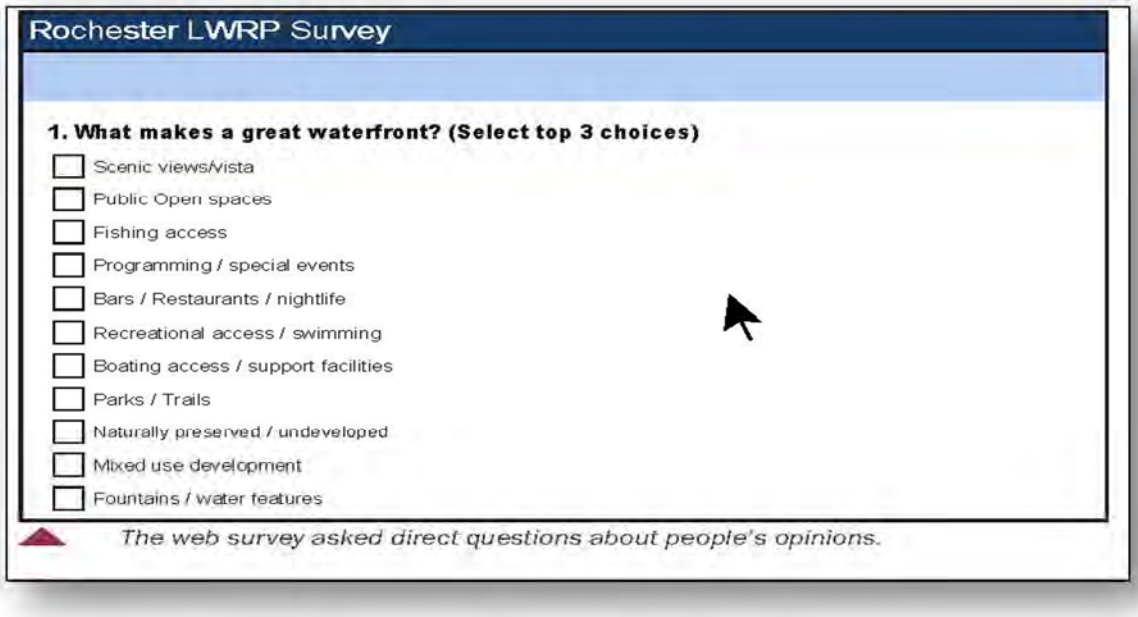


Key findings from these comments include:

- Participants offered many creative and visionary opportunities for downtown and High Falls, yet added little information on the river gorge areas between High Falls and Charlotte.
- Commenters identified maintaining the park-like atmosphere and activating underused urban space throughout the Genesee Riverway Trail and downtown, respectively.
- Many agree that sensitive development of the Genesee Riverway Trail were valuable opportunities.

The web survey asked direct questions about people's opinions and generated 264 responses registered between September 2013 and January 2014. Consisting of ten multiple choice questions, the survey solicited a combination of participant values, preferences and behaviors concerning the waterfront.

Below is a screenshot of one of the questions asked in the survey:



Although the LWRP area is wholly located in the City of Rochester, slightly less than half of the respondents lived in the City. Over half of the respondents listed their primary residence as outside of the City. This makes sense in that the Rochester waterfront is a regional destination that draws people from throughout the metropolitan area

Key findings of the web survey feedback include:

- Water quality improvement at Charlotte and Durand Eastman beaches was a top priority.
- Respondents identified the GardenAerial project in High Falls, Beebee Station Redevelopment and the Marina project as the most important catalyst waterfront projects, and that High Falls and the port area are most in need of improvement.
- Slightly more respondents lived outside of Rochester than lived within the city.

Anyone with web access could offer general comments through a simple text form on the project website. While the survey and the collaborative map determined the type of content to be offered, the general comment form offered participants an open-ended, simplistic method of contributing information. Between June 2013 and January 2014, participants used the general comment form to offer diverse feedback. For example, some identified their overall vision for Charlotte, while others offered specific strategies to improve water safety.

Key Findings from the General Comment Form include:

- Respondents value increasing the sensitive use of the water (e.g. greater gorge access for hiking, river kayaking).
- Participants want to involve diverse stakeholders in shaping the future of the waterfront.
- Respondents wish to maintain peaceful natural areas while activating neighborhoods like High Falls and Charlotte.

C. LWRP PUBLIC INPUT: OPEN HOUSE EVENTS

An Open House Event was held on June 26, 2013 where more than 50 residents, business-owners and leaders attended and shared their ideas. There were five exhibits at the open house. These displays were intended to both inform attendees and collect public comments. Most exhibits were interactive and encouraged attendees to share their vision, identify issues, opportunities and assets, and comment on the proposed waterfront boundary.

Meeting attendees were greeted by project leaders and encouraged to join a focus group. They also viewed a slideshow covering the history of the LWRP in Rochester. Previous waterfront planning documents and other information were on display and available for review.

The "vision" exhibit was an important component of the open house. Participants were asked the following two questions:

- What makes a great waterfront?
- What words, phrases and ideas should be part of our waterfront vision?



The participant's answers were used to create the "word cloud" to the right, which summarizes the community's vision for the waterfront. The size of each word in the cloud is determined by the frequency with which the respondents used the word to describe their ideal waterfront.

The “priorities” exhibit included a list of current and proposed city waterfront projects. Participants were asked to place stickers in specific project columns while considering the following questions:

- What is your one “big idea” or “catalyst project” for our waterfront?
- Which waterfront projects or priorities are important to you?

Overall, the key findings from this open house include:

- People want a waterfront that offers both sensitive development and nature conservation.
- Participants stressed that great waterfronts feature public access to the water and active transportation through multi-use trails.
- In addition to walking, biking and boating, people want to see waterfront restaurants and dining as important components of their vision.
- The highest priorities for waterfront development as voted on by the participants are: develop downtown waterfront and improve access to waterfront neighborhoods. Their lowest priorities are: develop more boat docks/slips and marinas and improve fishing access.

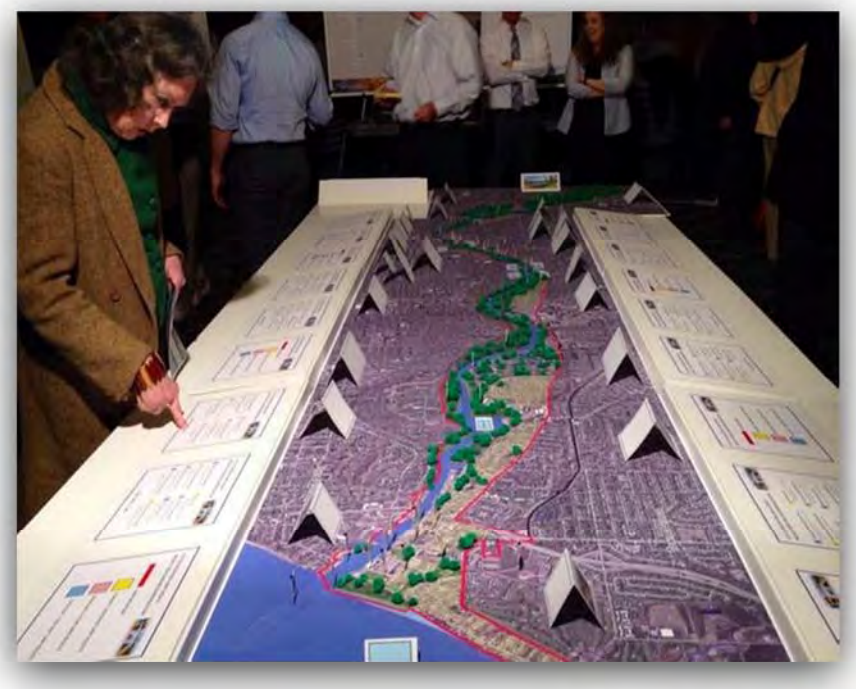
A second Open House Event/Community Meeting was held on April 9, 2014 in Rochester City Hall Council Chambers. While the first community open house focused primarily on gathering feedback, the purpose of this second open house was to review the preliminary vision, goals and policies and analyze more than 50 proposed waterfront projects.

At the center of the meeting was a large waterfront diorama that illustrated each waterfront project along with a brief explanation (see graphics below.) Participants spent much of the time reviewing the variety of waterfront opportunities and ranking their importance (See Section 4 for detailed description of the proposed and future waterfront projects.)

As a result of the varied public participation that was solicited throughout the process, five major themes emerged from the varied public participation:

- improve water quality;
- improve public access to the waterfront;
- connect downtown to the waterfront;
- develop more waterfront amenities and activities; and
- improve connectivity of the river trail segments.

A final public hearing will be held when the LWRP document is submitted to Rochester City Council for final approval and adoption.



LWRP diorama displayed at second public meeting showing boundary, focus areas, key development opportunities and waterfront project recommendations











Genesee River flowing north through downtown Rochester

Section 8: LWRP Harbor Management Plan



A. INTRODUCTION AND PURPOSE

Through an independent but coordinated initiative, the City of Rochester prepared the *Port of Rochester & Genesee River Harbor Management Plan* ("Port HMP") for the Rochester's Harbor at the mouth of the Genesee River on Lake Ontario. That plan assessed jurisdiction, water surface use issues, public safety, events and programming, boating, sedimentation and dredging, water level and drainage issues, water quality, and operations and maintenance. The Port HMP is included as Appendix I of this LWRP.

This section of the LWRP incorporates, by reference, recommendations from the Port HMP, and provides additional structure, clarification, and recommendations that address harbor management issues within the remaining harbors within the city's waterways. The remaining harbors of the city that are addressed within the following harbor management structure fall into five general zones of character. These are described below:

(1) Lake Ontario's Durand Eastman Park frontage as an open water zone;

(2) The Genesee River between the Lower Falls and the Turning Basin as a zone that is navigable by boat to the Port of Rochester and Lake Ontario;

(3) The Genesee River between the Court Street Bridge and the Lower Falls as an area of rapids and falls that is not safely navigable by boat;

(4) The Erie Canal within the city limits including the canalized section of the Genesee River (between the Erie Canal crossing and the Court Street Dam) as a zone that is navigable by boat and operated by a NYS Agency (NYS Canal Corporation); and

(5) The Genesee River south of the Erie Canal from the city's southern limits to the Erie Canal crossing in Genesee Valley Park, as a zone that is navigable by power boats during certain times of the year, and by hand powered craft most of the year.

B. HARBOR MANAGEMENT AREA BOUNDARIES

The boundary of the Port HMP, as described in the plan, is as follows:

The Harbor Management Area (HMA) begins approximately 1,500 feet north of the Ontario Beach shoreline and extends upstream to the terminus of the federal navigation channel approximately 200 yards south of the Essroc Cement Corporation facility, near Turning Point Park. The 1,500-foot northern boundary was established in accordance with New York State Executive Law Article 42 §922,

whereby authority is granted to cities with an HMP to regulate uses in, on or above surface waters to a maximum distance of 1,500 ft. from the shoreline.

Generally, the HMA is bounded by the Charlotte Running Track (a railroad right-of-way owned by CSX Transportation) and Lake Avenue on the west, while the eastern boundary generally follows the municipal boundary between the Town of Irondequoit and the City of Rochester From Seneca Park north to Pattonwood Drive, where it turns northeast and winds its way around the marinas and yacht club properties before reaching Lake Ontario. The HMA includes approximately 340 acres of lands abutting the shoreline or directly associated with those shoreline parcels.

The Genesee River within the HMA lies entirely within the City of Rochester. Along the western border of Irondequoit, the city claims a thin strip of land that extends northward along the banks of the river from Seneca Park to Lake Ontario, at some points less than 50 yards (46 m) from the shore so that the entire east bank is located within the boundary of the City and the border of the Town of Irondequoit never reaches the river.

In total, the HMA encompasses 557 acres, of which the majority (approximately 340 acres) is located land-side; the remaining 217 acres encompass the Genesee River and Lake Ontario. As it relates to municipal boundaries, the HMA includes 431 acres within the City of Rochester and 42 acres within the Town of Irondequoit; the remaining 84 acres are associated with Lake Ontario and do not fall within municipal boundaries.

For the remainder of the City's harbors and potential harbors, as shown in Figure 26, the Harbor Management Plan boundary is generally defined as follows:

Lake Ontario at Durand Beach: Along the Durand Eastman Park shoreline, the Harbor Management Area section would run from the 100 year flood plain boundary to a point 1,500' off shore

Genesee River South, the Genesee River Rapids and Genesee River North: The entire river section within the 100 year flood plain boundary and the immediately adjacent riparian properties.

Erie Canal: All New York State Canal Corporation lands, including the entire section of the navigable Erie Canal.

The Harbor Management Plan boundary zones are shown on Figure 26 and are further described in the Inventory and Analysis section below. The map also illustrates park and open space areas within the city as well as proposed "harbor activity areas" and "landings". The HMP boundary for Zone 1 (Port of Rochester to Turning Basin) is shown in more detail on Figure 27 below.

FIGURE 26: LWRP HARBOR MANAGEMENT PLAN ZONES

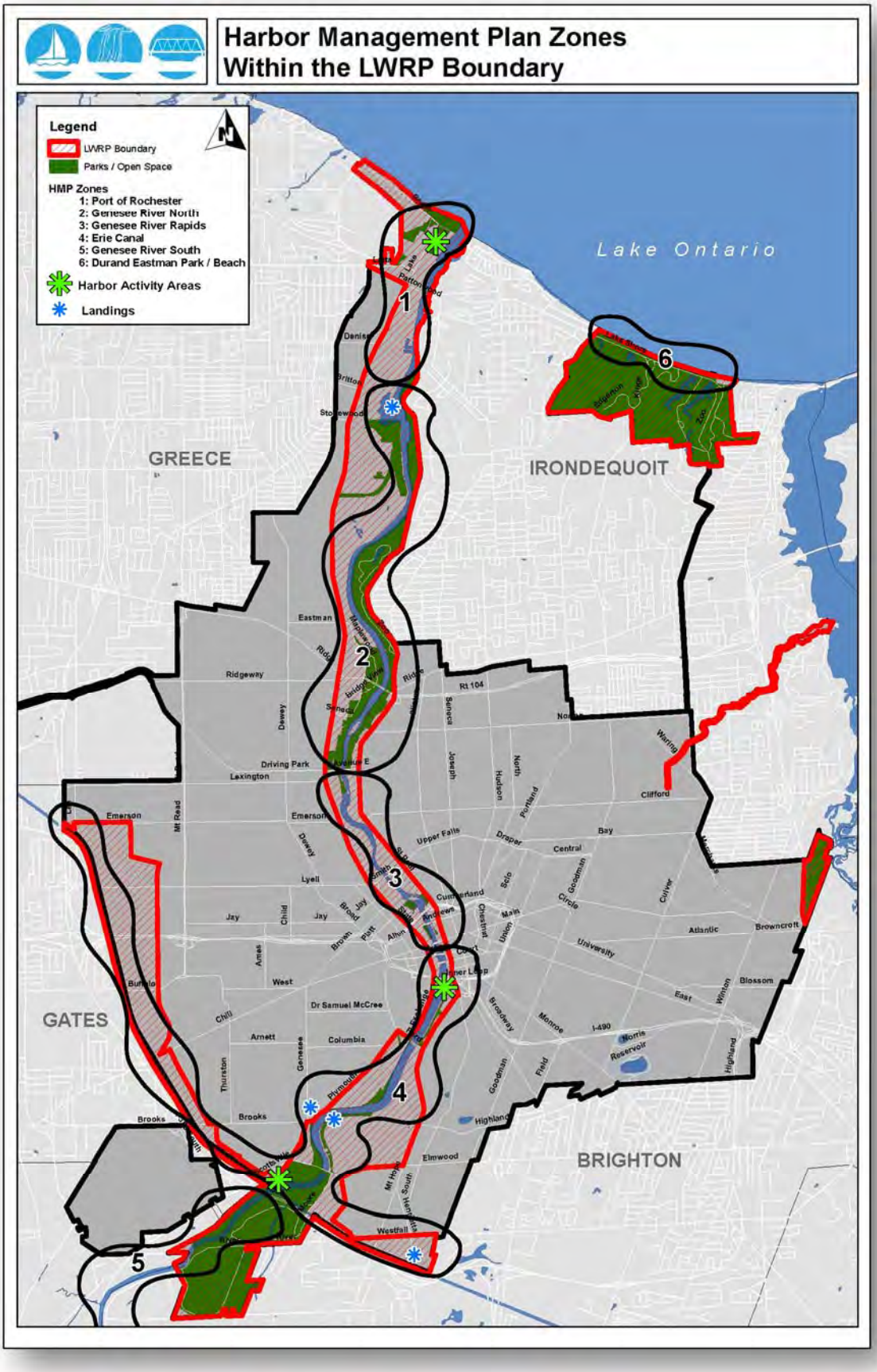


FIGURE 27: LWRP HARBOR MANAGEMENT ZONE 1
PORT OF ROCHESTER TO TURNING BASIN



Port of Rochester Harbor Area

Genesee River & Navigation Channel

Turning Basin & Turning Point Park

HMP Boundary Extent – Zone 1

C. INVENTORY AND ANALYSIS

A detailed inventory and analysis has been prepared for the Port of Rochester Harbor Management Plan and for the city's Local Waterfront Revitalization Program. The following description of existing conditions, analyses and opportunities summarizes those that directly impact Harbor Management Plan considerations for zones 2, 3, 4, 5 and 6.

PORT HMP (ZONE 1)

A detailed inventory and analysis for the Port HMP (Zone 1) is included in Appendix I.

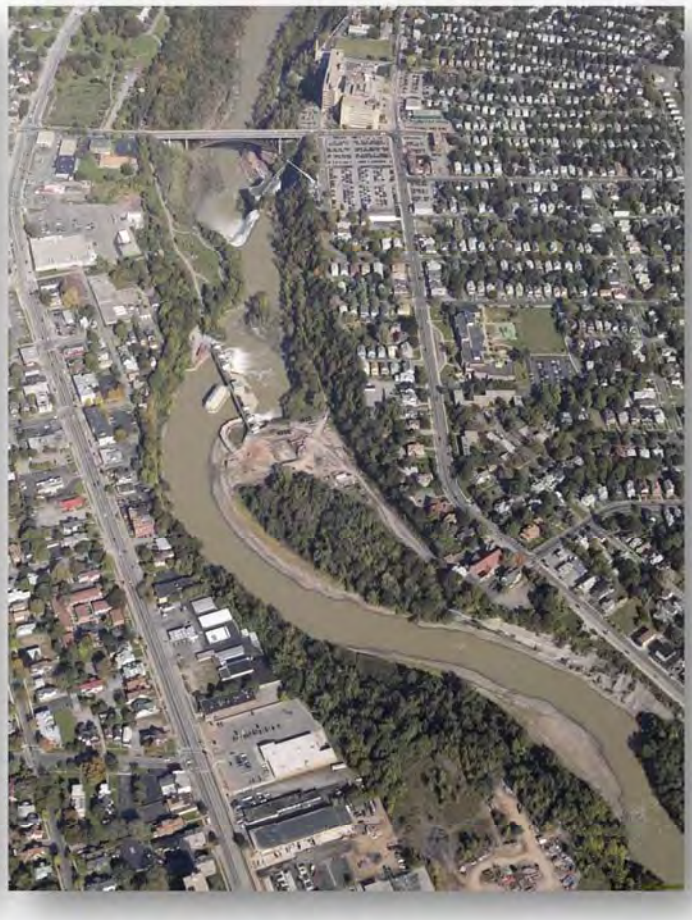
GENESEE RIVER NORTH (ZONE 2)

This section of the Genesee River is navigable for most vessels for a distance of approximately 3 miles to the south of the Turning Basin, providing drafts of up to 6' or more within a natural river channel. The width of the river varies between 200' and 250' with a navigable 4' depth for 75% of that width, or more. As the River nears Seth Green Island and the Lower Falls, the water depth decreases suddenly and becomes a series of rolling rapids.

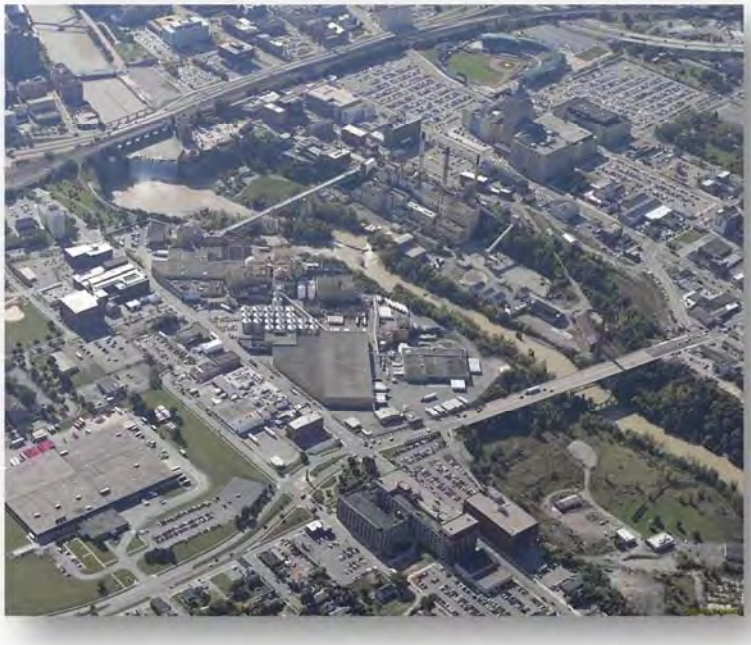
This section of River is very scenic with high banks, limited shoreline development and good fish and wildlife habitat. It is lightly used for recreation, kayaking and power boating - and heavily used for fishing. A tour boat offers scenic trips up this section of the River gorge. A large regional park and zoo (Seneca Park) abuts the River on its eastern bank, near the south end of this river segment. A multi-use trail parallels a portion of this section of river, with plans to eventually connect the Port of Rochester to Seneca Park and the Erie Canal.



LWRP HMP Zone 2 – Genesee River North



LWRP HMP Zone 3 – Genesee River Rapids



LWRP HMP Zone 3 – Genesee River Rapids



LWRP HMP Zone 3 – Genesee River Rapids

GENESEE RIVER RAPIDS (ZONE 3)

The section of Genesee River that flows from the Court Street Dam in Rochester's Center City area, and then approximately 3 miles downstream to the Lower Falls is fast flowing, full of waterfalls and intermittent rapids. This section has several river control structures that serve to control water levels, maintain safe conditions, and generate power. A parallel multi-use trail offers visual access and very limited fishing access to the water. This is historically, as well as today, the most urbanized portion of Rochester's waterfront. Historically, the rapids provided the water power to run early mills. The confluence of the historic Erie Canal (located at the Broad Street aqueduct) and the Genesee River rapids provided both the transportation and water power to fuel the United States' first real boom town.

For the most part, the extreme variation in water conditions and dangerous falls and rapids limits the recreational and commercial use of this section of waterway to scenic landside activities and power generation. The section of river within the Center City area and High Falls Historic District has been used for visual programming and events in the past.

ERIE CANAL WEST AND EAST (ZONE 4)

The Erie Canal includes a man-made channelized section of waterway that runs west to east across the southern portion of the city, forming the municipal boundary in some cases. The canal also includes a section of the channelized Genesee River from north of the Erie Canal crossing to the Court Street Dam. The dam functions as the control structure that regulates the water level for this section of the Genesee River and for the Erie Canal. The standard cross section for the canal includes a total width of approximately 100' and a maintained depth of 8'.

The land use character of the Erie Canal varies. Within the east-west channelized section the surrounding uses are substantially industrial and transportation related. At the confluence of the man-made canal section and the Genesee River is Genesee Valley Park which is a Frederick Law Olmsted designed park with beautiful shoreline, a golf course, rowing centers and elegant bridges. The channelized section of the Genesee River begins within Genesee Valley Park, then runs through the University of Rochester's campus, and terminates approximately 3 miles north at Rochester's Center City, and a port called Corn Hill Landing.

The water surface use of the Erie Canal is dominated by hand powered craft, including rowing shells, kayaks and canoes. The University of Rochester and Rochester Institute of Technology both have boathouses on the canal or river, and several other rowing clubs operate out of two other boat houses. The Erie Canal also has tour boats, for hire canal

boats and private motor craft in this section of River. Transient docking is available at Corn Hill Landing. However, no marine services are available in this area.

The New York State Canal Corporation has jurisdiction of the canal and imposes a 10 mph speed limit and no wake zone for the entire water body.

GENESEE RIVER SOUTH (ZONE 5)

The Genesee River flows northward from its headwaters in northern Pennsylvania, through the Letchworth Park gorge, fertile farmlands, and then flows through the City of Rochester before emptying into Lake Ontario. The section of river between Rochester's southern municipal boundary and the Erie Canal crossing at Genesee Valley Park is characterized as a slow moving meandering river. Its width varies between 250' and 300' and carries maximum depths in the 4' to 8' range. The shoreline is substantially undeveloped, including parkland, public land and vacant land. The water surface use is primarily hand powered watercraft (significant rowing presence), limited power boating and some fishing. This section of river has direct access to the Erie Canal, and as a result, has some Erie Canal related navigation on it. A multi-use trail parallels this section of river, but due to the corridor's undeveloped state, security issues may be a limiting factor regarding use.



LWRP HMP Zone 4 – Erie Canal (West and East)



LWRP HMP Zone 5 – Genesee River South

LAKE ONTARIO/DURAND EASTMAN PARK (ZONE 6)

Durand Eastman Park is located within the City of Rochester, even though it is managed by Monroe County and surrounded by the Town of Irondequoit. The Park has 5,000 LF of Lake Frontage, comprised entirely of sandy beach. The linear water frontage hosts picnicking, swimming, surfing, sail boarding and many passive recreational activities. A multi-use trail parallels the entire shoreline. Boats will often anchor and/or raft and swim in the waters just off of the beach. The western end of the park hosts the Van Lare wastewater treatment plant which is licensed to treat 130 million gallons per day, serving the majority of the Rochester metropolitan area. The City of Rochester operates a public swimming beach that was re-opened for supervised swimming in 2006 and is supported by temporary facilities at this time, however the construction of a more permanent bathhouse structure and additional amenities are planned.

D. MANAGEMENT, OPERATION AND ENFORCEMENT

Management and operations recommendations for the Port HMP are included in Appendix I. The remainder of the City's waterways fall generally into four categories: Navigable sections of the Genesee River; Un-navigable sections of the Genesee River; the Erie Canal (including the canalized section of the Genesee River); and the Lake Ontario shoreline (off of Durand-Eastman Park Beach). Within select areas, issues of jurisdictional authority, operations, enforcement and public safety need to be well coordinated between multiple agencies and municipalities, particularly within and adjacent to the Port of Rochester.

NAVIGABLE SECTIONS OF THE GENESEE RIVER

Two sections of the Genesee River are navigable by pleasure boat and hand carry craft. One section is south of the Erie Canal and the other section is between the Port of Rochester and the Lower Falls. These sections of River are managed for flood control, environmental impact, and in a limited manner, for water surface use.

Primary responsibility for managing flood control is held by the US Army Corps of Engineers. This includes active management through flood water controls, as well as the administration of permits. Strict enforcement of existing regulations is recommended along with adequate maintenance of existing flood control structures.

Environmental regulation in this area is handled in several manners, with much of the jurisdiction within New York State's Department of Environmental Conservation (NYS DEC). NYS DEC reviews permit applications of work within the waterway. They also, together with the City of Rochester, administer the NYS Environmental Quality Review Act (SEQR). NYS DEC also administers stormwater regulations designed to protect water

quality and quantity. It is recommended that the City of Rochester work together with the US Army Corps of Engineers and the NYS DEC to continue diligent administration and enforcement of existing environmental regulations.

Water surface use in this section is administered by the New York State Office of Parks, Recreation and Historic Preservation. Lands under water are administered by the New York State Office of General Services, as property of New York State. Vessel operation is regulated by International Navigation Law, with the US Coast Guard having primary administrative responsibility. This section of waterway has had very little use or demand in the past, hence, has had very little need for enforcement of NYS regulations pertaining to public lands underwater or water surface use. Most of the riparian lands are owned by the City of Rochester. Within these sections of waterway, the City of Rochester should consider the following potential regulations and authorities in anticipation of increased use:

Docking, Anchoring and Mooring Regulations
Speed and Wake
Courses and Markers
Navigation Aids
Education and Signage

GENESEE RIVER RAPIDS - UN-NAVIGABLE SECTIONS OF THE GENESEE RIVER

The falls and rapids section of the Genesee River between the Court Street Dam and the Lower Falls is primarily managed for hydroelectric power, flood control and environmental impact. Relative to flood control and environmental impact, the operations and maintenance of this section is the same as for the navigable section of the river. Hydro-electric power is regulated by the Federal Energy Regulatory Commission (FERC) in association with NYS DEC. It is recommended that the City of Rochester work closely with NYS and Federal agencies to enforce existing regulations.

ERIE CANAL

The Erie Canal is managed and operated by the New York State Canal Corporation. Monroe County and local municipalities assist with enforcement and safety. It is recommended that the City of Rochester work with the Canal Corporation to consider the same potential regulations and authorities as are recommended for the navigable river sections (noted above). The rules and regulations that govern the Canal can be found at: http://www.canals.ny.gov/about/rulesregs/canalregs.pdf and http://www.canals.ny.gov/business/realproperty/tap-923b.pdf.

LAKE ONTARIO

The waters of Lake Ontario, off of Durand Beach Park, are substantially regulated by New York State Navigation law (https://parks.ny.gov/recreation/boating/navigation-law.aspx) with enforcement support from Monroe County Sheriff's Office and the U.S. Coast Guard. This open water area should consider additional safety and environmental considerations including:

Anchoring and Mooring
Swimming and Special Beach Use Areas
Speed and Wake
Courses and Markers
Navigation Aids
Education and Signage

HARBOR MANAGEMENT COMMISSION

It is recommended that a Harbor Management Entity, similar to what is proposed in the Port HMP, should be formed that focuses on the harbor management of the Erie Canal and the portion of the Genesee River that are south of the Erie Canal.

EXISTING REGULATORY JURISDICTIONS AND AUTHORITIES

Existing regulatory jurisdictions and authorities within the city's Port HMP are summarized in the chart below. Existing regulatory jurisdictions and authorities within the city's remaining Harbor Management Plan Zones will be determined at a future date by the Harbor Management Entity.

SUMMARY OF HARBOR MANAGEMENT PLAN
REGULATORY JURISDICTIONS AND AUTHORITIES
FOR HMP ZONE 1 (RIVER HARBOR TO TURNING BASIN)

Function / Role	Review Development Projects	Establish Land Use Regulations	Establish Environmental Regulations	Resource Management Permits	Enforce Regulations	Planning & Techical Assistance	Natural Resource Management	Land Ownership / Management	Environmental Management	Land Use Planning Studies	Navigation	Recreational Facilities & Public Access	Public Information / Education	Conservation Advocacy
Monroe County Departments														
Sheriff's Office					x						x		x	
Department of Transportation	x					x								
Department of Parks												x	x	
Fishery Advisory Board							x						x	x
City of Rochester Departments														
Police Department					x						x		x	
Fire Department	x				x								x	
Administration	x	x	x			x	x	x	x	x		x	x	x
State Agencies														
State Police					x						x		x	
Department Environmental Conservation (DEC)	x		x	x	x	x	x	x	x	x	x	x	x	x
Department of State (DOS)						x	x					x	x	x
Office of Parks, Recreation, and Historic Preservation														
Office of General Services				x				x						
Federal Agencies														
U.S. Coast Guard	x				x	x					x		x	
U.S. Customs and Border Protection	x				x	x					x		x	
U.S. Army Corps of Engineers	x		x	x	x	x	x	x	x	x	x	x	x	x
National Oceanic and Atmospheric Administration			x		x	x	x		x				x	x
U.S. Enviornmental Protection Agency (EPA)	x	x				x			x				x	x
U.S. Fish and Wildlife				x		x	x						x	x
Other Agencies														
Town of Irondequoit	x	x	x			x		x		x			x	

E. INFRASTRUCTURE

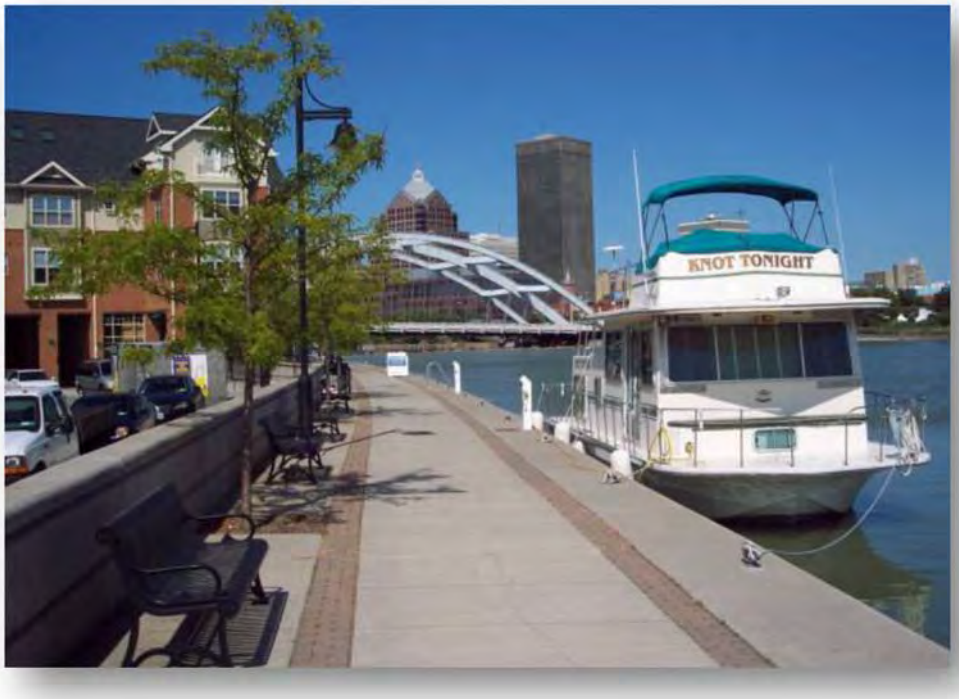
Existing harbor infrastructure includes flood, environmental, hydro-electric, recreational and navigational components. These components are described below:

FLOOD AND ENVIRONMENAL CONTROLS

The Army Corps of Engineers has invested heavily in successful flood protection measures over the last century. The NYS Canal Corporation owns additional flood, water control, and lock facilities. It is recommended that existing facilities be maintained and operated to current performance criteria. During major capital maintenance projects opportunities to incorporate green practices should be seriously considered and pursued. Opportunities to improve public access, visibility, safety, interpretation, and recreational use should also be incorporated whenever feasible.

HYDROELECTRIC POWER

The Genesee River has several existing hydro-electric facilities, all owned by Rochester Gas and Electric. The facilities go through periodic licensing and inspection to insure their safe operation. Future projects are regulated and reviewed by the NYS DEC and FERC. Continued use and possible expansion of hydro-power as an alternative and clean energy source should be encouraged, conditioned on a thorough environmental assessment.



CORN HILL LANDING ON THE GENESEE RIVER / ERIE CANAL

PUBLIC ACCESS AND VISITOR AMENITY

A substantial investment has been made in public access to the shore, including trails, trailheads, parks, and boardwalks. There is a trailer boat launch at the Port of Rochester. Hand-carry boat launches exist at Turning Point Park and the Genesee Valley Park. The city has invested in a strong environmental signage program that should be continued with the installation of additional infrastructure. Additional car-top boat launches should be strongly considered, as well as a trailer launch accessing the upper Genesee River and Erie Canal. A potential site for a trailer launch could be on the west side of the Genesee River, south of the Erie Canal. Potential locations for hand-carry launches could include the eastern end of the Erie Canal (CityGate area), the western end of the Erie Canal, the Corn Hill area, the South Wedge Area, and Seneca Park, among other possibilities.

BOATER SERVICES

A marine holding tank pump-out, water supply, visitor information, and electrical hook ups are located at Corn Hill Landing. Similar services should be provided at Brooks Landing, the Citygate Landing, and a potential location at the western end of the canal near Chili Avenue. Services for hand-carry and hand powered boats, including several boathouses, exist at Genesee Valley Park. Additional hand-carry services should be developed at Citygate, at a location in the western end of the Erie Canal, at a location south of the Erie Canal on the Genesee River, in the South Wedge area, at Turning Point Park and at the Port of Rochester. Safety provisions should be provided for hand-powered craft including shoreline access, landside visibility, and hand holds in wall sections.

DREDGING

The NYS Canal Corporation performs annual dredging necessary to maintain water depths in the Erie Canal and canalized section of the Genesee River. It is recommended that this dredging program continue in an environmentally responsible manner, that limited new dredging be allowed to accommodate new boater services, and that all other water uses are sited in a manner that would not require any dredging.

F. WATER SURFACE USES AND ACTIVITIES

GENERALIZED USE CATEGORIES

Six general categories of water surface use exist within the city's limits, outside of the Port of Rochester. Generalized locations are mapped in Figure 29 and the suggested regulation of these uses is as follows.

Docking, Anchoring and Mooring: No docks, moorings or anchoring should be allowed in the Rapids section of the Genesee River, with the exception of public fishing piers. No docks or moorings should be allowed in the Lake Ontario section with the exception of fishing piers. Anchoring outside of swimming areas to be allowed and regulated per Federal Navigation Law. Moorings should only be located within the designated mooring location (Erie Canal Harbor) and should be maintained and operated by the city or its assigned agent to strict standards that would limit vessel swing and that would not impact navigation or recreational use. Anchoring should be permitted in all waters for safety and emergency purposes. Recreational daytime anchoring is also to be allowed outside of designated course areas.

Power Boating: Power boating is allowed on all sections of the navigable Genesee River and Erie Canal. The Erie Canal has a speed limit of 10 mph and a no-wake restriction as established by the NYS Canal Corporation. The entire limits of the Genesee River are within 200' of shore, and are recommended to have a speed limit of 10 mph. The Lake Ontario area should have a 10 mph speed limit within 200' of shore and within 200' of any swimming area. No-wake restrictions should be in effect within any Course area. Navigation Law should be adhered to regarding all operation of vessels in all waters of the city. Expanded public access to the water should include support of tour boats, water busses, water taxis and boats for hire.

Hand-powered Craft: Hand-powered craft should be encouraged on all waters of the City of Rochester, with the exception of the Rapids Section of the Genesee River. Landside facilities in support of rowing and paddling are recommended to be allowed and expanded. Public access should be encouraged in the form of liveries, training facilities, rental and storage facilities as well as launch areas.

Courses: The Genesee River and Erie Canal are used extensively for hand-powered craft events, including training, regattas and races. Courses should be allowed to be set up within designated areas and with appropriate permits from the NYS Canal Corporation and NYS Parks. Consideration should be given to establishing a local source for permitting, as well as a system of standing permits. No recreational anchoring, docking, or mooring is allowed within designated course areas. Course areas should be no-wake zones for power boats.

Fishing: Fishing should be allowed in all sections of the city's waterways except for those areas designated as safety zones within the Genesee Rapids Section of the river.

Swimming: Swimming should only be allowed within the Lake Ontario Section and only within designated swimming areas during posted hours of operation.

OTHER WATER SURFACE USES AND ACTIVITIES

Common water surface activities in the Lake Focus Area include swimming within designated areas at Ontario Beach Park and Durand Beach. A large unofficial "mooring area" for recreational boaters is located towards the east end of Durand Beach where boats often tie up to each other and anchor. Other common water surface uses on Lake Ontario include recreational power boating / sailing, and windsurfing. The Charlotte Pier at the mouth of the river extends out into Lake Ontario providing a popular spot for fishing access.

A public boat launch is located at the Port of Rochester as well as several nearby public and private marinas that offer short and long term boat docking along the banks of the Genesee River. With the public boat launch and marina entrance on the west side, navigation channel for boats traveling north-south along the center of the river, and the Rochester Yacht Club's sailing activities in front of their property on the east side, the potential for surface use conflicts exist.

The predominant water surface activity in the river includes fishing in almost all areas within the lower river gorge. A particularly popular spot among anglers is at the terminus of Seth Green Drive near the Lower Falls. Recreational boating (both powerboats and human powered boats) is also common along the river from the Port of Rochester south to Seth Green Island, at which point access becomes limited due to rocky terrain and shallow water depths. The river gorge area between the Middle and High Falls is not easily accessible and therefore water surface activities in this section are rare.

Common water surface activities in the canal focus area include recreational boating (both powerboats and human-powered boats) along the east-west portion of the Erie Canal. Recreational boaters can navigate from the Erie Canal north up the "canalized" portion of the Genesee River to Brook's Landing and Corn Hill Landing on the west side where transient docking is available for visitors. With the Genesee Valley Waterways Center on the west side and the University of Rochester River Campus on the east side, human powered boating (canoeing, rowing, crew related activities, etc.) is prevalent in the south river corridor. As a result, the potential for water surface use conflicts between recreational power boats and human power boats exist in this section of the corridor. Fishing is also a common activity throughout this area and points south in Genesee Valley Park.

FIGURE 28: LWRP WATER RELATED RESOURCES / WATER SURFACE USE

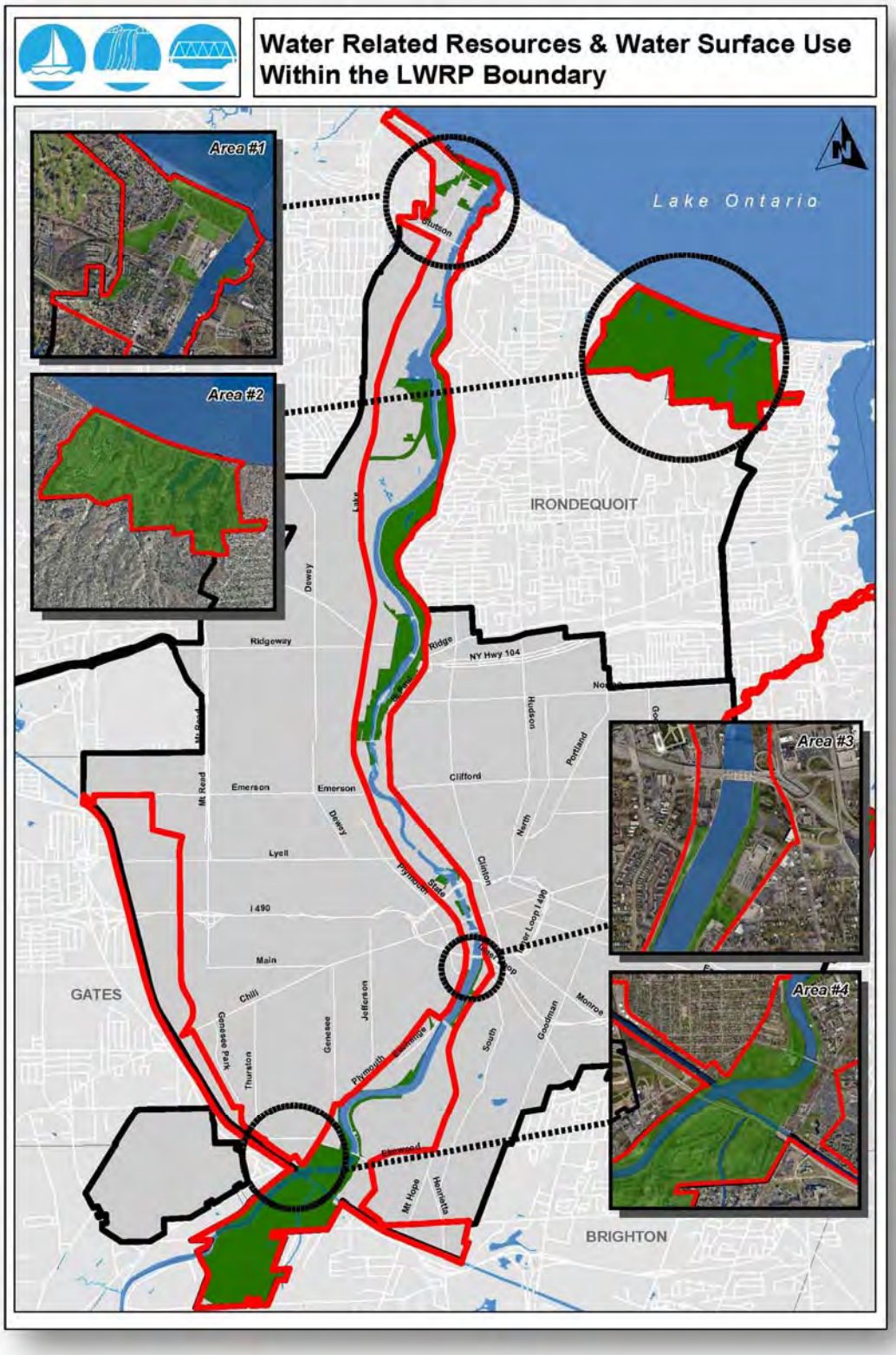


FIGURE 28, Continued: LWRP WATER RELATED RESOURCES / WATER SURFACE USE

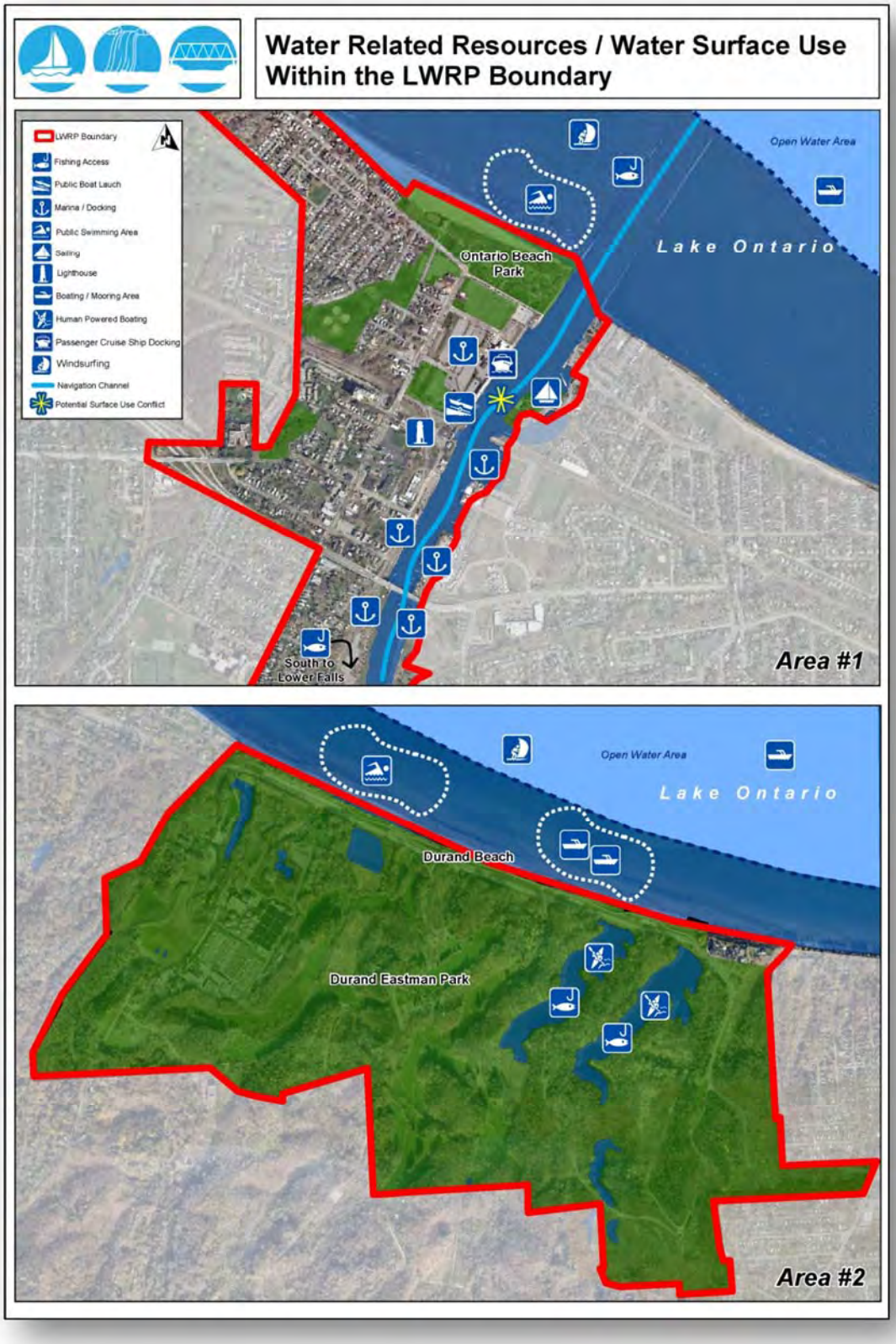
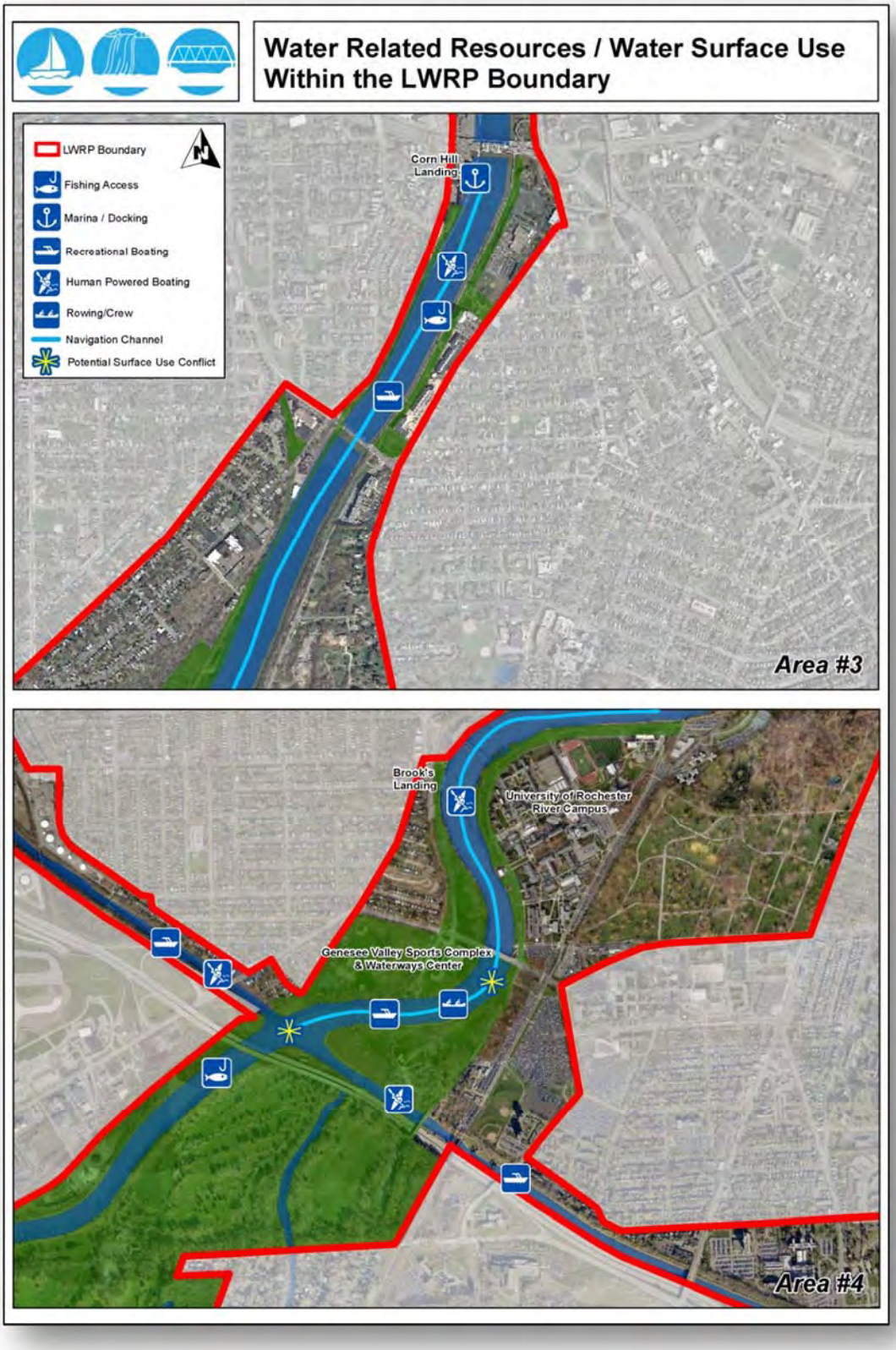


FIGURE 28, Continued: LWRP WATER RELATED RESOURCES / WATER SURFACE USE



G. WATER QUALITY AND HABITAT

NYS DEC rates the Genesee River's quality as generally good. The River carries heavy sediment loads, particularly during storm events from non-point sources in the southern portion of the drainage basin. Additional impairment comes from the industrial impacts located in the northern section of the River. The varied riparian edge includes very natural areas in the south, parkland, urban landscape through the Center City, and natural edges in the gorge area. These riparian edges provide good terrestrial and fisheries habitat in the northern section of the River. The Rapids area begins with urban and hard edges, but is substantially within a natural and wooded corridor and gorge. Water quality at the City's two swimming beaches (Ontario Beach and Durand Eastman Beach) both have periodic issues with algae and high bacteria counts that can temporarily close the beaches for swimming. Recommendations aimed at addressing water quality and habitat issues include:

Storm Water/Non-Point Pollution: Continued strict compliance with NYS DEC storm water regulations and best practices.

Green Infrastructure: Incorporate NYS Environmental Facilities Corporation green infrastructure practices in public capital projects and encourage their use in private development projects.

Fisheries, Bird and Wildlife: Insure strict compliance with NYS DEC Article 15 permitting with special focus on protecting and enhancing habitats and spawning areas; enhance wildlife corridors, including the identification of a corridor through the Center City; incorporate riparian plantings, habitat enhancements and green corridors into public and private capital projects.

Rochester Embayment Area of Concern: Assist with the implementation of the Remedial Action Plan (RAP), together with the EPA, NYS DEC and Monroe County.

Genesee "Riverkeeper" Initiative: Support the Center for Environmental Information's (CEI) Genesee "Riverkeeper" program.

Beach Water Quality: Maintain continued focus and investment on water quality infrastructure and maintenance (algae control and storm water management) to keep public beaches at Ontario Beach Park and Durand-Eastman Park open for swimming.

H. LAKE ONTARIO WATER LEVEL

The International Joint Commission (IJC) is a body made up of representatives from the United States and Canada and is responsible for maintaining the lake levels of the Great Lakes, including Lake Ontario and the Port of Rochester.

The IJC has four main responsibilities - regulating shared water uses, improving water quality, improving air quality and investigating trans-boundary issues and recommending solutions.

As part of its management efforts, the IJC has developed a new approach for managing water levels and flows in the Lake Ontario / St. Lawrence River (LOSLR) system. The former water level management plan (known as 1958 D) allowed water levels within Lake Ontario and the St. Lawrence River to fluctuate approximately four feet, from 243.3 to 247.3 above sea level. The IJC believes that the 1958-D plan severely impacted coastal environmental processes, in particular emergent wetland communities over the past four decades of it being in place.

The new regulation plan, referred to as Plan 2014 was adopted and put into effect in December 2016 and specifies the operational rules for managing Lake Ontario outflows to more closely follow natural patterns of water levels and flows than did the 1958-D plan, while moderating extreme water levels and establishing an "adaptive management strategy." The new plan allows more seasonal variability in water levels (higher highs and lower lows) from year to year on Lake Ontario and the upper St. Lawrence River in an effort to improve the health and diversity of coastal wetlands.

I. HARBOR MANAGEMENT GOALS

MANAGEMENT AND OVERSIGHT

Actively manage the use and conservation of the harbor management area in the public interest and for the benefit of all City residents and the general public.

PUBLIC ACCESS AND RECREATION

Maintain and enhance opportunities for recreational use of the harbor area consistent with its capacity to support those uses. Provide long-term opportunities for safe and enjoyable use of, and access to, the harbor area and waterfront.

WATER SURFACE USE AND RIPARIAN SHORE

Support and maintain a diversity of water-dependent and water-enhanced facilities and uses that enhance the quality of the waterfront zone.

DEVELOPMENT AND INFRASTRUCTURE

Recognize and pursue opportunities for economic growth and community development associated with the harbor area and waterfront in a sustainable and substantial manner.

FISH, WILDLIFE AND HABITAT

Conserve and enhance the environmental quality, natural resources and ecological functions associated with the harbor area and the larger Genesee River gorge/ecosystem.

FLOODING AND EROSION CONTROL

Maintain and enhance existing flood control structures while seeking opportunities to utilize natural systems and green infrastructure to achieve equal or better results.

PUBLIC HEALTH, SAFETY AND WELFARE

Plan for, manage, and regulate the use and development of the harbor area and waterfront to assure their most orderly and efficient use.

WATER AND WETLAND RESOURCES

Utilize best practices and green infrastructure to constantly seek means to improve non-point and point water pollution. Protect and restore wetland resources within the city limits and within the Genesee River / Erie Canal watershed.

EDUCATION AND CULTURAL ENRICHMENT

Preserve, promote, and interpret the natural features and historic waterway and maritime heritage of the harbor area. Promote a strong ethic of environmental stewardship whereby all citizens, officials, agencies and organizations with an interest or authority pertaining to the harbor area and waterfront consider themselves stewards of the water.

J. WATER SURFACE USE RECOMMENDATIONS

The following summary of water surface use recommendations is designed to address opportunities in support of the city's overall harbor management goals:

GENERAL

Water Dependent and Water Enhanced Riparian Uses: Insure that riparian zoning districts encourage water dependent and water enhanced uses and discourage all other waterfront uses.

FIVE HARBOR AREAS

Beyond the Port of Rochester Harbor Management Area, the following five waterfront zones should be recognized in municipal planning documents and implementation plans as being the City of Rochester's waterfront zones (see Figure 27):

Lake Ontario/Durand Eastman Park
Genesee River North
Genesee River Rapids
Erie Canal
Genesee River South

DEVELOPMENT NODES

Within the five Harbor Areas, special development nodes have been identified as being appropriate for clusters of recreation, services and public access activities. These nodes include:

Lake Ontario/Durand Eastman Park: Swimming Beach
Genesee River North: Port of Rochester
Seth Green
Erie Canal: Erie Harbor West; Erie Harbor East; Brooks Landing; Citygate; (and a western Erie Canal Landing – location TBD)
Genesee River South: (a south landing – location TBD)

K. HARBOR MANAGEMENT RECOMMENDATIONS

The following projects are recommended in support of the Harbor Management Goals.

OVERSIGHT, OPERATIONS AND MANAGEMENT

The Port of Rochester Harbor Management Plan has recommended a Harbor Management Entity for the Port area. The role of that group should be replicated for management of the Genesee River North Zone, the Erie Canal Zone and the Genesee River South Zone.

New Regulations: New regulations regarding the setting of race courses, docking, mooring, anchoring, speed, wake, swimming limits, and boating limits should be implemented within all of the navigable waters of the city.

INFRASTRUCTURE

The following harbor area and waterway infrastructure improvements should be pursued.

Green Infrastructure Program: All public sector facility maintenance projects and new construction projects should strive to incorporate green infrastructure as a matter of course. Private development projects should be incentivized to include green infrastructure.

Public Access and Interpretation Program: Continued implementation of the Genesee Riverway Trail, the Erie Canal Heritage Trail and the Genesee Greenway

Trail including trailheads, directional signage, interpretive signage and other educational elements.

Trailer Boat Launch (Southern Genesee River): Develop a trailer boat launch for access to the Erie Canal system within the undeveloped portion of Genesee Valley Park at the south-west corner of the Erie Canal/Genesee River crossing.

Hand-Carry Boat Launches (Southern Genesee River, Western Canal, Citygate): Develop new car-top boat launches with trailheads, facilities, signage and appropriate docking on the Erie Canal and the Genesee River.

Landings and Boater Services (Corn Hill Landing, Brooks Landing, Citygate, South Wedge, western canal landing): Enhance waterfront access nodes in six locations on the Erie Canal and navigable portion of the Genesee River South.

Directional, Information and Interpretive Signage Program: A consistent signage program should be developed for the entire harbor management and waterfront area. A visitor experience should include signage that is graphically exciting, simple, accessible to all ages, and friendly to families. Signage should engage visitors upon arrival and during the visit. Interpretation should detail Rochester and its waterways unique environmental and cultural heritage including glacial creation, Native American history, settlement, the Erie Canal, current activities, water and resource conservation, etc.

Landside Support for Rowing and Paddling: Encourage and accommodate the development of public and private landside support for hand-powered craft. Trailheads, accessible and low docking areas, and boathouses should be developed consistent with Figure 29.

Fishing Access Points and Piers (Southern Genesee River, Genesee Rapids, Seth Green Park, Northern Genesee River, Durand-Eastman Park): Fishing access trailheads, fishing piers and safety features should be developed in appropriate locations to encourage expanded use and opportunity.

Cable Car, Zip Line or Funicular for Gorge Access: Explore the engineering and financial feasibility of developing a vertical transportation system into the Genesee River Gorge in the locations identified in High Falls in Section 4.

Dredging: Continue to support existing dredging programs in the Port of Rochester and Erie Canal.

Expanded/Enhanced Hydroelectric Power: Explore the financial feasibility, engineering feasibility, and environmental sustainability of improved and expanded hydroelectric facilities on the Genesee River.

WATER SURFACE USE

Navigation Aids and Markings: Develop a plan and maintenance program for expanded navigation aids in the Genesee River North, Erie Canal, and Genesee River South areas. Aids and markings should identify channels, special anchorage areas, course areas, and obstructions.

Canal Harbor Mooring Field: Study the feasibility of designating a water surface area for linear mooring pattern in the Erie Canal Harbor area between the Ford Street Bridge and the I-490 Bridge.

Race Course Areas: Designate water surface areas for setting regular race courses within the Erie Canal and the Genesee River South area. Provide temporary and/or permanent markings to warn boaters of course areas and protocols.

WATER QUALITY AND HABITAT

Habitat Enhancement Program: Develop a habitat enhancement plan designed to return wildlife to urban areas and to strengthen the Genesee River and Erie Canal as wildlife corridors. Incorporate into public and private design standards, capital projects and site plan reviews.

Beach Water Quality Infrastructure and Maintenance: Strive for continuous improvement of water quality at the two Lake Ontario public swimming beaches through green infrastructure and mechanical means.

"Riverkeeper" Program: Support the Center for Environmental Information in seeking "Riverkeeper" designation for the Genesee River and the development of a sustainable conservation program for the River.

LOCAL HARBOR MANAGEMENT STRUCTURE

With the City of Rochester's substantial commitment to and investment in its waterfront areas (lake, river, canal) over the past 15-20 years, the city needs a strong and effective local harbor management structure to oversee public infrastructure investments and projects, advocate for its harbor areas, protect environmental resources, support existing businesses and pursue new water-related economic development opportunities. The components of the proposed LWRP harbor management structure include:

1. Creation of a Waterfront Owners and Operators Association to improve collaboration, advocacy, and promotion related to harbor operations and waterfront development issues throughout the LWRP boundary.
2. Reassessment of the need for a waterfront-wide management entity after completion of the new marina and the Phase 1 landside development at the Port Site.
3. Development of a specific regional promotion and marketing strategy for the City of Rochester's "Three Great Waterways" that will focus on attracting visitors and tourists to the city's waterfront areas (lake, river and canal). This strategy should promote Lake Ontario and the Erie Canal as new "front doors" to the city for visitors coming to the region by boat or cruise ship.
4. Creation of an internal city coordinating committee or team to review and critique waterfront development proposals, plans, infrastructure projects and other waterfront issues and concerns.
5. Consider continuing the operation of the city's LWRP Waterfront Advisory Committee (WAC) to serve as a citizen's advocacy group for the city's waterfront areas and as a community sounding board for the discussion of important waterfront development issues.
6. Develop advocacy and budgetary strategies for ensuring ongoing, long-term dredging for the federal navigation channel, the Port Terminal dock wall area, the public boat launch and the two public marinas at the Port site; work to develop a plan for coordinated dredging (public/private partnerships) as needed throughout the LWRP boundary to save costs and expedite permit administration; work to coordinate debris removal throughout the river corridor.

L. IMPLEMENTING RESPONSIBILITIES AND TECHNIQUES

The following entities should have a shared responsibility for implementing harbor management recommendations and projects.

<u>City of Rochester</u>
Harbor Management Entity Leadership
Implementation of New Regulations
Green Infrastructure Program
Trailer Boat Launches
Public Access and Interpretation Program
Hand –Carry Boat Launches

Private Sector
Green Infrastructure on Private Properties
Habitat Enhancement on Private Properties
Landside Support for Rowing and Paddling

Monroe County
Emergency Response Teams
Enforcement Assistance

NYS Canal Corporation
Hand-Carry Boat Launches
Landings and Boater Services
Navigation Aids and Markings within the Canal Zone
Canal Harbor Mooring Field
Dredging within the Canal Zone

New York State Parks
Approval, Regulation, and Identification of Courses

NYS DEC
Review and Issuance of Article 15 Permits
Dredging Permitting
Fishing Access and Piers
Habitat Enhancement Program

Army Corps of Engineers
Flood Protection
Protection of Waters
Navigation Aids and Markings

US Coast Guard
Enforcement of Navigation Law
Public Safety Response

Environmental Protection Agency
Implementation and Maintenance of Rochester Embayment Area of Concern Plan

Not-for-Profits
CEI – Genesee "Riverkeeper" Program

Genesee Waterways Center – Development of Additional Hand-Carry Boat Launches and Hand Powered Craft Support; Landside Support for Rowing and Paddling



Genesee River
Center City, Rochester

City of Rochester

Local Waterfront Revitalization Program

Appendix I

Port of Rochester Harbor Management Plan



2017

Draft Port of Rochester & Genesee River Harbor Management Plan







This report was prepared with funding provided by the New York State Department of State under Title 11 of the Environmental Protection Fund.

NEW YORK STATE OF OPPORTUNITY. Department of State

Photos provided by NYS DOS and City of Rochester

City of Rochester, NY
Lovely A. Warren, Mayor
Rochester City Council

Bergmann associates
architects // engineers // planners

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1.0 INTRODUCTION

1.1 Purpose & Benefit of the Harbor Management Plan

Located at the confluence of the Genesee River and Lake Ontario, the Port of Rochester-Genesee River Harbor is a regional destination for water-based recreation, entertainment, and commerce. The Harbor services a variety of public and private interests along a small segment of the Genesee River. Given the popularity of the Harbor, coupled with the City's recent redevelopment of the Port of Rochester site, a management plan is needed that will provide a multi-jurisdictional and mutually agreed upon strategy to guide and manage the use of waters in the Harbor.

The *Port of Rochester-Genesee River Harbor Management Plan* (HMP) is intended to facilitate management of the Harbor and nearshore areas in conjunction with New York State's Coastal Management Program. Management considerations discussed in the HMP include:

- Surface water uses and issues including public safety and user coordination;
- River sedimentation and dredging;
- Multi-jurisdictional responsibilities, law enforcement, existing regulations and agency facility needs;
- The International Joint Commission water level proposal;
- Public safety/boater education regarding the rules of navigation;
- Wave surge impacts and mitigation;
- Harbor infrastructure maintenance responsibilities;
- Future harbor development and marketing; and
- Water quality issues within the Rochester Embayment Area of Concern (AOC);

HMP MISSION:

The mission of the Port of Rochester-Genesee River Harbor Management Plan is to inform and direct operations in the harbor that will facilitate and promote sustainable economic development and tourism, preserve the unique natural environment, seek opportunities to upgrade infrastructure, and support the collaboration among public safety agencies.

1.2 Legislative Authority for Local Harbor Management

In order to resolve harbor management issues, the NYS *Waterfront Revitalization of Coastal Areas and Inland Waterways Act* (Article 42 of the Executive Law) was amended to provide local governments with the clear authority to comprehensively manage activities in harbor and nearshore areas by developing comprehensive harbor management plans and laws to implement those plans.

Article 42 and Department of State regulations (19 NYCRR Part 600, 601.1, and 603) contain procedures for the development and approval of harbor management plans and their local implementing legislation. According to the regulations, harbor management plans must be developed with the participation of the public and federal, state and local governments and agencies. The Department of State provides information, technical, and financial assistance to municipalities for the development of Harbor Management Plans as components of their Local Waterfront Revitalization Programs.

1.2.1 The HMP as a Component of the Local Waterfront Revitalization Program

Following passage of the federal Coastal Zone Management Act (CZMA) in 1972, New York State developed a Coastal Management Program (CMP) and enacted implementing legislation in 1981. Following the enactment of that legislation, NYS implemented the Waterfront Revitalization of Coastal Areas and Inland Waterways Program offering local governments the opportunity to participate in the State's CMP on a voluntary basis by preparing and adopting a Local Waterfront Revitalization Program (LWRP). When an LWRP is approved by the New York State Secretary of State, state agency actions are required to be consistent with the approved LWRP to the maximum extent practicable. When the federal government concurs with the incorporation of an LWRP into the CMP, federal agency actions must be also be consistent with the LWRP.

In 1990 the City of Rochester prepared an LWRP, which was approved by City Council, the New York State Secretary of State, and the U.S. Office of Ocean and Coastal Resource Management. The purpose of the LWRP is to recommend how the Genesee River and Lake Ontario will be protected as a unique and unified resource and developed to enhance Rochester's quality of life and stimulate economic growth. It establishes policy that land uses should take maximum advantage of their waterfront location, enhance the unique neighborhood and maritime ambience, provide public access to the river, increase public recreational opportunities and rehabilitate existing structures to the extent possible. The boundaries of the plan include the lakefront and the riverfront from Lake Ontario south to the Lower Falls.

In 2007, the City began planning an update to the 1990 LWRP to extend the current boundary of the LWRP along the Genesee River Gorge from the Lower Falls south through downtown Rochester to the Erie Canal and to re-examine waterfront development issues and priorities. Section 915 of Article 42 of the NYS Executive Law requires that an LWRP include a comprehensive harbor management plan. In keeping with the requirements of that law, the LWRP update includes this HMP is an integral component.

1.3 Harbor Management Area

1.3.1 Harbor Management Area

The Rochester-Genesee River Harbor Management Area (HMA) shown on Maps 1 and 2 includes the river and the adjacent uplands that are integral to the use and management of and dependent on surface waters and underwater lands. The HMA is primarily located in the City of Rochester, with a portion of it extending into the Town of Irondequoit.

The HMA begins approximately 1,500 feet north of the Ontario Beach shoreline and extends upstream to the terminus of the federal navigation channel approximately 200 yards south of the Essroc Cement Corporation facility, near Turning Point Park. The 1,500-foot northern boundary was established in accordance with New York State Executive Law Article 42 §922, whereby authority is granted to cities with an HMP to regulate uses in, on or above surface waters to a maximum distance of 1,500 ft. from the shoreline.

Generally, the HMA is bounded by the Charlotte Running Track (a railroad right-of-way owned by CSX Transportation) and Lake Avenue on the west, while the eastern boundary generally follows the municipal boundary between the Town of Irondequoit and the City of Rochester From Seneca Park north to Pattonwood Drive, where it turns northeast and winds its way around the marinas and yacht club properties before reaching Lake Ontario. The HMA includes approximately 340 acres of lands abutting the shoreline or directly associated with those shoreline parcels.

The Genesee River within the HMA lies entirely within the City of Rochester. Along the western border of Irondequoit, the city claims a thin strip of land that extends northward along the banks of the river from Seneca Park to Lake Ontario, at some points less than 50 yards (46 m) from the shore so that the entire east bank is located within the boundary of the City and the border of the Town of Irondequoit never reaches the river.

In total, the HMA encompasses 557 acres, of which the majority (approximately 340 acres) is located land-side; the remaining 217 acres encompass the Genesee River and Lake Ontario. As it relates to municipal boundaries, the HMA includes 431 acres within the City of Rochester and 42 acres within the Town of Irondequoit; the remaining 84 acres are associated with Lake Ontario and do not fall within municipal boundaries (see Map 2).

The HMA is in close proximity to several additional waterfront resources in the region, including Durand Eastman Park (3 miles east), Irondequoit Bay (4 miles east), Seabreeze Amusement Park (4 miles east), Webster Park (11 miles east) and Hamlin Beach State Park (23 miles west).


CITY of ROCHESTER
PORT of ROCHESTER - GENESEE RIVER HARBOR MANAGEMENT PLAN
Map 1
PROJECT LOCATION
0 0.5 1 2 3 Miles
Legend
Harbor Management Area Boundary
Municipal Boundaries
This map was prepared for the New York State Department of State with funds provided under Title 11 of the Environmental Protection Fund
Town of GREECE
City of ROCHESTER
Town of IRONDEQUOIT
Town of WEBSTER
Town of PENFIELD
Town of GATES
Town of BRIGHTON
Town of CHILI
Town of HENRIETTA
Town of PITTSFORD
Rochester
Pittsford
East Rochester
Henrietta
Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community
Bergmann


CITY of ROCHESTER
PORT of ROCHESTER - GENESEE RIVER HARBOR MANAGEMENT PLAN
Map 2
PROJECT BOUNDARY
0 370 740 1,480 2,220 2,960 Feet
Legend
Harbor Management Area Boundary
Municipal Boundaries
Port Site
Federal Channel Limits
This map was prepared for the New York State Department of State with funds provided under Title 11 of the Environmental Protection Fund
West Pier (i.e., Charlotte Pier)
East Pier (i.e., Summerville Pier)
Lake Ontario
Ontario Beach Park
City of ROCHESTER
Town of IRONDEQUOIT
Essroc Cement Corporation
Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community
Bergmann Associates

1.3.2 Port of Rochester and Rochester Harbor Designations

Rochester's HMA includes both a harbor and a port, two similar and often confused terms. According to the U.S. Army Corps of Engineers (USACOE) *Planning Guidance Notebook* (ER 1105-2-100), harbors are defined as "places that offer vessels shelter from weather". Rochester's harbor is suitable for offering shelter to vessels during most storm events and, in fact, is designated as a Critical Harbor of Refuge by the USACOE. According to the latest ACOE guidance, having a Coast Guard Search and Rescue Station and the nearest adjacent Harbor of Refuge being more than 50 miles away are the determining factors for the category of Critical Harbor of Refuge designation. This designation raises the harbor's status for USACOE maintenance priorities.

A harbor can also be defined as a port if it "provides facilities for the loading or unloading of cargo or passengers." Rochester's Port Terminal Building offers provisions for the loading and unloading of passengers, while the Essroc facility upriver within the harbor provides facilities for unloading cement ships. For purposes of this document, the Port of Rochester is the land area in the HMA that contains the City-owned land that has a history of being used for port purposes and contains the Port Terminal Building.

The Rochester harbor is the entire area outlined as the Harbor Management Area in Maps 1 and 2, and includes the Port of Rochester.

1.3.3 Port Redevelopment Project

The Port of Rochester Public Marina and Mixed Use Development Project (Port Redevelopment Project), substantially complete, involves creation of a marina basin and public promenade constructed in two phases; installation of broadside docking along the Terminal Dock Wall adjacent to the Port Terminal Building; construction of new and realignment of existing streets and infrastructure; enhancement of pedestrian and bicycle access with new trails and sidewalks including extension of the Genesee Riverway Trail from its terminus at Latta Road north to Ontario Beach Park; creation of two new public overlooks to the waterfront; new zoning regulations for the Port of Rochester; and, sale of City-owned land for private development.

The new zoning regulations were adopted by City Council in May of 2012. Construction of the phase 1 marina, right-of-way and infrastructure improvements, and one of the two new overlooks were completed in 2016, including:

- An approximately five-acre public marina with access to the Genesee River to be located adjacent to and west of Port Terminal Building and north of the existing public boat launch, primarily within the property at 1000 North River Street. The marina replaced paved parking and inspection areas associated with the defunct fast ferry service;
- A public promenade around the perimeter of the marina, as well as adjacent public open space;
- Boater amenities, including a boater facility building (rest rooms, showers, laundry, etc), a pump-out station, and appropriate utility connections including Wi-Fi, electricity and water;
- Thirty transient and 54 seasonal boat docks up to 80 feet in length. The basin was designed to also function as a venue for local, regional and national in-water boat shows and regattas.

Reconstruction of the existing broadside dockage along the Terminal Dock Wall adjacent to the Port Terminal Building is designed to provide broadside docking for approximately 39 boats;

- Realigned and extended streets, including N. River Street, providing a new secondary north-south access into the Port of Rochester and changed access to the Port Terminal Building;
- Reconfiguration of the public boat launch access and parking, extension of the Genesee Riverway Trail and installation of an overlook north of the boat launch at the intersection of Portside Drive and N. River Street. The overlook provides vistas of the harbor and the new marina; and
- Construction of the Lighthouse trail and overlook located at 4576 and 4580 Lake Avenue.

Phase 2 of the planned public improvements includes expansion of the marina, relocation of the public boat launch and relocation of the Ontario Beach Park labor operations center. The City's investment in phase 2 will be predicated upon private investment and market demand in the parcels available for development and demonstrated interest within the development community. Although the marina expansion will require the relocation of the boat launch facility, the timing of these three components is uncertain, and it is unknown whether they would be undertaken together as a single project or as multiple projects over time.

1.3.4 HMA Historical Context

The Genesee River is a tributary of Lake Ontario flowing northward through the Twin Tiers of Pennsylvania and New York. Located 83 meters (272 ft) above sea level, the Port of Rochester on the Genesee River is today a primarily recreational harbor with most surface water use focused on fishing, sailing and boating, but this harbor has a rich and diverse history as a port, summer resort and iron manufactory. While the history of the former waterfront communities- Charlotte, Summerville, Windsor Beach and White City - are embroiled in the history of the harbor, the story recounted here focuses on the activities on the river and its banks and is intended to provide context for future operation, management and development within the HMA.

Harbor Management and Development

Harbor Management

Records indicate that the lands along the river were first inhabited by the Seneca Indians who used the area as hunting grounds into the late 18th century. In 1788, the Mill Yard Tract, a parcel of land approximately 12 miles wide and 24 miles long, along the banks of the Genesee River was purchased from the Seneca Indians by Oliver Phelps and Nathaniel Gorham, of which the Rochester Harbor is a part. They also purchased six million acres east of the River from the State of Massachusetts, where the Town of Irondequoit is today.

Official management of the river as a harbor began when the *Customs District of the Genesee* was established in 1805 by President Thomas Jefferson who appointed Samuel Latta as the first *Collector of Customs for the Port of Genesee*. This management existed until the 1920's when in 1924 the last *Collector of Customs* was appointed. During this time, the Charlotte settlement had been incorporated into the Town of Greece in 1869, and in 1916, Charlotte was annexed into the City of

Rochester. The *Collector of Customs* was a federal officer who was in charge of the collection of import duties on foreign goods that entered the United States by ship and for keeping records.

In 1930, a *Joint Harbor Survey Commission* was created consisting of five (5) members; two (2) from the City of Rochester, two (2) from the County of Monroe and one other from either the City or the County to be elected by the other four. The function of this committee was to use money equally appropriated by these two municipalities and to retain competent engineers to furnish a comprehensive economic engineering survey of harbor requirements.

In 1958, Governor Averill Harriman approved a bill for a new management structure for the harbor, the *Rochester Monroe County Port District and Port Authority*. Among other responsibilities the *Authority* was charged with operation and oversight of the development and maintenance of city and county port facilities and with responsibility for all legal matters related to real property transactions. Both City and County staff served the *Authority* in carrying out these responsibilities for 18 years until the *Port Authority* was dissolved in 1976 and responsibility for operation of the Port was transferred to the City of Rochester and remains the city's responsibility.

Harbor Development

At the time Port of Genesee was established, the entrance to the mouth of the Genesee River was a triangular marshy inlet and navigation was severely hindered by treacherous sandbars. Sailors and lake ships were guided through the inlet by way of lantern-lit pilot trees until 1821 when a lighthouse was constructed on the bluff and 157 acres of trees were cleared to provide unobstructed views of the lighthouse lantern. It is said that the beam could be seen 12 miles out into the lake. Today the Charlotte Genesee Lighthouse stands as the second oldest lighthouse in the Great Lakes, though it was deactivated in 1881.

Keepers remained at the house, however, through 1947 to service the pier lights. In 1893, a steam whistle replaced the fog bell that had been placed at the entrance to the harbor; a foghorn was used until the last decade of the 20th Century. This 1858 photo, courtesy of the National Archives, is of the original lighthouse structure.

The beginning of development of the harbor is said to have occurred in 1829, when Congress appropriated funds to construct parallel piers into the lake and to excavate the river channel. The construction of these breakwaters was for the purpose of confining and directing the action of spring freshets. Ultimately, the placement of these piers caused sand and other debris to build up beside it and this buildup along with placement of other fill extended the lake shore out into the lake and over many years, gradually "moved" the lighthouse back from the lake shore. The Lighthouse keeper would light torches at the end of each pier until lanterns and light houses were installed on the piers. In 1883 the length of the piers was extended.



In 1935, the federal government assumed the cost of dredging the lower basin and created a turning basin 600' wide opposite the municipal docks alongside the City's terminal. Ten years later, the federal government additionally undertook the regular maintenance of the upstream channel above the turning basin for a distance of approximately 2.5 miles to a point 200' south of the Genesee Docks, with a project depth fixed at 20' below low water. This assured vessel access to the docks which handled large volumes of interstate and international trade, primarily coal, and provided for a second turning basin in what is now part of Turning Point Park.

In 1916, construction of the two lane Stutson Street 28 foot clearance bascule (lift) bridge across the river to the Town of Irondequoit began. It was built as three (3) connected bridges - one over land, one over the river, and one over a set of railroad tracks. Before construction, motorists drove several miles south to the Veterans Bridge, or used a ferry to cross the river. The bridge was replaced by the Colonel Patrick O'Rorke Memorial Bridge in 2004 by NYS DOT with federal, state and local funds. The new bridge, aligning with the Lake Ontario State Parkway, is located just south of the former Stutson Street Bridge.

In 1932, based on recommendations of the Joint Harbor Survey Commission, influenced by the completion of the enlarged Welland Canal, the first publicly owned Port of Rochester terminal opened on the west bank of the river located north of the former Hojack Rail line. The terminal building was two-stories designed to provide for freight storage, passenger traffic, U.S. Customs and administration offices. The project included a quay wall 1200' long placed 70' back from the existing shoreline to provide ships with berths away from the federal channel thus widening the turning area. This was the first major City investment in the harbor and the Port of Rochester.

In the late 1990's the City of Rochester initiated three major public improvement projects on the west bank: the Port of Rochester Fast Ferry Terminal project, the River Street Public Marina project and the Genesee Riverway Trail project. These projects were financed with federal, state and local funds. The Ferry Terminal was completed in 2004 and a vehicle and passenger ferry service between Rochester and Toronto operated until 2006 when it was shut down due primarily to a lack of anticipated truck trade and the high cost of fuel. The River Street Public Marina facility, including 112 docks and a boaters services building, was completed in 2006 and is operated privately for the City through a License agreement. Construction of both these projects included substantial improvements to the river wall. In 2006, the City completed the Genesee Riverway trail project extending the trail from Turning Point Park near Boxart Street northerly to Petten Street, a portion of which is a pedestrian bridge located within the river that incorporates some structures which were a part of the former Genesee Docks.

U.S. Coast Guard

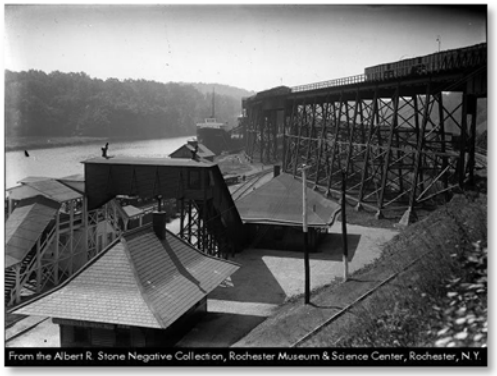
The Life Saving Station at Charlotte was authorized in 1875 as part of a service buildup throughout the Great Lakes. The station was operated under a volunteer system until at least 1885. It was located about a mile upriver from the mouth of the Genesee River, near the lighthouse and back from the water. In 1878, a new station was built in the same basic location, a mile from the river mouth, but this station did include an inclined ramp so boats could be launched directly into the river. In 1885, the station was moved to the lakeshore near the east pier in Summerville. Lifeboats were getting larger, to carry more equipment, and it was more efficient to respond to disaster calls on the lake from the mouth of the river. In March 1939, Charlotte Station became one of fifteen stations

equipped with radios on the Great Lakes. Later that year construction of a new station was completed which included: a main building which had a basement, two floors, an attic and 21 rooms; a lookout tower; and an equipment building. Over the years, rescue equipment, radio communication, warning signal equipment, etc. was modernized and expanded as technology advanced and rescue requirements evolved and an air patrol was added. In 1944, the name of the Station was changed from Charlotte to Rochester.

During World War II, the participation of the Coast Guard Reserve, later called the Auxiliary/Temporary Reserve, (converted from military to civilian personnel in 1945) was essential to the operation of the station. Subsequently, the Auxiliary continued to assist the Coast Guard during manpower shortages, the Korean conflict, and special events. An Auxiliary station remains in the harbor on the west bank, just below the lighthouse.

The Railroads

In 1852 construction of the Rochester and Lake Ontario Railroad began (later part of the New York Central Railroad) providing convenient passenger transportation from Charlotte. As these lines were expanded, trains brought thousands to the Charlotte beach and boardwalk and also provided a convenient route for those arriving by boat to travel to Chicago, New York City and in between.



It was in 1883, when the Buffalo, Rochester & Pittsburgh Railroad (BR&P) laid tracks for a spur to the Genesee Docks for the transportation of coal which was additionally improved with a large trestle for loading coal barges by gravity. The trestle was demolished and removed in 1974, and the spur to the docks was removed.



In 1875, a turn bridge was built across the river by the Lake Ontario Shore Railroad. It was a light structure so that one man with a pole could move the bridge. In 1905, the newly formed Rome Watertown Ogdensburg Railroad (RW&O) replaced the bridge. Records indicate that King Iron and Bridge Company Pivot Bridge was steam powered for more than 40 years until a gas or electric motor was installed. Eventually, the bridge served the New York Central Railroad (which had absorbed RW&O) for its Ontario Branch, the Hojack Line - which ran from Niagara Falls to Oswego. The line was abandoned and torn up in the late 1970's after years of declining service and track deterioration. All that remained was a 3 mile section in the Charlotte area which serviced Rochester Gas & Electric Russell Station in Greece, and a 40 mile segment in Wayne County. The bridge itself was placed out of service in the 1990's. After much controversy in the local community to save the bridge, it was removed in 2012 by CSXT, as ordered by the U. S. Coast Guard during planning and design of the harbor improvements associated with now defunct Rochester-Toronto fast ferry service. Mitigation to demolition of the bridge included installation of interpretive signage to be placed on both river banks to tell the story of the bridge, both its structure and its use.

In the bridge's heyday, it remained in a closed position across the river to facilitate rail traffic and was opened by a fulltime bridge keeper stationed there. In later years when service on the Hojack ceased and only local traffic needed to get to the other side of the river, the bridge remained open and was closed as needed; a rail employee would row across to the bridge to close it.

Today, rail activity is limited to a connection at the nearby former power plant at Russell Station in the Town of Greece. Owned by CSXT, it serves only one customer located within the HMA at Boxart Street adjacent to Turning Point Park.

In 1905, the BR&P and Canadian Grand Trunk Railroad of Canada (Canadian National Railway) obtained rights to handle coal traffic across the lake from Rochester to Cobourg, Canada. There were two vessels, the Ontario No.1, and the Ontario No.2 which operated until 1949 and 1950. While the primary function was to carry coal, these vessels also carried passengers.

Port Activity

Trade and Industry

By the end of the 18th century, the Genesee River was already noted as an active port on Lake Ontario. When the War of 1812 began Charlotte was a principal settlement on the lake controlling the exportation of frontier produce to Canada, including fruit and wheat among other things. The wheat was shipped to millers on the Genesee River south of Charlotte in Rochester, milled, transported to Charlotte and shipped primarily to Canadian dealers by schooners first and then steamship. By 1869, when the Village of Charlotte was incorporated as part of the Town of Greece, the harbor on the Genesee was an active and bustling commercial port replete with boat-building yards, grain elevators, dry docks, warehouses, shipping offices, hotels, and, along the docks, luxurious steamers. Also by 1869, a blast furnace for the manufacture of pig iron had begun operation along the river, continuing operation through 1893 and then off and on until the 1920s.

In the 1870's, trade relations between the USA and Canada became more restrictive, the number of American Ships dwindled, commerce between the two countries diminished sharply, and when the American Line of steamships was sold to the Canadian Steam Navigation Company, the shipping of fruit and wheat from Charlotte essentially ended. This signaled the passing of an era in the history of the Port of Charlotte. The port remained active in the early 20th century, but rail became the primary mode for transportation of goods. It is reported that neither the port nor the NYS canal system carried more than a fraction of the tonnage shipped by rail.

Shipbuilding

Among some of the earliest industries of Charlotte was the building of schooners and other boats. Sources reported that in 1828 the vessels "General Brown," "Julia," "Mary Jane" and "Charlotte" were built and ran between Charlotte and Cobourg and Port Hope. The "Clara Guernsey" and "Cleveland" were built in 1832 and 1833. The "Commerce" was built about 1850 and in 1856-57 the "Joseph Cochrane", a three-mast vessel, 135 feet in length, 56 feet in breadth of beam, and 350 tons, and the "Fairchild" were built. A Gazetteer of New York State published in 1860 recorded three shipyards in Charlotte. One of them, on the east side of the river built the schooners, "Samuel T. Atwater," "George J. Whitney," "Polly Rogers" and "Thomas Parsons", the last launched in August, 1868. Dozens of crafts, large and small, were launched into the river and lake in those years. The river steamer



"United States" was built here. Later in the 1870's-90's, skiffs, canoes, small pleasure steamers that ran on the river and Irondequoit Bay, racing canoes and yachts were being built including the "Nox," "Pedro," "Rochester," "Kee Lox III and IV". There are some accounts that at one time there were five (5) shipyards at the harbor.

Tourism

Charlotte became a transportation hub and a destination place for recreation. They came by boat, by rail, by trolley and by bicycle. Travel to the new "frontier" of Michigan and the western Great Lakes began with the opening of the Welland Canal in 1829. The "Mapleleaf" and the Highlander, side-wheel steamers, made weekly trips from Canada between 1851 and 1862, and the "Mapleleaf" also carried passengers from Charlotte to Point Breeze, NY. It was about this time that residents in the nearby city of Rochester began to summer at the shore. They came to enjoy the cool breezes at the beach, to dine on fresh fish, to take excursions on the river, out onto the lake, and the ports along both shores. They erected tents and stayed in hotels, or came for the day. With the arrival of the rail in 1854, travel between the Port and places as far away New York City and Watertown became commonplace.



In 1884, the Ontario Beach Improvement Company was formed to establish a lake front resort area on land owned by the New York Central Railroad and leased to local entrepreneurs. This was common practice by railroad companies at the time, to create destinations with hotels, attractions and amenities. The trains were run into the park on a loop and for those who arrived by train, their fare included admission to the park.

Ontario Beach Park opened in August 1884. There were hotels, restaurants, a beer garden, a tea garden, a midway, roller coasters, a bandstand, a skating rink, a shooting gallery, a bathhouse and special attractions. By 1889, a new electric trolley from Ridge Road had reached Charlotte, and Canadian steamers were running regularly between Canada and Charlotte, including the "Toronto", capable of sleeping 300 passengers, and her larger sister ship the "Kingston" and then the even larger "Rochester" came in 1909 serving Rochester and the Thousand Islands.

The "Ontario No.1" and "Ontario No.2," built primarily for the transportation of coal, also had passenger decks and held up to 1,000 passengers. These were magnificent ships to see, and people

on the shore would gather to watch them approach. The company never carried passengers between October and May due to Lake storms and ice. By the mid-1920s they had begun carrying automobiles on flat cars and were carrying about 70,000 passengers per season.

It was in the 1920s that Ontario Beach as a resort and amusement center and Charlotte as a destination and transportation hub declined and the park saw its last season in 1919. By 1931, all the structures except for the Dentzel Carousel were razed and the bathing beach and bath house (now the Roger Robach Center) supplanted the once infamous "Coney Island of the West".

Recreational Sailing

Sailing at the harbor began at least 140 years ago, as it is recorded that the first yacht club was established in 1874, known as the Genesee Yacht Club and its first regatta held in 1875. It is also recorded that by year end 1876, the Genesee Yacht Club ceased to exist, and that in 1877 the Rochester Yacht Club was founded, though record of incorporation at the City of Rochester shows the papers were filed in 1887. Today there are two yacht clubs on the Genesee River, the Rochester Yacht Club being one of the oldest clubs in the country, and the Genesee Yacht Club which was founded in 1934.

The Rochester Yacht Club (RYC) held its first regatta with eight sail boats competing in 1877 and in July 1887, it held its first regatta under the auspices of the newly formed Lake Yacht Racing Association (L.Y.R.A.), and many of the major yacht clubs on Lake Ontario took part. It wasn't long after that the Rochester yachtsmen were touted as some of the nation's most skilled yachtsmen. For nearly 60 years the RYC was a dominating factor in the Canada Cup contests as the only American Club to earn the Cup, won first in 1899, by the "Genesee" sailing under the Chicago Yacht Club Burgee. Over the years it has been host to L.Y.R.A. District and National Regattas, World Championships, Star Class, International 14's, Flying Dutchmans, and the World Dragons. And when the "Women's Worlds" was first held in the U.S. in 1979, it too was hosted by the RYC.

The first club house opened in June 1877 and was located "on the beach of Summerville" and was reportedly destroyed by a fire soon after. The second club house was built in 1889 on the west bank just north of the Hojack Rail line. Another move brought the RYC back to the east bank when they constructed their third clubhouse in 1902 just east of the east pier. This building later became an inn and survived until the 1950's. In 1922 the fourth and current club house was built.

The Genesee Yacht Club, now more than 80 years old, remains at its original location on the east bank. The clubhouse today, built by the members in 1984 is located a bit north of the original, (a construction shack that its members moved to the site from the Rundel Memorial Library). The club's premier event is the Scotch Bonnet Light Race which has been hosted by the Genesee Yacht Club for 43 years. A global celebration of sailing, racing begins near sunset on a Friday evening in June (always about the time of the summer solstice) from the Genesee River, overnight across Lake Ontario to round Scotch Bonnet Island (on the south shore of Canada) and then back to Rochester Harbor the next day, covering approximately 92 NM. The race was originally designed as a test of navigation skills and an offshore challenge to regional racers. It is an honored tradition and rite of passage for Genesee Yacht Club members and other Lake Ontario sailors, and is one of the first major racing events on the Lake every year. The club has also been host to the Women Skippers Invitational Regatta, a three (3) race event which requires a woman at the helm.

The RYC and GYC have played a major role in promoting the Rochester waterfront enticing participants and spectators from near and far.

The Underground Railroad

A history of Rochester's harbor on the lake would not be complete without mention of the Underground Railroad activity. In the mid-1800s, travelers departing from the Port included fugitive slaves who left the U.S. aided by Underground Railroad Conductors who would get them to the river on the west shore where they hid until they were able to board the steamers bound for settlements in Canada. While this activity did not impact life along the waterfront, it was said that the number of fugitive slaves who escaped to Canada through Rochester averaged 130 per year. There were several homes in Charlotte where escaped slaves were hidden including the George C. Latta House, which was located at Lake Avenue and Latta Road. Mr. Latta was one of the first frontier merchants, his family having settled here in the 1790s, and his older brother, Samuel, named the first *Collector of Customs* in 1805.

The United States Power Squadron (USPS)

The USPS was formed in 1914 to address what was believed to be a serious lack of knowledge of the proper handling of power boats and instituted special activities for power boats, including instructional classes in their operation. At the onset of World War I, USPS offered classes in the study of seamanship, signaling, navigation and naval procedures, the first of many civic services offered to the public. When the war was over, emphasis changed and the USPS as we know it today began to take form and continues to evolve as a premier educational program for power and non-power boats, its members now some of the best informed and most enthusiastic boatmen in the country. When a boat displays the symbol of United States Power Squadrons, it is under the command of an individual who has earned the right to display this symbol.

The Rochester division was founded in 1938, to the credit of F. Ritter Shumway, who took the USPS piloting course by mail shortly after he arrived in Rochester in 1934. At the request of the RYC, Mr. Shumway began teaching USPS boater safety to its members. Subsequently, Shumway and 10 men who passed the course moved forward to establish the Rochester Squadron. Shumway was elected as the first commander (1938-1939) and in 1948 he was elected Chief Commander of USPS.

For more than 75 years the Rochester Squadron has taught USPS Boating Courses to thousands. Advanced grade courses range from seamanship through piloting, advanced piloting, and junior navigation to navigation. Elective courses include weather, sail, marine electronics, engine maintenance, cruise planning and instructor qualification. The Squadron actively participates and educates through special events and at boat shows in the area. The Rochester Squadron conducts meetings within the HMA, the last 15 or more years at the Genesee Yacht Club House. [i]

1.4 Public & Stakeholder Outreach During HMP Preparation

Community and stakeholder outreach is an important component of any planning process. As part of the HMP, it was essential to engage the public and community stakeholders to ensure that the most critical issues are identified and that the strategies resulting from this planning effort adequately address the needs of the Harbor. The public and stakeholder outreach efforts for the HMP included:

- A public meeting/open house designed to engage the community in a discussion of the issues facing the Harbor and solicit feedback and a second public meeting to present the draft plan as a component of the LWRP.
- Several meetings with key project stakeholders, the purpose of which was to gain insight into daily Harbor operations and to better understand the views, needs and concerns of particular users of the HMA. Key stakeholders included public safety agencies, marina operators, local advisory boards and other relevant individuals and organizations.
- Several Project Advisory Committee (PAC) meetings to attain feedback and guidance in the development of the HMP. The PAC included representatives from the various local, state and federal agencies that operate in the Harbor, as well as local residents and business owners.

These community and stakeholder outreach efforts occurred over the course of the development of the HMP and the results of these efforts are found throughout the document. A summary of each of the public meetings can be found below.

1.4.1 Project Advisory Committee Meetings

A Project Advisory Committee (PAC) was formed which included representation from the City of Rochester, Monroe County, Town of Irondequoit, HMA property owners, public safety agencies and others that have an interest in the future of the HMA. PAC meetings were held at key intervals over the course of the planning process to share information and solicit feedback from the PAC. Presentations from each of the committee meetings can be found in Appendix A.

The first PAC meeting was held on August 13, 2012 at the Port Terminal Building. The purpose of this meeting was to introduce the project and provide an overview of the goals and objectives for the planning process. The HMP boundary was reviewed and refined based on PAC feedback. Committee members were also provided the opportunity to share their ideas and thoughts regarding issues and opportunities as they relate to the HMA. Feedback from this meeting established a framework for topics to be addressed in the HMP.

The second PAC meeting was held on November 14, 2013. PAC members were provided an update on the planning process and other activities and projects taking place in and around the HMA. The project team reviewed key findings from the inventory and analysis under 8 general categories, with the PAC providing comment and feedback:

- Harbor Services & Amenities
- Jurisdictions
- Enforcement
- Dredging
- Commercial Activity
- Surface Water Use: Fishing & Boating
- Water Quality/Lake Levels
- Education

The third PAC meeting was conducted on April 7, 2015. At this meeting, the priority objectives were reviewed and the overall action plan. The PAC was supportive of the direction of the action plan.

1.4.2 Stakeholder Meetings

In addition to PAC meetings, stakeholder meetings were held over the course of the planning process to better define and understand key issues and opportunities associated with management of the harbor. These were individual and small group meetings held at numerous times during the preparation of the HMP. Stakeholder meetings included the Town of Irondequoit, Monroe County, Essroc, marina and yacht club operators, and agencies involved in harbor management and operations including the Rochester Police Department, Rochester Fire Department, Army Corps of Engineers, US Coast Guard, Monroe County Sherriff, Us Border Patrol, and the New York State Department of Environmental Conservation.

1.4.3 Public Informational Meetings

A Public Informational Meeting was held on March 31, 2014 at the Port of Rochester Terminal Building. The purpose of the meeting was to introduce the project to the community and to solicit information and ideas from the community regarding the future management of the harbor. The meeting began with an overview of the project, including a discussion regarding how the HMP fits into the City's ongoing LWRP effort and the Port Redevelopment Project. This was followed by a summary of the key findings that were developed based on a review of available data and stakeholder outreach efforts. Finally, meeting attendees were provided the opportunity to visit a series of key findings boards and provide their comments to the project team. In total, more than 70 local residents attended the meeting and provided input to the planning process. A summary of the comments received is provided in Appendix A.

2.0 HMA INVENTORY AND ANALYSIS

2.1 Demographic Overview

The entrance to the Harbor is located just east of the approximate center of Monroe County's Lake Ontario shoreline (see Map 1). Approximately 650,000 residents are located within a 15 mile radius of the Harbor or an estimated drive time of less than 30 minutes. The HMA falls within the City of Rochester and Town of Irondequoit and is also in close proximity to the Town of Greece. Together, these three municipalities account for 48 percent of Monroe County's 2010 population. Between 2000 and 2013, Monroe County experienced population growth of approximately 1.9%.



Based on a review of parcel data, few people currently reside within the HMA. This will likely change as the Port Redevelopment Project moves forward and new residential units are added to the area.

Other census data examined included median age and median household income:

- Median age for the City of Rochester is 30.8 in 2010, which is much younger than that for the Towns of Greece (42.1) and Irondequoit (44.1) and Monroe County (38.5).
- The 2013 estimated median household income for the City is $30,741, $52,871 for the Town of Irondequoit, and $55,351 for the Town of Greece. The 2013 median household income for all of Monroe County is estimated to be $51,778.

2.2 Access and Transportation Overview

2.2.1 Roadways

The HMA is accessed by three primary transportation corridors: Lake Avenue from the south, the Lake Ontario State Parkway from the west, and Pattonwood Drive/NYS Route 18 from the east (see Map 3). Lake Avenue is owned and maintained by the City of Rochester. Based on traffic data for 2011 provided by the NYSDOT, Lake Avenue experiences the greatest amount of traffic within the HMA, carrying approximately 18,000 cars per day to and from the Port of Rochester and Ontario Beach Park. The Lake Ontario State Parkway is owned and maintained by the New York State Department of Transportation (NYSDOT), carrying approximately 13,000 vehicles per day eastbound toward the HMA. Pattonwood Drive/NYS Route 18 carries approximately 4,900 vehicles per day and is owned and maintained by Monroe County. Truck traffic is prohibited on the Parkway due to the roadway

classification as a Parkway. During the summer months, significant additional traffic volumes are experienced on Lake Avenue heading to and from Ontario Beach Park.

In addition to these primary roads, there are several secondary streets that provide vehicular access into the HMA, including Beach Avenue, Latta Road, Stutson Street, River Street, Petten Street and Boxart Street on the west side of the river and St. Paul Blvd and Marina Drive on the east side.

2.2.2 Parking

Public parking is available at various locations within and around the HMA (See Map 3). These locations include:

- Ontario Beach Park (east and west of Lake Avenue);
- Parking lot north of the Port Terminal Building;
- Boat Launch;
- Corner of Lake Avenue and Stutson Street;
- Petten Street near its intersection with the Genesee Riverway Trail;
- Turning Point Park at Boxart Street; and
- East Harbor Fishing Access site (terminus of St. Paul Blvd.)

In addition to the aforementioned public parking facilities, on-street parking is available along most streets in and adjacent to the HMA. For additional information regarding traffic and parking within the HMA, see Section IV.K (*Port of Rochester Traffic and Parking Analysis*) of the Draft Environmental Impact Statement for the City's Port Public Marina & Mixed Use Development Project. A parking analysis, in the context of the marina and development project, can be found in Appendix B.


CITY of ROCHESTER
PORT of ROCHESTER - GENESEE RIVER HARBOR MANAGEMENT PLAN
Map 3
TRANSPORTATION
0 370 740 1,480 2,220 2,960 Feet
Legend
Harbor Management Area Boundary
Municipal Boundaries
Railroads
RTS Bus Routes
5 - South/Saint Paul
1 - Lake/Park
Road Jurisdiction
State Route
County Road
Local Roads
XX Average Annual Daily Traffic (AADT)*
P Public Parking
* AADT data provided by the NYSDOT Traffic Data Viewer
This map was prepared for the New York State Department of State with funds provided under Title 11 of the Environmental Protection Fund
West Pier (i.e., Charlotte Pier)
East Pier (i.e., Summerville Pier)
Lake Ontario
Genesee River
Ontario Beach Park
4,406
17,953
4,878
12,920
17,953
Bergmann

2.2.3 Public Transportation

The HMA is also served by two Regional Transit Service (RTS) bus routes – the 1/1X (Lake) Route in Rochester and the 5/5X (St. Paul) Route in Irondequoit. The 1/1X Route travels along Lake Avenue between downtown Rochester and the Park, where it then travels along Beach Avenue to Dewey Avenue and eventually looping back to Lake Avenue at Latta Road (note that the 1X route does not extend to Dewey Avenue). The 1/1X Route currently offers regular transit service to the Port of Rochester on weekdays, weekends, and on holidays from approximately 6:00 AM until 1:00 AM. Depending on the day, the frequency of stops for 1/1X Route ranges from 25 minutes during the morning rush on weekdays, to more than one hour during non-peak hours. Service frequency during daylight hours on weekends and holidays is approximately every 45 minutes.

The 5 Route provides service to the Irondequoit side of the HMA, making its way along St. Paul Boulevard from downtown Rochester to its northern-most terminus at Club Terrace. This Route currently offers regular transit service at levels similar to the 1/1X, with buses running from approximately 5:30 AM until 10:00 PM on weekdays, weekends, and on holidays. Depending on the day, the frequency of stops ranges from 20 minutes during the morning rush on weekdays, to more than one hour during non-peak hours.

In 2014, RTS provided an expanded bus service that facilitated the transport of people from a remote vacant Kodak parking lot on Lake Avenue to the beach for the Wednesday night concerts.

2.2.4 Bicycle/Pedestrian Access

Pedestrian and bicycle access to the HMA is along a network of trails and sidewalks. Sidewalks are located along most streets in the HMA. There are also several existing and proposed trails within and around the HMA, including:

- The Genesee Riverway Trail;
- The Irondequoit Lakeside Trail;
- The Lake Ontario State Parkway Trail;
- The proposed Sea Breeze-Charlotte-Seneca Park Trail;
- The Irondequoit River-Rail Corridor, and
- The proposed Irondequoit Seneca Multi-Use Trail.



A more detailed discussion of these trail facilities can be found in Section 2.6.2.

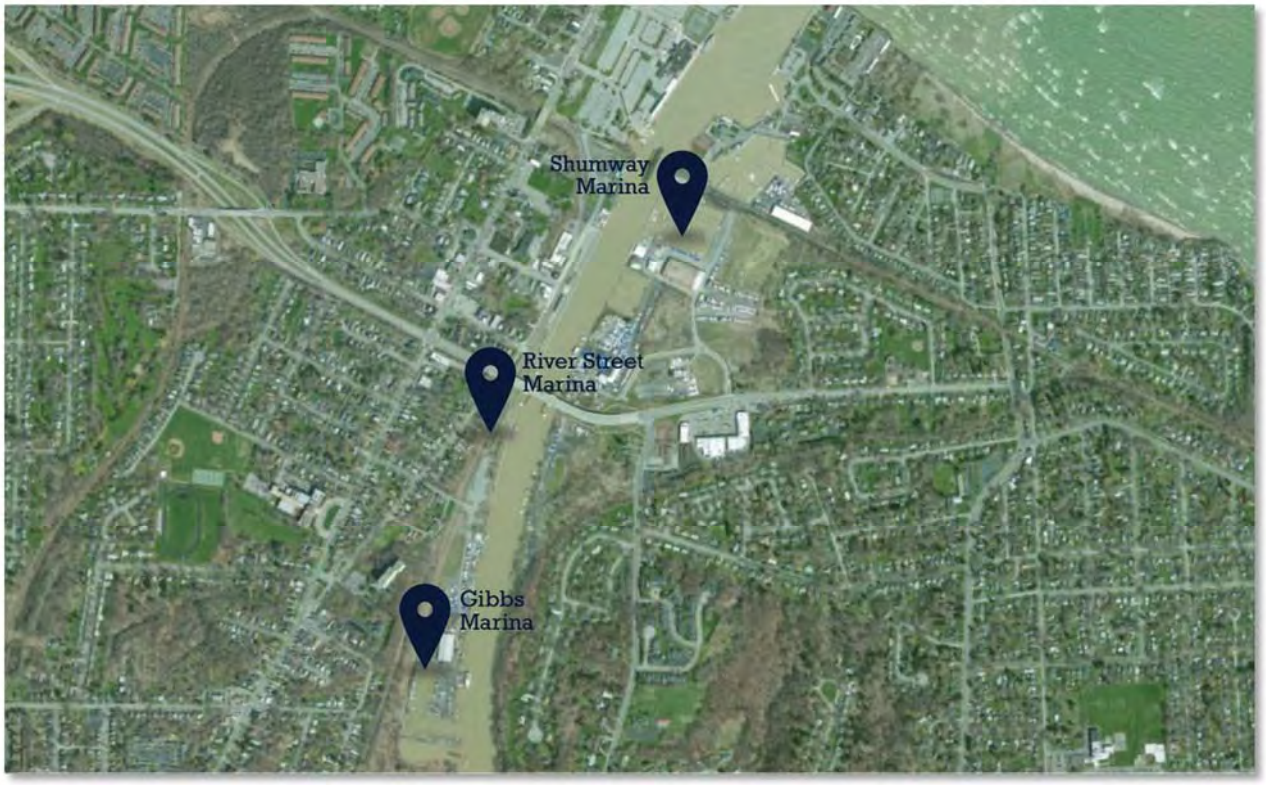
2.2.5 Water Access

Visitors also arrive via boat to reach land-based attractions or participate in on-water special events such as regattas or fishing derbies. As such, these visitors often depend on transient boat docks at one of the marinas located within the HMA, including (see Figure 1):

- Genesee Marina;
- Shumway Marina/Schooners Riverside Pub;
- River Street Marina; and
- New public marina at the Port of Rochester (not indicated in Figure 1).

In addition, Pelican's Nest restaurant offers short-term docking at 566 River Street for restaurant patrons. A more detailed discussion of these water-side access locations can be found in Section 2.7.5.

Figure 1. Transient Dock Locations



2.3 Harbor Services

2.3.1 Services available along the waterfront

The HMA currently offers a variety of services for users of the harbor and its shoreline. Fuel delivery, pump-out facilities, potable water, trash removal, electricity, crane service and marine supplies are available from the various marinas located in the harbor (see Section 2.7.2 for additional details). Landside services/amenities include the following:

- Convenience ship stores at both Genesee Marina and Shumway Marina;
- Several restaurants and entertainment venues;

- ATMs located at many of the restaurants and entertainment venues, as well as at the Port Terminal Building; and
- Public restrooms at Ontario Beach Park and inside the Port Terminal Building.

2.3.2 Additional services available within 1/2 mile of the HMA

In addition to the amenities noted above, there are several additional services available within close proximity of the HMA.

- Immediately across Lake Ave from the HMA's western boundary is a small commercial strip that contains a number of restaurants, bars and other commercial establishments.
- While there are no hotels or motels within the HMA boundaries or within a half mile of the boundary, there are area homeowners who advertise their properties for short- and long-term rentals. The HMA is also served by RGRTA bus service, making hotels in downtown Rochester accessible to visitors that travel to the region via watercraft. The City is currently working with a developer that has proposed the construction of a new 50-room hotel and spa to be located at River Street and Corrigan Street.
- There is also a drug store, a full-service grocery store and liquor store within one mile of the HMA.
- There are no medical/urgent care facilities within ½ mile of the HMA. The closest hospital is Rochester General Hospital in Rochester.

2.4 Land Use & Zoning

2.4.1 Existing Land Use Patterns

As discussed in Section 1, the determination for the boundary of the HMA was largely limited to lands that are occupied by water-dependent uses. These are uses that are primarily waterfront parks, marinas, an industry that relies on water-based shipping of materials, and a port. The distribution of land uses in the HMA is depicted in Figure 2 and Map 4.

Almost two-thirds of the land in the HMA is classified as Conservation & Parks (this does not include land in rights-of-way or open water). Most of this land is located in the southern portion of the HMA and is associated with Turning Point Park, Seneca Park and Rattlesnake Point State Park (see Section 2.5.3 for additional details regarding these parks). A second concentration of park land is located in the northern portion of the HMA along the Lake Ontario shoreline and is part of Ontario Beach Park. All of these parks are directly on the waterfront and provide public access to the water and recreational opportunities.

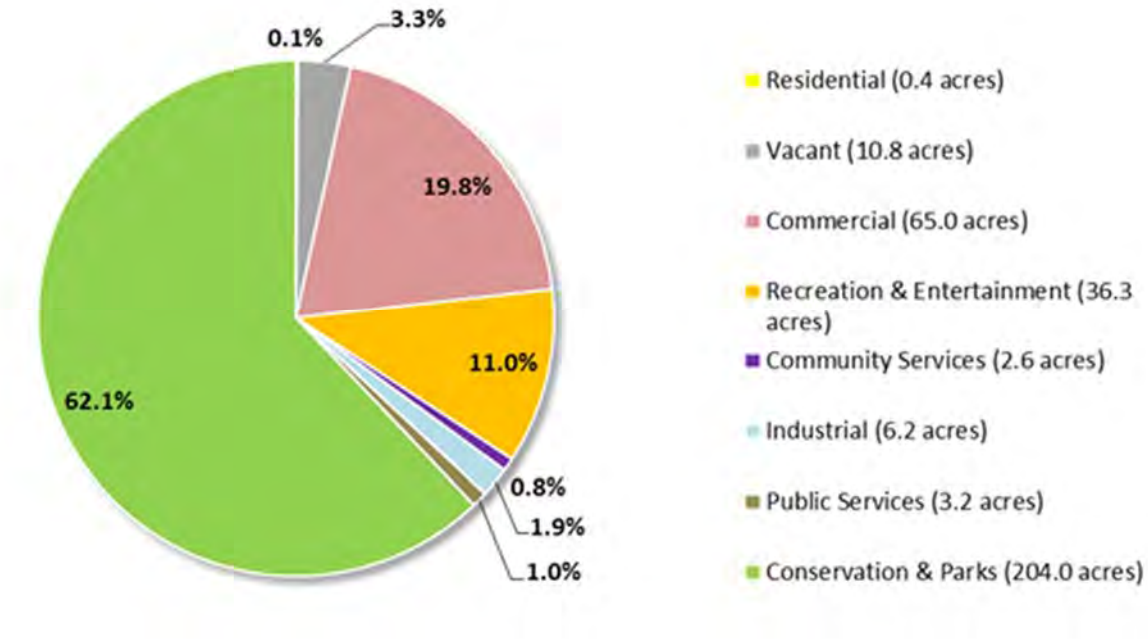
Commercial is the next largest land use category in the HMA, making up nearly 20 percent of the land area. Most of these lands comprise private marinas, including Shumway Marina, and Voyager Marina along the east side of the Genesee River, and the River Street Marina and Genesee Marina along the west side. There are also a few commercial uses scattered throughout the HMA.

The next largest category of land uses includes Recreation & Entertainment lands, which comprise approximately 11 percent of the HMA. These lands include the Genesee and Rochester Yacht Clubs, River Street Marina (owned by the City of Rochester), and the Port of Rochester.

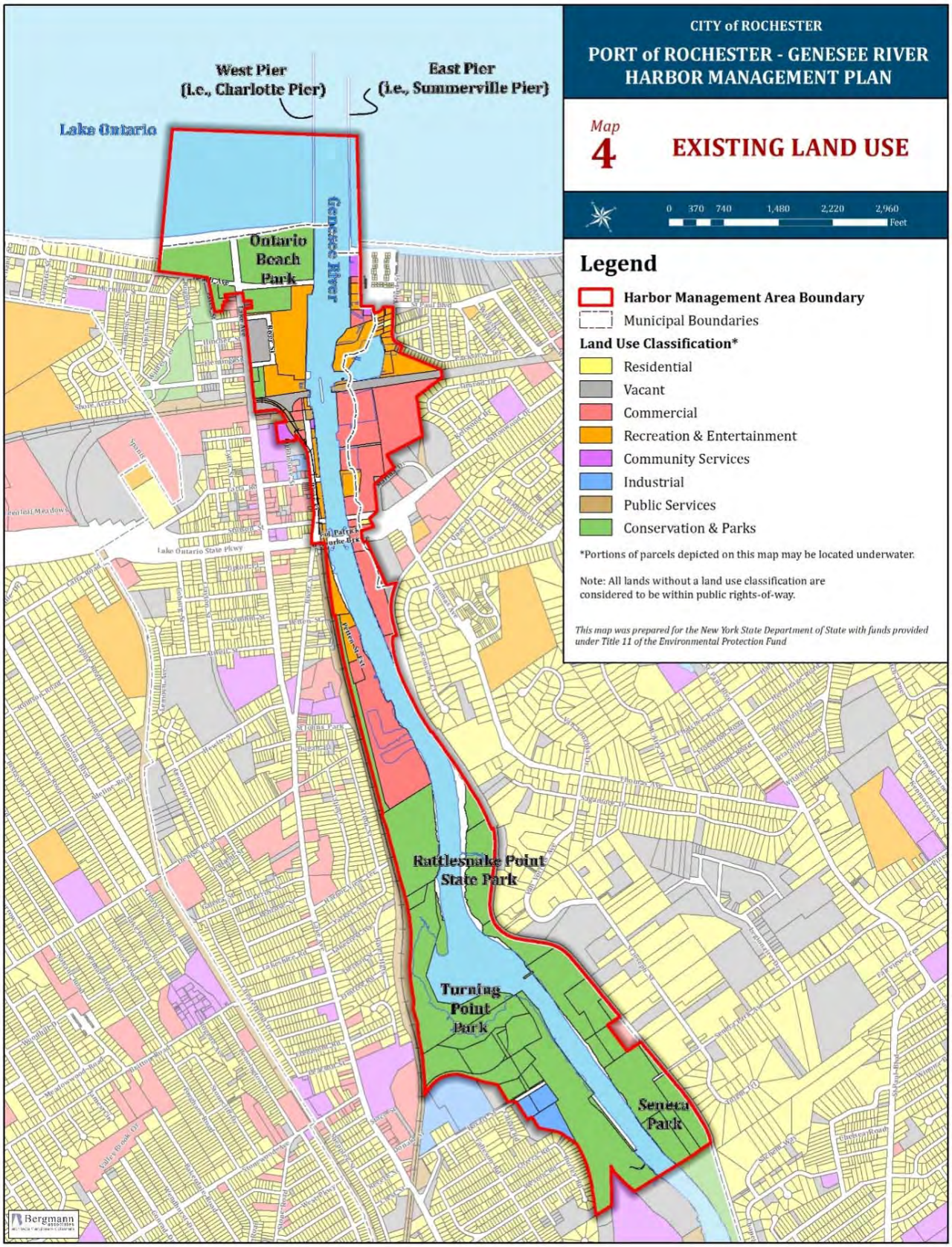
Essroc Cement Corp, the only industrial land use within the HMA, is located at the southern end of the HMA on Boxart Street. Essroc's cement ship is an important factor in the Genesee River's harbor designation as a commercial harbor.

The remaining land area is a mix of four land use categories, including Vacant Land (3.3 percent), Public Services (1.0 percent), Community Services (0.8 percent) and Residential Land (0.1 percent).

Figure 2. Existing Land Use in HMA



SOURCE: Monroe County Parcel Database (2011)


CITY of ROCHESTER
PORT of ROCHESTER - GENESEE RIVER HARBOR MANAGEMENT PLAN
Map 4
EXISTING LAND USE
0 370 740 1,480 2,220 2,960 Feet
Legend
Harbor Management Area Boundary
Municipal Boundaries
Land Use Classification*
Residential
Vacant
Commercial
Recreation & Entertainment
Community Services
Industrial
Public Services
Conservation & Parks
*Portions of parcels depicted on this map may be located underwater.
Note: All lands without a land use classification are considered to be within public rights-of-way.
This map was prepared for the New York State Department of State with funds provided under Title 11 of the Environmental Protection Fund
West Pier (i.e., Charlotte Pier)
East Pier (i.e., Summerville Pier)
Lake Ontario
Genesee River
Ontario Beach Park
Rattlesnake Point State Park
Turning Point Park
Seneca Park
Lake Ontario State Pkwy
Bergmann

2.4.2 Land Use Planning in the HMA

Over the past several years, the City of Rochester and Town of Irondequoit have completed (or are completing) a range of planning efforts that either wholly or partially address activities in the HMA. An overriding theme in land use planning for lands in the HMA is to preserve waterfront lands for public access and water-dependent uses. A brief summary of those planning efforts are included below:

City of Rochester

Local Waterfront Revitalization Program

As the City's official statement of land use and development policy for its waterfront areas, the LWRP establishes a land use and planning framework that will guide and influence future decision-making at all levels of government. The updated LWRP identifies waterfront policies and recommendations for future development and infrastructure improvements and may help leverage potential funding opportunities.

Old Port Charlotte Strategic Plan

In 2013, the Charlotte Community Development Corporation completed a strategic plan for the historic village area of Charlotte in the area of the River Street and Latta Road intersection. The purpose of this community-based planning study was to identify a "long-range strategy for transforming the historic neighborhood into a vibrant and economically healthy place to live, work and play".

To achieve the vision set forth in the strategic plan, ten initiatives were identified, two of which are relevant to the HMA:

- *Design Themes & Guidelines* – Design Guidelines that would serve as a high quality guide to implementation of projects in the Old Port Charlotte area have been recommended for adoption by the City. It was also recommended that the Design Committee of the Old Port Leadership Organization provide technical assistance to businesses and property owners to help comply with the guidelines and further a quality theme.
- *The Public Realm: Projects* – The Plan recommended that the Design Committee work with the City of Rochester and other public and private entities to ensure that the public realm, streetscape and urban infrastructure supports goals, projects and design guidelines.

Town of Irondequoit

Master Plan

The Town of Irondequoit Master Plan was recently adopted in October 2014. The Master Plan focuses on the waterfront areas of the town and includes the delineation of and vision for "Waterfront Opportunity Areas." Three of these areas (see Figure 3) are within or adjacent to the HMA:

River-Rail Corridor Opportunity Area. The River-Rail Corridor is a former railroad bed that parallels the Town's western boundary. The corridor extends from the Rochester city line northward along the rim of the Genesee River gorge. Just south of Pattonwood Drive, the railroad right-of-way turns eastward crossing St. Paul Boulevard and then intersecting with the Hojack Line rail bed which runs from the

Genesee River eastward to Rock Beach Road. The corridor connects a proposed river trail in the city with Seneca Park, numerous Irondequoit neighborhoods, the Pattonwood commercial district, the Summerville area, and the existing Lakeshore Trail. The *Rochester Regional Trails Initiative* study completed for the Genesee Transportation Council in 2002 identified Irondequoit's River-Rail corridor as a regional priority for trail development. The *Irondequoit Seneca Trail Feasibility Study* completed in March 2014 identified the preferred alignment and amenities for a future trail corridor in this area.

Pattonwood Opportunity Area. The Pattonwood Opportunity Area is located in the northwest corner of Irondequoit on the east side of the Genesee River largely within the HMA. According to the Irondequoit Master Plan, this area is an important neighborhood commercial district serving the northwest corner of Irondequoit as well as the Charlotte neighborhood across the river. The Town's River Harbor District zoning, including the entire Pattonwood Opportunity Area, encourages high density, mixed use development incorporating pedestrian accommodations. The existing code is consistent with the community input received for this area during the master plan preparation and the vision for this area indicated in the plan.

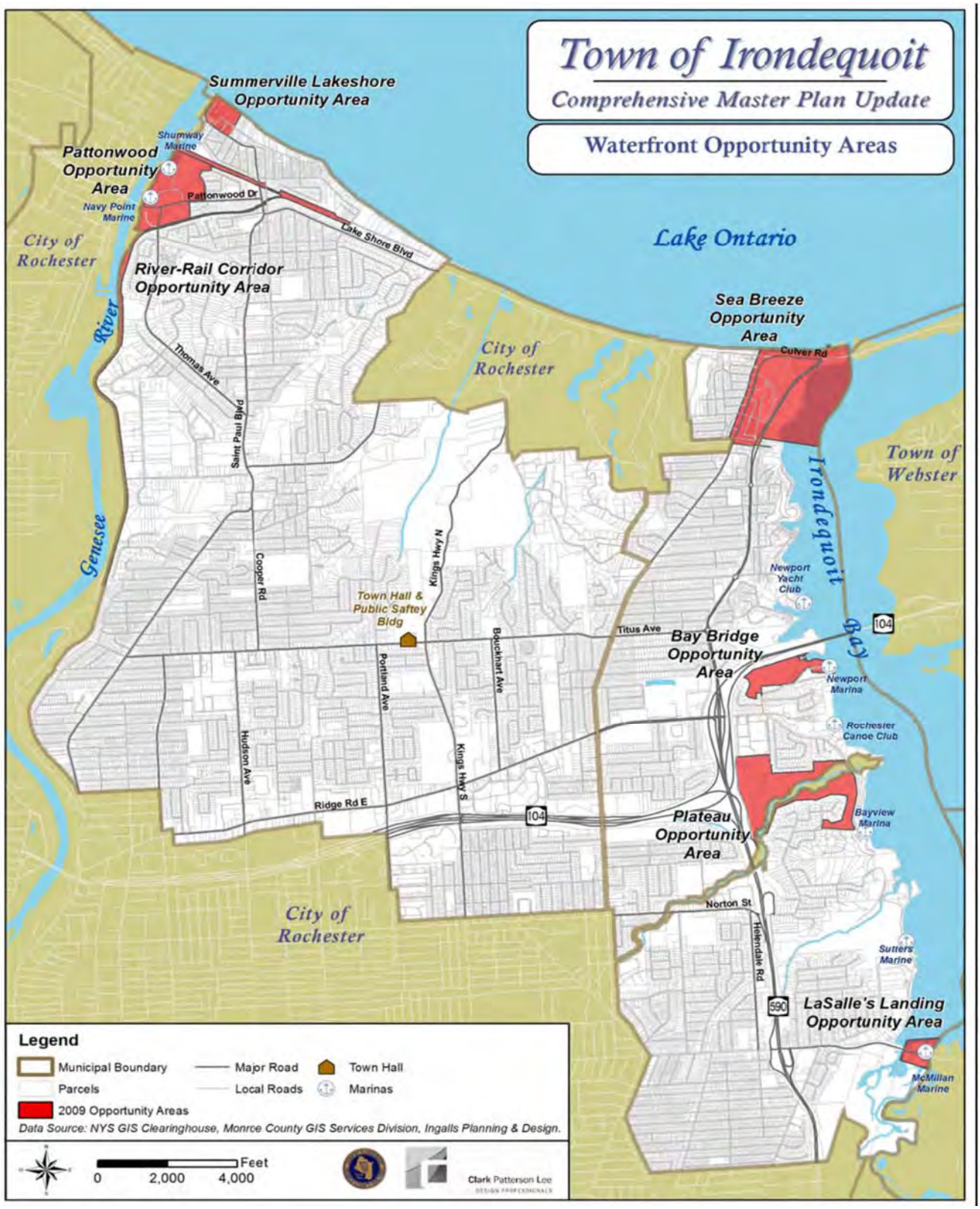
The Summerville-Lakeshore Opportunity Area. The Summerville-Lakeshore area is located in the extreme northwestern corner of town just east of the outlet of the Genesee River adjacent to the HMA. The area includes a public alley leading to a small section of Lake Ontario waterfront. This public footpath is bounded by the United States Coast Guard Station (USCG), the Westage condominium complex, Silk O'Loughlin's Restaurant, and the NYS fishing access site. Public access to the lakeshore and the Summerville pier is available here. However, this area also includes private beach and pathways, which restrict public access via deeds of property owners.

The Master Plan recommends pedestrian improvements to the area including improving the pedestrian route from the end of Saint Paul Boulevard to the Summerville Pier, the East Harbor Fishing Access site, and the public lakeshore area.

LWRP

The town's existing LWRP was adopted in 1988 and includes recommendations for mixed-use development with a maritime theme for vacant parcels around Stutson Street (since removed) and the areas around Thomas Avenue and Pattonwood Drive. The LWRP is currently undergoing an update to ensure alignment with community priorities outlined in the town's recently updated master plan. Building on the master plan's broad land use and design preferences for Irondequoit's waterfront opportunity areas, the LWRP update will provide a more detailed examination of redevelopment priorities and outline strategies and policies to ensure appropriate environmental conservation and protection. Together, the LWRP and the master plan will provide a balanced view of how Irondequoit's waterfront resources can be used wisely for public benefit.

Figure 3. Town of Irondequoit Waterfront Opportunity Areas



2.4.3 Zoning Regulations

Map 5 depicts the location and relative distribution of the seven zoning districts within the HMA, respectively. Four of the districts are within the City of Rochester (Open Space, Harbortown Village, Marina District, and Industrial) and three are within the Town of Irondequoit (River Harbor, Waterfront Development, and Residential). Below is a brief description of the four largest districts, which cover 96 percent of the land area in the HMA.

City of Rochester

Open Space (OS) District

Just under two-thirds of the land within the HMA is zoned as Open Space, including the four major parks; Ontario Beach Park, Turning Point Park, Rattlesnake Point Park and Seneca Park. The purpose of this district is to "preserve and enhance Rochester's open spaces and recreational areas by protecting these natural amenities and restricting development that does not respect these environmentally sensitive areas." The permitted uses in the district include:

- Publicly owned parks, recreational areas, natural wildlife areas and other open areas.
- Cemeteries, including associated facilities.
- Botanical gardens, arboretums and conservatories.
- Public marinas, boat launches, boat docks and fishing docks.
- Outdoor recreational facilities, such as hiking and bicycle trails, greens and commons, sitting areas and picnic areas.

Based on a review of the land use data provided in the Monroe County Parcel Database (2011), there are no existing conflicts between the land use and the zoning in the Open Space District within the HMA.

Harbortown Village (HV) District

The Harbortown Village district covers 20 percent of the HMA. The Harbortown Village District provides for a "distinct neighborhood developing around the mouth of the Genesee River and the shore of Lake Ontario as a unique and lively water- and pedestrian-oriented area." The district regulations promote public access, encourage tourism and preserve the waterfront environment. Permitted uses and structures include:

- Public boardwalks, paths, biking trails and outdoor seating/assembly areas.
- Boating and fishing docks.
- Marinas.
- Water passenger transportation terminals.
- Boating and sailing instruction schools.
- Boat sales, rental and charter facilities.

There are several additional land uses permitted within the district when located 30 feet or more from the edge of the Genesee River including but not limited to single-family attached dwellings, live-work spaces, mixed-use development and restaurants, bars and offices when 2,500 square feet or less in size. There are also several specially permitted uses when located within 30 feet of the River including retail sales and services, bars, taverns and cocktail lounges, museums and aquariums and private clubs.

Based on a review of the land use data provided in the Monroe County Parcel Database (2011), there are no land use/zoning conflicts in the Open Space District within the HMA.

Marina District (M-D) District

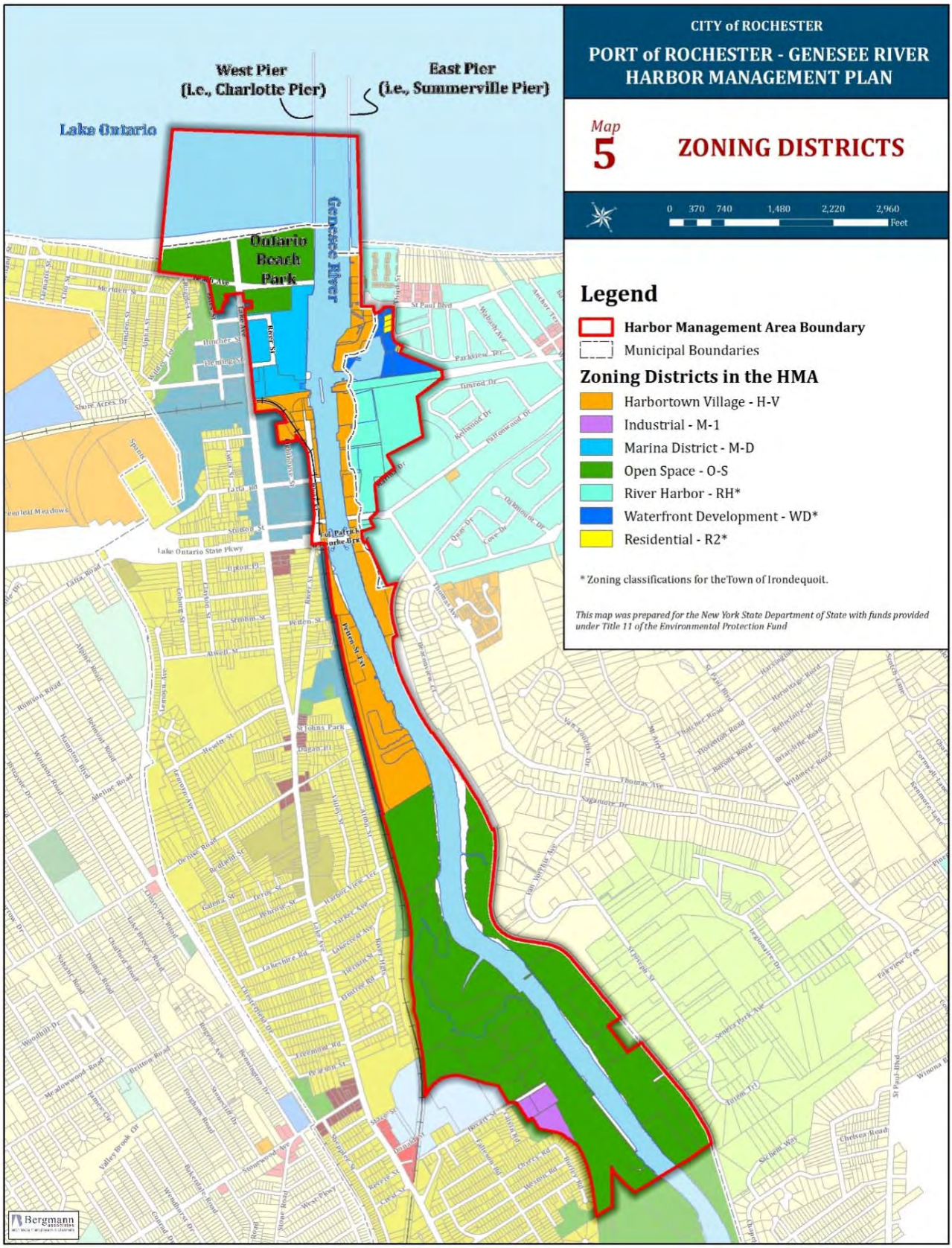
The Marina District covers six percent of the HMA. It includes the area bounded generally by Ontario Beach Park to the north, Lake Avenue to the west, the Genesee River to the east and the railroad embankment to the south. The Marina District will be the next chapter in Charlotte's history as a lakeshore resort community. The ultimate goal of the Marina District code is to foster the creation of a district that will attract visitors because it is distinctive and memorable and will endure because it is valued by residents and visitors alike. This district incorporates a form-based code intended to govern the development of the Port of Rochester, including the Terminal Building. In the Marina District, the primary emphasis is placed upon the physical form of buildings, civic spaces and place making.

Town of Irondequoit

River Harbor (RH) District

The River Harbor District is a Town of Irondequoit zoning district that encompasses more than eight percent of the HMA. The River Harbor (RH) District is “designed to provide a suitable character and stable environment for the establishment and maintenance of water-dependent and/or water-enhanced uses and activities along the east bank of the Genesee River near the Port of Rochester.” The district also aims to promote appropriate residential and economic development and to provide improved public access to the riverfront. The River Harbor district permits a wide range of uses, including single-family detached dwellings, townhouses, parks, community centers, hotels, marinas, boat sales, retail and restaurants, just to name a few.

Based on a review of the land use data provided in the Monroe County Parcel Database (2011), there are no land use/zoning conflicts in the Open Space District within the HMA.

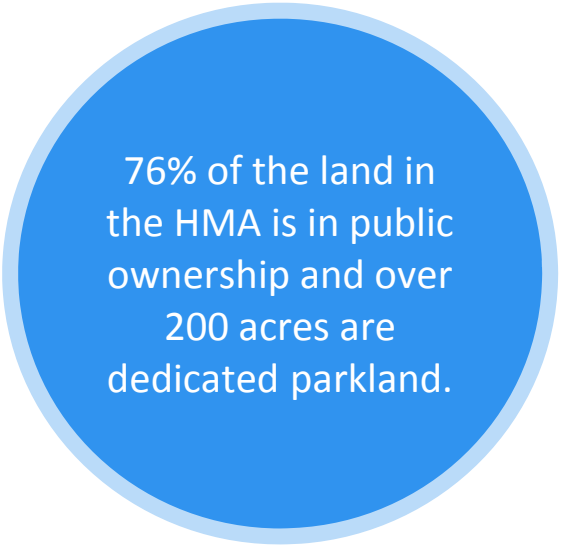

CITY of ROCHESTER
PORT of ROCHESTER - GENESEE RIVER HARBOR MANAGEMENT PLAN
Map 5
ZONING DISTRICTS
0 370 740 1,480 2,220 2,960 Feet
West Pier (i.e., Charlotte Pier)
East Pier (i.e., Summerville Pier)
Lake Ontario
Ontario Beach Park
Genesee River
Legend
Harbor Management Area Boundary
Municipal Boundaries
Zoning Districts in the HMA
Harbortown Village - H-V
Industrial - M-1
Marina District - M-D
Open Space - O-S
River Harbor - RH*
Waterfront Development - WD*
Residential - R2*
* Zoning classifications for the Town of Irondequoit.
This map was prepared for the New York State Department of State with funds provided under Title 11 of the Environmental Protection Fund
Bergmann

2.5 Land Ownership

2.5.1 Public Lands

Public entities are the primary property owners in the HMA. This is beneficial for ensuring public access to valuable waterfront resources and protecting the natural resources, particularly water quality. As shown in Map 6 and Figure 4, more than 260 acres or 76 percent of the HMA land area is publicly owned.

Based on a review of the Monroe County Parcel Database, the City of Rochester is the largest landowner in the HMA, holding title to 47 parcels covering just less than 200 acres (58 percent of the total parcel land area in the HMA). The vast majority (146 acres) of this land is parkland. Additionally, the City owns two parcels located along the eastern shore of the Genesee River, one of which lacks direct access to the existing street network (i.e., land-locked). This land is currently leased to Voyager Marina on an annual basis.



New York State and Monroe County are the next two largest public landowners in the HMA, with the State owning just less than 40 acres and the County owning approximately 22 acres. The majority of this land owned by the State and the County is also parkland. The United States Government owns 1.6 acres on 3 parcels, all of which are associated with the USGC.

Significant publicly-owned properties in the HMA include:

- Ontario Beach Park (City of Rochester);
- The Port of Rochester (City of Rochester);
- River Street Marina (City of Rochester);
- Parcel leased to Voyager Marina (City of Rochester);
- Turning Point Park (City of Rochester)
- Seneca Park (City of Rochester and Monroe County); and
- Rattlesnake Point State Park (New York State);

A detailed description of these park properties can be found in Section 2.6.1.

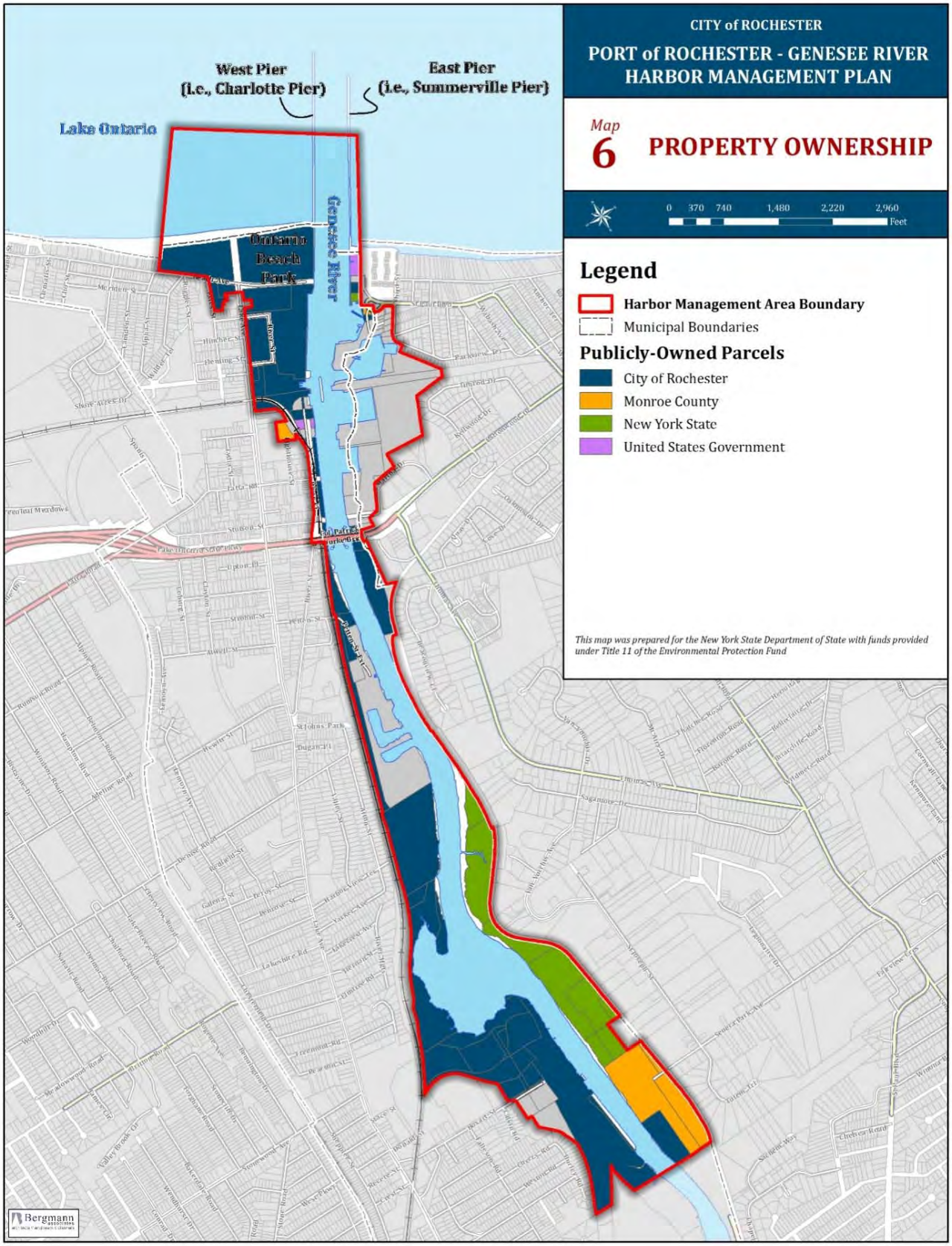
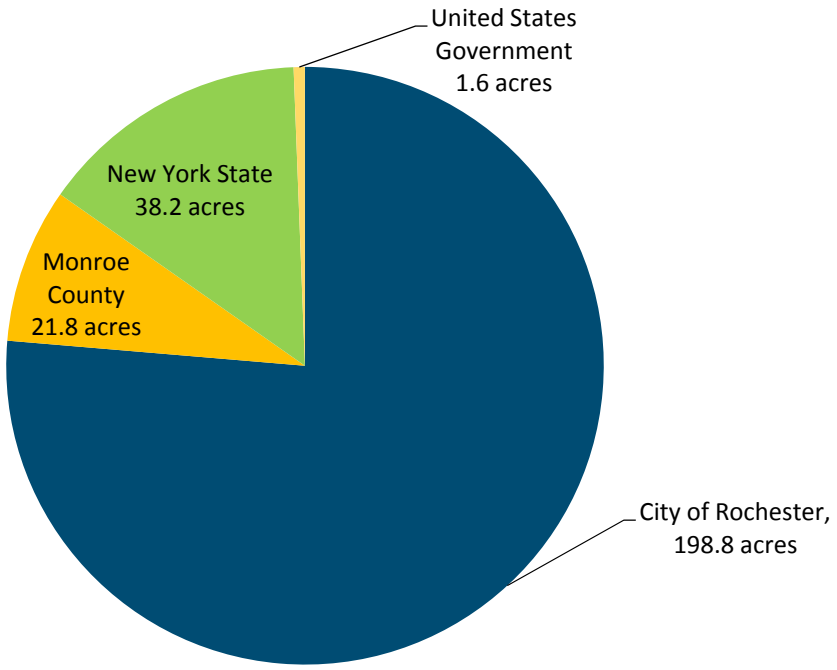

West Pier
(i.e., Charlotte Pier)
East Pier
(i.e., Summerville Pier)
Lake Ontario
Genesee River
Ontario Beach Park
CITY of ROCHESTER
PORT of ROCHESTER - GENESEE RIVER HARBOR MANAGEMENT PLAN
Map 6
PROPERTY OWNERSHIP
0 370 740 1,480 2,220 2,960 Feet
Legend
Harbor Management Area Boundary
Municipal Boundaries
Publicly-Owned Parcels
City of Rochester
Monroe County
New York State
United States Government
This map was prepared for the New York State Department of State with funds provided under Title 11 of the Environmental Protection Fund
Bergmann

Figure 4. Publicly-Owned Lands in the HMA



SOURCE: Monroe County Parcel Database (2011)

2.5.2 Land Under Water

Based on a review of the Monroe County Parcel Database, only one parcel in the HMA is specifically classified as "Land Under Water". This 16-acre parcel is owned by the City of Rochester and is associated with Turning Point Park. More specifically, this parcel is located entirely within the confines of the Genesee River and the Turning Point Basin.

Ownership of the riverbed throughout the HMA is an issue that needs clarification. There are differing opinions about who owns the underwater lands of the River. This issue becomes important when work is being conducted that impacts the riverbed, such as dredging or the construction of docks and piers. More specifically, to receive permits (e.g., dredging), private property owners must demonstrate that they own the land to be impacted. Since parcel boundaries do not extend into the River (in most instances), demonstrating ownership to permitting agencies such as NYSDEC or USACOE has been difficult.

2.6 Recreational Facilities and Public Access

2.6.1 Parks

Ontario Beach Park

One of the most significant recreational facilities within the HMA is Ontario Beach Park (see Map 7). The park is owned by the City of Rochester, operated and maintained by the County of Monroe

through a formal agreement between the City and the County. The facilities at the park include the beach, a boardwalk, a large historic "bathhouse" facility now functioning as the Robach Community Center, the Ontario Beach Carousel, picnic facilities, a performance bandstand/pavilion, playground equipment, basketball courts, sand volleyball courts, soccer fields, etc. People from across the region come to enjoy this waterfront destination.

Port Public Marina Project

The City of Rochester Port Public Marina and Mixed Use Development Project includes parkland and waterfront amenities. Most of the area of the marina basin, along with the public amenities, including an open space at the north end of the marina and a promenade around the marina perimeter, include new parkland because they are in areas that were not parkland.

The following park amenities and improvements have been added as part of the project:

- Development of an approximately five-acre public marina with access to the River;
- A public promenade around the perimeter of the marina basin (varying in width from 10 to 15 feet), as well as adjacent public open space;
- Construction of the Lighthouse trail and overlook located at 4576 and 4580 Lake Avenue; and
- A second overlook north of the boat launch where Portside Drive and N. River Street intersect.

Rattlesnake Point State Park

Located on the eastern shore of the Genesee River, the southern boundary of Rattlesnake Point State Park adjoins the northern boundary of Seneca Park and runs north along the gorge for approximately one mile. Scenic views of the river gorge and the turning basin from a minimally maintained trail are abundant in this 50-acre park.

Seneca Park

Located along the eastern shore of the Genesee River, Seneca Park encompasses more than 290 acres (25 acres are within the HMA). Designed by Frederick Law Olmsted, the Park offers a variety of natural and recreational opportunities including picnic shelters, the newly renovated Wegman Lodge, playgrounds, a zoo, scenic views of the Genesee River gorge, hiking trails, open fields and a large pond with a paved perimeter walking path.

Turning Point Park



Located in the southern portion of the HMA, Turning Point Park includes 275 wooded acres along the western bank of the Genesee River. Hiking and biking trails will help you discover the park's distinct areas, from the wooded oak forest called "Bullock's Woods" to the cattail lined shores of the river. Turning Point's boardwalk and trail won an American Public Works Associations' "Transportation Project of the Year" award in 2008. The trail consists of 3 main parts: 1) the 2,968 ft land-based trail that utilized an old railroad bed to transition from the top of the bank to the river's edge, 2) a 3,572 ft-long bridge over the Genesee River Turning Basin, and 3) an all-new land-based trail, 3,406 feet in length, through Turning Point Park North and adjacent to the Genesee Marina. Turning Point Park also features a Rain Garden, an eco-friendly way to use natural vegetation as sediment filters. When it rains or snows, flowing sediments and pollutants from the nearby parking lot are captured by the garden's vegetation. The plants act as filters and clean the runoff before it reaches the river. The rain garden is stocked with a wide variety of hardy plants that aid in the process, from ostrich fern and filipendula to coneflower and New England aster.

2.6.2 Multi-Use Trails

The HMA is served by portions of three multi-use trails – the Genesee Riverway Trail, the Irondequoit Lakeside Trail, and the Lake Ontario State Parkway (LOSP) Trail. There are two additional currently-proposed trails that would also serve the HMA – the Sea Breeze-Charlotte-Seneca Park Trail and the Irondequoit Seneca Multi-Use Trail (see Map 7). A brief overview of each is provided below.

Genesee Riverway Trail



The Genesee Riverway Trail, a designated National Recreation Trail, is a multi-use trail located along the Genesee River. Within the City, the trail system extends from Genesee Valley Park north to Ontario Beach Park. The Riverway Trail provides access to the Genesee River, its scenic gorge, three waterfalls, eight pedestrian bridges, and eleven parks, including four historic parks designed by Frederick Law Olmsted. The Genesee Riverway Trail is marked with a system of wayfinding and interpretive signs to encourage and

guide public use. Most of the trail is paved and easily accessible. Steep, rough, or narrow sections of the trail are clearly signed.

In September 2012, the Environmental Health Sciences Center of the University of Rochester Medical Center completed the *Genesee Riverway Trail Count and Survey Data Report*. This report summarizes data collected from trail user counts and surveys conducted along the Genesee Riverway Trail throughout the City of Rochester during June and July 2012 as part of *Healthy Waterways, a Health Impact Assessment of the City of Rochester's LWRP*. The report included data from the following locations found within the HMA:

- Turning Point Park;
- Intersection of LOSP and the Genesee Riverway Trails at River Street; and
- Irondequoit Lakeside Trail at Durand Eastman Park.

As noted in Figure 5, the study found that the portions of the trail located in the HMA appear to be used more often during weekend (recreation) hours than during commute times ("commute" and "recreation" are used to describe the selected sampling time and do not represent the users' purpose for the trip). Additionally, the average number of people per hour was calculated to demonstrate overall density of use during sampling times.

Figure 5. Genesee Riverway Trail User Counts for the HMA

Site	Total Trail Users	Commute Time Total		Recreation Time Total		Number of Sampling Times	Users per Hour
		Users	Percent	Users	Percent		
Turning Point	151	37	25%	114	75%	2	37.8
LOSP	137	54	39%	83	61%	2	34.3
Lakeside Trail	203	68	33%	135	67%	2	50.8

Irondequoit Lakeside Multi-Use Trail

The Irondequoit Lakeside Multi-Use Trail was established in November 2007 and runs for approximately 5 miles between the Irondequoit Bay Outlet Marine Park and the Colonel Patrick O'Rorke Memorial Bridge. This multi-use trail is a paved pedestrian and bicycle path running along Lake Ontario in Irondequoit, primarily on an old CSX railroad bed. As it exits the western side of Durand Eastman Park, the trail begins to follow Lake Shore Blvd until reaching Pattonwood Drive, where it continues to the Colonel Patrick O'Rorke Memorial Bridge.

Lake Ontario State Parkway (LOSP) Trail

The LOSP Trail is a multi-use trail that runs along the north side of Lake Ontario Parkway. Trail users enjoy scenic views of wooded areas, surrounding bodies of water and wetlands as they make their way along the 3.3-mile trail between Island Cottage Road and Latta Road and then continuing along Latta Road to Lake Avenue.

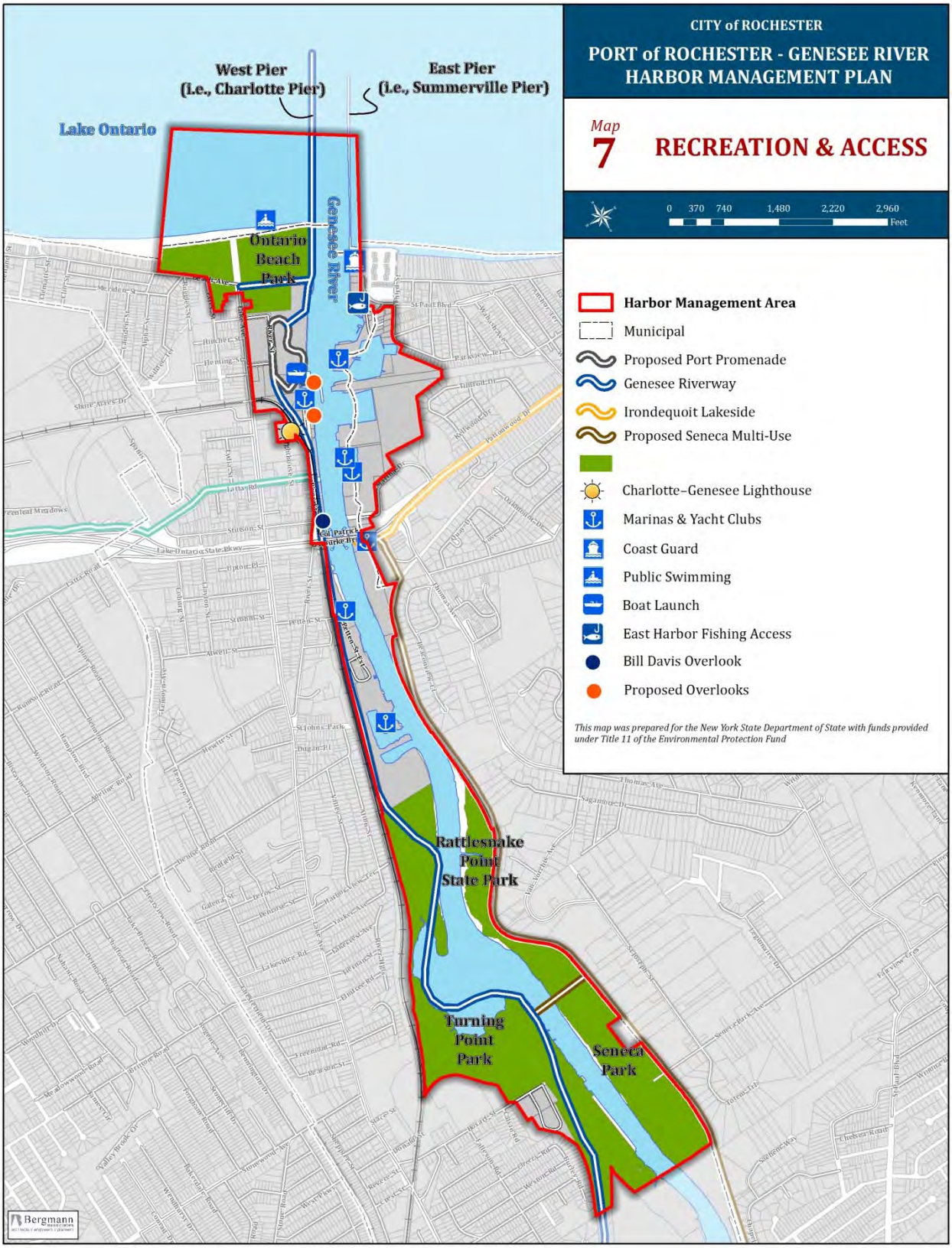
Irondequoit Seneca Multi-Use Trail (proposed)

The Irondequoit Seneca Multi-Use Trail (Figure 6) is proposed along the abandoned CSX railroad bed along the east side of the Genesee River connecting Seneca Park, the recently completed El Camino Trail, and the Lakeside Multi-use trail that runs along Lake Ontario in Irondequoit.

The Town of Irondequoit completed a feasibility study in 2014 which identified the preferred alignment and amenities for this future trail.

Figure 6. Proposed Irondequoit Seneca Multi-Use Trail




CITY of ROCHESTER
PORT of ROCHESTER - GENESEE RIVER HARBOR MANAGEMENT PLAN
Map 7
RECREATION & ACCESS
0 370 740 1,480 2,220 2,960 Feet
West Pier (i.e., Charlotte Pier)
East Pier (i.e., Summerville Pier)
Lake Ontario
Genesee River
Ontario Beach Park
Rattlesnake Point State Park
Turning Point Park
Seneca Park
Harbor Management Area
Municipal
Proposed Port Promenade
Genesee Riverway
Irondequoit Lakeside
Proposed Seneca Multi-Use
Charlotte–Genesee Lighthouse
Marinas & Yacht Clubs
Coast Guard
Public Swimming
Boat Launch
East Harbor Fishing Access
Bill Davis Overlook
Proposed Overlooks
This map was prepared for the New York State Department of State with funds provided under Title 11 of the Environmental Protection Fund
Bergmann

2.6.3 Piers & Overlooks

Charlotte Pier (i.e., West Pier)
The Charlotte Pier is located next to Ontario Beach Park on the western shore of the Genesee River. The Pier is approximately 3,036 feet long with railings on both sides and a light tower at its northern end. The Pier is easily accessible from Ontario Beach Park, Lake Avenue and Beach Avenue. The Pier is a popular place for strolling, especially in summer, and fishing.

Summerville Pier (i.e., East Pier)
The Summerville Pier is located on the eastern shore of the Genesee River at the end of St. Paul Boulevard in Irondequoit and is approximately 2,699 feet long. The pier is accessed by parking in the lot next to the Genesee River and walking north along the driveway past the USCG Station. Like the Charlotte Pier, the Summerville Pier is best known for its fishing although the lack of railings can make it unsafe in wet weather. Both piers are also known for bird watching as it is a popular resting spot for migratory birds.

Bill Davis Overlook
Located at the site of the old Stutson Street Bridge, the Bill Davis Overlook was installed in 2005 and is located in the public rights-of-way. The overlook provides excellent views of the Harbor and Genesee River and includes a number of interpretive signs depicting various aspects of local history.

East Harbor Fishing Access
The East Harbor Fishing Access site (5575 St. Paul Boulevard) is located at the end of St. Paul Boulevard next to the Rochester Yacht Club on the east side of the River. It is owned and operated by the New York State Department of Environmental Conservation. This fishing site is open year-round and features parking and benches.

Port Overlooks
New overlooks were constructed as part of the City of Rochester Port Public Marina and Mixed Use Development Project - the Lighthouse trail and overlook located at 4576 and 4580 Lake Avenue and the new overlook at the intersection of Portside Drive and River Street.

Train Bridge Overlook

The Train Bridge Overlook, undergoing construction as of the publishing of this document, is located on the west bank of the Genesee River at the Port of Rochester. The overlook is an adaptive reuse of the abutment and trestle of the demolished historic CSX Railroad Swing Bridge, transforming a derelict structure into a scenic amenity. The overlook will serve as a trailside waterfront access point on the city-wide Genesee Riverway Trail. Since the former Hojack swing bridge was an iconic structure in the community for over a hundred years, CSX provided an interpretive display to be installed on the overlook at completion.

2.7 Water Surface Use

All waters within the HMA are considered navigable waters. Lake Ontario and the Genesee River federal navigation channel are both considered navigable waters of the United States, while the Genesee River outside the federal channel is considered navigable under New York State laws.

2.7.1 Recreational Boating

Boating is a popular activity in New York State which is 3rd in the country for recreational boat ownership. There were more than 27,000 boat registrations in Monroe County in 2012. Recreational boating, including motorized boats, sail boats, canoes, kayaks, windsurfing, etc. is an essential part of the fabric of the HMA.

Given the large number and variations of recreational boats that operate within the HMA, there is the potential for operational conflicts. At this time, however, water use conflicts were not identified as an issue by boaters within the HMA. As the popularity of harbor increases, user conflicts may in fact become an issue. In many harbors across New York State, municipalities have delineated "designated use zones" to address potential boater conflicts. These use zones are typically for harbors where other restrictions, such as speed limits and "no wake" zones are not already in effect. Establishing use zones may also be an effective strategy for protecting environmentally sensitive areas in a harbor.



Motor Boats

Approximately 50 percent of the boat slips in the Harbor are usually occupied by motorized boats. Not all motor boats operating in the HMA, however, own or lease a boat slip. For these boat operators, a boat launch is necessary to access the Genesee River and Lake Ontario. To provide maximum accessibility, a public boat launch is an essential component to harbor operations. The following public and private launches are located in the HMA.

- Public boat launch located on the west side of the River at the Port of Rochester;
- Car-top launch at Turning Point Park;
- Shumway Marina; and
- Voyager Marina.

The City-owned public boat launch at the port site has parking capacity to accommodate more than 75 cars with trailers. Figure 7 below provides annual data on paid launches at the public boat launch. Boat launch data for either privately-owned launches or the car-top launch is not readily available.

Figure 7. Paid launches from the public boat launch

Year	Paid Launches	Owner
2008	1,889	Monroe County
2009	1,757	Monroe County
2010	1,307	Monroe County
2011	2,582	City of Rochester
2012	3,603	City of Rochester
2013	3,059	City of Rochester
2014	2,632	City of Rochester
2015	3,834	City of Rochester
2016		City of Rochester

SOURCES: Monroe County Department of Parks; City of Rochester Dept. of Recreation & Youth Services; City of Rochester Municipal Parking; Port of Rochester Marina

Sailboats

Sailing is a popular activity in the HMA. Approximately 50 percent of the boat slips in the harbor are owned or leased to sailors. Of the sailboats that use the harbor, many are equipped with trolling motors to facilitate entry and egress from their respective marinas/launches.

The Rochester Yacht Club is a major presence in the sailing and yachting community on the Genesee River and in Lake Ontario for recreation and racing. The Rochester Yacht Club, located on the eastern shore of the Genesee River, was established in 1877 and is one of the oldest yacht clubs in the country. It often hosts internationally renowned regattas that bring in people from all over the world. The Yacht Club also offers sailing instruction for adults and children as young as 6 years old. The Club has a sailing lesson area in the River where visitors can regularly watch as young sailors learn the skill of sailing. The Rochester Yacht Club hosts between many on-water special events each year, such as:

- Hospice/ Regatta – this event is held in August and is co-hosted by the Genesee Yacht Club.
- Great Lakes Match Racing – this three-day event is held in June each year.
- J/70 North American Championship – the four-day annual event is held in July. The maximum number of boats that can participate is 120 and many boats are turned away each year.
- US Sailing's Junior Olympics – this three-day event is held in August each year.
- Rochester Race – this single-day event is held in August each year.
- US Laser Masters Championship – this event is held over four days in September.

- J/24 District 7 Championship Regatta – this two-day event is held in June each year.

The Genesee Yacht Club, located on the eastern shore of the Genesee River, also hosts several regattas and recreational racing opportunities for its members. A summary of the events hosted by the Genesee Yacht Club includes:

- Tuesday Night races – races held on Tuesday nights from May through September.
- Weekend Club races – races held during weekends from May through September.
- Pizza races (informal) – informal Pizza races during June and July.
- The Scotch Bonnet Regatta – annual event.
- The Woman Skipper Invitational – annual event.
- Hospice/ Regatta – this event is held in August and is co-hosted by the Rochester Yacht Club.

Other Recreational Boating

Canoeing and kayaking occur along the Genesee River, but there are no canoe, kayak or rowing clubs or rental locations within the HMA. Canoe and kayak owners can launch their vessels at Ontario Beach Park (only during the swimming off-season) and Turning Point Park. Windsurfing and kite surfing enthusiasts in the Rochester region can also launch at Ontario Beach Park (only during swimming off-season), although no formal clubs or schools are located within the HMA.

2.7.2 Commercial Boating

Cargo Vessels

Use of the harbor by the Essroc cement company is a significant commercial operation that is critical to the designation of the HMA as a commercial port by the ACOE. Essroc's cement is shipped in on a freighter, usually the *Stephen B. Roman*, or if the water depth is insufficient for the freighter, the cement is shipped in on a barge powered by tug boats.

The *Stephen B. Roman* is a 488-foot long cement carrier that docks at the Essroc docks located at the southern terminus of the federal navigation channel. Essroc is the only major cement supplier in the region and, due to the transportation cost savings associated with water-borne shipping, is able to provide this material at lower costs than would be possible were the material to be shipped into the region via truck. While there is no set schedule associated with cement delivery, Essroc representatives indicated that large shipments occur every 2 to 3 months, on average.



Charters

The harbor is an attractive and profitable launching point for many area fishing charters due to its accessibility to the Genesee River, Lake Ontario and its tributaries. Within these waters live a variety of sought-after fish including salmon, walleye, trout and perch, with charters receiving the most requests for salmon. There are approximately 20 to 30 licensed charters that launch from the Harbor. Some are docked in the harbor, while others are trailered and use the public boat launch. There are two charter boat associations that operate in the Rochester area - the Genesee Charter Boat Association and the Lake Ontario Charter Boat Association.

The Genesee Charter Boat Association (GCBA) was founded in 1984 with the mission of advancing the charter boat industry in Lake Ontario. The GCBA actively works to educate the angling community and to promote information exchange among charter boat operators. The organization also works with the charter boat industry to set standards of conduct to ensure that customers are receiving a quality product across all charters. To complete its mission, the GCBA has a range of involvements with a number of government and non-government agencies for the betterment of the Lake Ontario fishery, including:

- Pen Rearing Project
- Red Cross Casting for Caring
- National Association Of Charter Boat Operators
- Lake Ontario Sport Fishing Stakeholders Coalition (LOSSC)
- Monroe County Fish Advisory Board

The GCBA provides two levels of membership - Charter Captain membership (for all licensed captains) and Associate membership (individuals or area businesses). There are currently 43 Charter Captain members and 20 Associate members.

The Lake Ontario Charter Boat Association (LOCBA) is an organization consisting of professional charter captains that operate on the waters of Lake Ontario. The primary objective of the LOCBA is to "advance and promote the charter boat industry on Lake Ontario and connecting waterways". To accomplish this objective, the LOCBA and its members actively participate in a number of projects and actives in the region, including:

- Net Pens
- Fishing Tournament
- Fishing Seminars
- Outdoor Shows
- Activities geared toward Kids and Families

Like the GCBA, the LOCBA also provides two levels of membership - Charter Captain membership (for all licensed captains) and Associate memberships (individuals or area businesses). There are currently 33 Charter Captain members and 25 Associate members. .

Excursion Vessels

Recently, only one passenger excursion vessel operated out of the HMA– the Harbor Town Belle. Built along the banks of the Genesee River and berthed in the HMA, the 80-foot paddle wheel boat departs up to three times per day for two-hour excursions on the Genesee River, Irondequoit Bay and along the Lake Ontario shoreline. Able to accommodate up to 128 people, the Harbor Town Belle offers lunch and dinner cruises, as well as special events such as private parties, corporate events, weddings, charity functions and school excursions from approximately the middle of June until the end of October. The Harbor Town Belle operates approximately 80 trips per year, depending on the weather.

There are several cruise ships currently operating in the Great Lakes. Rochester has had periodic visits from different cruise ships over the years. In summer of 2009, the 290-foot Clelia II docked in Rochester. The Captain and his crew of 72 sailed from Portugal to Newfoundland to Quebec to Rochester, along with a few other stops in between. The Clelia II carries approximately 100 passengers and has a draft of 14'9". Other popular Great Lakes cruise ships include the Pearl Mist (335' long) which carries approximately 200 passengers and has a draft of 12 feet; and the Grand Mariner (184'long) and Grand Caribe (184'long) both carrying approximately 88 passengers and have a draft of 6'6".

2.7.3 Public Safety/Environmental Protection/Maintenance Vessels

As discussed in Section 3, there are several public agencies operating within the HMA, many of which utilize watercraft as part of their daily operations. The agencies and their respective watercraft are listed below:

- U.S. Coast Guard (USCG) – The USCG operates three boats out of the Rochester harbor. They are docked at their facility at 5500 St. Paul Blvd.
- U.S. Customs & Border Patrol (USCBP)– The USCBP operates two 40-foot watercraft in the Harbor;
- Monroe County Sheriff (MCSO)– The MCSO operates five patrol boats and two jet skis in and around the HMA;
- Rochester Police Department (RPD)– The RPD currently moors one SCUBA boat (27-feet) in the Harbor;
- Rochester Fire Department (RFD) – The RFD currently operates one 17-foot inflatable rescue boat in and around the HMA;
- U.S Environmental Protection Agency (USEPA) – The USEPA operates the Lake Guardian, its largest research and monitoring vessel on the Great Lakes. This vessel is 180 feet long, has a 40' beam and has a 12-foot draft; and
- New York State Department of Environmental Conservation (NYSDEC) – The NYSDEC operates a wide range of patrol boats on NYS waters, including Lake Ontario and the Genesee River.

The need for a common public safety facility was identified during meetings with public safety agencies. It was suggested that this facility could be shared by several agencies operating in the HMA. The facility could include slips for public safety boats and provide space for such things as offices, a fueling station for public safety vessels, parking for official vehicles, restrooms and meeting rooms. A public safety facility would provide a central location for agencies to manage incident and tactical

operations and coordinate all public safety efforts in the HMA. A harbor master could also be housed in this facility.

2.7.4 Marinas and Waterside Boat Storage

There are three commercial marinas, two public marinas, and two private yacht clubs within the HMA totaling approximately 1,000 boat slips. Based on interviews with these HMA stakeholders, it was determined that occupancy rates are very high, indicating a healthy boating market in the region, currently. The inventory of boat storage is summarized in Figure 8 below.

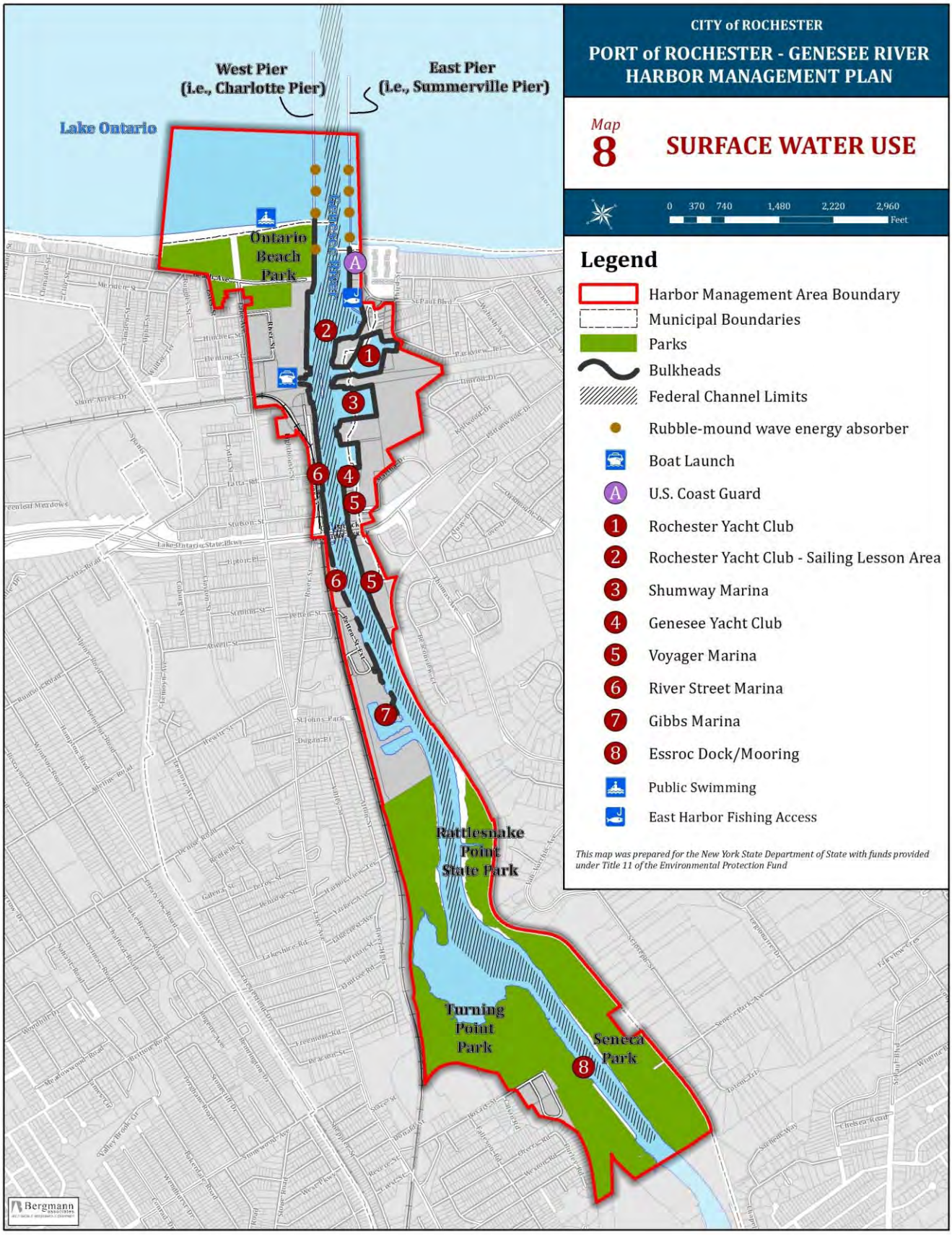
The Port of Rochester Marina (Phase 1) opened in 2016 and added approximately 84 slips inside the marina basin and about 39 transient broadside slips along the Terminal Dock Wall. Additionally, if expanded in the future, Phase 2 of the new marina could add an additional 70 slips in an expanded basin; no timeframe for Phase 2 has been identified.

Marina operators indicated approximately 90% of boat traffic is recreational boaters either traveling to Lake Ontario or to one of the region's bays, while the remaining 10% typically travel outside the area.

Figure 8. Boat Storage Inventory

Marina	Dock location	Percent Occupancy	Number of Slips	Average Slip/Boat Length (ft)	Dry Storage	Transient Docking Available
Shumway	basin	95-100%	219	30	Yes	Some
Voyager Marina	basin finger docks	65% 95%	100 100	28 35	Yes	Some
River Street Marina	finger docks	80%	112	25	No	All
Genesee Marina	basin finger docks	90% 100%	70 85	35	Yes	Some
Rochester Yacht Club	basin	100%	175		Yes	Reciprocal Club Members
Genesee Yacht Club	basin finger docks	100% 100%	22 27	25	Yes	Reciprocal Club Members
Port of Rochester Marina (Phase 1 and Broadside)	basin dock wall	60%	84 39	45	No	Yes

SOURCE: Stakeholder Interviews


CITY of ROCHESTER
PORT of ROCHESTER - GENESEE RIVER HARBOR MANAGEMENT PLAN
Map 8
SURFACE WATER USE
0 370 740 1,480 2,220 2,960 Feet
Legend
Harbor Management Area Boundary
Municipal Boundaries
Parks
Bulkheads
Federal Channel Limits
Rubble-mound wave energy absorber
Boat Launch
U.S. Coast Guard
1 Rochester Yacht Club
2 Rochester Yacht Club - Sailing Lesson Area
3 Shumway Marina
4 Genesee Yacht Club
5 Voyager Marina
6 River Street Marina
7 Gibbs Marina
8 Essroc Dock/Mooring
Public Swimming
East Harbor Fishing Access
This map was prepared for the New York State Department of State with funds provided under Title 11 of the Environmental Protection Fund
West Pier (i.e., Charlotte Pier)
East Pier (i.e., Summerville Pier)
Lake Ontario
Ontario Beach Park
Rattlesnake Point State Park
Turning Point Park
Seneca Park
Bergmann

2.7.5 Fishing

Lake Ontario is New York's largest and most diverse sport fishery, both in terms of angler days and expenditures. Between October 1, 2012 and August 9, 2013, 19,835 fishing licenses were issued in Monroe County. An additional 7,390 seasonal sportsman licenses were issued, which include fishing, and 4,458 one-day fishing licenses were issued in Monroe County during the same period.

The most recent data available (2007) indicated that angler effort on Lake Ontario (including the Rochester embayment) exceeded 1.5 million angler days, and expenditures of Lake Ontario anglers in counties bordering the lake topped $54 million. The Lake's salmon fisheries have been important to anglers and an important economic generator to local communities since their introduction around 1970. Additionally, warm water fishing for bass is important, particularly in the Eastern Basin of the Lake, accounting for approximately 21% of all angler days lake-wide in 2007. (Lake Ontario Sportfishing: Trends, Analysis, and Outlook, HDRU Series No 09-3, Tommy L. Brown and Nancy A. Connelly, Human Dimensions Research Unit, Department of Natural Resources, Cornell University, June 2009).

As one of Western New York's most productive sport fisheries, the Lower Gorge of the Genesee River offers excellent summer fishing for smallmouth bass, walleye, perch, catfish and carp as well as excellent spring and fall fishing for king salmon, steelhead, brown trout and lake trout. The Genesee River is also part of a lake sturgeon restoration program, with the NYSDEC releasing hatchery-reared sturgeon in an attempt to restore the self-sustaining fishery that once flourished here (additional details regarding release numbers is provided in Section 2.9.6).

Within the HMA, the Charlotte and Summerville Piers offer excellent fishing for landside anglers. Turning Point Park and the Genesee Riverway Trail provide direct public access to the river and many local residents use these facilities for fishing access. The NYSDEC also runs the scenic East Harbor Fishing Access site, which is located at the end of St. Paul Blvd. on the eastern shore of the River. It features parking and benches and is open year-round for public landside fishing access.

Fishing Derbies

Building on the excellent sports fisheries available in Lake Ontario, there are several fishing derbies that occur in the HMA. The largest of these derbies – the Lake Ontario Counties (LOC) Trout and Salmon Derby – is held during the spring and fall each year. The LOC Trout and Salmon Derby allows anglers to compete for cash and prizes in four separate categories – salmon, steelhead, lake trout and brown trout. These events attract people from across the country to compete and enjoy the world class fishing found in Monroe County. During most years, there is usually a weigh station for this event hosted somewhere in close proximity to the HMA, but is typically not located on the waterfront itself.

The Greater Rochester Chapter of the American Red Cross also hosts the Casting for Caring Sport Fishing Tournament in the HMA. This annual summer event started in 1993 and draws approximately 200 anglers each year.

2.7.6 Swimming

The only location where public swimming is supervised in the HMA is at the public beach at Ontario Beach Park, which offers one of the Great Lakes' best natural sand beaches. Supervised swimming is

offered each day from June 1st through Labor Day, 11 a.m. to 7 p.m. Water quality issues have been an ongoing problem at the beach and result in limiting access for swimming. Swimming is prohibited in the Genesee River per the Rochester City Code (§44-7 Swimming and Bathing).

Per New York State Parks regulations, boats are restricted from entering designated swimming areas. Additionally, the location of the beach immediately behind and adjacent to the West Pier reduces the likelihood of boats entering the designated swimming area.

2.7.7 On-Water Commercial Activities

As previously noted, the Genesee River Harbor currently offers a variety of services for users of the harbor and its shoreline. Specific to boaters, the following is a list of on-water commercial activities and services in the HMA.

Genesee Marina

Genesee Marina is a privately-owned marina located on the western bank of the Genesee River, approximately one-half mile south of the Colonel Patrick O'Rorke Memorial Bridge. This full-service marina offers on-water fueling; a convenience store; maintenance and repair services for most inboards, sterndrives, and outboards; 24-hour access to bathrooms with showers; head pump-outs; fresh water; dockage; and, hauling, storage and winterizing services.

River Street Marina

River Street Marina is located on the west bank of the Genesee River, both north and south of the Colonel Patrick O'Rorke Memorial Bridge. The marina is a public-private partnership between the City of Rochester, who owns the marina, and a private company that operates the facility under a long-term license. River Street Marina offers public restrooms (available from 8:00 AM to 6:00 PM in-season), a waste pump-out station, on-site dockmaster, laundry (for slip lessees), power and water at each slip, and free wireless internet north of the bridge. River Street Marina does not offer mechanical repairs, hauling, land storage or related services.

Shumway Marina

Shumway Marina is a full-service, private marina located along the eastern shore of the Genesee River. Shumway offers on-water fueling; a convenience store; maintenance and repair services; boat docks; free wireless Internet access; 24-hour access to bathrooms with showers; head pump-outs; fresh water; and, hauling, storage and winterizing services. The Marina is also home to Schooner's Riverside Pub, seasonal bar and grill with an open air gazebo and large deck overlooking the Genesee River. Transient docks are available for patrons of the Pub.

Voyager Marina

Voyager Marina is a privately-owned commercial marina operation located on the eastern shore of the river. The majority of the land on which the marina facilities are located is owned by the City of Rochester and leased to the marina operator on an annual basis. Voyager provides shore power, potable water, and outdoor storage.

Harbor Town Belle

The Harbor Town Belle is the only passenger excursion vessel operating out of the HMA. The paddle wheel boat offers lunch and dinner cruises, as well as special events such as private parties, corporate events, weddings, charity functions and school excursions from approximately the middle of June until the end of October. It departs from Voyager Boat Sales on the east side of the Genesee River.

Pelican's Nest Restaurant

Pelican's Nest is a seasonal waterfront restaurant located on the western bank of the Genesee River. Patrons can reach the restaurant by land and water and free guest dockage is provided for customers. In addition to both indoor and outdoor dining facilities and nighttime entertainment, Pelican's Nest also has restrooms and payphones available.

Port of Rochester Terminal Building

Constructed in 2004, the Port of Rochester Terminal Building is a 70,000 square foot structure located on North River Street at the mouth of the Genesee River. The building features an atrium main concourse that includes restaurants and public restrooms. It contains departure and arrival halls which can be used to accommodate loading and unloading passengers of excursion vessels or for special events and community meetings. The Terminal Building's second floor includes restaurant space, City administrative offices, and conference rooms. The 3-story southern portion of the Terminal is being used for the boaters' services building and a welcome center for the Port of Rochester Marina.



Silk O'Loughlin's Restaurant

Silk O'Loughlin's is a seasonal bar and restaurant overlooking the Genesee River and Lake Ontario. Located on the River's eastern shore, Silk O'Loughlin's offers both indoor and outdoor dining. Patrons visit the restaurant by land and water and free guest dockage is provided.

2.7.8 Water Surface Use Regulations

The New York State Navigation Law (Article 3 - Navigable Waters of the State) regulates water surface activity within the HMA. The Office of Parks, Recreation & Historic Preservation (OPRHP) through its Bureau of Marine Services, is the lead agency in charge of coordinating marine law enforcement efforts. The Bureau oversees the distribution of boater registration funds to qualifying counties and municipalities. It also conducts training seminars for law enforcement officers at the state, county and local levels. As it relates to enforcement, the Navigation Law is enforced in the HMA primarily by the Monroe County Sherriff's Office, while all local and state police agencies, including the Rochester Police, the Irondequoit Police, the NYS Police, NYSDEC, and the OPRHP Park Police, have enforcement authority.

Federal navigation regulations are provided in Title 33 Code of Federal Regulations (CFR) - *Navigation and Navigable Waters* which regulates water use and activity of federal waterways. Lake Ontario and the Genesee River federal navigation channel are regulated in accordance with these regulations.

With regard to permitting special events on the water, for events occurring outside federal waterways, water surface use permitting is handled by the NYS OPRHP. Within federal waterways, the USCG administers Maritime Event Permits. That permit is processed out of the USCG Station Buffalo, which determines to what level an event, if at all, should be supported and monitored by the USCG.

There are no local laws regulating water surface use in the HMA.

The harbor is posted as 6 MPH and "NO WAKE" at the harbor entrance on the end of the east pier and at the guard walls around the O'Rorke Bridge piers.

Additional details regarding jurisdictional and regulatory authority can be found in Section 3.0.

2.8 Navigation System, Water Depths & Dredging

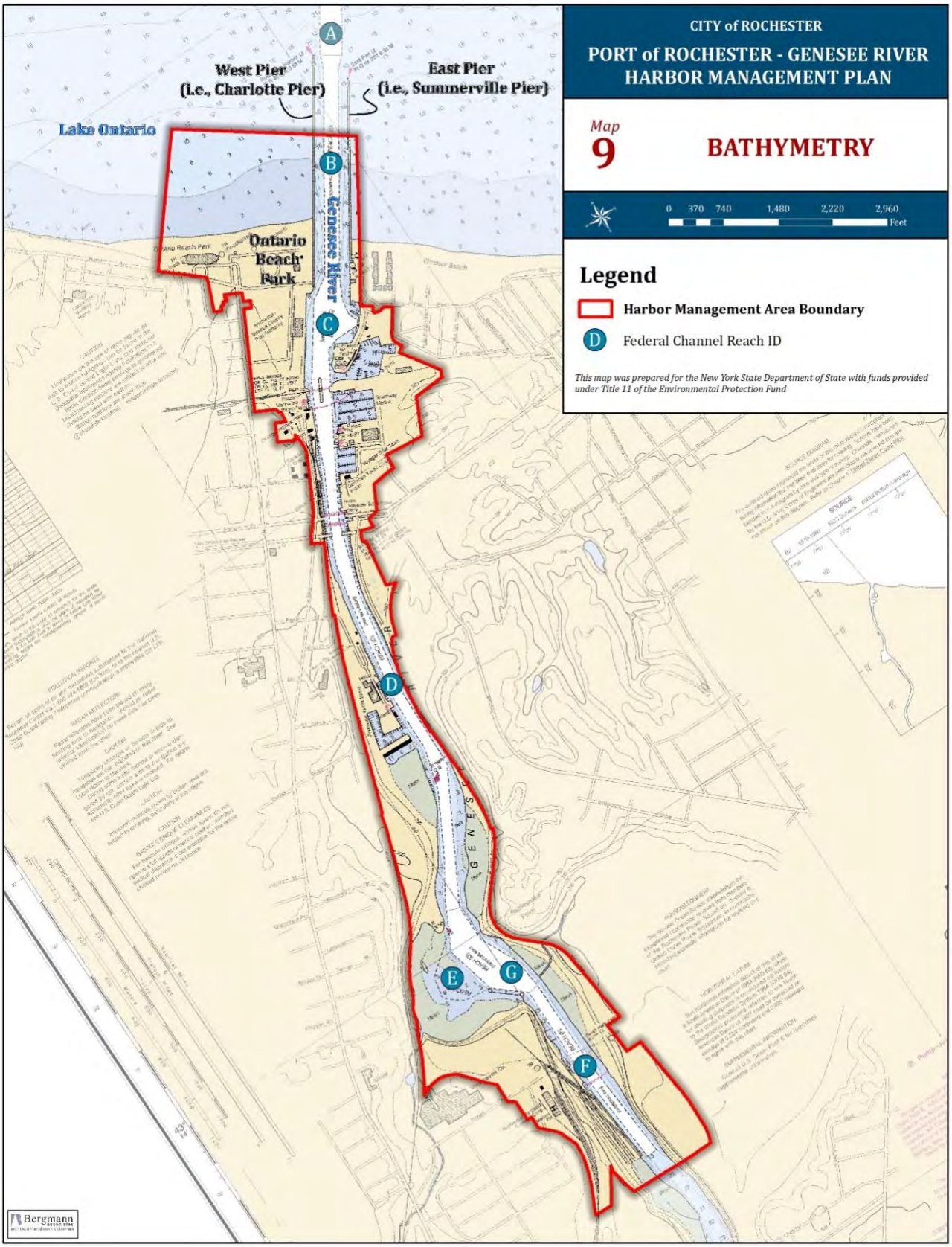
2.8.1 The Navigation Channel

The USACOE has designated approximately three miles of the Genesee River as a federal channel, generally from Lake Ontario upstream to just beyond the Essroc facility (see Map 9 - the NOAA Chart 14815). The federal channel is divided into sections for the purposes of defining the parameters of the channel dimensions. The maintenance of those dimensions depends on the commercial needs of the harbor and funding allocations. As identified on the NOAA Chart 14815, there are seven reaches within the Genesee River federal navigation channel, including:

- *Reach A: Lake Approach Channel* – the 2,800 foot-long and 300-foot wide approach channel is located north of the piers. It was constructed to a depth of 24 feet and is currently maintained to a depth of 22 feet.
- *Reach B: Entrance Channel (between the piers)* – this portion of the entrance channel extends for 4,400 feet from the southern end of the Lake Approach Channel upstream. This reach was constructed to a depth of 23 feet and is currently maintained to a depth of 21 feet. The width of the channel reach is approximately 200 feet.

- *Reach C: Lower Turning Basin* – this portion of the entrance channel extends from the southern end of the Entrance Channel upstream for about 1400 feet. This reach was constructed to a depth of 23 feet and is maintained to a depth of 21 feet. The width of the channel ranges from 200 feet to 350 feet. The channel was historically maintained to a width of 600 feet to create a turning basin in this area of the harbor. There is no longer a need for the turning basin and the channel is thus maintained to a maximum width of approximately 350 feet in the channel adjacent to the port site.
- *Reach D: Genesee River* – this portion of the channel is the longest identified reach (10,800 feet) and extends from Reach C to where the Turning Basin at Turning Point Park begins to flare out. This portion of the channel was constructed to a depth of 21 feet and maintained to a depth of 21 feet. The width of this channel ranges from approximately 250 feet where it meets Reach C and narrows to 150 feet until it approaches Reach E.
- *Reach E: Upper Turning Basin* – this reach was originally constructed as a turning basin for the channel at a depth of 21 feet. It is no longer maintained as a portion of the navigation system.
- *Reach F: Genesee River, Upstream* – this reach is subdivided into two portions:
  - *Reach F: Genesee River, Upstream to Dredging Limit* – this northern portion of Reach F is the upstream extent of the channel in the River. This part of the reach is approximately 150 feet wide, 1,580 feet long and is maintained to a depth of 21 feet. The upstream limit of the maintained channel is approximately 150 feet south of the Essroc dock.
  - *Reach F: Genesee River, Upstream 1,200 Feet of Navigation (not maintained)* – the southern (upstream) portion of Reach F is not maintained. The depths transition between the maintained channel to the north and the natural channel outside the Federal Channel Limits to the south.
- *Reach G: Upper Turning Basin* – this portion of the channel is located between Reaches F and D and ranges from 150 to 500 feet in width and is maintained to a depth of 21 feet.

The above descriptions are based on the Rochester Harbor Channel Depths as tabulated from surveys by the Corps of Engineers – Report to January 2014 and Surveys to December 2013 as presented in NOAA Chart 14815, last corrected on April 25, 2014. Dredging activities in the channel in 2015 and 2016 by the Army Corps of Engineers were intended to maintain depths described above.


CITY of ROCHESTER
PORT of ROCHESTER - GENESEE RIVER HARBOR MANAGEMENT PLAN
Map 9
BATHYMETRY
0 370 740 1,480 2,220 2,960 Feet
Legend
Harbor Management Area Boundary
Federal Channel Reach ID
This map was prepared for the New York State Department of State with funds provided under Title 11 of the Environmental Protection Fund
West Pier (i.e., Charlotte Pier)
East Pier (i.e., Summerville Pier)
Lake Ontario
Ontario Beach Park
Genesee River
A
B
C
D
E
F
G
Bergmann

2.8.2 Water Depth Requirements by Use Type

Each specific model of boat has a different draft and each individual boat will draft at a different depth depending on the specific load displaced at a given time. The following section provides an overview of the general water depths required by four different use types – cargo vessels, excursion vessels, recreational boats and public safety watercraft.

Cargo Vessels

The Essroc cement ship, *Stephen B. Roman*, is currently the only cargo vessel that visits the Rochester harbor on a regular basis. It primarily sails in Lake Ontario between the ports of Picton and Toronto, Ontario; and Oswego and Rochester, New York. The vessel has a capacity of 7,600 tons and a 21-foot draft under fully loaded conditions. Not fully loaded, The *Stephen B. Roman* can operate with less than 21-foot depth; Essroc prefers not to have the water depth in the channel at less than 19 feet.

Excursion Vessels

The Harbor Town Belle is the only excursion vessel currently operating in the Harbor. Due to this vessel's shallow draft, 3 feet, it is able to navigate the river at shallow depths

The cruise ships currently operating in the Great Lakes generally have drafts between 12 and 15 feet. Water depth should be two feet more than the drafts so to have the maximum opportunity for docking cruise ships in Rochester, the navigation channel and the Terminal Dock Wall should be maintained to a depth of 17 feet.

Recreational Boats

While the size and depth of recreational boats vary considerably, most small and medium size recreational boats have a relatively shallow draft. Based on information received from stakeholders on the River, the vast majority of recreational boats are able to operate at the natural water depth of 10 feet (although some boats require depths up to 15 feet). If, however, the depth were to dip below 8 feet, many of the boats that typically travel the Genesee River could not operate.

Public Agency Vessels

There are several agencies currently operating boats on waters located within the HMA. Information provided by stakeholders indicates that the vast majority of agency vessels that operate within the HMA are similar in size and type to many of the recreational watercraft that operate in the area, which require no more than 15 feet depth and no less than 8 feet.

The USEPA's Lake Guardian occasionally visits the Rochester HMA and has a 12-foot draft

2.8.3 International Joint Commission

Established as part of the 1909 Boundary Waters Treaty between the United States and Canada, the purpose of the International Joint Commission (IJC) is to provide assistance to these governments relating to the cooperative use and management of waterbodies that lie along or flow between their borders. The IJC comprises six members – three are appointed by the President of the United States,

with the advice and approval of the Senate, and three are appointed by the Governor in Council of Canada, on the advice of the Prime Minister.

The IJC has four main responsibilities - regulating shared water uses, improving water quality, improving air quality, and investigating transboundary issues. When resolving disputes and deciding on issues, the Commissioners are bound to the Treaty and must act impartially and not represent the views of their respective governments. Additionally, any recommendations and decisions must take into account the needs of a wide range of water uses, including drinking water, commercial shipping, hydroelectric power generation, agriculture, industry, fishing, recreational boating and shoreline property. To help carry out its responsibilities, the IJC has set up more than 20 boards made up of experts from the United States and Canada.

The IJC's responsibilities related to regulating water levels and water quality have direct implications to the HMA and are discussed below.

Water Level Management

The recently discontinued water level management plan (1958-D), developed in 1963 based upon water supply data gathered from 1860 to 1958, allowed water levels within Lake Ontario and the St. Lawrence River to fluctuate approximately four feet, from 243.3 to 247.3 above sea level. The IJC determined that the 1958-D plan severely impacted coastal environmental processes, in particular emergent wetland communities. These communities were not experiencing sufficient water level fluctuations to thrive, and were being overtaken by invasive upland species which reduced overall biodiversity within the Lake Ontario basin. Additionally, the 1958-D plan was developed with data from the mid 1800's. Weather patterns have changed, and the amount of impervious coverage has increased significantly since 1950. The 1958-D plan was also not modeled to take into consideration water supplies larger than those experienced between 1860 and 1958, and the IJC determined that the current plan fails to take into consideration a larger range of possible future water supplies.

The recently adopted new regulation plan, *Plan 2014*, will specify the operational rules for managing Lake Ontario outflows at the Moses-Saunders Dam (near Cornwall in Ontario, Canada) to more closely follow natural patterns of water levels and flows than does the 1958-D plan, while moderating extreme water levels and establishing an "adaptive management strategy." Plan 2014 allows more variability in water levels from year to year on Lake Ontario and the upper St. Lawrence River in an effort to improve the health and diversity of coastal wetlands. More specifically, based on water supply data from the 20th century, the maximum level of Lake Ontario under the most extreme conditions would increase by 2.4 inches (from 248.3 feet to 248.5 feet) compared to the 1958-D plan; the minimum water level would be lowered by 8 inches, from 242.1 feet to 241.4 feet; and the average water level would increase by 2.4 inches (from 245.2 feet to 245.4 feet). The average seasonal changes under Plan 2014 would raise the monthly average water level in Lake Ontario by 2.4 inches in April, 1.2 inches in June, and 2 inches in October, again based on the water supply data from the 20th century. High water levels would increase by approximately 5.5 inches, while low water levels would decrease by approximately 1.6 inches.

As it relates to the HMA and the Genesee River, Plan 2014 could result in potentially increased costs for shoreline protection of the Genesee River – the estimates by the IJC indicate that the annual cost of shoreline protection will increase by approximately 13 percent. However, the proposed changes have not been subjected to a rigorous study of the effects specific to the Rochester harbor with due consideration of the magnitude of the changes occurring during the navigation or non-navigation season. Increased water levels may extend the effective length of the navigation season to later in the fall. Lower water levels that occur during the non-navigation season may have little impact on usage and only have slightly increased "wear-and-tear" effects on permanent harbor infrastructure that remains in-place through the winter season. The results of Plan 2014 water level changes in combination with storm surge events cannot be gauged readily; a hydraulic study of separate and combined effects would be required.

2.8.4 Great Lakes Navigation System

Extending from the western shore of Lake Superior at Duluth, Minnesota to the Gulf of St. Lawrence on the Atlantic Ocean, the Great Lakes Navigation System (GLNS) is a 2,400-mile long, 27-foot deep draft waterway. The GLNS also includes an international network of harbors, channels, locks, and dams that provides for interstate and international transportation of goods and materials. In the United States, the GLNS includes 60 commercial harbors and 80 recreational harbors, two operational locks, 104 miles of breakwaters and jetties, and over 600 miles of maintained navigation channels, including those in the Rochester HMA; each year, 145 million tons are transported between and within U.S. ports located on the GLNS. The GLNS also connects to several shallow-draft waterways, including the New York State Barge Canal. The GLNS is a vital component of America's transportation system.

In 2013, Congresswoman Louise M. Slaughter introduced H.R. 2273, the Great Lakes Navigation System Sustainability Act, which would establish the GLNS as a single, comprehensive system for better budgeting. This legislation passed the House in December 2013 and awaits further progress. In early 2014, Congresswoman Slaughter and a bipartisan coalition of Great Lakes Representatives pushed for $30 million in additional funding for the GLNS to provide for increased maintenance of its navigational locks, harbor channels and harbor structures.

"The Great Lakes are a premier economic engine for the United States, responsible for 130,000 jobs and $18 billion in economic activity . It's time to start funding some of the pressing maintenance priorities in our Great Lakes communities."

-- Representatives Slaughter and Huizenga.

Rochester Harbor is ranked 60th of the 60 commercial harbors in the GLNS, as reported by the USACOE GLNS Fact Sheets published in March 2014. The ranking is based on the average tonnage of materials

handled between 2007 and 2011. Rochester Harbor shipped and received an average of 99,000 tons of material during that period. Cement arriving at the Essroc facility is the only major commodity being handled in the Rochester Harbor. For comparison, during the same period the two other US harbors on Lake Ontario, Ogdensburg and Oswego, handled an average of 104,000 tons and 400,000 tons for rankings of 59th and 47th, respectively. Ogdensburg is primarily receiving road salt and corn gluten while Oswego handles a wider range of commodities including metals, agricultural products, cement, salt, petroleum products, and windmill and nuclear power components. All three ports primarily receive cargo with only minor volumes of export shipping. This ranking is critically important for prioritizing harbors for infrastructure construction and/or maintenance.

According to section 230 of the Water Resources Development Act of 1996, cruise ship traffic can be considered in the ranking criteria for commercial harbors. Specifically, it states, "In evaluating potential improvements to navigation and the maintenance of navigation projects, the Secretary shall consider, and include for purposes of project justification, economic benefits generated by cruise ships as commercial navigation benefits." This was further clarified in Planning Guidance Letter No. 97-6, Cruise Ships and Benefits to Navigation (Appendix C) wherein it states that cruise ships that operate out of existing federal channels and harbors will receive equal consideration with other commercial navigation vessels for federal harbor or channel improvements.

2.8.5 Critical Harbor of Refuge

A Critical Harbor of Refuge is a designation by the USACOE that a harbor is considered a safe haven where mariners can moor their vessels in the event of foul weather. The Port of Rochester is designated by the USACOE as a Critical Harbor of Refuge due, in part, to the location of the USCG Search and Rescue Station. This designation raises the Harbor's status for USACOE maintenance priorities. However, as noted by harbor stakeholders and in USACOE reports, for northeast storms (Nor'easters) the lower portion of the harbor may not function as an adequate harbor of refuge due to intense wave action.

2.8.6 Dredging

Sediment that is carried via runoff into the Genesee River deposits in the harbor causing shoaling that can interfere with the River navigability. The rate to this deposition is estimated to be about 1 to 2 feet per year in the lower Genesee River, requiring ongoing "maintenance" dredging inside and outside the federal navigation channel to allow for boating activities.



USACOE Dredging in the Federal Navigation Channel

Based on information provided in the 2016 USACOE fact sheet (Appendix D) for the Rochester harbor, approximately 220,000 cubic

yards of sediment must be dredged from the channel every two years to maintain the design depth of 21'. Routine maintenance dredging of the navigation channel carried out by the USACOE ensures the continued operation of commercial traffic in the HMA.

To lobby for their continued dredging efforts, the USACOE prepares an analysis of the economic benefits of each maintenance project. According to the 2016 USACOE fact sheet, the bulk commodities that are handled by the harbor annually generate $610M annually in business revenue while supporting 3,681 direct, indirect, and induced jobs that produce over $183M in personal income. In spite of these numbers, however, the Rochester harbor is categorized as a low-use commercial port as it transits less than 1 million tons of commercial loads per year and, as stated above, is ranked 60th out of 60 commercial harbors in the GLNS.

If the Harbor is left un-dredged for a period of five years, it is unlikely that it would ever be economically viable to dredge the River to commercial depths again.

In the mid-2000's, given Rochester's low ranking on the GLNS, national priorities, and limited availability of funds to conduct dredging, the USACOE discontinued routine maintenance dredging of the Rochester harbor and by the spring of 2007 the *Stephen B. Roman*, for the first time, was unable to transit the Genesee River since depths in the harbor were reduced to less than 14 feet.

Fortunately, with emergency federal aid, the USACOE was able to resume maintenance dredging in 2008 and 2009, which partially restored the channel maintenance depth of 21 feet for the time being. There were still, however, no plans for ongoing routine dredging.

By 2011, the *Stephen B. Roman*, which requires a minimum of 19 feet of water, was again unable to enter the harbor, so in late 2011 Essroc and the City of Rochester were approached by the USACOE with a proposal for a "Pilot Program for Dredging in Low Use Commercial Ports." The underlying idea was that the USACOE would fund and provide essential technical assistance related to dredging within the federal navigation channel (e.g., permitting, surveying sediment sampling, and technical advice), while the participating stakeholders would fund the actual dredging activity. Essroc agreed to participate in the pilot program, while the City and County agreed to contribute nominally. As a result of this public-private partnership, more than 200,000 cubic yards of sediment was removed from the Genesee River in 2013.

In the spring of 2013, Congresswoman Louise Slaughter, as Co-Chair of the Congressional Great Lakes Task Force, announced that she had secured funding for the USACOE for dredging in 2014, partially through emergency relief funds associated with the sedimentation impacts of Super Storm Sandy.

In 2015, 290,000 cubic yards of material was removed during maintenance dredging. In December 2015, Schumer announced that the FY 2016 Omnibus Appropriations bill included $2.32 million in federal funding to dredge the Harbor in 2016 and 2017. While this funding for dredging is beneficial to the Rochester harbor, the year to year funding decision making, however, is not necessarily beneficial

to the long-term planning and growth for the harbor. The ongoing uncertainty is a challenge for existing businesses and will discourage new business. For instance, absent a regular and predictable maintenance dredging schedule, cruise ships that travel the Great Lakes Navigation Channel throughout the Great Lakes cannot put Rochester on their list of ports of call.

Essroc has indicated that they will be unable to continue supplying cement by vessel unless maintenance dredging continues to occur in the navigation channel. Without the use of the water for delivery of cement, there is no guarantee that Essroc would remain at the current Boxart Street location in Rochester. The *Preliminary Economic Impact Analysis: Genesee River Dredging Proposal* prepared for the City of Rochester in 2012 *(*Appendix E) explored the economic impacts of the cessation of Essroc in Rochester. This analysis found that the following impacts would likely occur:

- Loss of at least 17-20 jobs in the City of Rochester;
- Loss of approximately $3-4 million in annual economic output in Monroe County; and
- Loss of approximately $400 thousand in annual state and local tax revenue.

This analysis also noted that there are other potentially significant negative impacts of losing the only major cement supplier in the area, notably the presumed 15% increase in the cost of cement and its ripple effects to the local economy.

Disposal of Dredged Material

Open Lake Disposal

Open Lake disposal is the placement of dredged material into an area of the lake that is permitted by state and/or federal agencies for sediment disposal. Disposal of dredged material into inland waters (e.g. Lake Ontario), is governed by section 404 of the Clean Water Act (CWA). Open lake disposal is typically less costly than disposal on land. However, the permissibility of open lake disposal is dependent on the degree and type of contamination of disposed material, the disposal site, and the seasonal timing of the work.

Routine dredging to maintain adequate depth in navigational channels and harbors occurs in many locations throughout the Great Lakes. Chemical specific guidelines have historically been used in both the U.S. and Canadian portions of the Great Lakes to assess the suitability of disposing of the dredged material in open lake environments. In cases where chemical contaminants exceed the open lake disposal guidelines the dredged material is not considered suitable for disposal in the lake and must be disposed or managed in a more expensive manner within an engineered confined disposal facility or in an appropriate landfill or other upland disposal site.

Dredging operators in the Rochester HMA currently use an USACOE-permitted open lake disposal site in Lake Ontario. This site is located 1½ miles northeast of the east pier light. Marina and yacht club owners indicated that disposal of dredged materials to an upland site would be cost prohibitive.

Upland Disposal

Upland disposal of dredged material is the most common option for material determined to be unsuitable for open water disposal. These dredged sediments are regulated as a solid waste and are subject to 6 NYCRR Part 360 Solid Waste Management Facilities Regulations. Part 360 regulations require disposal at an authorized solid waste management facility.

Beneficial Use of Dredged Material

An important goal of managing dredged material is to ensure that the material is used or disposed of in an environmentally sound manner. According to the USEPA, much of the several hundred million cubic meters of sediment dredged each year from U.S. ports, harbors, and waterways is disposed of in open water, confined disposal facilities, and upland disposal facilities. Most of this dredged material could be used in a beneficial manner instead, such as for nourishment of beaches with clean sand or development of wetland habitats.

The USACOE and the NYSDEC offer a Beneficial Use of Dredged Material program which is an opportunity for reusing the dredged material. Instead of disposing of dredged material in the open water disposal site or an upland disposal site, it could be used for ecosystem restoration in and around the HMA. The USACOE has indicated that they would even be willing to explore alternative disposal locations (e.g. brownfield cover) if a sponsor, such as the City, is willing to pay any additional costs.

Dredging outside of the Federal Navigation Channel

While dredging of the Federal Channel is key to ensuring the longevity of the harbor, there are several areas outside of the channel that also require regular maintenance dredging. Marina and yacht club operators must periodically dredge outside the channel to ensure access to their slips. Private dredging is accomplished in accordance with NYSDEC permits, which are required every five years. NYSDEC provides a guidance document entitled*, In-Water and Riparian Management of Sediment and Dredged Material,* which outlines recommended procedures to be followed during dredging and dredged material management (Appendix F). Dredged sediment from the Genesee River, that meets the proper sediment classification and USACOE requirements, is currently disposed of at the USACOE open lake disposal site, as allowed by the NYSDEC permit.

Dredging along the Port of Rochester Terminal Dock Wall

Boats of all sizes can temporarily dock at the Terminal Dock Wall, within the Port of Rochester. This would be the area where large vessels, including cruise ships, visiting tall ships, contractor barges and vessels, and agency vessels such as the EPA Lake Guardian can dock. Reservations and payments for docking along the dock wall is handled by the manager of the Port of Rochester Marina (portofrochestermarina.com).

The design depth of the Dock Wall is 228.5’ (International Great Lakes Datum 1985 [IGLD85]) at which level a Scour Mat was installed to ensure no disturbance of sediment below that depth. Maintenance dredging of the Dock Wall has been routinely permitted to a depth of 230’ (IGLD85) which would only involve new deposition so that Open Lake disposal would be permitted. In the past the City has entered into funding agreements with the USACOE to have its contractors dredge City Port facilities in order to take advantage of the competitive volume related pricing in the USACOE dredge contracts. Ongoing dredging to a depth of 230’ would leave approximately 12’ of water depth during low water and a depth of about 17’ during high water.

Collaborative Dredging

One potential strategy to address Harbor dredging needs is collaborative dredging. Collaborative dredging is the process by which a group of individual entities (e.g., marina owners, commercial shippers, and municipalities) develop a plan to coordinate all of the individual dredging activities into one master dredging plan. This has many potentially positive impacts on harbor operations, including the reduction of mobilization costs and permit administration costs and time. Currently, within the HMA, there is occasional informal collaboration among individual stakeholders who are interested in simply sharing a particular dredger for a cost savings. Formalizing harbor-wide collaboration for the Rochester harbor was discussed in stakeholder meetings as a desirable cost saving opportunity.

On a regional scale, the Orleans County Planning Department led an effort with Lake Ontario harbor stakeholders to prepare the *Regional Dredging Management Plan (RDMP)* (Appendix G). The RDMP provides a comprehensive approach to the on-going dredging needs for harbor access channels along the south shore of Lake Ontario. Figure 9 presents a list of all the participating harbors in that regional plan.

Figure 9. RDMP Channels

Channel / Waterbody Designation	Municipality	County
Wilson Harbor	Wilson (T)	Niagara
Olcott Harbor	Newfane (T), Olcott (V)	Niagara
Oak Orchard Harbor	Carlton (T), Point Breeze (Hamlet)	Orleans
Sandy Creek	Hamlin (T)	Monroe
Braddock Bay	Greece (T)	Monroe
Long Pond Inlet	Greece (T)	Monroe
Genesee River	Rochester (C)	Monroe
Irondequoit Bay	Irondequoit (T), Webster (T), Penfield (T)	Monroe
Bear Creek Harbor	Ontario (T)	Wayne
Pultneyville	Pultneyville (Hamlet), Williamson (T)	Wayne
Great Sodus Bay	Sodus Point (V), Sodus (T), Huron (T)	Wayne
East Bay	Huron (T)	Wayne
Port Bay	Huron (T), Wolcott (T)	Wayne
Blind Sodus Bay	Wolcott (T)	Wayne
Little Sodus Bay	Sterling (T), Fairhaven (V)	Cayuga
Oswego Harbor	Oswego (C)	Oswego
Mexico Pt. - Little Salmon River	Mexico (T)	Oswego
Salmon River - Port Ontario	Richland (T)	Oswego
Sandy Pond Inlet	Sandy Creek (T)	Oswego

Source: Draft Regional Dredging Management Plan Update, F-E-S ASSOCIATES, 7/3/2013

One of the obstacles to collaborative dredging is permitting conditions and restrictions. Every dredging location is subject to permit conditions related to protection of aquatic habitat and fish spawning seasons. In fact, in the Rochester HMA alone there can be up to 3 different scheduling windows when dredging is allowed, and aligning those windows may challenge collaboration efforts.

Dredging Permits & Restrictions

Several agencies are involved with the approval of a dredging permit which is administered through the NYSDEC in the HMA. A NYSDEC dredging permit references authorizations under the following laws:

NY Code Article 15, Title 5, Section 15-0505– Excavation and Fill in Navigable Waters
NY Code Article 15, Title 5, Section 15-0501- Protection of Streams
NY Code Article 24 – Freshwater Wetlands
Clean Water Act, Section 401 – Water Quality Certification

Dredging schedule windows are indicated on each permit and vary by location within or outside of the Federal Channel and by reach (e.g., as one moves upriver, the habitat value of the shoreline areas increases and the windows of allowable dates become smaller). The current dredging restrictions are influenced by the Genesee River's designation as a Significant Coastal Fish and Wildlife Habitat from its mouth at Lake Ontario upstream to the Lower Falls. In accordance with the *Coastal Fish & Wildlife Habitat Rating Form for the Genesee River* the current NYSDOS dredging restrictions for the Genesee River include:

- The existing navigation channel should be dredged between mid-May and mid-August or between mid-November and early April in order to avoid impacts on the habitat use by migrating salmonid.
- Activities that would affect the habitat above the navigation channel should not be conducted during the period from March through July in order to protect warmwater fish habitat values.
- New dredging (outside the existing navigation channel) would likely result in the direct removal of warmwater fish habitat values and should not be permitted.
- Contaminated dredge spoils should be deposited in upland containment areas.

Dredging permits in the HMA are issued in 5-year terms and sediment testing is required as part of the permitting process. If sediment quality exceeds specified parameters, then instead of taking advantage of the open-lake disposal site, an upland disposal site would need to be used.

Harbor Maintenance Trust Fund

The Harbor Maintenance Trust Fund (HMTF) was established in the U.S. Treasury in 1986 to fund the operation and maintenance of Federal ports and harbors and is funded by the Harbor Maintenance Tax (HMT). The HMT is based on the value of both imports and domestic goods at U.S. ports that have federally-maintained harbors and channels; the revenues are deposited into the HMTF. The primary uses of HMTF appropriations include maintenance dredging, dredged material disposal areas, jetties, and breakwaters. Monies from the HMTF are appropriated by the US Congress and allocated for use at different projects throughout the country through the USACOE. The distribution of funds is

primarily controlled by those two government entities with only limited local-level involvement. Although enough HMT revenue is generated annually to meet the entire nation's authorized harbor maintenance needs, it is not all appropriated for harbor maintenance. According to Congresswoman, Louise Slaughter, every year, Congress spends less than half of this revenue on harbor maintenance, and instead diverts funding away from small harbors like Rochester toward other federal programs.

The Water Resources Reform and Development Act (WRRDA) (Appendix H) that was signed into law on June 10, 2014 addresses this issue. The legislation gradually increases HMT expenditures on operations and maintenance so that, beginning in 2025, 100 percent of HMT funds will be used toward its intended purposes. In WRRDA 2014, low-use commercial harbors are referred to as "emerging harbors." And, emerging harbors are specifically provided for in terms of receiving a portion of the HMT funds. According to the Act, between fiscal 2015 and 2022, no less than 10 percent of the first $800 million of HMT collected would go to emerging harbors.

2.8.7 Navigation Hazards

The depth of the federal navigation channel is maintained by the USACOE, as described in 2.8.1. The river, between the southern boundary of the navigation channel and the Lower Falls, is not dredged and is therefore subject to variable depth, snags, obstructions, and other hazards of a natural river channel. Although smaller craft such as recreational motor boats, kayaks and canoes can navigate this stretch of the River, larger boats may have difficulty.

Additionally, due to changes in elevation, there is no navigable connection between the area north of the Lower Falls and the upper River which connects to the New York State Canal, approximately 11 miles upstream from Lake Ontario.

While docks, floats and anchored/moored vessels can pose potential obstructions for boats traveling within the HMA, this was not raised as an issue by harbor stakeholders.

Based on information provided in the *Rochester Harbor – Genesee River to Head of Navigation* Nautical Chart 14815 (Appendix I), published by the National Oceanic and Atmospheric Administration, National Ocean Service Office of Coast Survey, the following potential navigation hazards exist within the HMA and its vicinity:

Within the HMA

- Two sets of deteriorated dolphins (noted as Piles on the NOAA Chart 14815) are present adjacent to the east bulkhead wall approximately 300 feet upstream from the USCG station. They are located outside the federal navigation channel. They are not an obstruction to vessel mooring as the bulkhead has pedestrian railing running its full length, thus prohibiting mooring. The southern dolphin may be difficult for boaters to see as it is mostly missing above the waterline and is unmarked.
- In its closed (lowered) position, the O'Rorke bascule bridge, including the guard walls around its piers, has a vertical clearance of 41 feet at the edges and 45 feet at the center and a horizontal clearance of 131 feet. The vertical clearance is unlimited with the bridge span open, which removes the overhead hazard.

- Overhead power cables are present approximately 350 feet north of the Essroc dock. The vertical clearance below the power cables is 141 feet. This clearance is of sufficient height as to be neglected as a potential hazard for vessels traveling along the Genesee River.
- Two mooring cells, three abandoned jetties, and old dolphins or piles are present to the west of the maintained navigation channel between the Essroc dock and the turning basin. These hazards are minor as they are mostly contained within vegetated marsh areas along the west bank of the river.
- The west side of the turning basin in Reach G is not maintained between the federal navigation channel and the Genesee Riverway Trail foot bridge. This area is very shallow (reported between 6 feet and 1 foot) but unmarked.
- There are six dolphins located along the western edge of the navigation channel, just south of Genesee Marina Basin. There are often vessels moored to these dolphins.

  In addition to those noted in the aforementioned nautical chart, prior to 2001 the Tug *Cheyenne* sunk in the Genesee River and is only a few feet below the surface of the water. Although the exact location of the tug is not precisely mapped and thus unmarked, its approximate location is along the western edge of the Federal Navigation Channel, 0.4 mile north of the Turning Basin.

Outside the HMA

- A large rock approximately ½-foot below the water surface is located close to shore approximately 0.7 mile southeast of the Genesee River entrance in Lake Ontario (at the northern end of the piers).
- A dangerous wreck approximately 1.4 feet below the water surface is located 0.2 mile offshore (43°17.6'N., 77°40.2'W).
- Lewis Shoal, covered by approximately 14 feet of water, located 1.2 miles offshore and extends from about 43°18.5'N., 77°40.5'W. to 43°18.8'N., 77°39.5'W., with a width of approximately 600 yards.
- An unmarked dumping ground with a least reported depth of 35 feet is located approximately 1.8 miles northeast of the mouth of the Genesee River.
- A dangerous sunken wreck is located 0.8 mile east-northeast of Rochester Harbor Light at the end of the west pier

2.9 Natural Resources

2.9.1 Land

Topography

The Genesee River, which originates in Pennsylvania, flows north, through the center of Rochester, to Lake Ontario. It descends over three waterfalls through the City and drops nearly 300 feet in elevation.

Within the HMA, upland elevations range from 257 feet to 177 feet, with the highest elevations occurring along the ridgelines located in the southern portion of the HMA near Seneca Park, Turning Point Park and the Essroc facility (see Map 10). This portion of the HMA is characterized by steep slopes (greater than 15 percent) that form a gorge around the River. As the River continues downstream towards Lake Ontario, the adjacent lands flatten out.

Geology

As depicted in Map 11, the surficial geology of the HMA consists primarily of recent alluvium (90.6 percent), with lacustrine silt and clay also underlying a portion of the study area. The recent alluvium layer is composed of oxidized fine sand to gravel resulting from stream deposition and is generally confined to flood plains within a valley. This layer ranges in thickness from one to ten meters and may be overlain by silt. The lacustrine silt and clay layer is composed of laminated layers of silt and clay, deposited in lakes existing at the time when glaciers historically covered western New York. Lacustrine silt and clay contains calcareous soil with low permeability, resulting in potential land instability.

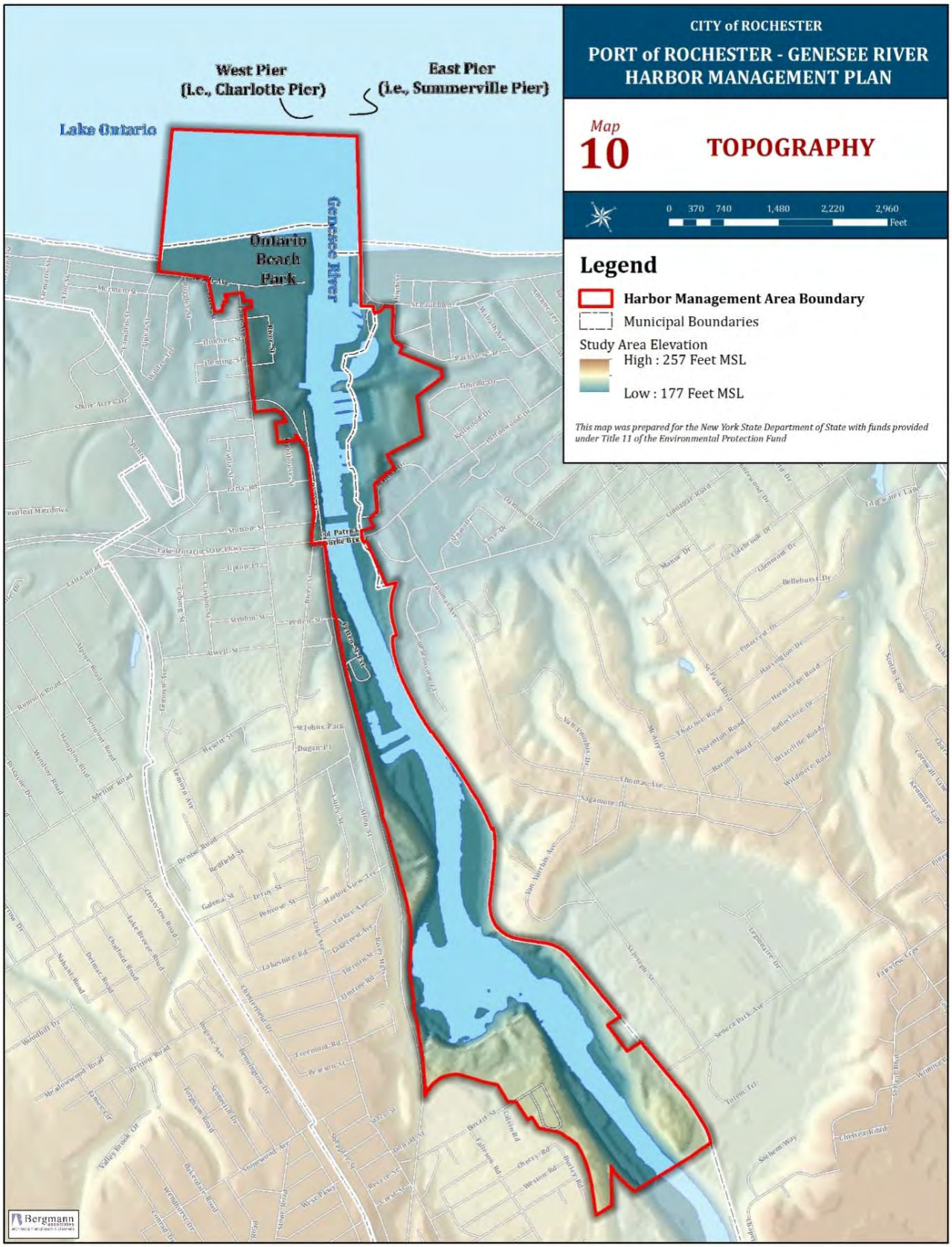
According to *New York State Museum Bedrock Geology* mapping, the HMA lies above the Queenston bedrock formation. The Queenston formation is the oldest bedrock formation in Monroe County and was deposited more than 410 million years ago during the last stages of the Ordovician period.

Soil Erosion

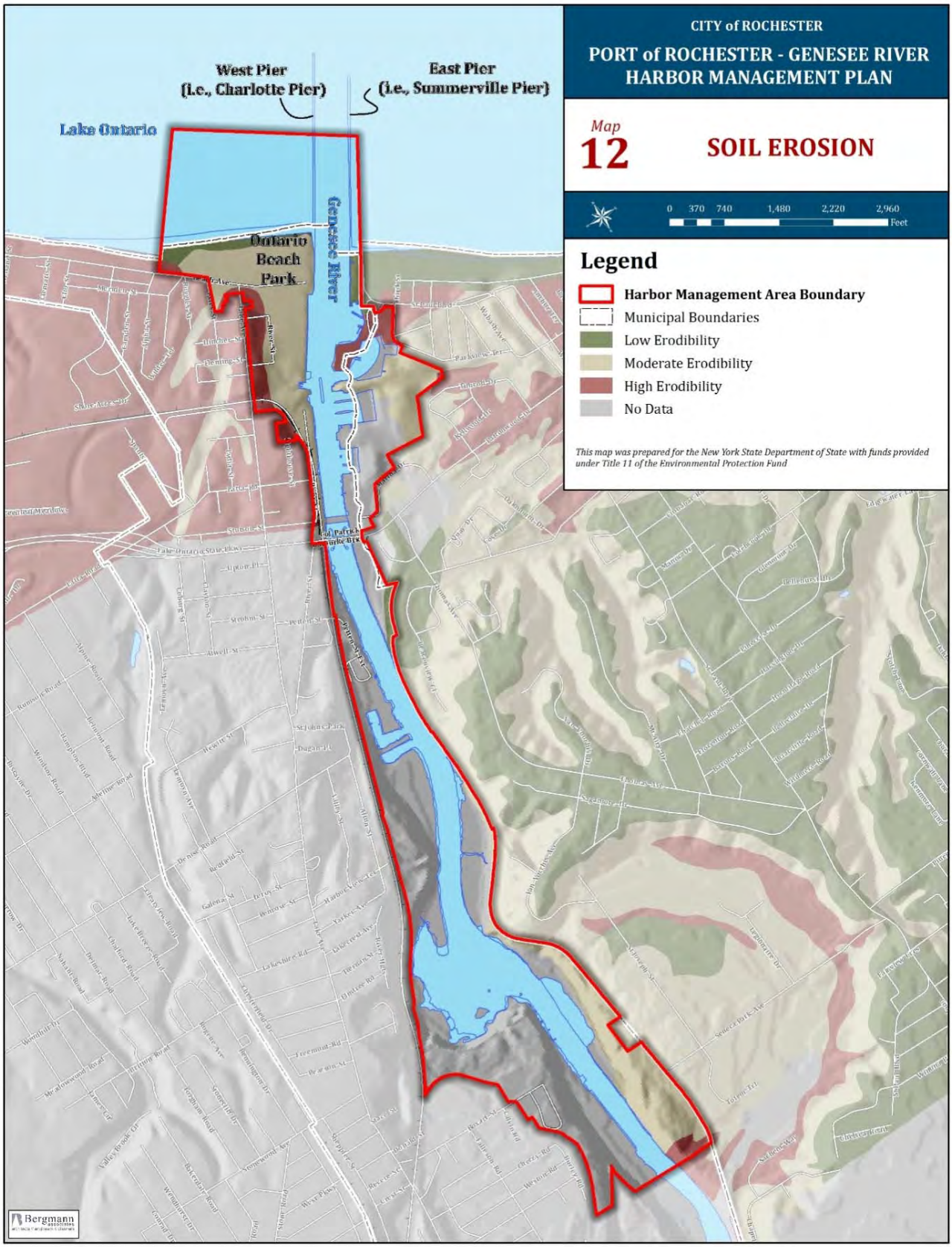
The susceptibility of soils to erosion is important to understand, particularly as it relates to sedimentation of the Genesee River in the HMA. To determine how susceptible the soils within the HMA are to erosion, k-factor data provided by the Soil Survey of Monroe County was investigated. K-factor is a measure of soil erodabilty that represents both a soils susceptibility to erosion and its rate of runoff (note that this is independent of other factors such as vegetative cover and stream stability). K-factor values in the HMA range between 0.10 and 0.49 which represents soils that are fairly stable and moderately susceptible to erosion. Soils high in silt content are the most erodible; values for these soils tend to be greater than 0.4(see Map 12). Medium-texture soils are characterized by moderate k-factor values (i.e., 0.25 to 0.4) and are moderately susceptible to erosion.

Coastal Erosion Hazard Areas

Coastal Erosion Hazard Areas (CEHAs) are those mapped areas along coasts that are prone to erosion. In the HMA, the CEHAs are along the Lake Ontario shoreline. This area is subject to permitting in order to limit activities that may interfere with natural shoreline protection against coastal erosion, or exacerbate erosion. The City of Rochester administers its own CEHA program using NYSDEC maps on file at City Hall and at Regional NYSDEC offices. For more information on local, state and federal coastal erosion hazard programs, see Section 3.4.


CITY of ROCHESTER
PORT of ROCHESTER - GENESEE RIVER HARBOR MANAGEMENT PLAN
Map 10
TOPOGRAPHY
0 370 740 1,480 2,220 2,960 Feet
Legend
Harbor Management Area Boundary
Municipal Boundaries
Study Area Elevation
High : 257 Feet MSL
Low : 177 Feet MSL
This map was prepared for the New York State Department of State with funds provided under Title 11 of the Environmental Protection Fund
West Pier (i.e., Charlotte Pier)
East Pier (i.e., Summerville Pier)
Lake Ontario
Ontario Beach Park
Genesee River
Bergmann


CITY of ROCHESTER
PORT of ROCHESTER - GENESEE RIVER HARBOR MANAGEMENT PLAN
Map 11
SURFACE GEOLOGY
0 370 740 1,480 2,220 2,960 Feet
Legend
Harbor Management Area Boundary
Municipal Boundaries
Material
Recent Alluvium
Lacustrine Silt and Clay
This map was prepared for the New York State Department of State with funds provided under Title 11 of the Environmental Protection Fund
West Pier (i.e., Charlotte Pier)
East Pier (i.e., Summerville Pier)
Lake Ontario
Genesee River
Ontario Beach Park
Bergmann


CITY of ROCHESTER
PORT of ROCHESTER - GENESEE RIVER HARBOR MANAGEMENT PLAN
Map 12
SOIL EROSION
0 370 740 1,480 2,220 2,960 Feet
Legend
Harbor Management Area Boundary
Municipal Boundaries
Low Erodibility
Moderate Erodibility
High Erodibility
No Data
This map was prepared for the New York State Department of State with funds provided under Title 11 of the Environmental Protection Fund
West Pier (i.e., Charlotte Pier)
East Pier (i.e., Summerville Pier)
Lake Ontario
Genesee River
Ontario Beach Park
Bergmann

2.9.2 Water Quality

International Joint Commission

In 1972, the United States and Canada signed the Great Lakes Water Quality Agreement following an extensive IJC scientific study. The result was a series of agreed upon actions that each nation would take to improve water quality in the Great Lakes (e.g., building new sewage treatment plants, reducing industrial discharges). The IJC was required by the agreement to report on progress by each government as it relates to restoring the chemical, physical and biological integrity of the waters of the Great Lakes basin. A new agreement was signed in 1978 that added a commitment to rid the Great Lakes of persistent toxic substances, while amendments in 1987 established a process for restoring contaminated Areas of Concern in the Great Lakes and St. Lawrence River.

The Agreement was further amended in 2012 to include measures that will prevent ecologic harm. The amended agreement includes new provisions that address the nearshore environment, aquatic invasive species, habitat degradation and the effects of climate change, as well as support for continuing work on existing threats such as harmful algae, toxic chemical and vessel discharges.

Through the Water Quality Agreement, the United States and Canada designated water areas that were particularly degraded as "Areas of Concern." An Area of Concern (AOC) is defined in the agreement as a geographic area "*that fail[s] to meet the general or specific objectives of the agreement where such failure has caused or is likely to cause impairment of beneficial use of the area's ability to support aquatic life.*"

Lake Ontario

Water quality in Lake Ontario is largely a reflection of water quality in Lake Ontario Watershed and the nearshore waters and embayments of the Lake. The legacy of toxic discharges to the Lake and its tributaries has resulted in fish consumption advisories for numerous species. While phosphorus levels in Lake Ontario have declined over the years, nutrients and resulting aquatic plant growth continues to impact recreational uses in nearshore waters. To address these issues, NYSDEC reports that legacy industrial discharges are currently being remediated in Great Lakes Program Areas of Concern in Oswego, Rochester and Eighteen Mile Creek.

According to the NYSDEC, major water quality concerns in the Lake Ontario Watershed include:

- Invasive and Other Aquatic Plant Growth which discourage recreational uses;
- Legacy Industrial Discharges in Areas of Concern currently being remediated; and
- Great Lakes Management Plans to restore uses in Lake Erie.

The Lake Ontario Lakewide Action and Management Plan (LaMP) is a binational plan under the Great Lakes Water Quality Agreement directed at restoring and protecting Lake Ontario by reducing the amount of pollutants entering the lake and addressing the chemical, biological and physical stressors impacting the lake. The LaMP guides activities of the participating U.S. and Canadian federal, state and provincial government agencies and other partners and includes ecosystem goals, objectives and indicators. Ecosystem objectives have been identified for aquatic communities, wildlife, human

health, habitat, and stewardship. The indicators track progress toward achieving the lake ecosystem objectives.

In 2012, a new Great Lakes Water Quality Agreement expanded the scope of the Lake Ontario LaMP to include both the Niagara and St. Lawrence rivers.

Rochester Embayment Area of Concern

Located between Bogus Point in the Town of Parma and Nine Mile Point in the Town of Webster, the Rochester Embayment Area of Concern (AOC) is the area formed by the indentation of the Monroe County shoreline and six miles of the Genesee River influenced by lake levels, beginning at the River's mouth and stretching upstream to the Lower Falls (see Map 13). In 1985, the Water Quality Board of the International Joint Commission designated the Rochester Embayment a category 4 AOC and identified several embayment problems, including conventional pollutants, heavy metals, toxic organic substances, contaminated sediments, and fish consumption advisories. The report identified pollutant sources as municipal and industrial point sources, combined sewage overflows, and in-place pollutants.

To ensure that AOCs in the Great Lakes Basin are remediated, each is required to have a Remedial Action Plan (RAP) that is implemented through an ecosystem-based, multi-media approach for assessing and remediating impaired uses. According to Annex 2 of the Great Lakes Water Quality Agreement, each Remedial Action Plan "*shall embody a systematic and comprehensive ecosystem approach to restoring and protecting beneficial uses in Areas of Concern or in open lake waters*" and "*serve as an important step toward virtual elimination of persistent toxic substances and toward restoring and maintaining the chemical, physical and biological integrity of waters of the Great Lakes Basin Ecosystem*."

Coordinated through the Monroe County Department of Public Health, the Rochester Embayment RAP identifies a series of beneficial use impairments (BUIs) that were used to assist in developing management actions necessary to remediate the AOC. BUI's are specific indicators of a condition that is damaging or inhibiting one or more beneficial uses of the embayment area. Once the identified management actions succeed in removing the indicator and/or restoring beneficial uses, the AOC is eligible for delisting. The Rochester Embayment RAP was initially completed in 1993 with ongoing updates and addendums. Twelve BUIs and two other use impairments were identified. Figure 10 provides a list of the impairments identified for the Rochester Embayment AOC, as well as the status of each. NYS DEC, working with the Monroe County Department of Public Health, is preparing the BUI removal documentation with the goal of the AOC being delisted within the next couple years.

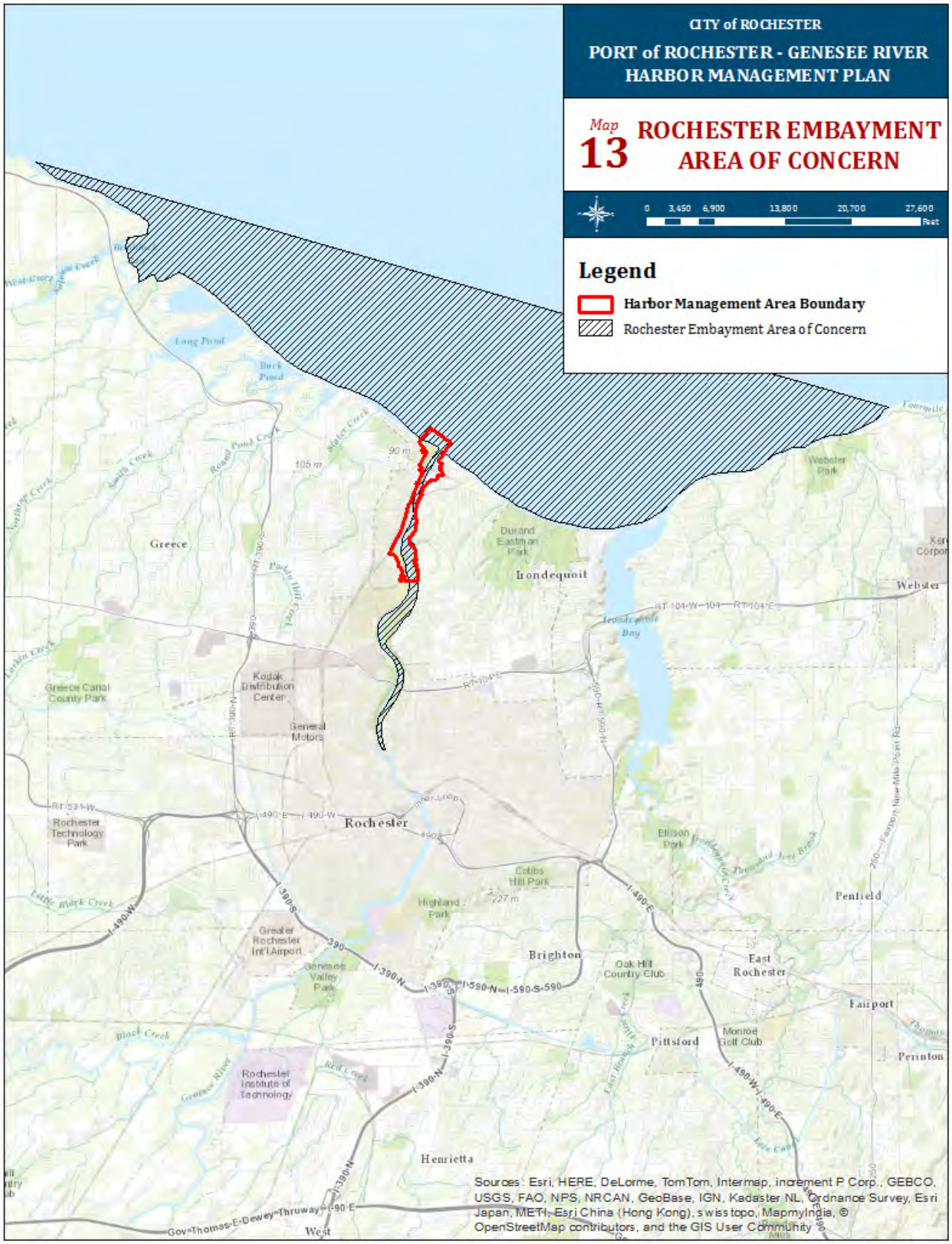

CITY of ROCHESTER
PORT of ROCHESTER - GENESEE RIVER HARBOR MANAGEMENT PLAN
Map 13
ROCHESTER EMBAYMENT AREA OF CONCERN
0 3,450 6,900 13,800 20,700 27,600 Feet
Legend
Harbor Management Area Boundary
Rochester Embayment Area of Concern
Greece
Irondequoit
Webster
Rochester
Brighton
East Rochester
Penfield
Fairport
Pittsford
Perinton
Henrietta
Greece Canal County Park
Kodak Distribution Center
General Motors
Rochester Technology Park
Greater Rochester Int'l Airport
Genesee Valley Park
Rochester Institute of Technology
Durand Eastman Park
Cobbs Hill Park
Highland Park
Oak Hill Country Club
Monroe Golf Club
Ellison Park
Webster Park
Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Figure 10. Rochester Embayment Remedial Action Plan BUI Status

Beneficial Use Impairment	6/2016 BUI Status
Restrictions on fish and wildlife consumption	Fish testing complete. Proposed as a lake-wide issue. BUI removal documents to be generated.
Tainting of fish and wildlife flavor	Phenol study completed and shows that AOC is same or better than non-AOC control sites. Public meeting held Nov, 2015. BUI Removal documentation submitted for review.
Degradation of fish and wildlife populations	Benthic invertebrate analysis complete. Mink studies complete. BUI removal documentation in preparation.
Fish tumors or other deformities	Removed in 2014.
Bird or animal deformities or reproduction problems	Mink studies complete. Findings support BUI removal. BUI removal documents to be generated.
Degradation of benthos	Benthic invertebrate analysis complete. Public meeting held Nov, 2015. BUI Removal documentation submitted for review.
Restriction on dredging activities	Final Legacy Act report found that navigation channel sediments are suitable for open lake disposal. Removal document to be generated.
Eutrophication or undesirable algae	Ontario Beach Algae Control Project implemented. Education programs in place aimed to reduce nutrient sources. This is Lake-wide issue.
Restrictions on drinking water consumption, or taste and odor problems	Removed in 2010
Beach closings	Ontario Beach Algae Control Project implemented. BUI removal documentation in preparation.
Degradation of aesthetics	All assessments and surveys are complete. BUI removal documents in technical draft form.
Added costs to agriculture or industry	Removed in 2010.
Degradation of phytoplankton and zooplankton populations	Plankton analysis complete. All findings support BUI removal. Public meeting held Nov, 2015. BUI removal documentation in final stages of review with EPA.
Loss of fish and wildlife habitat	Mink evaluation and USFWS wetlands evaluation completed. All habitat restoration projects to be substantially complete by end 2016. Post construction monitoring to follow.

SOURCE: Monroe County Department of Public Health (Updated 6/2016)

Great Lakes Restoration Initiative

The Great Lakes Restoration Initiative (GLRI) was launched in 2010 in an effort to accelerate the protection and restoration of the Great Lakes Basin. The GLRI represents the largest investment in the Great Lakes in two decades and has acted as a catalyst for unprecedented federal agency coordination – a task force of eleven federal agencies worked together to develop an action plan for realizing the goals of the GLRI. The GLRI Action Plans I and II focus on five priorities necessary to achieve the long-term goals for this important ecosystem:

- Cleaning up toxins in areas of concern;
- Combating invasive species;
- Promoting nearshore health by protecting watersheds from polluted run-off;
- Restoring wetlands and other habitats; and
- Working with partners on outreach.

The GLRI Action Plan I, implemented between 2010 and 2014, has funded more than 2,000 projects. Under the first priority of the GLRI, the Great Lakes Legacy Act provides federal funding to accelerate the pace of contaminated sediment remediation in AOCs. The GLRI's Legacy Act has been a tremendous success. In 2011, through the GLRI's Legacy Act, the USEPA conducted a sediment characterization program in the Genesee River outside the federal navigation channel within the HMA and found elevated levels of some contaminants, including silver and cadmium, but not at levels warranting a Legacy Act-funded project. NYSDEC and Monroe County Health Department (MCHD) requested additional information related to the sediment toxicity. They requested that the USEPA Great Lakes National Program Office (GLNPO) resample eight locations due to concerns about the sampling method. As a result of this request, in July 2013, GLNPO resampled and analyzed eight samples from locations selected by NYSDEC and MCHD. Seven of the sampling locations were in the same location as the prior sampling and one location was approximately 50 feet from a prior sampling location. The 2013 sampling round successfully addressed the NYSDEC and MCHD question regarding the 2011 sampling methodology and results. The results of the 2013 sampling found that sediment silver concentrations were lower than those found in the 2011 samples and indicated that the probability is low for silver to impacts benthos in the River. The results of both the 2011 and 2013 sampling showed that there are no significant impacts to the growth and survival of the amphipod. The two sampling events are consistent and confirm the 2011 conclusion that sediment remedial action under the Legacy Act is not warranted in the lower Genesee River.

Federal agencies have drafted GLRI Action Plan II, which summarizes the actions that federal agencies plan to implement during FY15-19 using GLRI funding (Appendix J). The GLRI Action Plan II will combine Great Lakes Initiative resources with agency base budgets in an effort to strategically target the biggest threats and accelerate progress towards the GLRI's long-term goals. By continuing to work with state and local partners, federal agencies will implement a range of management actions necessary to delist eleven additional AOC's, including the Rochester Embayment AOC.

Genesee River

To comply with the Federal Clean Water Act (CWA), the NYSDEC maintains the Waterbody Inventory/Priority Waterbodies List, a statewide inventory of waterbodies that characterizes each in terms of "water quality, the degree to which water uses are supported, progress toward the identification of water quality problems and sources, and activities to restore and protect each individual waterbody". The most recent Genesee River Basin Waterbody Inventory/Priority Waterbodies List Report was issued in March 2003. This report includes an overall evaluation of water quality in the Genesee River Basin, as well as assessments for specific waterbody segments in the basin.

Based on information provided in the report, the Genesee River (0401-0001) is classified as Impaired and has well-documented water quality problems:

- A number of water quality studies have indicated impacts to aquatic life in the river. A biological (macroinvertebrate) assessment of the river below the Lower Falls was conducted in 1999. Sampling results indicated water quality borders between slight and moderate impact. An Impact Source Determination indicated nutrient enrichment and municipal/industrial impacts. At the time of the survey, the fauna was dominated by caddis flies and midges. (NYSDEC/DOW, BWAR/SBU, January 2000)
- Fish consumption in the Lower Genesee is not recommended due to a NYS Department of Health advisory for Lake Ontario that applies to the first impassable fish barrier (i.e., Lower Falls). These advisories are a result of elevated PCB levels (i.e., mirex and dioxin) found in Lake Ontario sediments. (2000-01 NYS DOH Health Advisories).

Additionally, NYSDEC Rotating Intensive Basin Studies (RIBS) were completed in the Genesee River between 2009 and 2011 (RIBS monitoring is conducted in 2 to 4 of the State's 17 major drainage basins each year, resulting in data available statewide over a 5-year cycle). Data collected during these monitoring periods include water column, sediment, and organism tissue chemistry and biological assessment of water quality using macroinvertebrate community analysis and toxicity testing. RIBS program water quality data and information are used to support assessment and management functions within NYSDEC, including the Waterbody Inventory/Priority Waterbodies List, New York State's Clean Water Act Section 305(b) Water Quality Report, and Section 303(d) List of Impaired Waters of the State.

The NYSDEC also provides a class and standard designation for all waters of the State based on existing or expected best usage of each water or waterway segment. As indicated by the NYSDEC, the Genesee River is a Class B waterbody, indicating that its best uses are for swimming (restrictions apply) and other contact recreation, but not for drinking water.

The *Genesee River Basin Action Strategy* is a report prepared in 2004 for the New York State Department of Environmental Conservation and United States Army Corps of Engineers by the Genesee/Finger Lakes Regional Planning Council to address priority water quality and natural resource needs throughout the Genesee River Basin. The purpose of the Action Strategy is to develop and/or compile and document a strategy for the Basin that brings together all appropriate agencies and

stakeholders to focus support in the form of grant dollars, technical assistance and other resources to address the priority water and natural resource needs in that watershed.

The NYSDEC is currently (as of the drafting of this plan) implementing the *Work Plan for RCRA Facility Investigation and Corrective Measure Study for OU-5 Lower Genesee River Area of Concern*, which outlines the work plan for sampling, laboratory analyses and scientific and engineering evaluations conducted on behalf of the NYSDEC's Division of Environmental Remediation for the portion of the lower Genesee River downstream of the State Route 104 (Veteran's Memorial) Bridge. The objectives of the activities described in this work plan are to improve the understanding of the nature and extent of contamination and the loadings of contaminants (if any) continuing to enter the lower reach of the Genesee River, to assess whether remedial action is warranted, and to develop and evaluate corrective measure alternatives as warranted. Field and laboratory activities include the following:

- Sampling and chemical analyses of sediment, surface water, and suspended sediment in the lower river, wetland-floodplain soils adjoining the lower river, benthic macroinvertebrates and fish;
- Physical characterizations of the river channel, river flows and potential cultural resources in the river;
- Further assessing sediment toxicity;
- Updating groundwater conditions at the Kings Landing Wastewater Treatment Plant;
- Assessing sediment bed mobility;
- Assessing upstream sites potentially impacting the lower river;
- Further assessing types and diversity of benthic macroinvertebrates and fish in the lower river; and
- Sampling and chemical analyses of benthic macroinvertebrates and fish.

During 2015, DEC's engineering consultant conducted field sampling to assess the sediments, water, biota and floodplains in the lower Genesee River in Rochester from near the Lower Falls to the mouth of the river at Lake Ontario. The sampling program started in August 2015 and was completed in December 2015. The results of the investigation are disclosed in a report, *RCRA Facility Investigation for the Lower Genesee River,* released in March 2017. DEC will keep the public informed about this project through periodic posting of updates/documents on their website, issuance of factsheets, and public meetings at key project milestones.

This study is funded through a trust fund provided through an EPA Settlement Agreement. On March 12, 2014, the US Department of Justice on behalf of the EPA reached a Settlement Agreement with the US Bankruptcy Court under which Eastman Business Park (EBP) agreed to fund a trust in the total amount of $49,000,000 to allow the DEC to clean up EBP contaminated sites, including the lower Genesee River. The Genesee River allocation, however, will likely only be sufficient to contribute to studies of sediment conditions and remediation work plan development. Sediment sampling conducted in 2011 and 2013 under the GLRI Legacy Act will be instrumental in informing the RCRA study.

In 2014, the Center for Environmental Initiatives launched the Genesee RiverWatch Initiative "whose goals are to ensure that the water in the Genesee River, its tributaries, and the near-shore waters of Lake Ontario are fishable, swimmable and drinkable now and for future generations." This initiative hopes to pull together an array of stakeholders to take a systemic approach to improving water quality of the entire Genesee River Basin.

2.9.3 Floodplains/Floodways

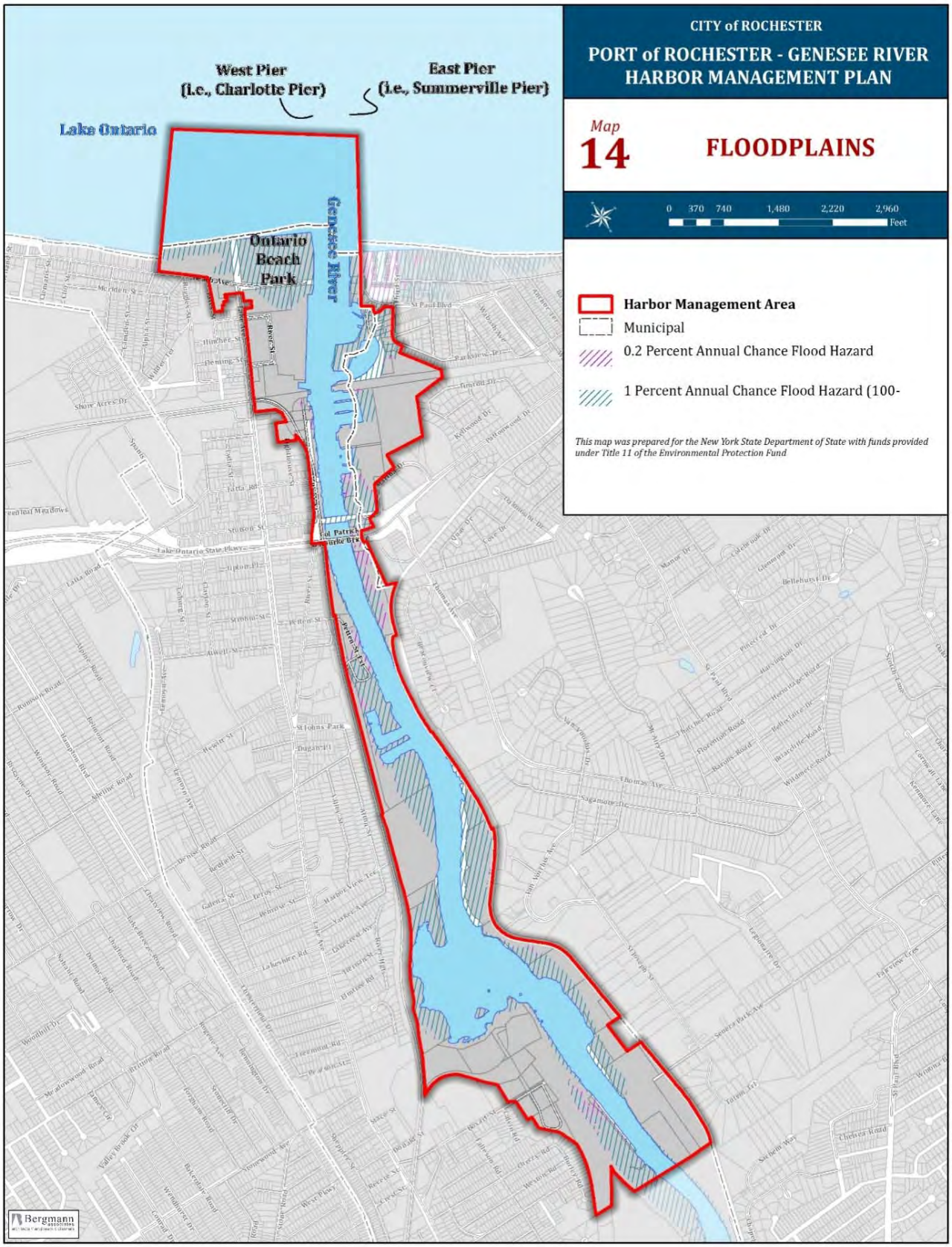
Flooding, a natural and recurring event, results from heavy or continuous rainfall that exceeds the soil's absorptive capacity and the flow capacity of rivers and streams. Once these capacities are exceeded, the waterway overflows its banks and spills into adjacent low-lying areas. Floodplains are these adjacent low-lying areas that are most subject to recurring inundation.

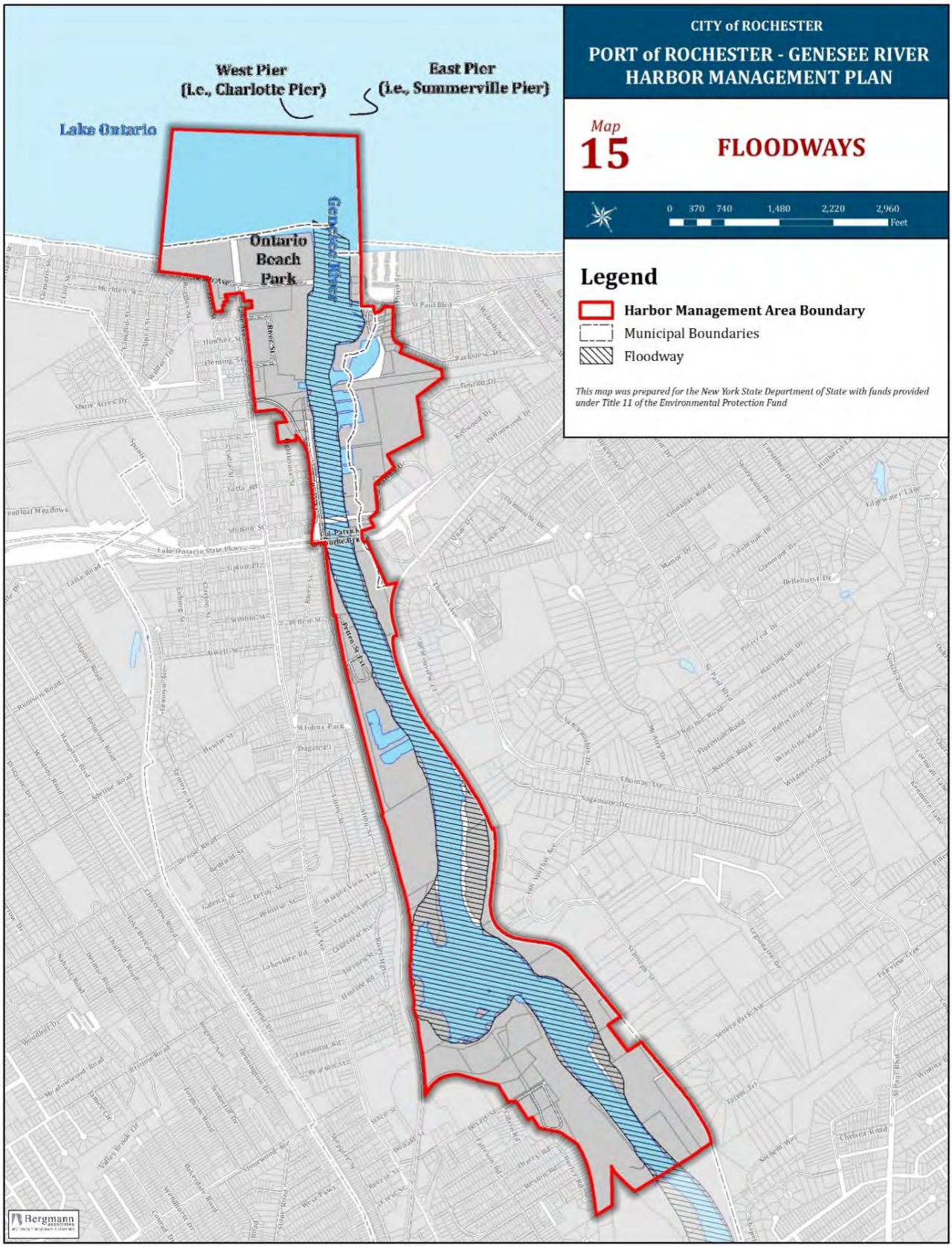
Floods, and floodplains, are generally defined according to their statistical frequency of occurrence. A 100-year floodplain is an area that is subject to a one percent chance of flooding in any given year. 100-year floodplains are also known as Special Hazard Flood Areas. A 500-year floodplain is an area that is subject to a 0.2 percent chance of flooding in any given year.

Floodways consist of the stream channel and adjacent areas that carry flood flows and are those areas where the floodwater is likely to be deepest and fastest. For the purposes of this HMP analysis, 100-year and 500-year floodplains, as well as floodways, were evaluated. Based on a review of the FEMA floodplain data, just over 300 acres of 100-year and 500-year floodplains are within the HMA (see Map 14). Much of these areas are located along the River near the Turning Basin and along the Lake Ontario shoreline near the confluence of the Lake and the River. Also within the HMA are approximately 175 acres of floodway (see Map 15).

To promote the public health, safety and general welfare and to minimize public and private losses due to flood conditions, the City of Rochester enacted a Flood Damage Prevention ordinance (Chapter 56 of the City Code). Key provisions of this ordinance regulate floodplain encroachments, and the development of structures in floodplains.

Given that much of the lands mapped as floodplains in the HMA are typically associated with a park or water-based use (e.g., marinas), it is unlikely that new development will occur in floodplain areas. As such, impacts from flooding on commercial activities in the harbor should be minimal. It should be noted that this assessment relies on continued dredging of the harbor. If maintenance dredging in the harbor ceases or decreases, the buildup of sediment and the resultant change to the river bottom elevations may increase the risk of flooding.


West Pier
(i.e., Charlotte Pier)
East Pier
(i.e., Summerville Pier)
Lake Ontario
Genesee River
Ontario Beach Park
CITY of ROCHESTER
PORT of ROCHESTER - GENESEE RIVER HARBOR MANAGEMENT PLAN
Map 14
FLOODPLAINS
0 370 740 1,480 2,220 2,960 Feet
Harbor Management Area
Municipal
0.2 Percent Annual Chance Flood Hazard
1 Percent Annual Chance Flood Hazard (100-
This map was prepared for the New York State Department of State with funds provided under Title 11 of the Environmental Protection Fund
Bergmann


CITY of ROCHESTER
PORT of ROCHESTER - GENESEE RIVER HARBOR MANAGEMENT PLAN
Map 15
FLOODWAYS
0 370 740 1,480 2,220 2,960
Feet
Legend
Harbor Management Area Boundary
Municipal Boundaries
Floodway
This map was prepared for the New York State Department of State with funds provided under Title 11 of the Environmental Protection Fund
West Pier (i.e., Charlotte Pier)
East Pier (i.e., Summerville Pier)
Lake Ontario
Ontario Beach Park
Genesee River
Beer St
Bergmann

2.9.4 Wetlands

Wetland areas within the HMA are identified by two separate agencies using different qualifying characteristics – NYSDEC wetlands and U.S. Fish and Wildlife Service's National Wetlands Inventory (NWI) wetlands. The NYSDEC identifies and regulates all freshwater wetlands greater than 12.4 acres in size. An adjacent buffer area of 100 feet around every wetland is also protected. The NWI identifies all wetlands, regardless of size and regulatory status, based on a combination of the interpretation of aerial photography, soils maps, and on-the-ground surveys.

Wetlands can provide more cost-effective flood control than manmade measures such as reservoirs or dikes.

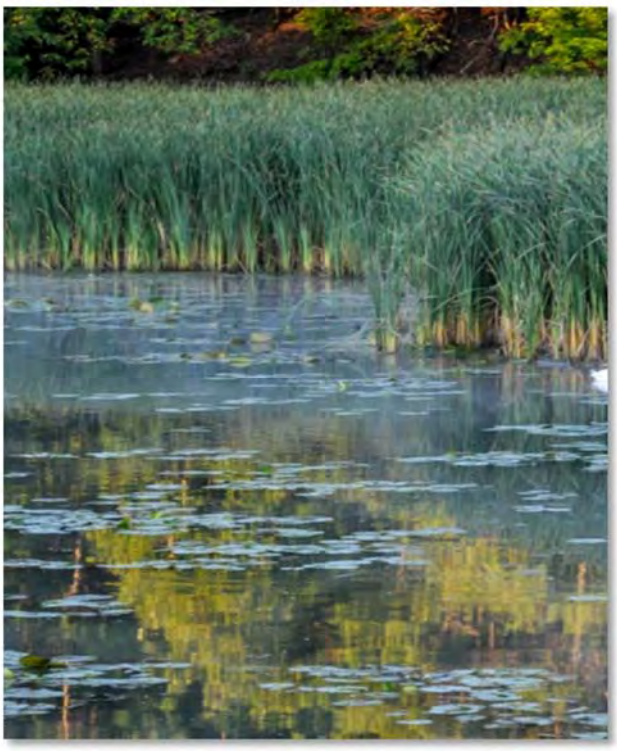
Within the HMA, the NYSDEC has identified 79.2 acres of wetlands (does not include 100-foot buffer), all of which are categorized as Class II wetlands (see Map 16). Class II wetlands provide important wetland benefits, the loss of which is acceptable only in very limited circumstances.

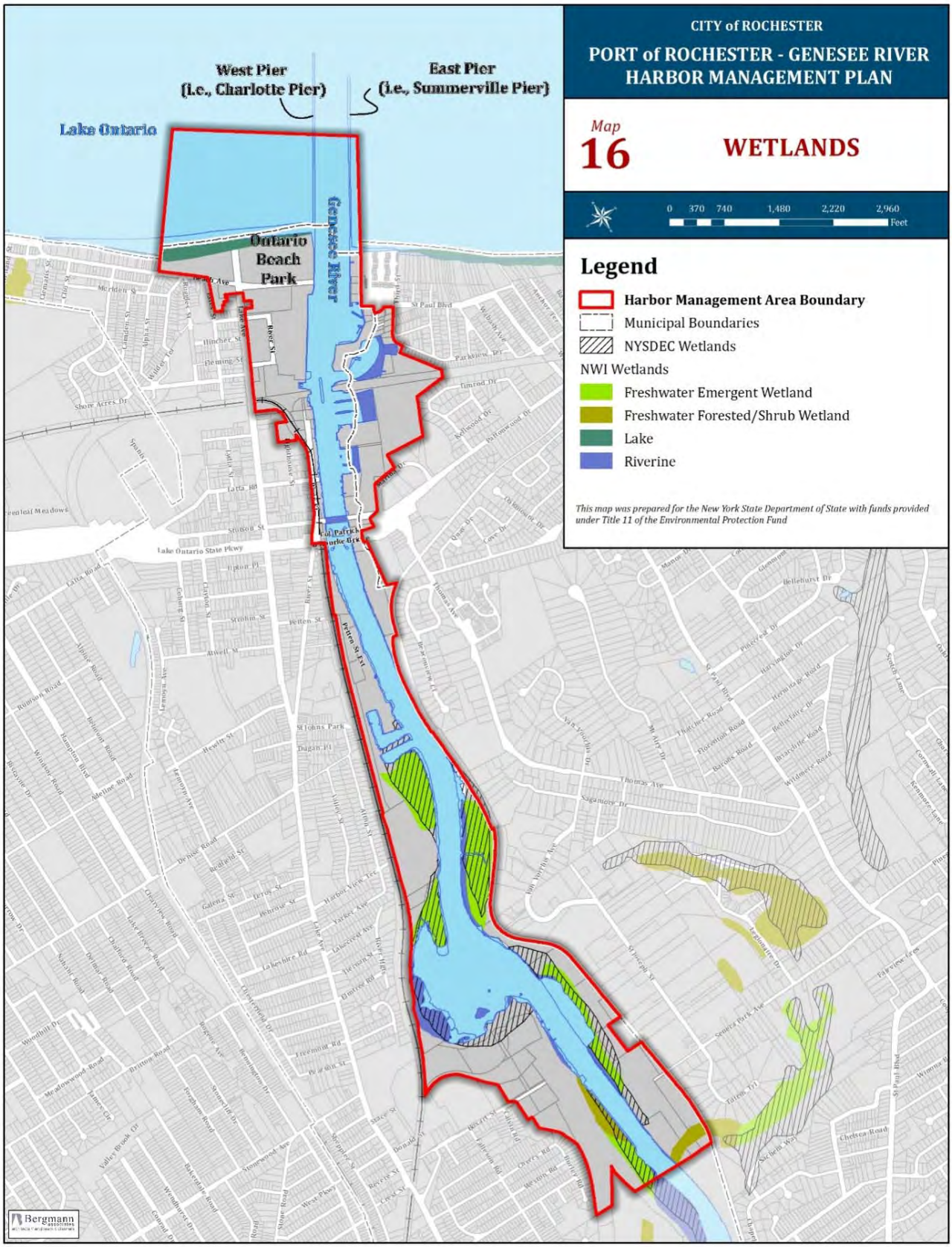
Based on the NWI data, approximately 299 acres of wetlands can be found in the HMA (see Map 16):

- Emergent wetlands (37.6 acres) – wetlands with erect, rooted herbaceous vegetation present during most of the growing season.
- Forested/shrub wetlands (5.8 acres) – wetlands dominated by woody vegetation either less than or greater than 6 meters (20 feet) tall. Woody vegetation includes tree saplings, trees that are stunted due to environmental conditions and full-grown trees.
- Lake wetlands (76.4 acres) – this system includes any large body of water that is greater than 8 hectares (20 acres) in size or is more than 2 meters (6.6 feet) deep
- Riverine wetlands (179.1 acres) – this system includes all wetlands and deepwater habitats that are within natural and artificial channels and contain either continuous (perennial) or intermittently flowing water.

The NWI data classifies a large section of the Genesee River as Riverine wetlands and the entire portion of Lake Ontario within the HMA is classified as Lake wetlands. Removing these areas from the total NWI acreage results in approximately 67.9 acres of non-Lake and Riverine wetlands located within the HMA. As such, only those NWI wetlands located outside of the actual River and Lake are depicted in Map 16. As can be seen, the majority of NWI wetlands located outside of the river and lake are classified as either freshwater emergent wetlands or freshwater forested/shrub wetlands. There is, however, a small section of lake wetlands located along the entire portion of the Lake Ontario shoreline within the HMA.

In addition to providing food and habitat for a wide range of plant and animal species, wetlands also contribute to water quality and flood mitigation. By impeding drainage flow from developed land, wetlands can filter out pollutant- and sediment-laden runoff prior to it entering streams, thus improving water quality. Riparian wetlands located along streams and rivers also provide valuable flood protection, acting as storage basins and reducing the amount of downstream flow. This temporary storage of water results in decreased runoff velocities, reduced flood peaks, and delayed distribution of storm flows. In some instances it has been found that wetlands provide more cost effective flood control than manmade measures such as reservoirs or dikes.




CITY of ROCHESTER
PORT of ROCHESTER - GENESEE RIVER HARBOR MANAGEMENT PLAN
Map 16
WETLANDS
0 370 740 1,480 2,220 2,960 Feet
Legend
Harbor Management Area Boundary
Municipal Boundaries
NYSDEC Wetlands
NWI Wetlands
Freshwater Emergent Wetland
Freshwater Forested/Shrub Wetland
Lake
Riverine
This map was prepared for the New York State Department of State with funds provided under Title 11 of the Environmental Protection Fund
West Pier (i.e., Charlotte Pier)
East Pier (i.e., Summerville Pier)
Lake Ontario
Genesee River
Ontario Beach Park
Bergmann

2.9.5 Wildlife

Terrestrial Habitat

Two large expanses of forests are located on either side of the Genesee River in the HMA, both of which are located in the southern portion of the study area. The first is associated with Turning Point Park and is located on the western shore of the River. Turning Point Park covers approximately 275 acres (266 acres in the HMA), most of which can be characterized as oak forest. It is not uncommon to see whitetail deer, opossums, raccoons and other widespread species of mammal and, in recent years, sightings have included non-resident species such as coyote and black bear (at Turning Point Park). Bird species are much more numerous and include typical urban species (e.g., sparrows, blue jays, robins), as well as species more common in woodland habitats such as pileated woodpeckers, northern flickers, owls, and a variety of warblers and other small songbirds.

The second wooded area is located on the east side of the Genesee River in Seneca Park and Rattlesnake Point Park. Similar to the forest habitat found in Turning Point Park, a variety of tree species can be found along the River's eastern shore, including oak, hemlock, shagbark hickory, hornbeam, witchhazel, and basswood. Bird and mammal species similar to those found in Turning Point Park can also be found at Seneca Park.

Wetland Habitat

Wetland habitats, defined in terms of their physical geography, are those areas located at the interface between terrestrial and aquatic ecosystems and comprise a wide range of hydrologic and vegetative conditions. Wetland vegetation is predominantly comprised of species that are tolerant of anaerobic soil conditions resulting from inundation (i.e., hydrophytes) and includes both woody and non-woody plants.

Wetlands are some of the most productive and diverse ecosystems in the world and, as such, provide valuable habitat for a variety of species. Serving as critical feeding, spawning, and brood-rearing habitat, many species of wildlife live their whole lives in wetlands, while others depend on wetlands only for essential parts of their life cycle (e.g., breeding).

Aquatic Habitat

The Genesee River provides habitat for a range of aquatic species. With the help of stocking by NYSEDC, the salmonid concentrations in the Genesee River are among the largest in all of Lake Ontario's tributaries. The major salmonid runs in the River are as follows:

- In the spring (late February - April), steelhead run up the river to the Lower Falls and lake trout occur at the mouth.
- In the fall (September - November, primarily), concentrations of coho and chinook salmon, brown trout and steelhead are found throughout the river during their spawning runs.

The *Assessment of Habitat Use by Experimentally Stocked Juvenile Lake Sturgeon* report, prepared by the U.S. Geological Survey, states that the substrate of the River between Seth Green Island (approximately 3 miles south of the HMA) and the River mouth consists of sand, silt, silty clay, and

sandy gravel at depths of two to seven meters. This study also conducted a pre-stocking assessment of the benthic community and identified several orders of insects in the River, including Megaloptera, Ephemeroptera, Mollusca, and high densities of Chironomidae and Oligochaeta. The highest densities of these insects were found in the silty-sandy dredged areas within four kilometers of Lake Ontario.

Additionally, as indicated in the NYSDOS *Coastal Fish & Wildlife Habitat Rating Form for the Genesee River (*Appendix K*)*, the Genesee River is a highly productive warmwater fishery. Resident warmwater fish species include smallmouth bass, brown bullhead, northern pike, channel catfish, walleye, carp, and white sucker, while lake-run species include white bass, yellow perch, white perch, smelt, bowfin, sheepshead, rock bass and American eel.

The Genesee River supports extensive warmwater and salmonid fisheries and is an important recreational fishery, attracting anglers from throughout New York State and beyond. Locally, the Genesee River is very popular with City residents primarily at the mouth of the River and between Seth Green Island and Lower Falls. As such, the River, from its mouth at Lake Ontario upstream to the Lower Falls, has been designated as a *Significant Coastal Fish and Wildlife Habitat* by the NYSDOS.

2.9.6 Fish Stocking

Each year DEC releases over one million pounds of fish into more than 1,200 public streams, rivers, lakes and ponds across the state. These fish are stocked for two main purposes-- to enhance recreational fishing and to restore native species to waters they formerly occupied. The DEC runs 12 fish hatcheries, each specializing in raising one or more species of fish, including brook trout, brown trout, rainbow trout, lake trout, steelhead, chinook salmon, coho salmon, landlocked salmon, walleye, muskellunge and tiger muskellunge.

According to a DEC website, the following list reflects the fish stocking by DEC in the Genesee River in Monroe County during 2015.

Water	Number	Species	Size in inches
Genesee River	1000	Lake Sturgeon	0.5
Genesee River	85250	Chinook	3
Genesee River	85250	Chinook	3.5
Genesee River	41930	Coho	4.5
Genesee River	8580	Steelhead	5
Genesee River	7090	Steelhead	6

2.9.7 Threatened & Endangered Species

Based on a review of the NYSDEC Environmental Resource Mapper, no New York State rare or protected species are located within the HMA. Also, based on information provided by the New York

Natural Heritage Program, there are “no records of rare or state-listed animals or plants, significant natural communities, or other significant habitats” in or in the vicinity of the HMA (Appendix L).

Lake sturgeon is a native fish species that has been designated a species of concern across the Great Lakes Region. Historically abundant in Lake Ontario, this unique primitive fish has virtually disappeared due to overfishing and habitat degradation. Releasing fingerlings is one of the efforts being undertaken to remove the lake sturgeon from the New York Threatened Species List. In September 2003, the NYSDEC released 900 fingerling lake sturgeons in the Genesee River downstream of the Lower Falls. The fingerling sturgeon had an average length of 210 mm and an average weight of 44 g when released. The NYSDEC released an additional 1,000 fingerlings in September 2004, each averaging 169 mm and 23 g when released. Those 2003/2004-released sturgeons now measure up to 4 feet long with weights ranging from 10 to 25 pounds.

In October of 2013, 1,000 hatchery-reared sturgeons were again released just south of the HMA at the Genesee River Lower Falls as part of a DEC lake sturgeon restoration program. This was the first release of hatchery-reared sturgeon since the 2004 release.

The U.S. Fish and Wildlife Service's New York Field Office supports the collaborative DEC lake sturgeon restoration program through funding provided from the US Fish and Wildlife Service's *Fish Enhancement, Mitigation and Research Fund*, a settlement with the New York Power Authority resulting from the relicensing of the St. Lawrence Power Project. The funding facilitates the cooperative sturgeon conservation field efforts in the St. Lawrence River valley, as well as the rearing of sturgeon fingerlings at the U.S. Fish and Wildlife Service Genoa National Fish Hatchery. As stated above, the DEC has released lake sturgeon fingerlings in the Genesee River just south of the HMA.

2.9.8 Aesthetic and Scenic Visual Resources

The HMA contains diverse aesthetic and scenic resources, ranging from open panoramic views of Lake Ontario to rich and diverse vistas of the Genesee River. North of the Colonel Patrick O'Rorke Memorial Bridge, the scenery primarily comprises man-made historic structures and sites with vast views of the water. South of the Bridge, however, the scenery changes and becomes more defined by upland natural resources such woodlots and wetlands, as well as significant topographical changes. Both short and long vistas of the River are also characteristic of the southern portion of the HMA.

Lake Ontario is an expansive waterbody, forming the northern border of the City of Rochester and Monroe County. Lake Ontario provides miles of scenic shoreline and many opportunities for scenic vistas and views. The Charlotte Pier and Ontario Beach Park, both located within the HMA, are popular destinations to view the Lake. Both physical and visual access to and from these public lands must be preserved.

The Genesee River and adjacent lands are a significant aesthetic resource for the City and the region. Beyond the natural beauty of the flowing water, the river valley harbors natural ecological communities that enhance the aesthetic value of the River. South of the O'Rorke Bridge, large wetlands and limited river development contribute to the aesthetics of the area. The steep slopes in this area are home to many different types of trees, shrubs, and aquatic plants with a variety of colors and textures. Along the river's edge, many wetland ecosystems are home to birds, fish, and insects. The topographical and ecological characteristics of the river bolster its value as a scenic asset. Moreover, its placement within an urban area enhances its aesthetic and natural value. These areas are currently zoned by the City of Rochester as open space districts (O-S) which is a restrictive zone that seeks to preserve their natural beauty and retain them for public access.

The HMA contains diverse aesthetic and scenic resources, ranging from open panoramic views of Lake Ontario to rich and diverse vistas of the Genesee River.

The following areas were observed to have important scenic value within the HMA (see Map 17):

Scenic Views (extensive or large range of vision)

1. Charlotte Pier
2. Summerville Pier
3. Ontario Beach Park Boardwalk directly adjacent to the beach
4. Summerville Shore
5. Port of Rochester Boardwalk
6. NYSDEC East Harbor Fishing Access site
7. Historic Charlotte-Genesee Lighthouse
8. Bill Davis Overlook
9. Col. Patrick O'Rorke Memorial Bridge
10. Rattlesnake State Park
11. Genesee Riverway Trail boardwalk and dolphins
12. Turning Point Park
13. Seneca Park

Scenic Vistas (a distant view through or along an avenue or opening)

a) Ontario Beach Park Boardwalk
b) Beach Ave & Lake Ave
c) Lake Avenue Railroad Bridge
d) Lake Ave & Latta Rd
e) Petten St & Railroad


CITY of ROCHESTER
PORT of ROCHESTER - GENESEE RIVER HARBOR MANAGEMENT PLAN
Map 17
SCENIC RESOURCES
0 370 740 1,480 2,220 2,960 Feet
West Pier (i.e., Charlotte Pier)
East Pier (i.e., Summerville Pier)
Lake Ontario
Ontario Beach Park
Genesee River
Legend
Harbor Management Area Boundary
Municipal Boundaries
Scenic Views
1 Charlotte Pier
2 Summerville Pier
3 Ontario Beach Park Boardwalk
4 Summerville Shore
5 Port of Rochester Boardwalk
6 NYSDEC East Harbor Fishing Access
7 Charlotte-Genesee Lighthouse
8 Bill Davis Overlook
9 Col. Patrick O'Rourke Brudge
10 Rattlesnake State Park
11 Genesee Riverway Trail Basin Boardwalk
12 Turning Point Park Observation Area
13 Seneca Park
Scenic Vistas
a Ontario Beach Park Boardwalk
b Beach Avenue & Lake Avenue
c Lake Avenue Railroad Bridge
d Lake Avenue & Latta Road
e Petten Street & Railroad
This map was prepared for the New York State Department of State with funds provided under Title 11 of the Environmental Protection Fund
Bergmann
Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

2.10 Historical Resources

As previously noted, the Port of Rochester has a rich and varied history as a center of trade and amusement in the region. Throughout the 19th century and during the pre-war years of the 20th century, the port was the hub of import and exports to Rochester, including significant amounts of coal and other bulk goods. Although the mid-20th century marked the end of passenger and goods shipments at the port, it still remained a center for recreation and entertainment. While many of the structures that were once located here are no longer standing, there are a still a number of historic sites remaining within the HMA. A summary of these sites is provided below.

2.10.1 Hojack Swing Bridge Removal and Mitigation

In 2011, the USCG initiated an enforcement proceeding requiring CSX Transportation, Inc. (CSXT) to dismantle, remove and dispose of the Hojack Railroad Swing Bridge and all its appurtenances to restore the free, easy, and unobstructed navigation on the Genesee River. Removal of the bridge took place in 2013. To mitigate for the loss of this historic resource, CSXT developed a series of mitigation measures to preserve a substantial part of the bridge's historical and cultural legacy. The following mitigation measures will or may impact the HMA:

- *Historical Interpretive Signage* – CSXT will provide historical signage that will consist of a single flat panel, installed in two prominent public locations (detailed locations to be provided at a later date). The flat panel will focus on key points of the history of the Bridge, its usage, and its design. The signage would be posted on both the east and west sides of the River within the Project area, provided access and approvals are granted.
- *Contribution to a Bricks and Mortar Fund* – To further offset the loss of the Bridge and to benefit other cultural and historical resources in the area, CSXT will contribute $30,000 to a "Bricks and Mortar Fund." The Fund will be used to support one or more project(s) associated with a historic resource on or eligible for listing on the National Register of Historic Places, which is accessible to the public within the City and preferably in or near the Project area. The only project selected thus far is the Charlotte-Genesee Lighthouse.
- *Preservation of Bridge Components at Local and State Museums* – Several components have been identified as potentially salvageable pieces for preservation, including date plaques, the steam engine and fly wheel, the lever control assembly and the rotation indicator stand. How those pieces will be incorporated into the HMA will be determined at a later date.

More recently, the removal of the Hojack Swing Bridge has resulted in anecdotal reports of changes in the magnitude of storm surge in the harbor. Reports from the marina and yacht club owners in the harbor vary from noting reduced surge effects or no discernable change to worsening damages and wave heights. There has not been an analysis or review of water level measurements for the harbor or any modeling of the hydraulic channel to compare with the anecdotal reports. Due to the variability of the reports and lack of analysis, no conclusion can yet be made regarding the effects that the removal of the Hojack Bridge had on storm surge waves in the harbor; further study is required

2.10.2 Other Historic Resources

Several additional historic sites found on the National and State Registers of Historic Places are located within the HMA, including:

- *The Charlotte-Genesee Lighthouse* – This lighthouse is located at 70 Lighthouse Street and is America's oldest surviving lighthouse on Lake Ontario. Listed on the State and National Registers of Historic Places (S/NRHP – 90NR01478), the Charlotte-Genesee Lighthouse was constructed in 1822 and includes a 40-foot high tower (with an additional 12 feet of height for the lantern room). When the lighthouse was originally constructed, much of the Port of Rochester and Ontario Beach Park was wetland, which resulted in its location away from the lakeshore. The lighthouse is owned by Monroe County and operated by the Charlotte-Genesee Lighthouse Historical Society.
- *The Former New York Central Railroad Station* – Located at 490 River Street at the River Street Marina, the wood frame structure was built during the early 20th century by the New York Central Railroad. The station served both passengers and freight and was determined individually eligible for S/NRHP listing. The station can be accessed from the Genesee Riverway Trail.
- *Ontario Beach Park* – The Park and eleven buildings, including the Dentzel Carousel (a locally designated landmark) and bath house (now the Roger Robach Community Center), have been determined to be eligible for S/NRHP listing as a group.
- *Seneca Park East and West* – Although not fully located within the HMA, Seneca Park does border its southern boundary and is listed on the S/NRHP. The park was designed by Frederick Law Olmsted.
- *Old Customs House* - The Charlotte-Genesee Lighthouse Historical Society, new owner of the historic U.S. Custom House at 10 Latta Road, is renovating the structure for use as a museum. The building is outside, but immediately adjacent to, the HMA boundaries. The two-story frame structure, circa 1840, served as the launching site for some of the port's most heavily traded products, like lumber, and hosted stores to provide the vital supplies needed by ships using this U.S. port before the Civil War. The government moved both its customs operations and post office into the building where both federal functions served the harbor from the 1870s into the 20th century. The renovations will be accomplished in phases over the next few years.

2.11 Public Infrastructure

2.11.1 Utilities

The HMA is served by storm sewer, sanitary sewer, public water, natural gas, electric, fiber optics, and telecommunications utilities. Given that the southern portion of the HMA is mostly undeveloped, the vast majority of the utilities serving the HMA are located in and around the Port of Rochester. A summary of each utility is provided below, while the utilities available for boaters at each marina are discussed in Section 2.6.5.

Sanitary Sewer

Based on a review of geographic information system (GIS) data provided by Monroe County in 2013, the 7.8 miles of sewer lines within the HMA comprise the following:

- 0.2 mile of abandoned sewer mains
- 0.5 mile of forced sewer mains
- 2.3 miles of sanitary sewer mains
- 1.8 miles of storm sewer mains

A 21-inch sewer main runs south from Beach Ave, through the Port of Rochester, to the Monroe County Pure Waters Charlotte Pump Station located on River Street that ranges from approximately 7 to 15 feet below the ground surface. The location/placement of this main will be affected by the new marina project.

One 24-inch forced sewer main crosses the River in close proximity to the Historic Charlotte-Genesee Lighthouse and, based on information provided in the *Port of Rochester Redevelopment Planning Assistance* document, this sewer main is submerged approximately 35.5 feet below the Low Water Datum.

Water

Based on data provided by the City of Rochester Water Bureau, water mains serving the HMA are typically located along the existing street alignments. In the port area, the existing water mains create a loop around Corrigan Street, Portside Drive and North River Street. Given that no water lines are located in the Genesee River or Lake Ontario, these facilities should not impact harbor operations and management or interfere with surface water use in the HMA.

Natural Gas

Natural gas in the HMA is supplied by RG&E with gas mains entering the Port of Rochester from several locations. Based on information provided in the Port Public Marina & Mixed Use Development Project Environmental Impact Statement, there is currently sufficient capacity for the existing Terminal Building and its occupants; however, there is little to no additional capacity in the existing mains for new natural gas users in the Charlotte area. As it relates to harbor operations and management, the current gas main locations do not interfere with surface water use in the HMA.

Fiber/Telecommunications/Electricity

The majority of fiber, telecommunications and electric lines are located in the upland areas surrounding the Genesee River. There is one overhead line that crosses the River in the vicinity of the Colonel Patrick O'Rorke Memorial Bridge. The aerial placement of this line does not interfere with surface water use in the HMA.

2.11.2 Navigation Channel, Channel Protection & Shoreline Structures

USACOE Navigation Facilities

The piers and the navigation channel are USACOE structural facilities within the HMA. The east and west piers are breakwaters or, as described by the USACOE, "protective structures" that define the entrance into the harbor and protect the harbor entrance from weather and the impacts of wave action. The maintenance of the piers as protective structures is the responsibility of the USACOE. The piers were constructed as stone-filled timber cribs, which have been encased in a parallel steel sheet pile structure with anchor rods and capped with concrete. The East and West Piers total approximately 1.1 miles in length and are approximately 450 feet apart. The west pier is marked with a harbor light atop a cylindrical tower, and has a white light that flashes over Lake Ontario every five seconds, and on the east pier there is a flashing green light.

The USACOE has designated approximately three miles of the Genesee River as a federal navigation channel, generally from Lake Ontario upstream to just beyond the Essroc facility. The federal channel is divided into sections for the purposes of defining the parameters of the channel dimensions (See Section 2.8.1). Currently, the channel is classified for commercial use and is subject to maintenance dredging by the USACOE.

River Bulkhead Walls

Located just south of the west pier, adjacent to 1000 N. River Street, is the City's Terminal Dock Wall, which was reconstructed in the early 2000s. This wall provides shoreline and channel stability and served as a vehicle loading platform with a dead man/tieback system for about 50 to 60 percent of the structure's overall length.

Most of the developed length of the harbor has bulkhead walls or finger docks along the river bank. These bulkhead walls are generally owned and maintained by the adjoining land owners (public or private entities) and are in good condition. The undeveloped portions of the river bank consist mostly of parkland with marsh vegetation along the natural bank and are not maintained or anticipated to be developed.

Storm Surge Mitigation

When large Nor'easter storms occur in the vicinity of the harbor, a surge of lake water is directed through the east and west piers and up the Genesee River. Nor'easters derive their name from the direction in which the winds are blowing and can cause severe coastal flooding, coastal erosion, hurricane force winds or blizzard conditions. Large storms can result in surges that make the River non-navigable, make mooring north of the public boat launch dangerous, and can cause damage to docked boats, particularly those that are docked in the River. The surge can also hamper the ability of emergency responders to respond to a boater emergency during a storm event.

In 1997, the USACOE installed eight rubble-mound wave energy absorbing revetments along the piers. The purpose of the project was to reduce wave heights to 1.0 foot or less within the harbor during the occurrence of a 20-year navigation season (April to October) wave.

Testimonials from harbor stakeholder indicated that, although the impacts from the storm surge have been reduced, the surge continues to be a problem and the removal of the Hojack Swing Bridge changed the wave action in the harbor and should be studied.

2.11.3 Colonel Patrick O'Rorke Memorial Bridge

The only bridge crossing the Genesee River within the HMA is the Colonel Patrick O'Rorke Memorial Bridge. Located in the northern portion of the HMA, the O'Rorke Bridge is a bascule bridge with two side spans connecting the City of Rochester to the Town of Irondequoit. Named for Civil War Colonel Patrick O'Rorke, the movable span of this lift bridge is 243 feet long and provides approximately 45 feet of vertical clearance above the River in the closed position. There is approximately 131 feet of horizontal clearance between the guide walls inside the bascule span piers. The drawbridge span opens at the center with both sides able to rise to near vertical to allow boats requiring higher clearances to pass underneath.

The bridge opens on signal from April 1 through December 15, with the following exceptions:

- From 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM Monday through Friday except Federal holidays, the draw need be opened only for the passage of commercial vessels.
- From 9:00 AM to 4:00 PM and 6:00 PM to 11:00 PM Monday through Friday except Federal holidays, and from 7:00 AM to 11:00 PM on Saturdays and Sundays, and Federal holidays, the draw need be opened only on the hour and half hour, except that commercial vessels shall be passed at any time.
- From December 16 through March 31, the draw shall open on signal if at least 12-hours notice is provided.

The Colonel Patrick O'Rorke Memorial Bridge is located along NYS Route 18 and the Seaway Trail and is operated and maintained by Monroe County. The construction of this bridge included installation of a scenic overlook at the former approach to the Stutson Street Bridge; the overlook is located within City public right-of-way and was dedicated to local Genesee River historian Bill Davis and is improved with interpretive historic signage that tells the story of the Genesee River Harbor at Charlotte.

2.11.4 Navigation Lighting

The Rochester Harbor Light is a red light that flashes every four seconds. It is located 40 feet above the water and is shown from a white cylindrical tower with red band located on the outer end of the west pier. This light was installed on the west pier in 1995 and replaced a skeletal steel tower that was installed in 1931. Although this structure is more of a beacon than true lighthouse, its purpose is to mark the entrance to the Port of Rochester and Genesee River. The east pier provides a green light flashing every four seconds. According to the USCG, lighting of the piers is currently in conformance with all requirements (33 U.S. Code 735).

Boats crashing into the east pier have been an ongoing concern in the HMA for several years. Boats have struck the pier several times in recent years, including an accident in 2008 that claimed three lives. After two separate accidents during the summer of 2014, U.S. Senator Charles Schumer announced that he was calling on the USCG and USACOE to make the east pier more visible to boaters

at night. That call was followed up with a letter from the USCG, endorsed by the USACOE, stating that the navigational lighting is in conformance with federal regulations and additional lighting could in fact confuse boaters.

2.12 Current Harbor Management

2.12.1 Dockage and Boat Launch Operations

Docking operations and use of the boat launch at the Port of Rochester are managed through the Port of Rochester Marina. Public boat launch users are required to either purchase a pass for the entire season or pay a daily use fee in order to launch trailered boats at the launch.

A permit and fee are required to temporarily dock a boat at the Port of Rochester (Appendix M). The permit is handled through the Port of Rochester Marina manager.

2.12.2 Port Terminal Building Management

The Terminal Building is owned and operated by the City of Rochester. Leasing space in this facility is managed through the City's Department of Neighborhood and Business Development, Division of Real Estate. Temporarily reserving party rooms in the old ferry departure and arrival halls can be obtained by making reservations and submitting fees through the City's Department of Recreation and Youth Services.

Maintenance and security of the Terminal building is managed through the City Department of Environmental Services.

2.12.3 Dredging/Harbor Maintenance

Maintenance dredging of the federal navigation channel is performed by the USACOE. Coordination of public dredging activities including City port maintenance dredging and coordination with the USACOE for dredging the federal navigation channel is handled in the Department of Environmental Services, Division of Environmental Quality (DEQ).

The dock wall on the west side of the River along the terminal building offers opportunities for transient docking and docking of excursion vessels such as cruise ships. Maintenance dredging along the wall is required to retain these docking opportunities, and is the responsibility of the City of Rochester which has secured state and federal permits for dock wall dredging. The City has periodically contracted with the USACOE for terminal dock wall dredging when the USACOE is performing maintenance dredging of the navigation channel.

2.12.4 Public Marina Operations

The Harbor includes two City-owned and operated public marinas – the new Port of Rochester Marina adjacent to the terminal building and the River Street Marina located at 490 River Street. The two marinas are managed by private operators through operation and management agreements with the City. These agreements, approved by City Council, are administered through the City of Rochester Department of Environmental Services, Bureau of Buildings and Parks.

2.12.5 Events Management

Management of special events in the HMA is largely coordinated through the City's Communications Bureau's Office of Special Events, the Monroe County Parks Department, the Ontario Beach Park Program Committee (OBPPC), or the USCG, depending on where in the HMA the event will take place.

The City of Rochester Bureau of Communications' Office of Special Events administers Special Event Permits, which are essentially a coordination mechanism. For events in the HMA, the Office of Special Event administers permits for events on land and outside of the County-maintained Ontario Beach Park. The event coordinator/sponsor submits a completed application form to the Office of Special Events where it then is routed throughout involved agencies (e.g., Rochester Police Department) before a decision is made about whether to approve the event or impose parameters.

The Monroe County Parks Department administers a Special Use Permit for events or rental of park's facilities. Ontario Beach Park is a County-maintained City-owned park. The County manages the operations in the park and therefore is responsible for event permits in the park.

Established in 1984, the OBPPC attracts and manages events in the HMA, primarily at Ontario Beach Park. The committee is comprised of volunteers from non-profit organizations from the local Charlotte area, and staff from City of Rochester and County of Monroe. This committee is largely responsible for the renewed interest in the harbor, bringing approximately 300,000 of the 500,000 annual visitors to Ontario Beach Park. The OBPPC is a not-for-profit corporation and finances events by fund raising, individual and private contributions, corporate sponsors and grants. All monies raised are put back into activities and improvements for the beach and harbor area.

Lastly, the USCG issues permits for approval of a "Marine Event." A marine event permit is required when an individual, organization, or government entity is planning an event that has any possibility of impacting the navigable waters of the United States, which includes Lake Ontario and the navigation channel within the Genesee River. A marine event would include any concentration of traffic on water, whether participant or spectator, craft or not, and competitive or non-competitive. The permit application provides additional criteria for determining if the planned event would be considered a regulated marine event.

As has been general practice over the last several years, event sponsors are required to manage any parking deficiencies associated with their event by establishing off-site parking locations and offering shuttling services to event attendees. Similarly, traffic management that requires additional police may result in a charge back of those costs to the event sponsor. Use of vacant Kodak lots have been successfully used for events in the HMA, but there currently is no permanently established offsite parking lot to accommodate large-scale special events that exceed parking capacities and strain traffic movement.

2.12.6 Promotion and Marketing

In general, promotion and marketing of parks, events, and facilities in the HMA are handled by individual entities, both public and private, for different purposes and events. The County offers on-line information and promotion for those facilities and events for which it is responsible. Likewise, the City has on-line information that provides information and promotion for its events and facilities. The OBPPC promotes the events it is sponsoring using various forms of media, such as print ads, and radio

commercials. In addition, the private operations and businesses in the HMA, such as the marinas, yacht clubs and restaurants promote the area through advertising their own operations and events. There is no central coordination or location for advertising and promoting activities and events in the HMA.

One of the roles of the Port of Rochester Marina manager, through the management and operation agreement with the City, is to promote and market the marina as well as the activities, attractions, and events at the port.

VisitRochester is this region's tourism sales and marketing organization. Their mission is to attract conventions, meetings, group tourism, and leisure visitors to the Greater Rochester area. They help to promote and market the waterfront as part of their overall mission to promote the region, but it is not their central focus.

3.0 HARBOR AUTHORITIES

The roles and responsibilities of agencies that have a role with respect to harbor management are described below and summarized in Figure 11.

3.1 Local Agencies

3.1.1 Monroe County Sherriff's Office

The Monroe County Sheriff's Office (MCSO) has jurisdiction on both the shore and on the water of Lake Ontario and the Genesee River, where it enforces the New York State Navigation Law. The MCSO has an active marine unit that patrols throughout the river and lake, including federal waters, and within some adjoining counties where they have mutual aid agreements. The Sheriff also has jurisdiction over county parks, although this is part-time and seasonal. When the parks are out of peak season, they are patrolled by the Rochester Police Department (RPD). The Sheriff collaborates most often with the Rochester Police Department, the USCG, and the NYSDEC.

The MCSO has a landside office on the eastern shore of the Genesee River at 5575 St. Paul Boulevard. It currently operates five patrol boats and two jet skis in and around the HMA.

3.1.2 Monroe County Department of Transportation

The Monroe County Department of Transportation plays an active role in the transportation system in the HMA. Not only is it responsible for many highways and bridges, it handles countywide traffic, highway and bridge engineering, pavement markings and the fabrication, installation and maintenance of signs. It is also responsible for the installation and maintenance of all traffic control devices on county highways and streets within the City of Rochester and the Town of Irondequoit.

3.1.3 Monroe County Parks Department

The Monroe County Parks Department manages the Monroe County Parks System. Ontario Beach Park is owned by the City of Rochester but is managed by the Monroe County Parks Department through an agreement with the City. The park attracts tens of thousands of visitors annually. It is a total of 39 acres and offers seven shelters that are available for rent in the summer months, a swimming beach, and the Roger Robach Community Center (Bathhouse) that is available to rent for picnics, parties and weddings. The park office is located at 4650 Lake Avenue.

3.1.4 Monroe County Department of Public Health

The Monroe County Department of Public Health monitors and permits swimming at Ontario Beach Park pursuant to the provisions of Part 6, Subpart 6-1 and 6-2 of the New York State Sanitary Code. The department also provides public information on water quality and beach access.

Figure 11. Agencies Function / Roles

	Function / Role													
	Review Development Projects	Establish Land Use Regulations	Establish Environmental Regulations	Resource Management Permits	Enforce Regulations	Planning & Technical Assistance	Natural Resource Management	Land Ownership / Management	Environmental Management	Land Use Planning Studies	Navigation	Recreational Facilities & Public Access	Public Information / Education	Conservation Advocacy
Monroe County														
Sheriff's Office					x						x		x	
Department of Transportation	x					x								
Department of Public Health				x								x	x	
Department of Parks												x	x	
Fishery Advisory Board							x						x	x
City of Rochester														
Police Department					x						x		x	
Fire Department	x				x								x	
Administration	x	x	x		x	x	x	x	x	x		x	x	x
New York State														
State Police					x						x		x	
Department Environmental Conservation (DEC)	x		x	x	x	x	x	x	x		x	x	x	x
Department of State (DOS)						x	x					x	x	x
Office of Parks, Recreation, and Historic Preservation	x			x	x				x			x	x	x
Office of General Services				x				x						
Federal														
U.S. Coast Guard				x	x	x					x		x	
U.S. Customs and Border Protection					x	x					x		x	
U.S. Army Corps of Engineers	x		x	x	x	x	x	x	x	x	x	x	x	x
National Oceanic and Atmospheric Administration (NOAA)			x			x	x		x				x	x
U.S. Environmental Protection Agency (EPA)	x		x	x		x	x		x				x	x
U.S. Fish and Wildlife				x	x	x	x						x	x
Other														
Town of Irondequoit	x	x	x		x	x	x	x	x	x		x	x	x

3.1.5 Monroe County Fishery Advisory Board

Appointed by the County Legislature, the purpose of the Monroe County Fishery Advisory Board is to study the issues associated with maintaining and improving the Monroe County fisheries and to advise the County Legislature and other agencies and organizations on those actions necessary to realize the full potential of the County's fishing resources.

The Monroe County Fishery Advisory Board currently undertakes the following:

- Assisting and advising County and local governments on how to plan for increased access to shoreline and the need for related facilities and services such as boat launches and public fishing access;
- Providing information on fishing in Monroe County to the general public, including working with tourism agencies to provide information and promote the fishery;
- Working on issues affecting Monroe County's fishery with the New York State Department of Environmental Conservation, and the Fish and Wildlife Management Act (FWMA) Board, as well as other agencies, including, but not limited to the New York State Legislature, Congressional representatives, United States Geological Survey, U.S. Fish and Wildlife Service, and New York Sea Grant; and
- Providing a public forum for sportsmen, businessmen and government officials to address the problems and potential of the County's fishery resource.

3.1.6 Rochester Police Department

Although all law enforcement agencies enforce the navigation law, all do not actively patrol the water. While the MCSO has on-water jurisdiction for law enforcement on the Genesee River and Lake Ontario, the Rochester Police Department (RPD) focuses on patrolling the HMA's nearby parking lots and other landside areas. With regard to enforcement, the RPD primarily addresses issues in the harbor with vagrants, vandalism and burglaries on boats.

The RPD operates under a mutual aid agreement with the Town of Irondequoit for calls to the eastern side of the Genesee River. This agreement stipulates that emergency calls go to both the City of Rochester and the Town of Irondequoit – whichever agency arrives on the scene first is responsible for addressing the issue, unless additional support is required.

RPD will become involved with on-water emergencies, such as a boat accident or a person falling into the river. The RPD currently moors one SCUBA boat (27-feet) in the harbor. Often times, the RPD will conduct joint SCUBA training exercises with other agencies, particularly the Rochester Fire Department.

3.1.7 Rochester Fire Department

The Rochester Fire Department (RFD) provides firefighting and emergency medical services (EMS) services in the HMA and also works with the RPD for in-water rescues. While both the RFD and RPD respond to active drowning, the RFD responds to in-vessel emergencies.

The RFD currently operates one 17-foot inflatable rescue boat in and around the HMA. However, this vessel does not have the ability to fight fires. If fire suppression is required, the RFD seeks assistance from the West Webster Fire Department (WWFD), which operates a 25-foot boat with a fire pump. This is not an ideal situation as the WWFD is all-volunteer department; therefore, response time can be an issue. Additionally, the WWFD cannot always maneuver in Lake Ontario, depending on conditions. The City of Rochester does reserve one slip for the RFD at the River Street Marina. The slip can accommodate a boat up to 40 feet long.

3.1.8 City of Rochester Administration

The City Department of Neighborhood and Business Development

The Department of Neighborhood and Business Development (NBD) comprises three bureaus, all having a role in the HMA. The City Bureau of Buildings and Zoning is responsible for administering the New York State Uniform Fire Prevention and Building Code (Chapter 39), which includes the Site Preparation and Stormwater Pollution Prevention code (Article IV), Property Code (Chapter 90) and the City of Rochester Zoning Code (Chapter 120). On behalf of the Commissioner of the Department of Neighborhood and Business Development, the Bureau of Buildings and Zoning performs normal and customary administrative functions required by the City relative to the implementation and administration of a coastal erosion management program pursuant to the Rochester Coastal Erosion Hazard Area Law, Chapter 43A of the City Code. For more information regarding the program, see section 3.4.3 in this document.

The Office of the Commissioner leads the oversight of the LWRP and is responsible for making consistency recommendations to City agencies for actions proposed within the boundaries of the City's LWRP. For further details on LWRP consistency review see section 3.4.2 of this document.

The Bureau of Business and Housing Development is responsible for assisting businesses by providing technical, financial, and other services; improving neighborhoods by fostering a healthy real estate market; working to stabilize and enhance the tax base; and, providing a broad array of housing options to address the needs of diverse households. Development in the HMA will likely engage some of the services provided by this Bureau.

Lastly, the Bureau of Neighborhood Preservation is intended directly solve problems, establish community partnerships, and promote strength and growth in city neighborhoods.

City Department of Environmental Services

The Department of Environmental Services (DES) comprises four bureaus, all of which are involved with operations and maintenance in the HMA. The Bureau of Operations is responsible for solid waste management, street maintenance, snow and ice control, and fleet management. The Bureau of Buildings and Parks is responsible for building facilities, forestry, and parks maintenance. The Bureau of Water has oversight and administration of the City's water system. The Bureau of Architecture & Engineering serves as the steward of the City’s infrastructure. Using in-house resources, consultants, and contractors, DES provides design and construction services in the public realm related to streetscapes, street lighting, trails, bridges, and City-owned buildings.

City Department of Recreation and Youth Services

The Department of Recreation and Youth Services (DRYS) provides recreational and educational programming throughout the City, including at one of the City's largest parks, Ontario Beach Park, which is within the HMA.

3.1.9 Town of Irondequoit

The Town has regulatory authority over land use in the Town of Irondequoit and provides fire and police protection on the east side of the river within the township. In addition, the Town adopted an LWRP in 1988 and is in the process of updating it. The process for review of actions proposed within the boundaries of the Town's LWRP boundary for consistency with the Town's LWRP is set forth in Town of Irondequoit Code (Chapter 123).

3.2 State Authorities

3.2.1 New York State Police

Although the New York State Police has jurisdiction in the HMA, it typically gets involved on an as needed basis. It provides specialty services and coordinates with local law enforcement agencies as necessary. The closest available State Police watercraft is stored in Canandaigua.

3.2.2 New York State Department of Environmental Conservation

The New York State Department of Environmental Conservation (NYSDEC), among other environmental responsibilities, manages the State's recreational and commercial fisheries, tidal and freshwater wetlands, and water quality. Under the Freshwater Wetlands Act (NY Code Article 24), the NYSDEC regulates activities within and within 100 feet of a freshwater wetland. The agency issues permits to "protect and conserve freshwater wetlands and the benefits derived therefrom." Under the Use and Protection of Waters (NY Code Article 15), the NYSDEC regulates and controls the water resources of NY. Under this provision, NYSDEC issues permits for activities such as dredging, filling in a waterway, disturbing the bank of the waterway, or installing docks and moorings.

The New York State Department of Environmental Conservation also has oversight responsibilities for the cleanup of hazardous material spills, including spills within the water and unauthorized upland discharges that can threaten harbor waters (e.g., into storm drains, tributary streams, wetlands, etc.). During an emergency situation related to a spill, NYSDEC oversees the cleanup operation to ensure that the spill is effectively contained and environmental impacts are minimized.

The NYSDEC has more than 300 sworn Environmental Conservation Police Officers; five are located in Monroe County and five in nearby Orleans and Wayne counties. Although they focus their efforts on enforcing the NYS Environmental Conservation Law, they are empowered to enforce all laws of the State, including the navigation law. According to the Sherriff's office, NYSDEC officers play an active role in law enforcement in the HMA.

3.2.3 New York State Department of State

As the State's designated coastal management agency, the New York State Department of State (NYSDOS), through the Office of Planning and Development, is responsible for administering the New

York State Coastal Management Program (CMP) as well as coordinating activities essential to the program's implementation. NYSDOS renders determinations on whether actions within the state's coastal area directly undertaken by, or on behalf of, federal agencies; or which require a permit or other regulatory approval from a federal agency; or involve federal financial assistance are consistent with the CMP. In addition to the consistency determination, if a proposed activity involves the alienation of parkland and includes the elimination or reduction of public access to the water, the park alienation process would typically require a review by the NYSDOS to analyze the benefits and detriments for the proposed alienation.

The NYSDOS also provides assistance to communities for the preparation of LWRP's and HMP's. In coordination with the New York State Department of Environmental Conservation, NYSDOS also administers the State's Significant Coastal Fish and Wildlife Habitats program.

3.2.4 New York State Office of Parks, Recreation and Historic Preservation

The New York State Office of Parks, Recreation and Historic Preservation (OPRHP) administer both the National and State Registers of Historic Places. The National and State Registers of Historic Places are the official lists of buildings, structures, districts, objects and sites significant in the history, architecture, archeology and culture of New York and the nation. The same eligibility criteria are used for each register. All sites, structures, etc. within New York State that are listed on the National Register are also listed on the State Register.

As with the NYSDEC, the OPRHP also have law enforcement officers that are empowered to enforce all laws of New York State. In addition to patrolling and enforcing laws in State Parks, the Park Police also provide special services including marine law enforcement and education duties on New York waterways. According to discussions with the Genesee Region office, the OPRHP involvement in the HMA relates to historic preservation, environmental conservation, and the issuance of permits (e.g. regatta permits and floating object permits) in non-federal waters (outside the navigation channel in the Genesee River).

3.2.5 New York State Office of General Services

The New York State Office of General Services (NYSOGS) manages and leases state-owned real property, designs and builds facilities, contracts for goods, services, and technology, and delivers a wide array of support services. Its role in the HMA is limited due to the fact that the only state-owned land is located in the southern portion of the HMA along the eastside of the River in Rattlesnake Point Park.

The State of New York usually owns and manages the land beneath coastal waters, and waters of large lakes and rivers. However, according to NYSOGS in an email dated on December 16, 2013:

> *The bed of the Genesee River is not State owned, having been conveyed by the State of Massachusetts to Oliver Phelps and Nathaniel Gorham in 1788. This determination has been upheld by the courts over the years. Certain acts of the legislature (Chapter 250, Laws of 1828, for example), have declared the bed of the river to be a public highway. This legislation gave the State the ability to regulate activity in the river. I believe that our office in the past has used this regulatory ability as a basis from which to issue fee*

grants and easements, mostly in the area between the first falls and Lake Ontario. Presently, this office is of the opinion that the bed of the river, for its entire length, is in private ownership.

3.3 Federal Authorities

3.3.1 Department of Homeland Security

In 2002, the creation of the Department of Homeland Security combined 22 federal departments and agencies into a unified, integrated agency. Within the HMP, the Department of Homeland Security has two components actively involved: the U.S. Coast Guard and U.S. Customs and Border Protection. The Rochester harbor is an international Port of Entry requiring screening of all foreign visitors, returning American citizens and imported cargo that enters the U.S. through the harbor.

United States Coast Guard (USCG)

The USCG is responsible for promoting the safety and security of the nation's waters. The USCG enforces maritime laws, promotes vessel safety, conducts inspections of commercial and recreational vessels, participates in homeland security, undertakes illegal drug interdiction, responds to oil and hazardous materials spills, and performs emergency searches and rescues. The USCG is responsible for maintaining public aids to navigation (buoys, lights) and regulating the placement of private aids to navigation. In Federal waters (channel and Lake), the USCG also handles the permitting for regattas and other events involving water surface use. The Coast Guard is also responsible for ensuring that navigational lighting on the piers conforms to legal and regulatory requirements.

The Rochester-based USCG has jurisdiction over navigable water from Sodus to 30 Mile Point, extending to Canadian border and all navigable waterways inland, including the Genesee River up to the Route 104 Bridge.

United States Customs and Border Protection (USCBP)

United States Customs and Border Protection is a federal law enforcement organization charged with keeping terrorists and their weapons out of the U.S. The agency takes a comprehensive approach to border management and control, combining customs, immigration, border security, and agricultural protection into one coordinated and supportive activity.

The Rochester Border Patrol Station has existed since October 2004 and is responsible for 54 linear miles of border on Lake Ontario. Agents in Rochester perform border patrol duties within the Buffalo Sector Area of Responsibility in support of the National Border Patrol Strategy. During the summer months, agents conduct joint marine patrols with other federal, state and local law enforcement agencies.

USCBP is responsible for monitoring international travelers and transportation of goods in the HMA. There is a video phone at Shumway Marina and at the Port of Rochester Marina for customs check-in.

U.S.C.App.289, which was enacted in 1886 to reserve United States vessels the right to transport passengers between one U.S. port and another U.S. port. The U.S. Customs service is the agency responsible for interpreting this statute and issuing the necessary regulations.

Ships involving travel to and/or from Canada are subject to regulations pertaining to U.S. vessel entry and clearance as well Canadian vessel entry and clearance. Regulations can be found throughout Title 19 part 4 of the Code of Federal Regulations.

The *Great Lakes / St. Lawrence Seaway System Cruise Vessel Information and Reference Guide* is a good resource for general explanation and citations of laws. However, specific questions or interpretation of the laws should be directed to the U.S. Customs Service.

In addition to water depth, surge and the need for regular maintenance in the harbor area, there are several laws that impact the potential operation of cruise ships in the Port of Rochester. The laws regulating cruise ships vary considerably based on whether ships include international travel. United States port-to-port regulations can be found in the "Passenger Services Act."

3.3.2 United States Army Corps of Engineers

The United States Army Corps of Engineers (USACOE) is the federal government's largest water resources development and management agency. The Corps began its water resources program in 1824 when Congress for the first time appropriated money for improving river navigation. The USACOE is authorized to carry out projects in seven mission areas: navigation, flood damage reduction, ecosystem restoration, hurricane and storm damage reduction, water supply, hydroelectric power generation and recreation. Navigation projects include both inland and deep-water projects. The USACOE plays an active an integral role in the management of the HMA. It is the federal agency responsible for surveying, dredging, and maintaining the federal channel in the Genesee River and it also owns and maintains protective structures, which include the East and West Piers.

Regulatory

Two laws delegate the authority to regulate waters of the United States to the USAC: Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act which governs the permitting process for discharge of dredged or fill material. A USACOE permit is required for any structure or work that takes place in, under, or over a navigable water, or wetlands adjacent to or abutting navigable waters (Sec. 10, Rivers and Harbors Act). The Genesee River is a navigable water subject to this permit requirement. And, a USACOE permit is required for activities which involve a discharge of dredged or fill material into a water of the United States (Sec. 404, Clean Water Act). Lake Ontario and the Genesee River federal navigation channel are classified as waters of the United States.

Civil Works

Continuing Authorities Program

The Continuing Authorities Program establishes a process by which the USACOE can respond to a variety of water resource problems without the need to obtain specific congressional authorization for each project. This decreases the amount of time required to budget, develop, and approve a potential project for construction. Under the Continuing Authorities Program, the USACOE is authorized to construct small projects within specific federal funding limits. The total cost of a project is shared by the federal government and a non-federal sponsor(s). The following list is a brief reference for each area of programming:

- Section 14 of the Flood Control Act of 1946 - Emergency Streambank and Shoreline Protection
- Section 103 of the 1962 River and Harbor - Beach Restoration and Shoreline Protection
- Section 107 of the River and Harbor Act of 1960 - Small Navigation Projects
- Section 111 of the 1968 River and Harbor Act - Mitigation of Shoreline Erosion Damage
- Section 204 of the Water Resources and Development Act of 2007 - Regional Sediment Management
- Section 205 of the Flood Control Act of 1948- Flood Risk Management
- Section 206 of the Water Resources Development Act of 1996 - Aquatic Ecosystem Restoration
- Section 1135 of the Water Resources Development Act of 1986, - Modifications to Projects for Improvement of the Environment

General Investigation Program

The General Investigation Program, known as the G.I. Program, establishes a process by which the USACOE can help a community solve a water resource problem.

Under the G.I. Program, the USACOE would jointly conduct a study and, if shown by the study to be feasible, construct a project. This approach requires that Congress provide the USACOE first with authority to accomplish a feasibility study and second, to construct a project. Local sponsors share the study and construction costs with the USACOE, and usually pay for all operation and maintenance costs. The G.I. Program may be used to address a variety of water resource problems including navigation, flood risk management, ecosystem restoration, and hurricane and storm damage reduction. The following list is a brief reference for each area of programming:

- Section 905(b) - Reconnaissance and Feasibility Studies
- Section 729 - Watershed Planning
- Section 22 - Planning Assistance to States and Indian Tribes

Great Lakes Program

Congress has authorized programs, specific to the Great Lakes, which offer additional capabilities for the USACOE, Great Lakes Districts (Buffalo, Chicago, and Detroit) to protect, maintain, and restore the natural resources of the Great Lakes (Appendix O). These programs are:

- Great Lakes Fishery and Ecosystem Restoration
- Great Lakes Remedial Action Plans
- Great Lakes Restoration Initiative
- Great Lakes Tributary Model

Planning Guidance Notebook

The USACOE Planning Guidance Notebook (ER 1105-2-100, Appendix P) provides the overall direction by which Corps of Engineers Civil Works projects are formulated, evaluated and selected for implementation. It is useful in understanding the planning processes and direction of the USACOE. The purpose of the notebook is to:

Provide the overall direction by which the Corps of Engineers civil works projects are formulated, evaluated, and selected for overall implementation. It contains a description of the Corps of Engineers planning process, Corps of Engineers missions and programs, specific policies applicable to each mission and program, and analytical requirements.

Planning Assistance to the States

Section 22 of the Water Resources Development Act of 1974, as amended, allows the USACOE to provide Planning Assistance to States, Indian Tribes, and local governments (PAS) for Water Resource planning efforts. PAS studies generally involve the analysis of existing data and serve as the basis for state, tribal or local planning decisions and include efforts such as water quality, environmental restoration, flood plain management and harbor/port studies. Projects pursued under the Section 22 authority are cost-shared 50% Federal, 50% non-Federal.

Pursuant to this authority, in 2008, the USACOE prepared a report wherein they developed a scope of work and cost estimate for the sixteen several projects identified by the City of Rochester. Each project has a path forward identified by the USACOE that could be pursued at the discretion of the City. Project prioritization remains at the City's discretion. Outlined are the ways in which the USACOE could provide support to redeveloping the harbor and the specific authorities under which this work could be completed. This report still serves as a resource document for project planning and implementation.

In 2016, the City of Rochester again engaged the USACOE for a PAS to study the economic feasibility of Rochester as a cruise destination or Port of Call and to study the sedimentation patterns in the Genesee River the area of the Port (see Appendix Q).

3.3.3 National Oceanic and Atmospheric Administration

The overall mission of National Oceanic and Atmospheric Administration (NOAA) is to undertake oceanographic and atmospheric investigations and to conserve and manage the coastal and marine resources of the United States. NOAA's National Marine Fisheries Service is responsible for rebuilding and maintaining the health of coastal marine habitats and managing fisheries as well as assessing the impacts of proposed projects on Essential Fish Habitat, marine mammals, and rare, threatened, and endangered species.

The NOAA also partners with coastal states through its National Coastal Zone Management Program to address some of today's most pressing national coastal issues including climate change, ocean planning, and planning for energy facilities and development. Based on the 1972 Coastal Zone Management Act to develop comprehensive programs to manage and balance competing uses of and impacts to coastal resources, NOAA approved the New York Coastal Management Program in 1982.

In addition to navigation maps that include the location of potential navigation hazards that exist in the vicinity of the HMA, NOAA also has several weather stations in the vicinity that provide valuable information and data to boaters via the National Weather Service.

3.3.4 United States Environmental Protection Agency (USEPA)

The mission of the United States Environmental Protection Agency (USEPA) is to safeguard human health by protecting the integrity of the environment. USEPA pursues this mission by developing

legislation and national environmental protection programs and by administering funding to states and municipalities for the development and implementation of environmental plans, policies, projects, and programs. USEPA sponsors a number of programs for the protection of natural resources, such as various Clean Water Act programs, and publishes a variety of environmental protection and planning guidance documents to provide technical support and educational assistance to the public.

The EPA has a research vessel called the Lake Guardian. The vessel is the largest dedicated science vessel on the Great Lakes. It has been doing a long-term study of the Great Lakes water quality under the terms of the US/Canada Great Lakes Water Quality Agreement, and in addition is serving as a research platform for various universities (including Cornell and SUNY), and other federal and state agencies who are concerned with the Great Lakes. The ship is 180' in length, 40' beam, and draws a maximum of 12'. It has 4 laboratories and 40 berths, with a permanent ship's crew of 14.

3.3.5 United States Fish and Wildlife Service

The United States Fish and Wildlife Service (USFWS) provides technical assistance to private individuals and organizations, as well as federal, state, and local agencies pursuant to the Endangered Species Act of 1973. The USFWS must be consulted when a proposed project or action may impact endangered or threatened species. They offer a seven step process, found at http://www.fws.gov/northeast/nyfo/es/section7.htm, to assist a project sponsor or reviewing agency determine whether a federally-listed, proposed, or candidate species, and/or designated "critical habitat" may occur within a proposed project area and when it is appropriate to contact the USFWS offices. The USFWS works with individuals as well as public and private agencies to preserve, protect, and enhance the viability of fish and wildlife habitats within the United States. The USFWS also oversees the Boater Infrastructure Grant (BIG) program to promote transient boating in the United States. The New York State Office of Parks, Recreation, and Historic Preservation administers the BIG program in NYS.

3.4 Cross-jurisdictional Programming Specific to the HMA

3.4.1 Coastal Zone Management

Federal, state, and local programs are working together to address the nation's coastal management issues. Programming started at the federal level with the adoption of the Coastal Zone Management Act (CZMA) in 1972, which led to approval of the NYS Coastal Management Program (CMP), followed lastly by the City's adoption of an LWRP.

Federal, state, and local programs are working together to address the nation's coastal management issues.

The CZMA and ensuing federal Coastal Zone Management Program, administered by the NOAA, provide the basis for protecting, restoring, and responsibly developing the

nation's important and diverse coastal communities and resources. The NOAA also works with states to interpret state and local policies and standards.

New York State is one of 34 states currently participating in the National Coastal Zone Management Program authorized by CZMA. NYSDOS was designated, pursuant to the Waterfront Revitalization and Coastal Resources Act of 1981, and Chapter 464 of the 1975 Laws of New York State, to prepare and implement a CMP. As the State's designated coastal management agency, the NYSDOS is responsible for administering the CMP as well as coordinating activities essential to the program's implementation. The CMP provides a means for coordinating all state agencies by describing forty-four coastal policies with which all state agency actions must be consistent. Generally, the policies fall under three headings: promotion of beneficial use of coastal resources; prevention of their impairment; and management of major activities substantially affecting numerous resources. Actions (i.e., permits, funding approvals, etc) by state agencies in a coastal area are subject to a Consistency Determination from the NYSDOS. No state agency can undertake, issue a permit for, or fund a project affecting New York's coastal area until the NYSDOS issues a Consistency Determination. Likewise, a copy of all federal application materials for proposals in a coastal zone must also be submitted to the NYSDOS at the same time they are sent to a federal permitting agency. In this process, the applicant certifies to the federal agency and NYSDOS that the proposed project complies and is consistent with the CMP. No federal agency can undertake, issue a permit for, or fund a project affecting New York's coastal area until the NYSDOS concurs with this consistency certification.

The New York State Waterfront Revitalization of Coastal Areas and Inland Waterways Act (Article 42 of the Executive Law) offers local governments the opportunity to participate in the CMP on a voluntary basis by preparing and adopting an LWRP. When an LWRP is approved by the NYSDOS, state and local actions are required to be consistent with the approved LWRP to the maximum extent practicable. When the federal government concurs with the incorporation of an LWRP into the CMP, federal agency actions must also be consistent with the approved LWRP. The consistency review process is described below.

3.4.2 LWRP Consistency Determination Process

The Waterfront Consistency Review Ordinance (Chapter 112 of the City Code) is one of the primary tools used to implement the City's LWRP. This ordinance requires that a City agency prior to approving, funding or undertaking a action, as defined in the law, located in the LWRP boundary, make a determination that the action is consistent with the LWRP with the applicable LWRP policies and purposes. Whenever a City agency receives an application for approval or funding of an action or as early as possible in the agency's undertaking of a direct action, the applicant or, in the case of a direct action, the agency shall prepare a coastal assessment form (CAF) to assist with the consistency review. The CAF is reviewed by the Commissioner of the Department of Neighborhood and Business Development with the assistance of the Office of City Planning. The Commissioner must render his or her written recommendation to the decision-making agency within 10 working days following the submission of the CAF. The recommendation shall indicate whether, in the opinion of the Commissioner, the proposed action is consistent, to the maximum extent practicable, or inconsistent with one or more of the applicable LWRP policy standards or conditions. The decision-making agency makes the determination of consistency based on the

information in the CAF, the recommendation of the Commissioner and other information as is deemed to be necessary in its determination.

In addition, many federal funding, permitting and direct actions must be consistent with an approved LWRP. These federal actions are reviewed by NYSDOS who then concurs with, or objects to, them being undertaken. If the NYSDOS objects to the action, it cannot be funded, permitted, or undertaken. State agencies, when undertaking, permitting or funding SEQRA Type I or Unlisted Actions are generally required to submit a completed Coastal Assessment Form (CAF) to the NYSDOS as part of their responsibilities in ensuring their compliance with the enforceable policies contained within the LWRP. NYSDOS reviews these CAFs and comments as appropriate while the state agency in question directly consults with the LWRP community. NYSDOS serves as a mediator between the LWRP community and the state agency if requested by either party. This consistency provision is a strong tool that helps ensure all government levels work in unison to build a stronger economy and a healthier environment.

3.4.3 Coastal Erosion Hazard Law

The Waterfront Revitalization and Coastal Resources Act of 1981 gave the CMP authority to advocate for managing erosion and flooding hazards. To protect lives and reduce the loss of property due to coastal erosion and flooding, the State Legislature mandated that vulnerable shore areas be designated as Coastal Erosion Hazard Areas, where construction or excavation is controlled through a permit. The Coastal Erosion Hazard Areas Law (Environmental Conservation Law Article 34) empowers NYSDEC to identify and map coastal erosion hazard areas and to adopt regulations (6 NYCRR Part 505)[1] to control certain activities and development in those areas. The Coastal Erosion Hazard Areas, consisting of the Natural Protective Feature Area and the Structural Hazard Area, are delineated on a map prepared by the DEC entitled "Coastal Erosion Hazard Area Map of the City of Rochester."

Within the Coastal Erosion Hazard Areas, the construction or placement of a structure, or any action or use of land which materially alters the condition of land, including grading, excavating, dumping, mining, dredging, filling or any disturbance of soil is a regulated activity requiring a Coastal Erosion Management Permit. The permit provides written approval granted by DEC or a local government, whichever has the jurisdiction. Rochester is 1 of 42 communities in New York State that has been certified by NYSDEC to have a coastal erosion hazard area law (City Code Chapter 43A) and therefore has jurisdiction for issuing permits. The permits are administered through the City's Bureau of Planning and Zoning on behalf of the Commissioner of Neighborhood and Business Development.

NYSDEC works with USACOE to study coastal erosion problems along coastlines and develop coastal erosion solutions. These are typically large scale projects that impact entire communities.

[1] At the time of this writing, NYSDEC is reviewing and updating Part 505 regulations to make it easier for people to understand and comply with the regulations. This will include outreach to stakeholders and a public comment period.

3.4.4 Water Use Permitting

Floating Objects

New York State Office of Parks Recreation & Historic Preservation, Bureau of Marine Services has the responsibility of administering the permit system for floating objects on non-federal waters (outside the navigation channel in the Genesee River). Mooring buoys, mooring fields, swim area markers and vessel speed zones as well as swim platforms are all considered floating objects by New York State Navigation Law Section 35A.

In federal waters (channel and Lake), the USCG issues permits for floating objects, which are referred to as "private aids to navigation." Private aids to navigation are designed to allow individuals or organizations to mark privately owned marine obstructions or other similar hazards to navigation, or to assist their own navigation operations. They are required to be maintained by the owner as stated on the U.S. Coast Guard permit. Private citizens, marina and yacht clubs, municipal and state governments, construction and dredging companies, research and non- profit organizations, beach front associations, and large industrial companies are required to apply for a permit for any private aid to navigation.

Regattas and Other Events

In order to conduct a regatta on the waters of the State of New York a permit must be granted by New York State Parks. A regatta is defined as "an organized event of limited duration, which is conducted according to a prearranged schedule" according to section 34 of the NYS Navigation Law. Applications for permits may be obtained online at the NYS Parks website.

As stated in 33 Code of Federal Regulations (CFR) Chapter 1 PART 100, an individual or organization planning to hold a regatta or marine parade which, by its nature, circumstances, or location, introduces any extra or unusual hazard to the safety of life on the navigable waters of the United States, must have the event approved by the USCG. Applications need to be submitted no later than 135 days prior to the start of the proposed event. If the event meets certain provisions it may be submitted no later than 60 days prior to the start of the event. Applications for permits may be obtained online at the USCG's website.

3.4.5 Emergency Responders Mutual Aid Agreements

Mutual aid is an agreement among emergency responders to lend assistance across jurisdictional boundaries. There are several mutual aid agreements relevant to the public safety in the HMA. Rather than a detailed description for each agreement, which can change periodically, this section includes a brief summary of relevant agreements. Please see agreements for details.

Monroe County Comprehensive Emergency Management Plan

The purpose of this plan is to formulate a comprehensive action of search, rescue, and recovery operations for marine emergencies that may occur within Monroe County and on the adjacent waters of Lake Ontario. The plan was developed and coordinated with the cooperation of law enforcement, fire departments, County Public Safety Officials, 911/ Emergency Communications Department (ECD), Office of Emergency Management, and USCG advisors. According to the Plan, as the lead agency for

emergency response on the water, the USCG is the Water Branch Director and will assess the seriousness of the incident and relay this information to the 911/ECD.[2] For emergencies on land, the Senior Fire Officer of the jurisdiction affected, is the Land Branch Director who will assess and report information to the 911/ECD. The 911/ECD will dispatch/notify emergency responders as specified in this Plan.

Monroe County Emergency Medical Services Mutual Aid Plan

For this plan, mutual aid is "organized, supervised, coordinated, cooperative and reciprocal assistance in which personnel, the physical facilities and the equipment of all participating EMS agencies, regardless of type or size, are utilized for EMS or emergencies throughout Monroe County."[3]

County of Monroe Mutual Aid Fire Plan

The purpose of this Plan is to ensure that mutual aid is an "organized, supervised, coordinated and cooperative reciprocal assistance in which personnel, equipment and physical facilities of all participating fire departments, companies or districts, regardless of type or size, are utilized for a fire or other emergency in which the services of fire personnel would be used throughout the County of Monroe." This Plan is reviewed each year, by the Monroe County Fire Coordinator where corrections and/or changes are processed.[4]

3.4.6 Joint Permit Application

In an effort to reduce applicant paperwork and ensure all agencies involved in a project review the same information, the NYSDEC; Office of General Services (OGS); NYSDOS; and, New York and Buffalo Districts of the USACOE developed a joint permit application for Permits and Determinations within their jurisdiction that affect streams, waterways, waterbodies, wetlands, coastal areas and sources of water withdrawal. The Joint Application Form and instructions are in Appendix R.

[2] Monroe County Comprehensive Emergency Management Plan – Revised June 2008
[3] Monroe County Emergency Medical Services Mutual Aid Plan – Draft October 2013
[4] County of Monroe Mutual Aid Fire Plan – Revised April 2012

4.0 ISSUES AND OPPORTUNITIES

Using the information detailed in Sections 2 and 3 above and stakeholder meetings, the following key issues and opportunities were identified for the Rochester HMA. These create the basis and framework from which the Action Plan described in Section 5.0 was developed.

The key issues and opportunities are divided into six categories:

- Harbor Services and Amenities;
- Management, Operations, and Communications;
- Harbor Infrastructure;
- Surface Water Use;
- Dredging; and
- Natural Resources.

The issues identified in each section are the concerns that require attention and problem solving to improve harbor operations. Often these issues represent a complex situation requiring the cooperation of more than one agency/stakeholder and may require multifaceted funding solutions.

The positive aspects of the HMA, represented in the list of opportunities, deserve action steps toward promotion or advancement. Opportunities often require attention and funding and should be given the same consideration as issues.

4.1 Management, Operations & Communications

4.1.1 Issues

- There is the need for a responsible entity to oversee, coordinate, and manage the varied activities and operations of the HMA, including but not limited to boater notifications, dredging coordination, facilities management, education, information dissemination, advocacy, and grant writing.
- There is confusion for HMA users regarding regulations, permitting, and oversight.
- There is a perception among stakeholders that over-patrolling is occurring in the harbor.
- The IJC's *Plan 2014* could result in operational and economic impacts to the Port of Rochester, although the specific impacts are currently unknown (the IJC notes that *Plan 2014* could increase shoreline protection costs by 13 percent). Impacts could include increased maintenance costs for piers and breakwalls and increased operational costs for marinas.
- Facilities for onsite Customs and Border Protection agents would be required if Rochester becomes a regular port for cruise ships.
- Public safety agencies indicate the need for dedicated support facilities in the HMA for use on a regular basis, not just during emergency and special events. A secure, dedicated space would ideally include office space, a meeting table, computer terminals, conferencing facilities, arrest

processing area, and off-season storage for bikes, ATV's and boats. Agencies also expressed the need for additional dedicated docking and water access facilities.

- The Rochester Fire Department indicated that it does not have a fire safety boat that can effectively put out a fire on the water or near the shoreline. The closest boat with a fire pump is docked in Irondequoit Bay.
- The future use of the Terminal Building is undefined.
- While there is a significant amount of information and educational materials available to boaters and other harbor users, there is no centralized access point to retrieve information. Important information to harbor users includes permitting processes, educational materials, boater safety, debris removal, special events, commercial boat arrivals, and the availability of services and amenities.
- There are different legal opinions pertaining to ownership of the river bottom. This is an issue whenever activities (e.g., installing dock systems, dredging) involve contact with the river bottom.

4.1.2 Opportunities

- There are a range of potential organizational and management structures for the HMA that may be considered.
- The Terminal Building is currently underutilized. Utilization of the terminal building to address immediate needs and potential value-added services and amenities for harbor users, public safety agencies, and HMA visitors may be an opportunity.
- Marketing and promoting the HMA in conjunction with surrounding amenities and resources would help to attract visitors year round.
- The Port of Rochester Marina manager will play a key role in the promotion and marketing of the harbor.
- While all agencies operating in the HMA currently work well together, there may be opportunities for improved communication and coordination.
- Some of the infrastructure remains to support a passenger ferry service.
- Collaboration and partnerships among the various HMA organizations, business and landowners would improve the year round viability of the HMA.
- The Great Lakes Restoration Initiative (GLRI) was launched in 2010 to accelerate efforts to protect the Great Lakes. The Initiative directs advocacy and funding to strategic activities targeting the largest threats to the lake ecosystem, including controlling invasive species, reducing nutrient runoff and restoring habitat. The opportunities of the GLRI should be pursued for HMA improvement projects.

- Future roadway and infrastructure projects can positively contribute to the long-term sustainability of the HMA. The application of Complete Streets and LEED for Neighborhood Development (or LEED-ND) principles in street design and construction can support and enhance mobility, access, and natural resource protection.
- Funding through the Harbor Maintenance Trust Fund, as well as other federal funding resources, can be used for a variety of planning and implementation activities in the HMA.

4.2 Harbor Services and Amenities

4.2.1 Issues

- Due to limited transportation options, traveling within the HMA or to some destinations outside the HMA is currently complicated or unavailable.
- Managing traffic during special events is challenging due to limited options for alternate routes and limited access management.
- Parking demand can exceed supply during special events that draw large crowds into the HMA. Parking demand will likely increase as additional amenities and events are introduced into the HMA.
- The absence of dedicated transient boater slips in the HMA limits the potential for visitors arriving via water to take advantage of landside amenities and attractions.
- The HMA lacks overnight accommodations and other services and amenities that would help to make it more attractive for visitors.
- Boater services and amenities, including fuel dispensing, boat-oriented convenience shopping, boat mechanics and winter storage may need to be increased within the HMA.
- The HMA lacks fishing amenities such as bait shops, weigh stations, and fish cleaning stations. These amenities are desirable for fishing and would make the HMA more attractive to large-scale fishing events, such as fishing derbies.
- Public boat rental services are absent in the HMA and could be attractive to casual boaters and increase day-use visitor traffic.

4.2.2 Opportunities

- Existing events, including regattas, fishing derbies, and celebrations, create a market for nearby landside amenities.
- With easy access to both high quality coldwater and warmwater fisheries, the HMA could increases its prominence for sport fishing in Upstate New York.

4.3 Harbor Infrastructure

4.3.1 Issues

- The on-going maintenance of the piers by the Army Corps of Engineers is critical to the harbor.
- Although the piers were constructed for the purpose of providing safe entrance into the harbor, their continued maintenance for public access is important for visitors to the HMA.
- Storm surge continues to be an issue reported by HMP stakeholders. The specific impacts of storm surge on the HMA have not been fully evaluated since the stone revetment was installed along the piers for wave attenuation. Stakeholders have reported that the removal of the Hojack Swing Bridge has altered how the surge impacts the harbor, further necessitating an evaluation of the surge. Storm surge can cause damage to docked boats and make the Genesee River non-navigable. This occasionally limits the harbor's ability to function as a Critical Harbor of Refuge during large nor'easter storms.
- There is fragmented management and oversight and no comprehensive maintenance program of City-owned harbor infrastructure, including the terminal dock wall, terminal building, River Street Marina, train station, future Port of Rochester Marina, boat launch and former swing bridge abutment.
- During maintenance activities, such as dredging, there is the potential for impacts to utilities that cross the river.
- There are three known but unmarked navigation hazards in the vicinity of the HMA: the sunken tug *Cheyenne*, the west side of the turning basin in Reach G (between the federal navigation channel and the Genesee Riverway Trail footbridge), and the southern dolphin approximately 300 feet upstream of the Coast Guard Station. Several less prominent hazards located along the shoreline also exist and are described in Section 2.8.7.
- Senator Schumer prompted the United States Coast Guard and Army Corps of Engineers to develop a plan to make the east pier more visible during the night, following a number of boat accidents. Although both agencies have indicated that the current lighting meets navigation requirements, the visibility of the east pier at night remains a stakeholder concern.
- The effectiveness and resiliency of the current infrastructure has not been evaluated in response to climate changes and potential lake level changes.

4.3.2 Opportunities

- The former ferry vehicle loading platform remains in place situated along the river entrance to the Port of Rochester Marina and connects to the boardwalk that runs along the waterfront east of the Terminal Building. This platform provides a large space for public gatherings, signage, and/or public art.

4.4 Dredging

4.4.1 Issues

- The ACOE prioritizes harbors for maintenance dredging based on total commercial tonnage that passes through the harbor. The Rochester harbor was ranked 60th of the 60 commercial harbors in the Great Lakes Navigation System in 2014.
- If the Federal Channel is not maintained to 21 feet, Essroc will no longer be able utilize water-based shipping for transporting cement to their facility in the HMA. This could cause the company to move the facility to another municipality, resulting in significant economic impacts on the region, including the loss of 17-20 local jobs, the loss of $3-4 million in annual economic output, and the loss of $400 thousand in annual state and local tax revenue.
- Dredging in the federal navigation channel is conducted by the ACOE. Dredging outside the federal navigation channel is managed by individual marina and yacht club operators under individual permits. Renewals of these individual permits are required every five years. This individual approach is more costly to mobilize and administer than a collaborative, harbor-wide approach.
- The disposal of dredged material can be very costly, especially if the option for open-lake disposal was eliminated.
- There is limited developable land along the HMA shorelines. The lack of developable lands limits the development opportunities for short-sea shipping that would result in increased tonnage and commercial activity in the Harbor.

4.4.2 Opportunities

- Increasing commercial traffic into the Rochester Harbor would improve the port's ACOE maintenance dredging priority.
- A collaborative dredging strategy among property owners and agencies could reduce dredging mobilization costs and permit administration.
- Dredged material from the Genesee River is clean enough to be considered for beneficial uses, such as ecosystem restoration.
- Implementing natural or engineered systems that facilitate sedimentation to occur upstream of the navigable sections of the harbor may help to reduce the need for frequent dredging.
- Reducing overall suspended particles in the water column through appropriate local and regional land use and storm water runoff management measures may help to reduce the need for frequent dredging.

4.5 Surface Water Use

4.5.1 Issues

- While boater conflicts were not identified as a problem in the lower reach of the HMA, speed of motor boats in the upper reaches of the HMA has reportedly occasionally, impacted non-motorized boaters.
- Water users would benefit from improved wayfinding and informational signage within the HMA.
- Water users would benefit from a centralized website for information about events, activities, educational programs, and public safety warnings.
- The adequacy of existing car top boat launches to support current and future activity is unknown and has not been evaluated.
- Fishing charter operations are a valuable use in the HMA. The most suitable location for dock space, parking, and associated amenities has not been fully evaluated.
- The east and west piers continue to be popular locations for fishing. Unlike the west pier, there are no railings located along the east pier, presenting a potential safety hazard for users.
- While there are no documented conflicts associated with the various surface water uses taking place in the HMA, future expansion of uses has the potential to increase user conflicts.
- Water dependent support uses, such as trailer parking and dry dock facilities, currently meet the needs of HMA users. Long-term adequacy of these facilities, based on future demand, has not been evaluated.

4.5.2 Opportunities

- Sport fishing and charter excursions bring visitors to the HMA creating spin-off impacts such as demand for overnight accommodations, restaurant activity, and other support businesses.
- With easy access to both high quality cold and warm water fisheries, the Port of Rochester could be a major destination for sport fishing in Upstate New York. This will require a coordinated effort to bring amenities (e.g., bait shops, weigh stations) and develop a marketing and outreach strategy to promote the HMA for fishing.
- The Monroe County Fisheries Advisory Board, created by the County Legislature to advise them on issues related to fishing in the county, is a valuable resource that the City and County can team with to promote and advocate for fishing in the HMA.
- The Lake Ontario Sport Fishing Promotion Council, formed to ensure the long-term sustainability of fishing derbies in Lake Ontario, is a not-for-profit organization financially supported by nine counties in the region. The Council is a potential resource and partner for the growth and sustainability of recreational fishing in the HMA.

- The public boat launch is an important amenity that should remain in the HMA.
- City-owned vacant land at the end of Petten Street offers opportunities for waterfront access and is a potential site for a car-top and/or motorized boat launch.
- Construction of the new marina will provide additional transient slips which may result in greater visitation to the HMA and surrounding landside amenities via watercraft.

4.6 Natural Resources

4.6.1 Issues

- Water quality and sedimentation issues in the HMA result from watershed-wide point and non-point sources and thus must be addressed at both the local and regional levels (the Genesee River watershed encompasses 2,373 square miles of land in New York State).
- Water quality issues are an ongoing problem at Ontario Beach resulting in beach closures and other impacts to visitors, including algae blooms, fish kills, and resulting foul odors.
- It is currently unclear how issues such as climate change, potential lake level changes associated with IJC Plan 2014, or any change in dredging patterns will impact the current extent of floodplains in the lower Genesee River.

4.6.2 Opportunities

- Ensuring the long-term protection of the River's riparian areas would contribute to improving water quality in the HMA and the eventual delisting of the Rochester Embayment Area of Concern.
- The implementation of upland best practice techniques identified in the *Genesee River Basin Action Strategy* could contribute to a reduction in the need for frequent dredging and improve overall water quality conditions in the HMA.
- The NYS DEC is currently implementing the *Work Plan for RCRA Facility Investigation and Corrective Measure Study for OU-5 Lower Genesee River Area of Concern*, which outlines the plan for analyzing contamination levels in the lower four miles of the Genesee River and evaluating the potential impact on fish, wildlife, and human health. The results will provide additional information about contamination in the HMA, resulting in potential remedial efforts in the River.
- The warm water and salmonid fisheries associated with the Genesee River and Lake Ontario provide excellent fishing opportunities for visitors to the HMA and could create additional economic spin-off impacts for the local community.
- Existing and potentially constructed wetlands can play an important role in reducing sedimentation in the Genesee River and provide habitat for fisheries and water fowl.

5.0 HMP IMPLEMENTATION STRATEGY

5.1 Introduction

Section 5.0 identifies the key HMP objectives and lists specific implementation steps necessary to achieve them. The objectives are the culmination of Sections 1.0 through 4.0 of the HMP, providing a framework and direction for future decision-making and activities. Priority objectives, indicated with an asterisk (*), are discussed in more detail in Section 5.3.

The objectives and implementation steps are organized under the same six overarching categories as the issues and opportunities in Section 4.0. Implementation steps are further classified as capital projects, operational/legislative actions, or studies/research. For each implementation step a timeframe for completion is identified as one of the following:

- Short-term (0-3 year activities)
- Medium-term (4-6 year activities)
- Long-term (7+ years)
- On-going (implementation activity is underway/ongoing)

An indication of the implementing agencies and potential funding sources completes the Action Plan. The names of the agencies are abbreviated as follows:

- **ACOE:** Army Corps of Engineers
- **CHFM**: City Harbor Facilities Management
- **City DES**: Department of Environmental Services
- **City NBD**: Department of Neighborhood and Business Development
- **City OMB**: Office of Management and Budget
- **City RFD**: Rochester Fire Department
- **HME**: Harbor Management Entity
- **NYSDEC**: New York State Department of Environmental Conservation
- **NYSOG**S: New York State Office of General Services
- **USFWS**: US Fish and Wildlife Service

5.2 The Action Plan

5.2.1 Management, Operations and Communication

Objectives *Priority Objectives - detailed further in Section 5.3		Implementation Steps		Implementation Classification				Timeframe	Implementing Agency	Action Plan Map Reference (see Maps 18 & 19)
				Capital Projects	Operations/ Legislation	Study / Research	Other			
1	**Establish a management structure for overseeing harbor operations.***	A	Establish a structure for City harbor facilities management (CHFM) within City government for the management of City-owned harbor facilities, including but not limited to, the Terminal Building, boat launch, Port Marina, River Street Marina, train station, parking lots and dock wall.		X			Short-term	Mayor, City Council, City DES	NA
		B	Facilitate the implementation of the HMP objectives by identified City departments.		X			Short-term	Mayor, City Council	NA
		C	Identify existing and future agency budget allocations for harbor projects, facilities, and on-going harbor oversight and maintenance of infrastructure.		X			Short-term	CHFM, Mayor, City Council	NA
		D	Identify and establish a long-term harbor management entity (HME) to oversee harbor activities including the management of city facilities.		X			Long-term	CHFM, Mayor, City Council	NA
2	**Evaluate the future use, programming and ownership of the Port Terminal Building.***	A	Prepare a financial feasibility analysis for various ownership options and programming of the Terminal Building in the context of a vibrant harbor destination.			X		Short-term	CHFM, City OMB	1
		B	Ensure space is retained in the building for use by public safety agencies for meeting rooms, storage, first aid, etc.				X	Short-term	CHFM, City OMB	1
3	**Improve harbor-oriented communications, education, and promotion.***	A	Establish a Harbor On-water Operations Advisory Committee for collaboration of on-water stakeholders in the coordination, advocacy and promotion of the harbor.		X		X	Short-term	City DES, Mayor, City Council	NA
		B	With the help of the On-water Operations Advisory Committee, create a map of the harbor showing all areas of use, dredging, and needs.		X	X		Short-term	CHFM, On-water Advisory Committee	NA
		C	Develop a harbor logo and brand that can be used on materials produced for the harbor.			X		Short-term	CHFM, City Communications	NA
		D	Create a harbor website to facilitate the sharing of information related to the harbor and its functions, including education resources, special events, permitting information, amenities and services, contact information, etc.				X	Short-term	CHFM, City Communications	NA
		E	Convene regular meetings with VisitRochester to promote and market the harbor. Work with VisitRochester and other harbor service provides to develop tour packages.				X	Short-term	CHFM, City Communications, HME, Marina Manager (long-term)	NA
		F	Meet with harbor service providers to discuss joint programs and promotional opportunities.				X	Medium-term	CHFM, City Communications, HME, Marina Manager (long-term)	NA
		G	Package and distribute information on educational programs via the harbor website, including trainings, the Vessel Safety Check Program and other available resources.				X	Short-term	Marina Manager, HME (Long-term)	NA
		H	Consider the implementation of a formal education program with training, classes and programs provided in the harbor.				X	Medium-term	HME	NA

Objectives *Priority Objectives - detailed further in Section 5.3		Implementation Steps		Implementation Classification				Timeframe	Implementing Agency	Action Plan Map Reference (see Maps 18 & 19)
				Capital Projects	Operations/ Legislation	Study / Research	Other			
		I	Coordinate with the Rochester Central School District to identify on-site educational opportunities associated with the harbor and natural resources.				X	Medium-term	HME, Rochester School District, Center for Environmental Initiatives	NA
4	**Promote the harbor as a destination for cruise ships.***	A	Prepare an economic impact analysis associated with the Port as a cruise ship destination. (Completed, see Appendix Q)	X		X		Completed	City, USACOE	NA
		B	Maintain terminal dock wall and provide necessary dredging from federal channel to dock wall.	X				Ongoing	CHFM, HME	2
		C	Add electrical and potable water hookups on the port wall. This would make services more accessible for Great Lake cruise ships as well as transient vessels.	X				Medium-term	City	1
		D	Coordinate with VisitRochester to promote the City and region as a cruise destination; create a comprehensive list of suppliers, servicers, contractors, musicians, and lecturers for cruise ships; and, arrange tours from the Port.				X	Medium-term	Port of Rochester Marina Manager, HME (long-term)	NA
		E	Work with Visit Rochester to create a brochure that can be sent to Great Lakes cruise ship companies that would highlight the positives of the harbor, region and potential shore excursions.				X	Medium-term	Marina Manager, VisitRochester, City Communications	3
		F	Work with customs to set up phone clearance. (A video phone was installed at the Terminal Building in early 2017).	X				Completed	City, US Customs	
5	**Evaluate the benefits of acquiring Ontario Beach Park.**	A	Complete an analysis to identify the potential implications of City ownership and acquisition of Ontario Beach Park, including budget and revenue impacts.	X		X		Short-term	CHFM, County Parks Dept, Mayor, City Council	4
		B	Amend City / County Park Agreement if Ontario Beach Park is acquired by the City of Rochester.		X			Medium-term	CHFM, Mayor, City Council County Legislature	NA
6	**Ensure emergency preparedness of harbor.**	A	Prepare a HMA Disaster Response Plan.	X		X		Medium-term	City/County Emergency Preparedness Agencies	NA
		B	Seek funding for a pump boat for the Rochester Fire Department.	X			X	Ongoing	City RFD, CHFM	NA
7	**Clarify the ownership of underwater lands.**	A	Pursue a legal opinion and interpretation of underwater land ownership.		X		X	Short-term	City Law Department, NYSOGS	NA
8	**In addition to attracting cruise ships, identify other revenue generating opportunities to support Port operations.**	A	Complete a study to evaluate potential revenue that could be generated by charging for parking in the HMA. The study should evaluate full-time priced parking versus priced parking only during special events.	X		X		Short-term	CHFM, City Finance Department	NA
		B	Consider the development of a harbor-wide special assessment district for the Port of Rochester.		X		X	Medium-term	City Finance Department	NA

5.2.2 *Harbor Services and Amenities*

Objectives *Priority Objectives - detailed further in Section 5.3		Implementation Steps		Implementation Classification				Timeframe	Implementing Agency	Action Plan Map Reference (see Maps 18 & 19)
				Capital Projects	Operations/ Legislation	Study / Research	Other			
1	**Enhance pedestrian and vehicular wayfinding.**	A	Meet with harbor stakeholders to identify needs associated with a comprehensive wayfinding system.		X			Short-term	City DES, HME	NA
		B	Seek funding for and create a harbor-wide wayfinding plan.	X				Short-term	City DES, HME	NA
2	**Ensure harbor services are provided that adequately meet demand.**	A	Monitor the Intelligent Transportation Systems (ITS) installations to evaluate its effectiveness in management of parking and traffic flow.	X				Ongoing	City DES, County DOT, NYSDOT	NA
		B	Seek vendors for City facilities that respond to market demands.		X			Medium-term	City NBD, CHFM	NA
		C	Work with the private sector to fill gaps and address obstacles associated with providing harbor services.		X			Medium-term	City NBD, CHFM, Private Sector	NA
		D	Promote transportation amenities (water taxi, bike and scooter rentals, segways, etc.) that will enhance and improve the ability to travel within the harbor area.		X			Long-term	HME	NA
		E	Assess the market demand for a boat rental operation.			X		Long-term	HME	NA
		F	Consider options for remote, satellite parking options in conjunction with special events occurring in the HMA.	X				Ongoing	Event Sponsor	NA
		G	Coordinate with RGRTA to increase service to the Port area during peak summer events.				X	Ongoing	RGRTA, HME, Event Sponsor	NA
3	**Support transient boaters with adequate amenities including dockage, services and connections to destinations.**	A	Monitor transient dockage supply and demand.		X			Medium-term	CHFM, HME (long-term)	3
		B	Provide transient boater services including convenience shopping, showers, and restrooms.(Partially completed with opening of Marina Boaters Services Bulding)	X				Ongoing	City DES, Private Sector	3
		C	Establish tours and transportation options for harbor visitors to access destinations outside of the harbor area, including taxis, shuttles or limo services.		X		X	Medium-term	Private Sector, HME (long-term)	NA
4	**Promote fishing in the HMA.**	A	Set aside docks at River Street Marina for charter dockage and passenger interface.		X			Short-term	CHFM	5
		B	Convene a meeting with charter operators and the Genesee Charter Boat Association to discuss and assess interest in the establishment of the River Street marina as a charter hub.		X		X	Medium-term	CHFM	NA
		C	If warranted, secure space in the River Street Train Station for charter use, including ticketing, restrooms, bait sales, lounge, weigh station and other amenities determined to be necessary.	X	X			Medium-term	CHFM	6
		D	Advocate for the retention of access to and upgrade of the east pier for anglers.				X	Ongoing	CHFM , ACOE	11
		E	Retain the public boat launch within the HMA.		X			Ongoing	Mayor, City Council	7
		F	Evaluate the need and location for a weigh station and fish cleaning station to support recreational fishing.			X		Medium-term	CHFM	NA

Objectives *Priority Objectives - detailed further in Section 5.3		Implementation Steps		Implementation Classification				Timeframe	Implementing Agency	Action Plan Map Reference (see Maps 18 & 19)
				Capital Projects	Operations/ Legislation	Study / Research	Other			
5	Increase/improve public waterfront access.	A	Transform the former ferry vehicle loading platform into a space for public gatherings, signage, and/or public art.	X				Short-term	CHFM, Mayor, City Council	8
		B	Convert the former CSX Hojak swing bridge western abutment into a waterfront overlook and fishing access. (To be completed in late 2017)	X		X		Ongoing	City DES	9
		C	Ensure that the waterfront boardwalk running along the east side of the Port Terminal building remains open for public access unless it is in use with the loading or unloading of passengers of an excursion vessel such as a cruise ship.				X	Ongoing	CHFM	10

5.2.3 *Harbor Infrastructure*

Objectives *Priority Objectives - detailed further in Section 5.3		Implementation Steps		Implementation Classification				Timeframe	Implementing Agency	Action Plan Map Reference (see Maps 18 & 19)
				Capital Projects	Operations/ Legislation	Study / Research	Other			
1	**Work with USACOE Buffalo District to secure funding to prepare studies and sponsor projects in the HMA.**	A	Advocate for an appropriation pursuant to the $10 million WRDA authorization to the Rochester harbor in 2007.		X			Ongoing	CHFM, ACOE, HME (long-term)	NA
		B	Implement USACOE design recommendations for the east pier.	X				Short-term	ACOE	11
		C	Complete a study to fully evaluate the impacts of storm surge on the harbor.			X		Medium-term	ACOE, CHFM, HME (long-term)	NA
		D	Evaluate the effectiveness and resiliency of current harbor infrastructure with respect to climate change and water-level changes.	X		X		Short-term	CHFM, ACOE	NA
2	**Monitor and maintain harbor infrastructure.**	A	Centralize and organize harbor maintenance agreements and identify any gaps.				X	Long-term	HME	NA
		B	Identify a responsible entity to centralize and oversee utility and other essential mapping for the harbor.				X	Long-term	HME	NA
		C	Monitor conditions of infrastructure and pursue necessary maintenance funding.	X	X			Ongoing	CHFM, ACOE, HME	NA
3	**Provide infrastructure to maintain the health, safety, and welfare of harbor users.**	A	Assess the potential impacts of hazards to navigation on HMA users and determine if signage or markings are necessary.			X		Medium-term	ACOE, NYSDEC	NA
		B	Educate the public on locations of unmarked navigation obstacles in the HMA boundary.				X	Long-term	NYSDEC, HME	NA
		C	Continue to monitor lighting needs of the east pier.			X		Ongoing	ACOE, USCG	NA
		D	Provide space along the dock wall for public safety agencies to pull over boats for emergencies and boat inspections.				X	Short-term	CHFM	2
		E	Identify a designated location within the HMA for a first aid station.		X		X	Medium-term	Public Safety Agencies	1

5.2.4 *Dredging*

Objectives *Priority Objectives - detailed further in Section 5.3		Implementation Steps		Implementation Classification				Timeframe	Implementing Agency	Action Plan Map Reference (see Maps 18 & 19)
				Capital Projects	Operations/ Legislation	Study / Research	Other			
1	**Cost-effectively maintain dredging depths sufficient for ongoing and long-term planning for excursion and commercial vessels.***	A	Advocate for and coordinate on-going maintenance dredging in the harbor.		X			Ongoing	CHFM , HME (long-term)	NA
		B	Maintain the federal navigation channel to a depth of 21 feet.		X			Ongoing	ACOE	NA
		C	Maintain the river bottom elevation at the terminal dock wall to the design depth of approximately 228'(IGLD85) to accommodate small cruise and excursion vessels.	X				Ongoing	CHFM , City DES , ACOE, HME (long-term)	2
		D	Advocate for the retention of open-lake disposal of dredged materials.		X			Ongoing	CHFM , HME (long-term)	NA
3	**Support harbor-wide collaborative dredging to reduce costs and facilitate permit administration.**	A	Evaluate feasibility of the Draft Regional Dredging Management Plan (7/3/13).			X		Medium-term	CHFM	NA
		B	Convene a meeting with DEC, ACOE and marina/yacht club operators to discuss potential for collaborative dredging.				X	Short-term	Harbor On-water Operations Advisory Committee, CHFM, ACOE, NYSDEC	NA
		C	Evaluate harbor-wide versus regional dredging management plan.			X		Medium-term	CHFM	NA
		D	Implement a collaborative dredging approach.		X			Medium-term	Harbor On-water Operations Advisory Committee, CHFM, ACOE, NYSDEC	NA
4	**Promote engineering solutions in the river to reduce the rate of sediment deposition in the harbor, resulting in the reduced need for dredging.**	A	Commission an engineering study to analyze sediment movement and deposition in the Genesee River and recommend solutions for reducing sedimentation in the harbor.	X		X		Short-term	CHFM , ACOE	NA

5.2.5 *Surface Water Use*

Objectives *Priority Objectives - detailed further in Section 5.3		Implementation Steps		Implementation Classification				Timeframe	Implementing Agency	Action Plan Map Reference (see Maps 18 & 19)
				Capital Projects	Operations/ Legislation	Study / Research	Other			
1	**Improve the boater experience within the HMA.**	A	Expand the harbor website to inform visitors of launching locations, fishing opportunities, weather, special events, water-use rules (swimming, fishing, etc.).		X			Short-term	CHFM, City Communications	NA
		B	Develop a wayfinding program to assist boaters in finding transient docks, boater services, commercial services and other cultural and recreational destinations.			X		Medium-term	City DES, HME (long-term)	NA
		C	Ensure speed limit signs are posted and are conspicuous to boaters.				X	Short-term	USCG, County Sherriff	NA
		D	Evaluate the need for additional boater services as demand increases.				X	long-term	HME	NA
		E	As use of the harbor increases, assess the need for designated water use zones.				X	Medium-term	CHFM	NA
2	**Promote the establishment of landside support facilities and services for boaters.**	A	Add a car top boat launch at the end of Petten Street, allowing boaters to utilize existing City recreational parking on Petten Street.	X				Medium-term	CHFM, City DES	12
		B	A public boat launch will stay within the boundaries of the HMA. If development pressures force the relocation of the boat launch from the port site, the end of Petten Street and the area where Voyager Marine is located have been identified as alternative boat launch locations.	X				Long-term	CHFM, HME, Mayor, City Council	12
		C	As demand increases, evaluate the need for additional trailer parking and dry dock storage.			X		Long-term	HME	NA
3	**Promote and advocate for fishing in the HMA.**	A	Convene a meeting with local charter boat operators and organizations to discuss the establishment of a charter hub at River Street Marina.				X	Medium-term	CHFM	NA
		B	Retain access to and provide upgrades to the east pier for anglers.	X				Short-term	ACOE	11
		C	Retain a public boat launch in the HMA.				X	Ongoing	CHFM	12
		D	Advocate for continued fish stocking in the Genesee River.				X	Ongoing	Private Sector, NYSDEC, USFWS	NA
		E	Evaluate the need and location for a weigh station and fish cleaning station to support recreational fishing.			X		Medium-term	CHFM	NA

5.2.6 *Natural Resources*

Objectives *Priority Objectives - detailed further in Section 5.3		Implementation Steps		Implementation Classification				Timeframe	Implementing Agency	Action Plan Map Reference (see Maps 18 & 19)
				Capital Projects	Operations/ Legislation	Study / Research	Other			
1	**Implement policies and practices that maintain and improve water quality in the river and lake.**	A	Develop and implement design guidelines to ensure that future development projects in the HMA maintain and/or improve water quality.		X			Medium-term	City NBD, City DES, CHFM	NA
		B	Implement recommendations identified in the Genesee River Basin Action Strategy.	X		X		Ongoing	City Departments, State Agencies, Federal Agencies, HME (long-term)	NA
		C	Coordinate with the Center for Environmental Initiatives Genesee Riverwatch program and identify recommended approaches that may have beneficial impacts on water quality in the HMA.	X			X	Short-term	CHFM	NA
		D	Incorporate a riparian buffer ordinance into the City's Open Space District regulations to prevent the clearing of vegetation along the Genesee River shoreline		X			Short-term	City NBD, CHFM	NA
		E	Continue to monitor the findings and recommendations presented in the USEPA *Work Plan for RCRA Facility Investigation in the Lower Genesee River Area of Concern* to identify future remedial efforts in the River.		X			Short-term	City DES, Monroe County Health Department, CHFM	NA
2	**Implement policies and practices that ensure the long-term maintenance and protection of natural habitats.**	A	Support the goals identified in the International Joint Commission Plan to enhance natural habitats along the lakeshore.		X			Short-term	CHFM, Mayor, City Council	NA
		B	Advocate for the USACOE and USFWS to select the City of Rochester for additional riparian wetland restoration projects along the Genesee River.		X			Short-term	ACOE, USFWS, County Health Department, City DES, CHFM	NA
3	**Preserve and protect scenic resources.**	A	Ensure significant aesthetic resources, as noted in Section 2.9.8 of the HMP, are considered as part of future planning and development projects in the HMA.		X			Ongoing	City NBD, City DES, CHFM	NA


CITY of ROCHESTER
PORT of ROCHESTER - GENESEE RIVER HARBOR MANAGEMENT PLAN
Map 18
ACTION PLAN MAP
MARCH 2015
Legend
Harbor Management Area Boundary
Municipal Boundaries
Parcel Boundaries
Federal Navigation Channel
Existing Speed Limit Sign
City Dredging Permit Limits
Public Improvement Projects
Lake Ontario
Charlotte Pier
Summerville Pier
Ontario Beach Park
Bergmann


Lake Ontario
CITY of ROCHESTER
PORT of ROCHESTER - GENESEE RIVER HARBOR MANAGEMENT PLAN
Map 19
ACTION PLAN MAP (DETAIL)
MARCH 2015
Legend
Harbor Management Area Boundary
Municipal Boundaries
Parcel Boundaries
Federal Navigation Channel
City Dredging Permit Limits
Public Improvement Projects
Ontario Beach Park
Beach Ave
Estes St
Lake Ave
Hincher St
Fleming St
Lighthouse St
Lydia St
Bergmann

5.3 Priority HMP Objectives

5.3.1 Formalize Management of City-Owned Harbor Facilities

The City of Rochester is a major property owner within the HMA and is responsible for the oversight and maintenance of most of the amenities and infrastructure, including the Terminal Building, Terminal Dock Wall, River Street train station, public boat launch, Port of Rochester Marina, River Street Marina, overlooks, trails, and associated parking lots.

Interdepartmental coordination remains one of the most significant challenges to overall management of the Harbor. As noted in Section 2.12 there are a number of Departments and Bureaus within City government that have various responsibilities relating to harbor management, though there is no formal operational structure or communication protocols in place.

In order to accomplish the implementation activities identified in the Action Plan, the City must first formalize a management structure for harbor maintenance and operations. This may involve an organizational restructuring within city government, retaining a contractor to oversee City harbor facilities, or the establishment of a system of protocols established to ensure interdepartmental coordination. This newly-formed management is referred to as the City Harbor Facilities Management (CHFM) in the above Action Plan.

5.3.2 Determine the future of the Port Terminal Building

The Terminal Building is currently owned by the City of Rochester. The City has not had the resources to dedicate to marketing and programming the space in the Terminal Building. A full assessment of the disposition alternatives for the building should be conducted and a decision made as to the best path for getting the building fully occupied and programmed.

5.3.3 Improve Collaboration, Advocacy, and Promotion in the Harbor

Through the HMP planning process, including stakeholder feedback, it was determined that an On-water Operations Advisory Committee would be beneficial to improving collaboration in the HMA and could provide a single voice for harbor advocacy and promotion. It is proposed that this advisory committee would be assisted and supported by City staff but would not equate to another level of governance within the harbor. The role of this group, as envisioned during this process, would be to serve in an advocacy role and to ensure there are open lines of communication between harbor property owners, harbor users, authorities and City Hall. The committee could also provide input into the decision-making regarding long-term management solutions for the harbor. The first task of the committee would be to collectively map out the areas of the harbor they currently use for their operations, areas they would like to use for future operations, and the areas they routinely dredge. The private use areas mapping would then be combined with the public areas currently included in the HMP map. This water use map would be useful for collaboration and information for public safety and other government agencies present in the harbor.

In addition to creating an advisory committee, overall branding, promotions, and communications that relate specifically to the harbor and harbor operations could be improved. A Rochester harbor

logo and brand could create interest and excitement for harbor events and promotional materials. A unique website that promotes and coordinates harbor events and activities would benefit the community, region and visitors. There are great models from other harbors that the City could emulate. One example of a benefit of an interactive and harbor-oriented website is for a visiting boater who wishes to visit Rochester via the harbor; they could get directions on the harbor entrance and where to dock their boat, obtain a docking permit on-line, link up with tours to local and regional attractions, then make hotel reservations all from the City harbor website.

5.3.4 Promote Rochester as a Cruise Ship Destination

In 2016, the USACOE conducted a study (Appendix Q) of the economic feasibility of Rochester as a cruise destination or Port of Call. According to the study, the Port of Rochester is well suited for Great Lakes cruise ships, having access to all the typical services required by ships when they call. The depth at the Terminal Dock Wall is the only major infrastructure requirement that needs to be addressed to allow any notable increase in Great Lakes cruise ship activity. Dredging the Terminal Dock Wall in coordination with the U.S. Army Corps of Engineers' maintenance dredging is a lower cost opportunity to maintain access to the terminal for cruise ships.

Having a functional port though does not guarantee that Great Lakes cruise ships will call on the port. Great Lakes cruising appears to be a niche industry. There are only three companies operating four vessels on the Great Lakes. Discussion with the operating companies indicated that there is the possibility for future expansion though it is fairly uncertain. What is positive is the current demographics of the industry. Great Lake cruises are dominated by an older clientele. With the retirement of baby boomers and the current economic expansion, there is room for growth in this industry subset.

Currently, Great Lakes cruise ships generate limited economic benefit for the city of Rochester and the region at large. In terms of the number of passengers, it should be noted that six calls from either the Grande Caribe or Grande Mariner on the port in a given year equates to approximately 15% of what a large ocean-going cruise ship can carry in one trip. Even in a high growth scenario, where an anticipated 3,094 Great Lakes cruise ship passengers would call on the port, that would still represent less than what one of the larger ocean-going cruise ships could carry (note: estimation based on the 2006 built Freedom of the Seas cruise ship which has a max capacity of 3,634 passengers. The largest cruise ships can carry in excess of 5,000 passengers).

As for the port becoming a port of embarkation, the analysis would appear to indicate that this is unlikely. With the location of Montreal and Toronto, competition is stiff. Both cities offer excellent flight service for guests before and after tours. Rochester would have a hard time competing with this in terms of cost.

According to the ACOE study, the best chance for Rochester becoming a port of embarkation would be if the Blount Cruise Lines decided to create a shortened itinerary that navigated the Erie Canal, running from Rochester to New York, NY or Warren, RI, and vice versa. This would be a niche tour that Blount's vessel could exclusively provide. It would also avoid any customs requirements. This would be a weekly tour, which would also be less expensive for guests and might drive additional demand. The study noted that this idea was not mentioned by Blount representatives and is merely an idea based on current itineraries.

5.3.5 *Collaborate and Advocate for Necessary Dredging*

Use of the harbor by the Essroc cement company is a significant commercial operation that is critical to the designation of the HMA as a commercial port by the USACOE. Essroc's cement is shipped in on a freighter, usually the *Stephen B. Roman*. Essroc is the only major cement supplier in the region and, due to the transportation cost savings associated with water-borne shipping, is able to provide this material at lower costs than would be possible were the material to be shipped into the region via truck. Dredging of the harbor is essential to Essroc remaining viable at the Boxart Street location. The loss of Essroc would mean:

- Loss of at least 17-20 jobs in the City of Rochester;
- Loss of approximately $3-4 million in annual economic output in Monroe County;
- Loss of approximately $400 thousand in annual state and local tax revenue.
- 15% increase in the cost of cement and its ripple effects to the local economy.

Ongoing dredging that is part of a long-term dredging plan for the federal navigation channel is also essential to attracting and retaining cruise ships. Cost-effectively maintaining dredging depths sufficient for excursion and commercial vessels is an important economic driver for the City of Rochester. For dredging of the navigation channel, this will require the City to be vigilant in its advocacy for federal funding for dredging. In addition, the Terminal Dock Wall must be maintained to a specific depth to allow for the docking of large excursion vessels, such as cruise ships. Dredging in this area of the River is outside the navigation channel and is therefore the responsibility of the City.

5.4 Harbor Management Entity (HME) to Oversee Harbor-wide Operations

While the City will continue to play a role in the long-term management and operations of the harbor due to the city ownership of many harbor facilities, an overall coordinating body may be warranted in the future to address the needs of a growing harbor with its many activities, events, competing interests, public safety matters, and stakeholder issues. A Harbor Management Entity (HME) that can identify, facilitate, and execute solutions within the HMA for positive community, environmental, and economic impact could become imperative to its long-term viability.

As part of the overall HMP development, a study was undertaken (Management Analysis, see Appendix S) which evaluated a range of potential management options that could effectively implement the initiatives identified in the HMP Action Plan. In addition, a meeting with harbor stakeholders and property owners was convened to gauge their feedback on a long-term management solution for harbor activities.

Both the results of the Management Analysis and stakeholder feedback indicated an On-water Operations Advisory Committee would be beneficial to regularly bring together harbor stakeholders and provide an opportunity to advocate and promote for on-water actions in the HMP.

According to the Management Analysis, the recommended long-term HMP management and organization structure should be inclusive and responsive to a wide variety of identified HMP issues. The organization should allow for varied degrees of responsiveness and management agility

to address issues, including those that are already identified in the HMP and those that are as yet unidentified. Organizational strength and sustainability, along with capability to take quick action when appropriate, should be defining qualities of the HME.

The role of the HME could be far-reaching, including but not limited to day-to-day operations, outreach, education, stakeholder collaboration, agency coordination, marketing, grant writing, advocacy and planning. The Action Plan, identified in Section 5.2, indicates specific implementation techniques identified through the HMP process that would be the responsibility of the HME. With limited City staff and resources, many of these action items may not be completed in the absence of a defined HME.

5.5 Summary of Potential Funding Resources

Implementation of the HMP will be driven, in part, by the availability of funding resources. Potential funding resources noted in Section 5.2, The Action Plan are described in further detail below.

City and County Operating Budget and Capital Improvement Plan Budget

The City and the County fund maintenance and operations of the City and County facilities and events out of their respective operations and capital budgets. The City Operating Budget is an annual budget that accounts for City staffing and programming. The City Capital Improvement Plan (CIP) is an annually updated five-year expenditure plan for City projects and infrastructure. The City Department of Environmental Services is currently in the primary role of managing CIP planning and requests for the facilities within the HMA that are under City control. The County Parks Department manages CIP planning and requests for facilities within Ontario Beach Park.

Consolidated Funding Application (CFA)

The New York State CFA consolidates over 30 programs available through 12 state agencies, acting as a single entry point for access to funding. The CFA replaces multiple applications for funding with a single, annual application for economic development resources. Applications are coordinated through the Regional Economic Development Councils and grant resources are available for projects that align with the Regional Economic Development Plan. Some of the resources described in this section are accessed through the CFA process.

Specific funding sources and programs can change from year to year and should be monitored. In future years, some programs may be phased out while other new programs are added.

New York State Division of Homeland Security and Emergency Services

Emergency Management Performance Grant Program (EMPG)

The purpose of the EMPG program is to support a comprehensive, all hazard emergency preparedness system by building and sustaining the core capabilities contained in the National Preparedness Goal. Examples include:

- Completing the Threat and Hazard Identification and Risk Assessment (THIRA) process;

- Strengthening a state or community's emergency management governance structures;
- Updating and approving specific emergency plans;
- Designing and conducting exercises that enable whole community stakeholders to examine and validate core capabilities and the plans needed to deliver them to the targets identified through the THIRA;
- Targeting training and verifying identified capabilities;
- Initiating or achieving a whole community approach to security and emergency management.

New York State Environmental Protection Fund

Funding through various programs of the NYS Environmental Protection Fund are available through the Consolidated Funding Application process noted above.

Water Protection (WPIQ) Grants – New York State Department of Environmental Conservation

The WQIP program is a competitive, reimbursement grant program that directs funds from the New York State Environmental Protection Fund to projects that reduce polluted runoff, improve water quality and restore habitat in New York's waterbodies.

- Nonagricultural Nonpoint Source Abatement and Control (NPS)
- Municipal Wastewater Treatment (WWT)
- Aquatic Habitat Restoration (AHR)
- Municipal Separate Storm Sewer Systems (MS4)

Local Waterfront Revitalization Program (LWRP) – New York State Department of State

The NYSDOS administers LWRP funding which can be utilized for waterfront improvement projects in conjunction with an approved LWRP document. Funds can be utilized for planning, design and capital improvements, including the preparation of design and construction documentation for infrastructure and shoreline improvement projects, as well as trails and parks

NYS Environmental Facilities Corporation (EFC)

Funding from the NYS EFC is currently available through the Consolidated Funding Application process.

Green Innovation Grant Program (GIGP)

The Green Innovation Grant Program (GIGP) supports projects across New York State that utilize unique stormwater infrastructure design and create cutting-edge green technologies. Eligible projects include:

- Permeable pavements
- Bioretention/bioswales
- Green roofs and green walls

- Stormwater street trees
- Construction or restoration of wetlands, floodplains, or riparian buffers
- Stream daylighting
- Downspout disconnection
- Stormwater harvesting and reuse

Clean Vessel Assistance Program (CVAP)

Provides grants to marinas for the installation, renovation, and replacement of pumpout stations for the removal and disposal of recreational boater septic waste.

CVAP provides up to 75% of eligible project costs up to $60,000 to marinas, municipalities and not-for-profit organizations for installing pumpout boats and up to $35,000 for installing or upgrading stationary pumpout units or upgrading pumpout boats. Additional CVAP grants are also available for the operation and maintenance of pumpout facilities, as well as educational projects that address the benefits, use, and availability of pumpout stations.

NYSERDA Cleaner, Greener Communities Program Implementation Grants for Planning Initiatives

The New York Cleaner, Greener Communities Program empowers regions to create more sustainable communities by funding smart growth practices and projects consistent with the Finger Lakes Regional Sustainability Plan (FLRSP). The FLRSP was developed through a partnership among public and private experts and recommends implementation projects that significantly improve the economic and environmental health of the region.

NYSERDA is offering a total of $90 million in potential funding available to support the Implementation Phase (Phase II) of the Cleaner, Greener Communities Program. Funding is offered through the annual CFA process. According to the NYSERDA website, "grants will be awarded to market-transforming sustainability initiatives that accelerate the adoption of sustainable planning and development practices." These grant funding opportunities have been categorized as follows:

- Category 1 – Photovoltaic and Electric Vehicle Supply Equipment Permitting Incentive;
- Category 2 – Planning Initiatives; and
- Category 3 – Community-Scale Sustainability Projects.

NYS Office of Parks, Recreation, & Historic Preservation (OPRHP)

OPHRP funds are currently applied for and allocated through the annual CFA process, with the exception of the Boating Infrastructure Grant Program.

Boating Infrastructure Grant Program

The Sportfishing and Boating Safety Act of 1998 (Public Law 105-178), administered though the U.S. Fish & Wildlife Service, established the Boating Infrastructure Grant Program (BIG) which provides

funding opportunities for the development and maintenance of facilities for transient non-trailerable recreational vessels. The New York State Office of Parks, Recreation, and Historic Preservation is the designated state agency to administer the BIG program in New York. Rochester's HMA was the beneficiary of BIG funding for the new public marina at the Port of Rochester.

Funding is available for the development and maintenance of boating infrastructure (facilities for transient non-trailerable recreational vessels), including mooring buoys, day docks, navigational aids, transient slips, safe harbors, floating docks and fixed piers, floating and fixed breakwaters, dinghy docks, restrooms, retaining walls, bulkheads, dockside utilities, pumpout stations, recycling and trash receptacles, dockside electric service, dockside water supplies, dockside pay telephones, debris deflection booms and marine fueling stations.

Eligible Activities:

- Construct, renovate, and maintain either publicly or privately owned boating infrastructure tie-up facilities;
- one time dredging only to give transient vessels safe channel depths between the tie-up facility and maintained channels or open water; (sometimes allow for depths greater than 6' if justified). The dredging cannot exceed 10% of total BIG project costs.
- install navigational aids, limited to giving transient vessels safe passage between the tie-up facility and maintained channels or open water;
- grant administration;
- preliminary costs (appraisals, environmental reviews, permits, feasibility studies, site surveys, site planning, preparing cost estimates, construction plans and specifications);
- information and education materials.

Ineligible Activities:

- Projects that do not provide public benefits or are not open to the public;
- involve law enforcement activities;
- significantly degrade or destroy valuable natural resources or alter the cultural or historic nature of the area; construct or renovate principal structures not expected to last at least 20 years;
- maintenance dredging;
- fund operations or routine, custodial, and janitorial maintenance of the facility;
- tie-up facilities available for occupancy for more than 10 consecutive days by a single party;
- dry land storage;

- haul-out features;
- boating features for trailerable or "car-top" boats such as launch ramps and carry-down walkways;
- conduct surveys

Municipal Grants Program (parks, historic properties, heritage areas)

A matching grant program for the acquisition, development and planning of parks and recreational facilities to preserve, rehabilitate or restore lands, waters or structures for park, recreation or conservation purposes and for structural assessments and/or planning for such projects. Funds may be awarded to municipalities or not-for-profits with an ownership interest, for indoor or outdoor projects and must reflect the priorities established in the NY Statewide Comprehensive Outdoor Recreation Plan (SCORP).

U.S. Environmental Protection Agency (EPA)

Great Lakes National Program, Great Lakes Fish Monitoring and Surveillance Program (GLNP)

Funding can be granted directly to municipalities for planning, research, monitoring, outreach and implementation projects in furtherance of the Great Lakes Restoration Initiative and the Great Lakes Water Quality Agreement. The program collects fish from each Great Lake annually and analyzes them for contaminants that bioaccumulate to assess trends in the open waters of the lakes. The GLFMSP consists of two separate programs, the Open Lakes Trend Monitoring Program and the Emerging Chemical Surveillance Program. The Sport Fish Fillet Monitoring Program was eliminated in 2008.

- *Open Lakes Trend Monitoring.* This program, established in the late 1970s, monitors contaminant trends in whole fish in open waters of the Great Lakes and evaluates the effect of toxics on fish and fish consuming wildlife.
- *Sport Fish Fillet Monitoring Program*. This program was directed at monitoring potential human exposure to contaminants through consumption of popular sport fish species in the Great Lakes Basin.

Urban Waters Small Grant Competition

Funding can be granted directly to municipalities. The program funds research, investigations, experiments, training, surveys, studies, and demonstrations that will advance the restoration of urban waters by improving water quality through activities that also support community revitalization and other local priorities. In previous years, grants ranged from $30k – $60k. In general, projects should meet the following four program objectives:

- Activities to improve and restore local urban water quality;
- Engage, educate and empower local residents and entities;
- Support community priorities; and
- Involve underserved communities.

Federal Emergency Management Agency (FEMA)

Pre-Disaster Mitigation Grant.

The Pre-Disaster Mitigation (PDM) program provides funds for hazard mitigation planning and projects on an annual basis. The PDM program is available to local governments. It was put in place to reduce overall risk to people and structures, while at the same time, also reducing reliance on federal funding if an actual disaster were to occur.

ACOE Funding

Water Resources Development Act

The Water Resources Development Act (WRDA), currently named the Water Resources Reform and Development Act (WRRDA), authorizes the United States Army Corps of Engineers to do various water related projects, such as improvements to ports or flood protection. WRDA is usually passed every few years since 1974, but there was a gap between 2007 and 2014. In WRDA 2007 (excerpts in Appendix N), Congress authorized the appropriation of $10 million dollars for "the ecosystem restoration, navigation, flood damage reduction, and recreation components of the Port of Rochester Waterfront Revitalization Project."

In WRRDA 2014 (Appendix H), funding authorizations in WRDA's prior to 2007 that have not resulted in a project were "deauthorized." This deauthorization of projects should be a warning that Rochester must work diligently with the ACOE to consider advancing, near term, a harbor project that meets the objectives indicated in this document.

Operations and Maintenance Budget

The ACOE manages its annual Operations and Maintenance budget to undertake projects that further their primary authorities of navigation, flood control, and environmental restoration. As an example, dredging of the federal channel and pier repairs would fall under their authority.

Planning Assistance to States

Section 22 of the Water Resources Development Act of 1974 provides authority for the Corps of Engineers to assist local governments and others in the preparation of comprehensive plans for the development and conservation of water and related land resources. These studies are called Planning Assistance to States (PAS). PAS studies are undertaken at the planning level of detail; they do not include detailed design for project construction

GLRI funding

The USACOE can use GLRI funding for water quality related activities including: removal of contaminated sediments from AOC's; restoration of wetlands and other critical habitat; planning and design of restoration projects; and, provision of technical support. The GLRI Legacy Act funding has been a particularly useful source of funds in the HMA. See Section 2.9.2.

[i] **Sources for Section 1.3.4**

Books

JA Termotto Sr: LIFE BEYOND HERE - Visiting History in the "Community of Great Lake Ontario." (2004)
Bill Davis: Tribute No.3 to Ed Spelman, "The Story of Ontario Beach Park", (10/27/92)
Bill Davis Overlook/Outdoor Museum (Interpretive signage text)
Blake McKelvey : Rochester on the Genesee: The Growth of a City (April 1993)
Rochester: A Brief History (November 1984)
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Rochester Learns To Play: 1850-1900, Volume 8 (July 1946)
Blake McKelvey and Ruth Rosenberg-Naparsteck: Rochester: A Panoramic History (November 2001)
Ruth Rosenberg-Naparsteck and Edward Curtice: Runnin' Crazy: A Portrait of the Genesee River
Joan Sullivan: Rochester History, Volume XLV (July & October 1983)published by the Rochester Public Library/Entrepeneurship in the Genesee Country
Joseph Barnes: Rochester History, Volume XXXVII (January 1975) published by the Rochester Public Library/ The Annexation of Charlotte
Richard W. Flint : Meet me in Dreamland, the Early Development of Amusement Parks in America, Pages 99-106 (Not Dated)
Laws of New York: Ch. 806 Title 3, Rochester Monroe County Port Authority (Enacted 4/16/1958)
Rochester-Monroe County Port Survey by Water P. Hedden, Port Development Consultant (June 1957)
Wave Surge Project Cooperation Agreement/Appendix A (2/21/1996)
Port of Rochester/Annual Report, Division of Engineering/DPW (not dated)

Articles from News Publications (Provided by Marie Poinan)

Buffalo Evening News (March 5, 1924) "Would Change Name of Port of Charlotte" (to Port of Rochester)
The Geneva Times (June 23, 1958) "With Seaway Opening —Port Activity May Boom"
Unidentified publication: Volume 42. No. 35 (June 10, 1976) Robach Bill Passes in Assembly
Unidentified publication (March 31, 1931)"Bill May Be Hurried to (State) Legislature"
Greece Post (July 29, 1976) "Schooner Days...Flash Back to Mastheads, Steampower"
Rochester Democrat & Chronicle:

- (January 18, 1913) "Better Harbor Or Fight, Cry of Delegation"
- (February 21, 1916) "Rochester Becomes Port of Lake Ontario through Order of the President"
- (April 30, 1926) "Way Cleared For Changing Harbor Name"
- (June 24, 1930) "Harbor Bill Defeated by Council Tie"
- (December 12, 1930) "Organized For Port Inquiry"
- (February 10, 1933) "Port Board Said Needed By Rochester"
- (October 4, 1933) "First Ocean Cargo Ship to Dock Here"
- (November 6, 1933) "Greater 1934 Use of Port Aim of Harbor Commission"
- (October 1982) "City Regains Waterfront", Steve Orr
- (May 1991) "Ontario Beach Park", Lloyd Klos

Articles from the Web

Rochester Sail and Power Squadron http://www.usps.org/localusps/rochester/about_us.htm
The History of the U.S. Coast Guard at Rochester, N.Y., Michael Scott and Chilloa Young (12/3/1988)

http://www.uscg.mil/history/stations/CHARLOTTE.pdf
The Charlotte Genesee Lighthouse http://www.seathelights.com/ny/charlotte.html
Charlotte-Genesee, NY http://www.lighthousefriends.com/light.asp?ID=304
Charlotte Genesee Lighthouse Historical Society http://www.geneseelighthouse.org/
The Charlotte-Genesee Lighthouse and the Lights of Rochester Harbor
http://www.lighthousedigest.com/Digest/StoryPage.cfm?StoryKey=3467
Rochester History Central Library http://www.libraryweb.org/~rochhist/indexo.htm
Ontario Car Ferry http://www.cobourghistory.org/harbour/car-ferry
Charlotte http://www.lowerfalls.org/maplewood/charlotte.php
The Hojack Line http://www.rochester-railfan.net/structur.htm#hojack
Rochester Yacht Club http://www.rochesteryc.com/files/
Genesee Yacht Club http://www.geneseeyc.org and from member, Darbbie Thomas
Charlotte & Port History/Charlotte Community Association http://charlottecca.org/history.asp
Summerville Pier, Bob Marcotte http://media.democratandchronicle.com/retrofitting-rochester/summerville-pier

Public Meeting 1 | March 31, 2014

MEETING SUMMARY

March 31, 2014

Meeting Attendees

Please see attached list of meeting attendees.

Summary

1 Welcome and Introductions

Dorraine Kirkmire (City of Rochester) opened the meeting with welcoming remarks, introduced the project team, provided an overview of the meeting's agenda and explained what a Harbor Management Plan is and how it relates to the LWRP. Ms. Kirkmire then introduced Kimberly Baptiste (Bergmann Associates), who delivered the presentation portion of the meeting (the meeting also included an Open House after the presentation).

2 Project Overview

Kimberly Baptiste provided an overview of the purpose and benefits of a Harbor Management Plan and described how it relates to the City's Local Waterfront Revitalization Program (LWRP) and Port Public Marina & Mixed Use Development Project. Ms. Baptiste then described the location of the project boundary and the process used to identify this boundary. The project boundary includes only waterfront parcels or those parcels with a direct use connection to the water (e.g., marinas, bars, etc) and extends 1,500 feet north from the Lake Ontario shoreline.

Ms. Baptiste followed the discussion of the project boundary by describing the composition of the Harbor Management Area (HMA) in terms of land area and water area, total number of parcels and the amount of land in the City of Rochester and the Town of Irondequoit. The next topic discussed was the overall project schedule, including the Project Team's progress on the inventory and analysis of existing conditions.

3 Key Findings – What We've Learned

Kimberly Baptiste presented an overview of the Key Findings, which were developed based on a review of available data and extensive stakeholder outreach efforts. The Key Findings were grouped into the following categories:

- Harbor Services & Amenities
- Management & Operations
- Harbor Infrastructure
- Dredging & Commercial Use
- Jurisdictions & Authorities
- Surface Water Use
- Water Quality/Lake Levels
- Education

Meeting attendees were requested to wait to provide comments and ask questions after the formal presentation and during the Open House portion of the meeting (see below). Ms. Kirkmire noted that the Key Findings will be available on the City's website and that the comment period will be open until April 16, 2014.

4 Next Steps

Following the overview of the Key Findings, Ms. Baptiste discussed the next steps in the Harbor Management Plan process, which include:

- Reviewing comments from the public meeting;
- Reviewing comments from the public comment period;
- Developing draft Objectives and Implementation Techniques; and
- Preparing for and holding the second Public Meeting.

5 Open House Comments

Following the formal presentation, meeting attendees were asked to participate in an Open House, which allowed them to comment on the individual Key Findings and discuss project details with Project Team members. Below is a summary of the comments provided during the Open House portion of the meeting:

Jurisdictions & Enforcement

- The following comments were provided by various public safety officers that attended the meeting:
    - The City's fireboat should be able to address fire suppression, hazardous material spill management, water rescue, incident management, and emergency care and response.
    - A public safety facility at the port should be jointly used by the RPD, the RFD, US Border Patrol, US Customs, US Coast Guard, MCSO, Park Police and the NYSDEC. This facility would ideally include a meeting area, restroom, response boat dockage and/or storage, possible fueling station, first aid facilities, and act as a beacon for community interaction.
    - It would be beneficial if a secure, inside boat storage/maintenance facility was available for RPD/RFD boats, including lifts for extending the season and improving response vehicle availability. River-side dockage would also be useful. Both would make deployment easier and go more smoothly.
    - Increased signage is needed for the rules of the Harbor, fire safety on vessels, life vest information and general boater safety.
- There needs to be some discussion of the Public Trust Doctrine in relation to the shore.
- I want to see a more active, strong public collaboration between the IJC and other water-related agencies. The public needs to know the City's involvement since this always seems to be private. The City must take an active, public support of Louise Slaughter's work for Legislation to have Congress declare the St. Lawrence-Great Lakes Basin a national commercial waterway. Much of the economic and environmental issues will be easier to manage with his type of designation. It will be a national public statement and the City can reap monetary benefits.

Public Meeting 1 | March 31, 2014

Harbor Services & Amenities

- Don't underestimate shopping mall as a destination
- There is a pump-out available at Shumway Marina
- A fenced-in dog-running area would be useful for boaters as many bring their pets when they travel.

Harbor Infrastructure

- We need to improve water access and provide more launch facilities for all sizes of boats.
- How about a signature lighthouse at the end of the West Pier, something that says you're in Rochester.

Dredging & Commercial Use

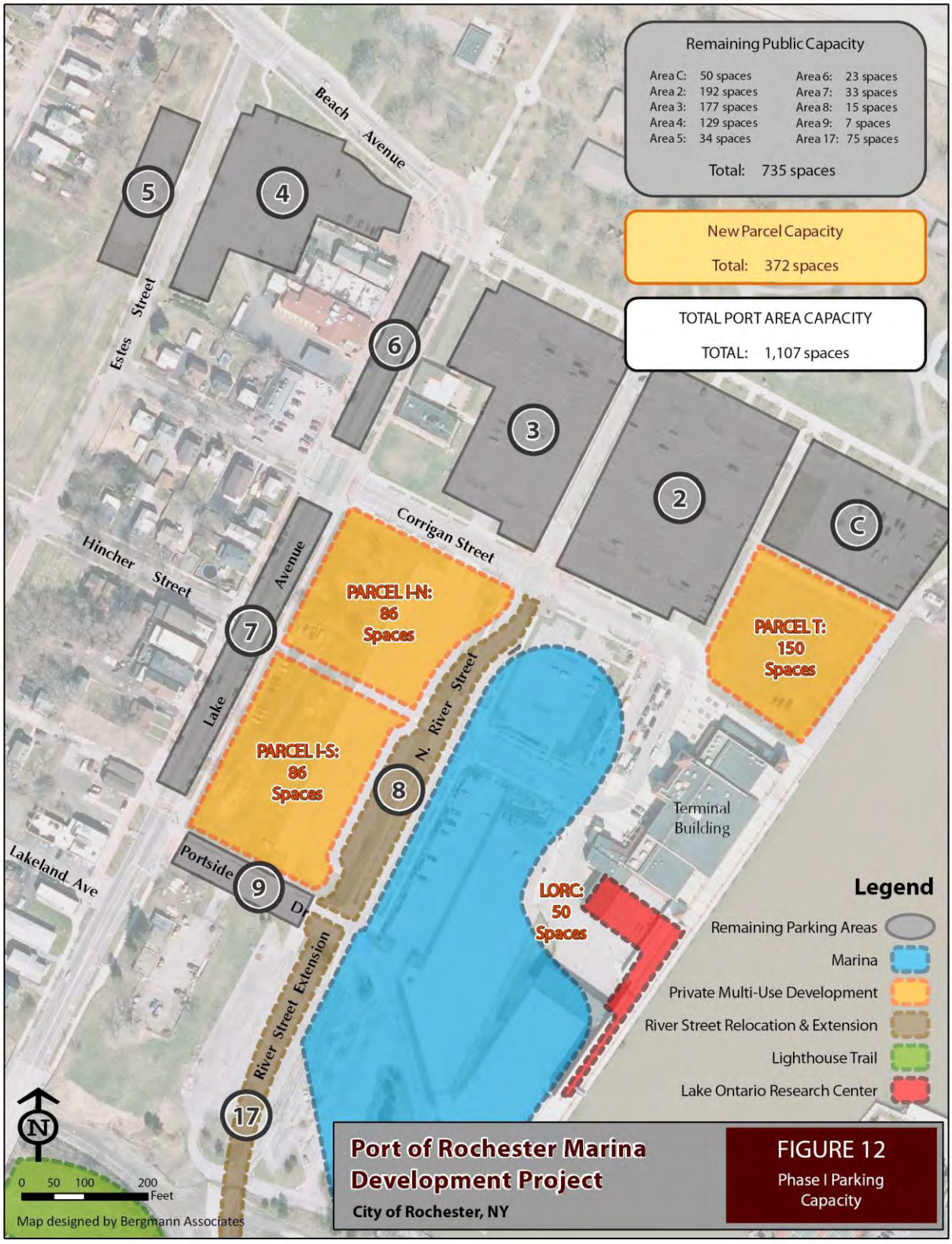
- The City should lobby our federal representatives to free-up money from the Harbor Management Trust Fund.
- Developing a comprehensive dredging plan that includes the River, marinas and yacht clubs is very important.

Surface Water Use – Fishing

- This plan should also consider the USGS/NYSDEC sturgeon restoration efforts in the Genesee River.

Surface Water Use – Boating

- There is an 8-hour boater safety course required for all personal watercraft (new NYS law under Gov. Cuomo).
- Reach out to CSX to determine what its future plans are for the rail line located in the HMA.
- How did you determine the need for more docks when there are empty slips along the River?
- A water taxi to the area south of the Pioneer Cemetery would take advantage of the great views of the River
- Will the boat launch ramp and parking remain in its current location or move to somewhere not adjacent to the marina ingress/egress?


Remaining Public Capacity
Area C: 50 spaces
Area 2: 192 spaces
Area 3: 177 spaces
Area 4: 129 spaces
Area 5: 34 spaces
Area 6: 23 spaces
Area 7: 33 spaces
Area 8: 15 spaces
Area 9: 7 spaces
Area 17: 75 spaces
Total: 735 spaces
New Parcel Capacity
Total: 372 spaces
TOTAL PORT AREA CAPACITY
TOTAL: 1,107 spaces
Beach Avenue
Estes Street
Corrigan Street
Hincher Street
Avenue
Lake
N. River Street
Lakeland Ave
Portside
Dr
River Street Extension
PARCEL I-N: 86 Spaces
PARCEL I-S: 86 Spaces
PARCEL T: 150 Spaces
LORC: 50 Spaces
Terminal Building
5
4
6
3
2
C
7
8
9
17
Legend
Remaining Parking Areas
Marina
Private Multi-Use Development
River Street Relocation & Extension
Lighthouse Trail
Lake Ontario Research Center
N
0 50 100 200 Feet
Map designed by Bergmann Associates
Port of Rochester Marina Development Project
City of Rochester, NY
FIGURE 12
Phase I Parking Capacity

Planning Guidance Letter #97-06

Cruise Ships and Benefits to Navigation

CECW-PD (7 July 1997)

MEMORANDUM FOR MAJOR SUBORDINATE COMMANDS AND DISTRICT COMMANDS

SUBJECT: Planning Guidance Letter No. 97-6, Cruise Ships and Benefits to Navigation

1. Purpose. This letter provides implementing guidance for Section 230 (Benefits to Navigation)of the Water Resources Development Act (WRDA) of 1996. This guidance will be incorporated into the revision of ER 1105-2-100, Guidance for Conducting Civil Works Planning Studies.

2. Background. The WRDA of 1996 directs the U.S. Army Corps of Engineers to categorize all benefits generated by cruise ships as commercial navigation benefits. Benefits of navigation improvements affecting cruise ships arise from more efficient ship operations and increased tourism or enhanced tourism experience. Prior to the 1996 WRDA efficiency improvement was classified as commercial navigation and improved tourism was classified as recreation. Categorization of benefits matters because the Corps considers commercial navigation one of its high priority missions.

3. Guidance. Consistent with section 230, feasibility studies should consider economic benefits generated by cruise ships as commercial navigation benefits for project justification and cost sharing purposes.

4. Discussion. Cruise ships that operate out of existing Federal channels and harbors will receive equal consideration with other commercial navigation vessels for Federal harbor or channel improvements. Likewise, where new channels are required for cruise ships they will be treated like other new channel decisions for other commercial navigation vessels. That is, when new channels or harbors are constructed by non-Federal interests, Federal assumption of navigation maintenance may occur consistent with Section 204(f) of WRDA 1986 (as amended by Section303(b)(1) of WRDA 1990), if approved by the Secretary of the Army for Federal assumption of maintenance prior to construction

FOR THE COMMANDER:

(Signed) RUSSELL L. FUHRMAN, Major General, USA, Director of Civil Works

US Army Corps of Engineers

Great Lakes Navigation System

Rochester Harbor, NY

Harbor Features

- Located on Lake Ontario in the city of Rochester, Monroe County, New York
- Authorization: River & Harbor Acts of 1829, 1882, 1910, 1935, 1945 and 1960
- Deep draft commercial harbor
- Project depths are 24 feet in the approach channel, 23 feet in the entrance channel and 21 feet in the Genesee River
- 104K tons of material shipped and received in 2013
- Protective structures include the east and west piers that total approximately 1.1 miles in length
- Lake approach, entrance, and Genesee River federal channels total approximately 2.7 miles in length
- Major stakeholders include the Rochester-Monroe County Port Authority, Port of Rochester, U.S. Coast Guard, and Essroc Cement Corporation

Project Requirements

- Approximately 220,000 cubic yards of material must be dredged every 2 years. The harbor was last dredged in 2015 when approximately 290,000 cubic yards of material was removed. Maintenance dredging is scheduled to be completed in 2016.
- Sandy supplemental funded dredging of approximately 200,000 cubic yards of material from storm impacted harbor areas was completed in Summer 2014.
- Approximately 1000 feet of the east pier is severely deteriorated and in need of repairs.



Consequences of Not Maintaining the Project

- Reduction of bulk commodities that pass through the harbor and generate $610M annually in business revenue while supporting 3,681 direct, indirect, and induced jobs that produce over $183M per year in personal income in the transportation and commodity related industries.
- If the harbor were closed to commercial traffic, commodities would have to be transported by truck. This would increase annual emission rates by over 9,001 tons of harmful particulate matter (PM-10) and increase costs by $1,401,000 due to increased trucking related accidents.
- Light loading; losses of between 3 and 4 feet of channel depth would result in increased transportation costs of between $347,000 and $4,020,000 annually.

Transportation Importance

- Receiving and shipping port on the Great Lakes; and a Critical Harbor of Refuge
- Location of U.S. Coast Guard station
- Cement is the major commodity shipped and received
- Home to 1,034 recreational slips, 5 boat launch lanes, and 26 charter boats.
- Generates recreational economic benefits totaling $9,961,798 and supports 141 jobs.

U.S. Army Corps of Engineers Fiscal Year (FY) 2015, 2016 and 2017
Rochester Harbor, New York - Project Requirements and President's Budget ($1,000)

Work Package	FY15 Requirement	FY15 Appropriation	FY16 Requirement	FY16 Appropriation	FY17 Requirement	FY17 President's Budget
Maintenance Dredging – Primary			2,320	2,320		
E&D, Constr., East Pier Repair	4,750		4,750		4,750	
TOTAL	**4,750**	**0**	**7,070**	**2,320**	**4,750**	**0**

Congressional Interests

- Representative Louise Slaughter D-NY-25
- Senator Kirsten Gillibrand D-NY
- Senator Charles Schumer D-NY

Preliminary
Economic Impact Analysis

Re: Genesee River Dredging Proposal

DRAFT REPORT
April 23, 2012

For the City of Rochester, NY

HANSON
Engineering | Architecture | Planning | Allied Services

Table of Contents

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1.0 PRELIMINARY ECONOMIC IMPACT ANALYSIS

1.1 Definition of Key Terms[1, 2]

IMPLAN - Software and data developed by the Minnesota IMPLAN Group for the purpose of economic impact analysis. IMPLAN is one of the tools most often utilized by professionals, Universities, and state and federal government entities

Direct Effects - Represents the impacts to industries (e.g. change in employment) for the expenditures and/or production values specified as changes in demand

Indirect Effects - Represents the impacts (e.g. change in employment) caused by the iteration of industries purchasing from industries resulting from changes in direct final demand. Represents the changes in inter-industry purchases as they respond to the new demands of the directly affected industries

Induced Effects - Represents the impacts (e.g. change in employment) on all local industries caused by the expenditures of new household income generated by the direct and indirect effects of direct final demand changes

Labor Income - All forms of employment income, including Employee Compensation (wages and benefits) and Proprietor Income

Value Added - The difference between an industry or an establishment's total output and the cost of its intermediate inputs. It equals gross output (sales or receipts and other operating income, plus inventory change) minus intermediate inputs (consumption of goods and services purchased from other industries or imported). Value added consists of compensation of employees, taxes on production and imports less subsidies (formerly indirect business taxes and nontax payments), and gross operating surplus

Output - Represents the value of industry production. In IMPLAN these are annual production estimates for the year of the data set and are in producer prices. For manufacturers this would be sales plus/minus change in inventory. For service sectors production = sales. For Retail and wholesale trade, output = gross margin and not gross sales

[1] IMPLAN Pro™ User's Guide, Analysis Guide, Data Guide, V2
[2] http://implan.com/v3/index.php

Tax Impacts - Reported values show the amount of revenue generated for State & Local governments from Employee Compensation, Proprietor Income, Indirect Business Taxes, Households, and Corporations based on the modeled impact. Tax impacts are derived from region wide averages across industries in New York. Federal tax impacts are not included in this report.

Margin - The value of the wholesale and retail trade services provided in delivering commodities from producers\ establishments to purchasers. Margin is calculated as sales receipts less the cost of the goods sold. It consists of the trade margin plus sales taxes and excise taxes that are collected by the trade establishment

1.2 Method of Analysis

An economic impact analysis seeks to quantify the effect of a policy, program, project or event on the economy of a given area. The economic impact is typically measured in terms of changes in economic growth (output or value added) and associated changes in jobs (employment), income (wages) and taxes.

This analysis is intended to evaluate economic impacts associated with a potential failure to dredge the Genesee River. The model assumes that the Essroc wholesale cement distribution would cease in Monroe County. Further, the model assesses economic impacts of losing existing passenger cruise spending while in port in Rochester.

The first task was to develop the input assumptions to allow construction of an economic model. The input assumptions were developed as follows:

The input numbers for Essroc are derived from confidential sales revenue information reported by Essroc. Because the facility is a wholesale distribution center, rather than a manufacturing center, margins were applied to the revenue numbers in the model. The model was evaluated using two different margins – one representing the default model margins for the wholesale industry sector and one using a different margin perhaps more reflective of the particular wholesale cement industry. The second margin was derived based on given total sales revenue minus reported value of goods transported.

The input numbers for cruise passenger local spending activity were derived from two sources. The current activity was modeled as reported from the City, with passenger local spending patterns assumed by the modeler. Because no specific spending data was available at the time of this analysis, a range of values was assumed to reflect sensitivity of impacts to different levels of spending. The potential future developed cruise passenger volumes, trip frequency, and trip length were modeled as assumed and given by the City. Again, the same range of daily spending patterns was utilized for consistency. The City's assumptions regarding numbers of passengers, number of

cruise visits, and length of stay for current and future more developed cruise activity were based on the City's participation on the Great Lakes Cruising Coalition.

Once the input assumptions for the models were specified, Hanson used a well-known data and software package called Impact Analysis for Planning (IMPLAN) to build the models and calculate outputs from the three different development phases. IMPLAN uses proprietary data and software to create complete, extremely detailed social accounting matrices and multiplier models of local economies. The IMPLAN database contains county, state, zip code, and federal economic statistics which are specialized by region, not estimated from national averages, and can be used to measure the effect on a regional or local economy of a given change or event in the economy's activity. IMPLAN data files are compiled from a wide variety of sources including the US Bureau of Economic Analysis, the US Bureau of Labor, and Census data.[3]

1.3 Additional Assumptions and Limitations

The following key assumptions and understanding of limitations are included in the analysis:

1. The economic impact model does not predict what development will occur – it analyzes the direct, indirect and induced impacts of *assumed* development (in this case, the assumed loss of business associated with not dredging the Genesee River).

2. At this preliminary stage, the only impacts modeled here include those attributable to potential loss of economic activity at the Essroc cement distribution facility and *some* of the impacts associated with loss of existing and assumed developable cruise tourism activity. These are two of the main activities identified as directly affected by a lack of dredging in the Genesee River. It is assumed that the results do not fully represent all of the actual loss or damage to economic activity associated with not dredging. Additional activity not evaluated in this model include: marinas and marine retail; and marine and industrial fabrication, maintenance, repair, and welding. The primary reason they are not included is the time frame associated with completing this preliminary study in addition to a lack of readily available information from which to create model inputs for these additional activities.

3. The model does *not* include specific evaluation of the very likely price increase impacts to cement, concrete, construction and all of the many other businesses that depend on cement, concrete, and construction activities. It has been reported to the City that "currently trucking to Rochester from Oswego or Buffalo is in the range $17 per ton representing over 15% of the current cost of cement in Rochester. However, this additional transportation cost is not reflected [in] current market price."[4] Additionally, "as cement represents fully 25% of the input

[3] http://implan.com/v3 and modified
[4] From supplemental information provided by Essroc to the City of Rochester, April 5, 2012

cost [of] concrete, it is apparent that an increase in the base cost of cement in Rochester would have a significantly detrimental impact on the building trades, development and cost of all projects that use large amounts of concrete."[4]

4. There are fees paid on a per passenger basis for each cruise. The impact of the fees on the Monroe County economy was not modeled.

5. The assumptions regarding spending patterns of cruise passengers while in port in Monroe County are not based on known data, but rather on a range of possible patterns. The analysis could be recalculated based on actual cruise passenger behavior survey data if such data is made available.

6. The impact results are based on the demographics, types of businesses, and economic relationships that existed in Monroe County in 2010. 2010 is the most recent year for which data was available at the time the analysis was completed.

7. Monroe County is the only MSA county included in this model. Argument could be made to increase the size of the model by including all six of the MSA counties, which would certainly result in higher impact numbers. With most of the MSA's economic activity and population occurring in Monroe County, the single county model was chosen to be intentionally conservative.

1.4 Preliminary Results

The following two tables represent economic impacts associated with potential loss of existing Essroc wholesale operations in Rochester. The first table shows the output of the model when the total revenue is margined at the default model margins for the generic wholesale industry sector. The second table is the same analysis done using a modified margin perhaps more reflective of the particular wholesale cement industry. The results are on an annual basis.

Loss of Essroc in Monroe County at Default Margin (Annual Impacts)

	Direct	Indirect	Induced	Total
Employment	9.2	2.7	5.6	**17.4**
Labor Income	$749,077	$139,990	$231,168	**$1,120,235**
Value Added	$1,380,479	$247,401	$453,443	**$2,081,324**
Output	$1,665,890	$382,085	$717,548	**$2,765,523**
State & Local Taxes	$299,501	$24,824	$57,140	**$381,463**

Loss of Essroc in Monroe County at Modified Margin (Annual Impacts)

	Direct	Indirect	Induced	Total
Employment	9.2	4.7	6.2	**20**
Labor Income	$749,077	$244,169	$258,422	**$1,251,668**
Value Added	$1,380,479	$431,514	$506,905	**$2,318,898**
Output	$2,905,622	$666,428	$802,143	**$4,374,192**
State & Local Taxes	$299,501	$43,295	$63,878	**$406,675**

These results differ somewhat from what was reported by the US Army Corps of Engineers in a recent study. Specifically, the Corps study found that the impact would include the loss of approximately 30 jobs. Two potential explanations for the difference include: the Corps model may have included multiple counties in the MSA, or the revenue numbers may not have been margined. Including more counties would very likely result in higher economic impacts. The modeling completed for this preliminary study replicated the Corps numbers by using the Corps reported sales revenue and not margining those sales (as if the Essroc facility in Rochester were a cement manufacturing facility, rather than a wholesale cement facility). Note that there are other potentially significant negative impacts of losing the only major cement supplier in the area, notably the presumed 15% increase in the cost of cement and its ripple effects to the local economy. Those impacts should be considered, but are not modeled in this preliminary study.

The following two tables represent economic impacts associated with potential loss of existing cruise passenger spending while in port in Monroe County. The first table represents the impacts of 300 total annual passengers each spending at a level of $50 per passenger in Monroe County while off the boat. The second table represents the same 300 annual passengers each spending at a level of $200 per passenger in Monroe County while off the boat. The total number of cruise visits is estimated at 6 boats per year, or a total of 6 days of annual spending.

Note that the impacts here are only associated with passenger spending while off the boat in Monroe County – having nothing to do with the revenue generated to the cruise line on the cruise itself.

Annual Cruise Passenger Activity with Little or no Maintenance Dredging (6 trips @ 50 passengers per boat & @ $50/day spending, 1-day trip)

	Direct	Indirect	Induced	Total
Employment	0.1	0	0	**0.2**
Labor Income	$3,725	$1,044	$1,237	**$6,006**
Value Added	$5,667	$1,973	$2,426	**$10,065**
Output	$9,548	$3,032	$3,839	**$16,419**

Annual State & Local Tax Implication - **$1,500 plus approximately $15,000 in passenger fees**

Annual Cruise Passenger Activity with Little or no Maintenance Dredging (6 trips @ 50 passengers per boat & @ $200/day spending, 1-day trip)

	Direct	Indirect	Induced	Total
Employment	0.6	0.1	0.1	**0.8**
Labor Income	$14,901	$4,175	$4,948	**$24,024**
Value Added	$22,666	$7,890	$9,705	**$40,261**
Output	$38,190	$12,128	$15,357	**$65,676**

Annual State & Local Tax Implication - **$5,981 plus approximately $15,000 in passenger fees**

With a total of approximately 6 trips per year, existing cruise passengers do not currently represent a large impact on the local economy. However, the opportunity cost of not having the ability to attract additional cruise activity should not be overlooked, and is addressed on the following pages.

The following two tables represent economic impacts associated with potential loss of additional cruise passenger spending that can occur with a more developed cruise industry in Rochester. The first table represents the impacts of 1,250 total annual passengers, each spending at a daily level of $50 per passenger in Monroe County while off the boat. The second table represents the impacts of 3,750 total annual passengers, each spending at a daily level of $50 per passenger in Monroe County while off the boat. The total number of cruise visits is estimated at 25 boats per year, each in port for 3 days, or a total of 75 days of annual spending.

Note that the impacts here are only associated with passenger spending while off the boat in Monroe County – having nothing to do with the revenue generated to the cruise line on the cruise itself.

Further Developed Annual Cruise Passenger Activity
(25 trips @ 50 passengers per boat & $50/day spending, 3-day trip)

	Direct	Indirect	Induced	Total
Employment	1.8	0.3	0.4	**2.4**
Labor Income	$45,586	$12,748	$15,130	**$73,464**
Value Added	$69,209	$24,043	$29,678	**$122,930**
Output	$116,344	$36,955	$46,965	**$200,263**

Annual State & Local Tax Implication - **$18,278 plus approximately $62,500 in passenger fees**

Further Developed Annual Cruise Passenger Activity
(25 trips @ 150 passengers per boat & $50/day spending, 3-day trip)

	Direct	Indirect	Induced	Total
Employment	5.5	0.8	1.1	**7.4**
Labor Income	$139,697	$39,143	$46,384	**$225,224**
Value Added	$212,494	$73,972	$90,982	**$377,448**
Output	$358,031	$113,703	$143,977	**$615,712**

Annual State & Local Tax Implication - **$224,228 plus approximately $187,500 in passenger fees**

The following two tables represent economic impacts associated with potential loss of additional cruise passenger spending that can occur with a more developed cruise industry in Rochester. The first table represents the impacts of 1,250 total annual passengers, each spending at a daily level of $200 per passenger in Monroe County while off the boat. The second table represents the impacts of 3,750 total annual passengers, each spending at a daily level of $200 per passenger in Monroe County while off the boat. The total number of cruise visits is estimated at 25 boats per year, each in port for 3 days, or a total of 75 days of annual spending.

Note that the impacts here are only associated with passenger spending while off the boat in Monroe County – having nothing to do with the revenue generated to the cruise line on the cruise itself.

Further Developed Annual Cruise Passenger Activity
(25 trips @ 50 passengers per boat & $200/day spending, 3-day trip)

	Direct	Indirect	Induced	Total
Employment	7.3	1.1	1.5	**9.8**
Labor Income	$186,263	$52,190	$61,845	**$300,299**
Value Added	$283,326	$98,629	$121,310	**$503,264**
Output	$477,375	$151,604	$191,970	**$820,949**

Annual State & Local Tax Implication - **$5,981 plus approximately $62,500 in passenger fees**

Further Developed Annual Cruise Passenger Activity
(25 trips @ 150 passengers per boat & $200/day spending, 3-day trip)

	Direct	Indirect	Induced	Total
Employment	21.9	3.2	4.5	**29.5**
Labor Income	$558,790	$156,571	$185,536	**$900,897**
Value Added	$849,977	$295,887	$363,929	**$1,509,793**
Output	$1,432,125	$454,811	$575,910	**$2,462,846**

Annual State & Local Tax Implication - **$224,248 plus approximately $187,500 in passenger fees**

Obviously, the analysis indicates the number of passengers and the actual spending patterns has a large affect on the modeled impacts. What seems clear from the model is that not having the ability to operate cruise boats on the Genesee River will be a potentially costly loss. Navigation difficulty caused by lack of dredging has already forced the cruise ships, including the Clelia II, that require deeper drafts (i.e. greater than 12 feet) to avoid entering the Port of Rochester.

1.5 Summary Points

1.5.1 Loss of the Existing Essroc Operation in Rochester

- Loss of at least 17-20 jobs in Monroe County alone.
- Loss of approximately $3-4 Million in annual economic output in Monroe County alone.
- Loss of approximately $400 Thousand in annual state and local tax revenue.

Note that these impacts do *not* include the additional potential severe consequence of losing the only major cement supplier in the area. It is reasonable to assume that such a loss would have a noticeable impact on the cost of cement and concrete. The resultant cement cost increase could be expected to exceed 15%. This would in turn be expected to increase the cost of construction and other dependant activities – resulting in additional job losses and attendant impacts in other sectors.

1.5.2 Loss of Existing and Potential Cruise Passenger Spending

- While existing cruise passenger spending does not appear to generate a significant economic activity for Rochester, the opportunity cost of losing the potential is considerable.
- The annual impacts of losing potential cruise passenger spending in Monroe County include:
    - Loss of up to 30 potential jobs in Monroe County
    - Loss of approximately $2.5 Million in potential annual economic output in Monroe County.
    - Loss of over $200 Thousand in potential annual state and local tax revenue.
    - Loss of up to $187 Thousand in potential annual passenger fees at the current pricing structure.

1.5.3 Loss of Potential for other Potential Development on the Genesee River

The limited scope of this study did not examine or attempt to quantify the loss of potential for other business development requiring navigation on the Genesee River. Such a study could be expected to result in significant additional negative economic impacts to Rochester and Monroe County.

New York State Department of Environmental Conservation
Division of Water
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Erin Crotty
Commissioner

Division of Water

Technical & Operational Guidance Series (TOGS) 5.1.9

In-Water and Riparian Management of Sediment and Dredged Material

November, 2004

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Erin Crotty
Commissioner

***** N O T I C E *****

This document has been developed to provide Department staff with guidance on how to ensure compliance with statutory and regulatory requirements, including case law interpretations, and to provide consistent treatment of similar situations. This document may also be used by the public to gain technical guidance and insight regarding how the department staff may analyze an issue and factors in their consideration of particular facts and circumstances. This guidance document is not a fixed rule under the State Administrative Procedure Act section 102(2)(a)(i). Furthermore, nothing set forth herein prevents staff from varying from this guidance as the specific facts and circumstances may dictate, provided staff's actions comply with applicable statutory and regulatory requirements. This document does not create any enforceable rights for the benefit of any party.

Date: November 29, 2004

TO: Regional Water Engineers, Division of Water Bureau Directors and Section Chiefs, Regional Habitat Managers, Regional Marine Habitat Protection Managers and Division of Fish, Wildlife and Marine Resource Bureau Directors and Section Chiefs

SUBJECT: Division of Water Technical and Operational Guidance Series (5.1.9)

In-water and Riparian Management of Sediment and Dredged Material

Originators: Frank Estabrooks, Karen Woodfield and Diane English

Purpose

To update and consolidate procedures for the in-water and riparian management of sediment and dredged material. The document outlines recommended procedures to be followed during dredging and dredged material management in riparian or in-water locations. This is a joint document developed by the Division of Water and the Division of Fish, Wildlife and Marine Resources. This document supersedes the NYSDEC Interim Guidance for Freshwater Navigational Dredging - 1994.

Discussion

This TOGS has been jointly produced by the NYSDEC Division of Water and the NYSDEC Division of Fish/Wildlife and Marine Resources (hereafter referred to as "Divisions"). The Divisions pursued the development of this TOGS in order to provide staff with guidance on the statutory and regulatory requirements for dredging activities and to promote uniformity in the certification and/or permitting of dredging projects throughout the state. This document applies to dredging and the in-water or riparian management of dredged material. For the purposes of this document the term dredging includes all in-water activities designed to move or remove sediment. Examples of such activities include but are not limited to mechanical and hydraulic dredging, mechanical plowing, trenching and jetting. Upland management of dredged material is not covered by this document. In regard to upland management, dredged material is considered a solid waste under 6 NYCRR Part 360, unless upland management/disposal is included under one of a number of specific permits as described in 6 NYCRR Part 360-1.2(a)(4)(ix). Beneficial use of dredged material as fill material, aggregate, or for other purposes may offer an alternative to in-water, riparian, or upland management of dredged material. NYSDEC Regional Solid Waste Engineers may be contacted concerning petitions for a beneficial use determination (BUD). Regulations covering BUD's in New York State appear under 6 NYCRR Part 360-1.15.

This TOGS is offered as an approach to environmental review of navigational dredging projects, dredging of channels and berths, dredging of ponds, trenching for pipelines and cables, and other incidental dredging in both marine and fresh waters of the state. This TOGS is not applicable to the review of dredging for industrial lagoons or dredging conducted for remediation or cleanup of sites managed by the Division of Environmental Remediation (DER) or Resource, Conservation, and Recovery Act (RCRA) corrective action sites. Sites managed by the DER include, but are not limited to, State Superfund sites, spills sites, environmental restoration program sites, brownfield cleanup program sites, and some RCRA corrective action sites. It should be noted that this TOGS is not intended to create any substantive or procedural rights, enforceable by any party in administrative or judicial litigation with the State of New York. While this TOGS contains numerical assessment criteria, it is not law or regulation. Discretion in applying the sediment quality parameters and the associated best management practices is expected and is defensible so long as human health and the environment are effectively protected. The Divisions also reserve the right, at anytime, to modify this TOGS subject to applicable laws, regulations and updated scientific information.

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Sandra Allen, Director
Division of Water

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I. INTRODUCTION

A. Discussion

This TOGS has been produced by the NYSDEC Division of Water and Division of Fish/Wildlife and Marine Resources (hereafter referred to as "Divisions") to provide staff with guidance on the statutory and regulatory requirements for dredging activities and to promote uniformity in the certification and/or permitting of dredging projects throughout the state. Dredging is an integral part of the maintenance of New York's harbors, channels, fairways, canals, marinas, ports, terminals, and reservoirs. For this reason, a uniform and balanced approach to dredging projects is important.

This document applies to dredging and the in-water or riparian management of dredged material. **For the purposes of this document the term dredging includes all in-water activities designed to move or remove sediment. Examples of such activities include but are not limited to mechanical and hydraulic dredging, mechanical plowing, trenching and jetting. For the purpose of this TOGS, "riparian" is defined as the 100 year flood plain plus any adjacent wetland integral to the surface water**. Dredged material destined for upland management or dredged material to be managed outside of New York State would be subject to different procedures and may require a different set of analyses and approvals. In regard to upland management within New York Sate, dredged material is considered a solid waste under 6 NYCRR Part 360, unless upland management/disposal is included under a dredging or other permits as described in 6 NYCRR Part 360-1.2(a)(4)(ix). Beneficial use of dredged material as fill material, aggregate, or for other purposes may offer an alternative to in-water, riparian, or upland management of dredged material. NYSDEC Regional Solid Waste Engineers may be contacted concerning petitions for a beneficial use determination (BUD). Regulations covering BUD's in New York State appear under 6 NYCRR Part 360-1.15.

To clarify the sampling, testing and certification and/or permitting process, this document provides an explanation of the requirements of state law that apply to dredging projects with a general overview of relevant federal requirements. This TOGS is offered as an approach to environmental review of navigational dredging projects, dredging of channels and berths, dredging of ponds, trenching for pipelines and cables, and other incidental dredging in both marine and fresh waters of the state. This TOGS is not applicable to the review of dredging for industrial lagoons or dredging conducted for remediation or cleanup of sites managed by the Division of Environmental Remediation (DER) or Resource, Conservation, and Recovery Act (RCRA) corrective action sites. Sites managed by the DER include, but are not limited to, State Superfund sites, spills sites, environmental restoration program sites, brownfield cleanup program sites, and some RCRA corrective action sites.

It should be noted, however, that this TOGS is not intended to create any substantive or procedural rights, enforceable by any party in administrative or judicial litigation with the State of New York. While this TOGS contains numerical assessment criteria, it is not law or regulation. Discretion in applying the sediment quality parameters and the associated best management practices is expected and is defensible so long as human health and the

environment are effectively protected. The Divisions also reserve the right to modify this TOGS subject to applicable laws, regulations and updated scientific information.

B. Required Approvals

There are a number of federal, state and local regulatory controls in place which apply to dredging projects. The applicability of these controls to each operation depends on the particular circumstances of each case, such as the sediment classification and the intended use or management of the material. However, the following descriptions can be used as an index of the current regulatory demands on projects which will result in either disposal or beneficial use of dredged material. Applicants are advised to contact NYSDEC or US Army Corps of Engineers (USACE) personnel for a case specific referral to applicable laws.

Some or all of the following State and Federal Permits may be required: Use and Protection of Waters Permit; Freshwater Wetlands Permit; Tidal Wetlands Permit; State Pollutant Discharge Elimination System Permit; Clean Water Act (CWA) § 401 Water Quality Certification; and CWA § 404 Permit and Rivers and Harbors Act § 10 Permits, issued by the USACE. An antidegradation review and Wild, Scenic and Recreational Rivers Program permits may also be required.

Use and Protection of Waters

Article 15 of the Environmental Conservation Law (ECL) and its implementing regulations found at 6 NYCRR Part 608 apply to most dredging projects. A Use and Protection of Waters permit is required by 6 NYCRR Part 608.2(a) whenever: there is to be a change, modification or disturbance of any protected stream; the bed or bank of a protected stream in the State will be disturbed; or sand, gravel or other material is to be removed. Part 608.5 also requires a permit for the excavation or placement of fill directly or indirectly in navigable waters. This includes 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. Water Quality Certifications required by Section 401 of the federal Water Pollution Control Act are incorporated into the State regulations in Part 608.9.

Freshwater Wetlands Permits

Under the Freshwater Wetlands Act (ECL Article 24) and 6NYCRR Part 663, NYSDEC regulates activities in freshwater wetlands and in their regulated 100 feet wide adjacent areas. NYSDEC regulates such activities to prevent, or at least to minimize, impairment of wetland functions. Almost any activity which may adversely impact the natural values of the wetlands or their adjacent areas is regulated. Some activities requiring a permit include: dredging, construction of buildings, roadways, septic systems, bulkheads, dikes, or dams; placement of fill, excavation, or grading; modification, expansion, or extensive restoration of existing structures; drainage, except for agriculture; and application of pesticides in wetlands. In addition, a Freshwater Wetlands Permit pursuant to the Adirondack Park Agency (APA) Executive Law may be required from the APA for work on wetlands located within the Adirondack Park. A “Shoreline Clearing Variance” could also be required from the APA.

Within the Adirondack Park a permit would be required from the NYSDEC for work on State owned lands, or from the APA for work on private lands.

Tidal Wetlands Permits

Under the Tidal Wetlands Act (ECL Article 25) and 6NYCRR Part 661, NYSDEC administers a permit program regulating activities in tidal wetlands and their adjacent areas. In general, tidal wetlands consist of all the salt marshes, non-vegetated as well as vegetated flats, and shorelines subject to tides including areas now or formerly connected to tidal waters. The adjacent areas extend up to 300 feet inland from the wetland boundary (up to 150 feet inland within New York City). NYSDEC requires a permit for almost any activity which will alter wetlands or the adjacent areas.

State Pollutant Discharge Elimination System (SPDES) Permits

In certain instances a SPDES permit may be required. A discharge of a pollutant from a point source to the surface or ground waters of the state requires a SPDES permit. There is an exception from the SPDES permit requirement for "dredged or fill material discharged into navigable waters" in 6 NYCRR Part 751.3(a)(6). SPDES permits are required for discharges of dredged material effluent from point sources to groundwater, and permanent dredged material treatment facilities. Discharges that do not require a SPDES permit will be regulated under a 401 Water Quality Certificate.

Clean Water Act §401 Water Quality Certification.

Section 401 of the Federal Water Pollution Control Act requires that certain federal activities, including projects that require federal permits such as § 404 Permits and Federal Energy Regulatory Commission (FERC) hydroelectric permits, must obtain a 401 Water Quality Certification from the State. A Water Quality Certificate is a statement from the agency responsible for water quality indicating that the project will comply with State technology and water quality standards. Generally dredging projects require a Water Quality Certification from the State. The 401 Certification may contain conditions that will be enforced by the Federal Agency issuing approval (i.e., USACE).

Clean Water Act §404 Permit and Rivers and Harbors Act §10 Permit

Additional permits may be necessary from the USACE under Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the federal Water Pollution Control Act. The USACE regulates the placement of fill or dredged material and the construction of certain structures in waterways and wetlands. The USACE jurisdiction has expanded beyond major waterways to include all waters of the United States. A Rivers and Harbors §10 Permit is required for any activity that may obstruct a navigable water and for the excavation or fill of navigable waters. This statute also applies to management activities such as in-place or ex situ capping, treatment, or subaqueous containment of sediments if the proposed activity will alter or modify the course, location, condition, or capacity of any navigable water of the United States.

Additionally, a CWA §404 permit is required when dredged material is discharged in U.S. waters.

Antidegradation Review

An antidegradation review may be required for Great Lakes Basin dredging projects. See NYSDEC Technical & Operational Guidance Series (TOGS) 1.3.9 for details.

Wild, Scenic and Recreational Rivers Program

The Wild Scenic and Recreational Rivers Program could potentially require permits for work on designated wild, scenic or recreational rivers. Within the Adirondack Park a permit would be required from the NYSDEC for work on State owned lands, or from the APA for work on private lands.

C. Jurisdictional Considerations

While it is generally acknowledged that certain types of dredged material may potentially exhibit 6 NYCRR Part 371 (Part 371) hazardous waste characteristics, most navigational dredging operations have not historically tested excavated sediments for hazardous waste characteristics.

On October 30, 1998, the United States Environmental Protection Agency (EPA) signed new rules for the management of contaminated media. The new rules contain a provision to clarify the relationship of the Resource Conservation and Recovery Act to dredged material. Specifically, the rules establish that "dredged material disposed of in accordance with a permit issued under section 404 of the Federal Pollution Control Act [33 U.S.C. S1344] or in accordance with a permit issued for the purpose of transporting material for ocean dumping under section 103 of the Marine, Protection, Research and Sanctuaries Act of 1972 [33 U.S.C. 1413] is not a hazardous waste" (RCRA) (40 CFR section 261.4[g]).

Other agencies that may have jurisdiction in dredging projects are the New York State Department of State and the New York State Office of General Services. The New York State Canal Corporation also has jurisdiction over dredging activities conducted on NYS owned lands under its jurisdiction.

D. Application Process

Primary responsibility for managing dredging permit applications rests with the Department's Division of Environmental Permits. Applicants must apply for necessary dredging permits on a Joint Application for Permit form and submit this form to the NYSDEC Regional Permit Administrator, in the regional office serving the project location. This form and supporting documentation will suffice as an application to the Department for a Protection of Waters Permit, 401 Water Quality Certification, freshwater wetlands, tidal wetlands. A copy of the

Joint Application will be forwarded to the USACE, by the Department. The USACE will contact the applicant for additional information to complete their review. If a SPDES permit is required, the applicant should complete an Industrial Application Form NY-2C and submit this with the Joint Application to the Regional Permit Administrator.

An Environmental Assessment form must also be completed and submitted with the joint application. The Environmental Assessment form is used to help assess whether the proposed action may have a significant adverse impact on the environment and may require the preparation of an Environmental Impact Statement. This assessment is required by the State Environmental Quality Review Act (SEQR) and State Environmental Quality Review regulations (Part 617).

Applications for dredging permits are subject to the Uniform Procedures Act (ECL Article 70, UPA) and Uniform Procedures regulations (Part 621). These regulations identify required application information and specify deadlines by which applications and supporting documentation must be reviewed by the Department. The UPA regulations also require the simultaneous submission of all required applications, encourage public participation, and seek to ensure timely and thorough reviews of all regulated actions. Division of Environmental Permits staff will advise as to all the components necessary for a complete permit application. For information on the Division of Environmental Permits' project management role, see Commissioner Cahill's March 14, 2000 Memorandum: Permit Management System.

1. Description of Application Process and Technical Review

The following provides an outline of the basic steps for sediment assessment and management in dredging projects.

STEP 1 PRE-APPLICATION MEETING

! Hold pre-application meeting(s) with the applicant to explain how the project should be described, and all application and information needs. The applicant should contact Division of Environmental Permits staff to arrange a pre-application meeting. Environmental Permits staff will involve the appropriate Department technical staff. Other agencies having jurisdiction may also be invited to attend the pre-application meeting.

! The coordination of smaller dredging projects into one large project may have benefits both in disposal options available and in the reduction of sampling costs. If small dredging projects are in close proximity to each other and can be coordinated easily by the applicants, such coordination can be beneficial to all involved parties.

STEP 2 DETERMINE SAMPLING REQUIREMENTS

A sampling plan should be submitted to the Divisions prior to sampling to ensure proper characterization of the proposed dredged material. The sampling plan should specify the type, number, and location of samples as well as laboratory analyses and analytical methods.

! Screen for Exemptions (see Chapter II, Section B.1)

! Identify Numbers and Locations of Samples (see Chapter II, Section B.2) Based on:

- o site contamination history
- o sampling history
- o dredging history
- o site resources/sensitivity

! Identify chemical analytes including grain size, TOC and analytes from Table 1 with additional case-specific analytes as necessary. If upland management of dredged material is planned, contact Division of Solid and Hazardous Materials for additional testing requirements.

STEP 3 REQUIRE LABORATORY ANALYSIS OF SAMPLES

! Follow laboratory protocols (see Table 1)

! Use New York State Department of Health (NYSDOH ELAP: Environmental Laboratory Approval Program) approved laboratory

! Report results based on identified quantitation levels (see Table 1)

STEP 4 EVALUATE RESULTS

! Determine dredged material classification for intended riparian/in-water management as Class A, B or C (see Table 2 and Chapter III, Section B.)

! Determine need for possible further sampling/analysis if high level of contamination is indicated

STEP 5 DETERMINE APPROPRIATE DREDGING/MANAGEMENT OPTIONS

! Determine dredging technology to be used based on appropriate sediment class (A, B, C), (see Table 3)

! Determine riparian/in-water management options based on sediment class (see Table 3)

STEP 6 DEVELOP PERMIT CONDITIONS FOR DREDGING AND DREDGED MATERIAL MANAGEMENT (Chapter V, Section C)

STEP 7 MONITOR OPERATIONS, AS NEEDED (see Chapter V, Section D)

2. Applicant Requirements for Description of Dredging Projects

The applicant should describe the physical, chemical and biological characteristics of proposed dredging and management sites in enough detail for the Divisions to estimate impacts and determine appropriate conditions governing conduct of the project.

a. Dredge Area.

! Physical - Show limits of excavation for areas targeted for dredging on a location map with a scale of no greater than one-inch to 100 feet (1:1200). When in-water disposal is proposed or when dredging in a sensitive habitat, provide bottom contours and profiles at no greater than one foot intervals before and after the proposed dredging. Detail the proposed method of dredging and indicate specific methods of operating equipment to minimize resuspension and migration of sediments.

Include an estimation of dredged material volume and if possible, estimate the length of time needed to complete dredging and transport. If applicable, summarize prior dredging operations that have occurred in this area and include any sediment chemistry, and total organic carbon (TOC) data available.

! Chemical - Sediment core samples should be collected to a depth of at least one foot below maximum proposed dredge depth or to bedrock, whichever is less. Log and analyze cores for sediment quality parameters, grain size, TOC and Unified Soils Classification System (USCS) classification. Homogenize and analyze each individual core down to dredging depth. Do not composite single or multiple cores if the grain size, TOC, and likelihood of contamination history indicate that individual horizons may be significantly different in sediment contaminant characteristics. Instead, sample and analyze the horizons separately or contact the Division of Water for guidance. If appropriate (see Chapter II, Section B.2.a), separately analyze a sample segment representing the top six inches of the sediment to be exposed after dredging.

The number of core samples required of each project may vary according to site-specific information. Chapter II elaborates on the proposed sampling plan approval process.

Water quality analyses and hydrology may also help establish baseline conditions.

! Biological - Describe existing habitat and characterize its use by biota, including rare, threatened or endangered species of special concern. Identify specially protected or regulated habitat.

b. Placement area (In-water and Riparian).

! Physical - Indicate location of the placement area on a plan or map having a minimum scale of 1:24,000. This plan or map should show the surrounding topography, 100 year flood-plain

elevation contour, cultural features, wildlife habitats, wetlands, and known or suspected sources of contaminants, such as point-source discharges, landfills, nearby water supply intakes or wells, primary and principal aquifers and any other site-specific features that would be useful in defining this proposed placement area. Represent the placement site on a site plan at an appropriate scale. The site plan should contain pre- and post-placement elevations of the site at intervals of no greater than one foot. The Divisions may require the plan to describe bottom sediments according to the USCS, along with their relevant parameters, such as TOC and grain size. Describe the method of transporting dredged material to the placement area and the manner of placement.

! Chemical - For proposed in-water placement, characterize existing surface sediment, chemical quality of the water-column and hydrology using the same parameters employed in evaluating the dredge area. Indicate sampling locations on plan or map.
For riparian placement onto previously dredged sediments, the intent is not to degrade the existing sites. The top two feet of the existing surface soils should be analyzed for contaminant loading to confirm that the contaminant level of the dredged material to be disposed of at the site does not exceed the contaminant level at the receiving site. Physical properties such as grain size and permeability should also be measured.

! Biological - Describe existing habitat and characterize its use by biota, including use by rare, threatened or species of special concern. Identify specially protected or regulated habitat. Describe post placement habitat conditions.

! Deed Restrictions - If Class C sediment is placed in a riparian area, and capped with Class A material, there may need to be provisions for deed restrictions, so that excavation beneath the Class A sediment cover would trigger management of the Class C sediments as a solid waste.

II. SEDIMENT QUALITY PARAMETERS AND SAMPLING REQUIREMENTS

Each dredging site and management area may have unique physical and chemical characteristics which will influence both the number of samples required to obtain a representative characterization of the sediment and the chemical analytes targeted in testing. Sediment testing is the most critical step in any dredging operation as proper or improper sediment characterization can have long lasting impacts on both the dredged area and the management site. Along with the physical, chemical and biological descriptions required in Chapter I, Section D.2., core sample collection and analysis will lead the applicant to more informed dredged material management decisions. The Divisions have selected a number of chemical analytes that may be tested for and these are identified in section A of this chapter. Section B describes the sampling and analysis requirements for sediment classification. If upland management of dredged material is a possible option, contact the Division of Solid and Hazardous Materials for additional testing requirements.

The TOGS relies on whole sediment chemistry analysis for determining the level of contamination and best management practices for the excavated dredged material. There are several reasons for relying on whole sediment chemistry analysis. Whole sediment chemistry is used in other Department guidance documents that predominantly rely on the Equilibrium Partitioning methodology. One such document is the Division of Fish, Wildlife, and Marine Resources, 1999, "Technical Guidance for Screening Contaminated Sediments". The whole sediment chemistry testing method is consistent with baseline values already measured in the Division of Water's sediment assessment and monitoring program and is used in scientific geochemical literature for soils and sediments.

The use of whole sediment chemistry in this TOGS is a consistent choice for sediment testing, and it has the added benefit of being simpler and less expensive than the extract concentrations used in the Toxicity Characteristic Leaching Procedure (TCLP) or the biotoxicity/bioaccumulation testing protocols.

The sampling required by the Divisions to determine whether to grant a dredge permit is <u>not</u> the same testing required by the USACE. It is acknowledged that for some dredging projects, or for in-water placement of dredged material at an EPA-designated site, the USACE may require applicants to conduct a suite of biological tests to support their permit application. If such test results are available, and considered sufficient to characterize the material to be dredged, and especially if open water placement is planned, the Divisions may elect to use this information (see Chapter III, Section B. 4) to make permit decisions in lieu of or in addition to whole sediment chemistry test results . When sediment contamination (Class B or C) is expected at the dredge site, the Divisions may still require whole sediment chemistry analysis in order to determine the appropriate best management practices to be implemented during the dredging or placement operations. Under USACE requirements, sampling would be required for open water placement according to the most recent version of "Evaluation of Dredged Material Proposed for Ocean Disposal Testing Manual" (USACE, Green Book) or "Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. - Testing Manual Inland Testing Manual" (USACE Gold Book). The Divisions may also require mixing zone analyses (see Chapter V, Section C) based on the biological test results.

A. Chemical Selection

A key element to this TOGS is the selection of chemicals for analysis and the evaluation of dredging and management options. The Divisions, therefore, focused on chemicals known to be both toxic and persistent in the environment for the in-water/riparian protocol. The Divisions selected these chemicals as important to sediment evaluation. The list includes all chemicals for which there are fish flesh consumption advisories in New York State:

PCB
chlordane
DDT and its metabolites
mercury
dioxin
cadmium
mirex

Table 1 contains the suggested analytical methods for detection of selected chemicals and references the detection limits of those analytical methods.

In the aquatic environment, these chemicals can bioaccumulate to elevated levels. Fish consumption is the primary exposure path for humans and wildlife. Sediment quality threshold values (discussed in Chapter III and listed in Table 2) for all of the above, except DDT, are based on toxicity to aquatic benthic life. The DDT threshold value is based on the protection of wildlife. The threshold values are all lower than those that would be derived to assure that fish tissues do not exceed human health advisories. Table 1 contains the threshold values below which the sediment is considered to exhibit no appreciable contamination. Table 2.1 in Chapter III provides more details on the derivation of the threshold values. The substantial, dual threat from these chemicals to both human and aquatic life warrants their selection as sediment quality parameters.

Other substances selected for testing include:

BTEX, the sum of benzene, toluene and xylene concentrations, was selected as a general indicator of petroleum contamination (i.e., gasoline). BTEX can be a problem for aquatic life in areas associated with land-based petroleum or petroleum-use facilities, marinas, and/or spills.

Benzene is a known human carcinogen and deserves separate analysis from BTEX. Human exposure to benzene can occur from drinking contaminated surface or groundwater. However, the Screening Value for Benzene in Table 2 is derived for protection of benthic life.

Arsenic is widely distributed in the environment and forms a variety of organic and inorganic compounds, some of which are very toxic to aquatic organisms. Some arsenic compounds are readily absorbed by intestinal tract and muscle tissue.

Lead is a persistent bioaccumulative chemical of growing concern to public health managers. Evidence of bioaccumulation in aquatic life to levels of concern for human health is currently

sparse. The paths of lead to human exposure include contaminated soils and drinking water. Lead is also toxic to benthic life.

Copper is toxic to aquatic life, but is not known to be the source of widespread or severe damage to aquatic life in New York State waters. When copper contamination and adverse effects are known or suspected, the metal should be required for sample analysis.

Dieldrin was selected as a common indicator of pesticide use. It is bioaccumulative and the primary path of exposure to humans and wildlife is through the consumption of contaminated fish. Dieldrin is also toxic to benthic life, which is the basis for the Screening Value in Table 2.

Total Polycyclic Aromatic Hydrocarbons (PAH) generally show little tendency to biomagnify in food chains, although in some cases of high contamination, elevated PAH body burdens in fish and bivalves have occurred. Sediment concentrations of Total PAHs in sediments from as low as 4 ppm and certainly higher than 35 ppm are toxic to benthic life. Several compounds of the PAH family are known human carcinogens. PAH's are found in soils, air, surface waters and plant and animal tissues as a result of natural processes such as forest fires, microbial synthesis and volcanic activities. Anthropogenic sources of PAH's cause higher concentrations along transportation corridors, industrial sites and in urban soils resulting from the long term use of fossil fuels (i.e., coal and petroleum) and petroleum-derived products (i.e., asphalt pavement). Total PAH is an indicator of possible impact from the spectrum of PAH compounds.

NOTE: Copper, dioxin, chlordane, BTEX and mirex are case specific analytes. The analysis and evaluation of these case specific analytes is recommended for those waters known or suspected to have sediment contamination caused by those chemicals. In the case where known discharges or spills of other potentially harmful chemicals have occurred, in or near a dredge site, or in the case of potential water quality limiting substances (see appendix A) these other analytes should be included along with those listed in Tables 1 and 2. In the case where a marina is to be dredged, BTEX may be a parameter of concern due to past gasoline spillage into the water and possible accumulation into the sediments. These determinations are made at the discretion of Division staff.

Table 1 - revised 9/25/06

Method Detection Limits and Suggested Analytical Methods

Parameter Sediment/Soil	EPA Method CLP\RCRA	Required Method Detection Limits (mg/kg, ppm)	No Appreciable Contamination (Threshold Values (mg/kg, ppm)
Metals			
Arsenic	Metals - EPA 6010B	3.0	<14
Cadmium	Metals - EPA 6010B	1.0	< 1.2
Copper+	Metals - EPA 6010B	5.0	< 33
Lead	Metals - EPA 6010B	2.0	< 33
Mercury *	Metals - EPA 6010B, 7470	0.2	< 0.17
PAH's and Petroleum-Related Compounds			
Benzene	EPA 8021, 8260B	0.0003	< 0.59
Total BTX+	EPA 8021, 8260B	0.0008	< 0.96
Total PAH	EPA 8270	0.33	< 4
Pesticides			
Sum of DDT+DDE+DDD *	EPA 8081A	0.0033	< 0.003
Mirex *+	EPA 8081A	0.189	< 0.0014
Chlordane +	EPA 8081A	0.0017	< 0.003
Dieldrin	EPA 8081A	0.0033	< 0.11
Chlorinated Hydrocarbons			
PCBs (sum of aroclors)	EPA 8082	0.033	< 0.1
Dioxin (Toxic Equivalency Total)+	EPA 1613B	0.000002	< 0.0000045
Physical Properties			
Grain Size	ASTM D41/D42		
Total Organic Carbon	EPA 9060A		

* Note: Threshold values lower than the Method Detection Limits are superseded by the Method Detection Limit.

+ Indicates case specific analytes.

B. Sampling and Analysis Requirements

Core samples should be collected and analyzed, at a laboratory certified by the New York State Department of Health (ELAP), to characterize the physical and chemical properties of the sediment in situ, prior to a dredging operation. Physical analysis should include grain size and TOC determinations. Chemical analysis should include appropriate chemical analytes and method detection limits from Table 1 with additional case-specific analytes as necessary. Evaluation of the analytical results of these samples will help determine the management and/or reuse options that can be considered, the types of dredging equipment that might be employed, and the environmental controls that may be necessary to reduce the potential impacts to fish and wildlife during dredging operations.

1. Sampling Exemptions

There are instances where sediment testing is not necessary and these exclusions are detailed below. If there are no recent spill incidents (within the past ten years) and there are no known present or historical contamination problems associated with the site or its environs, sampling and analysis of sediments for proposed dredging projects will generally not be required under the following circumstances:

a. The material to be dredged is at least 90% sand and gravel.

or

b. The entire project involves less than 1,500 cubic yards of dredged material.

or

c. The Divisions determine that the site has been appropriately sampled and analyzed within the last five years and that data reveals sediments with no appreciable contamination. The Division of Water's Sediment Assessment and Management Section maintains an extensive database of results of chemical analyses of sediment from locations throughout the state. Information from the database can be provided to applicants upon request.

Note: Sampling exemptions are not generally available for projects involving open water placement. Additional sampling waivers may be applicable on a case by case basis.

2. Collection of Samples to Characterize Sediment

A sampling plan should be submitted to the Divisions prior to sampling, indicating the type, number and location of samples to ensure proper characterization of the proposed dredged material.

a. Type of Sample. Sediment core samples should represent the complete depth of the material to be dredged, plus an additional one foot of material that will represent the new sediment surface. Sampling procedures are described in Appendix C. Methods of underwater investigation using free-fall gravity corers, or other equipment, and of logging cores and mapping sediments are given in Hunt (1984), ASTM (1993) and similar publications.

Each core should be broken into two segments:

! A segment homogenized over the complete dredging depth should be analyzed to determine the physical and chemical properties of the sediment to be dredged. Do not homogenize the core if the grain size, TOC or likelihood of contamination based on core lithology or known contamination history indicates that individual horizons within the core may be significantly different in sediment quality. Instead, sample and analyze the horizons separately or contact the Divisions for guidance.

!

! A segment representing the top six inches of the sediment to be exposed after dredging should be archived for possible future analysis (see Table C-3 in Appendix C for holding times and storage requirements). If chemical analysis of the dredging depth segment reveals Class B or C (Table 2) sediments, then some or all of these substrate segments may need to be analyzed to determine the risk of increased contamination exposure after dredging.

b. Number and Location of Samples. The applicant should propose how many samples will be collected, explain how this number was derived and why it is adequate to characterize the dredged material, including the detection of potential "hot spots" of highly contaminated sediments. The plan should also detail the locations of the sampling sites and state how they afford spatial representativeness while also providing coverage for areas likely to have been affected by specific contamination (i.e., a sampling bias should exist toward areas known to be affected by outfalls, tributaries, other industrial sources, historical spill areas, etc.). The number of samples should take into account project area, depth of dredging, potential heterogeneity of the sediments both horizontally and vertically and contaminant source locations. Projects that require dredging of relatively homogenous sediments will require fewer samples than those that require dredging of heterogeneous sediments. Sampling should preferably include no less than three sample locations for any given project. Examples of various methods for calculating how many samples would provide spatial representativeness in order to characterize a dredge site are presented in Appendix B.

c. Cost Reduction Strategies. In the case of small projects, small marina operations, etc., strategies are available to manage the cost of the analyses. These strategies should yield a reasonably accurate representation of the spatial and vertical stratigraphy and contaminant distribution in the area to be dredged and take into account historical and current pollutant inputs. Divisions approval should be obtained before any of the sample size reduction strategies are used. Unless otherwise exempt from the sampling requirements, a minimum of three sediment samples should be analyzed to characterize any proposed dredging project.

Cost reduction strategies may include:

i. Collect the required number of cores, then select those with the highest organic carbon levels and closest to known/potential contaminant sources for analysis. If the results of the initial analysis are valid, representative and indicate clean material, the other cores could be assumed likewise. More specifically, if the sediment with the highest silt and clay fraction reveals no appreciable contamination, then it is likely that relatively coarser textured samples would reveal similar or less contaminated results. If the results indicate contamination, however, then the other cores could be assumed similarly contaminated or they could be analyzed by the applicant.

ii. Collect the required number of cores and composite those with similar characteristics (e.g., grain size, TOC, color, etc.) for analysis. If this is done, a record of the cores that were composited, including their percentages of total organic carbon and USCS descriptions, as well as the post-compositing analytical results, should be submitted to the Divisions. Do not composite the cores if the grain size, TOC or likelihood of contamination based on core lithology or known contamination history indicates that individual horizons between the cores are appreciably different in sediment quality. Instead, sample and analyze the horizons separately or contact the Divisions for guidance.

iii. These strategies may also be used to reduce the number of substrate samples that need to be analyzed to characterize the sediment to be exposed as a result of the dredging operation. Analysis cost may also be reduced, for these samples, by limiting the analytical parameters to those found to be at Class B or C concentrations in the dredging depth segments.

d. Quality Assurance and Quality Control The goal of the sampling strategies presented in this TOGS is to provide sediment data which are accurate, representative and legally defensible. Therefore, the importance of Quality Assurance/Quality Control (QA/QC) measures in sampling sediments cannot be overlooked. Failure to use proper containers and appropriate methods of sample

collection and preservation, collect an adequate number and type of QC samples, provide strict sample identification and chain-of-custody documentation and employ correct laboratory procedures can limit data usability, or render sample results invalid.

The project-specific sampling and analysis plan for each dredging application should include a description of the project QA/QC program. The NYSDEC Analytical Services Protocol (ASP), dated June 2000, provides the in-laboratory QA/QC requirements and should be referenced and adhered to in the project QA/QC program. All data that might be subject to challenge, should be reported via ASP Category B deliverables. Otherwise, at least twenty-five percent of samples should be reported as ASP Category B deliverables. In-field QA/QC requirements should be specified in the project sampling and analysis plan. These requirements should include, but not necessarily be limited to: sample collection methods; decontamination of sampling equipment; sample container selection; sample preservation methods; number and type of QC samples (i.e. Matrix Spike/Matrix Spike Duplicate [MS/MSD], duplicates, etc.) to be collected; sample identification; and chain-of-custody procedures.

The Divisions' general guidelines for the number and type of QC samples to be collected is presented in Appendix C of this TOGS. These guidelines may be modified on a project-specific basis at the discretion of the Divisions. Also presented in Appendix C, are guidelines for the selection of sample containers and preservation methods, a sample chain-of-custody form, sampling procedures, and a glossary of selected QA/QC terminology and qualifiers.

III. EVALUATION OF RESULTS

After sediment sampling and analysis is complete, the proposed dredged material may be classified according to sediment type to allow the selection of an appropriate management option. This chapter provides the threshold values for in-water/riparian placement, in-water/riparian management options, and the methods employed for applying sampling results to the classification scheme. Chapters IV and V describe how sediment classification impacts dredging and in-water and riparian management of dredged material.

A. Sediment Quality Thresholds For In-water/Riparian Placement

The Divisions have carefully considered how sediment data should be structured and analyzed. This consideration has resulted in a classification system where sediment is placed in classes dependent upon its chemistry. The derivation of the sediment quality guidelines used in the classification system is consistent with the methodologies described in the Technical Guidance for Screening Contaminated Sediments (NYSDEC-DFWMR 1999). The Divisions have established three classes of sediment quality thresholds for dredged material proposed for in-water/riparian placement. Based on the concentration of contaminants identified during the chemical analyses, sediment to be dredged is classified as Class A, B or C (Table 2). Management options are identified in Table 3 for each class. This system differs from EPA's categorical system for in-water placement that is based on bioaccumulation and biotoxicity.

1. Class A - No Appreciable Contamination (No Toxicity to aquatic life).

If sediment chemistry is found to be at or below the chemical concentrations which define this class, dredging and in-water or riparian placement, at approved locations, can generally proceed.

2. Class B - Moderate Contamination (Chronic Toxicity to aquatic life).

Dredging and riparian placement may be conducted with several restrictions. These restrictions may be applied based upon site-specific concerns and knowledge coupled with sediment evaluation.

3. Class C - High Contamination (Acute Toxicity to aquatic life).

As defined in Table 2, Class C dredged material is expected to be acutely toxic to aquatic biota and therefore, dredging and disposal requirements may be stringent. When the contaminant levels exceed Class C, it is the responsibility of the applicant to ensure that the dredged material is not a regulated hazardous material as defined in 6NYCRR Part 371. This TOGS does not apply to dredged materials determined to be hazardous. Questions regarding hazardous waste, should be referred to the Department's Division of Environmental Remediation.

Table 2 Sediment Quality Threshold Values for Dredging, Riparian or In-water Placement

Threshold values are based on known and presumed impacts on aquatic organisms/ecosystem. Where fresh water and marine threshold values differ sufficiently, the marine value is presented in parentheses. All concentrations are in mg/kg dry weight.

Compound	Class A	Class B	Class C	Derivation Code
Metals (mg/kg)				
Arsenic	< 14 (8.2)	(8.2) 14 - 53	> 53	1
Cadmium	< 1.2	1.2 - 9.5	> 9.5	1
Copper*	< 33	33 - 207 (270)	> 207 (270)	1
Lead	< 33 (47)	33 (47) - 166 (218)	> 166 (218)	1
Mercury[+]	< 0.17	0.17 - 1.6 (1.0)	> 1.6 (1.0)	1
PAHs and Petroleum-Related Compounds (mg/kg)				
Benzene	< 0.59	0.59 - 2.16	> 2.16	2
Total BTEX*	< 0.96	0.96 - 5.9	> 5.9	2
Total PAH[1]	< 4	4 - 35 (45)	> 35 (45)	1
Pesticides (mg/kg)				
Sum of DDT+DDD+DDE[+]	< 0.003	0.003 - 0.03	> 0.03	2
Mirex*[+]	< 0.0014	0.0014 - 0.014	> 0.014	2
Chlordane*[+]	< 0.003	0.003 - 0.036	> 0.036	1
Dieldrin	< 0.11	0.11 -0. 48	> 0.48	2
Chlorinated Hydrocarbons (mg/kg)				
PCBs (sum of aroclors)[2]	< 0.1	0.1 - 1	> 1	3
2,3,7,8-TCDD*[3] (sum of toxic equivalency)	< 0.0000045	0.0000045 - 0.00005	> 0.00005	4

[+] Threshold values lower than the Method Detection Limit are superseded by the Method Detection Limit. (See Table 1)
* Indicates case-specific parameter (see Chapter II, Section A) .
[1]For Sum of PAH, see Appendix E
[2]For the sum of the 22 PCB congeners required by the USACE NYD or EPA Region 2, the sum must be multiplied by two to determine the total PCB concentration.
[3]TEQ calculation as per the NATO - 1988 method (see Appendix D)

Note: The proposed list of analytes can be augmented with additional site specific parameters of concern. Any additional analytes suggested will require Division approved sediment quality threshold values for the A, B and C classifications.

Table 2.1 Derivation Codes for Chemical Threshold Values

Derivation Code	Explanation
1	Values are the geometric mean (GM) between Long & Morgan (1990) and Persaud (1992). Class A values are the GM of ER-L[1] and Lowest Effect Level. Class C values are the GM of the ER-M[1] and Severe Effect Levels. The resulting GMs were compared to marine water ER-L and ER-M values published by Long & Morgan (1992). When compared, the lowest of the two corresponding values was selected. When there was a large difference between a freshwater (Long & Morgan (1990) or Persuad (1992) GM) and a saltwater (Long & Morgan 1992) value, the marine value was recorded in parentheses, and is applicable to marine water dredging and management only. For total PAHs, Persaud (1992) had no toxicity values so only those of Long and Morgan (1990) were used. This approach is consistent with that described in the Technical Guidance for Screening Contaminated Sediments Document (DFW/DMR 1999). The Chlordane values were developed by NYSDEC generally following the Long and Morgan method.
2	NYSDEC water quality standards were used in conjunction with the U.S. EPA equilibrium partitioning methodology (see DFW/DMR 1993, pages 5-11) to calculate sediment quality threshold values for organic compounds assuming 2% organic carbon and equating K_{ow} to K_{OC}, consistent with the reality of contaminant uptake in biological organisms (Kenaga and Goring, 1980). Class A value is for the protection of benthic life from chronic toxicity. The Class C value is for the protection of benthic life from acute toxicity. If aquatic life standards were not available from 6NYCRR Part 703.5 to generate the sediment screening criterion, a guidance value was derived in accordance with 6 NYCRR Part 706.1. For total BTEX, the A and C values are the geometric means of the A and C values for benzene, xylene, ethylbenzene, and toluene. For DDT (sum of DDT, DDD, & DDE), the A value was based upon the 6 NYCRR 703.5 standard for the protection of wildlife. Because this value (0.00022 mg/l) was below the limit of analytical detection, the analytical detection limit of 0.003 mg/l was selected as a default value. The C value was the level at which significant mortality to *daphnia magna* has been documented (Long & Morgan, 1990). This approach is consistent with that described in the Technical Guidance for Screening Contaminated Sediments Document (DFW/DMR 1999).
3	Synthesis of Consensus Based Sediment Quality Assessment Values (D.D. MacDonald, et, al., Jan 2000), Marine and Estuarine Sediment Quality Values (E.R. Long, et. al., Nov 1993), PCB soil cleanup levels in NYSDEC Division of Environmental Remediation TAGM HWR-92-4046 and of sediment quality values from NYSDEC Division of Fish, Wildlife and Marine Resources Technical Guidance for Screening Contaminated Sediments, 1998.
4	A mean of the NYSDEC Fish and Wildlife bioaccumulation number, of the USEPA's low risk to mammals, the disposal of paper sludge in pasture land and the bioaccumulation protection of fish values, was calculated and rounded down to the nearest 0.5 ppt. This value is 0.0000045 ppm or 4.5 ppt. Additionally, the soil/sediment action level for 2,3,7,8 TCDD in the RCRA hazardous waste program (TAGM DHSR 3028, 1992) is 4.5 ppt. The on-land application limit of 50 ppt is used as the contaminated level from the USEPA - Paper Industry Agreement from Environment Reporter, 29 April 1994, pages 2222-3.

[1] **Error! Main Document Only.**The ER-L values are the concentrations equivalent to the lower 10 percentile of the screened available data and indicated the low end of the range of concentrations in which effects were observed or predicted (concentrations above which adverse effects may begin). The ER-M values were the concentrations equivalent to the 50 percentile point in the screened available data (concentrations above which effects were frequently observed or predicted).

Table 3 RIPARIAN/IN-WATER Management Options

Activity	Class A	Class B	Class C
Dredging	Any means meeting generally accepted and approved practices	Closed bucket suggested or any means meeting environmental objectives	Closed bucket or other method minimizing loss of resuspended sediment ordinarily required
Riparian Placement	Any means meeting generally accepted and approved practices	Placement at riparian sites already containing more contaminated material. New riparian sites should be covered with Class A sediments to insure isolation of the dredged material. The depth of the cap will be determined on a site specific basis.	Riparian sites should be lined and capped with clay or other impermeable material and covered with Class A sediments to ensure long-term isolation of the dredged material from the environment. The depth of the cover material will be determined on a site specific basis.
In-water Placement	Any means meeting generally accepted and approved practices	In water placement discouraged. When applicable, sites should be capped with Class A sediment to insure isolation of the dredged material	In-water disposal ordinarily precluded.
Barge Overflow	Barge overflow may be allowed (site specific)	Usually, no barge overflow. May be allowed on site specific basis	No barge overflow
Post dredging Monitoring	May be required	See Chapter V	See Chapter V

NOTES:

1. Environmental Objectives for Dredging, Chapter IV, Section A applies to all classes.
2. Environmental Objectives for Dredged Material Management Placement at Riparian and/or In-water Sites, Chapter IV, Section B applies to all classes.
3. Riparian sites are adjacent to or within the 100-year flood plain of the surface waters in which dredging is proposed. These sites are typically diked with controlled outlets for retention of sediment and are typically regulated under Section 401 of the CWA. They do not constitute “on-land” placement.
4. Due to site specific circumstances, an applicant has full responsibility to justify all operations, including both those described above and any other selected alternatives.
5. Depending on conditions, hydraulic dredging to a confined disposal facility or excavation in the dry is the recommended method for PCB concentrations of greater than 10 ppm. Dredged material should be disposed of directly at final disposal sites. An applicant may justify another method of dredging and disposing of this material, as long as no net dumping of contaminated dredged material is proposed. If concentrations approach 50 ppm, Division of Environmental Remediation should be consulted.

B. Application of Sampling Results

1. Because these dredge and placement or disposal levels are based upon a limited number of screening parameters, one or more exceedances of a threshold in any level may be considered presumptive evidence that dredged material management should meet the restrictions of the more stringent level. However, judgment should be applied in interpreting the results. For example, failure of only one sample may be an analytical or sampling anomaly. Failure of two or three samples within a reasonable range of statistical, analytical variability may also not warrant special treatment. Biological testing may be used as an additional tool to evaluate the level of classification of the dredged material (See Section B.4). Consult with Division of Water and the Division of Fish, Wildlife, and Marine Resources staff in these cases before classifying material.

2. If one or more samples exceed Class C (high contamination, acute toxicity) thresholds for sediment quality, in-water disposal will likely be precluded. For riparian placement, the Division of Solid & Hazardous Materials staff and if necessary the Division of Environmental Remediation staff should be consulted to determine further site characterization needs and to assess dredging and disposal requirements (i.e., Part 373 site or other facility).

3. In the event that dredging may expose more highly contaminated sediments, as evidenced by the analysis of a sample segment representing the top six inches of the sediment to be exposed after dredging, prevent or limit exposure by one of the following options:

- dredge to a shallower depth than originally proposed;
- dredge to a greater depth until cleaner sediments are exposed; or
- dredge to a greater depth and then cap with available cleaner material.

4. Biological Testing of Dredged Material for Management Options.

Although the Divisions do not routinely require biological testing, the Army Corps of Engineers (USACE) may require applicants to conduct a suite of biological tests to support their federal dredging permit application. If such test results are available and considered sufficient to characterize the material to be dredged, and especially if open water placement is planned, the Divisions may elect to use this information in lieu of or in addition to whole sediment chemistry test results to make permit decisions for dredging and management of dredged material. When sediment contamination (Class B or C) is expected at the dredge site, the Divisions may still require whole sediment chemistry analysis in order to determine the appropriate best management practices to be implemented during dredging or placement operations.

Biological testing conducted to satisfy federal regulations and guidance usually consists of:

! 24-96 hour elutriate (suspended particulate and water) dilution series assays
! 10 day solid phase acute toxicity assays

- 28 day solid phase bioaccumulation assays.

If toxicity and bioaccumulation testing indicates a lower level of concern for acute and chronic effects than the corresponding sediment chemical results, then the Divisions, after evaluating project specifics (such as proximity of sensitive habitats and water use areas, the volume of material, the duration and seasonal window of the dredging, or the characteristics of the contaminant(s) of concern) would have the option of approving the management of the material at a lower classification level.

For more information on biological testing and the application of test results, see Appendix F.

IV. GENERAL GUIDELINES FOR DREDGING AND IN-WATER AND RIPARIAN MANAGEMENT OF DREDGED MATERIAL

This Chapter discusses management objectives for dredging and riparian and in-water placement of dredged material, design considerations for riparian placement facilities, and guidelines for monitoring activities during dredging and placement activities. These measures may help minimize any impacts incident to dredging and may ensure the long term protection of the dredged material placement area. The beneficial reuse of dredged material should be promoted when practical. It is important to keep the following objectives in mind so that aquatic habitats, wetland habitats, and riparian areas are protected.

A. General Dredging Guidelines

1. Environmental Objectives for Dredging

Dredging projects should comply with the specific provisions of all permits issued for the activity and should be planned, permitted and conducted toward achieving the following environmental objectives:

- Minimize the resuspension of silt, oil and grease and other fine particles or materials by careful equipment operation, floating booms, silt curtains or screens and other suitable means.

- Minimize the amount of material disturbed or returned to the water body. For mechanical dredging of sediments containing contaminant concentrations at levels of concern, the use of a closed, watertight bucket and the elimination of barge overflow may be required.

- Avoid damage to nearby wetlands and habitats from dredging activities.

- Avoid known historical or archaeological sites and minimize impacts if any previously unknown sites are discovered.

- Avoid dredging in particular water bodies during fish migration and spawning periods specified by the Division of Fish, Wildlife and Marine Resources for species of concern. Timing restrictions may be eased or lifted for small, closely monitored dredging projects, if the use of containment measures, such as silt curtains, adequately isolate the site during fish spawning and rearing periods.

- Avoid littoral zones and any adverse impacts to the littoral zone whenever possible.

- Avoid exposing benthic organisms to more highly contaminated underlying material.

2. Best Management Practices

Best Management Practices (BMP's) that meet the environmental objectives for dredging may include, but are not limited to, the following options. BMP's should be chosen with

consideration of site and project specific conditions and apply to all dredged material regardless of how it is to be managed.

Clamshell Dredge: When using a clamshell dredge, the amount of suspended solids dispersed during the dredging operation should be minimized by maximizing the size of the bucket used for dredging. This minimizes the number of "bites" needed to dredge a particular site. Bucket retrieval rates should be controlled to minimize turbidity. The spuds or anchors of the haul barge should be carefully placed outside the contaminated area to reduce resuspension of contaminated sediments. When off loading dredged material using a clamshell or backhoe, the bucket should not swing over open water.

Closed Clamshell: The closed clamshell bucket reduces the amount of suspended solids in the upper water column at the site of dredging. A closed clamshell bucket may be required when the sediments to be dredged contain contaminants at levels of concern as determined by the Divisions or if warranted by site specific conditions. Bucket retrieval rates should be controlled to minimize turbidity. The spuds or anchors of the haul barge should be carefully placed outside the contaminated area to reduce resuspension of contaminated sediments. When off loading dredged material using a clamshell or backhoe, the bucket should not swing over open water. The environmental bucket should have a sealing system to minimize the loss of material during transport through the water column. Excessive loss of water from the bucket should be investigated and repaired. An experienced bucket dredge operator with sufficient control over bucket depth, bucket closure and bucket hoist speed should be used.

Hydraulic Dredge: Hydraulic dredging, a vacuum-suction dredging process, is preferable when the placement site is within pumping distance of the dredge site. This type of dredge reduces the resuspension of suspended solids at the dredge site. However, large volumes of high percent water content material are created by this method and this water may require greater settling time and/or treatment prior to discharge.

Barge Overflow: No barge overflow should be allowed during transport of dredged material outside the dredged area. Barge overflow may be allowed during the dredging operation if the dredged material is determined to be Class A material. It should be avoided during the dredging operation if the dredged material is Class B or Class C (See Table 3) or if there are site specific reasons for not approving its use with Class A material.

Silt curtains: Silt curtains, can greatly reduce the long-term turbidity occurring during the dredging operation in water current flows of less than 1 foot per second (ft/sec). Silt curtains have been used to protect tidal creeks near the dredging area. Very poor silt curtain performance can be expected in flows of greater than 1 ft/sec. Controlling long term turbidity may also be accomplished using sheet pilings to cut off the disturbed area during work.

Shunting: Shunting, pumping via pipe of the free water in a barge to the bottom of the water column, may be permitted as an alternative to barge overflow as long as no disruption of in-place sediments occurs.

Tidal Periods: In certain semi-enclosed water bodies, dredging may only be allowed during the incoming tide. This practice may minimize the dispersal of contaminated sediments by allowing time for settling of suspended sediments.

Dredging Inspectors: In some cases, independent USACE certified dredging inspectors may be required to observe the dredging operation and report on compliance with permit requirements.

Coffer dam dewatering: Some dredging projects may include the construction of a coffer dam in the water column, with dewatering of the coffer dam prior to the dredging operation. Coffer dam dewatering should be conducted in a manner so as to preclude visible increases in turbidity or sheens in the waterbody. If the underlying sediments to be dredged are Class C, coffer dam dewatering effluent may need to be treated (settling, filtering, etc) prior to discharge back to the waterbody.

Flocculent addition: The proposed addition of a flocculent, during sediment dewatering operations, requires the submission of the Water Treatment Chemical (WTC) Usage Notification Requirements for SPDES Permittees form if the dewatering effluent is to be discharged to waters of the State. The permittee must demonstrate that any flocculent remaining in the effluent will not be toxic to organisms in the receiving water.

B. General Guidelines for In-Water and Riparian Management of Dredged Material

1. Environmental Objectives for Dredged Material Management at Riparian and/or In-water Sites

a. Riparian sites.

! New placement sites should not be located in wetlands or other specially protected or regulated habitats or in identified significant habitats.

! Placement within the 100 year flood-plain may be limited if the fill would cause an increase in the backwater elevation of a given flood event.

! Contaminated material should be covered with Class A sediments to a depth that ensures the long-term isolation of dredged material from the surrounding environment.

! Sites planned for use during multiple dredging seasons should be covered, with an interim cover that is equivalent to the final cover, if the period between use exceeds three years for Class B material and one year for Class C sediments. The need for an interim cover can be determined on a case-by case basis, depending on the bioaccumulative nature of the contaminants of concern. Alternatively, a dredging project that involves sediments with different levels of contamination may be dredged so that the most contaminated sediments are placed at the disposal site first and are then subsequently covered with cleaner sediments.

! Use of and maintenance of existing sites should minimize impacts to nearby wetlands. Any material re-excavated from riparian placement areas for other use should meet the sediment quality requirements for the other use.

! Placement sites should be maintained and operated to prevent the uncontrolled release of sediments beyond the boundary of the site or into surface waters.

b. Non-capped, In-water sites.

! In-water placement should be limited to dredged material that is homogeneous, consists of generally coarse grained material and shows no evidence of appreciable contamination. In water placement should only be used when practicable on-land or riparian management alternatives are not available.

! In-water placement of contaminated dredged material in any “clean” area viewed as an economic or environmental resource of New York State should be discouraged. As an example, such areas might support sand mining, commercial or sport fishing and/or be near public bathing beaches.

! In-water placement of dredged materials at EPA-designated sites will continue to be a viable option, since these sites have undergone environmental review, are authorized for such placement, and have established sediment criteria.

! The placement area should not be located in specially protected or regulated habitats or identified significant habitats.

! In-water placement activities must be approved by the Divisions and must minimize intrusion into littoral areas.

! The resuspension of fine-grained materials should be minimized for in-water placement areas by use of silt curtains, floating booms, the proper selection and careful operation of equipment and other suitable means.

! Characteristics of the dredged material should be similar to existing characteristics at the placement area to ensure that aquatic communities will reestablish themselves.

c. In-water capped sites.

These sites should be limited to moderately contaminated sediments (Class B) when no upland or riparian management sites are available.

In addition to the considerations in item b above, the following apply.

! Site-specific biological surveys, toxicity and bioaccumulation testing may be required for approval and for post-placement monitoring. These studies should

support the contention that biota exposed to the site after placement will not contain appreciably more body burdens of contaminants and will not experience acute or chronic toxicity.

! Existing depressions and old excavations (e.g., borrow pits) should be considered before any new excavations are created. Capping with Class A sediments and leveling to surrounding bottom contours will likely be required.

! Cap material should be deposited in a thickness that will provide long-term isolation of the dredged material from the overlying water. Capping material should have the same characteristics as the surrounding bottom sediments to prevent differential scouring and encourage re-establishment of benthic communities.

! Placement area should not be proposed for future dredging or mining; it must be recorded on USGS, NOAA or other appropriate maps, using Universal Transverse Mercator (UTM) or New York Transverse Mercator (NYTM) coordinates.

2. Design Consideration for Riparian Confined Disposal Facilities

For the purpose of this TOGS, "riparian" is defined as the 100 year flood plain plus any adjacent wetland integral to the surface water. Riparian confined disposal facilities are by this definition any facility located within the 100 year flood plain or adjacent wetland. Other names for a confined disposal facility may be upland disposal site or containment site. These sites are typically diked with controlled outlets for retention of sediment and are typically regulated under Section 401 of the CWA. They do not constitute "on-land" placement.

1. Riparian disposal facilities should be located, where possible, on soils with low permeability (i.e., Soil Conservation Service soil groups C and D).

2. The disposal facility should retain dredge water for the time required to meet discharge conditions (see Chapter V, Section A). The volume needed to provide this retention period should be in addition to the volume needed for solids storage. Disposal facilities designed to receive solids from more than one dredging cycle should use any excess volume to increase the retention period to the maximum practicable extent.

3. Inlet and outlet openings should not be placed directly in-line with each other unless baffles are in place to provide adequate settling time.

4. A minimum water depth of three feet should be provided for retention, using a controlled-outlet weir, in a disposal facility served by a hydraulic dredge. The weir overflow rate should be controlled in order to achieve an acceptable effluent concentration for suspended solids.

5. The length-to-width ratio of the disposal facility should be greater than two to one where the length is the distance between the inlet and the outlet.

6. A baffle could be constructed as part of the outfall structure to prevent the release of floating debris and oils.

7. The outlet should convey the discharge in an erosion-free manner, preferably to an existing stable channel.

NOTE: The prime objective of these design considerations is to enable reasonable capture of fine grain sediments, which contain most of the contaminants. Any number of engineered methods can increase fine grain capture. Design of confined disposal facilities for Class C sediments are site-specific and should ensure optimal fines (see glossary) capture to retain pollutants.

V. PERMIT CONDITIONS FOR DREDGING AND DREDGED MATERIAL MANAGEMENT

The dredging permit or Water Quality Certification may contain special conditions which will vary depending upon dredged material classification, where discharges are directed, or where sediment generated from dredging operations is placed.

When discharges associated with dredging operations are directed outside of the dredging area, the receiving water may experience loadings of new pollutants. These loadings should be reviewed in accordance with Division of Water's TOGS 1.2.1 and TOGS 1.3.1. These TOGS should be followed for calculating the total maximum daily loading (TMDL) and to determine if any water quality based effluent limits are necessary. The dredging permit or 401 Certification would then be conditioned with any applicable water quality based limits, technology limits, requirements for best management practices, mixing zone limits, and monitoring requirements.

When discharges associated with dredging operations are directed back into the dredge area, and if no new pollutants are added to the dredged material, the discharge may not need to be reviewed to determine an allowable TMDL. The dredging permit or 401 Certification could then be conditioned with applicable technology limits or narrative water quality standards, BMPs, mixing zone limits, and monitoring requirements.

A. Water Quality Based Limits and Technology Limits

A mixing zone can be assigned at the site of dredging, at the site of in-water placement of dredged material and at the effluent discharge from on-water processing, on-land processing, and confined disposal facilities (see Section C, following). The narrative limits presented in Table 4 apply at the edge of any defined mixing zone and should be included as conditions in the 401 Certification or dredging permit. For water quality limiting substances (Appendix A) and parameters measured at levels higher than Class A threshold values in the dredged material, concentrations at the edge of the mixing zone should not exceed water quality standards or background conditions plus an allowance for analytic variability.

Table 4 Section 703.2 Narrative Water Quality Standards

Parameter	Classes	Standard
Turbidity	AA, A, B, C, D, SA SB, SC, I, SD	No increase that will cause a substantial visible contrast to natural conditions
Suspended, Colloidal, and Settleable Solids	AA, A, B, C, D, SA SB, SC, I, SD, A-special	None from sewage, industrial wastes or other wastes that will cause deposition or impair the waters for their best usages

For effluent from on-water or on-land processing and confined disposal facilities, an alternative to meeting water quality standards at the edge of an established mixing zone would be setting effluent limits at the point of discharge (e.g. at the weir). The following options would be available:

The applicant can suggest and justify a maximum limit for TSS and/or turbidity at the point of discharge (e.g. at the weir). This justification should demonstrate that the proposed limit will not cause detrimental effects to the environment or to human health. This case specific-number should be developed with attention to existing background concentrations of TSS in the receiving water, to any and all localized water quality limiting substances or chemicals of concern, and to the proximity of any critical water use areas or sensitive habitats. The Divisions will evaluate the justification of the proposed limit with the goal of ensuring environmental protection and that no exceedance of water quality standards are likely to occur.

-or-

The following default technology limits at the point of discharge (e.g. at the weir) may be used as dredging permit or 401 Certification conditions:

- total suspended solids - 200 ppm;
- settleable solids - monitor; (no limit)
- chlorides - none greater than 110 percent of the background concentration; and
- for water quality limiting substances and tested parameters at levels higher than Class A level - limits determined by procedures outlined in TOGS 1.2.1 and TOGS 1.3.1 for developing TMDL's.

B. Best Management Practices.

Best management practices (BMPs) during dredging and dredged material management operations should be included as conditions in the 401 Certification or dredging permit if appropriate. These practices should protect sensitive resources in the vicinity of dredging or dredged material management activities and may include:

- Operational controls, during dredging, such as the use of a closed bucket, a controlled bucket speed or cycle speed, and no barge overflow. These measures can all be instrumental in reducing the amount of solids resuspended and therefore the extent of the area impacted by dredging.
- Silt curtains to protect sensitive habitats from resuspended solids.
- Environmental windows which restrict dredging or placement during fish migration and spawning periods.

Lists of possible BMPs are included in Chapter IV, Sections A and B.

C. Mixing Zones

A mixing zone is an area in a water body, defined by DEC, within which the Division of Water will accept temporary exceedances of water quality standards resulting from short-term

disruptions to the water body caused by dredging or the management of dredged material. A mixing zone can be assigned at the site of dredging, at the site of in-water placement of dredged material, and at the effluent discharge from on-water processing, on-land processing, and confined disposal facilities. (See Section A, preceding, for water quality limits that apply at the edge of any defined mixing zone).

In the case of contaminated sediment resuspended during dredging or dredged material management, disruptions to beneficial uses of the water-body must be minimized. The size and shape of mixing zones should be limited to ensure that they do not impair the integrity of the water body as a whole and that there is no lethality to organisms passing through or enveloped by the mixing zone (EPA Water Quality Standards Handbook - 2nd Edition - August 94). In addition, mixing zones should be established to provide a continuous zone of passage and to prevent any impairment to critical resource areas (EPA 94). Shallow water shorelines of rivers, lakes and the coast line, wetlands and biologically active zones should receive the greatest protection when establishing the limits of mixing zones (EPA 76).

To ensure protection of aquatic life when defining the allowable extent of a mixing zone, the following should be considered:

- Along shorelines, acute toxicity thresholds for suspended sediments should not be exceeded beyond a distance of 500 feet along the shore.
- In rivers and river-like sections of estuaries, acute toxicity thresholds for suspended sediments should not be exceeded beyond a distance of one third the width of the waterway or a total width of 500 feet, whichever is less.
- In open water areas of estuaries and lakes, acute toxicity thresholds for suspended sediments should not be exceeded beyond a distance which corresponds to 10% of the cross-sectional area of the waterway or a total width of 1500 feet, whichever is less.
- Wetlands, tidal creeks and other critical resources (e.g., water use areas or areas with abundant early life stages of fish or shellfish) must be protected from levels of suspended sediments that cause chronic toxicity. Permit review staff should delineate the size and shape of the chronic toxicity mixing zone to protect these resources.

For dredged material that has undergone suspended phase toxicity testing:

- The threshold of acute toxicity is estimated to be the suspended sediment (SS) concentration associated with 0.1 x the LC50.
- The threshold of chronic toxicity is estimated to be the suspended sediment (SS) concentration associated with 0.05 x the LC50.

For dredged material that has not undergone suspended phase toxicity testing:

- The threshold of acute toxicity is considered to be any SS levels 100 ppm above ambient conditions.
- The threshold of chronic toxicity is considered to be any SS levels 50 ppm above ambient conditions.

The Divisions may assign a default mixing zone of 500 feet (unless there is a critical water use area or sensitive habitat located closer than 500 feet) or require the applicant to provide a mixing zone analysis when whole sediment chemistry test results identify the presence of water quality limiting substances (Appendix A) or analytes at concentrations higher than the Class A threshold values or when sediment toxicity test results warrant. The analysis shall characterize the extent of potentially toxic water quality conditions that may result from remobilization of contaminants during dredging or management activities. This determination shall be made by the Divisions on a case-by-case basis and shall include consideration of the following:

- The nature of sediment contamination
- Proximity of sensitive habitats or water use areas (beaches, water intakes, etc.)
- Proximity of sensitive life stages of important biological resources.

Information such as sediment chemical and physical characteristics may be used to assess the potential impacts at the dredging or management site. Qualitative assessments which compare the proposed project to similar projects, for which field monitoring results are available, may also be considered.

1. Mathematical Models.

In some cases, mathematical models can be used to calculate contaminant or suspended solids concentrations at the boundaries of a defined mixing zone. If, based on characterization of sediments or whole sediment chemistry or toxicity tests, it is determined that the sediments are or have the potential to be toxic to aquatic life, then the Divisions may require the applicant to study the proposed dredge activity with the use of an appropriate model. The model should be used to determine whether predicted water quality conditions at the edge of the allowable mixing zone will comply with conditions in the 401 Certification or dredging permit. The applicant may choose to use an existing model or may have a model developed for the particular location.

Most of the existing sediment dispersion models are designed for the specific situations of open water disposal in the ocean, barge overflow, or return water from an upland disposal facility. These models are complex and have limits on their applicability. USACE Automated Dredging and Disposal Alternatives Management System (ADDAMS) models are available on the USACE web page and can be downloaded onto a personal computer.

The following guidelines apply to the use of mathematical models:

- If one of the existing mixing zone models is used (e.g. ADDAMS, CORMIX), then all input parameters and model runs should be provided to the Division of Water for review. If a new mixing zone model is developed for a particular site, the model and all documentation (including input parameters, model runs and analysis) should be provided to the Division of Water for review prior to acceptance of the predicted results.

! Some available models will predict concentrations of chemicals at the edge of the defined mixing zone. These predicted concentrations should be compared to the water quality standards (6NYCRR Parts 700-706) to ensure standards are not exceeded outside this mixing zone.

! Some available models will predict acute or chronic toxicity at the edge of the defined mixing zone. The predicted results should be compared to existing standards for toxicity.

! The predicted conditions at the boundary of the mixing zone should be evaluated based on proximity to sensitive habitats or water use areas.

! The model should be verified as appropriate for use in the particular flow situation. Some mathematical calculations for mixing can be used for steady state or non-complex flow conditions. However, tidally influenced rivers and estuaries are, by definition, complex flow conditions.

! The results of the model should be reproducible. A model cannot be used to predict conditions at the boundary of a mixing zone until it has been adequately calibrated.

! Model predictions should be verified by real-time sampling.

D. Monitoring Requirements.

A permit or certification for dredging and dredged material management may contain a number of performance requirements. If water quality monitoring is required to ensure compliance with these requirements, then the applicant, in consultation with the Divisions, should propose appropriate monitoring locations (including background sample location), action levels, and contingency requirements (i.e. corrective actions to be taken if monitoring reveals exceedances of water quality limits) for dredging and management operations, with final approval by the Divisions. The frequency and location of sample collection and the scheduled reporting of analytical results will be included in the permit and will be decided on a case-by-case basis. Monitoring may be biased toward a more intense monitoring effort during the early phases of a project. After consistent, satisfactory performance has been demonstrated, the Divisions would have the option of decreasing monitoring frequency. Any required field measurements or observations, including turbidity, should be reported to the Divisions within 24 hours. Sample analysis shall be undertaken at an environmental laboratory approved by the New York State Department of Health (ELAP). All laboratory results of analyses shall be transmitted to the Divisions electronically or by fax or overnight mail within ten working days of sample collection and immediately followed by a mailed copy. When the sediments to be dredged are highly contaminated, the permit may be conditioned to require a shorter turn around time for the transmission of required water column and/or effluent analysis results. This turn-around time shall be decided on a case-by-case basis. The permittee should identify any exceedances of the limit for suspended solids or of any other required monitoring parameter. The permittee should also include a description of the exceedance, its cause, and identify the corrective actions that were taken at the time of the exceedance. Typical monitoring requirements are as follows:

1. Total Suspended Solids

Total suspended solids concentrations may be measured directly through laboratory analysis, or a correlation may be derived for suspended solids and NTU. NTU may be measured in the field using one of a variety of available meters or sensors. An appropriate number of samples must be collected to make a statistical correlation between these two parameters.

- For dredged material that has undergone suspended phase toxicity testing, applicants should be required to measure the TSS and turbidity (NTU) of the full strength suspended phase and all dilutions tested. These measurements can be used to determine the turbidity in NTU associated with the acute or chronic toxicity levels established for the limits of any mixing zones. Turbidity in NTU may then be monitored in the field during any dredging or management operations.

- For dredged material that has not undergone suspended phase toxicity testing, applicants may be expected to collect a suspended phase sample of the dredged material, measure the TSS and turbidity, and determine if there is a correlation between the two measurements following the method in Thackston and Palermo "Improved Methods for Correlating Turbidity and Suspended Solids for Dredging and Disposal Monitoring" -1998. In accordance with this method, the applicant may be expected to provide the turbidity in NTU that is associated with TSS levels of 50 and 100 ppm above background.

2. Dredging Area

- The dredging area may be monitored for water quality parameters of concern (e.g., water quality limiting substances (see Appendix A) or substances identified at concentrations greater than Class A threshold values), for total suspended solids (TSS) at locations approved by the Divisions, or to ensure compliance with mixing zone limits. If a mixing zone limit was set using a mathematical model, TSS or turbidity monitoring requirements may be waived after real-time sampling verifies model predictions.

- The dredging area should be routinely inspected for compliance with general and special permit conditions for protection and restoration of habitat.

- The post-dredging sediment surface may be sampled and analyzed for sediment quality parameters and other contaminants of concern to assure that their concentrations do not exceed pre-dredging levels. This may be required if initial sampling and analysis of the sample segment representing the top six inches of the sediment to be exposed after dredging (see Chapter II, Section B.2.a) indicates an increased risk of contaminant exposure. See Application of Sampling Results (Chapter III, Section B.3) for options to prevent or limit exposure.

3. In-water/Riparian Placement Area

- In-water placement should be monitored for total suspended solids (TSS), settleable solids and other water quality parameters of concern (e.g., water quality

limiting substances (see Appendix A) or substances identified at concentrations greater than Class A threshold values) at locations approved by the Divisions.

- For any capped in-water placement area, physical inspections that are supplemented, if necessary, by bathymetric surveys should be conducted periodically and after major storm events to detect loss of cap integrity.

- For riparian diked sites or confined disposal facilities, overflow should be routinely monitored at the point of discharge (e.g. at the weir) for turbidity, total suspended solids, settleable solids and other water quality parameters of concern, to assess effectiveness of retention time for prevention of sediment and associated contaminant transport back into surface waters.

- For riparian diked sites or confined disposal facilities, the effluent plume should be visually monitored daily with periodic verification of total suspended solids concentrations. If there is a visible plume outside the mixing zone, the permittee should take action to rectify the situation. If there are water quality limiting substances in the dredged sediment or levels in the sediment at higher concentrations than Class A threshold values, the permittee may be required to monitor for these parameters at the edge of the mixing zone at the frequency deemed appropriate by the Divisions. Samples should be collected until there is no longer a discharge of effluent from the site or until the site has been modified to prevent further discharge to the waterway. The analytical laboratory quantitation levels for monitored parameters must be low enough to allow a meaningful evaluation of the concentration of the analytes.

E. Violations

Exceedance of state water quality standards may subject the permittee to a monetary fine, corrective or mitigation action, or other enforcement action by the Department.

Permits or certifications containing conditions with emission, discharge or other monitoring limits (i.e., for turbidity) should state that exceedances of such limits require that corrective measures be implemented immediately and a report e-mailed, faxed or overnight mailed to the appropriate Department personnel within 24 hours. For subsequent exceedances, the Certificate should require the permittee to immediately stop the activity causing the exceedances, and e-mail, fax or overnight mail notification to appropriate Department personnel within 24 hours. Such notification should contain a plan for corrective measures.

APPENDICES

APPENDIX A POTENTIAL WATER QUALITY LIMITING SUBSTANCES

Potential Water Quality Limiting Substances are substances that cause Water Quality Limiting Segments for different water bodies throughout the State. The definition of Water Quality Limiting Segments is as follows: "A designated portion of a water body where water quality does not meet applicable standards, or is not expected to meet applicable standards, even after the application of technology based treatment requirements by industry and secondary treatment by municipalities." This definition can be found in TOGS 1.3.1 - Total Maximum Daily Loads and Water Quality Based Effluent Limits.

Potential Water Quality Limiting Substances as of July 2001

For the Upper Hudson, Mohawk and Lower Hudson Basins, the following are potential or actual water quality limiting substances: mercury, copper, cyanide, iron, lead and PCB

For the St. Lawrence River PCB's and PAH's are water quality limiting substances.

For the Grass River cadmium, copper, cyanide, fluoride, iron, lead, sulfide, surfactants, zinc and phenols are water quality limiting substances.

For the New York Harbor mercury is water quality limiting and there is a fish advisory for PCB's. Other chemicals of concern are dioxin/furan's, PAH's and chlordane.

For the Genesee River Basin phenolics, chlorinated phenolics, cobalt, cyanide, hydroquinone, lead, 1,1,1-trichloroethane, dichlorobenzene, cadmium, tetrachloroethylene and copper are water quality limiting substances.

For the Lake Ontario Basin 1,1-dichloroethylene, 1,2-dichloropropane, dimethylaniline, ethylene glycol, acrylonitrile, bis-(2ethylhexyl) ether, 2,4-dichlorophenol and 2,6-dinitrotoluene are water quality limiting substances.

For the Allegheny River Basin copper, phenol and nickel are water quality limiting substances.

For the Lake Erie-Niagara River basin chrysene, benz(a)anthracene, hexachlorocyclohexane, PCB's, endosulfan, heptachlor, DDT, hexachlorobenzene and phenolics are water quality limiting substances.

For the Susquehanna River Basin - copper, cyanide, and iron are water quality limiting substances. In addition:

- Cadmium, lead, selenium and phenols are water quality-limiting downstream of Cortland.
- Cadmium is also water quality-limiting downstream of the Amphenol Corp. discharge at Sidney.
- Mercury is water quality-limiting downstream of the Binghamton-Johnson City STP.
-

For the Chemung River Basin - antimony, cadmium, copper, cyanide, lead, iron, and thallium are water quality limiting substances. In addition:

- Nickel, silver, zinc and fluoride are water quality-limiting downstream of the Toshiba, Westinghouse, Cutler-Hammer complex.
- Mercury, nickel, silver and zinc are water quality-limiting downstream of the Facet Enterprises hazardous waste remediation site on Mays Creek.

For the Seneca-Oneida-Oswego River basins cyanide, mercury, iron, aldrin, PCB's, dichlorobenzenes, and phenols are water quality limiting substances. In addition:

- Cadmium is water quality-limiting in the Onondaga Lake sub-basin while lead and trichloroethylene are water quality-limiting in the Ley Creek sub-sub-basin.
- Lead is water quality-limiting in the Owasco Lake sub-basin and in the Skaneateles Creek sub-basin.

APPENDIX B VARIOUS METHODS FOR CALCULATING HOW MANY SAMPLES SHOULD BE COLLECTED TO CHARACTERIZE A DREDGE SITE

Balduck's Method

The method of gridded sampling proposed by Balduck, 1992 (in Keillor 1993) may be used for dredge site characterization with certain modifications based on site size, dredge history, environmental flags (e.g., fish advisory), and the presence or absence of potential pollutants in the drainage basin or local environment. The Balduck equation considers the area (not volume) to be dredged and is used only to determine the number of sediment cores to be collected to provide spatially representative sampling of the dredge site. Core sample depth and segmentation guidelines are described in Chapter II, Section B.2.

Balduck's equation, modified for English units, is:

$$N=(Df)(30)((W)(L)(\frac{1}{1.2x10^6}))^{0.33}$$

where

N = the total number of coring (sampling) stations;

$\frac{1}{1.2X10^6}$ = factor to convert square yards into square kilometers;

W = the width (in yards) of a single dredge area or the widest dredge area where there are multiple areas to be dredged;

L = the length (in yards) of a single dredge area or the sum of the lengths of the parts of a combined dredge area;

Df = a dredge factor consisting of a multiplier (unitless) from 1 to 3 based on the site's dredging, environmental or pollutant history and other case-specific factors discussed below.

Table B-1: Balduck Method for Selection of Sample Size
Number of Samples for Analysis per Area (sq. yds.) to be Dredged

	Balduck Method		
Dredging Area (sq. yds.)	Number of Samples	Number of Samples	Number of Samples
	Df = 1	DF = 2	Df = 3
5,000 - 10,000	5 - 6	10 - 12	15 - 18
10,000 - 20,000	6 - 7	12 - 14	18 - 21
20,000 - 30,000	8 - 9	16 - 18	24 - 27
30,000 - 50,000	9 - 10	18 - 20	27 - 30
50,000 - 65,000	11	22	33
65,000 - 85,000	12	24	36
85,000 - 100,000	13	26	39
100,000 - 130,000	14	28	42
130,000 - 160,000	15	30	45
160,000 - 200,000	16	32	48
200,000 - 230,000	17	34	51
230,000 - 280,000	18	36	54
280,000 - 330,000	19	38	57
330,000 - 380,000	20	40	60
380,000 - 440,000	21	42	63
440,000 - 500,000	22	44	66
500,000 - 580,000	23	46	69
580,000 - 650,000	24	48	72
650,000 - 750,000	25	50	75
750,000 - 830,000	26	52	78
830,000 - 930,000	27	54	81
930,000 - 1,030,000	28	56	84

Df equals 1 for sites:

- with no previous sediment data; and
- no suspected likelihood of appreciable contamination.

Df equals 2 for sites:

- with no previous sediment data; but
- where there is a likelihood of contamination based on history of surrounding land uses (e.g., heavy industry), spills, observed environmental stresses; and dredging has occurred within the last five years; or
- near particularly sensitive features, e.g., water supply intakes, unique habitats.

Df equals 3 for sites:

- with documented contamination from past sediment data; or
- in areas of established fish advisories or spills or site-specific contamination of concern (e.g., copper, mirex, dioxin, PCB's) in the drainage basin; or
- where there is a likelihood of contamination and dredging has not occurred in the last five years.

NOTE:

Df of 0.5 where:

- previous data show no contamination.
- there is no likelihood of contamination.

SORENSEN

A Dutch formula for estimating sample density for conventional maintenance dredging was proposed by Sorensen (1984). The formula is as follows:

$$N = 3 + \left[\frac{(A^{0.5} * d^{0.33})}{50} \right]$$

where

N = number of cores
A = area (sq. Meters)
d = depth (meters)

ENVIRONMENT CANADA

An Environment Canada method for selecting the number of samples was presented by Macknight (1991). These guidelines call for calculating the dimensions of a sampling block (grid rectangle), using1000 cubic meters as a sampling block volume. For larger areas, this method calls for more samples than the other two methods. For small dredge areas, fewer samples would be suggested. The Canadian method calls for a sample in the center of each 1000 cubic meter block and is less random that the other two methods.

For more information on this method see: Mudrock A + S.D. MacKnight, 1991. Handbook of Techniques for Aquatic Sediments Sampling. pp.210. CRC Press, Boca Raton, FL.

APPENDIX C SEDIMENT SAMPLING

Table C-1 QC SAMPLES FOR SEDIMENTS			
Sample Type	**Purpose**	**Collection**	**Documentation**
Duplicate	Check laboratory and field procedures	1 sample per week or 10% of all field samples, whichever is greater	Assign two separate sample numbers, submit blind to the lab
Equipment (Rinseate) Blank	Check field decontamination procedures	Collect when sampling equipment is decontaminated and reused in the field.	Assign separate sample number
Matrix Spike and Matrix Spike Duplicate (MS/MSD)*	Required by laboratory protocols.	1 sample per twenty sediment samples	Assign both samples the same sample number. Indicate MS/MSD on chain-of-custody form.

*This is not necessary with PCB congener method or high resolution pesticide method or dioxin/furan analyses.

Table C-2 SAMPLE CONTAINERS AND VOLUMES FOR SEDIMENT SAMPLES		
Type of Analysis	**Type and Size of Container**	**Number of Containers and Sample Volume (per sample)**
Purgeable (Volatile) Organics	2-oz. glass jar with Teflon lined cap	Two; fill completely
Extractable Organics, Dioxin/Furan Pesticides/PCBs	8-oz. amber glass jar with Teflon-lined cap	One; fill completely
Metals	8-oz. glass jar with Teflon-lined cap	One; fill half full

Table C-3 SAMPLE PRESERVATION AND HOLDING TIMES FOR SEDIMENT SAMPLES		
Parameter	**Preservative**	**Maximum Holding Time[1]**
Volatiles	Cool to 4 C	7 days
PCBs/Pesticides	Cool to 4 C	Extract within 5 days, analyze within 40 days
Extractable organics	Cool to 4 C	Extract within 5 days, analyze within 40 days
Metals	Cool to 4 C	6 months
Mercury	Cool to 4 C	26 days
Dioxin/Furan	Cool to 4 C	Extract within 30 days, analyze within 1 year

[1] Holding times are based on verified time of sample receipt (VTSR). Source NYSDEC Analytical Services Protocol.

CHAIN OF CUSTODY RECORD

WORK ORDER #:
CUSTODY No:
PROJECT:
SAMPLED BY:
LOCATION:

SAMPLE NUMBER	DATE	TIME	SAMPLE LOCATION	MATRIX	COMPOSITE OR GRAB	FIELD MEASUREMENT	No. OF CONTAINERS	ANALYSIS REQUIRED							REMARKS (PRESERVATION, ETC.)

RELINQUISHED BY: (Signature)	DATE:	TIME:	RECEIVED BY: (Signature)	RELINQUISHED by: (Signature)	DATE:	TIME:	RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature)	DATE:	TIME:	RECEIVED BY: (Signature)	RELINQUISHED by: (Signature)	DATE:	TIME:	RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature)	DATE:	TIME:	RECEIVED BY: (Signature)	SHIPPED / DELIVERED:			DATE: / TIME:
RELINQUISHED BY: (Signature)	DATE:	TIME:	RECEIVED BY: (Signature)	REMARKS:			
RELINQUISHED by: (Signature)	DATE: TIME:	TIME:	RECEIVED FOR LABORATORY BY: (Signature)				

Sampling Procedures

Core Samples

Sediment cores should be collected using a vibra-coring apparatus, or other appropriate coring device. Selected equipment is to be used in accordance with the manufacturer's instructions. Clean, decontaminated core tube liners must be used. The bottom of the coring tube liner should be immediately capped and taped upon removal of the coring apparatus from the water. The core tube liner should then be removed from the coring apparatus and its top immediately capped and taped.

The core tube liner and boat deck should then be rinsed with ambient water to reduce the risk of contaminated sediments becoming airborne as they dry.

A visual inspection of the sediment cores should then be performed. Individual horizons or strata within each core should be measured, along with the overall core length. These measurements and all significant features should be documented in a field notebook. The field notebook should also document the date, time, and location of each sample collected. Using a permanent marker, the date, time, and sample location should also be recorded on the sediment core tube liner. High resolution photographs of the cores may be taken.

The sediment core (or segment if appropriate) should be emptied into a clean tub and mixed with a clean spatula made of appropriate material. Generally sediment to be analyzed for trace metals should not come into contact with metals and sediment to be analyzed for organic compounds should not come into contact with plastics. When the sediment appears mixed to a uniform color and consistency, a clean scoop should be used to place the material into acid washed wide mouth glass jars with Teflon® lined screw lids. After a jar is capped and labeled, it should be immediately placed on ice in a cooler.

All sample containers should be labeled using a permanent marker to indicate the date, time, and sampling location. This information should then be recorded in a field log book and on a chain of custody form which will follow the samples. Sediment material not placed in sample bottles should be returned to the location from which it was collected. All sample bottles should be placed in coolers with ice and delivered to the laboratory via overnight delivery service.

Sediment Data Qualifiers

Qualifiers for Organics Analyses

Value — If the result is a value greater than or equal to the quantification limit, report the value.

U — Indicates compound was analyzed for, but not detected.

J — Indicates an estimated value.

N — Indicates presumptive evidence of a compound.

P — This flag is used for a pesticide/Aroclor target analyte where there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".

C — This flag applies to pesticide results where the identification has been confirmed by GC/MS.

B — This flag is used when the analyte is found both in the associated blank and in the sample.

E — This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis.

D — This flag identifies all compounds identified in an analysis at a secondary dilution factor. If a sample or extract is re-analyzed at a higher dilution factor, as in the "E" flag above, the "DL" suffix is appended to the sample number on the Form I for the diluted sample, and all concentration values reported on that Form I are flagged with the "D" flag. This flag alerts data users that any discrepancies between the concentrations reported may be due to dilution of the sample or extract.

NOTE: These qualifiers do not apply to the PCB congener method 1668, but are applicable to the recommended PCB method 8082.

Qualifiers for Metals Analyses

B — The reported value is less than the Contract Required Detection Limit but greater than the Instrument Detection Limit.

U — The Analyte was analyzed for but not detected, i.e., less than the Instrument Detection Limit.

E — The reported value is estimated because of the presence of an interference.

Glossary of Selected QA/QC Terms
(source: NYSDEC ASP, 10/95)

Analytical Services Protocol (ASP) - the collection of analytical methods and corresponding reporting and quality control procedures that has been adopted by the Division of Water.

Contract Required Quantitation Limit (CRQL) - minimum level of quantitation acceptable under the ASP.

Equipment Rinseate - a sample of analyte-free media which has been used to rinse the sampling equipment. It is collected after completion of decontamination and prior to sampling. This blank is useful in documenting adequate decontamination of sampling equipment.

Field Blank - any sample submitted to the laboratory identified as a blank prepared in the field. The purpose of the field blank is to document whether or not there was contamination introduced in the collection of the sample.

Field Duplicates - an additional sample taken from the same homogenized sample and sent to the analytical laboratory for identical analysis.

Holding Time - the elapsed time, expressed in days, from the date of receipt of the sample by the laboratory until the date of its preparation (digestion, distillation or extraction) and/or analysis.

Matrix - the predominant material, component, or substrate (e.g., sediment) of which the sample to be analyzed is composed. Matrix is not synonymous with phase (liquid or solid).

Matrix Spike (MS) - aliquot of a sample fortified (spiked) with known quantities of specific compounds (target analytes) and subjected to the entire analytical procedure in order to indicate the appropriateness of the method for the matrix by measuring recovery. The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Matrix Spike Duplicate (MSD) - a second aliquot of the same matrix as the MS that is spiked with identical concentrations of target analytes as the MS, in order to document the precision and bias of the method in a given sample matrix.

Method Detection Limit (MDL) - the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero.

Minimum Quantitation Limit - the minimum level that an analyte can be quantitated within a specified precision.

Percent Moisture - an approximation of the amount of water in a sediment sample made by drying an aliquot of the sample at 105 °C. The percent moisture determined in this manner

also includes contributions from all compounds that may volatilize at or below 105 °C, including water. Percent moisture may be determined from decanted samples and from samples that are not decanted.

Practical Quantitation Limit (PQL) - is the lowest level that can be measured within specified limits of precision during routine laboratory operations on most effluent matrices.

Project - single or multiple data collection activities that are related through the same planning sequence.

Replicate - independent samples which are collected as close as possible to the sample point in space and time. They are two separate samples taken from the same source, stored in separate containers, and analyzed independently at the same laboratory. These replicates are used to characterize sediment heterogeneity.

Semivolatile Compounds - compounds amenable to analysis by extraction of the sample with an organic solvent. Used synonymously with Base/Neutral/Acid (BNA) compounds.

Tentatively Identified Compounds (TICs) - compounds detected in samples that are not target compounds, internal standards or surrogate standards. Up to 30 peaks (those greater than 10% of peak areas or heights of nearest internal standards) are subjected to mass spectral library searches for tentative identification.

Time - when required to record time on any deliverable item, time shall be expressed as Military Time, i.e., a 24-hour clock.

Trip Blank - a sample of analyte-free media taken from the laboratory to the sampling site and returned to the laboratory unopened. A trip blank is used to document contamination attributable to shipping and field handling procedures.

Validated Time of Sample Receipt (VTSR) - the date on which a sample is received at the laboratory facility, as recorded on the shipper's delivery receipt and chain-of-custody.

Volatile Compounds - compounds amenable to analysis by the purge and trap technique. Used synonymously with purgeable compounds.

Wet Weight - the weight of a sample aliquot including moisture (undried).

APPENDIX D TEQ CALCULATION FOR DIOXIN/FURAN

The 2,3,78-TCDD equivalent for a congener is obtained by multiplying the concentration of that congener by its Toxicity Equivalency Factor (TEF) from the table below. The TEQ is the sum of the products.

CONGENER	TEF
2,3,78 -Tetrachlorodibenzo-p-dioxin	1
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	0.5
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	0.1
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	0.1
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	0.1
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	0.01
Octachlorodibenzo-p-dioxin	0.001
2,3,7,8-Tetrachlorodibenzofuran	0.1
1,2,3,7,8-Pentachlorodibenzofuran	0.05
2,3,4,7,8-Pentachlorodibenzofuran	0.5
1,2,3,4,7,8-Hexachlorodibenzofuran	0.1
1,2,3,6,7,8-Hexachlorodibenzofuran	0.1
2,3,4,6,7,8-Hexachlorodibenzofuran	0.1
1,2,3,7,8,9-Hexachlorodibenzofuran	0.1
1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.01
1,2,3,4,7,8,9-Heptachlorodibenzofuran	0.01
Octachlorodibenzofuran	0.001

TEQ calculation as per: NATO.1988. International Toxicity Equivalency Factors (I-TEF) Method of Risk Assessment for Complex Mixtures of Dioxins and Related Compounds. North Atlantic Treaty Organization. Report Number 176.

Known standards and guidelines are based on the method outlined above. In 1998 an expert meeting of the WHO was held to derive consensus TEF's for dioxins/furans and dioxin-like PCB's. A new list of TEF's was recommended which included values for humans, mammals, fish and birds. A copy of these numbers is available in:

Environmental Health Perspectives, December 1998. Toxic Equivalency Factors (TEFs) for PCB's, PCDD's, PCDF's for Humans and Wildlife. Volume 106, Number 12.

APPENDIX E SUM OF PAH'S

PAH's in sum of PAH's

Acenaphthene
Acenaphthylene
Anthracene
Benz(a)anthracene
Benzo(b)fluoranthene
Benzo(k)fluoranthene
Benzo(g,h,i)perylene
Benzo(a)pyrene
2-Chloronaphthalene
Chrysene
Dibenz(a,h)anthracene
Fluoranthene
Fluorene
Indeno(1,2,3-c,d)-pyrene
2-Methylnaphthalene
Naphthalene
Phenanthrene
Pyrene

The sum of the concentrations of these eighteen PAH analytes are used to calculate the sum of PAH for Table 2. If one or more analytes are missing from the list, sum the remaining analytes for the calculation of sum of PAH.

APPENDIX F BIOLOGICAL TESTING OF DREDGED MATERIAL

Although the Divisions do not routinely require biological testing, the Army Corps of Engineers (USACE) may require applicants to conduct a suite of biological tests to support their federal dredging permit application. If such test results are available and considered sufficient to characterize the material to be dredged, and especially if open water placement is planned, the Divisions may elect to use this information in lieu of or in addition to whole sediment chemistry analytical results to make permit decisions. The following sections describe biological testing and the application of test results.

A. Water Column (Suspended Phase) Evaluations

Federal dredging guidance requires preparation of a suspended particulate phase for bioassay testing with water column organisms. The suspended phase is the supernatant after 1 hour of settling following 30 minutes mixing of 1 part of sediment with 4 parts of dredging site water. Dilution series of 100, 50, 10 and 0% are prepared for the suspended phase toxicity tests to enable calculation of an LC-50 or EC-50 for three test organisms. The results of these toxicity tests can be used after applying mixing considerations and resource concerns at the dredging and placement sites. Water chemistry elutriate analyses are also conducted on a filtrate (0.45 um filter) of the suspended particulate phase to compare with water quality criteria. The results of both tests above are interpreted by USEPA/USACE using numerical modeling methods which simulate the hydrology and topography at the placement site. In federal determinations, the measured toxicity in the suspended phase has a 0.01 safety factor applied to calculate a Limiting Permissible Concentration (LPC), which is then applied in a mixing model to determine compliance with a 4 hour mixing zone at the placement site. For evaluations of dredging and placement operations, the LC/EC-50s and elutriate results can be applied by using a mixing zone analysis as described in Chapter V, Section C.

B. Benthic (Solid Phase) Evaluations

In federal dredging assessments, test results are compared to organisms exposed to a reference sediment for a designated placement site. Both the solid phase toxicity and bioaccumulation test results can be evaluated with regard to the potential for adverse impacts from newly exposed sediments at the dredge site, resettling of suspended solids at the dredge site, and at the in-water placement site.

i. Solid phase toxicity tests

When low reference survivorship is allowed to be used to evaluate the tests (a 20% difference from reference is allowed for amphipod test, and there is no established limit for reference survivorship), this should be considered in light of what would be an acceptable reference result for the dredging and placement sites. Significant toxicity in federal solid phase tests typically disqualifies dredged material from in-water placement. Disposal of such material within any State aquatic site would require positive placement, a comprehensive capping program and significant coordination. Any such project would be likely to require all available BMP permit conditions.

A lack of toxicity in solid phase tests does not itself automatically allow dredged material to be considered class A, as toxicity may still be demonstrated in the suspended phase or in the bioaccumulation portion of the solid phase tests. In addition, sediment quality thresholds may be exceeded to such an extent that the material cannot be confidently described as Class A.

The toxicity tests will be based on acute effects and follow EPA and ASTM standard methods. Using freshwater sediments, the test species should be *Hyalella azteca* and *Chironomus tentans* (ASTM Method E 1706). The endpoint for *Hyalella* is survival, while *Chironomus* is growth (weight) and survival. These species are recommended because they are widely used, easy to culture, and are highly tolerant to changes in grain size. The test should consist of five replicate samples for statistical comparison and be conducted in accordance with the standard methods. The results of the test should indicate whether the test sediments are statistically different from the reference sediment. ASTM (E 1383) provides ways to calculate these results.

For marine sediments, the acute toxicity bioassay test species should be the amphipod *Ampelisca abdita* (ASTM Method E 1367) and a polychaete *Neanthes arenaceodentata* (ASTM Method E 1611) or the mysid shrimp *Mysidopsis bahia*. Survival is the endpoint for these two species using the 10-day test. The results of these two tests should indicate whether the test sediments are statistically different from the reference sediment. ASTM (E 1383) provides ways to calculate these results. A solid phase chronic toxicity test using *Leptocheirus* has been developed by EPA. This test is outlined in "Methods for Assessing the Chronic Toxicity of Marine and Estuarine Sediment-associated Contaminants with the Amphipod *Leptocheirus plumulosus* EPA/600/R-01-020, March 2001." Since this test is relatively new, it may not be cost effective for the applicant. However, the applicant has the option to use this chronic test to support the results of other biological tests.

These biological testing protocols are further detailed in a NYSDEC Division of Water document "Biological Assessment of Sediments in New York State - 1998".

ii. Solid phase bioaccumulation assays

Federal bioaccumulation testing for dredged material typically includes an extensive list of bioaccumulative contaminants of concern. Effects-based (ecological or human health) limits derived from scientific literature, as well as exposure considerations, are used to develop tissue guidelines. Divisions will need to consider any available field background tissue concentrations and exposure considerations for the dredging and placement sites to evaluate potential bioaccumulation impacts. To independently evaluate the toxicological aspects, literature values should be selected from studies that compared effects to *tissue* concentrations, as opposed to *exposure water* concentrations. For some contaminants, data for organisms that are as close as possible to, but not necessarily the same as the species at risk, will need to be used.

APPENDIX G GLOSSARY

GLOSSARY

ambient conditions - the conditions present at a given site based on chemical, physical and biological assessments.

anaerobic - able to live, and grow in the absence of free oxygen.

baffle - a device (as a plate, wall or screen) to deflect, check, or regulate flow.

beneficial use - material being used beneficially pursuant to section 6 NYCRR Part 360-1.15 and removed from the definition of a solid waste, and therefore the jurisdiction of Part 360, as per 6 NYCRR Part 360 - 1.2(a)(4)(vii).

benthic - of, relating to, or occurring at the bottom of a water body; relating to sediments.
benthos - organisms that live on or in the bottom of a water body.

best management practices (BMPs) - methods and measures employed during dredging or dredged material management to minimize adverse environmental impacts.

bioaccumulation - the progressive increase in the amount of a chemical in an organism through any route including respiration, ingestion, or direct contact with sediment or water.

borrow pit - an excavated area where material has been dug for use at another location.

confined disposal facility - for the purposes of this TOGS, a diked area, either in-water or in a riparian area, used to contain dredged material.

containment area - any location or site used for the permanent or temporary placement of dredged material which may or may not have structures designed to prevent contact with water or terrestrial environment.

data qualifier - a word or symbol that limits or modifies the meaning of analytical results.

dewatering - the practice of removing water from a waste product or dredged material , which can be performed actively or passively.

dioxin - a toxic chlorinated hydrocarbon which occurs as an impurity in the herbicide 2,4,5-T.

dredging - for the purposes of this document the term dredging includes all in-water activities designed to move or remove sediment. Examples of such activities include but are not limited to mechanical and hydraulic dredging, mechanical plowing, trenching and jetting.

dredged material - the sediments under a body of water removed during a dredging operation and displaced or removed to a management location.

effluent - waste material discharged into the environment, especially when serving as a pollutant; applies to the water discharged over the weir of a confined disposal facility for dredged material or from a dredged material dewatering facility.

fines - sediment (silt and clay) that passes through the 200 U.S. standard sieve mesh or material with a grain size of 0.0625 mm or less.

guidelines - are published in TOGS and other internal documents but do not have the force and effect of a law.

guidance - refers to either national or regional implementation manuals developed to assist the evaluator in making technical decisions.

hazardous waste - any material meeting the definition of a hazardous waste as defined in 6NYCRR part 371.

homogenize (as in *sample homogenization*) - to make more uniform throughout in texture, mixture, quality, etc. by breaking down and blending the particles.

hydraulic dredging - removing sediment from the bottom of a water body or the sea with the use of suction equipment.

interstitial - referring to the interstices, or pore spaces in rock, soil, or other material subject to filling by water.

littoral - a coastal region; the shore zone between high and low watermarks.

loading - the quantity of a material or substance entering a system.

mixing zone - the area in a water body where a temporary exceedances of water quality standards resulting from short-term disruptions to the water body caused by dredging or the placement of dredged material will be accepted.

modeling - a system of postulates, data, and inferences presented as a mathematical description to both describe and predict a system which can not be easily observed.

navigable waters (of the State) - (NY State definition) means all lakes, rivers, streams and other bodies of water in the State that are navigable in fact or upon which vessels with a capacity of one or more persons can be operated notwithstanding interruptions to navigation by artificial structures, shallows, rapids or other obstructions, or by seasonal variations in capacity to support navigation. It does not include waters that are surrounded by land held in single private ownership at every point in their total area.

navigable waters - (EPA definition) means the waters of the United States, including the territorial seas.

outfall - the mouth of a drain or sewer.

parameter of concern - a substance that exceeds a threshold value for assessment.

persistent - refers to the transformation half life of a chemical in the environment (EPA defines as greater than 6 months in soils and sediment).

polychlorinated biphenyls (PCBs) - one of several aromatic compounds containing two benzene nuclei with two or more substituent chlorine atoms. They are colorless, toxic, viscous liquids. Because of their persistance and ecological damage from water pollution, their manufacture has been discontinued in the US (1976).

polycyclic aromatic hydrocarbons (PAHs) - hydrocarbons are an organic compound consisting exclusively of the elements hydrogen and carbon. Polycyclic hydrocarbons are made up of four or more ring structures. Aromatic refers to their strong and not unpleasant odor. PAH's are derived principally from petroleum and coal tar sources and some have demonstrated carcinogenic properties.

protected stream - means any stream or particular portion of a stream for which there has been adopted by the Department or any of its predecessors any of the following classifications or standards: AA, AA(t), A, A(t), B, B(t) or C(t). Streams designated (t)(trout) also include those more specifically designated (ts)(trout spawning).

riparian - land areas directly influenced by a body of water; usually pertains to the banks of a river, stream, or waterway that have visible vegetation or a physical characteristic showing influence by a water body. For the purpose of this TOGS is defined as the 100 year flood plain plus any adjacent wetland integral to the surface water (U.S. vs. Riverside Bayview Homes, Inc., 474 U.S. 121, 106 S. Ct. 455 (1985).

riparian diked site - see confined disposal facility.

silt - loose sedimentary material with rock particles measuring 4 to 62.5 micrometers in diameter.

sediment quality criteria - numeric, effects-based concentrations that provide an interpretive tool to relate ambient sediment chemistry data to potential adverse biological impacts.

standard - form the legal basis for controls on the amount of pollutants entering the environment from various sources.

stratification (of sediments) - the formation of distinct layers of sediments having the same general composition (grain size, quality), arranged one on top of another.

substrate - the base on which an organism lives.

surfactant - a compound that reduces surface tension (as a detergent).

Toxicity Characteristic Leaching Procedure (TCLP) - A test that measures the mobility of organic and inorganic chemical contaminants in wastes (see - SW846 method 1311).

Total Organic Carbon (TOC) - the amount of carbon covalently bound in organic compounds.

upland - beyond the FEMA designated 100 year flood plain.

weir (controlled outlet weir) - structure which raises the water level or diverts water flow.

wetlands - under the Clean Water Act, the term wetlands means "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas."

freshwater wetlands -(NYSDEC definition) - "Freshwater wetlands" or "wetlands" means lands and waters of the state which meet the definition provided in subdivision 24-0107(1) of the Freshwater Wetlands Act and have an area of at least 12.4 acres (approximately 5 hectares) or, if smaller, have unusual local importance as determined by the Commissioner pursuant to subdivision 24-0301(1) of the Freshwater Wetlands Act and 6NYCRR Part 664.

tidal wetlands -(NYSDEC definition) , Generally, tidal wetlands or wetland shall mean any lands delineated as tidal wetlands on an inventory map and shall comprise the following classifications as delineated on such map: Coastal fresh marsh; intertidal marsh; coastal shoals, bars and flats; littoral zone; high marsh or salt meadow; or formerly connected tidal wetlands. Tidal wetlands are more fully defined in ECL §25-0103(1) and its implementing regulations.

whole sediment chemistry - the analytical quantification of target analytes in sediments being dredged or proposed for dredging.

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REGIONAL DREDGING MANAGEMENT PLAN UPDATE FINAL REPORT

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County of Orleans (Lead)
Town of Greece
City of Oswego
Niagara County
Monroe County
Wayne County
Cayuga County
Oswego County

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A. Introduction

This Regional Dredging Management Plan Update ('RDMP Update') has been prepared to provide a comprehensive approach to the on-going dredging needs for harbor access channels along the south shore of Lake Ontario. It provides an update and expansion of a plan originally developed in 2000, which dealt with only a portion of the Lake Ontario shoreline.

The RDMP Update has been developed under the direction of and in cooperation with the Counties of Orleans, Monroe, Niagara, Cayuga, Oswego and Wayne, the Town of Greece, the City of Oswego and the Division of Coastal Resources of the New York State Department of State. The County of Orleans administered the plan development with funding by the participating communities and the New York State Department of State.

This RDMP Update addresses the required maintenance dredging of nineteen harbor access channels, utilized primarily for recreational boating, along the south shore of Lake Ontario. The location of the harbors is shown in Figure 1.

As detailed in this report, dredging needs for the Lake Ontario recreational channels are either not being met or are being provided through private efforts, sometimes with sporadic support from local governments. Even the channels originally constructed by the US Army Corps of Engineers with Federal funds, which are supposed to be maintained by the Corps of Engineers, are not automatically or regularly maintained due to budget constraints. This situation will continue to worsen since Corps of Engineers funding for the dredging of recreational channels is not expected to be restored.

Despite the lack of maintenance, vessel operations were able to continue in the recreational channels since water levels on Lake Ontario were generally at or above average over the last two decades. However, the Lake experienced below average levels during the 2011 and 2012 boating seasons, underscoring the consequences of delayed maintenance. As a result,



Figure 1: Harbor Locations

charter boat captains reported shortened operating seasons, and there were several groundings in the Lake Ontario channels during 2012.

Given the widely recognized need and economic importance of regular and dependable maintenance dredging of the recreational channels, the local governments and State of New York have worked together to formulate this RDMP Update. The plan addresses several issues related to dredging and presents potential solutions. This includes the identification of dredging needs, the economic benefits of a regular dredging program; the costs and potential funding mechanism for dredging projects; the feasibility, nature and form of potential inter-municipal cooperation; dredging priorities and scheduling; the requirements for permitting; and alternatives for ownership, control and operation of dredging equipment.

Section B of this report details dredging needs in the participating counties and Section C details the economic benefits provided by the harbors covered by the study, which can only be maintained and expanded by a consistent, dependable dredging operation. It is found that the recreational harbors within the study area are all in need of dredging as of 2012, some with critical needs. This neglect of maintenance dredging threatens the recreational boating

and related tourism industry, which is so important to Lake Ontario south shore communities. The recreational boating activity in the study area harbors is estimated to generate approximately $94 million annually in economic activity, support over 1,350 jobs, and generate sales tax revenues of almost $3.8 million for the local counties and almost $3.8 million for New York State. This is significant on a regional basis with recreational boating and associated tourism potentially representing a bright spot for further growth if the required infrastructure can be maintained. Unfortunately, as also discussed later in this report, the lack of such maintenance is already causing a curtailment in this sector of the economy.

Estimated costs for a regional dredging management program are detailed in Section D of this report. The final annual costs for the dredging program will vary depending upon how the program is structured. The least expensive option is for the dredging to be done directly with purchased equipment. Under this scenario, total annual costs are estimated from $522,000 to $776,000 with the total dependent upon whether or not the operation includes the Genesee River and Oswego Harbor, the largest, deepest and most complex to handle. A more expensive option is for private contracting of all dredging. Under the current range of prices, it is estimated that such an operation would cost between $648,000 and $3.2 million annually, again depending upon if the Genesee River and Oswego Harbor are included as well as the final unit price obtained under bidding. It is noted that bid prices for private dredging contracts could be reduced in the future if multi-year contracts are let, allowing contractors to confidently invest in newer, more efficient equipment.

Potential funding mechanisms for the program are discussed and evaluated in Section E. The focus is on local sources combined with contributions from the user community. On the basis of the evaluation, it is recommended that the local contribution be provided through the participating county governments while the user community contribution be provided through an increase in the NYS DMV boating registration surcharge. It is noted in this regard that the county contributions, which can be distributed among them in several ways, represents only 4–6% of the sales tax revenues to the counties that is generated annually by the recreational boating activities and that the registration surcharge represents a tiny fraction of the cost of ownership of boats.

Section F of this report evaluates potential forms of organization for a regional dredging management program. These range from operations under an existing county or town to the formation of a new public authority to the incorporation of a new not-for-profit corporation. The evaluation includes consideration of the ability of any structure to provide focus and responsibility for the dredging operations, the economies of scale that could be achieved with respect to the sharing of management functions, personnel and equipment, and the flexibility of any structure to allow for private contract dredging where feasible to help offset operating expenses. In addition, consideration is given to the ease with which structures can be implemented given potential political or public perception constraints. While all forms of organization are feasible, it is recommended that a new, not-for-profit local development corporation (LDC) be formed to implement and operate the regional dredging management program. One of the purposes of LDC's is to conduct public or quasi-public functions on behalf of multiple government jurisdictions, exactly what is being proposed under the regional dredging management program.

A potential implementation schedule is presented in Section G of this report. It is anticipated that spin-up to full funding and full operations would take two-three years, and may be longer if County or State legislative action is delayed. Funding for the first year is anticipated to be provided solely by the participating counties or through a one-time Federal or State grant. First year activities are anticipated to include formation of the LDC and its governing Board of Directors, the hiring of an executive director, and the contract dredging of several of the non-federal channels. With success in obtaining legislation for the remainder of the funding, year two would include the hiring of an engineer, evaluation of potential equipment to purchase and private contracting for the dredging of channels as funding permits. Year three would be the first under full operations.

For start-up actions, it is recommended that the NYS Department of State, Division of Coastal Resources, convene a meeting of representatives of the Counties participating in this planning effort in order to identify a leadership role for moving the plan recommendations forward. It is anticipated that this leadership role would be assumed by the Planning or

Public Works administrator for one of the Counties, or jointly by two of them. These individuals would then lead the organizing effort to form the LDC and get the initial funding from the participating County governments. Once the LDC is formed, the Board of Directors of the LDC would have the responsibility of carrying the effort forward.

The recommendations for funding sources and organizational structure for a regional dredging management program, as detailed in this report, will no doubt be modified as the program comes to life and evolves. In addition, the pace and form of implementation will depend on several factors, including the political will to solve the existing problem and the ability to raise the required funding. Establishing the program will require much effort on the part of its organizers and supporters. Given the economic importance to the region, these efforts are worthy of the task and have the potential to result in decades of benefit to many.

B. Dredging Needs

It is clear from the experience during the 2012 boating season that dredging of the recreational harbors along the Lake Ontario shoreline of New York are is being neglected.

To demonstrate this, a spot survey of water depths at fifteen of the nineteen study channels and harbors was conducted during the 2012 boating season. At each site, spot measurements were made of the minimum water depth, which was then converted to bottom elevations using the water level on the date of the measurement. This existing bottom elevation was then compared to the bottom elevation desirable to support the recreational boating activity at that location. Table 1 contains the results of this survey.

Table 1: Existing Critical Bottom Elevations

Channel/Water Body Designation	Critical Desired Bottom Elevation (ft - IGLD 85)	Existing Max Bottom Elevation (ft - IGLD 85)	deficit (feet)
Wilson	236	239.2	3.2
Olcott Harbor	236	239.2 near launch 238.2 channel	2.2
Oak Orchard Harbor	236	240.2	4.2
Sandy Creek	237	239.7	2.7
Irondequoit Bay	234.3	245	10.7
Bear Creek Harbor	239.8	241.4	1.6
Pultneyville	238.3	240.6	2.3
Great Sodus Bay	233.3	236.6	3.3
East Bay	239.3	241.6	2.3
Port Bay	236.8	240.6	3.8
Blind Sodus Bay	239.3	240.9	1.6
Little Sodus Bay	236	238.8	2.8
Mexico Point	239	240.4	1.4
Port Ontario	235.3	236.4 channel 240.9 harbor	1.1
Sandy Pond Inlet	236.3	241.4	5.1

As is evident from Table 1, the recreational harbors within the study area all are in need of dredging as of 2012. This neglect of maintenance dredging threatens the recreational boating and related tourism industry, which is so important to Lake Ontario south shore communities. As detailed later in this report, the recreational boating industry is estimated to generate over $90 million annually in economic activity and support over 1,277 jobs. This is significant on a regional basis. Recreational boating and associated tourism represents a sector of the upstate New York economy that could represent a bright spot for further growth if the required infrastructure can be maintained. Unfortunately, as also discussed later in this report, the lack of such maintenance is already causing a curtailment in this sector of the economy.

The first step in the development of a regional maintenance dredging program is the identification of on-going dredging needs. In support of this, all harbor access channels to Lake Ontario in Niagara, Orleans, Monroe, Wayne, Cayuga and Oswego Counties have been identified and background information on each collected. The background information was derived from available published sources; site visits; interviews with public officials, marina operators, yacht clubs and marine contractors; review of selected Town and County files; and a review of NYS DEC and US Army Corps of Engineers regulatory permit files. Emphasis was placed upon those items of relevance in determining dredging needs and operational requirements. This includes the channel physical configuration and protection, the type and level of use, size of vessels, sediment physical characteristics and chemical quality, and past dredging experience including sponsoring entity, frequency, amounts, and disposal.

It is noted that internal channels within harbors, including those leading into feeder creeks and streams, are not included as part of the RDMP Update. This is due to the overwhelming number of such channels, the unique characteristics and needs of each, and the fact that dredging such channels would only benefit a small, identifiable number of private docks and/or individual marinas in most cases. In contrast, maintenance of the larger connecting channels to Lake Ontario is expected to provide benefits to a large number of private docks, public launches, yacht clubs and/or several marinas for each identified channel. Given these factors, the participating communities decided at project commencement to only plan for

dredging of the access channels leading from Lake Ontario into harbors that were included in the 2000 RDMP as well as the Oak Orchard Harbor in Orleans County, and the Olcott and Wilson Harbors in Niagara County. As discussed in a later section, the secondary internal channels may be dredged, with private or local public funding, by contract with the entity created to implement the Regional Plan, depending upon the exact organizational and institutional form adopted. Otherwise, the internal channels can be maintained with private or local government funding, as is done under the present circumstances.

A total of nineteen harbor access channels are included as part of this RDMP Update over the approximately 100 linear miles of Lake Ontario shoreline in the six counties (Niagara, Orleans, Monroe, Wayne, Cayuga and Oswego). These were each assigned a site number, commencing with number one for the western-most harbor and progressing eastward. Table One contains a listing of the nineteen channels.

Table 2: RDMP Update Channels

Site	Channel / Waterbody Designation	Municipality	County
1	Wilson Harbor	Wilson (T)	Niagara
2	Olcott Harbor	Newfane (T), Olcott (V)	Niagara
3	Oak Orchard Habor	Carlton (T), Point Breeze (Hamlet)	Orleans
4	Sandy Creek	Hamlin (T)	Monroe
5	Braddock Bay	Greece (T)	Monroe
6	Long Pond Inlet	Greece (T)	Monroe
7	Genesee River	Rochester (C)	Monroe
8	Irondequoit Bay	Irondequoit (T), Webster (T), Penfield (T)	Monroe
9	Bear Creek Harbor	Ontario (T)	Wayne
10	Pultneyville	Pultneyville (Hamlet), Williamson (T)	Wayne
11	Great Sodus Bay	Sodus Point (V), Sodus (T), Huron (T)	Wayne
12	East Bay	Huron (T)	Wayne
13	Port Bay	Huron (T), Wolcott (T)	Wayne
14	Blind Sodus Bay	Wolcott (T)	Wayne
15	Little Sodus Bay	Sterling (T), Fairhaven (V)	Cayuga
16	Oswego Harbor	Oswego (C)	Oswego
17	Mexico Pt. - Little Salmon River	Mexico (T)	Oswego
18	Salmon River - Port Ontario	Richland (T)	Oswego
19	Sandy Pond Inlet	Sandy Creek (T)	Oswego

Several additional channels connecting to Lake Ontario exist within the six counties, such as Eagle Creek Harbor in Orleans County and Fairbanks Point/Hugh's Marina in Wayne

County. However, these generally service a single private entity without general public access. Given this, it is reasonable that the single private entity assumes responsibility for dredging of the channel as part of the cost of doing business.

Relevant information for each channel included in the RDMP Update was organized into a database. The resulting inventory database is contained in Appendix A.

Utilizing the collected information, the channels were grouped into four classes based upon the degree of current channel stabilization, the type of sediment present, and whether utilized for commercial shipping or not. The four classes are defined as follows:

Table 3: Channel Classification Scheme

Class	Properties
I	Sands and some small stone; presumed clean based on location and past experience; should be suitable for adjacent shoreline beach nourishment or other beneficial uses.
II	Minimum stabilization consisting of partial jetties; sand and/or cobble substrate. Sediment should be clean with some beneficially utilized in the past for shoreline nourishment with others disposed or utilized beneficially at upland sites.
III	Sands with some fines and silts of variable quality. These sites will require at least Tier II sampling and testing. Expected that some of the sediment should be suitable for beach nourishment or similar beneficial use. Remainder probably suited for construction fill, landfill cover, or other similar use, which may not be economically feasible. Non-usable material will likely require open lake or upland disposal.
IV	Stabilized Federal Projects utilized for commercial shipping. Materials contain significant silts and clays with high nutrient/organic concentrations and traces of other contaminants. Past disposal has been at open lake disposal sites.

Critical to the establishment of a regular dredging maintenance program is the estimate of the amount and frequency of dredging for each of the channels. Unfortunately, it is difficult to estimate this with complete accuracy. The primary tool utilized to estimate dredging amounts and frequency in this effort is the past dredging history for each site, primarily derived from regulatory permit records. However, this is inexact since some channels have historically been better maintained than others due to available funding, local government or private entity involvement, and political pressures. In addition, the rate of sedimentation of each channel will depend upon weather and the resulting stream flow and lake water level conditions, as well as manmade or man influenced factors such as physical changes to the stream or river feeding the outlet channel and land use changes in its upstream watershed.

Given these diverse factors, it is expected that required dredging amounts and frequencies will vary not only channel to channel but also over time for each channel.

With an appreciation for the uncertainty involved, conservative estimates of the required amount and frequency of dredging for each channel were made. The estimates are based upon the available data, leavened with professional judgment, and reflect the on-going requirements of a sustained program. Initial dredging amounts may be higher since the channels have been neglected of late. This may impact the initial timing or frequency of dredging as the program spins up.

The estimated amounts and frequencies for an on-going dredging maintenance program are given in Table 3.

Table 4: Amount and Frequency by Channel

Site Number	Channel	Frequency (yr)	Quantity (cu yd)	Class
1	Wilson	5	15,000	III
2	Olcott Harbor	5	15,000	III *
3	Oak Orchard Harbor	5	15,000	III
4	Sandy Creek	5	1,200	II
5	Braddock Bay	1	5,000	I
6	Long Pond Outlet	1	200	I
7	Genesee River	2	150,000	IV
8	Irondequoit Bay	5	15,000	III
9	Bear Creek Harbor	10	6,000	II
10	Pultneyville	2	500	II
11	Great Sodus Bay	5	15,000	III
12	East Bay	1	500	II
13	Port Bay	1	1,000	II
14	Blind Sodus Bay	1	300	II
15	Little Sodus Bay	5	15,000	III
16	Oswego Harbor	5	75,000	IV
17	Mexico Point	?	?	II
18	Salmon River/Port Ontario	?	?	III
19	Sandy Pond Inlet	2	6,000	I

* Eighteen Mile Creek, including the entire Olcott Harbor and outlet, was classified as a hazardous waste disposal site by the US EPA in March 2012 and by the NYS DEC in October 2012. The sediments are potentially contaminated by PCB's and metals. As such, more stringent testing is likely to be required and disposal of the sediments could be significantly more costly than at other locations.

As indicated in Table 3, dredging amounts for both Mexico Point and Salmon River/Port Ontario could not be estimated. There are no records of either of these sites having been dredged since their construction. Despite this, the Army Corps of Engineers states only that the Port Ontario site needs sand bypassing to alleviate a buildup on the south side of the channel, however this is not presently impeding use of the channel for navigation.

This Regional Dredging Management Plan is intended to deal with all nineteen channels within the study area. However, the class IV channels, the Genesee River and the Oswego Harbor, deserve a separate discussion.

Until very recently, the class IV channels have been maintained by the Army Corps of Engineers since they both support commercial shipping operations. The Corps, however, has indicated that they can no longer maintain these low volume commercial harbors. In 2012, the Corps piloted a public-private partnership to dredge the Genesee River in which the single commercial shipper utilizing the port funded the bulk of the cost.

In contrast to the other channels and harbors, the two class IV harbors generate a large amount of spoil of low quality that is generally not suited for beneficial use. These waterways must be maintained to minimum depths of 21 to 27 feet, far in excess of that required for recreational use. In addition, dredging to the required depths and handling the large volumes of spoil requires the use of equipment for dredging operations that would be too large for use in many of the other RDMP channels. For these reasons, and the fact that there are commercial shipping operations that may be able to fund dredging of these two harbors, the Genesee River and Oswego harbors will be called out and treated separately in this planning effort.

The estimated dredging amounts and frequencies in Table 4 were combined to obtain annual average dredging amounts by class of sediment. These annual amounts will form the basis for the analysis of equipment needs, organizational structure and cost of the maintenance

dredging program. Table 5 contains a summary of the estimated annual dredging demand for an on-going, sustained program.

Table 5: Annual Dredging Amounts by Class

Class	Sites	Material/Disposal	Annual Amount (cu yd)
I	Braddock Bay, Sandy Pond, Long Pond Outlet	Sands; presumed clean and probably suited to beneficial uses.	~ 8,100/ year
II	Bear Creek Harbor, Blind Sodus Bay, East Bay, Port Bay, Pultneyville, Sandy Creek	Sands, gravels, some cobbles; and little silt. Portions should be suitable for beneficial uses.	~ 3,000/year
III	Wilson, Olcott, Oak Orchard, Irondequoit Bay, Great Sodus Bay, Little Sodus Bay, Mexico Point, Salmon River/Port Ontario	Sands with some fines and silts of variable quality. These sites will require at least Tier II sampling and testing. Some of the sediment should be suitable for beach nourishment or similar beneficial use. Remainder probably suited for construction fill, landfill cover, or other similar use if economically feasible. Non-usable materials will likely quality for open lake disposal.	~ 15,000 / year plus Port Ontario and Mexico Point (see text)
IV	Genesee River Oswego Harbor	If adequately maintained for commercial shipping, no further maintenance will be required for recreational uses. Materials contain significant silts and clays with high nutrient/organic concentrations and traces of other contaminants. Past disposal has been at open lake disposal sites.	~ 90,000 / year

On the basis of maintaining the class I, II and III channels, the total annual dredging amount is 26,100 cubic yards. The class IV channels will add approximately 90,000 cubic yards per year to the annual total.

In addition to the above amounts, representing the on-going dredge amounts for a sustained program, the neglect of the channels has created a backlog that will have to be addressed at the commencement of any program. The primary backlog is within the federally authorized projects within class III. The Corps of Engineers provided a November 2012 update of its estimate of the backlog amounts for six of the class III harbors listing in Table 4, excluding Mexico Point and the Salmon River/Port Ontario sites. These updated estimates are contained in Table 5.

Table 6: Dredge Backlog Amounts (as of 7/2013)			
Harbor	**To Obtain Design Depth (cu. yd.)**	**One Foot Overdraft Amount (cu. yd.)**	**Total Backlog (cu. yd.)**
Wilson	17,797	21,260	39,057
Olcott	5,755	4,988	10,743
Oak Orchard	13,357	9,596	22,953
Irondequoit	9,565	11,107	20,672
Great Sodus	1,002	5,019	6,021
Little Sodus	16,601	10,026	26,627
Totals	**64,077**	**61,996**	**126,073**

The RDMP is primarily intended to address the on-going, sustained maintenance dredging of the south shore harbor channels, but allowance in the analysis will be provided to first deal with these backlog dredging needs.

C. Economic Impacts

The economic benefits, direct and indirect, of dependable maintenance dredging and the incremental cost associated with the neglect of the channels are both difficult to estimate with any precision. However, studies of the economic impact of recreational boating on the Great Lakes have been completed that provide economic factors applicable to the Lake Ontario harbors. When applied to the Lake Ontario harbors, an estimate can be obtained of the economic impacts, direct and secondary, associated with the use of the harbors for recreational boating. As detailed in this section, the resulting analysis demonstrates the substantial economic activity associated with this sector of the regional economy and, hence, the value of maintaining the channels for safe use.

As part of this planning effort, available studies of the economic impact associated with recreational boating were reviewed[1]. The most relevant and applicable such study was conducted by the US Army Corps of Engineers (COE) with the assistance of the Great Lakes Commission and published in 2008[2]. It provides a comprehensive survey and compilation of the direct spending for recreational boating on the Great Lakes as well as modeling that provides estimates of the indirect economic activity resulting from the direct spending. Combining the findings of the COE study with local use data allows for a calculation of the economic impact resulting from recreational boating for each harbor and for the region as a whole.

[1] *Economic Impact of the Canadian Recreational Boating Industry: 2006*, Prepared by Genesis Public Opinion Research, Inc. and Smith Gunther Associates, September 2007.
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Recreational Boating in Maryland, an Economic Impact Study. Preapred by D. Kpton and S. Miller for the Marine Trades Association of Maryland and the Maryland Department of natural Resources. 1995.
Economic Statistics on Massachusetts Marine Trades. Massachusetts Marine Trades Association. http://www.boatma.com/boating_in_ma.html. November 2011.

[2] *Great Lakes Recreational Boating.* Prepared in response to Public Law 106-53, Water Resources Development Act of 1999, Section 455(c), John Glenn Great Lakes Basin Program. December 2008.

The economic impact analysis is based upon the number of wet slips, launch lanes and charter boats associated with each harbor. Table 7 contains a compilation of these elements by harbor in the study region.

Table 7: Slips, Launch Lanes and Charter Boats by Harbor

Site Number	Channel/Water Body Designation	Boat Slips	Launch Lanes	Charter Boats
1	Wilson	476	2	15
2	Olcott Harbor	124	6	47
3	Oak Orchard Harbor	422	6	38
4	Sandy Creek	287	2	14
5	Braddock Bay	528	4	
6	Long Pond Outlet	20	0	
7	Genesee River	1034	5	26
8	Irondequoit Bay	1670	6	5
9	Bear Creek Harbor	4	3	
10	Pultneyville	170	1	10
11	Great Sodus Bay	802	4	45
12	East Bay	32	2	
13	Port Bay	382	4	10
14	Blind Sodus Bay	99	1	
15	Little Sodus Bay	550	8	12
16	Oswego Harbor	536	6	29
17	Mexico Point/Little Salmon River	322	7	17
18	Salmon River/Port Ontario	68	2	8
19	Sandy Pond Inlet	610	9	1
	Totals	**8136**	**78**	**263**

The COE economic analysis breaks recreational boater spending into craft and trip components and contains a separate analysis applicable to charter fishing boats. Craft spending includes items associated with the vessel ownership, upkeep and storage such as equipment, insurance, repairs, slip and storage fees. Trip spending consists of items utilized in the use of the vessels such as gas, oil, food and lodging. It was found that, on average, Great Lakes boaters expend $1,400 per year in craft spending and $2,200 per year in trip spending for a total $3,600 total per year in direct spending

For the current analysis, this $1,400 per year in direct craft spending and $2,200 per year in direct trip spending was assumed on average for all vessels kept in wet slips within the Lake Ontario harbors within the study area. The total number of wet slips was determined for each of the harbors through a combination of satellite photos and direct counts.

In addition to vessels kept in wet slips, a significant number of boaters store vessels on trailers and utilize boat launches for use. To account for these vessels, the number of active, public boat launch lanes for each harbor was determined. Three years of data from the Irondequoit Bay public boat launch, considered typical for the region, indicated that, on average, 1,425 individual boat launches occur on an annual basis per launch lane. Applying this to the number of launch lanes allowed for an estimate of the number of day use trips associated with trailer launched boats.

To determine spending associated trailered boat use, an average of $102 per day in direct trip spending was applied to the number of launched vessels. The $102 spending figure was the average daily direct trip spending found by the COE for Great Lakes boaters for vessels sizes between 16 and 20 feet in length, which is typical for launched vessels.

It is noted that the use of only the direct daily trip spending for trailer-launched vessels is conservative since these vessels also incur direct craft expenses such as insurance, storage, repairs and costs associated with the trailers themselves. Thus, the estimates for this component of the economic impact may be under estimated.

The COE economic estimates for charter boat operations in the Great Lakes are based upon Sea Grant surveys, with the 2002-2003 Sea Grant effort forming the basis of the 2008 COE analysis. Despite being ten years old, this is the most recent analysis available for charter economics.

The direct economic impact related to charter boat operations stems from direct spending by the craft operators as well as direct spending by their clients. The COE found that charter

vessels generate, on average, $11,093 in direct spending on operations while customer direct spending averages $13,443 per vessel.

These direct spending factors have been applied to the inventory of slips, launch lanes and charter boats within each of the nineteen study harbors and the results are shown in Table 8.

Table 8: Summary of Direct Spending

Channel/Water Body Designation	Wet Slips	Launch Lanes	Charter Boats	Total Direct Spending
Wilson	$1,713,600	$290,598	$368,040	$2,372,238
Olcott Harbor	$446,400	$871,794	$1,153,192	$2,471,386
Oak Orchard Harbor	$1,519,200	$871,794	$932,368	$3,323,362
Sandy Creek	$1,033,200	$290,598	$343,504	$1,667,302
Braddock Bay	$1,900,800	$581,196	na	$2,481,996
Long Pond Outlet	$72,000	na	na	$72,000
Genesee River	$3,722,400	$726,495	$637,936	$5,086,831
Irondequoit Bay	$6,012,000	$871,794	$122,680	$7,006,474
Bear Creek Harbor	$14,400	$435,897	na	$450,297
Pultneyville	$612,000	$145,299	$245,360	$1,002,659
Great Sodus Bay	$2,887,200	$581,196	$1,104,120	$4,572,516
East Bay	$115,200	$290,598	na	$405,798
Port Bay	$1,375,200	$290,598	$245,360	$1,911,158
Blind Sodus Bay	$356,400	$145,299	na	$501,699
Little Sodus Bay	$1,980,000	$1,162,392	$294,432	$3,436,824
Oswego Harbor	$1,929,600	$871,794	$711,544	$3,512,938
Mexico Point/Little Salmon	$1,159,200	$1,017,093	$417,112	$2,593,405
Salmon River/Port Ontario	$244,800	$290,598	$196,288	$731,686
Sandy Pond Inlet	$2,196,000	$1,307,691	$24,536	$3,528,227
Totals	**$29,289,600**	**$11,333,322**	**$6,796,472**	**$47,419,394**

As indicated in Table 8, the Lake Ontario harbors generate over $47 million in direct spending per year.

The direct spending on any activity generates secondary economic benefits. For example, dollars spent by a boater at a restaurant are then spent by the restaurant owner on employee salaries, supplies and maintenance. This economic activity is termed indirect economic impact and is sometimes quantified through the use of simple "multipliers". A more precise

estimate can be derived through detailed modeling of economic activity and the generation of individual factors that can be applied to the individual categories of direct spending.

The 2008 COE analysis of Great Lakes boating includes estimates of the indirect activity resulting from direct spending by recreational boaters. This is based upon a detailed input/output economic model for the Great Lakes states. Of interest for this analysis are the results with respect to the total indirect spending as well as the number of jobs supported by both the direct and indirect spending.

As with direct spending, the indirect spending and its effects are calculated separately for craft spending and trip spending by individual boaters and by operational and customer spending for charter boats. Details of these calculations are provided in the spreadsheet outputs in Appendix B to this report.

By combining the direct and indirect economic activity, along with the jobs supported by both, we arrive at a total view of the economic impact of recreational boating in the region. Table 9 contains a summary of the total direct and indirect spending as well as the jobs generated by both.

As indicated by the results in Table 9, the indirect spending due to recreational boating accounts for an additional $46.5 million in economic activity beyond the direct spending by users of the system. In addition, approximately 1363 jobs are supported by the recreational boating use of the Lake Ontario south shore harbors.

Combining the direct and secondary spending, the economic activity associated with recreational boating at the study area harbors totals approximately $94 million and supports 1363 jobs. This significant economic activity is directly threatened by the lack of maintenance of the harbor infrastructure of the region including, most immediately, the dredging of the harbors so they can remain operational.

Table 9: Spending and Jobs Summary					
Site Number	**Channel/Water Body Designation**	**Total Direct Spending**	**Total Indirect Spending**	**Direct + Indirect Spending**	**Jobs Supported**
1	Wilson	$2,372,238	$2,348,060	$4,720,298	69
2	Olcott Harbor	$2,471,386	$3,309,270	$5,780,656	109
3	Oak Orchard Harbor	$3,323,362	$3,763,739	$7,087,101	117
4	Sandy Creek	$1,667,3028	$1,746,474	$3,413,776	53
5	Braddock Bay	$2,481,996	$2,049,952	$4,531,948	54
6	Long Pond Outlet	$72,000	$58,717	$130,717	2
7	Genesee River	$5,086,831	$4,874,967	$9,961,798	141
8	Irondequoit Bay	$7,006,474	$5,886,158	$12,892,632	158
9	Bear Creek Harbor	$450,297	$386,615	$836,912	11
10	Pultneyville	$1,002,659	$1,091,174	$2,093,833	33
11	Great Sodus Bay	$4,572,516	$4,956,430	$9,528,946	152
12	East Bay	$405,798	$343,861	$749,659	9
13	Port Bay	$2,201,756	$2,088,443	$4,290,199	60
14	Blind Sodus Bay	$501,699	$415,605	$917,304	11
15	Little Sodus Bay	$3,436,824	$3,174,918	$6,611,742	90
16	Oswego Harbor	$3,512,938	$3,678,013	$7,190,951	111
17	Mexico Point/Little Salmon River	$2,593,405	$2,614,151	$5,207,556	77
18	Salmon River/Port Ontario	$731,686	$823,251	$1,554,937	26
19	Sandy Pond Inlet	$3,528,227	$2,962,189	$6,490,416	80
	Totals	**$47,419,394**	**$46,571,986**	**$93,991,380**	**1363**

The economic activity associated with the recreational boating use of the Lake Ontario harbors supports property tax revenues and generates sales tax revenue for the host counties and the State. The sales tax portion of this fiscal support to government operations can be estimated from the projected direct and indirect spending figures. Each of the six counties that are part of the study region have a total sales tax rate of 8.0%, with 4.0% going to the local county and the remaining 4.0% going to the State. Table 10 shows the results by county of applying these sales tax rates to the direct and indirect spending activities estimated at each of the harbors. It is noted that the results in Table 10 are based upon the assumption that all direct and indirect spending from boating activities is subject to sales tax in the county in which the boating activity occurs,

Table 10: Sale Tax Revenues from Boating Activities					
County	**local rate**	**State rate**	**total spending**	**County Sales Tax Amount**	**State Sales Tax Amount**
Niagara	4%	4%	$10,500,954	$420,038	$420,038
Orleans	4%	4%	$7,087,101	$283,484	$283,484
Monroe	4%	4%	$30,930,870	$1,237,235	$1,237,235
Wayne	4%	4%	$18,416,854	$736,674	$736,674
Cayuga	4%	4%	$6,611,742	$264,470	$264,470
Oswego	4%	4%	$20,443,860	$817,754	$817,754
Total			**$93,991,380**	**$3,759,655**	**$3,759,655**

The degree to which deferred maintenance dredging reduces the economic activity associated with recreational boating use is complex and cannot be estimated with any precision. It is expected that the impacts will occur in a step function resulting from the loss of use by different segments of the boater community. As dredging is neglected, available water depths are reduced. This will first curtail use by sailboats, which generally require the deepest water. As news of unacceptable depths spreads through the sailing community around Lake Ontario, tourism via sail will decrease along with local use. As depths decrease further, large power boats (> 24 feet) will also be precluded from use and this will effectively eliminate boating tourism and charter operations in the region. Further reductions in depth will finally preclude all use with the exception of kayaks and canoes.

The economic losses associated with this step function reduction in use will not be uniform. The COE documented that, on average, spending and the resulting secondary economic activity are much higher for the larger vessels in the fleet. For instance, direct craft spending averages $20,000 per year for vessels greater than 41 feet, over fourteen times higher than the $1,400 per year for the fleet average. Trip spending, which is especially relevant for the tourism sector, varies from $275 per day for boats larger than 40 feet down to $76 per day for those less than 16 feet in length. Thus, as the available water depths decrease, the highest spending portion of the vessel fleet will first be eliminated.

While predictions of the exact timing of the economic reductions due to deferred maintenance dredging is beyond the scope of this analysis, it is clear that effects were starting to be felt during the 2012 boating season. For example, a July 2012 report calling for the dredging of Wilson Harbor in Niagara County, a prime destination for Lake Ontario cruising vessels, stated the following:

> *"Negative trends are emerging. Boats are having increasing difficulty accessing launch areas, waste management and fuel access at the harbor is silting in. Boaters who would normally end their season in October or November have been forced to haul out in August and September due to low-water conditions. One marina owner reports a 20% loss of sailboats over the past two years. Canadian boats can no longer access major boat yard maintenance during the offseason, an estimated loss of $100-200,000 per year for just one marina (as well as a significant source of tax revenue)."*

These impacts were reported as of July 2012, even before the water level dropped in the fall of 2012 to the lowest it has been since the 1960's.

Another example of the impact of neglected dredging and unreliable water access is provided by the experience at North and South Sandy Ponds in Oswego County. A draft comprehensive plan for the Town of Sandy Creek indicated that 53 charter boats were active in the Town as of 1989. As of 2012, this has dropped to only 1 charter boat operating out of the Sandy Ponds. While impossible to attribute all of this reduction to access issues, it is noted that access to the ponds is a continuing problem that has only recently been addressed by a local, voluntary effort with some Town funding. It is noted that the drop in charter boat activity from 53 to 1 represents an annual loss in local direct spending of $1.28 million and in indirect spending of $2.43 million for a total loss of $3.70 million as well as the the loss of 87 jobs.

It is very clear from this analysis that recreational boating is an important economic activity in harbors along the south shore of Lake Ontario, generating approximately $94 million in

spending and supporting 1,363 jobs, and that this sector of the economy is and will continue to be significantly impacted by the lack of infrastructure maintenance including regular dredging of the harbor channels to allow for their continued operation.

D. Dredging Technology, Costs and Material Disposal

Dredging Technology

There are two overall types of dredging technologies available for use on the subject harbors and channels. These are mechanical and hydraulic dredging.

Mechanical dredging is achieved through the use of a crane or an excavator mounted on a barge or, where feasible, on the land adjacent to the dredge area. The sediments are scooped out by the crane or excavator and placed on a barge, landside holding area, or on trucks for eventual disposal. Since similar mechanical equipment is used for dry land construction activities, there are many types of cranes and excavators that are available and suited for dredging work. "Clamshell" buckets are generally preferred for dredging work since they minimize the release and re-suspension of sediments during operation.

Mechanical dredging offers some advantages. The equipment is readily available, both for purchase and lease/contracting, relatively inexpensive and experienced operators are plentiful. Cranes and long reach shovel excavators can operate in deeper water than hydraulic dredges and mechanical excavators can handle large stones and easily break up hard-packed sediments.

The disadvantages of mechanical dredging include the need to have additional barges and push boats, with Coast Guard licensed operators, to position the equipment and to move the excavated sediment where the dredging cannot be done from the adjacent land. Mechanical dredging equipment needs relatively deeper water for access and for the supporting barges and generally cannot be launched from land areas without heavy lift facilities. Finally, since the mechanical dredges generally need barge support, they are not land transportable, which can add to the cost of using one set of equipment at multiple sites.

Hydraulic dredges generally consist of a large pump mounted on a platform or shallow-draft barge with a large suction pipe mounted to the front. The suction pipe usually is equipped with a rotary or horizontal cutterhead. The cutterhead breaks up and suspends the sediments with the resulting slurry sucked into the piping by the action of the pump. The output from the dredge is either spray discharged to the side or, more commonly, discharged through piping to a temporary or permanent disposal area or to a transport barge.

Hydraulic dredges come in a variety of sizes and pumping powers and are generally classified by the size of the input piping to the pump. Thus, an "eight inch" dredge would utilize eight inch diameter piping to pump the sediment. Common sizes are eight to twelve inches for dredging in ponds, lakes, sheltered channels and marinas. Larger models, with sizes in the forty-eight to sixty inch range are utilized for large harbor projects and, very commonly, for beach nourishment in coastal areas.

Hydraulic dredges have many advantages. Smaller units can work in shallow water and many are one truck transportable. Many models are self-propelled and do not require push boats or tugs while working and some are self-launching from a suitable ramp. Since the sediments are sucked up and contained within the machine piping, hydraulic dredging results in less turbidity in the waters they are working, resulting in less environmental impact. For the same reason, hydraulic dredges are very efficient at handling silty sediments, which are more difficult to scoop up by mechanical means. Where suitable disposal sites are within close proximity of the dredge site, generally within 3,000 to 4,000 feet, the sediment is transported by the dredge itself and no secondary barge or truck handling and transport is necessary. Finally, hydraulic dredging is generally very efficient on a production rate basis where conditions are suitable for it.

The disadvantages of hydraulic dredging include the specialized nature of the equipment, which increases the cost relative to mechanical equipment and makes shared use of it for other, upland work infeasible. Since it is specialized, some training and a dedicated crew is generally recommended to achieve maximum productivity and efficiency. The smaller hydraulic dredges (eight to twelve inch) cannot reach deep water sediments beyond a 20–25

foot range. However, this is not a significant drawback for the Lake Ontario harbors since desired depths are generally 12 feet or less for all the harbors in the program with the exception of the Genesee and Oswego harbors, with even these requiring less than 25 feet of depth.

The biggest disadvantage of hydraulic dredges comes with sediment that needs to be transported to off shore disposal sites or to upland sites due to sediment quality. Since the sediment is suspended in a slurry, transporting the sediment includes transporting a large volume of water. This can be alleviated through dewatering, however that process would add to the cost and can slow down the production rate. Finally, hydraulic dredges cannot handle large stones, although some specify that they will pass stones up to the 6 to 8 inch size.

A variant on the two major categories of dredge, mechanical and hydraulic, are hopper dredges. These are large open barges with mechanical or hydraulic dredges mounted directly on them. The pumped or scooped materials is put into the barge holding area, or hopper, and once full, the entire hopper dredge moves to the disposal area for dumping or off-loading. Since the hopper dredge needs to support both the dredging equipment and the sediment, the units are generally very large and require relatively deep water to work in. For this reason, hopper dredges are not considered as feasible alternatives for the Lake Ontario harbors with the exception of the Genesee River and Oswego Harbor.

Equipment Suitability by Harbor and Material Disposal Options

A review has been conducted of the type of equipment that could be utilized for the Lake Ontario harbors included in this study. This review is based upon the expected sediment quality/type, the channel access, and the likely disposal options for each of the harbors.

It should be recognized that the sediment quality and resulting disposal options for some of the harbors cannot be adequately resolved with the available information and will only be

finally determined after sediment sampling and analysis is conducted as part of the permitting process.

Given the above caveat, the results of the review are given below for the harbors, lumped together by the classification system outlined in Section B of this report.

Class I Harbors: Braddock Bay, Long Pond Outlet, Sandy Pond Inlet

These harbors have clean sands that are suitable and have been permitted for beneficial use as beach nourishment and/or for littoral zone placement in adjacent and nearby shoreline locations. As such, these sites are ideally suited to hydraulic dredging and two of them, Braddock Bay and Sandy Pond Inlet, have current permits for such dredging. The dredging at both of those sites is being conducted with hydraulic dredges and both are using 10 inch IMS models. The Sandy Pond Inlet dredging is being conducted by a volunteer organization with some funding by the Town. The volunteer organization owns the dredge and utilizes Town Highway Department personnel and volunteers to perform the work. The Braddock Bay dredging is being done by a private contractor with private funds. The contractor is under the same ownership as the entity leasing and operating the Braddock Bay marina under contract with the Town of Greece.

Class II Harbors: Sandy Creek, Bear Creek Harbor, Pultneyville, East Bay, Port Bay and Blind Sodus Bay

These harbors have generally clean sediments with some variation in consistency. Sandy Creek and Bear Creek Harbor have clean sands in the main channels. They are also quite shallow. Hydraulic dredging with an 8-12 inch dredge should be feasible at these locations with sediment disposal in the adjacent littoral zone. Bear Creek Harbor has been dredged by mechanical means in the past with disposal at an adjacent upland, Town owned site.

The Pultneyville site should have a mix of sediment types with clean sands at the outlet grading to more silty materials within the harbor. This has been dredged in the past, with private funding, by mechanical means with disposal at a nearby upland site. Given the mix of sediments, mechanical dredging with transport to an upland site may be the most efficient. However, hydraulic dredging could be utilized with portions placed on the adjacent beach/littoral zone and the rest dewatered on an adjacent upland area and then trucked to the upland disposal site.

East Bay, Port Bay and Blind Sodus Bay all have coarse sand and gravel sediments with some larger stones. They are presently dredged annually by mechanical means from the adjacent upland. The dredge spoil is placed on adjacent upland and littoral areas and, in the case of East Bay, placed back in the channel at the end of the boating season. The dredging is funded by a volunteer organization in each case. These three harbors are most efficiently dredged by mechanical means from the adjacent upland, as they are presently being done.

Class III Harbors: Wilson, Olcott, Oak Orchard, Irondequoit Bay, Great Sodus Bay, Little Sodus Bay, Mexico Point, and Port Ontario

These harbors generally have sands in the outer portions of the channels, generally between the protecting jetties and just beyond, grading to silt/clay and more organic sediments as one moves up the harbor. All of the channels with the exception of Mexico Point and Port Ontario have been previously dredged with disposal at the Corps of Engineers open lake disposal sites located off shore from each location. No records are available of previous dredging at Mexico Point and Port Ontario.

All of the Class III harbors are suitable for hydraulic or mechanical dredging or a combination of both. Combining both types of dredging would allow for the beneficial use of the sands in the outer portions of the channels through discharge to adjacent littoral

areas or beaches while providing for more efficient mechanical dredging and open lake disposal of the silt/clay and organic sediments found in the inner harbors. An alternative would provide for all hydraulic dredging with beneficial use of the sands and discharge to transport barges of the inner harbor sediments.

It is noted that there are some questions regarding whether the sediment quality in two of the harbors would result in a prohibition on open lake disposal for all or a portion of the sediments. The Corps of Engineers has stated that Wilson Harbor, where the main navigation channel extends a significant distance inland, may have sediments that will not meet open lake disposal standards. A proposed sediment testing plan has been developed to assess this situation and is awaiting funding.

The second, Olcott Harbor at the mouth of Eighteen Mile Creek, has recently had its sediments designated as potentially contaminated with PCB's and metals. The contamination is reported to extend approximately 15 miles upstream to an inactive hazardous waste site in the City of Lockport. Detailed sediment testing will be required to assess the level and extend of contamination of the harbor sediments and make a determination of the method of disposal that will be acceptable.

For both the Wilson Harbor and Olcott Harbor sites, the regional dredging management plan has to anticipate and be prepared to deal with upland disposal options, perhaps including transport of some portion of the sediments to a confined disposal site or secure landfill. Under such conditions, mechanical dredging would be preferred due to the complexities and cost of dewatering contaminated sediments before transport.

It is concluded that having both hydraulic and mechanical dredging capabilities would be best for dealing efficiently with the Class III harbors in the study area.

Class IV Harbors: Genesee River, Oswego Harbor

As noted in Section B of this report, the Genesee River and Oswego Harbor both support commercial shipping requiring depths in the 20 + foot range. In addition, they both have rather rapid sedimentation rates requiring a large volume of dredging on a frequent basis.

Sediments from both harbors have been found to be suitable for open lake disposal and this has been the practice for all past dredging activities at these sites, including the privately funded 2012-13 dredging of the Genesee.

While these harbors could be dredged with hydraulic equipment, the most efficient means is mechanical with a barge mounted crane and supporting, large capacity scows for transport of the sediment to the open lake disposal sites. Given the depths of these harbors, much larger and heavier equipment, drawing much larger depths, can be utilized to get the work done efficiently. Unfortunately, such equipment is not suitable for dredging of the smaller harbors making up the rest of the regional dredging management sites.

On the basis of the above review, it is concluded that all harbor dredging could be done with relatively small hydraulic or mechanical dredging equipment, with the exception of the Genesee and Oswego harbors. However, a more efficient program would employ a combination of both hydraulic and mechanical equipment.

Interviews with private marine contractors located in the regional dredging management area indicate the presence and availability of one ten inch hydraulic dredge, at least two barge mounted excavators with long reach shovels, and one barge mounted crane. Supporting these are several transport barges and scows with tugs and push boats suitable for open lake disposal of sediments. In addition to this private contractor equipment, one ten inch hydraulic dredge, owned by a volunteer organization at the Sandy Ponds in Oswego County, is in operation. Contractors interviewed as part of this effort have indicated the willingness

to purchase additional equipment, if needed, to accommodate an expanded dredging program if multi-year contracts are let.

Dredging Permit Restrictive Dates

A factor with important implications for dredging operations and costs for the Lake Ontario harbors are the restrictive dates included as conditions in dredging permits issued by the Army Corps of Engineers and the NYS Department of Environmental Conservation. These conditions restrict dredging to certain times of year in light of environmental conditions. It is understood that the restrictive dates are generally incorporated upon the recommendation of the NYS Department of State (DOS), which reviews coastal permit applications to assure consistency with the policies under the NYS Coastal Management Program.

As part of the DOS review, considerable weight is given to the recommendations regarding potential habitat impairment for areas designated as Significant Coastal Fish and Wildlife Habitats. All of the harbors included in this regional dredging management plan have been designated as containing Significant Coastal Fish and Wildlife Habitats and, hence, the recommendations regarding potential habitat impairment are applicable for each of their dredging permits.

The designation of an area as containing a Significant Coastal Fish and Wildlife Habitat is based upon a rating system and summarized in a Coastal Fish and Wildlife Rating Form. These forms are available on the NYS DOS web site.

As part of the regional dredging management plan, a review was conducted of all the Coastal Fish and Wildlife Rating Forms for the Lake Ontario harbors. The habitat ratings and significance designations were all completed in October of 1987 and have not been updated or re-evaluated since. They all contain similar, if not identical, statements to the effect that impacts due to activities such as dredging could be detrimental during fish spawning and nursery periods, listed as late February-July for warmwater species and steelhead, and

September-November for most salmonids. On the basis of these general statements, permits for dredging in the harbors are generally restricted to the period from late June or early July through August and from the end of November to the first of March. While some dredging can usually be achieved during December of each year, the remainder of the winter through the first of March is generally not feasible for dredging due to icing and rough seas on Lake Ontario. Thus, most dredging has to be conducted during the approximately ten week period from late June to the end of August. This, unfortunately, also coincides with the peak recreational boating season when the channels are heavily used.

It is clear that the general recommendations contained in the habitat rating sheets need to be revisited. In general, warm water fish species do not spawn until water temperatures reach the 55-60 degree range. This does not generally occur for the Lake Ontario outlet channels until mid to late April or early May. In addition, there are specific habitat requirements for fish spawning. For instance, Northern Pike spawn in wetland vegetative beds and Smallmouth Bass spawn on coarse, gravely bottoms. Given this, it would appear appropriate to consider permit conditions that restrict dredging using a temperature threshold instead of fixed dates and that specific bottom habitat considerations be included in the recommendations regarding restrictive dates for specific areas of the channels.

As discussed in more detail later in this report, some minimal relaxation of the prevailing restrictive dates would have a significant impact on the operational costs for the regional dredging management program. Simply using a 50 degree water temperature threshold to implement the warm water fish spawning restriction could result in an additional ten to twelve weeks of dredging operations during the months of March and April, essentially doubling the dredging window for the year. The implications of such a modified approach are detailed as part of the operational plan options and resulting costs presented later in this report.

Costs

Costs for a regional dredging management program are estimated in two general ways, with several sub-options, for comparison purposes and to determine funding requirements. The first general approach is to have some new or existing entity, government or non-profit, purchase and operate the dredging equipment for all of the sites with little to no contracting out with private firms. In the second approach, it is assumed that some centralized entity, new or existing, funds the work but all of the dredging is performed by one or more private contractors hired through competitive bidding. Several variants combining both approaches are also possible with total costs generally falling between these two pure approaches.

The costs for all options are based upon data collected from current nonprofit dredging operations and from reported recent private contracts for dredging. Under the assumption of funding and operations by a new entity, the cost will depend upon the equipment used, the production rates that can be achieved and the available time for dredging within the restrictive dates.

In general, and depending upon weather conditions, operators and manufacturers report production rates of 125 – 250 cubic yards per hour for hydraulic dredging and 200 – 300 cubic yards per hour for mechanical dredging. These production rates will vary considerably depending upon local conditions. Hydraulic dredging rates are critically dependent upon the distance to the disposal area and the consistency of the material being dredged and the overall average production rate can be reduced considerably by set up time for the discharge piping. By contrast, mechanical dredging average production rates, with dependence on open water transport for mobilization, are dependent upon weather conditions. Finally, if open lake disposal with barge transport is utilized, both hydraulic and mechanical dredging are highly weather dependent.

For those operating plans involving private contracting for some or all of the work, current contract rates are for dredging on Lake Ontario ports are utilized. These costs vary from $15 to $25 per cubic yard with some variations in mobilization costs added on. While these same

contracting costs are utilized to get program cost estimates, it should be recognized that multi-port, multi-year dredging contracts, if possible, may result in lower unit costs.

The following unit cost assumptions are utilized to determine total program costs under a variety of operational plan options:

Table 11: Unit Cost Assumptions	
Capital Equipment*	
Hydraulic dredge and associated equipment	$600,000
Transport truck	$100,000
Crane/shovel plus barge & work boat	$120,000
Scow (each)	$75,000
*capital costs are annualized over 20 years @ 3%	
Labor (including benefits)	
foreman/equipment operator	$42.05 / hr
crew	$26.10 / hr
Central Operations:	
Director	$100,000
Engineer	$75,000
Sediment testing/permitting/surveys	$40,000
With class IV included	$90,000
Overhead	@ 40% of central salaries

For those operating plans involving private contracting for some or all of the work, current contract rates are for dredging on Lake Ontario ports are utilized. These costs vary from $15 to $25 per cubic yard with some variations in mobilization costs added on. While these same contracting costs are utilized to get program cost estimates, it should be recognized that multi-port, multi-year dredging contracts, if possible, may result in lower unit costs.

Total Program Cost Estimates

As noted above, there are several organizational options available for the dredging operations. These range from having a new entity, or new unit of an existing entity, own and operate the dredging equipment suitable for all the harbors to having a central entity handle the permitting and management of the program with all dredging work being let to private contractors under competitive bid. There are also combinations of these approaches that may be more suitable for getting the work done and several of these are also suggested and analyzed later in this report.

In this section, a brief description of several program options, labeled A through D, are each presented and cost estimates derived. A more thorough discussion of the advantages and disadvantages of each approach, and recommendations for implementation, are presented in Section F of this report. The purpose here is to come up with a range of costs for various program options so that potential funding mechanisms can be evaluated. The results for the funding evaluation are contained in Section E of this report.

The following is a description and total annual cost estimate for each of the potential operational plan options. The cost estimates are based upon the unit cost assumptions previously presented. Detailed cost estimates for each plan are contained in the spreadsheet output contained in Appendix C. It is noted that the cost for each of the potential plans includes the central administration of the program as well as assumed permitting costs, all as detailed in the unit cost breakdown previously given.

Potential Plan A

- A new or existing non-profit or authority manages, permits and operates the dredging equipment.
- Operations utilize both one hydraulic dredge plus one crane/excavator on a barge with two scows.

- Annual priority: 1 Class III harbor @ 15,000 cubic yards
  1 Class I harbor @ 6,000 cubic yards
  1 Class II harbor @ 1,200 cubic yards
  3 small Class II – East Bay, Port Bay, Blind Sodus Bay
- The hydraulic dredge unit is used for the outer portions of each channel containing sands under the assumption that the sands can be pumped to adjacent littoral or beach areas for beneficial use. The hydraulic dredge is supplemented with the crane/excavator unit for upper harbor areas that require open lake or upland disposal. The crane/excavator would also do the 3 small Class II harbors annually from the adjacent upland while barge/scows are transported to the other sites scheduled for that season.
- It is noted that this plan excludes the Class IV harbors (Genesee and Oswego), but could be accomplished within the existing restrictive dates. (10-12 weeks of work including transport and setup.)

On the basis of this operating plan, the total annual cost is estimated at $522,403 including capital equipment amortization costs and administration. This works out to $21.59 per cubic yard of dredging done for the season.

Potential Plan B

- This is the same as Plan A, but includes dredging of the Genesee and Oswego harbors. In order to achieve the necessary dredging while respecting the existing restrictive dates it is necessary to add another crane/excavator plus barge and work boat plus two more scows and appropriate personnel. This second crane unit would work all season in either the Genesee or Oswego (rotating basis) and the second crane/excavator would join it once the other Plan A work for the crane is done.

On the basis of this operating plan, the total annual cost is estimated at $776,143 including capital equipment amortization costs and administration. This works out to $6.80 per cubic yard of dredging done for the season.

Potential Plan C

- This is the same amount of seasonal dredging as Plan B, including the Genesee and Oswego harbors. However, it is assumed that the State reduces the restrictive dates to give approximately three more months of work. With this, all seasonal dredging could be completed with the one hydraulic unit and one crane/excavator unit working a longer season.

On the basis of this operating plan, the total annual cost is estimated at $673,931 including capital equipment amortization costs and administration. This works out to $5.90 per cubic yard of dredging done for the season.

Potential Plan D

- Under this plan, a central entity manages permits and lets contracts to private firms for all the dredging operations. This approach results in the highest total annual cost under the assumed cost structure and provides an upper bound on the amount of funding that may be necessary. Two variants are presented. In the first, the Class IV harbors (Genesee and Oswego) are omitted and assumed funding through other sources. In the second, the Class IV harbors are also included. For each variant, costs are presented for a range based upon $15 per cubic yard to $25 per cubic yard for the contract work in order to bookend the potential funding requirements.

On the basis of this operating plan, the total annual cost is estimated at from $648,000 to $890,000 with the Class IV harbors excluded and from $2,048,000 to $3,190,000 with the Class IV harbors included.

The following table contains a summary of the above costs for the various plans. It is noted that there are several variants of these approaches, including having a new entity purchase

equipment and conduct a portion of the work with private contracting for the remainder. These hybrid approaches are discussed and evaluated in Section F of this report.

Table 12: Total Cost for Plan Options		
Plan	**Annual Cost**	**Unit Cost (per cy)**
Plan A(excludes Genesee and Oswego)	$522,403	$21.59
Plan B(includes Genesee and Oswego, respects existing restrictive dates)	$776,143	$6.80
Plan C(includes Genesee and Oswego, relief from restrictive dates)	$673,931	$5.90
Plan D (central entity contracts out all work) (wo Class IV)	$648,000 @ $15 $890,000 @ $25	
Plan D (central entity contracts out all work) (all harbors)	$2,048,000 @ $15 $3,190,000 @ $25	

These cost figures are utilized in the next section to evaluate the feasibility of various potential funding mechanisms.

E. Potential Funding Mechanisms

Funding is the single most difficult component of any dredging plan. This section discusses several approaches to funding and provides an evaluation of funding levels by source that would result under the approaches.

In keeping with the goal of providing a long term and sustainable program, sources of operating funds that are of a continuous nature are preferred over "one-shot" sources that cannot be reliability renewed year after year. In consideration of issues of equity and feasibility of implementation, funding linked to users of the system, or derived from revenues generated from such users, is preferred. Finally, sources of funding that are regional are preferred to assure local control and continuity of the program.

As noted earlier in this report, ten of the nineteen harbors included in the plan were constructed by the Federal government and the Federal government has explicitly recognized its responsibility to maintain them. This includes the financial responsibility for periodic dredging. As also noted, the Federal government has not provided adequate funding for the maintenance dredging of these harbors and there is little chance that funding for regular maintenance dredging will be provided in the future.

Given the above considerations, five different regional funding approaches have been examined as part of the development of this Regional Dredging Management Plan Update. In addition, a discussion is included of the Federal funding option as that is currently relied upon for the ten Federal channels and may be continued to be relied upon for the two large harbors that still support commercial shipping operations. The other regional funding options are as follows:

- Voluntary, Private Funding
- County Funding
- Town Funding Utilizing Harbor Improvement Districts

- User Fee through a Per Slip/Launch Lane Basis
- User Fee through an increase in the existing Boat Registration Surcharge

Each of the potential regional funding sources is discussed separately below following a brief description of the Federal funding option.

Federal Funding through the Army Corps of Engineers

The Army Corps of Engineers (COE) has had limited funding for harbor maintenance over the last decade. In light of this limited funding, the COE has prioritized the allocation of its dredging funds with the highest priority given to harbors supporting commercial vessel traffic. The Genesee River and Oswego River harbors are the only locations in the study area currently supporting commercial shipping operations. Even for these harbors, funding has been inadequate to maintain channel depths and the COE has resorted to partnering with the private commercial shippers in order to conduct the necessary dredging.

Given the shortfall in funding and the priority for the commercial harbors, COE dredging of the recreational harbors has and continues to be neglected. As a result, dredging of the recreational harbors only occurs when there is a critical need affecting safety and only when strong public and political pressure results in a special, targeted congressional appropriation.

In addition, even if at adequate levels, COE funding can only be utilized for maintenance dredging of ten recreational harbors in the study area that were constructed as Federal projects. This leaves the other nine recreational harbors included in the study area without the possibility of any dredging with Federal funding.

The advantage of COE funding is that it comes with no local or regional cost contribution. The primary disadvantages are that there is not enough funding to meet even the minimal needs of the Federal channels and COE funding cannot be used for dredging in the non-Federal recreational channels. In addition, the program is out of the control of local governments and the user community.

It is not recommended that Federal funding through the COE be relied upon for operations under the Regional Dredging Management Plan. However, Federal funds should be sought, perhaps in conjunction with New York State funds, for capital equipment necessary for program implementation. To the extent that such funding can be obtained, annual program funding allocated to capital equipment can be reduced or eliminated.

Voluntary Private Funding

Seven of the identified recreational access channels in the study area are maintained through voluntary, private funding. These consist of Sandy Creek in Monroe County, Bear Creek, Pultneyville Harbor, East Bay, Port Bay and Blind Sodus Bay in Wayne County, and Sandy Ponds Inlet in Oswego County. Bear Creek is periodically maintained by the Constellation Energy Group as needed to bring equipment to the area for its Ginna Nuclear Power Plant. In the absence of such need, the Town of Ontario has performed some maintenance dredging of the Bear Creek Harbor in support of the Town boat launch located there. Sandy Creek and Pultneyville Harbor are both maintained, as needed, by local yacht clubs located near the channel entrances, even though both channels support marinas and launches further upstream. In the case of Sandy Creek, this includes a large public launch, which would likely not be usable without the yacht club maintenance of the access channel to Lake Ontario. East Bay, Port Bay and Blind Sodus Bay are maintained on an annual basis by voluntary dues to private improvement associations. The Sandy Pond Inlet is maintained through a combination of voluntary dues and a contribution from the Town of Sandy Creek. The Sandy Pond Inlet situation is unique in that the voluntary organization, The Sandy Pond Improvement Association, purchased and operates a hydraulic dredge for its dredging.

The primary problem with private funding is that it is not adequate to meet the identified need for dredging in the entire study area. In addition, it is not equitable to the parties involved. Only seven of the nineteen channels identified for maintenance under this Plan have willing and able private dredging sponsors. In addition, dredging of these channels is at

the will and at the option of the sponsors, leaving the other users in the system vulnerable to conditions beyond their control.

County Funding

None of the counties in the study area are providing funding for dredging activities despite the fact that this public infrastructure generates over $3.7 million in direct sales tax revenues to the county governments annually.

In recognition of the economic activity generated by recreational boating, and the economic development potential of area waterways, it is reasonable to request county funding for some of the dredging activity proposed as part of this Regional Dredging Management Plan Update. It is noted that dredging program funding solely by County governments is not recommended. This is due to the fact that, for equity, at least a portion of the project funding should be borne by system users and that at least a portion of the funding should be borne by the State and/or Federal governments. In addition, continuity and reliability of the program operation is important and should not be subject to short term changes in County funding which could result from a high dependence on this one source.

The proportion of the program costs to be borne by the counties, and the contribution of each of the four counties in the study area, would have to be determined. The following calculations can be utilized for discussion purposes.

It is noted that the following figures assume that the Class IV harbors will initially be left to Federal funding with the rest of the dredging conducted by a new entity operating its own equipment. As detailed in Section D, this results in the minimum program cost of $440,400 for operations and an additional $82,003 if capital equipment has to be amortized for an annual total of $522,403.

It is not anticipated that the counties alone would completely fund the required dredging and it is assumed that a portion of the funding would come from other sources. As detailed later

in this section, it is not unreasonable to assume that approximately $276,481 could be generated annually from an addition to the existing boat registration surcharge, leaving approximately $163,919 (without capital equipment cost) or $245,923 (with capital equipment cost) to be provided by the participating counties.

Assuming that the six counties in the study area will provide the remaining program funding, and that the $163,919 to $245,923 annual cost range is utilized, individual county contributions could be based upon an equal share, a share proportional to the amount of dredging required in the county, or a share proportional to the amount of county sales tax raised from recreational boating within each county. A summary of county funding for each of these options is contained in Table 13.

Table 13: County Funding Options

		w.o. capital cost	include capital cost
Every County Share (equal division)		$27,319.90	$40,987
County Share (proportional to annual dredge volume)			
	Niagara	$31,535	$47,311
	Orleans	$15,768	$23,655
	Monroe	$49,447	$74,184
	Wayne	$32,481	$48,730
	Cayuga	$15,768	$23,655
	Oswego	$18,921	$28,387
	Total	**$163,919**	**$245,923**
County Share (proportional to sales tax generation)			
	Niagara	$18,313	$27,475
	Orleans	$12,360	$18,543
	Monroe	$53,943	$80,929
	Wayne	$32,119	$48,187
	Cayuga	$11,531	$17,299
	Oswego	$35,654	$53,490
	Total	**$163,919**	**$245,923**
	% of boating sales tax	**4.4%**	**6.5%**

As can be seen, individual county funding support for the Regional Dredging Plan will vary depending upon the cost allocation basis. However, in no case is the cost to any county large in comparison to the amount of money generated in direct sales tax revenue due to recreational boating activities. In fact, the cost to counties for dredging represents roughly 5% of the sales tax revenue generated by the recreational boating activity.

A specific recommendation for the level and allocation of county funding for the Regional Dredging Management Plan is contained in the section entitled Recommended Program Funding.

Town Funding Utilizing Section 190 Harbor Improvement Districts

Funding for channel dredging could also be requested from the individual Town governments along the shoreline. As noted in an earlier section, there are seventeen different Towns and two cities with channels and harbors identified as part of this study. One mechanism for obtaining funding for harbor dredging is through the creation of Harbor Improvement Districts pursuant to Section 190 of the NYS Town Law.

The creation and management of any Harbor Improvement District is governed by the same procedural and legal requirements as all other types of improvement district. This includes the need to obtain petitions from a majority of the land owners, the holding of a public hearing and the adoption of a local law creating the district and specifying costs and assessments.

As for the Counties, any Town funding of dredging would have to be allocated among the participating Towns. Funding could be on the basis of an equal share, on the number of docks and/or launch ramps served, or on the basis of the annual average amount of dredging done in support of the harbors in each Town/Village. An analysis of the amount of funding that would be necessary under these allocation scenarios was conducted as part of the 2000 Regional Dredging Management Plan. It was concluded that funding levels for individual

Towns, utilizing town wide districts, will vary and may be substantial (up to 11%) for some areas, depending upon the funding allocation basis chosen. This would make it politically difficult to establish town wide improvement districts to support the dredging. In addition, establishing and maintaining seventeen separate Harbor Improvement Districts would represent a formidable barrier to plan implementation. For these and other reasons, discussed below, direct funding from Towns is not being recommended for the Regional Dredging Management Plan and, hence, no further discussion of funding allocation is necessary.

One apparent advantage of direct Town funding of dredging is that the cost of dredging could be assessed only to those properties on the waterfront through the careful configuration of Harbor Improvement District boundaries. There are questions regarding the equity of doing so, given that open navigation benefits more than just direct waterfront properties. However, these questions are superseded by a more practical difficulty regarding the effect on waterfront property tax rates and the impact of this on being able to establish the districts.

An analysis of the impact on waterfront property tax rates that would be necessary for Town Harbor Improvement Districts containing only such properties to support the required dredging was conducted as part of the 2000 Regional Dredging Management Plan. It was shown that property tax rates for the waterfront properties would have to increase by over 100%, even for areas with relatively high property values. Such an increase would make it difficult to establish the Harbor Improvement Districts.

As noted earlier, the formation of Harbor Improvement Districts requires favorable petition of a majority of the land owners in the district and individual legislation in each of the seventeen Towns. Further, if even one Town does not participate, the entire dredging program is jeopardized. Given these factors, and the anticipated steep tax rate increases necessary to fund the program, it is concluded that funding of the Regional Dredging Management Plan through the formation of Town sponsored Harbor Improvement Districts is not fiscally or politically realistic and is not recommended.

User Fee Through a Per Slip/Launch Lane Charge

The idea of funding through a direct user fee is appealing since under such a scenario those that principally receive the benefit will pay for the service. One approach to this is to levy a per slip or per launch lane fee for all commercial marinas. The equity and potential pitfalls of this approach are discussed below.

An estimate was made for the 2000 Regional Dredging Management Program of the estimated annual per slip cost if commercial marina boat slips in the study area were each assessed an equal share fee. The resulting cost came to a per slip fee of approximately $72 per year, which is believed to still be valid and provides a rough estimate for feasibility assessment purposes. The $72 per year fee, estimated to be less than ten percent of the average annual rental for boat slips along the south shore of Lake Ontario, would seem to be a reasonable approach to funding the dredging program. Unfortunately, this approach is not practicable for other reasons.

The first problem has to do with the perception of equity. A commercial marina per slip or per launch lane fee would not be borne by residential properties with docks. In some areas, such property owners would be the major beneficiaries of improved dredging maintenance. In addition, a per slip or launch lane fee would not be borne by boaters utilizing trailers and publicly owned launches, many of which do not assess fees and have no means in place for collecting fees. Even if this can be overcome, the most significant problem remains; there is no existing means for assessing and collecting any such fee. Marinas are primarily governed by local land use laws and no county or state agency issues operating permits or any other form of continuing approval. Thus, the institution and collection of any such fee would most likely have to result from individual Town actions all along the shoreline, with the same potential for political problems as funding through the creation of Harbor Improvement Districts.

Given the above factors, a user fee in the form of a per slip or per launch lane fee is not recommended as part of the funding for the Regional Dredging Management Plan.

User Fee Through Boat Registration Surcharge

Another source of potential funding for the Regional Dredging Management Plan is a user fee for boaters implemented through an addition to the existing surcharge applied to boat registrations. At present, all boats powered by a motor and operated in New York State waterways are required to register with the New York State Department of Motor Vehicles (NYS DMV). Current registrations are for three years with fees of $22.50 for boats up to 16 feet in length, $45 for boats 16 feet to less than 26 feet, and $75 for boats of 26 feet or larger. In addition, the state adds a surcharge for boat registrations of $3.75 for boats up to 16 feet in length, $12.50 for boats 16 feet to less than 26 feet, and $18.75 for boats of 26 feet or larger.

According to the NYS DMV, at present the boat registration surcharge goes to "a dedicated fund which supports improvements of vessel access and transient marina facilities." A majority of the surcharge funds, established under Section 2251 of the NY Vehicle and Traffic Law, are passed by the NYS DMV to the NYS Office of Parks and utilized pursuant to section 97-nn of the New York State Finance Law. The portion dedicated to marine facilities is currently utilized only for NYS Park marine facilities. It is noted that increases in the vessel surcharge, approximately 25%, instituted by the 2010 New York Vehicle and Traffic Law (section 2251) were directed to the dedicated state highway and bridge trust fund. It is understood that this amounts to approximately $250,000 per year from the boat registration surcharge that is diverted to the dedicated highway and bridge fund. Future effort may be directed to the recapture of this funding for boating infrastructure, including dredging. For the present, it is assumed that the existing boat registration surcharge funds are fully committed and that only an increase in the surcharge amount can be utilized to support dredging of recreational harbors.

A model for directing registration add-on fees to direct infrastructure maintenance exists for snowmobiles. Snowmobiles operated in New York, even on a temporary basis, are required to obtain a NYS DMV registration. The current annual fee is $45 for members of recognized snowmobile clubs and $100 for non-club members. Most of this annual fee is placed in the

NYS Snowmobile Trail Development and Maintenance Fund, which is administered through the NYS Office of Parks. The Office of Parks distributes these funds through an annual grant program to counties, or to municipalities if the county does not wish to participate. The funds are then distributed by the counties to snowmobile clubs for trail establishment, improvements and maintenance.

A similar system could be established, through State legislation, for all or partial funding for the Regional Dredging Plan program with a similar add-on fee established as an add on to the current boat registration surcharge.

To assess the required level of such a fee, boat registration figures for the counties in the study area were compiled and analyzed. The results indicate that full funding of the dredging program solely through an increase in the boat registration surcharge would result in an increase in the registration surcharge of approximately 340% for the boats registered in the coastal counties, even assuming the lowest annual operating funding of $440,400 is needed.

Full funding of the dredging program solely through an increase in the registration surcharge is not recommended for reasons of equity and practicality. At least a portion of the benefit provided by the program would flow to boaters not residing in counties in the study area. In addition, some boaters that do resident in the study area counties do not utilize Lake Ontario for boating. Finally, the economic benefits of increased use of the identified channels and harbors would flow to the community, regional and state economies and, therefore, funding should also be provided from this broader base. Finally, an increase of 340% may generate substantial political opposition that could result in the entire program not being implemented.

Given these factors, partial funding through a registration add-on fee is recommended. As is done under the current surcharge, the increase would be tied to the vessel size. Thus, the required portion of the program funding is allocated to vessels in the three registration size classes on the same percentage basis as the current surcharge. The calculations and results on this basis are summarized in Table 14.

Table 14: Boat Registration Surcharge Funding Amounts

County	Number < 16 ft	Number 16 - 26 ft	Number > 26 ft	Total Surcharge Collected
Cayuga	2,033	2,946	250	$40,947
Monroe	10,972	14,542	1,867	$214,939
Niagara	3,113	4,793	663	$70,015
Orleans	938	1,086	117	$16,072
Oswego	4,261	4,414	497	$67,060
Wayne	2,776	3,552	390	$51,769
Totals	24,093	31,333	3,784	$460,801
additional amount collected over the current surcharge				$276,481
Total Increased Surcharge (per year)	**$3.13**	**$10.42**	**$15.63**	
Percent Increase in Surcharge	**250%**	**250%**	**250%**	

As shown, the annual surcharge would rise to $3.13 to $15.63 from its existing $1.25 to $6.25 range per year depending upon the vessel size in order to raise the amount of program funding needed over and above that recommended to be provided from the counties in the study area.

Recommended Program Funding

On the basis of the discussion and analysis in this section, a combination of county and user fee sources are recommended as the primary funding for the proposed Regional Dredging Management Plan, with the possibility of Federal and/or State funding utilized for capital equipment. The specific allocation recommended among these sources is based upon the following considerations:

- County funding should be utilized to support roughly one-half of the annual program costs, allocated among the participating counties on the basis of the amount of annual dredging anticipated to be necessary within each county.
- Federal/State contribution should be directed toward capital equipment procurement, which is more easily obtained through one-time grant funding and justified as start-up costs.

- An increase in the current boat registration surcharge fee should make up the difference needed for annual program operating costs.

Based upon the above, the recommended annual and one-time funding amounts are shown in Table 15.

Table 15: Recommended Funding By Source

	Annual Without Capital Cost	Annual Including Capital Cost
Niagara County	$31,535	$47,311
Orleans County	$15,768	$23,655
Monroe County	$49,447	$74,184
Wayne County	$32,481	$48,730
Cayuga County	$15,768	$23,655
Oswego County	$18,921	$28,387
Total Annual Funding from Counties	**$163,919**	**$245,923**
One Time Federal/State Contribution (Capital Equipment)	$1,220,000.	$0.00
Annual from Boat Registration Surcharge Increase	$276,481	$276,481
Annual Operating Totals	$440,400	$522,403

The amounts shown in Table 15 assume the lowest level of program funding, consisting of maintenance dredging of only the Class I – Class III harbors. In particular, it is assumed that the dredging for the Genesee River and Oswego Harbor will be conducted with Federal funding and not through the Regional Dredging Management Program. If these harbors are included, the total cost will rise substantially (as detailed in Section D of this report) and the amounts in Table 15 will have to be adjusted accordingly.

It is noted that additional program funding may be derived by contract dredging of non-covered areas with voluntary private or local government funding. This aspect will evolve over time and may be used for a capital equipment replacement fund or to reduce the operating costs contribution from the Counties or from the registration surcharge.

It is also recommended that if additional areas of the state choose to participate in this program, the incoming counties be assessed an equitable operating share cost, plus a one-time capital equipment entry fee if Federal/State capital equipment funding is not realized.

F. Organizational Structure

There are many different organizational and management structures that are feasible for the implementation and operation of the proposed regional dredging management plan. The advantages and disadvantages of the best approaches are discussed in this section followed by a recommendation for the organizational structure to be implemented.

The potential organizational structures discussed and evaluated in this section are:

- Inter-municipal agreement with one County or Town taking the lead
- An existing or new public authority
- A not-for-profit local development corporation
- A not-for-profit private corporation

The evaluation of each option focuses on several desirable attributes. These are the ability of the structure to provide focus and responsibility for the dredging operations, the economies of scale that could be achieved with respect to the sharing of management functions, personnel and equipment, and the flexibility of any structure to allow for private contract dredging where feasible to help offset operating expenses. In addition, some consideration is given to the degree to which some structures will be difficult to implement due to political or public perception problems.

Inter-municipal Agreement with one County or Town taking the lead

Under this organizational structure, one of the participating counties or towns would undertake the dredging operations or the external dredge contracting on behalf of the entire system. This would most likely be placed within an existing public works department, but could be given more autonomy through the creation of a new local operating unit under the county or town. Funding and operations would occur under an inter-municipal agreement entered into by the participating counties.

The chief advantage of this organizational structure is the potential for cost reduction through the shared use of management functions, the potential for shared use of existing personnel for the dredging operations, and the potential for the sharing of equipment with other units of the county or town government. Other advantages include the ability of the county or town government to issue tax exempt bonds for capital equipment and the ease of implementing the program since a new governmental or private entity will not need to be established. Finally, if contracting is used for the dredging operations, the existing county or town government will have experience with bidding and contract management.

The disadvantages of this approach include the possibility that the focus on the dredging operations will be diluted in the face of other obligations of the lead town or county government. Such mission leakage could also result in funding intended for use in dredging being partially utilized to subsidize other operations. In addition, whether real or perceived, such an organizational structure may lead to the charge that certain harbors are getting more or less attention than others in the program due to local bias. An additional concern would be for the stability of any program residing in one municipality under any changes in local leadership. The cost savings resulting from the use of an existing government unit may be diluted or lost completely due to the need to comply with government employment (civil service) regulations or, for the case where contract dredging is utilized, due to government mandated bidding procedures and labor costs. Finally, a government unit could not contract out for additional private dredging operations..

An existing or new public authority

Under this scenario, a new or existing public authority, established through State legislation, would manage the dredging operations, either doing the work itself or through contracts to private firms.

The chief advantages of such an approach are that an authority would function independently under a board of directors and that it could issue tax exempt bonds for startup or capital

equipment. If an existing authority is tasked with the dredging, the program may be able to realize cost savings through the sharing of management functions, equipment and personnel. The enabling legislation for the existing authority would also have to be broad enough to allow it to conduct the dredging for the entire region. If a new authority is created specifically for the dredging program, its focus would be just on the dredging and mission leakage is less likely. In its enabling legislation, the board of directors could be specified as consisting in whole or part of representatives of the participating counties to assure local control.

The primary challenge to this approach is the difficulty of establishing a new public authority. It would take State legislation, requiring time and effort at the outset. In addition, there appears to be a reluctance by the State to establish new authorities given past, highly publicized problems with some existing authorities. On the other hand, if an existing authority is utilized, such as the Oswego Port Authority or the now moribund Port of Rochester Authority, the participating counties would not have any control over the operations or costs.

A not-for-profit local development corporation

An alternative method for creating an independent operating or contracting entity is through the creation of a local development corporation (LDC) pursuant to Section 1411 of the NY Not-For-Profit Corporation Law. The LDC could be incorporated jointly by any combination of Towns and Counties with the express purpose of the retention of the boating and tourism industry in the region and to lessen the burden of government to perform the dredging. By law, the LDC would be considered a "Type C" corporation, intended to achieve a lawful public or quasi-public objective.

The chief advantage of an LDC is its independence and focus on the dredging program. As a not for profit corporation, an LDC would not be bound by the contracting or civil service rules by which government agencies must function. Such a structure would also allow for the issuance of bonds and would allow additional contract dredging outside the channel areas

when possible to help defray program costs. Finally, if incorporated by the participating counties and/or towns, the LDC would be under the direct control of a board representing those entities and could receive government funding directly from those and other government entities.

The only disadvantage of an LDC structure is the recent bad publicity surrounding the use of such corporations, which may make the formation of the LDC difficult politically. This was made worse by an April 2011 report from the NYS Office of the Comptroller in which the independence from government procurement and debt rules and lack of transparency of LDC's were cited as reasons for concluding that "The use of LDCs and similar organizations to finance local government operations and projects increases the risk of waste, fraud, or abuse of taxpayer dollars or assets."

A not-for-profit private corporation

The final alternative structure being considered is the formation of a private not-for-profit corporation pursuant to Section 201 of the New York Not-For-Profit Corporation Law.

If formed as a "Type C" corporation, the entity could conduct any lawful public or quasi-public function and could be completely independent of any government entity. This would allow for dredging of the regional harbor channels through any combination of direct operations or private contracting. It would also allow for additional dredge contracting to defray program costs.

The primary disadvantages of a private corporate structure are the lack of ability to issue bonds, the difficulty of any arrangements for the shared use of equipment and/or personnel with the local governments, and the fact that funding through the local governments may be subject to bidding and procurement regulations. Finally control of the operations of a private corporation will be much more difficult for the participating communities since they will only have input via the Board of Directors, which may or may not be representatives of the local governments.

Recommendation for Program Organization

In light of the factors discussed in this section, it is recommended that the participating counties in the regional dredging management plan form a Local Development Corporation (LDC) pursuant to Section 1411 of the NY Not-For-Profit Corporation Law. Such a structure would allow for a focus by the organization solely on the dredging program, would provide bonding capabilities, would allow some sharing and/or donation of equipment from the participating counties, would allow seamless funding by governments, and would allow for control of the program by the participating counties through combined incorporation and representation on the corporate Board of Directors.

It is also clear that the LDC laws were established to facilitate public operations across government jurisdictions, such as the proposed regional dredging management program. Given this, it should be possible to overcome any political reluctance to establish the LDC by the counties involved.

It is noted that if one of the Counties in the study area decides to not participate in the formation of the LDC, the proposed dredging program can still be implemented by the others with the non-participating County having its dredging needs met by contracting with the LDC or through an inter-municipal agreement with one of the participating Counties.

G. Plan Implementation

The timing of the start, pace of implementation and final details of the regional dredging management program will depend upon many factors, not the least of which are the political will of the participating counties and State government to solve the existing problem and the ability of the organizers to raise the required funds.

In this section, a potential implementation schedule with required tasks is presented. There is no doubt that this schedule will be modified, but it is hoped that it will at least provide a crude roadmap for the initial steps in implementation.

Year 1 of the Program:

It is assumed that year 1 of the program will be completely funded by the participating counties or through a one-time grant from the State for startup. For planning purposes it is assumed that this funding is equivalent to the annual operating contribution from the counties at approximately $163,000. With this funding, and perhaps some in-kind legal support from the counties, the LDC can be formed and the Board of Directors appointed. The Board could then hire an Executive Director to assume the duties of the program. In year 1, the Executive Director could assume the transfer of all existing dredging permits by the LDC, pursue permit issues with the State over restrictive dates, pursue State legislation for the remaining program funding, pursue State/Federal funding for capital equipment (if desired) or startup costs, and contract with private firms to dredge the critical needs of non-federal channels in the program area as the available funds permit.

Year 2 of the Program:

It is assumed that full program funding will be in place for year 2. With this, the LDC can hire an engineer, continue with contract dredging for all harbors, and evaluate the feasibility and desirability of purchasing and operating its own equipment for all or a portion of the

dredging, perhaps utilizing Federal or State funds obtained through the efforts during year 1. In this year, the decision over in-house or contract dredging will be made, informed by the experience obtained with the private contract dredging in this and the previous year. In addition, decisions regarding whether to extend the program to the Genesee River and Oswego Harbor will be made, informed by the results of negotiations with the regulatory bodies over restrictive dates for dredging.

Year 3 of the Program:

Full operations are in place with either purchased equipment, contract dredging, or some combination of the two will start to take place on a regular basis as per the defined schedule.

Appendix A
Harbor Inventory Database

Channel/Water Body Designation **Wilson**

Latitude 43.318

Longitude 78.836

County Niagara

Town, City or Village Town of Wilson



Total Slips 476

Total Launch Lanes 2

Total Charter Boats 15

Approximate Dimensions 4,900 ft long x 80 ft wide

Type of Use

- Recreational boating
- Large sail and power vessels
- charter fishing boats

Economic Benefit $4,720,298 + 69 jobs



Maintained Public

By - Corps of Engineers. Last reported dredging in 2000 with 5,100 cubic yards removed near interior jetty wall
- last general channel dredging reported to be approximately 1997

Critical Desired Depth 8 feet

Critical Desired Bottom Elevation 236 feet (IGLD-85)

Existing Min Depth 5.5 channel, 5.0 harbor 9/28/12

Existing Max Bottom Elevation 239.2 ft (IGLD-85)

Critical Requirements

- Maintenance Dredging of Channel and Harbor

Corps Calculated Backlog in cu yd 17,797 design + 21,260 overdraft

Notes on Use - COE lists 9 charter fishing boats generating ~$73,000 in net annual income.

Quantity (cu yd) 15,000

Anticipated Frequency (yr) 6

Sediment Condition

Testing Date

Sediment Quality

Class III

Federal Navigation Project Yes

Construction Completed

Federal Project Authorized Depth 8 feet in channel, 6 feet in Bay

Designated Harbor of Refuge Yes

Previously Permitted Dredging

Permittee US Army Corps of Engineers

DEC Permit ID. 9-2942-00017/00001

Permit Minimum Depth

DEC Permit Date 9/03/1997

Permit Bottom Elevation

DEC Expiration Date 12/31/2002

Permit Dredge Amount (Cubic Yards)

COE Appl. No.

Disposal

COE Permit Date

COE Expiration Date

Restrictive Dates

NYS Designated Significant Habitat? No, but Tuscarora Bay Marsh, on east branch of Twelvemile Creek is designated.

Notes

Sources
- US Army Corps of Engineers Great Lakes Navigation System Fact Sheets (2012)
- NYS DOS Tuscarora Bay Marsh Significant Coastal Fish and Wildlife Habitat Rating Form (1987)
- NYS DEC Permit 9-2942-00017/00001 (Summary Sheet)
- boat counts in 2010 by others

Channel/Water Body Designation # Olcott Harbor

Latitude 43.340

Longitude 78.719

County Niagara

Town, City or Village Village of Olcott, Town of Newfane

Total Slips 124

Total Launch Lanes 6

Total Charter Boats 14



Approximate Dimensions 1,400 ft long x 140 ft wide

Type of Use

- recreational boating
- COE terms this a critical Harbor of Refuge
- charter fishing boats

Economic Benefit $5,780,656 + 109 jobs

Maintained By Public

- Corps of Engineers.
- Last dredged in 1997 with 9,900 cubic yards removed

.



Critical Desired Depth 8 feet

Critical Desired Bottom Elevation 236 ft (IGLD-85)

Existing Min Depth 5.0 ft near launch, 6.0 in channel 9/28/12

Existing Max Bottom Elevation 239.2 ft launch & 238.2 channel

Critical Requirements

- Maintenance dredging.

Corps Calculated Backlog in cu yd 5,755 design cut + 4,988 overdraft

Notes on Use - COE lists 14 charter fishing boats generating ~$114,000 in net annual income.

Quantity (cu yd) 15,000

Anticipated Frequency (yr) 6

Sediment Condition

Testing Date

Sediment Quality

Class III

- NYS DEC stated in October 2012 that the sediments in Eighteen Mile Creek may be listed as hazardous waste due to potential PCB and metals contamination.

Federal Navigation Project Yes

Construction Completed

Federal Project Authorized Depth 12 feet

Designated Harbor of Refuge Yes

Previously Permitted Dredging

Permittee Army Corps of Engineers

DEC Permit ID. 9-2928-00023/00001

Permit Minimum Depth

DEC Permit Date 3/17/1997

Permit Bottom Elevation

DEC Expiration Date 12/31/2002

Permit Dredge Amount (Cubic Yards)

COE Appl. No.

Disposal

COE Permit Date

COE Expiration Date

Restrictive Dates late February - July & September - November (SCFWH form)

NYS Designated Significant Habitat? Yes - Upstream of Route 18 bridge.

Notes

Sources
- US Army Corps of Engineers Great Lakes Navigation System Fact Sheets (2012)
- NYS DOS Eighteen Mile Creek - Lake Ontario Significant Coastal Fish and Wildlife Habitat Rating Form (1987)
- NYS DEC Permit 9-2928-00023/00001 (Summary Sheet)

Channel/Water Body Designation # Oak Orchard Harbor

Latitude 43.372

Longitude 78.192

County Orleans

Town, City or Village Hamlet of Point Breeze, Town of Carlton

Total Slips 422

Total Launch Lanes 6

Total Charter Boats 38



Approximate Dimensions

Type of Use

- Recreational boating
- charter fishing boats

Economic Benefit $7,087,101 + 117 jobs

Maintained By Public

- Corps of Engineers
- Last dredged in 2004 with 10,700 cubic yards removed



Critical Desired Depth 8 feet

Critical Desired Bottom Elevation 236 ft (IGLD-85)

Existing Min Depth 4.0 ft at East entry, 8+ channel - 9/28/12

Existing Max Bottom Elevation 240.2 ft at entry

Critical Requirements

- maintenance dredging

Corps Calculated Backlog in cu yd 13,357 cut design + 9,596 overdraft

Notes on Use
- Orleans County Sheriff Marine Patrol and Coast Guard Auxiliary located in harbor.
- Orleans County reports 38 charter fishing boats generating ~$310,000 in net annual income.

Quantity (cu yd) 15,000

Anticipated Frequency (yr) 6

Sediment Condition

Testing Date 2003

Sediment Quality

Class III

50% sand + 50% silt in channel
50% silt and 50% clay in harbor

Federal Navigation Project Yes

Construction Completed

Federal Project Authorized Depth 10 ft channel, 8 ft in harbor

Designated Harbor of Refuge Yes

Previously Permitted Dredging Yes

Permittee US Army Corps of Engineers

DEC Permit ID. 8-3424-00056/00006

Permit Minimum Depth 10 ft in channel, 8 ft in harbor

DEC Permit Date 4/29/2004

Permit Bottom Elevation 233.3 ft & 235.3 ft (IGLD-85)

DEC Expiration Date 9/1/2009

Permit Dredge Amount (Cubic Yards) 10,000

COE Appl. No.

Disposal open lake disposal

COE Permit Date

COE Expiration Date

Restrictive Dates late February - July & September - November (SCFWH form), Permit: June 15 - September 1 only allowed

NYS Designated Significant Habitat? Yes. Designated from mouth upstream approximately six miles to Waterport Dam.

Notes

Sources
- US Army Corps of Engineers Great Lakes Navigation System Fact Sheets (2012)
- NYS Department of State Coastal Fish & Wildlife Habitat Rating Form
- NYS DOS Oak Orchard Creek Significant Coastal Fish and Wildlife Habitat Rating Form (1987)
- Orleans County Planning Department

Channel/Water Body Designation # Sandy Creek

Latitude 43.352

Longitude 77.891

County Monroe

Town, City or Village Town of Hamlin



Total Slips 287

Total Launch Lanes 2

Total Charter Boats 14

Approximate Dimensions

Type of Use

- Recreational Boating
- Fishing Access to Lake
- Sailboat Use ~40%

Economic Benefit $2,416,298 + 29 jobs

Maintained Private

By Brockport Yacht Club



Critical Desired Depth 7 feet

Critical Desired Bottom Elevation 237 feet (IGLD-85

Existing Min Depth 4.2 ft on 10/9/12

Existing Max Bottom Elevation 239.7 ft (IGLD-85)

Critical Requirements

Corps Calculated Backlog in cu yd

Notes on Use
- Slips are for small - medium size vessels
- State boat launch has 50 parking spaces
- Sailboats generally north of parkway bridge
- Clean Vessel Study air photo count = 138
- DEC/Sea Grant guide lists only 166 slips, including only 50 at BYC

Quantity (cu yd) 1,200

Anticipated Frequency (yr) 5

Sediment Condition **Testing Date** 4/88

- hard packed sands

Sediment Quality **Class** II

- clean by direct testing, grain size and chemical tests done in 1988
- Analysis indicates 97.4% sand, 2.6% fines
- Tests for PCB's, Hg, and pesticides/herbicides all had none detected.

Federal Navigation Project No **Construction Completed**

Federal Project Authorized Depth **Designated Harbor of Refuge** No

Previously Permitted Dredging Yes

Permittee Brockport Yacht Club

DEC Permit ID. 8-2630-00050/00022 **Permit Minimum Depth**

DEC Permit Date 7/18/2007 **Permit Bottom Elevation**

DEC Expiration Date 10/31/2009 **Permit Dredge Amount (Cubic Yards)** 1,791

COE Appl. No. 2006-01701 **Disposal** Beach nourishment for area located east of channel east jetty.

COE Permit Date 3/6/2008

COE Expiration Date 3/6/2016

Restrictive Dates late February - July & September - November (SCFWH form)

NYS Designated Significant Habitat? Yes

Notes

- Brockport Yacht Club previously dredged channel and marina basin during 1999-2000.
- BYC has a current permit to dredge its basin only. No current permit from DEC for the channel.

Sources
- Monroe County Waterfront Recreation Opportunities Study (1990)
- NYS DEC/Sea Grant Marina Guide (1997)
- Sandy Creek Marina DEIS, NYS DEC as Lead Agency (1994)
- NYS DEC Permit 8-2630-00050/00022 (2007)
- NYS DOS Sandy Creek Significant Coastal Fish and Wildlife Habitat Rating Form (1987)

Channel/Water Body Designation # Braddock Bay

Latitude 43.314

Longitude 77.712

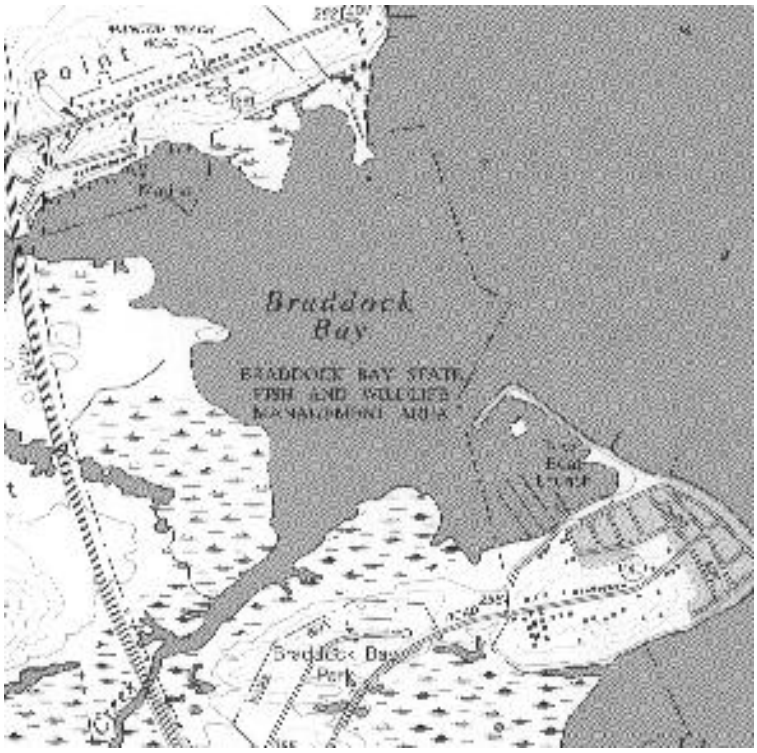
County Monroe

Town, City or Village Town of Greece

Total Slips 528

Total Launch Lanes 4

Total Charter Boats



Approximate Dimensions 1,200 ft long by 100 feet wide

Type of Use

- Recreational Boating
- Lake fishing access

Economic Benefit $4,531,948 + 54 jobs

Maintained Private

By Braddock Bay Marina, Inc.



Critical Desired Depth 4.5 ft

Critical Desired Bottom Elevation 239.5 ft

Existing Min Depth

Existing Max Bottom Elevation

Critical Requirements

- maintenance dredging for small vessel access
- channel is unprotected and subject to annual shoaling
- Has current permit.

Corps Calculated Backlog in cu yd

Notes on Use
- Small - Medium vessels only
- Sailboat use ~18%
- Clean Vessel Study air photo count = 159

Quantity (cu yd) 5,000

Anticipated Frequency (yr) 1

Sediment Condition

Testing Date 3/14/96 & 5/90

- sand, trace of silt/clay
- Grain size analysis (1996) indicates 99.7% sand, 0.3% fines
- Six samples in 1990 indicate 89-97% sand, 0-7.6% gravel, 1.8-3.7% fines

Sediment Quality

Class I

- apparently clean based upon grain size analysis and source

Federal Navigation Project No

Construction Completed

Federal Project Authorized Depth

Designated Harbor of Refuge No

Previously Permitted Dredging Yes

Permittee Steve Gibbs, Braddock Bay Marina, Inc.

DEC Permit ID. 8-2628-00208/00007

Permit Minimum Depth -4.5 ft (MLW)

DEC Permit Date 8/26/2011

Permit Bottom Elevation 238.8

DEC Expiration Date 12/31/2015

Permit Dredge Amount (Cubic Yards) up to 15,000 (COE - 15,500)

COE Appl. No. 2007-00144

Disposal Beach nourishment for beach area approximately 1,000 feet east of channel

COE Permit Date 10/22/2009

COE Expiration Date 10/22/2019

Restrictive Dates late February - July & September - November (SCFWH form)

NYS Designated Significant Habitat? Yes

Notes

- Braddock Bay Marina owner purchased an 10 inch IMS4010 cutter head suction dredge and is using to dredge channel in 2012
- Dredging with this equipment previously performed by the Braddock Bay Marina under contract to the Town.
- Dredging with landside dewatering cxonducted in1999.

Sources

- NYS DEC/Sea Grant Marina Guide (1997)
- Monroe County Waterfront Recreation Opportunities Study (1990)
- NYS DEC Permit 8-2628-00208/00007 (2011)
- NYS DOS Braddock Bay and Salmon Creek Significant Coastal Fish and Wildlife Habitat Rating Form (1987)

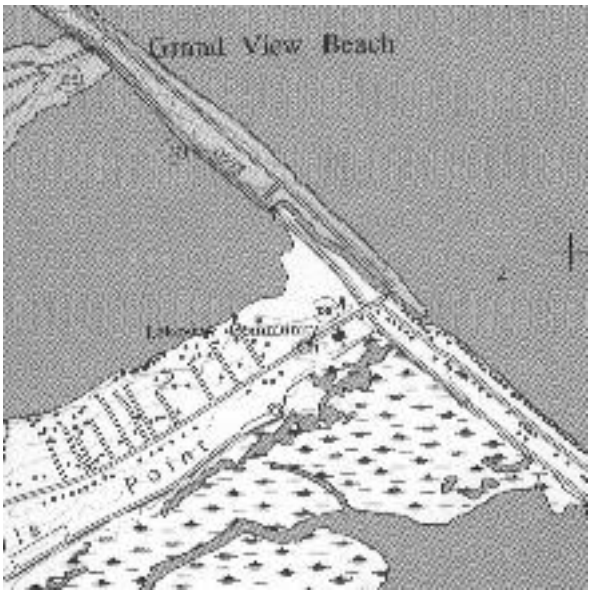
Channel/Water Body Designation # Long Pond Outlet

Latitude 43.290

Longitude 77.672

County Monroe

Town, City or Village Town of Greece



Total Slips 20

Total Launch Lanes 0

Total Charter Boats

Approximate Dimensions 100 ft long by 35 feet wide

Type of Use

- Small power boats for recreation and lake access

Economic Benefit $130,717 + 2 jobs

Maintained Private

By Long Pond Marine, Inc. (previous dredging)



Critical Desired Depth 3 ft

Critical Desired Bottom Elevation

Existing Min Depth

Existing Max Bottom Elevation

Critical Requirements

Corps Calculated Backlog in cu yd

Notes on Use
- Recreational boating
- Lake access for small (< 20 ft) power boats, primarily docked at residences on Long Pond

Quantity (cu yd) 200

Anticipated Frequency (yr) 2

Sediment Condition **Testing Date** 3/14/96

- Sands from littoral drift along lake
- Classed as Sand, trace of gravel, trace of silt/clay
- Grain size analysis indicates 3.9% gravel, 95.9% sand, 0.2% fines

Sediment Quality **Class** I

- Assumed clean by source and physical character

Federal Navigation Project No

Construction Completed

Federal Project Authorized Depth

Designated Harbor of Refuge No

Previously Permitted Dredging Yes

Permittee Long Pond Marina, Inc.

DEC Permit ID. 8-2628-00324/00003

Permit Minimum Depth - 2 ft (LWD)

DEC Permit Date 8/27/1999

Permit Bottom Elevation 241.3 ft (IGLD-85)

DEC Expiration Date 11/31/2004

Permit Dredge Amount (Cubic Yards) 500

COE Appl. No. 0095-48313

Disposal Above OHW on adjacent beach to the east.

COE Permit Date 1999

COE Expiration Date 2004

Restrictive Dates

NYS Designated Significant Habitat? No

Notes

- Previous dredging permitted under Regional Permit No. 81-000-1 from COE.
- Drawings for DEC permit indicate dredging needed for an approximately 31 ft x 50 ft area where the channel turns northeast and enters the Lake
- No record that the dredging was ever performed.

Sources - NYS DEC Permit 8-2628-00324/00003

Channel/Water Body Designation # Genesee River

Latitude 43.258

Longitude 77.603

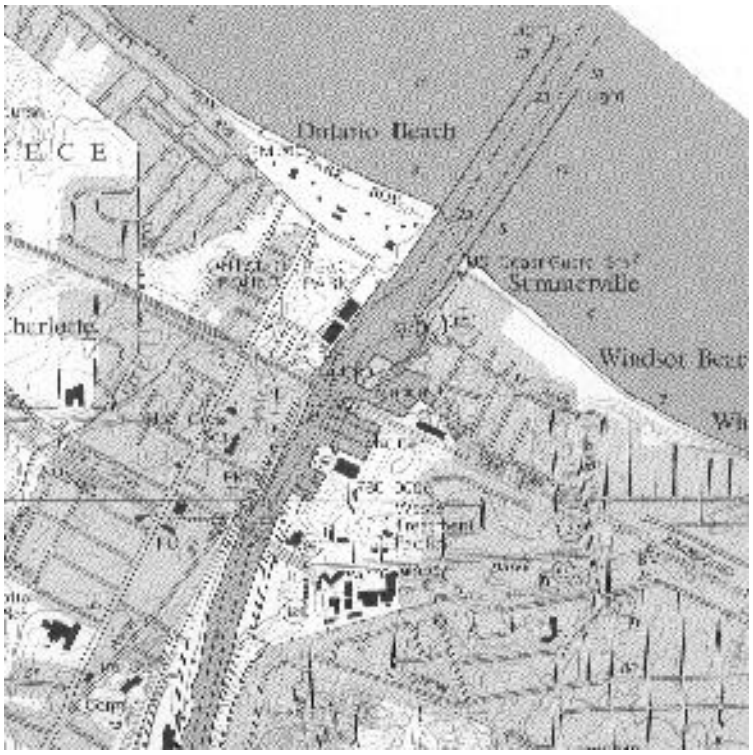
County Monroe

Town, City or Village City of Rochester

Total Slips 1034

Total Launch Lanes 5

Total Charter Boats 26



Approximate Dimensions

Type of Use

- Recreational Boating
- Lake fishing access
- Limited commercial port with ~45 trips per year by bulk carrier (cement) with 97,000 tons in 2008

Economic Benefit $9,961,798 + 141 jobs rec boating + $3 million in commercial shipping



Maintained Public

By
- Army Corps of Engineers
- Last dredged in 2009 with 160,000 cubic yards removed.
- Joint public/private partnership with commercial shipper conducting dredging in 2012-13.

Critical Desired Depth 21 ft in channel

Critical Desired Bottom Elevation 222.3 ft (IGLD-85)

Existing Min Depth

Existing Max Bottom Elevation

Critical Requirements

- Maintenance dredging to support commercial shipping use
- Approximately 1,000 ft of east pier severely deteriorated and in need of repair

Corps Calculated Backlog in cu yd

Notes on Use
- Small, Medium & Large Vessels
- Sailboat use ~48%, including large sailboats
- Clean Vessel Study air photo count = 711
- Light loading losses between $169,000 and $394,000 annually reported for current conditions.
- COE lists 26 charter fishing boats.

Quantity (cu yd) 150,000

Anticipated Frequency (yr) 2

Sediment Condition

- Silt with some sand and organics

Testing Date December 1994

Sediment Quality

- Some metals and nutrients

Class IV

Federal Navigation Project Yes

Construction Completed

Federal Project Authorized Depth 21 ft

Designated Harbor of Refuge Yes

Previously Permitted Dredging Dredged in 1999. Current permit application in process.

Permittee Army Corps of Engineers

DEC Permit ID. 8-2614-00604/00005

Permit Minimum Depth

DEC Permit Date 1/14/2009

Permit Bottom Elevation

DEC Expiration Date 12/31/2009

Permit Dredge Amount (Cubic Yards) 300,000

COE Appl. No.

Disposal Rochester area COE open lake disposal site.

COE Permit Date

COE Expiration Date

Restrictive Dates early April - Mid May & Mid August - Mid November (SCFWH Form)

NYS Designated Significant Habitat? Yes

Notes

- The Genesee River Harbor has been maintained periodically by the Army Corps of Engineers at a depth suited for the commercial traffic utilizin the port. These depths are far in excess of those necessary for recreational vessel use and no additional dredging of the channel is needed for recreational use.

Sources

- NYS DEC/Sea Grant Marina Guide (1997)
- Monroe County Waterfront Recreation Opportunities Study (1990)
- US Army Corps of Engineers Great Lakes Navigation System Fact Sheets (2012)
- NYS DEC Permit 8-2614-00604/00005 (2009)
- NYS DOS Genesee River Significant Coastal Fish and Wildlife Habitat Rating Form (1987)
- Monroe County Planning Department

Channel/Water Body Designation # Irondequoit Bay

Latitude 43.236

Longitude 77.534

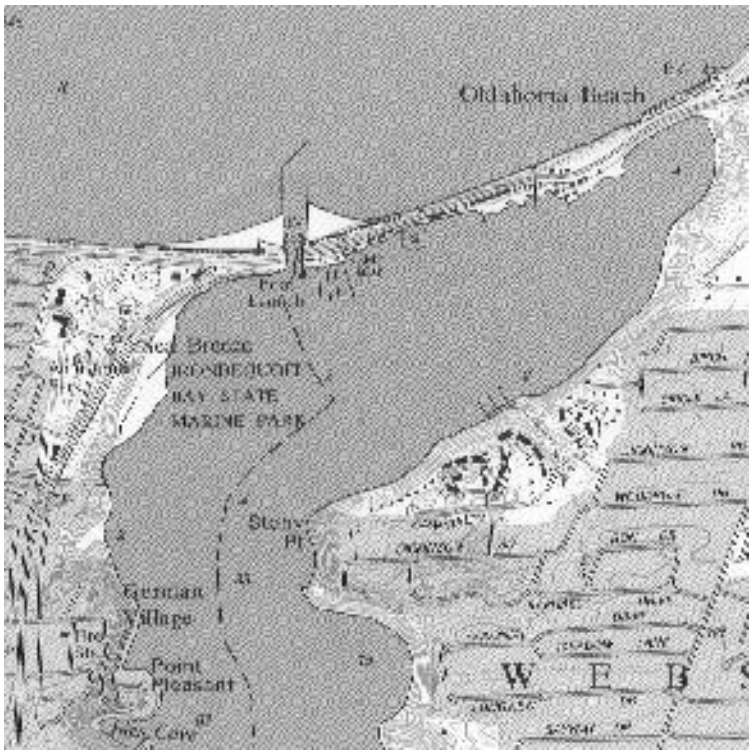
County Monroe

Town, City or Village Towns of Irondequoit and Webster

Total Slips 1670

Total Launch Lanes 6

Total Charter Boats 5



Approximate Dimensions

Type of Use

- Recreational boating
- Lake fishing access

Economic Benefit $12,892,632 + 158 jobs

Maintained Public

By Army Corps of Engineers
- Last dredged in 2008 with 21,000 cubic yards removed.



Critical Desired Depth 9 ft

Critical Desired Bottom Elevation 234.3 ft

Existing Min Depth +1.0 ft on 10/4/12, 1/2 channel < 4.0 feet

Existing Max Bottom Elevation 245.0 ft (IGLD-85)

Critical Requirements

- Maintenance dredging and associated sediment testing

Corps Calculated Backlog in cu yd 9,565 cut design + 11,107 overdraft

Notes on Use
- Small, medium & large vessels
- Sailboat use ~18%, including large sailboats
- Clean Vessel Study air photo count = 886
- Sea Grant Guide left out the Bounty Harbor and Rod and Gun Club - its slip count = 634, Use Monroe County WROS count instead
- COE lists 8 charter fishing boats generating $65,000 in net annual income.

Quantity (cu yd) 15,000

Anticipated Frequency (yr) 6

Sediment Condition

Testing Date 1990

- Channel sediments thought to be sands from littoral drift along lake shore
- Bay channel sediments are sand, silts and organics in various percentages. More sand to the north and less to the south in Bay.

Sediment Quality

Class III

- Entrance channel unpolluted and unrestricted for open lake disposal
- Bay channel - low to moderately polluted silts, clays and sands
- Sediments from both stated to be physically compatible for beach nourishment uses

Federal Navigation Project Yes

Construction Completed 1986

Federal Project Authorized Depth 9 ft in channel, 8 ft in harbor

Designated Harbor of Refuge Yes

Previously Permitted Dredging NYS DEC Permit issued in 2008

Permittee US Army Corps of Engineers O & M

DEC Permit ID. 8-2699-00001/00005

Permit Minimum Depth -9 ft (LWD)

DEC Permit Date 4/1/2008

Permit Bottom Elevation 234.3 ft (IGLD-85)

DEC Expiration Date 12/31/2008

Permit Dredge Amount (Cubic Yards) 30,000

COE Appl. No.

COE Permit Date

COE Expiration Date

Disposal Discharge to nearshore area located 2,400 ft east of the harbor's East Jetty. to east of inlet and open lake disposal

Restrictive Dates work to be performed on between July 1-September 1 (permit condition)

NYS Designated Significant Habitat? Yes

Notes

- Maintenance dredging of access channel and main Bay channel have been done by the ACE. Originally done as part of the project construction i 1985-86, again in 1988 (5,500 cu yd), in 1993 (10k-15k from channel and 3k-5k in Bay channel), in 2000 and last done in 2008..
- Extensive physical and chemical analyses of sediments performed in 1990.
- Harbor supports the operation of 5 charter fishing boats.

Sources

- NYS DEC/Sea Grant Marina Guide (1997)
- Monroe County Waterfront Recreation Opportunities Study (1990)
- US ACE- Phase I Design and EIS - 1979-82
- US ACE - FONSI and EA for Maintanance Dredging, Oct. 1992
- US Army Corps of Engineers Great Lakes Navigation System Fact Sheets (2012)
- NYS DEC Permit 8-2699-00001/00005
- NYS DOS Irondequoit Bay and Creek Significant Coastal Fish and Wildlife Habitat Rating Form (1987)
- Monroe County Planning Department

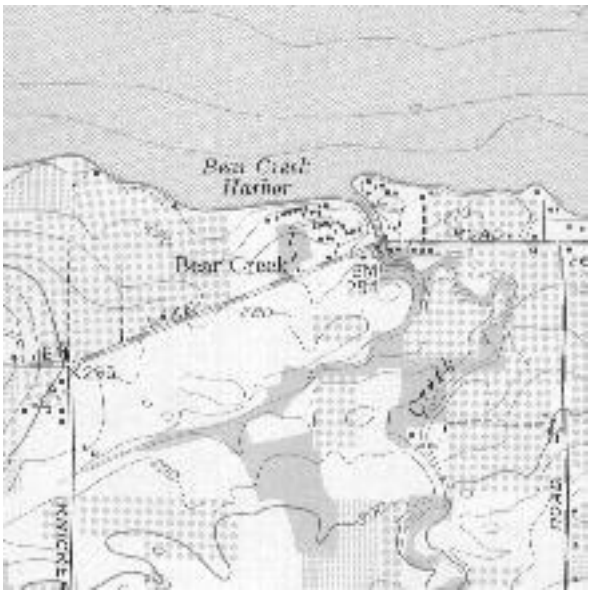
Channel/Water Body Designation # Bear Creek Harbor

Latitude 43.278

Longitude 77.276

County Wayne

Town, City or Village Town of Ontario



Total Slips 4

Total Launch Lanes 3

Total Charter Boats

Approximate Dimensions ~650 ft long by 60 ft wide

Type of Use

- Recreational boating
- Lake fishing access

Economic Benefit $836,912 + 11 jobs



Maintained Public

By Town of Ontario
- Harbor created and maintained in the past for construction and maintenance activities for the Ginna nuclear power plant.

Critical Desired Depth 3.5 ft for rec boating

Critical Desired Bottom Elevation 239.8 ft (IGLD-85)

Existing Min Depth 3.0 feet (9/21/2012)

Existing Max Bottom Elevation 241.4 ft (IGLD-85)

Critical Requirements

Corps Calculated Backlog in cu yd

Notes on Use
- Boat launch owned and operated by the Town of Ontario for residents' use.
- No trailer parking at the launch. Parking available at Town Highway facility to the west on Lake Road
- Small car-top launch also present

Quantity (cu yd) 6,000

Anticipated Frequency (yr) 10

Sediment Condition

Testing Date 1993

- Brown sand, some gravel, little silt by grain size analysis.
- Analysis indicates 26.4% gravel, 62.4% sand, 11.2% fines

Sediment Quality

Class II

- Assumed clean by grain size analysis and source.
- Radionuclide testing done by State during dredging in 1995

Federal Navigation Project No

Construction Completed

Federal Project Authorized Depth

Designated Harbor of Refuge No

Previously Permitted Dredging Yes

Permittee Town of Ontario

DEC Permit ID. 8-5434-00042/00007 - 00009

Permit Minimum Depth

DEC Permit Date 5/19/2009

Permit Bottom Elevation 240.0 ft (IGLD-85) (COE 236-239)

DEC Expiration Date 12/31/2011

Permit Dredge Amount (Cubic Yards) 585

COE Appl. No. 2009-00327

Disposal - Material transported to Town Wastewater facility for use in noise attenuation berms.

COE Permit Date 4/10/2009

COE Expiration Date 4/10/2011

Restrictive Dates March 15 - June 30 (permit condition)

NYS Designated Significant Habitat? No

Notes

- No record that the dredging permitted in 2009 for recreational boating access was completed.
- Dredged to 8 feet to launch in 1995-1996.
- Inlet protected by armor stone on both the east and west sides.
- 1995-96 dredging done by CP Ward by excavator on barge.

Sources - NYS DEC Permit 8-5434-00042/00007

Channel/Water Body Designation # Pultneyville

Latitude 43.283

Longitude 77.185

County Wayne

Town, City or Village Village of Pultneyville, Town of Williamson

Total Slips 170

Total Launch Lanes 1

Total Charter Boats 10



Approximate Dimensions

Type of Use

- Recreational boating
- Lake fishing access
- Sailing

Economic Benefit $2,093,833 + 33 jobs

Maintained By Private

Pultneyville Marina
- previoiusly maintained by the Pultneyville Yacht Club



Critical Desired Depth 5 ft

Critical Desired Bottom Elevation 238.3 ft (IGLD-85)

Existing Min Depth 5 ft (7/3/2012)

Existing Max Bottom Elevation 240.6 ft (IGLD-85)

Critical Requirements

Corps Calculated Backlog in cu yd

Notes on Use
- Primarily small & medium vessels
- Fishing charter boats up to ~28 ft.
- Sailboat use ~57%
- Clean Vessel Study air photo count = 259
- Channel and harbor maintained in the past by the Pultneyville Yacht Club
- Last issued permit to the Pultneyville Marina

Quantity (cu yd) 500

Anticipated Frequency (yr) 2

Sediment Condition

Testing Date

- Reportedly sands from littoral drift in main access channel.
- More silts and fines in material further upstream near the marina.

Sediment Quality

Class II

Federal Navigation Project No

Construction Completed

Federal Project Authorized Depth

Designated Harbor of Refuge No

Previously Permitted Dredging Yes

Permittee Pultneyville Marina

DEC Permit ID. 8-5446-00025/00003-00004

Permit Minimum Depth

DEC Permit Date 6/30/2004

Permit Bottom Elevation

DEC Expiration Date 10/31/2009

Permit Dredge Amount (Cubic Yards) 525

COE Appl. No. 2004-01403

Disposal - Upland at DEC approved Cornwall Trust disposal site..

COE Permit Date 7/22/2004

COE Expiration Date 7/22/2007

Restrictive Dates

NYS Designated Significant Habitat? No

Notes

- Main channel maintained as needed by the Pultneyville Yacht Club

Sources
- NYS DEC/Sea Grant Marina Guide (1997)
- Monroe County Waterfront Recreation Opportunities Study (1990)
- NYS DEC Permit 8-5446-00025/00003 (2004)

Channel/Water Body Designation # Great Sodus Bay

Latitude 43.274

Longitude 76.973

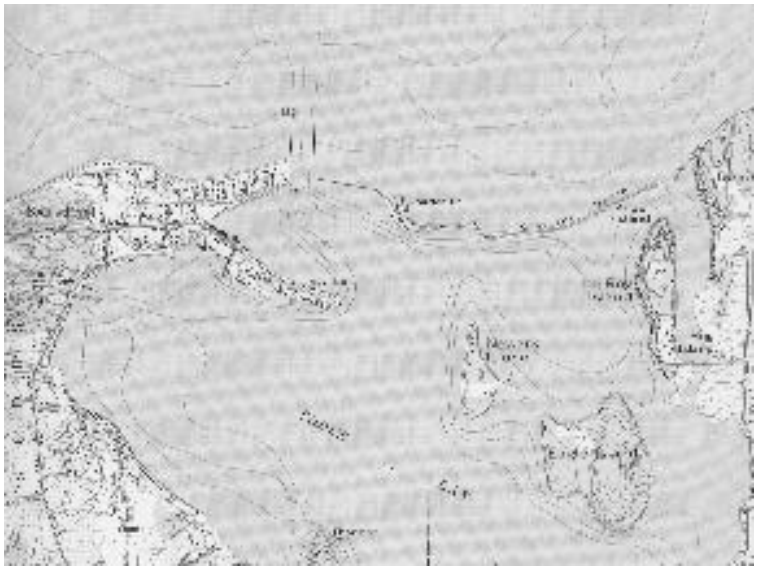
County Wayne

Town, City or Village Sodus Point (V), Sodus and Huron (T)

Total Slips 802

Total Launch Lanes 4

Total Charter Boats 45



Approximate Dimensions

Type of Use

- Recreational boating
- Lake access for fishing

Economic Benefit $9,528,946 + 152 jobs



Maintained Public

By Corps of Engineers
- Last dredged in 2004 with 42,500 cubic yards removed.
- Approximately 20,000 cubic yards of dredging needed as of 2012

Critical Desired Depth 10 feet

Critical Desired Bottom Elevation 233.3 ft (IGLD-85)

Existing Min Depth 9 ft - 11.8 ft (7/3/2012)

Existing Max Bottom Elevation 236.6 - 233.8 ft (IGLD-85)

Critical Requirements

- maintenance dredging
- repair of east breakwater and west pier

Corps Calculated Backlog in cu yd 1,000 cut design + 5,019 overdraft

Notes on Use
- COE describes as a Critical Harbor of Refuge
- Wayne County Sheriff Marine Patrol and Coast Guard Station located in harbor
- Small, medium & large vessels
- Large sailboats
- Sailboat use ~20%
- Clean Vessel Study air photo count = 1082

Quantity (cu yd) 15,000

Anticipated Frequency (yr) 6

Sediment Condition

Testing Date

Sediment Quality

Class III

Federal Navigation Project Yes

Construction Completed

Federal Project Authorized Depth 20 ft

Designated Harbor of Refuge Yes

Previously Permitted Dredging 2004 permit issued

Permittee Corps of Engineers

DEC Permit ID. 8-5442-00300/00001

Permit Minimum Depth -14 ft (LWD) + 1 ft over

DEC Permit Date 2004

Permit Bottom Elevation 238.3 ft (IGLD-85)

DEC Expiration Date 2009

Permit Dredge Amount (Cubic Yards) 60,000

COE Appl. No.

Disposal Open lake disposal site approximately 1.8 miles north-northeast of channel entrance.

COE Permit Date

COE Expiration Date

Restrictive Dates Work to be performed between July 1 and October 1 (permit condition)

NYS Designated Significant Habitat? Yes

Notes

- COE lists 5 charter fishing boats generating approximately $41,000 in net annual income.

Sources
- NYS DEC/Sea Grant Marina Guide (1997)
- US Army Corps of Engineers Great Lakes Navigation System Fact Sheets (2012)
- NYS DEC Permit 8-5442-00300/00001
- NYS DOS Sodus Bay Significant Coastal Fish and Wildlife Habitat Rating Form (1987)

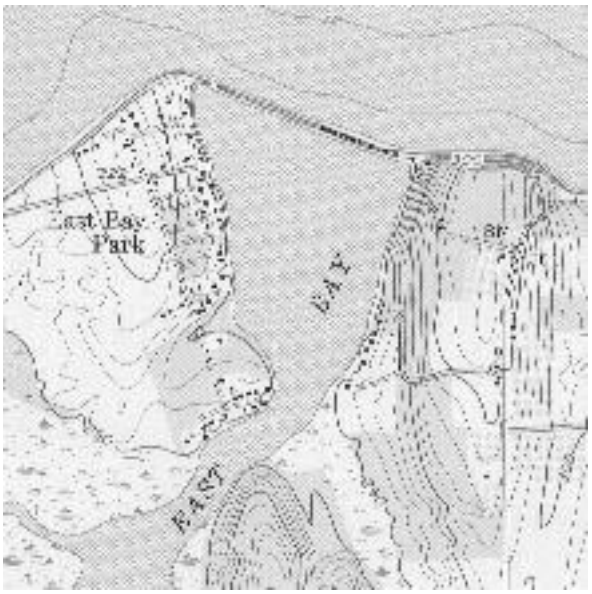
Channel/Water Body Designation # East Bay

Latitude 43.295

Longitude 76.892

County Wayne

Town, City or Village Town of Huron



Total Slips 32

Total Launch Lanes 2

Total Charter Boats

Approximate Dimensions

Type of Use

- recreational boating
- fishing
- lake access

Economic Benefit $749,659 + 9 jobs



Maintained Private

By Wayne East Bay Association, Inc.
- Channel is opened each season with material stored on the adjacent bar. The outlet is refilled with the stored material each fall.

Critical Desired Depth 4 ft

Critical Desired Bottom Elevation 239.3 ft (IGLD-85)

Existing Min Depth 4 ft (7/3/2012)

Existing Max Bottom Elevation 241.6 ft (IGLD-85)

Critical Requirements

Corps Calculated Backlog in cu yd

Notes on Use - used only for small crafts (est. < 22 ft)

Quantity (cu yd) 500

Anticipated Frequency (yr) 1

Sediment Condition **Testing Date**

- Reported as sand, gravel and cobbles

Sediment Quality **Class** II

- Assumed clean by physical characteristics and apparent source.

Federal Navigation Project No **Construction Completed**

Federal Project Authorized Depth **Designated Harbor of Refuge** No

Previously Permitted Dredging Yes

Permittee Wayne East Bay Improvement Association, Inc.

DEC Permit ID. 8-5426-0028/00008-9 **Permit Minimum Depth**

DEC Permit Date 4/19/2010 **Permit Bottom Elevation**

DEC Expiration Date 12/31/2014 **Permit Dredge Amount (Cubic Yards)** 400-600

COE Appl. No. 1993-99520 **Disposal** stored next to channel - redeposited in fall

COE Permit Date 8/6/2010

COE Expiration Date 8/6/2013

Restrictive Dates Dredge after May 15, refill by October 15. (permit condition)

NYS Designated Significant Habitat? Yes

Notes

- Existing permit indicates channel is opened seasonally only - cleared out in May and filled back in September
- Channel dimensions listed as 50 ft wide by 120 ft long. Assumed dredged to 4 ft minimum depth as per previous permits.
- Channel must be refilled to elevation 247.3 ft (IGLD-85) in fall.
- Installation of steel crib jetty filled with dredge spoil permitted in 1986 (DEC No. 80-85-0649)

Sources
- NYS DEC/Sea Grant Marina Guide (1997)
- NYS DEC Permit 8-5426-00010/00008-9
- NYS DOS East Bay Significant Coastal Fish and Wildlife Habitat Rating Form (1987)

Channel/Water Body Designation # Port Bay

Latitude 43.305

Longitude 76.838

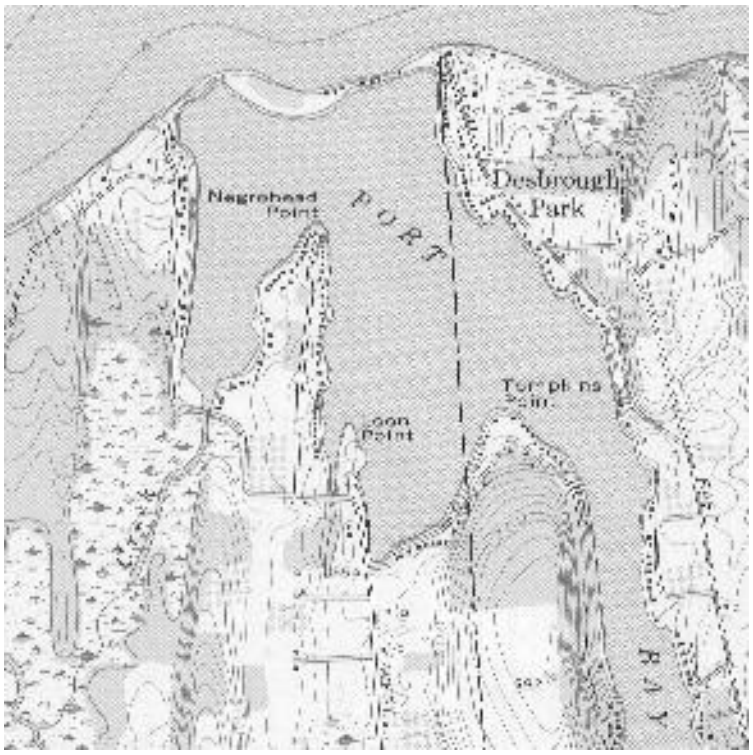
County Wayne

Town, City or Village Towns of Huron and Wolcott

Total Slips 382

Total Launch Lanes 2

Total Charter Boats 10



Approximate Dimensions 60 ft wide by 530 ft long

Type of Use

- Recreational boating
- Fishing access to Lake
- Little sailing, mostly transient

Economic Benefit $4,290,199 + 60 jobs



Maintained Private

By Port Bay Improvement Association
- Dredged annually with material partially used for road to outlet area and partially deposited in Lake littoral zone to the east of outlet.

Critical Desired Depth -6.5 ft LWD

Critical Desired Bottom Elevation 236.8 ft (IGLD-85)

Existing Min Depth 7 ft - 5 ft (7/3/2012)

Existing Max Bottom Elevation 238.6 - 240.6 ft (IGLD-85)

Critical Requirements

Corps Calculated Backlog in cu yd

Notes on Use

Quantity (cu yd) 1,000

Anticipated Frequency (yr) 1

Sediment Condition

- Reported to be coarse sand, gravel and loose stone with occasional pieces up to the size of basketballs

Testing Date none

Sediment Quality

- Assumed clean by physical characteristics and source.
- COE did not require testing due to nature of material present.

Class II

Federal Navigation Project No

Construction Completed

Federal Project Authorized Depth

Designated Harbor of Refuge No

Previously Permitted Dredging Yes

Permittee Port Bay Improvement Association

DEC Permit ID. 8-5426-00010/00003 & 00005

DEC Permit Date 4/16/2008

DEC Expiration Date 12/31/2013

Permit Minimum Depth -6 ft (LWD)

Permit Bottom Elevation 236.8 ft (IGLD-85)

Permit Dredge Amount (Cubic Yards) 1,200

COE Appl. No. 1996-7400001

COE Permit Date 3/17/2011

COE Expiration Date 6/18/2018

Disposal - Stockpiled adjacent to outlet for road use and deposited into lake littoral zone east of outlet.

Restrictive Dates March - July & September - November (SCFWH Form), none in permit

NYS Designated Significant Habitat? Yes

Notes

- Annual dredging done with a drag line on a crane which is stored at the outlet.
- Dredged material apparently stockpiled adjacent to the outlet on the west side.

Sources
- NYS DEC/Sea Grant Marina Guide (1997)
- NYS DEC Permit 8-5426-00010/00003 & 00005
- NYS DOS Port Bay Significant Coastal Fish and Wildlife Habitat Rating Form (1987)

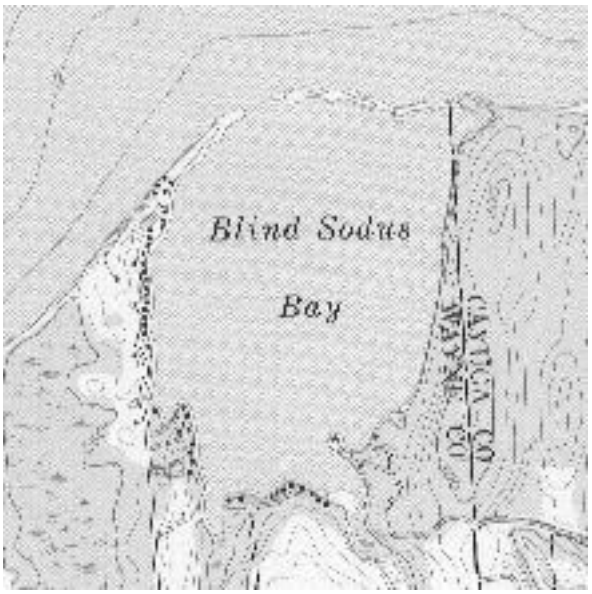
Channel/Water Body Designation # Blind Sodus Bay

Latitude 43.344

Longitude 76.721

County Wayne

Town, City or Village Town of Wolcott



Total Slips 99

Total Launch Lanes 1

Total Charter Boats

Approximate Dimensions 30 ft wide by 50 ft long

Type of Use

- recreational boating
- fishing
- lake access

Economic Benefit $917,304 + 11 jobs



Maintained Private

By Blind Sodus Bay Improvement Association
- Annual dredging of approximately 200 cubic yards to clear material brought into channel during winter.

Critical Desired Depth - 4 ft MLW

Critical Desired Bottom Elevation 239.3 ft (IGLD-85)

Existing Min Depth 4.5 ft (7/11/12)

Existing Max Bottom Elevation 240.9 ft (IGLD-85)

Critical Requirements

Corps Calculated Backlog in cu yd

Notes on Use
- Only 1 marina, Holiday Harbor Resort, present
- Additional private cottages

Quantity (cu yd) 300

Anticipated Frequency (yr) 1

Sediment Condition

Assumed clean sands, gravel and stone.

Testing Date

Sediment Quality

Assumed clean based upon source.

Class II

Federal Navigation Project No

Construction Completed

Federal Project Authorized Depth

Designated Harbor of Refuge No

Previously Permitted Dredging Yes

Permittee Blind Sodus Bay Improvement Association

DEC Permit ID. 8-5448-00034/00008

Permit Minimum Depth -4 ft. MLW

DEC Permit Date 8/11/2011

Permit Bottom Elevation 239.3 ft (IGLD-85)

DEC Expiration Date 3/3/2014

Permit Dredge Amount (Cubic Yards)

COE Appl. No. 1996-9740036

Disposal - Stockpiled adjacent to outlet on east and then taken for fill to trailer park/campground on east side of barrier bar.

COE Permit Date 12/2/2008

COE Expiration Date 3/3/2014

Restrictive Dates

NYS Designated Significant Habitat?

Notes

- Dredging to open channel usually done in the last week of May with further maintenance dredging done just before July 4th and Labor Day
- Appliation materials indicate that seasonal dredging of this channel has been done for decades.

Sources - NYS DEC/Sea Grant Marina Guide (1997)
- NYS DEC Permit 8-5448-00034/00008

Channel/Water Body Designation # Little Sodus Bay

Latitude 43.734

Longitude 76.708

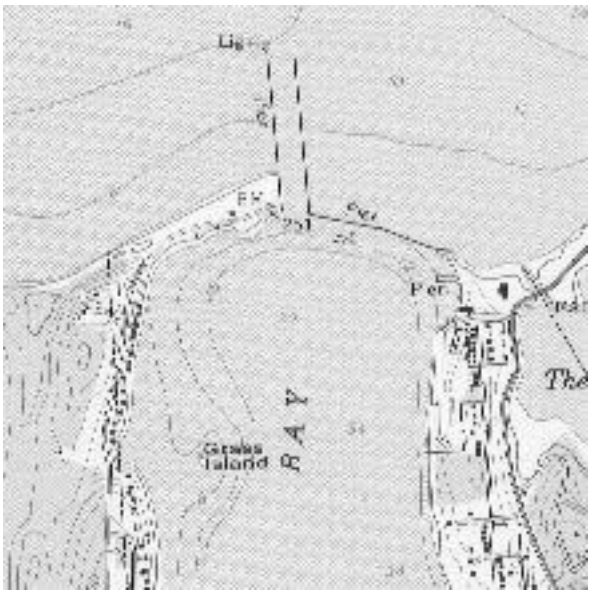
County Cayuga

Town, City or Village Town of Sterling, Village of Fairhaven

Total Slips 550

Total Launch Lanes 8

Total Charter Boats 12



Approximate Dimensions

Type of Use

- Recreational boating
- Lake access for fishing
- Used by large power and sailboats

Economic Benefit $6,611,742 + 90 jobs



Maintained Public

By Authorized Federal project. Last dredged by COE in 2005 with 12,000 cubic yards removed.
Permit extended in 2009 for five years, but dredging not done due to insufficient funds.

Critical Desired Depth 8 feet

Critical Desired Bottom Elevation 236 ft (IGLD-85)

Existing Min Depth 6.6 ft (7/11/12)

Existing Max Bottom Elevation 238.8 ft (IGLD-85)

Critical Requirements

- Maintenance Dredging of Channel
- Repair of Approximately 50 feet of separated sheet piling on west pier

Corps Calculated Backlog in cu yd 16,601 cut design + 10,026 overdraft

Notes on Use
- Small, medium & large vessels reported up to 40 ft.
- Sailboat use ~26%
- Clean Vessel Study air photo count = 228
- Current maintenance depth = 8 feet

Quantity (cu yd) 15,000

Anticipated Frequency (yr) 6

Sediment Condition **Testing Date** 2002

Primarily sands.

Sediment Quality **Class** III

No contamination. Materials suitable for nearshore or open lake disposal.

Federal Navigation Project Yes **Construction Completed** 1906

Federal Project Authorized Depth 15.5 ft **Designated Harbor of Refuge** Yes

Previously Permitted Dredging 2005 extended in 2009 to 3/15/2014

Permittee Army Corps of Engineers

DEC Permit ID. 7-0556-00067/00005 **Permit Minimum Depth**

DEC Permit Date 4/9/2009 **Permit Bottom Elevation** 243.3 ft (IGLD-85)

DEC Expiration Date 3/15/2014 **Permit Dredge Amount (Cubic Yards)**

COE Appl. No. **Disposal** Nearshore disposal east of channel jetty and/or open lake disposal site.

COE Permit Date

COE Expiration Date

Restrictive Dates Work allowed between June 1 and March 15. (permit condition)

NYS Designated Significant Habitat? No. Eastern tributary Sterling Creek is designated.

Notes

- Review of Army Corps of Engineer files indicates that the outlet jetties and channel were completed in 1906.
- COE indicates that the channel was last dredged in 2005 with 12,000 cubic yards removed.
- COE requested extension of permit in 2009 to allow up to 30,000 cubic yards of maintenance dredging over a five year period.

Sources
- NYS DEC/Sea Grant Marina Guide (1997)
- US Army Corps of Engineers Great Lakes Navigation System Database (2012)
- NYS DOS Sterling Creek and Wetlands Significant Coastal Fish and Wildlife Habitat Rating Form (1987)

Channel/Water Body Designation # Oswego Harbor

Latitude 43.466

Longitude 76.514

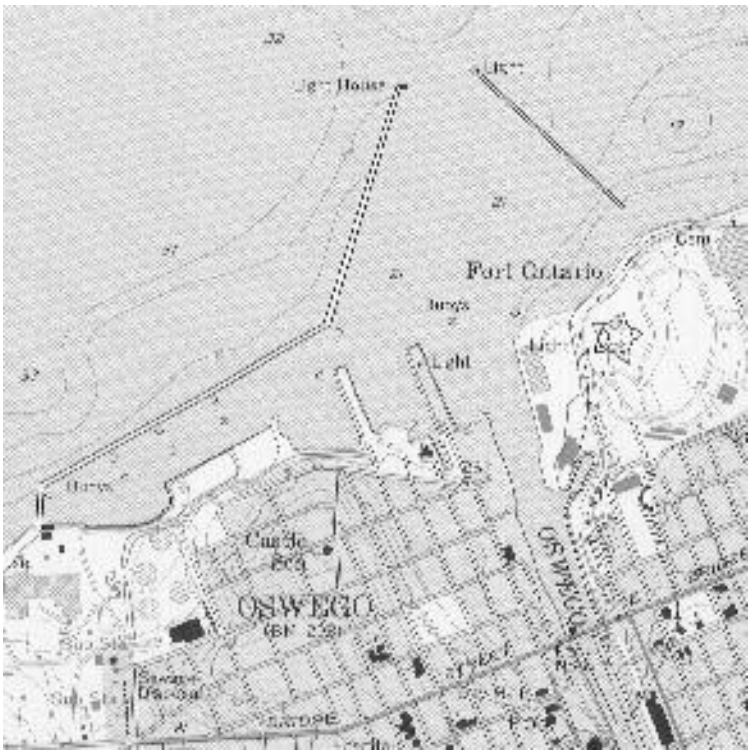
County Oswego

Town, City or Village City of Oswego

Total Slips 536

Total Launch Lanes 6

Total Charter Boats 29



Approximate Dimensions 3,000 ft of channel, 1.94 miles of breakwater

Type of Use

- Small, medium and large recreational vessels.
- Significant charter fishing, launch and sailboat use
- Cmmercial shipping utilizing Port of Oswego

Economic Benefit $7,190,951 + 111 jobs rec boating plus $15 million in commercial shipping



Maintained Public

By Army Corps of Engineers
- Harbor area last dredged in 2008 with 71,000 cubic yards removed
- Both channel and 280 acre outer harbor dredged by the COE

Critical Desired Depth 21 ft

Critical Desired Bottom Elevation 222.3 ft (IGLD-85)

Existing Min Depth

Existing Max Bottom Elevation

Critical Requirements

- Maintenance dredging of harbor and channel
- West breakwater repairs.
- Current functional backlog in the harbor area estimated at 203,000 cubic yards

Corps Calculated Backlog in cu yd $1,899,000 for dredging plus$ $4,600,000 inbreakwater repairs

Notes on Use
- Clean Vessel Study air photo count = 206
- 436,000 tons of commercial materials shipped or received in 2008
- Harbor houses US Coast Guard, Oswego County sheriff Marine Patrol, and NOAA Fisheries Lab and docks
- Major commercial stakeholders include NRG Energy, Sprague Energy Corp., Lafarge Cement, and Essroc Cement

Quantity (cu yd) 75,000

Anticipated Frequency (yr) 5

Sediment Condition

- Clays, silts and sands depending upon location.

Testing Date 2003

Sediment Quality

- Generally acceptable for open lake disposal based upon chemical and biological testing (bioassys) of sediments from proposed dredging areas as well as samples from the Lake disposal site.

Class IV

Federal Navigation Project Yes

Construction Completed

Federal Project Authorized Depth 25 ft outer channel, 21 ft in River

Designated Harbor of Refuge Yes

Previously Permitted Dredging Last permitted in 2004 with expiration in October 2008

Permittee Corps of Engineers

DEC Permit ID. 7-3512-00033/3

Permit Minimum Depth -21 to -27 feet LWD

DEC Permit Date 4/29/2004

Permit Bottom Elevation

DEC Expiration Date 10/1/2008

Permit Dredge Amount (Cubic Yards) 72,000

COE Appl. No.

Disposal Open lake disposal site located 1.5 miles northwest of channel.

COE Permit Date

COE Expiration Date

Restrictive Dates Work must be done between July 15 and October 1 (permit condition)

NYS Designated Significant Habitat? Yes

Notes

Sources
- NYS DEC/Sea Grant Marina Guide (1997)
- US Army Corps of Engineers Great Lakes Navigation System Database (2012)
- NYS DOS Oswego River Coastal Fish & Wildlife Habitat Rating Form (1987)

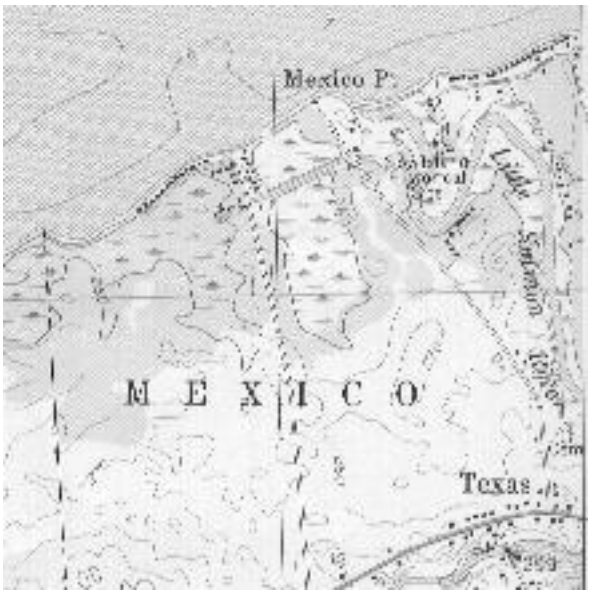
Channel/Water Body Designation # Mexico Point/Little Salmon River

Latitude 43.525

Longitude 76.257

County Oswego

Town, City or Village Town of Mexico



Total Slips 322

Total Launch Lanes 7

Total Charter Boats 17

Approximate Dimensions

Type of Use

- Recreational Boating
- Lake Access for Fishing
- Active Charter Fishing Area

Economic Benefit $5,207,556 + 77 jobs

Maintained Public

By NYS Office of Parks and Recreation (?)



Critical Desired Depth 5.0 ft

Critical Desired Bottom Elevation 239.0 ft (IGLD-85)

Existing Min Depth 5.0 ft (7/12/12)

Existing Max Bottom Elevation 240.4 ft (IGLD-85)

Critical Requirements

Corps Calculated Backlog in cu yd

Notes on Use
- Note that Dowie Dale Beach Campground has separate entry to Lake and supports 83 slips and a launch.
- Clean Vessel Study air photo count = 167
- Some large power boats (up to ~32 ft) are docked on river including many charters

Quantity (cu yd) ??

Anticipated Frequency (yr) ?

Sediment Condition

Testing Date

Sediment Quality

Class III

Federal Navigation Project No

Construction Completed

Federal Project Authorized Depth

Designated Harbor of Refuge No

Previously Permitted Dredging Yes

Permittee NYS Office of Parks and Recreation

DEC Permit ID.

Permit Minimum Depth

DEC Permit Date

Permit Bottom Elevation

DEC Expiration Date

Permit Dredge Amount (Cubic Yards) 200

COE Appl. No. 2004-01969

Disposal - COE states disposal at an undisclosed upland site

COE Permit Date 10/8/2004

COE Expiration Date 10/8/2007

Restrictive Dates late February - July & September - November (SCFWH form)

NYS Designated Significant Habitat? Yes

Notes

- There are a number of permits dating back to the early 1970's by the NYS Office of Parks and Recreation for various shore protection, bank stabilization and channel maintenance dredging. This includes a March 1979 to dredge the outlet area to an elevation of approximately 241.3 (IGLD'85). This was apparently before the major improvements at the outlet channel and the expansion of the State launch.
- No record of any additional maintenance dredging of outlet channel after the 1979 permit.

Sources - NYS DEC/Sea Grant Marina Guide (1997)
- NYS DOS Little Salmon River Significant Coastal Fish and Wildlife Habitat Rating Form (1987)

Channel/Water Body Designation # Salmon River/Port Ontario

Latitude 43.577

Longitude 76.204

County Oswego

Town, City or Village Town of Richland



Total Slips 68

Total Launch Lanes 2

Total Charter Boats 8

Approximate Dimensions

Type of Use

- Recreational boating
- Fishing access to Lake including several charter boats in the 32 foot size range
- State boat launch located to the south as part of the

Economic Benefit $1,554,937 + 26 jobs



Maintained Public

By
- Operation and maintenance to be done by the Corps of Engineers with 65% of costs provided by the NYS Office of Parks
- Operation and maintenance includes dredging and sand bypassing to the north side of outlet.

Critical Desired Depth 8 ft channel, 6 ft harbor

Critical Desired Bottom Elevation 235.3 ft, 238.0 ft (IGLD-85)

Existing Min Depth 9 ft channel, 4.5 ft harbor

Existing Max Bottom Elevation 236.4 channel, 240.9 ft harbor

Critical Requirements

- Sand bypassing
- Has not been maintained since construction completion in 1987
- Approximately 300,000 cubic yards of sand has accumulated on south side since construction

Corps Calculated Backlog in cu yd $800,000 for accumulated sand bypassing

Notes on Use
- Clean Vessel Study air photo count = 54
- COE lists 3 charter fishing boats generating approximately $24,000 in annual net income

Quantity (cu yd) ??

Anticipated Frequency (yr) ?

Sediment Condition

Testing Date

Sediment Quality

Class III

Federal Navigation Project Yes

Construction Completed 1987

Federal Project Authorized Depth 8 ft

Designated Harbor of Refuge Yes

Previously Permitted Dredging During Project Contstruction

Permittee

DEC Permit ID.

Permit Minimum Depth

DEC Permit Date

Permit Bottom Elevation

DEC Expiration Date

Permit Dredge Amount (Cubic Yards)

COE Appl. No.

Disposal

COE Permit Date

COE Expiration Date

Restrictive Dates late February - July & September - November (SCFWH form with misstype stating September - May)

NYS Designated Significant Habitat? Yes

Notes

- No records found of any maintenance dredging of navigation channel to lake.
- Several permit applications found for docks and access dredging further upstream near Route 3 and Port Ontario.

Sources
- NYS DEC/Sea Grant Marina Guide (1997)
- NYS DOS Salmon River Significant Coastal Fish and Wildlife Habitat Rating Form (1987)

Channel/Water Body Designation # Sandy Pond Inlet

Latitude 43.664

Longitude 76.196

County Oswego

Town, City or Village Town of Sandy Creek

Total Slips 610

Total Launch Lanes 9

Total Charter Boats 1



Approximate Dimensions 50 ft wide by 300 feet long

Type of Use

-Seasonal recreational boating
-Lake access for fishing

Economic Benefit $6,490,416 + 80 jobs



Maintained Private

By Sandy Pond Channel Maintenance Association, Inc.
- Town of Sandy Creek may contribute funding for the dredging
- Previously maintained by Oswego County

Critical Desired Depth - 7 ft LWD

Critical Desired Bottom Elevation 236.3 ft (IGLD-85)

Existing Min Depth 4.0 ft (7/12/12)

Existing Max Bottom Elevation 241.4 ft (IGLD-85)

Critical Requirements

- Bi-Annual dredging required to keep channel functional.

Corps Calculated Backlog in cu yd

Notes on Use
- Primarily small to medium size vessels
- Sailboat use limited to occasional, small vessels and those with retractable keels.
- Clean Vessel Study air photo count = 291

Quantity (cu yd) 6,000

Anticipated Frequency (yr) 2

Sediment Condition

- Generally sand from barrier bars

Testing Date

Sediment Quality

- Assumed good given source and location

Class I

Federal Navigation Project No

Construction Completed

Federal Project Authorized Depth

Designated Harbor of Refuge No

Previously Permitted Dredging Current Permit in force.

Permittee Sandy Pond Channel Maintenance Association, Inc.

DEC Permit ID. 7-3552-00055/00023, 24, & 25

DEC Permit Date 4/30/2007

DEC Expiration Date 3/30/2014

Permit Minimum Depth

Permit Bottom Elevation

Permit Dredge Amount (Cubic Yards) 12,000

COE Appl. No. 2003-01294

COE Permit Date 7/14/2010

COE Expiration Date 7/14/2013

Disposal - Must use hydraulic dredge with disposal in the Lake littoral zone both north and south of channel and at least 1,000 feet from the channel.

Restrictive Dates Must occur between July 15 and September 1 or between November 30 to March 30 (permit condition)

NYS Designated Significant Habitat? Yes.

Notes

- Inlet channel from Lake Ontario has shoals which form on both the Lake and Pond side. These shoals are sand and are due to the dynamic nature the barrier bar processes and sand transport through the channel.
- Most upstream areas around the Pond and the creeks leading in have private docks and bulkheads fronting on small, generally manmade, channe These channels were observed dry or nearly dry as of 12/4/98 indicating a bottom elevation of approximately 244.0 or more.
- Corps evaluated this as a project but decided not to pursue it. Believed that Port Ontario was constructed instead.
- Permit modification in 2012 to start June 10. Took out 4,000 cy in 2012.
- Requesting permit modification for mechanical dredging of outer part of channel with disposal on south spit for 2013.

Sources

- NYS DEC/Sea Grant Marina Guide (1997)
- Sandy Pond Resource Management Study (1989) - slips = 315
- NYS DEC Permit 7-3552-00055/00023
- Department of Army Permit No. 2003-01294
- NYS DOSNorth and South Sandy Ponds Significant Coastal Fish and Wildlife Habitat Rating Form (1987)
- NYS DOS Sandy Ponds Tributaries Significant Coastal Fish and Wildlife Habitat Rating Form (1987)

Appendix B
Economic Calculations

wet slip economics

Factors	direct annual craft spending/slip	$1,400	craft sales indirect/direct	0.7456
	direct annual trip spending/slip	$2,200	trip sales indirect/direct	0.86
	jobs/$10^3 craft spending	0.01109	jobs craft indirect/direct	0.64748
	jobs/$10^3 trip spending	0.015696	jobs trip indirect/direct	0.497497

			Direct Spending		Direct Jobs		Indirect Sales		Indirect Jobs	
Site Number	Channel / Water Body Designation	Boat Slips	Craft Spending	Trip Spending	Craft Spending	Trip Spending	Craft Spending	Trip Spending	Craft Spending	Trip Spending
1	Wilson	476	$666,400	$1,047,200	7.390	16.437	$496,868	$900,592	4.79	8.18
2	Olcott Harbor	124	$173,600	$272,800	1.925	4.282	$129,436	$234,608	1.25	2.13
3	Oak Orchard Harbor	422	$590,800	$928,400	6.552	14.572	$440,500	$798,424	4.24	7.25
4	Sandy Creek	287	$401,800	$631,400	4.456	9.910	$299,582	$543,004	2.89	4.93
5	Braddock Bay	528	$739,200	$1,161,600	8.198	18.232	$551,148	$998,976	5.31	9.07
6	Long Pond Outlet	20	$28,000	$44,000	0.311	0.691	$20,877	$37,840	0.20	0.34
7	Genesee River	1034	$1,447,600	$2,274,800	16.054	35.705	$1,079,331	$1,956,328	10.39	17.76
8	Irondequoit Bay	1670	$2,338,000	$3,674,000	25.928	57.667	$1,743,213	$3,159,640	16.79	28.69
9	Bear Creek Harbor	4	$5,600	$8,800	0.062	0.138	$4,175	$7,568	0.04	0.07
10	Pultneyville	170	$238,000	$374,000	2.639	5.870	$177,453	$321,640	1.71	2.92
11	Great Sodus Bay	802	$1,122,800	$1,764,400	12.452	27.694	$837,160	$1,517,384	8.06	13.78
12	East Bay	32	$44,800	$70,400	0.497	1.105	$33,403	$60,544	0.32	0.55
13	Port Bay	382	$534,800	$840,400	5.931	13.191	$398,747	$722,744	3.84	6.56
14	Blind Sodus Bay	99	$138,600	$217,800	1.537	3.419	$103,340	$187,308	1.00	1.70
15	Little Sodus Bay	550	$770,000	$1,210,000	8.539	18.992	$574,112	$1,040,600	5.53	9.45
16	Oswego Harbor	536	$750,400	$1,179,200	8.322	18.509	$559,498	$1,014,112	5.39	9.21
17	Mexico Point/Little Salmon River	322	$450,800	$708,400	4.999	11.119	$336,116	$609,224	3.24	5.53
18	Salmon River/Port Ontario	68	$95,200	$149,600	1.056	2.348	$70,981	$128,656	0.68	1.17
19	Sandy Pond Inlet	610	$854,000	$1,342,000	9.471	21.064	$636,742	$1,154,120	6.13	10.48
	totals		$11,390,400	$17,899,200	126.3	280.9	$8,492,682	$15,393,312	81.8	139.8
	Totals Craft + Trip Direct		$29,289,600		407					
	Totals Craft + Trip Indirect		$23,885,994		222					
	Totals - Direct + Secondary		$53,175,594		629					

launch economics

Factors	annual trips per launch lane	1424.5
	spending/trip	$102
	jobs/$10^3 trip spending	0.015696

Site Number	Channel / Water Body Designation	launch lanes	Direct Trip Spending	Direct Trip spending Jobs	Indirect Trip Spending	Indirect Trip Jobs
1	Wilson	2	$290,598	4.56	$249,914	2.3
2	Olcott Harbor	6	$871,794	13.68	$749,743	6.8
3	Oak Orchard Harbor	6	$871,794	13.68	$749,743	6.8
4	Sandy Creek	2	$290,598	4.56	$249,914	2.3
5	Braddock Bay	4	$581,196	9.12	$499,829	4.5
6	Long Pond Outlet	0	$0	0.00	$0	0.0
7	Genesee River	5	$726,495	11.40	$624,786	5.7
8	Irondequoit Bay	6	$871,794	13.68	$749,743	6.8
9	Bear Creek Harbor	3	$435,897	6.84	$374,871	3.4
10	Pultneyville	1	$145,299	2.28	$124,957	1.1
11	Great Sodus Bay	4	$581,196	9.12	$499,829	4.5
12	East Bay	2	$290,598	4.56	$249,914	2.3
13	Port Bay	4	$581,196	9.12	$499,829	4.5
14	Blind Sodus Bay	1	$145,299	2.28	$124,957	1.1
15	Little Sodus Bay	8	$1,162,392	18.24	$999,657	9.1
16	Oswego Harbor	6	$871,794	13.68	$749,743	6.8
17	Mexico Point/Little Salmon River	7	$1,017,093	15.96	$874,700	7.9
18	Salmon River/Port Ontario	2	$290,598	4.56	$249,914	2.3
19	Sandy Pond Inlet	9	$1,307,691	20.53	$1,124,614	10.2
	totals		$11,333,322	178	$9,746,657	88
	Totals Direct + Secondary		$21,079,979	266		

Charter Boats

			operations spending	
Factors	direct operations spending/boat	$11,093	indirect/direct	1.86
			customer spending	
	customer spending/boat	$13,443	indirect/direct	1.94
			operations jobs	
	direct jobs operations/boat	0.4732	indirect/direct	1.21
			customer jobs	
	direct jobs customer spending/boat	0.2654	indirect/direct	1.42

			Direct Spending		Direct Jobs		Indirect Spending		Indirect jobs	
Site Number	**Channel / Water Body Designation**	**Charter Boats**	**operations**	**customers**	**operations**	**customers**	**operations**	**customers**	**operations**	**customers**
1	Wilson	15	$166,395	$201,645	7.10	3.98	$309,495	$391,191	8.59	5.65
2	Olcott Harbor	47	$521,371	$631,821	22.24	12.47	$969,750	$1,225,733	26.91	17.71
3	Oak Orchard Harbor	38	$421,534	$510,834	17.98	10.09	$784,053	$991,018	21.76	14.32
4	Sandy Creek	14	$155,302	$188,202	6.62	3.72	$288,862	$365,112	8.02	5.28
5	Braddock Bay	0	$0	$0	0.00	0.00	$0	$0	0.00	0.00
6	Long Pond Outlet	0	$0	$0	0.00	0.00	$0	$0	0.00	0.00
7	Genesee River	26	$288,418	$349,518	12.30	6.90	$536,457	$678,065	14.89	9.80
8	Irondequoit Bay	5	$55,465	$67,215	2.37	1.33	$103,165	$130,397	2.86	1.88
9	Bear Creek Harbor	0	$0	$0	0.00	0.00	$0	$0	0.00	0.00
10	Pultneyville	10	$110,930	$134,430	4.73	2.65	$206,330	$260,794	5.73	3.77
11	Great Sodus Bay	45	$499,185	$604,935	21.29	11.94	$928,484	$1,173,574	25.77	16.96
12	East Bay	0	$0	$0	0.00	0.00	$0	$0	0.00	0.00
13	Port Bay	10	$110,930	$134,430	4.73	2.65	$206,330	$260,794	5.73	3.77
14	Blind Sodus Bay	0	$0	$0	0.00	0.00	$0	$0	0.00	0.00
15	Little Sodus Bay	12	$133,116	$161,316	5.68	3.18	$247,596	$312,953	6.87	4.52
16	Oswego Harbor	29	$321,697	$389,847	13.72	7.70	$598,356	$756,303	16.60	10.93
17	Mexico Point/Little Salmon River	17	$188,581	$228,531	8.04	4.51	$350,761	$443,350	9.73	6.41
18	Salmon River/Port Ontario	8	$88,744	$107,544	3.79	2.12	$165,064	$208,635	4.58	3.01
19	Sandy Pond Inlet	1	$11,093	$13,443	0.47	0.27	$20,633	$26,079	0.57	0.38
	Totals	277	$3,072,761	$3,723,711	131	74	$5,715,335	$7,223,999	159	104

Total Direct Spending	$6,796,472
Total Indirect Spending	$12,939,335
Total Spending	**$19,735,807**
Total Direct Jobs	205
Total Indirect Jobs	263
Total Jobs	**468**

Appendix C
Program Cost Estimate Calculations

Dredging Amounts

annual by class

class I	8,100
class II	1,100
class III	15,000
class IV	90,000

hydraulic rate (cy/hr)	150
mechanical rate (cy/hr)	200

weekly @ 4d/wk @ 8 hr/dy		Using Cobourg
hydraulic	4800	1700
mechanical	6400	6400

Annual Weeks Needed

Assume Class I & II by hydraulic, Class III (1/2 hydraulic and 1/2 by mechanical simulataneously) and Class IV by mechanical

hydraulic	3.5	9.8
mechanical	15.2	
mech excluding Class IV	1.2	

Cost Estimates for Regional Dredging Plan

on a contract rate (per cy)	$25	$15
annual excluding Class IV	$605,000	$363,000
including Class IV	$2,855,000	$1,713,000
totals including central operation	**$890,000**	**$648,000**
with class IV	**$3,190,000**	**$2,048,000**

on operating expense basis:

capital cost

hydraulic dredge Plus piping	$600,000
transport truck	$100,000
crane/shovel	$250,000
barge & work boat	$120,000
scow(2)	$150,000
total capital equipment	$1,220,000
annualized @ 3% 20 yr	$82,003

operations:

hour rates					
foreman	$42.05				
heavy equip operator	$42.05				
labor	$26.10				
hydraulic @ 1 operator + 3 labor	$962.80	per day	or	$4,814	per week
mechanical @ 2 operators + 2 labor	$1,090	per day	or	$5,452	per week
Assume 10 weeks hydraulic + 5 weeks of Mech	$75,400				
w. Class IV (+ 14 wks of mech. + $1,800 /wk fuel)	$176,928				
fuel, maintenance and transport($40 k each)	$80,000				

central operations

management + permitting		
director (w benefits)	$100,000	
engineer (w benefits)	$75,000	w. class IV
sediment testing/survey/engineering	$40,000	$90,000
overhead @ 40% of salaries	$70,000	
annual total	**$285,000**	**$335,000**

totals for independent operation

annual capital + operations + central	**$522,403**	or	$21.59	per cy
annual same w Class IV	**$673,931**		$5.90	per cy**
annual same w Class IV contracted @$25/cy=	**$2,822,403**		$24.71	per cy
annual same w Class IV contracted @$15/cy=	**$1,922,403**		$16.83	per cy

** only if restrictive dates can be removed

on operating expense basis w, additional equip to deal with restrictive dates:

capital cost

hydraulic dredge Plus piping	$600,000				
transport truck	$100,000				
crane/shovel (2)	$500,000				
barge & work boat (2)	$240,000				
scow (4)	$300,000				
total capital equipment	$1,740,000				
annualized @ 3% 20 yr	$116,955				

operations:

hour rates					
foreman	$42.05				
heavy equip operator	$42.05				
labor	$26.10				
hydraulic @ 1 operator + 3 labor	$962.80	per day	or	$4,814	per week
mechanical @ 2 operators + 2 labor	$2,181	per day	or	$10,904	per week
Assume 10 weeks hydraulic + 5 weeks of Mech	$102,660				
w. Class IV (+ 14 wks of 1 mech. + $1,800 /wk fuel)	$204,188				
fuel, maintenance and transport($40 k each)	$120,000				

central operations

management + permitting					
director (w benefits)	$100,000				
engineer (w benefits)	$75,000	w class IV			
sediment testing/survey/engineering	$40,000	$90,000			
overhead @ 40% of salaries	$70,000				
annual total	**$285,000**	**$335,000**			

totals for independent operation

annual capital + operations + central w class IV	**$776,143**		or	$6.80	per cy

Totals for 100% contracting out

excluding Class IV @ $15/cy	**$648,000**
same @ $25/cy	**$890,000**
with Class IV included all at $15/cy	**$2,048,000**
with Class IV included all at $25/cy	**$3,190,000**

HMP Appendix H - Water Resources Reform and Development Act of 2014

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H. R. 3080

One Hundred Thirteenth Congress of the United States of America

AT THE SECOND SESSION

Begun and held at the City of Washington on Friday, the third day of January, two thousand and fourteen

An Act

To provide for improvements to the rivers and harbors of the United States, to provide for the conservation and development of water and related resources, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) SHORT TITLE.—This Act may be cited as the "Water Resources Reform and Development Act of 2014".

(b) TABLE OF CONTENTS.—

Sec. 1. Short title; table of contents.
Sec. 2. Definition of Secretary.

TITLE I—PROGRAM REFORMS AND STREAMLINING

Sec. 1001. Vertical integration and acceleration of studies.
Sec. 1002. Consolidation of studies.
Sec. 1003. Expedited completion of reports.
Sec. 1004. Removal of duplicative analyses.
Sec. 1005. Project acceleration.
Sec. 1006. Expediting the evaluation and processing of permits.
Sec. 1007. Expediting approval of modifications and alterations of projects by non-Federal interests.
Sec. 1008. Expediting hydropower at Corps of Engineers facilities.
Sec. 1009. Enhanced use of electronic commerce in Federal procurement.
Sec. 1010. Determination of project completion.
Sec. 1011. Prioritization.
Sec. 1012. Transparency in accounting and administrative expenses.
Sec. 1013. Evaluation of project Partnership Agreements.
Sec. 1014. Study and construction of water resources development projects by non-Federal interests.
Sec. 1015. Contributions by non-Federal interests.
Sec. 1016. Operation and maintenance of certain projects.
Sec. 1017. Acceptance of contributed funds to increase lock operations.
Sec. 1018. Credit for in-kind contributions.
Sec. 1019. Clarification of in-kind credit authority.
Sec. 1020. Transfer of excess credit.
Sec. 1021. Crediting authority for federally authorized navigation projects.
Sec. 1022. Credit in lieu of reimbursement.
Sec. 1023. Additional contributions by non-Federal interests.
Sec. 1024. Authority to accept and use materials and services.
Sec. 1025. Water resources projects on Federal land.
Sec. 1026. Clarification of impacts to other Federal facilities.
Sec. 1027. Clarification of munition disposal authorities.
Sec. 1028. Clarification of mitigation authority.
Sec. 1029. Clarification of interagency support authorities.
Sec. 1030. Continuing authority.
Sec. 1031. Tribal partnership program.
Sec. 1032. Territories of the United States.
Sec. 1033. Corrosion prevention.
Sec. 1034. Advanced modeling technologies.
Sec. 1035. Recreational access.
Sec. 1036. Non-Federal plans to provide additional flood risk reduction.

Sec. 1037. Hurricane and storm damage reduction.
Sec. 1038. Reduction of Federal costs for hurricane and storm damage reduction projects.
Sec. 1039. Invasive species.
Sec. 1040. Fish and wildlife mitigation.
Sec. 1041. Mitigation status report.
Sec. 1042. Reports to Congress.
Sec. 1043. Non-Federal implementation pilot program.
Sec. 1044. Independent peer review.
Sec. 1045. Report on surface elevations at drought affected lakes.
Sec. 1046. Reservoir operations and water supply.
Sec. 1047. Special use permits.
Sec. 1048. America the Beautiful National Parks and Federal Recreational Lands Pass program.
Sec. 1049. Applicability of spill prevention, control, and countermeasure rule.
Sec. 1050. Namings.
Sec. 1051. Interstate water agreements and compacts.
Sec. 1052. Sense of Congress regarding water resources development bills.

TITLE II—NAVIGATION

Subtitle A—Inland Waterways

Sec. 2001. Definitions.
Sec. 2002. Project delivery process reforms.
Sec. 2003. Efficiency of revenue collection.
Sec. 2004. Inland waterways revenue studies.
Sec. 2005. Inland waterways stakeholder roundtable.
Sec. 2006. Preserving the Inland Waterway Trust Fund.
Sec. 2007. Inland waterways oversight.
Sec. 2008. Assessment of operation and maintenance needs of the Atlantic Intracoastal Waterway and the Gulf Intracoastal Waterway.
Sec. 2009. Inland waterways riverbank stabilization.
Sec. 2010. Upper Mississippi River protection.
Sec. 2011. Corps of Engineers lock and dam energy development.
Sec. 2012. Restricted areas at Corps of Engineers dams.
Sec. 2013. Operation and maintenance of fuel taxed inland waterways.

Subtitle B—Port and Harbor Maintenance

Sec. 2101. Funding for harbor maintenance programs.
Sec. 2102. Operation and maintenance of harbor projects.
Sec. 2103. Consolidation of deep draft navigation expertise.
Sec. 2104. Remote and subsistence harbors.
Sec. 2105. Arctic deep draft port development partnerships.
Sec. 2106. Additional measures at donor ports and energy transfer ports.
Sec. 2107. Preserving United States harbors.

TITLE III—SAFETY IMPROVEMENTS AND ADDRESSING EXTREME WEATHER EVENTS

Subtitle A—Dam Safety

Sec. 3001. Dam Safety.

Subtitle B—Levee Safety

Sec. 3011. Systemwide improvement framework.
Sec. 3012. Management of flood risk reduction projects.
Sec. 3013. Vegetation management policy.
Sec. 3014. Levee certifications.
Sec. 3015. Planning assistance to States.
Sec. 3016. Levee safety.
Sec. 3017. Rehabilitation of existing levees.

Subtitle C—Additional Safety Improvements and Risk Reduction Measures

Sec. 3021. Use of innovative materials.
Sec. 3022. Durability, sustainability, and resilience.
Sec. 3023. Study on risk reduction.
Sec. 3024. Management of flood, drought, and storm damage.
Sec. 3025. Post-disaster watershed assessments.
Sec. 3026. Hurricane and storm damage reduction study.
Sec. 3027. Emergency communication of risk.
Sec. 3028. Safety assurance review.
Sec. 3029. Emergency response to natural disasters.

TITLE IV—RIVER BASINS AND COASTAL AREAS

Sec. 4001. River basin commissions.
Sec. 4002. Mississippi River.
Sec. 4003. Missouri River.
Sec. 4004. Arkansas River.
Sec. 4005. Columbia Basin.
Sec. 4006. Rio Grande.
Sec. 4007. Northern Rockies headwaters.
Sec. 4008. Rural Western water.
Sec. 4009. North Atlantic Coastal Region.
Sec. 4010. Chesapeake Bay.
Sec. 4011. Louisiana coastal area.
Sec. 4012. Red River Basin.
Sec. 4013. Technical corrections.
Sec. 4014. Ocean and coastal resiliency.

TITLE V—WATER INFRASTRUCTURE FINANCING

Subtitle A—State Water Pollution Control Revolving Funds

Sec. 5001. General authority for capitalization grants.
Sec. 5002. Capitalization grant agreements.
Sec. 5003. Water pollution control revolving loan funds.
Sec. 5004. Requirements.
Sec. 5005. Report on the allotment of funds.
Sec. 5006. Effective date.

Subtitle B—General Provisions

Sec. 5011. Watershed pilot projects.
Sec. 5012. Definition of treatment works.
Sec. 5013. Funding for Indian programs.
Sec. 5014. Water infrastructure public-private partnership pilot program.

Subtitle C—Innovative Financing Pilot Projects

Sec. 5021. Short title.
Sec. 5022. Definitions.
Sec. 5023. Authority to provide assistance.
Sec. 5024. Applications.
Sec. 5025. Eligible entities.
Sec. 5026. Projects eligible for assistance.
Sec. 5027. Activities eligible for assistance.
Sec. 5028. Determination of eligibility and project selection.
Sec. 5029. Secured loans.
Sec. 5030. Program administration.
Sec. 5031. State, tribal, and local permits.
Sec. 5032. Regulations.
Sec. 5033. Funding.
Sec. 5034. Reports on pilot program implementation.
Sec. 5035. Requirements.

TITLE VI—DEAUTHORIZATION AND BACKLOG PREVENTION

Sec. 6001. Deauthorization of inactive projects.
Sec. 6002. Review of Corps of Engineers assets.
Sec. 6003. Backlog prevention.
Sec. 6004. Deauthorizations.
Sec. 6005. Land conveyances.

TITLE VII—WATER RESOURCES INFRASTRUCTURE

Sec. 7001. Annual report to Congress.
Sec. 7002. Authorization of final feasibility studies.
Sec. 7003. Authorization of project modifications recommended by the Secretary.
Sec. 7004. Expedited consideration in the House and Senate.

SEC. 2. DEFINITION OF SECRETARY.

In this Act, the term "Secretary" means the Secretary of the Army.

TITLE I—PROGRAM REFORMS AND STREAMLINING

SEC. 1001. VERTICAL INTEGRATION AND ACCELERATION OF STUDIES.

(a) IN GENERAL.—To the extent practicable, a feasibility study initiated by the Secretary, after the date of enactment of this Act, under section 905(a) of the Water Resources Development Act of 1986 (33 U.S.C. 2282(a)) shall—

(1) result in the completion of a final feasibility report not later than 3 years after the date of initiation;

(2) have a maximum Federal cost of $3,000,000; and

(3) ensure that personnel from the district, division, and headquarters levels of the Corps of Engineers concurrently conduct the review required under that section.

(b) EXTENSION.—If the Secretary determines that a feasibility study described in subsection (a) will not be conducted in accordance with subsection (a), the Secretary, not later than 30 days after the date of making the determination, shall—

(1) prepare an updated feasibility study schedule and cost estimate;

(2) notify the non-Federal feasibility cost-sharing partner that the feasibility study has been delayed; and

(3) provide written notice to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives as to the reasons the requirements of subsection (a) are not attainable.

(c) TERMINATION OF AUTHORIZATION.—A feasibility study for which the Secretary has issued a determination under subsection (b) is not authorized after the last day of the 1-year period beginning on the date of the determination if the Secretary has not completed the study on or before such last day.

(d) EXCEPTION.—

(1) IN GENERAL.—Notwithstanding the requirements of subsection (c), the Secretary may extend the timeline of a study by a period not to exceed 3 years, if the Secretary determines that the feasibility study is too complex to comply with the requirements of subsections (a) and (c).

(2) FACTORS.—In making a determination that a study is too complex to comply with the requirements of subsections (a) and (c), the Secretary shall consider—

(A) the type, size, location, scope, and overall cost of the project;

(B) whether the project will use any innovative design or construction techniques;

(C) whether the project will require significant action by other Federal, State, or local agencies;

(D) whether there is significant public dispute as to the nature or effects of the project; and

(E) whether there is significant public dispute as to the economic or environmental costs or benefits of the project.

(3) NOTIFICATION.—Each time the Secretary makes a determination under this subsection, the Secretary shall provide written notice to the Committee on Environment and Public Works of the Senate and the Committee on Transportation

and Infrastructure of the House of Representatives as to the results of that determination, including an identification of the specific 1 or more factors used in making the determination that the project is complex.

(4) LIMITATION.—The Secretary shall not extend the timeline for a feasibility study for a period of more than 7 years, and any feasibility study that is not completed before that date shall no longer be authorized.

(e) REVIEWS.—Not later than 90 days after the date of the initiation of a study described in subsection (a) for a project, the Secretary shall—

(1) take all steps necessary to initiate the process for completing federally mandated reviews that the Secretary is required to complete as part of the study, including the environmental review process under section 1005;

(2) convene a meeting of all Federal, tribal, and State agencies identified under section 2045(e) of the Water Resources Development Act of 2007 (33 U.S.C. 2348(e)) that may be required by law to conduct or issue a review, analysis, or opinion on or to make a determination concerning a permit or license for the study; and

(3) take all steps necessary to provide information that will enable required reviews and analyses related to the project to be conducted by other agencies in a thorough and timely manner.

(f) INTERIM REPORT.—Not later than 18 months after the date of enactment of this Act, the Secretary shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives and make publicly available a report that describes—

(1) the status of the implementation of the planning process under this section, including the number of participating projects;

(2) a review of project delivery schedules, including a description of any delays on those studies participating in the planning process under this section; and

(3) any recommendations for additional authority necessary to support efforts to expedite the feasibility study process for water resource projects.

(g) FINAL REPORT.—Not later than 4 years after the date of enactment of this Act, the Secretary shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives and make publicly available a report that describes—

(1) the status of the implementation of this section, including a description of each feasibility study subject to the requirements of this section;

(2) the amount of time taken to complete each feasibility study; and

(3) any recommendations for additional authority necessary to support efforts to expedite the feasibility study process, including an analysis of whether the limitation established by subsection (a)(2) needs to be adjusted to address the impacts of inflation.

SEC. 1002. CONSOLIDATION OF STUDIES.

(a) IN GENERAL.—

(1) REPEAL.—Section 905(b) of the Water Resources Development Act of 1986 (33 U.S.C. 2282(b)) is repealed.

(2) CONFORMING AMENDMENT.—Section 905(a)(1) of the Water Resources Development Act of 1986 (33 U.S.C. 2282(a)(1)) is amended by striking "perform a reconnaissance study and".

(b) CONTENTS OF FEASIBILITY REPORTS.—Section 905(a)(2) of the Water Resources Development Act of 1986 (33 U.S.C. 2282(a)(2)) is amended by adding at the end the following: "A feasibility report shall include a preliminary analysis of the Federal interest and the costs, benefits, and environmental impacts of the project.".

(c) FEASIBILITY STUDIES.—Section 905 of the Water Resources Development Act of 1986 (33 U.S.C. 2282) is amended by adding at the end the following:

"(g) DETAILED PROJECT SCHEDULE.—

"(1) IN GENERAL.—Not later than 180 days after the date of enactment of this subsection, the Secretary shall determine a set of milestones needed for the completion of a feasibility study under this subsection, including all major actions, report submissions and responses, reviews, and comment periods.

"(2) DETAILED PROJECT SCHEDULE MILESTONES.—Each District Engineer shall, to the maximum extent practicable, establish a detailed project schedule, based on full funding capability, that lists all deadlines for milestones relating to feasibility studies in the District developed by the Secretary under paragraph (1).

"(3) NON-FEDERAL INTEREST NOTIFICATION.—Each District Engineer shall submit by certified mail the detailed project schedule under paragraph (2) to each relevant non-Federal interest—

"(A) for projects that have received funding from the General Investigations Account of the Corps of Engineers in the period beginning on October 1, 2009, and ending on the date of enactment of this subsection, not later than 180 days after the establishment of milestones under paragraph (1); and

"(B) for projects for which a feasibility cost-sharing agreement is executed after the establishment of milestones under paragraph (1), not later than 90 days after the date on which the agreement is executed.

"(4) CONGRESSIONAL AND PUBLIC NOTIFICATION.—Beginning in the first full fiscal year after the date of enactment of this subsection, the Secretary shall—

"(A) submit an annual report that lists all detailed project schedules under paragraph (2) and an explanation of any missed deadlines to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives; and

"(B) make publicly available, including on the Internet, a copy of the annual report described in subparagraph (A) not later than 14 days after date on which a report is submitted to Congress.

"(5) FAILURE TO ACT.—If a District Engineer fails to meet any of the deadlines in the project schedule under paragraph (2), the District Engineer shall—

"(A) not later than 30 days after each missed deadline, submit to the non-Federal interest a report detailing—

"(i) why the District Engineer failed to meet the deadline; and

"(ii) a revised project schedule reflecting amended deadlines for the feasibility study; and

"(B) not later than 30 days after each missed deadline, make publicly available, including on the Internet, a copy of the amended project schedule described in subparagraph (A)(ii).".

(d) APPLICABILITY.—The Secretary shall continue to carry out a study for which a reconnaissance level investigation has been initiated before the date of enactment of this Act as if this section, including the amendments made by this section, had not been enacted.

SEC. 1003. EXPEDITED COMPLETION OF REPORTS.

The Secretary shall—

(1) expedite the completion of any on-going feasibility study for a project initiated before the date of enactment of this Act; and

(2) if the Secretary determines that the project is justified in a completed report, proceed directly to preconstruction planning, engineering, and design of the project in accordance with section 910 of the Water Resources Development Act of 1986 (33 U.S.C. 2287).

SEC. 1004. REMOVAL OF DUPLICATIVE ANALYSES.

Section 911 of the Water Resources Development Act of 1986 (33 U.S.C. 2288) is repealed.

SEC. 1005. PROJECT ACCELERATION.

(a) PROJECT ACCELERATION.—

(1) AMENDMENT.—Section 2045 of the Water Resources Development Act of 2007 (33 U.S.C. 2348) is amended to read as follows:

"SEC. 2045. PROJECT ACCELERATION.

"(a) DEFINITIONS.—In this section:

"(1) ENVIRONMENTAL IMPACT STATEMENT.—The term 'environmental impact statement' means the detailed statement of environmental impacts of a project required to be prepared pursuant to the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.).

"(2) ENVIRONMENTAL REVIEW PROCESS.—

"(A) IN GENERAL.—The term 'environmental review process' means the process of preparing an environmental impact statement, environmental assessment, categorical exclusion, or other document under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) for a project study.

"(B) INCLUSIONS.—The term 'environmental review process' includes the process for and completion of any environmental permit, approval, review, or study required for a project study under any Federal law other than the

National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.).

"(3) FEDERAL JURISDICTIONAL AGENCY.—The term 'Federal jurisdictional agency' means a Federal agency with jurisdiction delegated by law, regulation, order, or otherwise over a review, analysis, opinion, statement, permit, license, or other approval or decision required for a project study under applicable Federal laws (including regulations).

"(4) FEDERAL LEAD AGENCY.—The term 'Federal lead agency' means the Corps of Engineers.

"(5) PROJECT.—The term 'project' means a water resources development project to be carried out by the Secretary.

"(6) PROJECT SPONSOR.—The term 'project sponsor' has the meaning given the term 'non-Federal interest' in section 221(b) of the Flood Control Act of 1970 (42 U.S.C. 1962d–5b(b)).

"(7) PROJECT STUDY.—The term 'project study' means a feasibility study for a project carried out pursuant to section 905 of the Water Resources Development Act of 1986 (33 U.S.C. 2282).

"(b) APPLICABILITY.—

"(1) IN GENERAL.—This section—

"(A) shall apply to each project study that is initiated after the date of enactment of the Water Resources Reform and Development Act of 2014 and for which an environmental impact statement is prepared under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.); and

"(B) may be applied, to the extent determined appropriate by the Secretary, to other project studies initiated after such date of enactment and for which an environmental review process document is prepared under that Act.

"(2) FLEXIBILITY.—Any authority granted under this section may be exercised, and any requirement established under this section may be satisfied, for the conduct of an environmental review process for a project study, a class of project studies, or a program of project studies.

"(3) LIST OF PROJECT STUDIES.—

"(A) IN GENERAL.—The Secretary shall annually prepare, and make publicly available, a separate list of each study that the Secretary has determined—

"(i) meets the standards described in paragraph (1); and

"(ii) does not have adequate funding to make substantial progress toward the completion of the project study.

"(B) INCLUSIONS.—The Secretary shall include for each project study on the list under subparagraph (A) a description of the estimated amounts necessary to make substantial progress on the project study.

"(c) PROJECT REVIEW PROCESS.—

"(1) IN GENERAL.—The Secretary shall develop and implement a coordinated environmental review process for the development of project studies.

"(2) COORDINATED REVIEW.—The coordinated environmental review process described in paragraph (1) shall require that any review, analysis, opinion, statement, permit, license,

or other approval or decision issued or made by a Federal, State, or local governmental agency or an Indian tribe for a project study described in subsection (b) be conducted, to the maximum extent practicable, concurrently with any other applicable governmental agency or Indian tribe.

"(3) TIMING.—The coordinated environmental review process under this subsection shall be completed not later than the date on which the Secretary, in consultation and concurrence with the agencies identified under subsection (e), establishes with respect to the project study.

"(d) LEAD AGENCIES.—

"(1) JOINT LEAD AGENCIES.—

"(A) IN GENERAL.—At the discretion of the Secretary and subject to the requirements of the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) and the requirements of section 1506.8 of title 40, Code of Federal Regulations (or successor regulations), including the concurrence of the proposed joint lead agency, a project sponsor may serve as the joint lead agency.

"(B) PROJECT SPONSOR AS JOINT LEAD AGENCY.—A project sponsor that is a State or local governmental entity may—

"(i) with the concurrence of the Secretary, serve as a joint lead agency with the Federal lead agency for purposes of preparing any environmental document under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.); and

"(ii) prepare any environmental review process document under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) required in support of any action or approval by the Secretary if—

"(I) the Secretary provides guidance in the preparation process and independently evaluates that document;

"(II) the project sponsor complies with all requirements applicable to the Secretary under—

"(aa) the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.);

"(bb) any regulation implementing that Act; and

"(cc) any other applicable Federal law; and

"(III) the Secretary approves and adopts the document before the Secretary takes any subsequent action or makes any approval based on that document, regardless of whether the action or approval of the Secretary results in Federal funding.

"(2) DUTIES.—The Secretary shall ensure that—

"(A) the project sponsor complies with all design and mitigation commitments made jointly by the Secretary and the project sponsor in any environmental document prepared by the project sponsor in accordance with this subsection; and

"(B) any environmental document prepared by the project sponsor is appropriately supplemented to address any changes to the project the Secretary determines are necessary.

"(3) ADOPTION AND USE OF DOCUMENTS.—Any environmental document prepared in accordance with this subsection shall be adopted and used by any Federal agency making any determination related to the project study to the same extent that the Federal agency could adopt or use a document prepared by another Federal agency under—

"(A) the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.); and

"(B) parts 1500 through 1508 of title 40, Code of Federal Regulations (or successor regulations).

"(4) ROLES AND RESPONSIBILITY OF LEAD AGENCY.—With respect to the environmental review process for any project study, the Federal lead agency shall have authority and responsibility—

"(A) to take such actions as are necessary and proper and within the authority of the Federal lead agency to facilitate the expeditious resolution of the environmental review process for the project study; and

"(B) to prepare or ensure that any required environmental impact statement or other environmental review document for a project study required to be completed under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) is completed in accordance with this section and applicable Federal law.

"(e) PARTICIPATING AND COOPERATING AGENCIES.—

"(1) IDENTIFICATION OF JURISDICTIONAL AGENCIES.—With respect to carrying out the environmental review process for a project study, the Secretary shall identify, as early as practicable in the environmental review process, all Federal, State, and local government agencies and Indian tribes that may—

"(A) have jurisdiction over the project;

"(B) be required by law to conduct or issue a review, analysis, opinion, or statement for the project study; or

"(C) be required to make a determination on issuing a permit, license, or other approval or decision for the project study.

"(2) STATE AUTHORITY.—If the environmental review process is being implemented by the Secretary for a project study within the boundaries of a State, the State, consistent with State law, may choose to participate in the process and to make subject to the process all State agencies that—

"(A) have jurisdiction over the project;

"(B) are required to conduct or issue a review, analysis, opinion, or statement for the project study; or

"(C) are required to make a determination on issuing a permit, license, or other approval or decision for the project study.

"(3) INVITATION.—

"(A) IN GENERAL.—The Federal lead agency shall invite, as early as practicable in the environmental review process, any agency identified under paragraph (1) to become a participating or cooperating agency, as applicable, in the environmental review process for the project study.

"(B) DEADLINE.—An invitation to participate issued under subparagraph (A) shall set a deadline by which a response to the invitation shall be submitted, which

may be extended by the Federal lead agency for good cause.

"(4) PROCEDURES.—Section 1501.6 of title 40, Code of Federal Regulations (as in effect on the date of enactment of the Water Resources Reform and Development Act of 2014) shall govern the identification and the participation of a cooperating agency.

"(5) FEDERAL COOPERATING AGENCIES.—Any Federal agency that is invited by the Federal lead agency to participate in the environmental review process for a project study shall be designated as a cooperating agency by the Federal lead agency unless the invited agency informs the Federal lead agency, in writing, by the deadline specified in the invitation that the invited agency—

"(A)(i)(I) has no jurisdiction or authority with respect to the project;

"(II) has no expertise or information relevant to the project; or

"(III) does not have adequate funds to participate in the project; and

"(ii) does not intend to submit comments on the project; or

"(B) does not intend to submit comments on the project.

"(6) ADMINISTRATION.—A participating or cooperating agency shall comply with this section and any schedule established under this section.

"(7) EFFECT OF DESIGNATION.—Designation as a participating or cooperating agency under this subsection shall not imply that the participating or cooperating agency—

"(A) supports a proposed project; or

"(B) has any jurisdiction over, or special expertise with respect to evaluation of, the project.

"(8) CONCURRENT REVIEWS.—Each participating or cooperating agency shall—

"(A) carry out the obligations of that agency under other applicable law concurrently and in conjunction with the required environmental review process, unless doing so would prevent the participating or cooperating agency from conducting needed analysis or otherwise carrying out those obligations; and

"(B) formulate and implement administrative, policy, and procedural mechanisms to enable the agency to ensure completion of the environmental review process in a timely, coordinated, and environmentally responsible manner.

"(f) PROGRAMMATIC COMPLIANCE.—

"(1) IN GENERAL.—The Secretary shall issue guidance regarding the use of programmatic approaches to carry out the environmental review process that—

"(A) eliminates repetitive discussions of the same issues;

"(B) focuses on the actual issues ripe for analyses at each level of review;

"(C) establishes a formal process for coordinating with participating and cooperating agencies, including the creation of a list of all data that is needed to carry out an environmental review process; and

"(D) complies with—

"(i) the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.); and

"(ii) all other applicable laws.

"(2) REQUIREMENTS.—In carrying out paragraph (1), the Secretary shall—

"(A) as the first step in drafting guidance under that paragraph, consult with relevant Federal, State, and local governmental agencies, Indian tribes, and the public on the appropriate use and scope of the programmatic approaches;

"(B) emphasize the importance of collaboration among relevant Federal, State, and local governmental agencies, and Indian tribes in undertaking programmatic reviews, especially with respect to including reviews with a broad geographical scope;

"(C) ensure that the programmatic reviews—

"(i) promote transparency, including of the analyses and data used in the environmental review process, the treatment of any deferred issues raised by Federal, State, and local governmental agencies, Indian tribes, or the public, and the temporal and special scales to be used to analyze those issues;

"(ii) use accurate and timely information in the environmental review process, including—

"(I) criteria for determining the general duration of the usefulness of the review; and

"(II) the timeline for updating any out-of-date review;

"(iii) describe—

"(I) the relationship between programmatic analysis and future tiered analysis; and

"(II) the role of the public in the creation of future tiered analysis; and

"(iv) are available to other relevant Federal, State, and local governmental agencies, Indian tribes, and the public;

"(D) allow not fewer than 60 days of public notice and comment on any proposed guidance; and

"(E) address any comments received under subparagraph (D).

"(g) COORDINATED REVIEWS.—

"(1) COORDINATION PLAN.—

"(A) ESTABLISHMENT.—

"(i) IN GENERAL.—The Federal lead agency shall, after consultation with and with the concurrence of each participating and cooperating agency and the project sponsor or joint lead agency, as applicable, establish a plan for coordinating public and agency participation in, and comment on, the environmental review process for a project study or a category of project studies.

"(ii) INCORPORATION.—The plan established under clause (i) shall be incorporated into the project schedule milestones set under section 905(g)(2) of the Water Resources Development Act of 1986 (33 U.S.C. 2282(g)(2)).

"(B) SCHEDULE.—

"(i) IN GENERAL.—As soon as practicable but not later than 45 days after the close of the public comment period on a draft environmental impact statement, the Federal lead agency, after consultation with and the concurrence of each participating and cooperating agency and the project sponsor or joint lead agency, as applicable, shall establish, as part of the coordination plan established in subparagraph (A), a schedule for completion of the environmental review process for the project study.

"(ii) FACTORS FOR CONSIDERATION.—In establishing a schedule, the Secretary shall consider factors such as—

"(I) the responsibilities of participating and cooperating agencies under applicable laws;

"(II) the resources available to the project sponsor, joint lead agency, and other relevant Federal and State agencies, as applicable;

"(III) the overall size and complexity of the project;

"(IV) the overall schedule for and cost of the project; and

"(V) the sensitivity of the natural and historical resources that could be affected by the project.

"(iii) MODIFICATIONS.—The Secretary may—

"(I) lengthen a schedule established under clause (i) for good cause; and

"(II) shorten a schedule only with concurrence of the affected participating and cooperating agencies and the project sponsor or joint lead agency, as applicable.

"(iv) DISSEMINATION.—A copy of a schedule established under clause (i) shall be—

"(I) provided to each participating and cooperating agency and the project sponsor or joint lead agency, as applicable; and

"(II) made available to the public.

"(2) COMMENT DEADLINES.—The Federal lead agency shall establish the following deadlines for comment during the environmental review process for a project study:

"(A) DRAFT ENVIRONMENTAL IMPACT STATEMENTS.—For comments by Federal and States agencies and the public on a draft environmental impact statement, a period of not more than 60 days after publication in the Federal Register of notice of the date of public availability of the draft environmental impact statement, unless—

"(i) a different deadline is established by agreement of the Federal lead agency, the project sponsor or joint lead agency, as applicable, and all participating and cooperating agencies; or

"(ii) the deadline is extended by the Federal lead agency for good cause.

"(B) OTHER ENVIRONMENTAL REVIEW PROCESSES.—For all other comment periods established by the Federal lead agency for agency or public comments in the environmental review process, a period of not more than 30 days after

the date on which the materials on which comment is requested are made available, unless—

"(i) a different deadline is established by agreement of the Federal lead agency, the project sponsor, or joint lead agency, as applicable, and all participating and cooperating agencies; or

"(ii) the deadline is extended by the Federal lead agency for good cause.

"(3) DEADLINES FOR DECISIONS UNDER OTHER LAWS.—In any case in which a decision under any Federal law relating to a project study, including the issuance or denial of a permit or license, is required to be made by the date described in subsection (h)(5)(B)(ii), the Secretary shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives—

"(A) as soon as practicable after the 180-day period described in subsection (h)(5)(B)(ii), an initial notice of the failure of the Federal agency to make the decision; and

"(B) every 60 days thereafter until such date as all decisions of the Federal agency relating to the project study have been made by the Federal agency, an additional notice that describes the number of decisions of the Federal agency that remain outstanding as of the date of the additional notice.

"(4) INVOLVEMENT OF THE PUBLIC.—Nothing in this subsection reduces any time period provided for public comment in the environmental review process under applicable Federal law (including regulations).

"(5) TRANSPARENCY REPORTING.—

"(A) REPORTING REQUIREMENTS.—Not later than 1 year after the date of enactment of the Water Resources Reform and Development Act of 2014, the Secretary shall establish and maintain an electronic database and, in coordination with other Federal and State agencies, issue reporting requirements to make publicly available the status and progress with respect to compliance with applicable requirements of the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et. seq.) and any other Federal, State, or local approval or action required for a project study for which this section is applicable.

"(B) PROJECT STUDY TRANSPARENCY.—Consistent with the requirements established under subparagraph (A), the Secretary shall publish the status and progress of any Federal, State, or local decision, action, or approval required under applicable laws for each project study for which this section is applicable.

"(h) ISSUE IDENTIFICATION AND RESOLUTION.—

"(1) COOPERATION.—The Federal lead agency, the cooperating agencies, and any participating agencies shall work cooperatively in accordance with this section to identify and resolve issues that could delay completion of the environmental review process or result in the denial of any approval required for the project study under applicable laws.

"(2) FEDERAL LEAD AGENCY RESPONSIBILITIES.—

"(A) IN GENERAL.—The Federal lead agency shall make information available to the cooperating agencies and participating agencies as early as practicable in the environmental review process regarding the environmental and socioeconomic resources located within the project area and the general locations of the alternatives under consideration.

"(B) DATA SOURCES.—The information under subparagraph (A) may be based on existing data sources, including geographic information systems mapping.

"(3) COOPERATING AND PARTICIPATING AGENCY RESPONSIBILITIES.—Based on information received from the Federal lead agency, cooperating and participating agencies shall identify, as early as practicable, any issues of concern regarding the potential environmental or socioeconomic impacts of the project, including any issues that could substantially delay or prevent an agency from granting a permit or other approval that is needed for the project study.

"(4) ACCELERATED ISSUE RESOLUTION AND ELEVATION.—

"(A) IN GENERAL.—On the request of a participating or cooperating agency or project sponsor, the Secretary shall convene an issue resolution meeting with the relevant participating and cooperating agencies and the project sponsor or joint lead agency, as applicable, to resolve issues that may—

"(i) delay completion of the environmental review process; or

"(ii) result in denial of any approval required for the project study under applicable laws.

"(B) MEETING DATE.—A meeting requested under this paragraph shall be held not later than 21 days after the date on which the Secretary receives the request for the meeting, unless the Secretary determines that there is good cause to extend that deadline.

"(C) NOTIFICATION.—On receipt of a request for a meeting under this paragraph, the Secretary shall notify all relevant participating and cooperating agencies of the request, including the issue to be resolved and the date for the meeting.

"(D) ELEVATION OF ISSUE RESOLUTION.—If a resolution cannot be achieved within the 30 day-period beginning on the date of a meeting under this paragraph and a determination is made by the Secretary that all information necessary to resolve the issue has been obtained, the Secretary shall forward the dispute to the heads of the relevant agencies for resolution.

"(E) CONVENTION BY SECRETARY.—The Secretary may convene an issue resolution meeting under this paragraph at any time, at the discretion of the Secretary, regardless of whether a meeting is requested under subparagraph (A).

"(5) FINANCIAL PENALTY PROVISIONS.—

"(A) IN GENERAL.—A Federal jurisdictional agency shall complete any required approval or decision for the environmental review process on an expeditious basis using the shortest existing applicable process.

"(B) FAILURE TO DECIDE.—

"(i) IN GENERAL.—If a Federal jurisdictional agency fails to render a decision required under any Federal law relating to a project study that requires the preparation of an environmental impact statement or environmental assessment, including the issuance or denial of a permit, license, statement, opinion, or other approval by the date described in clause (ii), the amount of funds made available to support the office of the head of the Federal jurisdictional agency shall be reduced by an amount of funding equal to the amounts specified in subclause (I) or (II) and those funds shall be made available to the division of the Federal jurisdictional agency charged with rendering the decision by not later than 1 day after the applicable date under clause (ii), and once each week thereafter until a final decision is rendered, subject to subparagraph (C)—

"(I) $20,000 for any project study requiring the preparation of an environmental assessment or environmental impact statement; or

"(II) $10,000 for any project study requiring any type of review under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) other than an environmental assessment or environmental impact statement.

"(ii) DESCRIPTION OF DATE.—The date referred to in clause (i) is the later of—

"(I) the date that is 180 days after the date on which an application for the permit, license, or approval is complete; and

"(II) the date that is 180 days after the date on which the Federal lead agency issues a decision on the project under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.).

"(C) LIMITATIONS.—

"(i) IN GENERAL.—No transfer of funds under subparagraph (B) relating to an individual project study shall exceed, in any fiscal year, an amount equal to 1 percent of the funds made available for the applicable agency office.

"(ii) FAILURE TO DECIDE.—The total amount transferred in a fiscal year as a result of a failure by an agency to make a decision by an applicable deadline shall not exceed an amount equal to 5 percent of the funds made available for the applicable agency office for that fiscal year.

"(iii) AGGREGATE.—Notwithstanding any other provision of law, for each fiscal year, the aggregate amount of financial penalties assessed against each applicable agency office under the Water Resources Reform and Development Act of 2014 and any other Federal law as a result of a failure of the agency to make a decision by an applicable deadline for environmental review, including the total amount transferred under this paragraph, shall not exceed an amount equal to 9.5 percent of the funds made available for the agency office for that fiscal year.

"(D) NO FAULT OF AGENCY.—

"(i) IN GENERAL.—A transfer of funds under this paragraph shall not be made if the applicable agency described in subparagraph (A) notifies, with a supporting explanation, the Federal lead agency, cooperating agencies, and project sponsor, as applicable, that—

"(I) the agency has not received necessary information or approvals from another entity in a manner that affects the ability of the agency to meet any requirements under Federal, State, or local law;

"(II) significant new information, including from public comments, or circumstances, including a major modification to an aspect of the project, requires additional analysis for the agency to make a decision on the project application; or

"(III) the agency lacks the financial resources to complete the review under the scheduled time frame, including a description of the number of full-time employees required to complete the review, the amount of funding required to complete the review, and a justification as to why not enough funding is available to complete the review by the deadline.

"(ii) LACK OF FINANCIAL RESOURCES.—If the agency provides notice under clause (i)(III), the Inspector General of the agency shall—

"(I) conduct a financial audit to review the notice; and

"(II) not later than 90 days after the date on which the review described in subclause (I) is completed, submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a report on the notice.

"(E) LIMITATION.—The Federal agency from which funds are transferred pursuant to this paragraph shall not reprogram funds to the office of the head of the agency, or equivalent office, to reimburse that office for the loss of the funds.

"(F) EFFECT OF PARAGRAPH.—Nothing in this paragraph affects or limits the application of, or obligation to comply with, any Federal, State, local, or tribal law.

"(i) MEMORANDUM OF AGREEMENTS FOR EARLY COORDINATION.—

"(1) SENSE OF CONGRESS.—It is the sense of Congress that—

"(A) the Secretary and other Federal agencies with relevant jurisdiction in the environmental review process should cooperate with each other, State agencies, and Indian tribes on environmental review and project delivery activities at the earliest practicable time to avoid delays and duplication of effort later in the process, prevent potential conflicts, and ensure that planning and project development decisions reflect environmental values; and

"(B) the cooperation referred to in subparagraph (A) should include the development of policies and the designation of staff that advise planning agencies and project sponsors of studies or other information foreseeably required for later Federal action and early consultation with appropriate State and local agencies and Indian tribes.

"(2) TECHNICAL ASSISTANCE.—If requested at any time by a State or project sponsor, the Secretary and other Federal agencies with relevant jurisdiction in the environmental review process, shall, to the maximum extent practicable and appropriate, as determined by the agencies, provide technical assistance to the State or project sponsor in carrying out early coordination activities.

"(3) MEMORANDUM OF AGENCY AGREEMENT.—If requested at any time by a State or project sponsor, the Federal lead agency, in consultation with other Federal agencies with relevant jurisdiction in the environmental review process, may establish memoranda of agreement with the project sponsor, Indian tribe, State and local governments, and other appropriate entities to carry out the early coordination activities, including providing technical assistance in identifying potential impacts and mitigation issues in an integrated fashion.

"(j) LIMITATIONS.—Nothing in this section preempts or interferes with—

"(1) any obligation to comply with the provisions of any Federal law, including—

"(A) the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.); and

"(B) any other Federal environmental law;

"(2) the reviewability of any final Federal agency action in a court of the United States or in the court of any State;

"(3) any requirement for seeking, considering, or responding to public comment; or

"(4) any power, jurisdiction, responsibility, duty, or authority that a Federal, State, or local governmental agency, Indian tribe, or project sponsor has with respect to carrying out a project or any other provision of law applicable to projects.

"(k) TIMING OF CLAIMS.—

"(1) TIMING.—

"(A) IN GENERAL.—Notwithstanding any other provision of law, a claim arising under Federal law seeking judicial review of a permit, license, or other approval issued by a Federal agency for a project study shall be barred unless the claim is filed not later than 3 years after publication of a notice in the Federal Register announcing that the permit, license, or other approval is final pursuant to the law under which the agency action is taken, unless a shorter time is specified in the Federal law that allows judicial review.

"(B) APPLICABILITY.—Nothing in this subsection creates a right to judicial review or places any limit on filing a claim that a person has violated the terms of a permit, license, or other approval.

"(2) NEW INFORMATION.—

"(A) IN GENERAL.—The Secretary shall consider new information received after the close of a comment period

if the information satisfies the requirements for a supplemental environmental impact statement under title 40, Code of Federal Regulations (including successor regulations).

"(B) SEPARATE ACTION.—The preparation of a supplemental environmental impact statement or other environmental document, if required under this section, shall be considered a separate final agency action and the deadline for filing a claim for judicial review of the action shall be 3 years after the date of publication of a notice in the Federal Register announcing the action relating to such supplemental environmental impact statement or other environmental document.

"(l) CATEGORICAL EXCLUSIONS.—

"(1) IN GENERAL.—Not later than 180 days after the date of enactment of the Water Resources Reform and Development Act of 2014, the Secretary shall—

"(A) survey the use by the Corps of Engineers of categorical exclusions in projects since 2005;

"(B) publish a review of the survey that includes a description of—

"(i) the types of actions that were categorically excluded or could be the basis for developing a new categorical exclusion; and

"(ii) any requests previously received by the Secretary for new categorical exclusions; and

"(C) solicit requests from other Federal agencies and project sponsors for new categorical exclusions.

"(2) NEW CATEGORICAL EXCLUSIONS.—Not later than 1 year after the date of enactment of the Water Resources Reform and Development Act of 2014, if the Secretary has identified a category of activities that merit establishing a categorical exclusion that did not exist on the day before the date of enactment of the Water Resources Reform and Development Act of 2014 based on the review under paragraph (1), the Secretary shall publish a notice of proposed rulemaking to propose that new categorical exclusion, to the extent that the categorical exclusion meets the criteria for a categorical exclusion under section 1508.4 of title 40, Code of Federal Regulations (or successor regulation).

"(m) REVIEW OF PROJECT ACCELERATION REFORMS.—

"(1) IN GENERAL.—The Comptroller General of the United States shall—

"(A) assess the reforms carried out under this section; and

"(B) not later than 5 years and not later than 10 years after the date of enactment of the Water Resources Reform and Development Act of 2014, submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a report that describes the results of the assessment.

"(2) CONTENTS.—The reports under paragraph (1) shall include an evaluation of impacts of the reforms carried out under this section on—

"(A) project delivery;

"(B) compliance with environmental laws; and

"(C) the environmental impact of projects.

"(n) PERFORMANCE MEASUREMENT.—The Secretary shall establish a program to measure and report on progress made toward improving and expediting the planning and environmental review process.

"(o) IMPLEMENTATION GUIDANCE.—The Secretary shall prepare, in consultation with the Council on Environmental Quality and other Federal agencies with jurisdiction over actions or resources that may be impacted by a project, guidance documents that describe the coordinated environmental review processes that the Secretary intends to use to implement this section for the planning of projects, in accordance with the civil works program of the Corps of Engineers and all applicable law.".

(2) CLERICAL AMENDMENT.—The table of contents contained in section 1(b) of the Water Resources Development Act of 2007 (121 Stat. 1042) is amended by striking the item relating to section 2045 and inserting the following:

"Sec. 2045. Project acceleration.".

(b) CATEGORICAL EXCLUSIONS IN EMERGENCIES.—For the repair, reconstruction, or rehabilitation of a water resources project that is in operation or under construction when damaged by an event or incident that results in a declaration by the President of a major disaster or emergency pursuant to the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5121 et seq.), the Secretary shall treat such repair, reconstruction, or rehabilitation activity as a class of action categorically excluded from the requirements relating to environmental assessments or environmental impact statements under section 1508.4 of title 40, Code of Federal Regulations (or successor regulations), if the repair or reconstruction activity is—

(1) in the same location with the same capacity, dimensions, and design as the original water resources project as before the declaration described in this section; and

(2) commenced within a 2-year period beginning on the date of a declaration described in this subsection.

SEC. 1006. EXPEDITING THE EVALUATION AND PROCESSING OF PERMITS.

Section 214 of the Water Resources Development Act of 2000 (Public Law 106–541; 33 U.S.C. 2201 note) is amended—

(1) in subsection (a)—

(A) by striking "(a) IN GENERAL.—The Secretary" and inserting the following:

"(a) FUNDING TO PROCESS PERMITS.—

"(1) DEFINITIONS.—In this subsection:

"(A) NATURAL GAS COMPANY.—The term 'natural gas company' has the meaning given the term in section 1262 of the Public Utility Holding Company Act of 2005 (42 U.S.C. 16451), except that the term also includes a person engaged in the transportation of natural gas in intrastate commerce.

"(B) PUBLIC-UTILITY COMPANY.—The term 'public-utility company' has the meaning given the term in section 1262 of the Public Utility Holding Company Act of 2005 (42 U.S.C. 16451).

"(2) PERMIT PROCESSING.—The Secretary";

(B) in paragraph (2) (as so designated)—

(i) by inserting "or a public-utility company or natural gas company" after "non-Federal public entity"; and

(ii) by inserting "or company" after "that entity"; and

(C) by adding at the end the following:

"(3) LIMITATION FOR PUBLIC-UTILITY AND NATURAL GAS COMPANIES.—The authority provided under paragraph (2) to a public-utility company or natural gas company shall expire on the date that is 7 years after the date of enactment of this paragraph.

"(4) EFFECT ON OTHER ENTITIES.—To the maximum extent practicable, the Secretary shall ensure that expediting the evaluation of a permit through the use of funds accepted and expended under this section does not adversely affect the timeline for evaluation (in the Corps district in which the project or activity is located) of permits under the jurisdiction of the Department of the Army of other entities that have not contributed funds under this section.

"(5) GAO STUDY.—Not later than 4 years after the date of enactment of this paragraph, the Comptroller General of the United States shall carry out a study of the implementation by the Secretary of the authority provided under paragraph (2) to public-utility companies and natural gas companies."; and

(2) by striking subsections (d) and (e) and inserting the following:

"(d) PUBLIC AVAILABILITY.—

"(1) IN GENERAL.—The Secretary shall ensure that all final permit decisions carried out using funds authorized under this section are made available to the public in a common format, including on the Internet, and in a manner that distinguishes final permit decisions under this section from other final actions of the Secretary.

"(2) DECISION DOCUMENT.—The Secretary shall—

"(A) use a standard decision document for evaluating all permits using funds accepted under this section; and

"(B) make the standard decision document, along with all final permit decisions, available to the public, including on the Internet.

"(3) AGREEMENTS.—The Secretary shall make all active agreements to accept funds under this section available on a single public Internet site.

"(e) REPORTING.—

"(1) IN GENERAL.—The Secretary shall prepare an annual report on the implementation of this section, which, at a minimum, shall include for each district of the Corps of Engineers that accepts funds under this section—

"(A) a comprehensive list of any funds accepted under this section during the previous fiscal year;

"(B) a comprehensive list of the permits reviewed and approved using funds accepted under this section during the previous fiscal year, including a description of the size and type of resources impacted and the mitigation required for each permit; and

"(C) a description of the training offered in the previous fiscal year for employees that is funded in whole or in part with funds accepted under this section.

"(2) SUBMISSION.—Not later than 90 days after the end of each fiscal year, the Secretary shall—

"(A) submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives the annual report described in paragraph (1); and

"(B) make each report received under subparagraph (A) available on a single publicly accessible Internet site.".

SEC. 1007. EXPEDITING APPROVAL OF MODIFICATIONS AND ALTERATIONS OF PROJECTS BY NON-FEDERAL INTERESTS.

(a) SECTION 14 APPLICATION DEFINED.—In this section, the term "section 14 application" means an application submitted by an applicant to the Secretary requesting permission for the temporary occupation or use of a public work, or the alteration or permanent occupation or use of a public work, under section 14 of the Act of March 3, 1899 (commonly known as the "Rivers and Harbors Appropriation Act of 1899") (33 U.S.C. 408).

(b) REVIEW.—Not later than 1 year after the date of enactment of this Act, the Secretary, after providing notice and an opportunity for comment, shall establish a process for the review of section 14 applications in a timely and consistent manner.

(c) BENCHMARK GOALS.—

(1) ESTABLISHMENT OF BENCHMARK GOALS.—In carrying out subsection (b), the Secretary shall—

(A) establish benchmark goals for determining the amount of time it should take the Secretary to determine whether a section 14 application is complete;

(B) establish benchmark goals for determining the amount of time it should take the Secretary to approve or disapprove a section 14 application; and

(C) to the extent practicable, use such benchmark goals to make a decision on section 14 applications in a timely and consistent manner.

(2) BENCHMARK GOALS.—

(A) BENCHMARK GOALS FOR DETERMINING WHETHER SECTION 14 APPLICATIONS ARE COMPLETE.—To the extent practicable, the benchmark goals established under paragraph (1) shall provide that—

(i) the Secretary reach a decision on whether a section 14 application is complete not later than 15 days after the date of receipt of the application; and

(ii) if the Secretary determines that a section 14 application is not complete, the Secretary promptly notify the applicant of the specific information that is missing or the analysis that is needed to complete the application.

(B) BENCHMARK GOALS FOR REVIEWING COMPLETED APPLICATIONS.—To the extent practicable, the benchmark goals established under paragraph (1) shall provide that—

(i) the Secretary generally approve or disapprove a completed section 14 application not later than 45

days after the date of receipt of the completed application; and

(ii) in a case in which the Secretary determines that additional time is needed to review a completed section 14 application due to the type, size, cost, complexity, or impacts of the actions proposed in the application, the Secretary generally approve or disapprove the application not later than 180 days after the date of receipt of the completed application.

(3) NOTICE.—In any case in which the Secretary determines that it will take the Secretary more than 45 days to review a completed section 14 application, the Secretary shall—

(A) provide written notification to the applicant; and

(B) include in the written notice a best estimate of the Secretary as to the amount of time required for completion of the review.

(d) FAILURE TO ACHIEVE BENCHMARK GOALS.—In any case in which the Secretary fails make a decision on a section 14 application in accordance with the process established under this section, the Secretary shall provide written notice to the applicant, including a detailed description of—

(1) why the Secretary failed to make a decision in accordance with such process;

(2) the additional actions required before the Secretary will issue a decision; and

(3) the amount of time the Secretary will require to issue a decision.

(e) NOTIFICATION.—

(1) SUBMISSION TO CONGRESS.—The Secretary shall provide a copy of any written notice provided under subsection (d) to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives.

(2) PUBLIC AVAILABILITY.—The Secretary shall maintain a publicly available database, including on the Internet, on—

(A) all section 14 applications received by the Secretary; and

(B) the current status of such applications.

SEC. 1008. EXPEDITING HYDROPOWER AT CORPS OF ENGINEERS FACILITIES.

(a) POLICY.—Congress declares that it is the policy of the United States that—

(1) the development of non-Federal hydroelectric power at Corps of Engineers civil works projects, including locks and dams, shall be given priority;

(2) Corps of Engineers approval of non-Federal hydroelectric power at Corps of Engineers civil works projects, including permitting required under section 14 of the Act of March 3, 1899 (33 U.S.C. 408), shall be completed by the Corps of Engineers in a timely and consistent manner; and

(3) approval of hydropower at Corps of Engineers civil works projects shall in no way diminish the other priorities and missions of the Corps of Engineers, including authorized project purposes and habitat and environmental protection.

(b) REPORT.—Not later than 2 years after the date of enactment of this Act and biennially thereafter, the Secretary shall submit

to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives and make publicly available a report that, at a minimum, shall include—

(1) a description of initiatives carried out by the Secretary to encourage the development of hydroelectric power by non-Federal entities at Corps of Engineers civil works projects;

(2) a list of all new hydroelectric power activities by non-Federal entities approved at Corps of Engineers civil works projects in that fiscal year, including the length of time the Secretary needed to approve those activities;

(3) a description of the status of each pending application from non-Federal entities for approval to develop hydroelectric power at Corps of Engineers civil works projects;

(4) a description of any benefits or impacts to the environment, recreation, or other uses associated with Corps of Engineers civil works projects at which non-Federal entities have developed hydroelectric power in the previous fiscal year; and

(5) the total annual amount of payments or other services provided to the Corps of Engineers, the Treasury, and any other Federal agency as a result of approved non-Federal hydropower projects at Corps of Engineers civil works projects.

SEC. 1009. ENHANCED USE OF ELECTRONIC COMMERCE IN FEDERAL PROCUREMENT.

(a) REPORT.—Not later than 180 days after the date of enactment of this Act, the Secretary shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives and make publicly available a report describing the actions of the Secretary in carrying out section 2301 of title 41, United States Code, regarding the use of electronic commerce in Federal procurement.

(b) CONTENTS.—The report submitted under subsection (a) shall include, with respect to the 2 fiscal years most recently ended before the fiscal year in which the report is submitted—

(1) an identification of the number, type, and dollar value of procurement solicitations with respect to which the public was permitted to respond to the solicitation electronically, which shall differentiate between solicitations that allowed full or partial electronic submission;

(2) an analysis of the information provided under paragraph (1) and actions that could be taken by the Secretary to refine and improve the use of electronic submission for procurement solicitation responses;

(3) an analysis of the potential benefits of and obstacles to full implementation of electronic submission for procurement solicitation responses, including with respect to cost savings, error reduction, paperwork reduction, increased bidder participation, and competition, and expanded use of electronic bid data collection for cost-effective contract management and timely reporting; and

(4) an analysis of the options and technologies available to facilitate expanded implementation of electronic submission for procurement solicitation responses and the suitability of each option and technology for contracts of various types and sizes.

SEC. 1010. DETERMINATION OF PROJECT COMPLETION.

(a) IN GENERAL.—The Secretary shall notify the applicable non-Federal interest when construction of a water resources project or a functional portion of the project is completed so the non-Federal interest may commence responsibilities, as applicable, for operating and maintaining the project.

(b) NON-FEDERAL INTEREST APPEAL OF DETERMINATION.—

(1) IN GENERAL.—Not later than 7 days after receiving a notification under subsection (a), the non-Federal interest may appeal the completion determination of the Secretary in writing with a detailed explanation of the basis for questioning the completeness of the project or functional portion of the project.

(2) INDEPENDENT REVIEW.—

(A) IN GENERAL.—On notification that a non-Federal interest has submitted an appeal under paragraph (1), the Secretary shall contract with 1 or more independent, non-Federal experts to evaluate whether the applicable water resources project or functional portion of the project is complete.

(B) TIMELINE.—An independent review carried out under subparagraph (A) shall be completed not later than 180 days after the date on which the Secretary receives an appeal from a non-Federal interest under paragraph (1).

SEC. 1011. PRIORITIZATION.

(a) PRIORITIZATION OF HURRICANE AND STORM DAMAGE RISK REDUCTION EFFORTS.—

(1) PRIORITY.—For authorized projects and ongoing feasibility studies with a primary purpose of hurricane and storm damage risk reduction, the Secretary shall give funding priority to projects and ongoing studies that—

(A) address an imminent threat to life and property;

(B) prevent storm surge from inundating populated areas;

(C) prevent the loss of coastal wetlands that help reduce the impact of storm surge;

(D) protect emergency hurricane evacuation routes or shelters;

(E) prevent adverse impacts to publicly owned or funded infrastructure and assets;

(F) minimize disaster relief costs to the Federal Government; and

(G) address hurricane and storm damage risk reduction in an area for which the President declared a major disaster in accordance with section 401 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5170).

(2) EXPEDITED CONSIDERATION OF CURRENTLY AUTHORIZED PROJECTS.—Not later than 180 days after the date of enactment of this Act, the Secretary shall—

(A) submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a list of all—

(i) ongoing hurricane and storm damage reduction feasibility studies that have signed feasibility cost-share agreements and have received Federal funds since 2009; and

(ii) authorized hurricane and storm damage reduction projects that—

(I) have been authorized for more than 20 years but are less than 75 percent complete; or

(II) are undergoing a post-authorization change report, general reevaluation report, or limited reevaluation report;

(B) identify those projects on the list required under subparagraph (A) that meet the criteria described in paragraph (1); and

(C) provide a plan for expeditiously completing the projects identified under subparagraph (B), subject to available funding.

(b) PRIORITIZATION OF ECOSYSTEM RESTORATION EFFORTS.—For authorized projects with a primary purpose of ecosystem restoration, the Secretary shall give funding priority to projects—

(1) that—

(A) address an identified threat to public health, safety, or welfare;

(B) preserve or restore ecosystems of national significance; or

(C) preserve or restore habitats of importance for federally protected species, including migratory birds; and

(2) for which the restoration activities will contribute to other ongoing or planned Federal, State, or local restoration initiatives.

SEC. 1012. TRANSPARENCY IN ACCOUNTING AND ADMINISTRATIVE EXPENSES.

(a) IN GENERAL.—On the request of a non-Federal interest, the Secretary shall provide to the non-Federal interest a detailed accounting of the Federal expenses associated with a water resources project.

(b) STUDY.—

(1) IN GENERAL.—The Secretary shall contract with the National Academy of Public Administration to carry out a study on the efficiency of the Corps Engineers current staff salaries and administrative expense procedures as compared to using a separate administrative expense account.

(2) CONTENTS.—The study under paragraph (1) shall include any recommendations of the National Academy of Public Administration for improvements to the budgeting and administrative processes that will increase the efficiency of the Corps of Engineers project delivery.

SEC. 1013. EVALUATION OF PROJECT PARTNERSHIP AGREEMENTS.

(a) IN GENERAL.—The Secretary shall contract with the National Academy of Public Administration to carry out a comprehensive review of the process for preparing, negotiating, and approving Project Partnership Agreements and the Project Partnership Agreement template, which shall include—

(1) an evaluation of the process for preparing, negotiating, and approving Project Partnership Agreements, as in effect on the day before the date of enactment of this Act, including

suggested modifications to the process provided by non-Federal interests; and

(2) recommendations based on the evaluation under paragraph (1) to improve the Project Partnership Agreement template and the process for preparing, negotiating, and approving Project Partnership Agreements.

(b) SUBMISSION TO CONGRESS.—

(1) IN GENERAL.—The Secretary shall submit the findings of the National Academy of Public Administration to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives.

(2) REPORT.—Not later than 180 days after the date on which the findings are received under paragraph (1), the Secretary shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a detailed response, including any recommendations the Secretary plans to implement, on the process for preparing, negotiating, and approving Project Partnership Agreements and the Project Partnership Agreement template.

SEC. 1014. STUDY AND CONSTRUCTION OF WATER RESOURCES DEVELOPMENT PROJECTS BY NON-FEDERAL INTERESTS.

(a) STUDIES.—Section 203 of the Water Resources Development Act of 1986 (33 U.S.C. 2231) is amended to read as follows:

"SEC. 203. STUDY OF WATER RESOURCES DEVELOPMENT PROJECTS BY NON-FEDERAL INTERESTS.

"(a) SUBMISSION TO SECRETARY.—

"(1) IN GENERAL.—A non-Federal interest may undertake a feasibility study of a proposed water resources development project and submit the study to the Secretary.

"(2) GUIDELINES.—To assist non-Federal interests, the Secretary, as soon as practicable, shall issue guidelines for feasibility studies of water resources development projects to provide sufficient information for the formulation of the studies.

"(b) REVIEW BY SECRETARY.—The Secretary shall review each feasibility study received under subsection (a)(1) for the purpose of determining whether or not the study, and the process under which the study was developed, each comply with Federal laws and regulations applicable to feasibility studies of water resources development projects.

"(c) SUBMISSION TO CONGRESS.—Not later than 180 days after the date of receipt of a feasibility study of a project under subsection (a)(1), the Secretary shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a report that describes—

"(1) the results of the Secretary's review of the study under subsection (b), including a determination of whether the project is feasible;

"(2) any recommendations the Secretary may have concerning the plan or design of the project; and

"(3) any conditions the Secretary may require for construction of the project.

"(d) CREDIT.—If a project for which a feasibility study has been submitted under subsection (a)(1) is authorized by a Federal

law enacted after the date of the submission to Congress under subsection (c), the Secretary shall credit toward the non-Federal share of the cost of construction of the project an amount equal to the portion of the cost of developing the study that would have been the responsibility of the United States if the study had been developed by the Secretary.".

(b) CONSTRUCTION.—

(1) IN GENERAL.—Section 204 of the Water Resources Development Act of 1986 (33 U.S.C. 2232) is amended to read as follows:

"SEC. 204. CONSTRUCTION OF WATER RESOURCES DEVELOPMENT PROJECTS BY NON-FEDERAL INTERESTS.

"(a) WATER RESOURCES DEVELOPMENT PROJECT DEFINED.—In this section, the term 'water resources development project' means a project recommendation that results from—

"(1) a feasibility report, as such term is defined in section 7001(f) of the Water Resources Reform and Development Act of 2014;

"(2) a completed feasibility study developed under section 203; or

"(3) a final feasibility study for water resources development and conservation and other purposes that is specifically authorized by Congress to be carried out by the Secretary.

"(b) AUTHORITY.—

"(1) IN GENERAL.—A non-Federal interest may carry out a water resources development project, or separable element thereof—

"(A) in accordance with a plan approved by the Secretary for the project or separable element; and

"(B) subject to any conditions that the Secretary may require, including any conditions specified under section 203(c)(3).

"(2) CONDITIONS.—Before carrying out a water resources development project, or separable element thereof, under this section, a non-Federal interest shall—

"(A) obtain any permit or approval required in connection with the project or separable element under Federal or State law; and

"(B) ensure that a final environmental impact statement or environmental assessment, as appropriate, for the project or separable element has been filed.

"(c) STUDIES AND ENGINEERING.—When requested by an appropriate non-Federal interest, the Secretary may undertake all necessary studies and engineering for any construction to be undertaken under subsection (b), and provide technical assistance in obtaining all necessary permits for the construction, if the non-Federal interest contracts with the Secretary to furnish the United States funds for the studies, engineering, or technical assistance in the period during which the studies and engineering are being conducted.

"(d) CREDIT OR REIMBURSEMENT.—

"(1) GENERAL RULE.—Subject to paragraph (3), a project or separable element of a project carried out by a non-Federal interest under this section shall be eligible for credit or reimbursement for the Federal share of work carried out on a project or separable element of a project if—

"(A) before initiation of construction of the project or separable element—

"(i) the Secretary approves the plans for construction of the project or separable element of the project by the non-Federal interest;

"(ii) the Secretary determines, before approval of the plans, that the project or separable element of the project is feasible; and

"(iii) the non-Federal interest enters into a written agreement with the Secretary under section 221 of the Flood Control Act of 1970 (42 U.S.C. 1962d–5b), including an agreement to pay the non-Federal share, if any, of the cost of operation and maintenance of the project; and

"(B) the Secretary determines that all Federal laws and regulations applicable to the construction of a water resources development project, and any conditions identified under subsection (b)(1)(B), were complied with by the non-Federal interest during construction of the project or separable element of the project.

"(2) APPLICATION OF CREDIT.—The Secretary may apply credit toward—

"(A) the non-Federal share of authorized separable elements of the same project; or

"(B) subject to the requirements of this section and section 1020 of the Water Resources Reform and Development Act of 2014, at the request of the non-Federal interest, the non-Federal share of a different water resources development project.

"(3) REQUIREMENTS.—The Secretary may only apply credit or provide reimbursement under paragraph (1) if—

"(A) Congress has authorized construction of the project or separable element of the project; and

"(B) the Secretary certifies that the project has been constructed in accordance with—

"(i) all applicable permits or approvals; and

"(ii) this section.

"(4) MONITORING.—The Secretary shall regularly monitor and audit any water resources development project, or separable element of a water resources development project, constructed by a non-Federal interest under this section to ensure that—

"(A) the construction is carried out in compliance with the requirements of this section; and

"(B) the costs of the construction are reasonable.

"(e) NOTIFICATION OF COMMITTEES.—If a non-Federal interest notifies the Secretary that the non-Federal interest intends to carry out a project, or separable element thereof, under this section, the Secretary shall provide written notice to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives concerning the intent of the non-Federal interest.

"(f) OPERATION AND MAINTENANCE.—Whenever a non-Federal interest carries out improvements to a federally authorized harbor or inland harbor, the Secretary shall be responsible for operation and maintenance in accordance with section 101(b) if—

"(1) before construction of the improvements—

"(A) the Secretary determines that the improvements are feasible and consistent with the purposes of this title; and

"(B) the Secretary and the non-Federal interest execute a written agreement relating to operation and maintenance of the improvements;

"(2) the Secretary certifies that the project or separable element of the project is constructed in accordance with applicable permits and appropriate engineering and design standards; and

"(3) the Secretary does not find that the project or separable element is no longer feasible.".

(c) REPEALS.—The following provisions are repealed:

(1) Section 404 of the Water Resources Development Act of 1990 (33 U.S.C. 2232 note; 104 Stat. 4646) and the item relating to that section in the table of contents contained in section 1(b) of that Act.

(2) Section 206 of the Water Resources Development Act of 1992 (33 U.S.C. 426i–1) and the item relating to that section in the table of contents contained in section 1(b) of that Act.

(3) Section 211 of the Water Resources Development Act of 1996 (33 U.S.C. 701b–13) and the item relating to that section in the table of contents contained in section 1(b) of that Act.

(d) SAVINGS PROVISION.—Nothing in this section may be construed to affect an agreement in effect on the date of enactment of this Act, or an agreement that is finalized between the Corps of Engineers and a non-Federal interest on or before December 31, 2014, under any of the following sections (as such sections were in effect on the day before such date of enactment):

(1) Section 204 of the Water Resources Development Act of 1986 (33 U.S.C. 2232).

(2) Section 206 of the Water Resources Development Act of 1992 (33 U.S.C. 426i–1).

(3) Section 211 of the Water Resources Development Act of 1996 (33 U.S.C. 701b–13).

SEC. 1015. CONTRIBUTIONS BY NON-FEDERAL INTERESTS.

(a) IN GENERAL.—Section 5 of the Act of June 22, 1936 (33 U.S.C. 701h), is amended—

(1) by inserting "and other non-Federal interests" after "States and political subdivisions thereof" each place it appears;

(2) by inserting ", including a project for navigation on the inland waterways," after "study or project";

(3) by striking "*Provided*, That when" and inserting "*Provided*, That the Secretary is authorized to receive and expend funds from a State or a political subdivision thereof, and other non-Federal interests or private entities, to operate a hurricane barrier project to support recreational activities at or in the vicinity of the project, at no cost to the Federal Government, if the Secretary determines that operation for such purpose is not inconsistent with the operation and maintenance of the project for the authorized purposes of the project: *Provided further*, That when"; and

(4) by striking the period at the end and inserting the following: ": *Provided further*, That the term 'non-Federal

interest' has the meaning given that term in section 221 of the Flood Control Act of 1970 (42 U.S.C. 1962d–5b).".

(b) NOTIFICATION FOR CONTRIBUTED FUNDS.—Prior to accepting funds contributed under section 5 of the Act of June 22, 1936 (33 U.S.C. 701h), the Secretary shall provide written notice of the funds to the Committee on Environment and Public Works and the Committee on Appropriations of the Senate and the Committee on Transportation and Infrastructure and the Committee on Appropriations of the House of Representatives.

(c) TECHNICAL AMENDMENT.—Section 111(b) of the Energy and Water Development and Related Agencies Appropriations Act, 2012 (125 Stat. 858) is repealed.

SEC. 1016. OPERATION AND MAINTENANCE OF CERTAIN PROJECTS.

The Secretary may assume responsibility for operation and maintenance in accordance with section 101(b) of the Water Resources Development Act of 1986 (33 U.S.C. 2211(b)) (as amended by section 2102(b)) for improvements to a federally authorized harbor or inland harbor that are carried out by a non-Federal interest prior to December 31, 2014, if the Secretary determines that the requirements under paragraphs (2) and (3) of section 204(f) of the Water Resources Development Act of 1986 (33 U.S.C. 2232(f)) are met.

SEC. 1017. ACCEPTANCE OF CONTRIBUTED FUNDS TO INCREASE LOCK OPERATIONS.

(a) IN GENERAL.—The Secretary, after providing public notice, shall establish a pilot program for the acceptance and expenditure of funds contributed by non-Federal interests to increase the hours of operation of locks at water resources development projects.

(b) APPLICABILITY.—The establishment of the pilot program under this section shall not affect the periodic review and adjustment of hours of operation of locks based on increases in commercial traffic carried out by the Secretary.

(c) PUBLIC COMMENT.—Not later than 180 days before a proposed modification to the operation of a lock at a water resources development project will be carried out, the Secretary shall—

(1) publish the proposed modification in the Federal Register; and

(2) accept public comment on the proposed modification.

(d) REPORTS.—

(1) IN GENERAL.—Not later than 1 year after the date of enactment of this Act, the Secretary shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives and make publicly available a report that evaluates the cost-savings resulting from reduced lock hours and any economic impacts of modifying lock operations.

(2) REVIEW OF PILOT PROGRAM.—Not later than September 30, 2017, and each year thereafter, the Secretary shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a report that describes the effectiveness of the pilot program under this section.

(e) ANNUAL REVIEW.—The Secretary shall carry out an annual review of the commercial use of locks and make any necessary adjustments to lock operations based on that review.

(f) TERMINATION.—The authority to accept funds under this section shall terminate 5 years after the date of enactment of this Act.

SEC. 1018. CREDIT FOR IN-KIND CONTRIBUTIONS.

(a) IN GENERAL.—Section 221(a)(4) of the Flood Control Act of 1970 (42 U.S.C. 1962d–5b(a)(4)) is amended—

(1) in subparagraph (A), in the matter preceding clause (i), by inserting "or a project under an environmental infrastructure assistance program" after "law";

(2) in subparagraph (C) by striking "In any case" and all that follows through the period at the end and inserting the following:

"(i) CONSTRUCTION.—

"(I) IN GENERAL.—In any case in which the non-Federal interest is to receive credit under subparagraph (A) for the cost of construction carried out by the non-Federal interest before execution of a partnership agreement and that construction has not been carried out as of November 8, 2007, the Secretary and the non-Federal interest shall enter into an agreement under which the non-Federal interest shall carry out such work and shall do so prior to the non-Federal interest initiating construction or issuing a written notice to proceed for the construction.

"(II) ELIGIBILITY.—Construction that is carried out after the execution of an agreement to carry out work described in subclause (I) and any design activities that are required for that construction, even if the design activity is carried out prior to the execution of the agreement to carry out work, shall be eligible for credit.

"(ii) PLANNING.—

"(I) IN GENERAL.—In any case in which the non-Federal interest is to receive credit under subparagraph (A) for the cost of planning carried out by the non-Federal interest before execution of a feasibility cost-sharing agreement, the Secretary and the non-Federal interest shall enter into an agreement under which the non-Federal interest shall carry out such work and shall do so prior to the non-Federal interest initiating that planning.

"(II) ELIGIBILITY.—Planning that is carried out by the non-Federal interest after the execution of an agreement to carry out work described in subclause (I) shall be eligible for credit.";

(3) in subparagraph (D)(iii) by striking "sections 101 and 103" and inserting "sections 101(a)(2) and 103(a)(1)(A) of the Water Resources Development Act of 1986 (33 U.S.C. 2211(a)(2); 33 U.S.C. 2213(a)(1)(A))";

(4) by redesignating subparagraph (E) as subparagraph (H);

(5) by inserting after subparagraph (D) the following:

"(E) ANALYSIS OF COSTS AND BENEFITS.—In the evaluation of the costs and benefits of a project, the Secretary

shall not consider construction carried out by a non-Federal interest under this subsection as part of the future without project condition.

"(F) TRANSFER OF CREDIT BETWEEN SEPARABLE ELEMENTS OF A PROJECT.—Credit for in-kind contributions provided by a non-Federal interest that are in excess of the non-Federal cost share for an authorized separable element of a project may be applied toward the non-Federal cost share for a different authorized separable element of the same project.

"(G) APPLICATION OF CREDIT.—

"(i) IN GENERAL.—To the extent that credit for in-kind contributions, as limited by subparagraph (D), and credit for required land, easements, rights-of-way, dredged material disposal areas, and relocations provided by the non-Federal interest exceed the non-Federal share of the cost of construction of a project other than a navigation project, the Secretary, subject to the availability of funds, shall enter into a reimbursement agreement with the non-Federal interest, which shall be in addition to a partnership agreement under subparagraph (A), to reimburse the difference to the non-Federal interest.

"(ii) PRIORITY.—If appropriated funds are insufficient to cover the full cost of all requested reimbursement agreements under clause (i), the Secretary shall enter into reimbursement agreements in the order in which requests for such agreements are received."; and

(6) in subparagraph (H) (as redesignated by paragraph (4))—

(A) in clause (i) by inserting ", and to water resources projects authorized prior to the date of enactment of the Water Resources Development Act of 1986 (Public Law 99–662), if correction of design deficiencies is necessary" before the period at the end; and

(B) by striking clause (ii) and inserting the following:

"(ii) AUTHORIZATION AS ADDITION TO OTHER AUTHORIZATIONS.—The authority of the Secretary to provide credit for in-kind contributions pursuant to this paragraph shall be in addition to any other authorization to provide credit for in-kind contributions and shall not be construed as a limitation on such other authorization. The Secretary shall apply the provisions of this paragraph, in lieu of provisions under other crediting authority, only if so requested by the non-Federal interest.".

(b) APPLICABILITY.—Section 2003(e) of the Water Resources Development Act of 2007 (42 U.S.C. 1962d–5b note) is amended—

(1) by inserting ", or construction of design deficiency corrections on the project," after "construction on the project"; and

(2) by inserting ", or under which construction of the project has not been completed and the work to be performed by

the non-Federal interests has not been carried out and is creditable only toward any remaining non-Federal cost share," after "has not been initiated".

(c) EFFECTIVE DATE.—The amendments made by subsections (a) and (b) take effect on November 8, 2007.

(d) GUIDELINES.—

(1) IN GENERAL.—Not later than 1 year after the date of enactment of this Act, the Secretary shall update any guidance or regulations for carrying out section 221(a)(4) of the Flood Control Act of 1970 (42 U.S.C. 1962d–5b(a)(4)) (as amended by subsection (a)) that are in existence on the date of enactment of this Act or issue new guidelines, as determined to be appropriate by the Secretary.

(2) INCLUSIONS.—Any guidance, regulations, or guidelines updated or issued under paragraph (1) shall include, at a minimum—

(A) the milestone for executing an in-kind memorandum of understanding for construction by a non-Federal interest;

(B) criteria and procedures for evaluating a request to execute an in-kind memorandum of understanding for construction by a non-Federal interest that is earlier than the milestone under subparagraph (A) for that execution; and

(C) criteria and procedures for determining whether work carried out by a non-Federal interest is integral to a project.

(3) PUBLIC AND STAKEHOLDER PARTICIPATION.—Before issuing any new or revised guidance, regulations, or guidelines or any subsequent updates to those documents, the Secretary shall—

(A) consult with affected non-Federal interests;

(B) publish the proposed guidelines developed under this subsection in the Federal Register; and

(C) provide the public with an opportunity to comment on the proposed guidelines.

(e) OTHER CREDIT.—Nothing in section 221(a)(4) of the Flood Control Act of 1970 (42 U.S.C. 1962d–5b(a)(4)) (as amended by subsection (a)) affects any eligibility for credit under section 104 of the Water Resources Development of 1986 (33 U.S.C. 2214) that was approved by the Secretary prior to the date of enactment of this Act.

SEC. 1019. CLARIFICATION OF IN-KIND CREDIT AUTHORITY.

(a) NON-FEDERAL COST SHARE.—Section 7007 of the Water Resources Development Act of 2007 (121 Stat. 1277) is amended—

(1) in subsection (a), by inserting ", on, or after" after "before";

(2) by striking subsection (d) and inserting the following:

"(d) TREATMENT OF CREDIT BETWEEN PROJECTS.—The value of any land, easements, rights-of-way, relocations, and dredged material disposal areas and the costs of planning, design, and construction work provided by the non-Federal interest that exceed the non-Federal cost share for a study or project under this title may be applied toward the non-Federal cost share for any other study or project carried out under this title."; and

(3) by adding at the end the following:

"(g) DEFINITION OF STUDY OR PROJECT.—In this section, the term 'study or project' includes any eligible activity that is—

"(1) carried out pursuant to the coastal Louisiana ecosystem science and technology program authorized under section 7006(a); and

"(2) in accordance with the restoration plan.".

(b) IMPLEMENTATION.—Not later than 90 days after the date of enactment of this Act, the Secretary, in coordination with any relevant agencies of the State of Louisiana, shall establish a process by which to carry out the amendment made by subsection (a)(2).

(c) EFFECTIVE DATE.—The amendments made by subsection (a) take effect on November 8, 2007.

SEC. 1020. TRANSFER OF EXCESS CREDIT.

(a) IN GENERAL.—Subject to subsection (b), the Secretary may apply credit for in-kind contributions provided by a non-Federal interest that are in excess of the required non-Federal cost share for a water resources development study or project toward the required non-Federal cost share for a different water resources development study or project.

(b) RESTRICTIONS.—

(1) IN GENERAL.—Except for subsection (a)(4)(D)(i) of that section, the requirements of section 221 of the Flood Control Act of 1970 (42 U.S.C. 1962d–5b) (as amended by section 1018(a)) shall apply to any credit under this section.

(2) CONDITIONS.—Credit in excess of the non-Federal share for a study or project may be approved under this section only if—

(A) the non-Federal interest submits a comprehensive plan to the Secretary that identifies—

(i) the studies and projects for which the non-Federal interest intends to provide in-kind contributions for credit that are in excess of the non-Federal cost share for the study or project; and

(ii) the authorized studies and projects to which that excess credit would be applied;

(B) the Secretary approves the comprehensive plan; and

(C) the total amount of credit does not exceed the total non-Federal share for the studies and projects in the approved comprehensive plan.

(c) ADDITIONAL CRITERIA.—In evaluating a request to apply credit in excess of the non-Federal share for a study or project toward a different study or project, the Secretary shall consider whether applying that credit will—

(1) help to expedite the completion of a project or group of projects;

(2) reduce costs to the Federal Government; and

(3) aid the completion of a project that provides significant flood risk reduction or environmental benefits.

(d) TERMINATION OF AUTHORITY.—The authority provided in this section shall terminate 10 years after the date of enactment of this Act.

(e) REPORT.—

(1) DEADLINES.—

(A) IN GENERAL.—Not later than 2 years after the date of enactment of this Act, and once every 2 years

thereafter, the Secretary shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives and make publicly available an interim report on the use of the authority under this section.

(B) FINAL REPORT.—Not later than 10 years after the date of enactment of this Act, the Secretary shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives and make publicly available a final report on the use of the authority under this section.

(2) INCLUSIONS.—The reports described in paragraph (1) shall include—

(A) a description of the use of the authority under this section during the reporting period;

(B) an assessment of the impact of the authority under this section on the time required to complete projects; and

(C) an assessment of the impact of the authority under this section on other water resources projects.

SEC. 1021. CREDITING AUTHORITY FOR FEDERALLY AUTHORIZED NAVIGATION PROJECTS.

A non-Federal interest may carry out operation and maintenance activities for an authorized navigation project, subject to the condition that the non-Federal interest complies with all Federal laws and regulations applicable to such operation and maintenance activities, and may receive credit for the costs incurred by the non-Federal interest in carrying out such activities towards the share of construction costs of that non-Federal interest for another element of the same project or another authorized navigation project, except that in no instance may such credit exceed 20 percent of the total costs associated with construction of the general navigation features of the project for which such credit may be applied pursuant to this section.

SEC. 1022. CREDIT IN LIEU OF REIMBURSEMENT.

(a) REQUESTS FOR CREDITS.—With respect to an authorized flood damage reduction project, or separable element thereof, that has been constructed by a non-Federal interest under section 211 of the Water Resources Development Act of 1996 (33 U.S.C. 701b–13) before the date of enactment of this Act, the Secretary may provide to the non-Federal interest, at the request of the non-Federal interest, a credit in an amount equal to the estimated Federal share of the cost of the project or separable element, in lieu of providing to the non-Federal interest a reimbursement in that amount.

(b) APPLICATION OF CREDITS.—At the request of the non-Federal interest, the Secretary may apply such credit to the share of the cost of the non-Federal interest of carrying out other flood damage reduction projects or studies.

SEC. 1023. ADDITIONAL CONTRIBUTIONS BY NON-FEDERAL INTERESTS.

Section 902 of the Water Resources Development Act of 1986 (33 U.S.C. 2280) is amended—

(1) by striking "In order to insure" and inserting "(a) IN GENERAL.—In order to insure"; and

(2) by adding at the end the following:

"(b) CONTRIBUTIONS BY NON-FEDERAL INTERESTS.—Notwithstanding subsection (a), in accordance with section 5 of the Act of June 22, 1936 (33 U.S.C. 701h), the Secretary may accept funds from a non-Federal interest for any authorized water resources development project that has exceeded its maximum cost under subsection (a), and use such funds to carry out such project, if the use of such funds does not increase the Federal share of the cost of such project.".

SEC. 1024. AUTHORITY TO ACCEPT AND USE MATERIALS AND SERVICES.

(a) IN GENERAL.—Subject to subsection (b), the Secretary is authorized to accept and use materials and services contributed by a non-Federal public entity, a nonprofit entity, or a private entity for the purpose of repairing, restoring, or replacing a water resources development project that has been damaged or destroyed as a result of an emergency if the Secretary determines that the acceptance and use of such materials and services is in the public interest.

(b) LIMITATION.—Any entity that contributes materials or services under subsection (a) shall not be eligible for credit or reimbursement for the value of such materials or services.

(c) REPORT.—Not later than 60 days after initiating an activity under this section, the Secretary shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a report that includes—

(1) a description of the activities undertaken, including the costs associated with the activities; and

(2) a comprehensive description of how the activities are necessary for maintaining a safe and reliable water resources project.

SEC. 1025. WATER RESOURCES PROJECTS ON FEDERAL LAND.

(a) IN GENERAL.—Subject to subsection (b), the Secretary may carry out an authorized water resources development project on Federal land that is under the administrative jurisdiction of another Federal agency where the cost of the acquisition of such Federal land has been paid for by the non-Federal interest for the project.

(b) MOU REQUIRED.—The Secretary may carry out a project pursuant to subsection (a) only after the non-Federal interest has entered into a memorandum of understanding with the Federal agency that includes such terms and conditions as the Secretary determines to be necessary.

(c) APPLICABILITY.—Nothing in this section alters any non-Federal cost-sharing requirements for the project.

SEC. 1026. CLARIFICATION OF IMPACTS TO OTHER FEDERAL FACILITIES.

In any case where the modification or construction of a water resources development project carried out by the Secretary adversely impacts other Federal facilities, the Secretary may accept from other Federal agencies such funds as may be necessary to address the adverse impact, including by removing, relocating, or reconstructing those facilities.

SEC. 1027. CLARIFICATION OF MUNITION DISPOSAL AUTHORITIES.

(a) IN GENERAL.—The Secretary may implement any response action the Secretary determines to be necessary at a site where—

(1) the Secretary has carried out a project under civil works authority of the Secretary that includes placing sand on a beach; and

(2) as a result of the project described in paragraph (1), military munitions that were originally released as a result of Department of Defense activities are deposited on the beach, posing a threat to human health or the environment.

(b) RESPONSE ACTION FUNDING.—A response action described in subsection (a) shall be funded from amounts made available to the agency within the Department of Defense responsible for the original release of the munitions.

SEC. 1028. CLARIFICATION OF MITIGATION AUTHORITY.

(a) IN GENERAL.—The Secretary may carry out measures to improve fish species habitat within the boundaries and downstream of a water resources project constructed by the Secretary that includes a fish hatchery if the Secretary—

(1) has been explicitly authorized to compensate for fish losses associated with the project; and

(2) determines that the measures are—

(A) feasible;

(B) consistent with authorized project purposes and the fish hatchery; and

(C) in the public interest.

(b) COST SHARING.—

(1) IN GENERAL.—Subject to paragraph (2), the non-Federal interest shall contribute 35 percent of the total cost of carrying out activities under this section, including the costs relating to the provision or acquisition of required land, easements, rights-of-way, dredged material disposal areas, and relocations.

(2) OPERATION AND MAINTENANCE.—The non-Federal interest shall contribute 100 percent of the costs of operation, maintenance, replacement, repair, and rehabilitation of the measures carried out under this section.

SEC. 1029. CLARIFICATION OF INTERAGENCY SUPPORT AUTHORITIES.

Section 234 of the Water Resources Development Act of 1996 (33 U.S.C. 2323a) is amended—

(1) in subsection (a), by striking "other Federal agencies," and inserting "Federal departments or agencies, nongovernmental organizations,";

(2) in subsection (b), by inserting "or foreign governments" after "organizations";

(3) in subsection (c), by inserting "and restoration" after "protection"; and

(4) in subsection (d)—

(A) in the first sentence, by striking "There is" and inserting "(1) IN GENERAL.—There is"; and

(B) in the second sentence—

(i) by striking "The Secretary" and inserting "(2) ACCEPTANCE OF FUNDS.—The Secretary"; and

(ii) by striking "other Federal agencies," and inserting "Federal departments or agencies, nongovernmental organizations,".

SEC. 1030. CONTINUING AUTHORITY.

(a) CONTINUING AUTHORITY PROGRAMS.—

(1) DEFINITION OF CONTINUING AUTHORITY PROGRAM PROJECT.—In this subsection, the term "continuing authority program" means 1 of the following authorities:

(A) Section 205 of the Flood Control Act of 1948 (33 U.S.C. 701s).

(B) Section 111 of the River and Harbor Act of 1968 (33 U.S.C. 426i).

(C) Section 206 of the Water Resources Development Act of 1996 (33 U.S.C. 2330).

(D) Section 1135 of the Water Resources Development Act of 1986 (33 U.S.C. 2309a).

(E) Section 107 of the River and Harbor Act of 1960 (33 U.S.C. 577).

(F) Section 3 of the Act of August 13, 1946 (33 U.S.C. 426g).

(G) Section 14 of the Flood Control Act of 1946 (33 U.S.C. 701r).

(H) Section 103 of the River and Harbor Act of 1962 (Public Law 87–874; 76 Stat. 1178).

(I) Section 204(e) of the Water Resources Development Act of 1992 (33 U.S.C. 2326(e)).

(J) Section 208 of the Flood Control Act of 1958 (33 U.S.C. 701b–8a).

(K) Section 104(a) of the River and Harbor Act of 1958 (33 U.S.C. 610(a)).

(2) PRIORITIZATION.—Not later than 1 year after the date of enactment of this Act, the Secretary shall publish in the Federal Register and on a publicly available website, the criteria the Secretary uses for prioritizing annual funding for continuing authority program projects.

(3) ANNUAL REPORT.—Not later than 1 year after the date of enactment of this Act and each year thereafter, the Secretary shall publish in the Federal Register and on a publicly available website, a report on the status of each continuing authority program, which, at a minimum, shall include—

(A) the name and a short description of each active continuing authority program project;

(B) the cost estimate to complete each active project; and

(C) the funding available in that fiscal year for each continuing authority program.

(4) CONGRESSIONAL NOTIFICATION.—On publication in the Federal Register under paragraphs (2) and (3), the Secretary shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a copy of all information published under those paragraphs.

(b) SMALL RIVER AND HARBOR IMPROVEMENT PROJECTS.—Section 107 of the River and Harbor Act of 1960 (33 U.S.C. 577) is amended—

(1) in subsection (a), by striking "$35,000,000" and inserting "$50,000,000"; and

(2) in subsection (b), by striking "$7,000,000" and inserting "$10,000,000".

(c) SHORE DAMAGE PREVENTION OR MITIGATION.—Section 111(c) of the River and Harbor Act of 1968 (33 U.S.C. 426i(c)) is amended by striking "$5,000,000" and inserting "$10,000,000".

(d) REGIONAL SEDIMENT MANAGEMENT.—

(1) IN GENERAL.—Section 204 of the Water Resources Development Act of 1992 (33 U.S.C. 2326) is amended—

(A) in subsection (c)(1)(C), by striking "$5,000,000" and inserting "$10,000,000"; and

(B) in subsection (g), by striking "$30,000,000" and inserting "$50,000,000".

(2) APPLICABILITY.—Section 2037 of the Water Resources Development Act of 2007 (121 Stat. 1094) is amended by adding at the end the following:

"(c) APPLICABILITY.—The amendment made by subsection (a) shall not apply to any project authorized under this Act if a report of the Chief of Engineers for the project was completed prior to the date of enactment of this Act.".

(e) SMALL FLOOD CONTROL PROJECTS.—Section 205 of the Flood Control Act of 1948 (33 U.S.C. 701s) is amended in the third sentence by striking "$7,000,000" and inserting "$10,000,000".

(f) PROJECT MODIFICATIONS FOR IMPROVEMENT OF ENVIRONMENT.—Section 1135(d) of the Water Resources Development Act of 1986 (33 U.S.C. 2309a(d)) is amended—

(1) in the second sentence, by striking "Not more than 80 percent of the non-Federal share may be" and inserting "The non-Federal share may be provided"; and

(2) in the third sentence, by striking "$5,000,000" and inserting "$10,000,000".

(g) AQUATIC ECOSYSTEM RESTORATION.—Section 206(d) of the Water Resources Development Act of 1996 (33 U.S.C. 2330(d)) is amended by striking "$5,000,000" and inserting "$10,000,000".

(h) FLOODPLAIN MANAGEMENT SERVICES.—Section 206(d) of the Flood Control Act of 1960 (33 U.S.C. 709a(d)) is amended by striking "$15,000,000" and inserting "$50,000,000".

(i) EMERGENCY STREAMBANK AND SHORELINE PROTECTION.—Section 14 of the Flood Control Act of 1946 (33 U.S.C. 701r) is amended—

(1) by striking "$15,000,000" and inserting "$20,000,000"; and

(2) by striking "$1,500,000" and inserting "$5,000,000".

SEC. 1031. TRIBAL PARTNERSHIP PROGRAM.

(a) IN GENERAL.—Section 203 of the Water Resources Development Act of 2000 (33 U.S.C. 2269) is amended—

(1) in subsection (d)(1)(B)—

(A) by striking "The ability" and inserting the following:

"(i) IN GENERAL.—The ability"; and

(B) by adding at the end the following:

"(ii) DETERMINATION.—Not later than 180 days after the date of enactment of this clause, the Secretary shall issue guidance on the procedures described in clause (i).."; and

(2) by striking subsection (e) and inserting the following:

"(e) RESTRICTIONS.—The Secretary is authorized to carry out activities under this section for fiscal years 2015 through 2024.".

(b) COOPERATIVE AGREEMENTS WITH INDIAN TRIBES.—The Secretary may enter into a cooperative agreement with an Indian tribe (or a designated representative of an Indian tribe) to carry out authorized activities of the Corps of Engineers to protect fish, wildlife, water quality, and cultural resources.

SEC. 1032. TERRITORIES OF THE UNITED STATES.

Section 1156 of the Water Resources Development Act of 1986 (33 U.S.C. 2310) is amended—

(1) by striking "The Secretary shall waive" and inserting "(a) IN GENERAL.—The Secretary shall waive";

(2) in subsection (a) (as so designated), by inserting "Puerto Rico," before "and the Trust Territory of the Pacific Islands"; and

(3) by adding at the end the following:

"(b) INFLATION ADJUSTMENT.—The Secretary shall adjust the dollar amount specified in subsection (a) for inflation for the period beginning on November 17, 1986, and ending on the date of enactment of this subsection.".

SEC. 1033. CORROSION PREVENTION.

(a) IN GENERAL.—To the greatest extent practicable, the Secretary shall encourage and incorporate corrosion prevention activities at water resources development projects.

(b) ACTIVITIES.—In carrying out subsection (a), the Secretary, to the greatest extent practicable, shall ensure that contractors performing work for water resources development projects—

(1) use best practices to carry out corrosion prevention activities in the field;

(2) use industry-recognized standards and corrosion mitigation and prevention methods when—

(A) determining protective coatings;

(B) selecting materials; and

(C) determining methods of cathodic protection, design, and engineering for corrosion prevention;

(3) use certified coating application specialists and cathodic protection technicians and engineers;

(4) use best practices in environmental protection to prevent environmental degradation and to ensure careful handling of all hazardous materials;

(5) demonstrate a history of employing industry-certified inspectors to ensure adherence to best practices and standards; and

(6) demonstrate a history of compliance with applicable requirements of the Occupational Safety and Health Administration.

(c) CORROSION PREVENTION ACTIVITIES DEFINED.—In this section, the term "corrosion prevention activities" means—

(1) the application and inspection of protective coatings for complex work involving steel and cementitious structures, including structures that will be exposed in immersion;

(2) the installation, testing, and inspection of cathodic protection systems; and

(3) any other activities related to corrosion prevention the Secretary determines appropriate.

SEC. 1034. ADVANCED MODELING TECHNOLOGIES.

(a) IN GENERAL.—To the greatest extent practicable, the Secretary shall encourage and incorporate advanced modeling technologies, including 3-dimensional digital modeling, that can expedite project delivery or improve the evaluation of water resources development projects that receive Federal funding by—

(1) accelerating and improving the environmental review process;

(2) increasing effective public participation;

(3) enhancing the detail and accuracy of project designs;

(4) increasing safety;

(5) accelerating construction and reducing construction costs; or

(6) otherwise achieving the purposes described in paragraphs (1) through (5).

(b) ACTIVITIES.—In carrying out subsection (a), the Secretary, to the greatest extent practicable, shall—

(1) compile information related to advanced modeling technologies, including industry best practices with respect to the use of the technologies;

(2) disseminate to non-Federal interests the information described in paragraph (1); and

(3) promote the use of advanced modeling technologies.

SEC. 1035. RECREATIONAL ACCESS.

(a) DEFINITION OF FLOATING CABIN.—In this section, the term "floating cabin" means a vessel (as defined in section 3 of title 1, United States Code) that has overnight accommodations.

(b) RECREATIONAL ACCESS.—The Secretary shall allow the use of a floating cabin on waters under the jurisdiction of the Secretary in the Cumberland River basin if—

(1) the floating cabin—

(A) is in compliance with regulations for recreational vessels issued under chapter 43 of title 46, United States Code, and section 312 of the Federal Water Pollution Control Act (33 U.S.C. 1322);

(B) is located at a marina leased by the Corps of Engineers; and

(C) is maintained by the owner to required health and safety standards; and

(2) the Secretary has authorized the use of recreational vessels on such waters.

SEC. 1036. NON-FEDERAL PLANS TO PROVIDE ADDITIONAL FLOOD RISK REDUCTION.

(a) IN GENERAL.—If requested by a non-Federal interest, the Secretary shall carry out a locally preferred plan that provides a higher level of protection than a flood risk management project authorized under this Act if the Secretary determines that—

(1) the plan is technically feasible and environmentally acceptable; and

(2) the benefits of the plan exceed the costs of the plan.

(b) NON-FEDERAL COST SHARE.—If the Secretary carries out a locally preferred plan under subsection (a), the Federal share of the cost of the project shall be not greater than the share as provided by law for elements of the national economic development plan.

SEC. 1037. HURRICANE AND STORM DAMAGE REDUCTION.

(a) IN GENERAL.—Section 156 of the Water Resources Development Act of 1976 (42 U.S.C. 1962d–5f) is amended—

(1) by striking "The Secretary" and inserting the following:

"(a) IN GENERAL.—The Secretary"; and

(2) by adding at the end the following:

"(b) REVIEW.—Notwithstanding subsection (a), the Secretary shall, at the request of the non-Federal interest, carry out a study to determine the feasibility of extending the period of nourishment described in subsection (a) for a period not to exceed 15 additional years beyond the maximum period described in subsection (a).

"(c) PLAN FOR REDUCING RISK TO PEOPLE AND PROPERTY.—

"(1) IN GENERAL.—As part of the review described in subsection (b), the non-Federal interest shall submit to the Secretary a plan for reducing risk to people and property during the life of the project.

"(2) INCLUSION OF PLAN IN RECOMMENDATION TO CONGRESS.—The Secretary shall include the plan described in subsection (a) in the recommendations to Congress described in subsection (d).

"(d) REPORT TO CONGRESS.—Upon completion of the review described in subsection (b), the Secretary shall—

"(1) submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives any recommendations of the Secretary related to the review; and

"(2) include in the subsequent annual report to Congress required under section 7001 of the Water Resources Reform and Development Act of 2014, any recommendations that require specific congressional authorization.

"(e) SPECIAL RULE.—Notwithstanding any other provision of this section, for any existing authorized water resources development project for which the maximum period for nourishment described in subsection (a) will expire within the 5 year-period beginning on the date of enactment of the Water Resources Reform and Development Act of 2014, that project shall remain eligible for nourishment for an additional 3 years after the expiration of such period.".

(b) REVIEW OF AUTHORIZED PERIODIC NOURISHMENT AUTHORITY.—

(1) IN GENERAL.—Not later than 90 days after the date of enactment of this Act, the Secretary shall initiate a review of all authorized water resources development projects for which the Secretary is authorized to provide periodic nourishment under section 156 of the Water Resources Development Act of 1976 (42 U.S.C. 1962d–5f).

(2) SCOPE OF REVIEW.—In carrying out the review under paragraph (1), the Secretary shall assess the Federal costs associated with that nourishment authority and the projected benefits of each project.

(3) REPORT TO CONGRESS.—Upon completion of the review under paragraph (1), the Secretary shall issue to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives and make publicly available a report on the results of that review, including any proposed changes the Secretary may recommend to the nourishment authority.

SEC. 1038. REDUCTION OF FEDERAL COSTS FOR HURRICANE AND STORM DAMAGE REDUCTION PROJECTS.

Section 204 of the Water Resources Development Act of 1992 (33 U.S.C. 2326) (as amended by section 1030(d)(1)) is amended—

(1) in subsection (a)—

(A) in paragraph (1), by inserting "or used in" after "obtained through";

(B) in paragraph (3)(C), by inserting "for the purposes of improving environmental conditions in marsh and littoral systems, stabilizing stream channels, enhancing shorelines, and supporting State and local risk management adaptation strategies" before the period at the end; and

(C) by adding at the end the following:

"(4) REDUCING COSTS.—To reduce or avoid Federal costs, the Secretary shall consider the beneficial use of dredged material in a manner that contributes to the maintenance of sediment resources in the nearby coastal system.";

(2) in subsection (d)—

(A) by striking the subsection designation and heading and inserting the following:

"(d) SELECTION OF DREDGED MATERIAL DISPOSAL METHOD FOR PURPOSES RELATED TO ENVIRONMENTAL RESTORATION OR STORM DAMAGE AND FLOOD REDUCTION.—"; and

(B) in paragraph (1), by striking "in relation to" and all that follows through the period at the end and inserting "in relation to—

"(A) the environmental benefits, including the benefits to the aquatic environment to be derived from the creation of wetlands and control of shoreline erosion; or

"(B) the flood and storm damage and flood reduction benefits, including shoreline protection, protection against loss of life, and damage to improved property."; and

(3) in subsection (e), by striking paragraph (1) and inserting the following:

"(1) cooperate with any State or group of States in the preparation of a comprehensive State or regional sediment management plan within the boundaries of the State or among States;".

SEC. 1039. INVASIVE SPECIES.

(a) AQUATIC SPECIES REVIEW.—

(1) REVIEW OF AUTHORITIES.—The Secretary, in consultation with the Director of the United States Fish and Wildlife Service, the Chairman of the Tennessee Valley Authority, and other applicable heads of Federal agencies, shall—

(A) carry out a review of existing Federal authorities relating to responding to invasive species, including aquatic weeds, aquatic snails, and other aquatic invasive species, that have an impact on water resources; and

(B) based on the review under subparagraph (A), make any recommendations to Congress and applicable State agencies for improving Federal and State laws to more effectively respond to the threats posed by those invasive species.

(2) FEDERAL INVESTMENT.—

(A) ASSESSMENT.—The Comptroller General of the United States shall conduct an assessment of the Federal costs of, and spending on, aquatic invasive species.

(B) CONTENTS.—The assessment conducted under subparagraph (A) shall include—

(i) identification of current Federal spending on, and projected future Federal costs of, operation and maintenance related to mitigating the impacts of aquatic invasive species on federally owned or operated facilities;

(ii) identification of current Federal spending on aquatic invasive species prevention;

(iii) analysis of whether spending identified in clause (ii) is adequate for the maintenance and protection of services provided by federally owned or operated facilities, based on the current spending and projected future costs identified in clause (i); and

(iv) review of any other aspect of aquatic invasive species prevention or mitigation determined appropriate by the Comptroller General.

(C) FINDINGS.—Not later than 1 year after the date of enactment of this Act, the Comptroller General shall submit to the Committee on Environment and Public Works and the Committee on Energy and Natural Resources of the Senate and the Committee on Transportation and Infrastructure and the Committee on Natural Resources of the House of Representatives a report containing the findings of the assessment conducted under subparagraph (A).

(b) AQUATIC INVASIVE SPECIES PREVENTION.—

(1) MULTIAGENCY EFFORT TO SLOW THE SPREAD OF ASIAN CARP IN THE UPPER MISSISSIPPI AND OHIO RIVER BASINS AND TRIBUTARIES.—

(A) IN GENERAL.—The Director of the United States Fish and Wildlife Service, in coordination with the Secretary, the Director of the National Park Service, and the Director of the United States Geological Survey, shall lead a multiagency effort to slow the spread of Asian carp in the Upper Mississippi and Ohio River basins and tributaries by providing technical assistance, coordination, best practices, and support to State and local governments in carrying out activities designed to slow, and eventually eliminate, the threat posed by Asian carp.

(B) BEST PRACTICES.—To the maximum extent practicable, the multiagency effort shall apply lessons learned and best practices such as those described in the document prepared by the Asian Carp Working Group entitled "Management and Control Plan for Bighead, Black, Grass, and Silver Carps in the United States" and dated November 2007, and the document prepared by the Asian Carp Regional Coordinating Committee entitled "FY 2012 Asian Carp Control Strategy Framework" and dated February 2012.

(2) REPORT TO CONGRESS.—

(A) IN GENERAL.—Not later than December 31 of each year, the Director of the United States Fish and Wildlife Service, in coordination with the Secretary, shall submit to the Committee on Appropriations and the Committee

on Environment and Public Works of the Senate and the Committee on Appropriations, the Committee on Natural Resources, and the Committee on Transportation and Infrastructure of the House of Representatives and make publicly available a report describing the coordinated strategies established and progress made toward the goals of controlling and eliminating Asian carp in the Upper Mississippi and Ohio River basins and tributaries.

(B) CONTENTS.—Each report submitted under subparagraph (A) shall include—

(i) any observed changes in the range of Asian carp in the Upper Mississippi and Ohio River basins and tributaries during the 2-year period preceding submission of the report;

(ii) a summary of Federal agency efforts, including cooperative efforts with non-Federal partners, to control the spread of Asian carp in the Upper Mississippi and Ohio River basins and tributaries;

(iii) any research that the Director determines could improve the ability to control the spread of Asian carp;

(iv) any quantitative measures that the Director intends to use to document progress in controlling the spread of Asian carp; and

(v) a cross-cut accounting of Federal and non-Federal expenditures to control the spread of Asian carp.

(c) PREVENTION, GREAT LAKES AND MISSISSIPPI RIVER BASIN.—

(1) IN GENERAL.—The Secretary is authorized to implement measures recommended in the efficacy study authorized under section 3061 of the Water Resources Development Act of 2007 (121 Stat. 1121) or in interim reports, with any modifications or any emergency measures that the Secretary determines to be appropriate to prevent aquatic nuisance species from dispersing into the Great Lakes by way of any hydrologic connection between the Great Lakes and the Mississippi River Basin.

(2) NOTIFICATIONS.—The Secretary shall notify the Committees on Environment and Public Works and Appropriations of the Senate and the Committees on Transportation and Infrastructure and Appropriations of the House of Representatives any emergency actions taken pursuant to this subsection.

(d) PREVENTION AND MANAGEMENT.—Section 104 of the River and Harbor Act of 1958 (33 U.S.C. 610) is amended—

(1) in subsection (a)—

(A) in the first sentence, by striking "There is" and inserting the following:

"(1) IN GENERAL.—There is";

(B) in the second sentence, by striking "Local" and inserting the following:

"(2) LOCAL INTERESTS.—Local";

(C) in the third sentence, by striking "Costs" and inserting the following:

"(3) FEDERAL COSTS.—Costs"; and

(D) in paragraph (1) (as designated by subparagraph (A))—

(i) by striking "control and progressive," and inserting "prevention, control, and progressive"; and

(ii) by inserting "and aquatic invasive species" after "noxious aquatic plant growths";

(2) in subsection (b), in the first sentence, by striking "$15,000,000 annually" and inserting "$40,000,000, of which $20,000,000 shall be made available to implement subsection (d), annually"; and

(3) by inserting after subsection (c) the following:

"(d) WATERCRAFT INSPECTION STATIONS.—

"(1) IN GENERAL.—In carrying out this section, the Secretary may establish watercraft inspection stations in the Columbia River Basin to be located in the States of Idaho, Montana, Oregon, and Washington at locations, as determined by the Secretary, with the highest likelihood of preventing the spread of aquatic invasive species at reservoirs operated and maintained by the Secretary.

"(2) COST SHARE.—The non-Federal share of the cost of constructing, operating, and maintaining watercraft inspection stations described in paragraph (1) (including personnel costs) shall be—

"(A) 50 percent; and

"(B) provided by the State or local governmental entity in which such inspection station is located.

"(3) COORDINATION.—In carrying out this subsection, the Secretary shall consult and coordinate with—

"(A) the States described in paragraph (1);

"(B) Indian tribes; and

"(C) other Federal agencies, including—

"(i) the Department of Agriculture;

"(ii) the Department of Energy;

"(iii) the Department of Homeland Security;

"(iv) the Department of Commerce; and

"(v) the Department of the Interior.

"(e) MONITORING AND CONTINGENCY PLANNING.—In carrying out this section, the Secretary may—

"(1) carry out risk assessments of water resources facilities;

"(2) monitor for aquatic invasive species;

"(3) establish watershed-wide plans for expedited response to an infestation of aquatic invasive species; and

"(4) monitor water quality, including sediment cores and fish tissue samples.".

SEC. 1040. FISH AND WILDLIFE MITIGATION.

(a) IN GENERAL.—Section 906 of the Water Resources Development Act of 1986 (33 U.S.C. 2283) is amended—

(1) in subsection (d)—

(A) in paragraph (1)—

(i) in the first sentence—

(I) by inserting "for damages to ecological resources, including terrestrial and aquatic resources, and" after "mitigate";

(II) by inserting "ecological resources and" after "impact on"; and

(III) by inserting "without the implementation of mitigation measures" before the period; and

(ii) by inserting before the last sentence the following: "If the Secretary determines that mitigation to in-kind conditions is not possible, the Secretary shall

identify in the report the basis for that determination and the mitigation measures that will be implemented to meet the requirements of this section and the goals of section 307(a)(1) of the Water Resources Development Act of 1990 (33 U.S.C. 2317(a)(1)).";

(B) in paragraph (2)—

(i) in the heading, by striking "DESIGN" and inserting "SELECTION AND DESIGN";

(ii) by inserting "select and" after "shall"; and

(iii) by inserting "using a watershed approach" after "projects"; and

(C) in paragraph (3)—

(i) in subparagraph (A), by inserting ", at a minimum," after "complies with"; and

(ii) in subparagraph (B)—

(I) by striking clause (iii);

(II) by redesignating clauses (iv) and (v) as clauses (v) and (vi), respectively; and

(III) by inserting after clause (ii) the following:

"(iii) for projects where mitigation will be carried out by the Secretary—

"(I) a description of the land and interest in land to be acquired for the mitigation plan;

"(II) the basis for a determination that the land and interests are available for acquisition; and

"(III) a determination that the proposed interest sought does not exceed the minimum interest in land necessary to meet the mitigation requirements for the project;

"(iv) for projects where mitigation will be carried out through a third party mitigation arrangement in accordance with subsection (i)—

"(I) a description of the third party mitigation instrument to be used; and

"(II) the basis for a determination that the mitigation instrument can meet the mitigation requirements for the project;"; and

(2) by adding at the end the following:

"(h) PROGRAMMATIC MITIGATION PLANS.—

"(1) IN GENERAL.—The Secretary may develop programmatic mitigation plans to address the potential impacts to ecological resources, fish, and wildlife associated with existing or future Federal water resources development projects.

"(2) USE OF MITIGATION PLANS.—The Secretary shall, to the maximum extent practicable, use programmatic mitigation plans developed in accordance with this subsection to guide the development of a mitigation plan under subsection (d).

"(3) NON-FEDERAL PLANS.—The Secretary shall, to the maximum extent practicable and subject to all conditions of this subsection, use programmatic environmental plans developed by a State, a body politic of the State, which derives its powers from a State constitution, a government entity created by State legislation, or a local government, that meet the requirements of this subsection to address the potential environmental impacts of existing or future water resources development projects.

"(4) SCOPE.—A programmatic mitigation plan developed by the Secretary or an entity described in paragraph (3) to address potential impacts of existing or future water resources development projects shall, to the maximum extent practicable—

"(A) be developed on a regional, ecosystem, watershed, or statewide scale;

"(B) include specific goals for aquatic resource and fish and wildlife habitat restoration, establishment, enhancement, or preservation;

"(C) identify priority areas for aquatic resource and fish and wildlife habitat protection or restoration;

"(D) encompass multiple environmental resources within a defined geographical area or focus on a specific resource, such as aquatic resources or wildlife habitat; and

"(E) address impacts from all projects in a defined geographical area or focus on a specific type of project.

"(5) CONSULTATION.—The scope of the plan shall be determined by the Secretary or an entity described in paragraph (3), as appropriate, in consultation with the agency with jurisdiction over the resources being addressed in the environmental mitigation plan.

"(6) CONTENTS.—A programmatic environmental mitigation plan may include—

"(A) an assessment of the condition of environmental resources in the geographical area covered by the plan, including an assessment of recent trends and any potential threats to those resources;

"(B) an assessment of potential opportunities to improve the overall quality of environmental resources in the geographical area covered by the plan through strategic mitigation for impacts of water resources development projects;

"(C) standard measures for mitigating certain types of impacts;

"(D) parameters for determining appropriate mitigation for certain types of impacts, such as mitigation ratios or criteria for determining appropriate mitigation sites;

"(E) adaptive management procedures, such as protocols that involve monitoring predicted impacts over time and adjusting mitigation measures in response to information gathered through the monitoring;

"(F) acknowledgment of specific statutory or regulatory requirements that must be satisfied when determining appropriate mitigation for certain types of resources; and

"(G) any offsetting benefits of self-mitigating projects, such as ecosystem or resource restoration and protection.

"(7) PROCESS.—Before adopting a programmatic environmental mitigation plan for use under this subsection, the Secretary shall—

"(A) for a plan developed by the Secretary—

"(i) make a draft of the plan available for review and comment by applicable environmental resource agencies and the public; and

"(ii) consider any comments received from those agencies and the public on the draft plan; and

"(B) for a plan developed under paragraph (3), determine, not later than 180 days after receiving the plan, whether the plan meets the requirements of paragraphs (4) through (6) and was made available for public comment.

"(8) INTEGRATION WITH OTHER PLANS.—A programmatic environmental mitigation plan may be integrated with other plans, including watershed plans, ecosystem plans, species recovery plans, growth management plans, and land use plans.

"(9) CONSIDERATION IN PROJECT DEVELOPMENT AND PERMITTING.—If a programmatic environmental mitigation plan has been developed under this subsection, any Federal agency responsible for environmental reviews, permits, or approvals for a water resources development project may use the recommendations in that programmatic environmental mitigation plan when carrying out the responsibilities of the agency under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.).

"(10) PRESERVATION OF EXISTING AUTHORITIES.—Nothing in this subsection limits the use of programmatic approaches to reviews under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.).

"(11) MITIGATION FOR EXISTING PROJECTS.—Nothing in this subsection requires the Secretary to undertake additional mitigation for existing projects for which mitigation has already been initiated.

"(i) THIRD-PARTY MITIGATION ARRANGEMENTS.—

"(1) ELIGIBLE ACTIVITIES.—In accordance with all applicable Federal laws (including regulations), mitigation efforts carried out under this section may include—

"(A) participation in mitigation banking or other third-party mitigation arrangements, such as—

"(i) the purchase of credits from commercial or State, regional, or local agency-sponsored mitigation banks; and

"(ii) the purchase of credits from in-lieu fee mitigation programs; and

"(B) contributions to statewide and regional efforts to conserve, restore, enhance, and create natural habitats and wetlands if the Secretary determines that the contributions will ensure that the mitigation requirements of this section and the goals of section 307(a)(1) of the Water Resources Development Act of 1990 (33 U.S.C. 2317(a)(1)) will be met.

"(2) INCLUSION OF OTHER ACTIVITIES.—The banks, programs, and efforts described in paragraph (1) include any banks, programs, and efforts developed in accordance with applicable law (including regulations).

"(3) TERMS AND CONDITIONS.—In carrying out natural habitat and wetlands mitigation efforts under this section, contributions to the mitigation effort may—

"(A) take place concurrent with, or in advance of, the commitment of funding to a project; and

"(B) occur in advance of project construction only if the efforts are consistent with all applicable requirements of Federal law (including regulations) and water resources development planning processes.

"(4) PREFERENCE.—At the request of the non-Federal project sponsor, preference may be given, to the maximum extent practicable, to mitigating an environmental impact through the use of a mitigation bank, in-lieu fee, or other third-party mitigation arrangement, if the use of credits from the mitigation bank or in-lieu fee, or the other third-party mitigation arrangement for the project has been approved by the applicable Federal agency.".

(b) APPLICATION.—The amendments made by subsection (a) shall not apply to a project for which a mitigation plan has been completed as of the date of enactment of this Act.

(c) TECHNICAL ASSISTANCE.—

(1) IN GENERAL.—The Secretary may provide technical assistance to States and local governments to establish third-party mitigation instruments, including mitigation banks and in-lieu fee programs, that will help to target mitigation payments to high-priority ecosystem restoration actions.

(2) REQUIREMENTS.—In providing technical assistance under this subsection, the Secretary shall give priority to States and local governments that have developed State, regional, or watershed-based plans identifying priority restoration actions.

(3) MITIGATION INSTRUMENTS.—The Secretary shall seek to ensure any technical assistance provided under this subsection will support the establishment of mitigation instruments that will result in restoration of high-priority areas identified in the plans under paragraph (2).

SEC. 1041. MITIGATION STATUS REPORT.

Section 2036(b) of the Water Resources Development Act of 2007 (33 U.S.C. 2283a) is amended—

(1) by redesignating paragraph (3) as paragraph (4); and

(2) by inserting after paragraph (2) the following:

"(3) INFORMATION INCLUDED.—In reporting the status of all projects included in the report, the Secretary shall—

"(A) use a uniform methodology for determining the status of all projects included in the report;

"(B) use a methodology that describes both a qualitative and quantitative status for all projects in the report; and

"(C) provide specific dates for participation in the consultations required under section 906(d)(4)(B) of the Water Resources Development Act of 1986 (33 U.S.C. 2283(d)(4)(B)).".

SEC. 1042. REPORTS TO CONGRESS.

(a) IN GENERAL.—Subject to the availability of appropriations, the Secretary shall complete and submit to Congress by the applicable date required the reports that address public safety and enhanced local participation in project delivery described in subsection (b).

(b) REPORTS.—The reports referred to in subsection (a) are the reports required under—

(1) subparagraphs (A) and (B) of section 1043(a)(5);

(2) section 1046(a)(2)(B);

(3) section 210(e)(3) of the Water Resources Development Act of 1986 (33 U.S.C. 2238(e)(3)) (as amended by section 2102(a)); and

(4) section 7001.

(c) FAILURE TO PROVIDE A COMPLETED REPORT.—

(1) IN GENERAL.—Subject to subsection (d), if the Secretary fails to provide a report listed under subsection (b) by the date that is 180 days after the applicable date required for that report, $5,000 shall be reprogrammed from the General Expenses account of the civil works program of the Army Corps of Engineers into the account of the division of the Army Corps of Engineers with responsibility for completing that report.

(2) SUBSEQUENT REPROGRAMMING.—Subject to subsection (d), for each additional week after the date described in paragraph (1) in which a report described in that paragraph remains uncompleted and unsubmitted to Congress, $5,000 shall be reprogrammed from the General Expenses account of the civil works program of the Army Corps of Engineers into the account of the division of the Secretary of the Army with responsibility for completing that report.

(d) LIMITATIONS.—

(1) IN GENERAL.—For each report, the total amounts reprogrammed under subsection (c) shall not exceed, in any fiscal year, $50,000.

(2) AGGREGATE LIMITATION.—The total amount reprogrammed under subsection (c) in a fiscal year shall not exceed $200,000.

(e) NO FAULT OF THE SECRETARY.—Amounts shall not be reprogrammed under subsection (c) if the Secretary certifies in a letter to the applicable committees of Congress that—

(1) a major modification has been made to the content of the report that requires additional analysis for the Secretary to make a final decision on the report;

(2) amounts have not been appropriated to the agency under this Act or any other Act to carry out the report; or

(3) additional information is required from an entity other than the Corps of Engineers and is not available in a timely manner to complete the report by the deadline.

(f) LIMITATION.—The Secretary shall not reprogram funds to the General Expenses account of the civil works program of the Corps of Engineers for the loss of the funds.

SEC. 1043. NON-FEDERAL IMPLEMENTATION PILOT PROGRAM.

(a) NON-FEDERAL IMPLEMENTATION OF FEASIBILITY STUDIES.—

(1) IN GENERAL.—Not later than 180 days after the date of enactment of this Act, the Secretary shall establish and implement a pilot program to evaluate the cost-effectiveness and project delivery efficiency of allowing non-Federal interests to carry out feasibility studies for flood risk management, hurricane and storm damage reduction, aquatic ecosystem restoration, and coastal harbor and channel and inland navigation.

(2) PURPOSES.—The purposes of the pilot program are—

(A) to identify project delivery and cost-saving alternatives to the existing feasibility study process;

(B) to evaluate the technical, financial, and organizational efficiencies of a non-Federal interest carrying out a feasibility study of 1 or more projects; and

(C) to evaluate alternatives for the decentralization of the project planning, management, and operational decisionmaking process of the Corps of Engineers.

(3) ADMINISTRATION.—

(A) IN GENERAL.—On the request of a non-Federal interest, the Secretary may enter into an agreement with the non-Federal interest for the non-Federal interest to provide full project management control of a feasibility study for a project for—

(i) flood risk management;

(ii) hurricane and storm damage reduction, including levees, floodwalls, flood control channels, and water control structures;

(iii) coastal harbor and channel and inland navigation; and

(iv) aquatic ecosystem restoration.

(B) USE OF NON-FEDERAL FUNDS.—

(i) IN GENERAL.—A non-Federal interest that has entered into an agreement with the Secretary pursuant to subparagraph (A) may use non-Federal funds to carry out the feasibility study.

(ii) CREDIT.—The Secretary shall credit towards the non-Federal share of the cost of construction of a project for which a feasibility study is carried out under this subsection an amount equal to the portion of the cost of developing the study that would have been the responsibility of the Secretary, if the study were carried out by the Secretary, subject to the conditions that—

(I) non-Federal funds were used to carry out the activities that would have been the responsibility of the Secretary;

(II) the Secretary determines that the feasibility study complies with all applicable Federal laws and regulations; and

(III) the project is authorized by any provision of Federal law enacted after the date on which an agreement is entered into under subparagraph (A).

(C) TRANSFER OF FUNDS.—

(i) IN GENERAL.—After the date on which an agreement is executed pursuant to subparagraph (A), the Secretary may transfer to the non-Federal interest to carry out the feasibility study—

(I) if applicable, the balance of any unobligated amounts appropriated for the study, except that the Secretary shall retain sufficient amounts for the Corps of Engineers to carry out any responsibilities of the Corps of Engineers relating to the project and pilot program; and

(II) additional amounts, as determined by the Secretary, from amounts made available under paragraph (8), except that the total amount transferred to the non-Federal interest shall not exceed the updated estimate of the Federal share of the cost of the feasibility study.

(ii) ADMINISTRATION.—The Secretary shall include such provisions as the Secretary determines to be necessary in an agreement under subparagraph (A) to ensure that a non-Federal interest receiving Federal funds under this paragraph—

(I) has the necessary qualifications to administer those funds; and

(II) will comply with all applicable Federal laws (including regulations) relating to the use of those funds.

(D) NOTIFICATION.—The Secretary shall notify the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives on the initiation of each feasibility study under the pilot program.

(E) AUDITING.—The Secretary shall regularly monitor and audit each feasibility study carried out by a non-Federal interest under this section to ensure that the use of any funds transferred under subparagraph (C) are used in compliance with the agreement signed under subparagraph (A).

(F) TECHNICAL ASSISTANCE.—On the request of a non-Federal interest, the Secretary may provide technical assistance to the non-Federal interest relating to any aspect of the feasibility study, if the non-Federal interest contracts with the Secretary for the technical assistance and compensates the Secretary for the technical assistance.

(G) DETAILED PROJECT SCHEDULE.—Not later than 180 days after entering into an agreement under subparagraph (A), each non-Federal interest, to the maximum extent practicable, shall submit to the Secretary a detailed project schedule, based on full funding capability, that lists all deadlines for milestones relating to the feasibility study.

(4) COST SHARE.—Nothing in this subsection affects the cost-sharing requirement applicable on the day before the date of enactment of this Act to a feasibility study carried out under this subsection.

(5) REPORT.—

(A) IN GENERAL.—Not later than 2 years after the date of enactment of this Act, the Secretary shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives and make publicly available a report detailing the results of the pilot program carried out under this section, including—

(i) a description of the progress of the non-Federal interests in meeting milestones in detailed project schedules developed pursuant to paragraph (3)(G); and

(ii) any recommendations of the Secretary concerning whether the program or any component of the program should be implemented on a national basis.

(B) UPDATE.—Not later than 5 years after the date of enactment of this Act, the Secretary shall submit to the Committee on Environment and Public Works of the

Senate and the Committee on Transportation and Infrastructure of the House of Representatives an update of the report described in subparagraph (A).

(C) FAILURE TO MEET DEADLINE.—If the Secretary fails to submit a report by the required deadline under this paragraph, the Secretary shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a detailed explanation of why the deadline was missed and a projected date for submission of the report.

(6) ADMINISTRATION.—All laws and regulations that would apply to the Secretary if the Secretary were carrying out the feasibility study shall apply to a non-Federal interest carrying out a feasibility study under this subsection.

(7) TERMINATION OF AUTHORITY.—The authority to commence a feasibility study under this subsection terminates on the date that is 5 years after the date of enactment of this Act.

(8) AUTHORIZATION OF APPROPRIATIONS.—In addition to any amounts appropriated for a specific project, there is authorized to be appropriated to the Secretary to carry out the pilot program under this subsection, including the costs of administration of the Secretary, $25,000,000 for each of fiscal years 2015 through 2019.

(b) NON-FEDERAL PROJECT IMPLEMENTATION PILOT PROGRAM.—

(1) IN GENERAL.—Not later than 180 days after the date of enactment of this Act, the Secretary shall establish and implement a pilot program to evaluate the cost-effectiveness and project delivery efficiency of allowing non-Federal interests to carry out flood risk management, hurricane and storm damage reduction, coastal harbor and channel inland navigation, and aquatic ecosystem restoration projects.

(2) PURPOSES.—The purposes of the pilot program are—

(A) to identify project delivery and cost-saving alternatives that reduce the backlog of authorized Corps of Engineers projects;

(B) to evaluate the technical, financial, and organizational efficiencies of a non-Federal interest carrying out the design, execution, management, and construction of 1 or more projects; and

(C) to evaluate alternatives for the decentralization of the project management, design, and construction for authorized Corps of Engineers water resources projects.

(3) ADMINISTRATION.—

(A) IN GENERAL.—In carrying out the pilot program, the Secretary shall—

(i) identify a total of not more than 15 projects for flood risk management, hurricane and storm damage reduction (including levees, floodwalls, flood control channels, and water control structures), coastal harbor and channels, inland navigation, and aquatic ecosystem restoration that have been authorized for construction prior to the date of enactment of this Act, including—

(I) not more than 12 projects that—

(aa)(AA) have received Federal funds prior to the date of enactment of this Act; or

(BB) for more than 2 consecutive fiscal years, have an unobligated funding balance for that project in the Corps of Engineers construction account; and

(bb) to the maximum extent practicable, are located in each of the divisions of the Corps of Engineers; and

(II) not more than 3 projects that have not received Federal funds in the period beginning on the date on which the project was authorized and ending on the date of enactment of this Act;

(ii) notify the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives on the identification of each project under the pilot program;

(iii) in collaboration with the non-Federal interest, develop a detailed project management plan for each identified project that outlines the scope, budget, design, and construction resource requirements necessary for the non-Federal interest to execute the project, or a separable element of the project;

(iv) on the request of the non-Federal interest, enter into a project partnership agreement with the non-Federal interest for the non-Federal interest to provide full project management control for construction of the project, or a separable element of the project, in accordance with plans approved by the Secretary;

(v) following execution of the project partnership agreement, transfer to the non-Federal interest to carry out construction of the project, or a separable element of the project—

(I) if applicable, the balance of the unobligated amounts appropriated for the project, except that the Secretary shall retain sufficient amounts for the Corps of Engineers to carry out any responsibilities of the Corps of Engineers relating to the project and pilot program; and

(II) additional amounts, as determined by the Secretary, from amounts made available under paragraph (8), except that the total amount transferred to the non-Federal interest shall not exceed the updated estimate of the Federal share of the cost of construction, including any required design; and

(vi) regularly monitor and audit each project being constructed by a non-Federal interest under this section to ensure that the construction activities are carried out in compliance with the plans approved by the Secretary and that the construction costs are reasonable.

(B) DETAILED PROJECT SCHEDULE.—Not later than 180 days after entering into an agreement under subparagraph (A)(iv), each non-Federal interest, to the maximum extent practicable, shall submit to the Secretary a detailed project

schedule, based on estimated funding levels, that lists all deadlines for each milestone in the construction of the project.

(C) TECHNICAL ASSISTANCE.—On the request of a non-Federal interest, the Secretary may provide technical assistance to the non-Federal interest, if the non-Federal interest contracts with and compensates the Secretary for the technical assistance relating to—

(i) any study, engineering activity, and design activity for construction carried out by the non-Federal interest under this subsection; and

(ii) expeditiously obtaining any permits necessary for the project.

(4) COST SHARE.—Nothing in this subsection affects the cost-sharing requirement applicable on the day before the date of enactment of this Act to a project carried out under this subsection.

(5) REPORT.—

(A) IN GENERAL.—Not later than 3 years after the date of enactment of this Act, the Secretary shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives and make publicly available a report detailing the results of the pilot program carried out under this subsection, including—

(i) a description of the progress of non-Federal interests in meeting milestones in detailed project schedules developed pursuant to paragraph (2)(B); and

(ii) any recommendations of the Secretary concerning whether the program or any component of the program should be implemented on a national basis.

(B) UPDATE.—Not later than 5 years after the date of enactment of this Act, the Secretary shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives an update of the report described in subparagraph (A).

(C) FAILURE TO MEET DEADLINE.—If the Secretary fails to submit a report by the required deadline under this paragraph, the Secretary shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a detailed explanation of why the deadline was missed and a projected date for submission of the report.

(6) ADMINISTRATION.—All laws and regulations that would apply to the Secretary if the Secretary were carrying out the project shall apply to a non-Federal interest carrying out a project under this subsection.

(7) TERMINATION OF AUTHORITY.—The authority to commence a project under this subsection terminates on the date that is 5 years after the date of enactment of this Act.

(8) AUTHORIZATION OF APPROPRIATIONS.—In addition to any amounts appropriated for a specific project, there is authorized

to be appropriated to the Secretary to carry out the pilot program under this subsection, including the costs of administration of the Secretary, $25,000,000 for each of fiscal years 2015 through 2019.

SEC. 1044. INDEPENDENT PEER REVIEW.

(a) MANDATORY PROJECT STUDIES SUBJECT TO PEER REVIEW.—Section 2034(a)(3)(A)(i) of the Water Resources Development Act of 2007 (33 U.S.C. 2343(a)(3)(A)(i)) is amended by striking "$45,000,000" and inserting "$200,000,000".

(b) TIMING OF PEER REVIEW.—Section 2034(b) of the Water Resources Development Act of 2007 (33 U.S.C. 2343(b)) is amended—

(1) by redesignating paragraph (3) as paragraph (4); and

(2) by inserting after paragraph (2) the following:

"(3) REASONS FOR TIMING.—If the Chief of Engineers does not initiate a peer review for a project study at a time described in paragraph (2), the Chief shall—

"(A) not later than 7 days after the date on which the Chief of Engineers determines not to initiate a peer review—

"(i) notify the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives of that decision; and

"(ii) make publicly available, including on the Internet, the reasons for not conducting the review; and

"(B) include the reasons for not conducting the review in the decision document for the project study.".

(c) ESTABLISHMENT OF PANELS.—Section 2034(c) of the Water Resources Development Act of 2007 (33 U.S.C. 2343(c)) is amended by striking paragraph (4) and inserting the following:

"(4) CONGRESSIONAL AND PUBLIC NOTIFICATION.—Following the identification of a project study for peer review under this section, but prior to initiation of the review by the panel of experts, the Chief of Engineers shall, not later than 7 days after the date on which the Chief of Engineers determines to conduct a review—

"(A) notify the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives of the review conducted under this section; and

"(B) make publicly available, including on the Internet, information on—

"(i) the dates scheduled for beginning and ending the review;

"(ii) the entity that has the contract for the review; and

"(iii) the names and qualifications of the panel of experts.".

(d) RECOMMENDATIONS OF PANEL.—Section 2034(f) of the Water Resources Development Act of 2007 (33 U.S.C. 2343(f)) is amended by striking paragraph (2) and inserting the following:

"(2) PUBLIC AVAILABILITY AND SUBMISSION TO CONGRESS.—After receiving a report on a project study from a panel of experts under this section, the Chief of Engineers shall make

available to the public, including on the Internet, and submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives—

"(A) a copy of the report not later than 7 days after the date on which the report is delivered to the Chief of Engineers; and

"(B) a copy of any written response of the Chief of Engineers on recommendations contained in the report not later than 3 days after the date on which the response is delivered to the Chief of Engineers.

"(3) INCLUSION IN PROJECT STUDY.—A report on a project study from a panel of experts under this section and the written response of the Chief of Engineers shall be included in the final decision document for the project study.".

(e) APPLICABILITY.—Section 2034(h)(2) of the Water Resources Development Act of 2007 (33 U.S.C. 2343(h)(2)) is amended by striking "7 years" and inserting "12 years".

SEC. 1045. REPORT ON SURFACE ELEVATIONS AT DROUGHT AFFECTED LAKES.

(a) IN GENERAL.—Not later than 180 days after the date of enactment of this Act, the Secretary, in coordination with the Federal Energy Regulatory Commission (referred to in this section as "FERC"), shall initiate an assessment of the effects of drought conditions on lakes managed by the Secretary that are affected by FERC-licensed reservoirs, which shall include an assessment of—

(1) lake levels and rule curves in areas of previous, current, and prolonged drought; and

(2) the effect the long-term FERC licenses have on the ability of the Secretary to manage lakes for hydropower generation, navigation, flood protection, water supply, fish and wildlife, and recreation.

(b) REPORT.—The Secretary, in coordination with the FERC, shall submit to Congress and make publicly available a report on the assessment carried out under subsection (a).

SEC. 1046. RESERVOIR OPERATIONS AND WATER SUPPLY.

(a) DAM OPTIMIZATION.—

(1) DEFINITION OF PROJECT.—In this subsection, the term "project" means a water resources development project that is operated and maintained by the Secretary.

(2) REPORTS.—

(A) ASSESSMENT OF WATER SUPPLY IN ARID REGIONS.—

(i) IN GENERAL.—The Secretary shall conduct an assessment of the management practices, priorities, and authorized purposes at Corps of Engineers reservoirs in arid regions to determine the effects of such practices, priorities, and purposes on water supply during periods of drought.

(ii) INCLUSIONS.—The assessment under clause (i) shall identify actions that can be carried out within the scope of existing authorities of the Secretary to increase project flexibility for the purpose of mitigating drought impacts.

(iii) REPORT.—Not later than 1 year after the date of enactment of this Act, the Secretary shall submit

to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives and make publicly available a report on the results of the assessment.

(B) UPDATED REPORT.—

(i) IN GENERAL.—Not later than 2 years after the date of enactment of this Act, the Secretary shall update and make publicly available the report entitled "Authorized and Operating Purposes of Corps of Engineers Reservoirs" and dated July 1992, which was produced pursuant to section 311 of the Water Resources Development Act of 1990 (104 Stat. 4639).

(ii) INCLUSIONS.—The updated report described in clause (i) shall—

(I) include—

(aa) the date on which the most recent review of project operations was conducted and any recommendations of the Secretary relating to that review the Secretary determines to be significant;

(bb) the activities carried out pursuant to each such review to improve the efficiency of operations and maintenance and to improve project benefits consistent with authorized purposes;

(cc) the degree to which reviews of project operations and subsequent activities pursuant to completed reviews complied with the policies and requirements of applicable law and regulations; and

(dd) a plan for reviewing the operations of individual projects, including a detailed schedule for future reviews of project operations, that—

(AA) complies with the polices and requirements of applicable law and regulations;

(BB) gives priority to reviews and activities carried out pursuant to such plan where the Secretary determines that there is support for carrying out those reviews and activities; and

(CC) ensures that reviews and activities are carried out pursuant to such plan;

(II) be coordinated with appropriate Federal, State, and local agencies and those public and private entities that the Secretary determines may be affected by those reviews or activities;

(III) not supersede or modify any written agreement between the Federal Government and a non-Federal interest that is in effect on the date of enactment of this Act;

(IV) not supersede or authorize any amendment to a multistate water control plan, including the Missouri River Master Water Control Manual (as in effect on the date of enactment of this Act);

(V) not affect any water right in existence on the date of enactment of this Act;

(VI) not preempt or affect any State water law or interstate compact governing water;

(VII) not affect any authority of a State, as in effect on the date of enactment of this Act, to manage water resources within that State; and

(VIII) comply with section 301 of the Water Supply Act of 1958 (43 U.S.C. 390b).

(3) GENERAL ACCOUNTABILITY OFFICE REPORT TO CONGRESS.—The Comptroller General shall—

(A) conduct an audit to determine—

(i) whether reviews of project operations carried out by the Secretary prior to the date of enactment of this Act complied with the policies and requirements of applicable law and regulations; and

(ii) whether the plan developed by the Secretary pursuant to paragraph (2)(B)(ii)(I)(dd) complies with this subsection and with the policies and requirements of applicable law and regulation; and

(B) not later than 2 years after the date of enactment of this Act, submit to Congress a report that—

(i) summarizes the results of the audit required by subparagraph (A);

(ii) includes an assessment of whether existing practices for managing and reviewing project operations could result in greater efficiencies that would enable the Corps of Engineers to better prepare for, contain, and respond to flood, storm, and drought conditions; and

(iii) includes recommendations for improving the review of project operations to improve the efficiency and effectiveness of such operations and to better achieve authorized purposes while enhancing overall project benefits.

(4) INTERAGENCY AND COOPERATIVE AGREEMENTS.—The Secretary may enter into interagency agreements with other Federal agencies and cooperative agreements with non-Federal entities to carry out this subsection and reviews of project operations or activities resulting from those reviews.

(5) FUNDING.—

(A) IN GENERAL.—The Secretary may use to carry out this subsection, including any reviews of project operations identified in the plan developed under paragraph (2)(B)(ii)(I)(dd), amounts made available to the Secretary.

(B) FUNDING FROM OTHER SOURCES.—The Secretary may accept and expend amounts from non-Federal entities and other Federal agencies to carry out this subsection and reviews of project operations or activities resulting from those reviews.

(6) EFFECT OF SUBSECTION.—

(A) IN GENERAL.—Nothing in this subsection changes the authorized purpose of any Corps of Engineers dam or reservoir.

(B) ADMINISTRATION.—The Secretary may carry out any recommendations and activities under this subsection pursuant to existing law.

(b) IMPROVING PLANNING AND ADMINISTRATION OF WATER SUPPLY STORAGE.—

(1) IN GENERAL.—For each water supply feature of a reservoir managed by the Secretary, the Secretary shall notify the applicable non-Federal interests before each fiscal year of the anticipated operation and maintenance activities for that fiscal year and each of the subsequent 4 fiscal years (including the cost of those activities) for which the non-Federal interests are required to contribute amounts.

(2) CLARIFICATION.—The information provided to a non-Federal interest under paragraph (1) shall—

(A) be an estimate which the non-Federal interest may use for planning purposes; and

(B) not be construed as or relied upon by the non-Federal interest as the actual amounts that the non-Federal interest will be required to contribute.

(c) SURPLUS WATER STORAGE.—

(1) IN GENERAL.—The Secretary shall not charge a fee for surplus water under a contract entered into pursuant to section 6 of the Act of December 22, 1944 (commonly known as the "Flood Control Act of 1944") (33 U.S.C. 708) if the contract is for surplus water stored in the Upper Missouri Mainstem Reservoirs.

(2) OFFSET.—

(A) IN GENERAL.—Subject to subparagraph (B), of any amounts made available to the Secretary to carry out activities under the heading "OPERATION AND MAINTENANCE" under the heading "CORPS OF ENGINEERS–CIVIL" that remain unobligated as of the date of enactment of this Act, $5,000,000 is rescinded.

(B) RESTRICTION.—No amounts that have been designated by Congress as being for emergency requirements pursuant to section 251(b)(2)(A)(i) of the Balanced Budget and Emergency Deficit Control Act of 1985 (2 U.S.C. 901(b)(2)(A)(i)) shall be rescinded under subparagraph (A).

(3) LIMITATION.—The limitation provided under paragraph (1) shall expire on the date that is 10 years after the date of enactment of this Act.

(4) APPLICABILITY.—Nothing in this subsection—

(A) affects the authority of the Secretary under section 2695 of title 10, United States Code, to accept funds or to cover the administrative expenses relating to certain real property transactions; or

(B) affects the application of section 6 of the Act of December 22, 1944 (commonly known as the "Flood Control Act of 1944") (33 U.S.C. 708) to surplus water stored outside of the Upper Missouri Mainstem Reservoirs.

(d) FUTURE WATER SUPPLY.—Section 301 of the Water Supply Act of 1958 (43 U.S.C. 390b) is amended—

(1) by redesignating subsections (c) and (d) as subsections (d) and (e), respectively; and

(2) by inserting after subsection (b) the following:

"(c) RELEASE OF FUTURE WATER STORAGE.—

"(1) ESTABLISHMENT OF 10-YEAR PLANS FOR THE UTILIZATION OF FUTURE STORAGE.—

"(A) IN GENERAL.—For the period beginning 180 days after the date of enactment of this paragraph and ending

on January 1, 2016, the Secretary may accept from a State or local interest a plan for the utilization of allocated water storage for future use under this Act.

"(B) CONTENTS.—A plan submitted under subparagraph (A) shall include—

"(i) a 10-year timetable for the conversion of future use storage to present use; and

"(ii) a schedule of actions that the State or local interest agrees to carry out over a 10-year period, in cooperation with the Secretary, to seek new and alternative users of future water storage that is contracted to the State or local interest on the date of enactment of this paragraph.

"(2) FUTURE WATER STORAGE.—For water resource development projects managed by the Secretary, a State or local interest that the Secretary determines has complied with paragraph (1) may request from the Secretary a release to the United States of any right of the State or local interest to future water storage under this Act that was allocated for future use water supply prior to November 17, 1986.

"(3) ADMINISTRATION.—

"(A) IN GENERAL.—Not later than 180 days after receiving a request under paragraph (2), the Secretary shall provide to the applicable State or local interest a written decision on whether the Secretary recommends releasing future water storage rights.

"(B) RECOMMENDATION.—If the Secretary recommends releasing future water storage rights, the Secretary shall include that recommendation in the annual plan submitted under section 7001 of the Water Resources Reform and Development Act of 2014.

"(4) SAVINGS CLAUSE.—Nothing in this subsection authorizes the Secretary to release a State or local interest from a contractual obligation unless specifically authorized by Congress.".

SEC. 1047. SPECIAL USE PERMITS.

(a) SPECIAL USE PERMITS.—

(1) IN GENERAL.—The Secretary may issue special permits for uses such as group activities, recreation events, motorized recreation vehicles, and such other specialized recreation uses as the Secretary determines to be appropriate, subject to such terms and conditions as the Secretary determines to be in the best interest of the Federal Government.

(2) FEES.—

(A) IN GENERAL.—In carrying out this subsection, the Secretary may—

(i) establish and collect fees associated with the issuance of the permits described in paragraph (1); or

(ii) accept in-kind services in lieu of those fees.

(B) OUTDOOR RECREATION EQUIPMENT.—The Secretary may establish and collect fees for the provision of outdoor recreation equipment and services for activities described in paragraph (1) at public recreation areas located at lakes and reservoirs operated by the Corps of Engineers.

(C) USE OF FEES.—Any fees generated pursuant to this subsection shall be—

(i) retained at the site collected; and

(ii) available for use, without further appropriation, solely for administering the special permits under this subsection and carrying out related operation and maintenance activities at the site at which the fees are collected.

(b) COOPERATIVE MANAGEMENT.—

(1) PROGRAM.—

(A) IN GENERAL.—Subject to subparagraph (B), the Secretary may enter into an agreement with a State or local government to provide for the cooperative management of a public recreation area if—

(i) the public recreation area is located—

(I) at a lake or reservoir operated by the Corps of Engineers; and

(II) adjacent to or near a State or local park or recreation area; and

(ii) the Secretary determines that cooperative management between the Corps of Engineers and a State or local government agency of a portion of the Corps of Engineers recreation area or State or local park or recreation area will allow for more effective and efficient management of those areas.

(B) RESTRICTION.—The Secretary may not transfer administration responsibilities for any public recreation area operated by the Corps of Engineers.

(2) ACQUISITION OF GOODS AND SERVICES.—The Secretary may acquire from or provide to a State or local government with which the Secretary has entered into a cooperative agreement under paragraph (1) goods and services to be used by the Secretary and the State or local government in the cooperative management of the areas covered by the agreement.

(3) ADMINISTRATION.—The Secretary may enter into 1 or more cooperative management agreements or such other arrangements as the Secretary determines to be appropriate, including leases or licenses, with non-Federal interests to share the costs of operation, maintenance, and management of recreation facilities and natural resources at recreation areas that are jointly managed and funded under this subsection.

(c) USE OF FUNDS.—

(1) IN GENERAL.—If the Secretary determines that it is in the public interest for purposes of enhancing recreation opportunities at Corps of Engineers water resources development projects, the Secretary may use funds made available to the Secretary to support activities carried out by State, local, and tribal governments and such other public or private nonprofit entities as the Secretary determines to be appropriate.

(2) COOPERATIVE AGREEMENTS.—Any use of funds pursuant to this subsection shall be carried out through the execution of a cooperative agreement, which shall contain such terms and conditions as the Secretary determines to be necessary in the public interest.

(d) SERVICES OF VOLUNTEERS.—Chapter IV of title I of Public Law 98–63 (33 U.S.C. 569c) is amended in the first sentence by inserting ", including expenses relating to uniforms, transportation,

lodging, and the subsistence of those volunteers," after "incidental expenses".

(e) TRAINING AND EDUCATIONAL ACTIVITIES.—Section 213(a) of the Water Resources Development Act of 2000 (33 U.S.C. 2339) is amended by striking "at" and inserting "about".

SEC. 1048. AMERICA THE BEAUTIFUL NATIONAL PARKS AND FEDERAL RECREATIONAL LANDS PASS PROGRAM.

The Secretary may participate in the America the Beautiful National Parks and Federal Recreational Lands Pass program in the same manner as the National Park Service, the Bureau of Land Management, the United States Fish and Wildlife Service, the Forest Service, and the Bureau of Reclamation, including the provision of free annual passes to active duty military personnel and dependents.

SEC. 1049. APPLICABILITY OF SPILL PREVENTION, CONTROL, AND COUNTERMEASURE RULE.

(a) DEFINITIONS.—In this section:

(1) ADMINISTRATOR.—The term "Administrator" means the Administrator of the Environmental Protection Agency.

(2) FARM.—The term "farm" has the meaning given the term in section 112.2 of title 40, Code of Federal Regulations (or successor regulations).

(3) GALLON.—The term "gallon" means a United States gallon.

(4) OIL.—The term "oil" has the meaning given the term in section 112.2 of title 40, Code of Federal Regulations (or successor regulations).

(5) OIL DISCHARGE.—The term "oil discharge" has the meaning given the term "discharge" in section 112.2 of title 40, Code of Federal Regulations (or successor regulations).

(6) REPORTABLE OIL DISCHARGE HISTORY.—

(A) IN GENERAL.—Subject to subparagraph (B), the term "reportable oil discharge history" means a single oil discharge, as described in section 112.1(b) of title 40, Code of Federal Regulations (including successor regulations), that exceeds 1,000 gallons or 2 oil discharges, as described in section 112.1(b) of title 40, Code of Federal Regulations (including successor regulations), that each exceed 42 gallons within any 12-month period—

(i) in the 3 years prior to the certification date of the Spill Prevention, Control, and Countermeasure plan (as described in section 112.3 of title 40, Code of Federal Regulations (including successor regulations); or

(ii) since becoming subject to part 112 of title 40, Code of Federal Regulations, if the facility has been in operation for less than 3 years.

(B) EXCLUSIONS.—The term "reportable oil discharge history" does not include an oil discharge, as described in section 112.1(b) of title 40, Code of Federal Regulations (including successor regulations), that is the result of a natural disaster, an act of war, or terrorism.

(7) SPILL PREVENTION, CONTROL, AND COUNTERMEASURE RULE.—The term "Spill Prevention, Control, and Countermeasure rule" means the regulation, including amendments,

promulgated by the Administrator under part 112 of title 40, Code of Federal Regulations (or successor regulations).

(b) CERTIFICATION.—In implementing the Spill Prevention, Control, and Countermeasure rule with respect to any farm, the Administrator shall—

(1) require certification by a professional engineer for a farm with—

(A) an individual tank with an aboveground storage capacity greater than 10,000 gallons;

(B) an aggregate aboveground storage capacity greater than or equal to 20,000 gallons; or

(C) a reportable oil discharge history; or

(2) allow certification by the owner or operator of the farm (via self-certification) for a farm with—

(A) an aggregate aboveground storage capacity less than 20,000 gallons and greater than the lesser of—

(i) 6,000 gallons; and

(ii) the adjustment quantity established under subsection (d)(2); and

(B) no reportable oil discharge history; and

(3) not require compliance with the rule by any farm—

(A) with an aggregate aboveground storage capacity greater than 2,500 gallons and less than the lesser of—

(i) 6,000 gallons; and

(ii) the adjustment quantity established under subsection (d)(2); and

(B) no reportable oil discharge history; and

(4) not require compliance with the rule by any farm with an aggregate aboveground storage capacity of less than 2,500 gallons.

(c) CALCULATION OF AGGREGATE ABOVEGROUND STORAGE CAPACITY.—For purposes of subsection (b), the aggregate aboveground storage capacity of a farm excludes—

(1) all containers on separate parcels that have a capacity that is 1,000 gallons or less; and

(2) all containers holding animal feed ingredients approved for use in livestock feed by the Commissioner of Food and Drugs.

(d) STUDY.—

(1) IN GENERAL.—Not later than 1 year after the date of enactment of this Act, the Administrator, in consultation with the Secretary of Agriculture, shall conduct a study to determine the appropriate exemption under paragraphs (2) and (3) of subsection (b), which shall be not more than 6,000 gallons and not less than 2,500 gallons, based on a significant risk of discharge to water.

(2) ADJUSTMENT.—Not later than 18 months after the date on which the study described in paragraph (1) is complete, the Administrator, in consultation with the Secretary of Agriculture, shall promulgate a rule to adjust the exemption levels described in paragraphs (2) and (3) of subsection (b) in accordance with the study.

SEC. 1050. NAMINGS.

(a) DONALD G. WALDON LOCK AND DAM.—It is the sense of Congress that, at an appropriate time and in accordance with

the rules of the Senate and the House of Representatives, to recognize the contributions of Donald G. Waldon, whose selfless determination and tireless work, while serving as administrator of the Tennessee-Tombigbee Waterway for 21 years, contributed greatly to the realization and success of the Tennessee-Tombigbee Waterway Development Compact, that the lock and dam located at mile 357.5 on the Tennessee-Tombigbee Waterway should be known and designated as the "Donald G. Waldon Lock and Dam".

(b) REDESIGNATION OF LOWER MISSISSIPPI RIVER MUSEUM AND RIVERFRONT INTERPRETIVE SITE.—

(1) IN GENERAL.—Section 103(c)(1) of the Water Resources Development Act of 1992 (106 Stat. 4811) is amended by striking "Lower Mississippi River Museum and Riverfront Interpretive Site" and inserting "Jesse Brent Lower Mississippi River Museum and Riverfront Interpretive Site".

(2) REFERENCES.—Any reference in a law, map, regulation, document, paper, or other record of the United States to the museum and interpretive site referred to in paragraph (1) shall be deemed to be a reference to the "Jesse Brent Lower Mississippi River Museum and Riverfront Interpretive Site".

(c) JERRY F. COSTELLO LOCK AND DAM.—

(1) REDESIGNATION.—The lock and dam located in Modoc, Illinois, authorized by the Act of July 3, 1930 (46 Stat. 927), and commonly known as the Kaskaskia Lock and Dam, is redesignated as the "Jerry F. Costello Lock and Dam".

(2) REFERENCES.—Any reference in a law, map, regulation, document, paper, or other record of the United States to the lock and dam referred to in section 1 shall be deemed to be a reference to the "Jerry F. Costello Lock and Dam".

SEC. 1051. INTERSTATE WATER AGREEMENTS AND COMPACTS.

(a) WATER SUPPLY.—Section 301 of the Water Supply Act of 1958 (43 U.S.C. 390b) (as amended by section 1046(d)) is amended by adding at the end the following:

"(f) The Committees of jurisdiction are very concerned about the operation of projects in the Apalachicola-Chattahoochee-Flint River System and the Alabama-Coosa-Tallapoosa River System, and further, the Committees of jurisdiction recognize that this ongoing water resources dispute raises serious concerns related to the authority of the Secretary of the Army to allocate substantial storage at projects to provide local water supply pursuant to the Water Supply Act of 1958 absent congressional approval. Interstate water disputes of this nature are more properly addressed through interstate water agreements that take into consideration the concerns of all affected States including impacts to other authorized uses of the projects, water supply for communities and major cities in the region, water quality, freshwater flows to communities, rivers, lakes, estuaries, and bays located downstream of projects, agricultural uses, economic development, and other appropriate concerns. To that end, the Committees of jurisdiction strongly urge the Governors of the affected States to reach agreement on an interstate water compact as soon as possible, and we pledge our commitment to work with the affected States to ensure prompt consideration and approval of any such agreement. Absent such action, the Committees of jurisdiction should consider appropriate legislation to address these matters including any necessary clarifications to

the Water Supply Act of 1958 or other law. This subsection does not alter existing rights or obligations under law.".

(b) SENSE OF CONGRESS REGARDING INTERSTATE WATER AGREEMENTS AND COMPACTS.—

(1) FINDINGS.—Congress finds the following:

(A) States and local interests have primary responsibility for developing water supplies for domestic, municipal, industrial, and other purposes.

(B) The Federal Government cooperates with States and local interests in developing water supplies through the construction, maintenance, and operation of Federal water resources development projects.

(C) Interstate water disputes are most properly addressed through interstate water agreements or compacts that take into consideration the concerns of all affected States.

(2) SENSE OF CONGRESS.—It is the sense of Congress that—

(A) Congress and the Secretary should urge States to reach agreement on interstate water agreements and compacts;

(B) at the request of the Governor of a State, the Secretary should facilitate and assist in the development of an interstate water agreement or compact;

(C) Congress should provide prompt consideration of interstate water agreements and compacts; and

(D) the Secretary should adopt policies and implement procedures for the operation of reservoirs of the Corps of Engineers that are consistent with interstate water agreements and compacts.

SEC. 1052. SENSE OF CONGRESS REGARDING WATER RESOURCES DEVELOPMENT BILLS.

It is the sense of Congress that, because the missions of the Corps of Engineers are unique and benefit all individuals in the United States and because water resources development projects are critical to maintaining economic prosperity, national security, and environmental protection, Congress should consider a water resources development bill not less than once every Congress.

TITLE II—NAVIGATION

Subtitle A—Inland Waterways

SEC. 2001. DEFINITIONS.

In this title:

(1) INLAND WATERWAYS TRUST FUND.—The term "Inland Waterways Trust Fund" means the Inland Waterways Trust Fund established by section 9506(a) of the Internal Revenue Code of 1986.

(2) QUALIFYING PROJECT.—The term "qualifying project" means any construction or major rehabilitation project for navigation infrastructure of the inland and intracoastal waterways that is—

(A) authorized before, on, or after the date of enactment of this Act;

(B) not completed on the date of enactment of this Act; and

(C) funded at least in part from the Inland Waterways Trust Fund.

SEC. 2002. PROJECT DELIVERY PROCESS REFORMS.

(a) REQUIREMENTS FOR QUALIFYING PROJECTS.—With respect to each qualifying project, the Secretary shall require—

(1) for each project manager, that—

(A) the project manager have formal project management training and certification; and

(B) the project manager be assigned from among personnel certified by the Chief of Engineers; and

(2) for an applicable cost estimation, that—

(A) the Secretary utilize a risk-based cost estimate with a confidence level of at least 80 percent; and

(B) the cost estimate be developed—

(i) for a qualifying project that requires an increase in the authorized amount in accordance with section 902 of the Water Resources Development Act of 1986 (33 U.S.C. 2280), during the preparation of a post-authorization change report or other similar decision document;

(ii) for a qualifying project for which the first construction contract has not been awarded, prior to the award of the first construction contract;

(iii) for a qualifying project without a completed feasibility report in accordance with section 905 of the Water Resources Development Act of 1986 (33 U.S.C. 2282), prior to the completion of such a report; and

(iv) for a qualifying project with a completed feasibility report in accordance with section 905 of the Water Resources Development Act of 1986 (33 U.S.C. 2282) that has not yet been authorized, during design for the qualifying project.

(b) ADDITIONAL PROJECT DELIVERY PROCESS REFORMS.—Not later than 18 months after the date of enactment of this Act, the Secretary shall—

(1) establish a system to identify and apply on a continuing basis best management practices from prior or ongoing qualifying projects to improve the likelihood of on-time and on-budget completion of qualifying projects;

(2) evaluate early contractor involvement acquisition procedures to improve on-time and on-budget project delivery performance; and

(3) implement any additional measures that the Secretary determines will achieve the purposes of this subtitle, including—

(A) the implementation of applicable practices and procedures developed pursuant to management by the Secretary of an applicable military construction program;

(B) the development and use of a portfolio of standard designs for inland navigation locks, incorporating the use of a center of expertise for the design and review of qualifying projects;

(C) the use of full-funding contracts or formulation of a revised continuing contracts clause; and

(D) the establishment of procedures for recommending new project construction starts using a capital projects business model.

(c) PILOT PROJECTS.—

(1) IN GENERAL.—Subject to paragraph (2), the Secretary may carry out pilot projects to evaluate processes and procedures for the study, design, and construction of qualifying projects.

(2) INCLUSIONS.—At a minimum, the Secretary shall carry out pilot projects under this subsection to evaluate—

(A) early contractor involvement in the development of features and components;

(B) an appropriate use of continuing contracts for the construction of features and components; and

(C) applicable principles, procedures, and processes used for military construction projects.

(d) INLAND WATERWAYS USERS BOARD.—Section 302 of the Water Resources Development Act of 1986 (33 U.S.C. 2251) is amended—

(1) by striking subsection (b) and inserting the following:

"(b) DUTIES OF USERS BOARD.—

"(1) IN GENERAL.—The Users Board shall meet not less frequently than semiannually to develop and make recommendations to the Secretary and Congress regarding the inland waterways and inland harbors of the United States.

"(2) ADVICE AND RECOMMENDATIONS.—For commercial navigation features and components of the inland waterways and inland harbors of the United States, the Users Board shall provide—

"(A) prior to the development of the budget proposal of the President for a given fiscal year, advice and recommendations to the Secretary regarding construction and rehabilitation priorities and spending levels;

"(B) advice and recommendations to Congress regarding any feasibility report for a project on the inland waterway system that has been submitted to Congress pursuant to section 7001 of the Water Resources Reform and Development Act of 2014;

"(C) advice and recommendations to Congress regarding an increase in the authorized cost of those features and components;

"(D) not later than 60 days after the date of the submission of the budget proposal of the President to Congress, advice and recommendations to Congress regarding construction and rehabilitation priorities and spending levels; and

"(E) advice and recommendations on the development of a long-term capital investment program in accordance with subsection (d).

"(3) PROJECT DEVELOPMENT TEAMS.—The chairperson of the Users Board shall appoint a representative of the Users Board to serve as an advisor to the project development team for a qualifying project or the study or design of a commercial navigation feature or component of the inland waterways and inland harbors of the United States.

"(4) INDEPENDENT JUDGMENT.—Any advice or recommendation made by the Users Board to the Secretary shall reflect the independent judgment of the Users Board.";

(2) by striking subsection (c) and inserting the following:

"(c) DUTIES OF SECRETARY.—The Secretary shall—

"(1) communicate not less frequently than once each quarter to the Users Board the status of the study, design, or construction of all commercial navigation features or components of the inland waterways or inland harbors of the United States; and

"(2) submit to the Users Board a courtesy copy of all completed feasibility reports relating to a commercial navigation feature or component of the inland waterways or inland harbors of the United States.

"(d) CAPITAL INVESTMENT PROGRAM.—

"(1) IN GENERAL.—Not later than 1 year after the date of enactment of this subsection, the Secretary, in coordination with the Users Board, shall develop and submit to Congress a report describing a 20-year program for making capital investments on the inland and intracoastal waterways based on the application of objective, national project selection prioritization criteria.

"(2) CONSIDERATION.—In developing the program under paragraph (1), the Secretary shall take into consideration the 20-year capital investment strategy contained in the Inland Marine Transportation System (IMTS) Capital Projects Business Model, Final Report published on April 13, 2010, as approved by the Users Board.

"(3) CRITERIA.—In developing the plan and prioritization criteria under paragraph (1), the Secretary shall ensure, to the maximum extent practicable, that investments made under the 20-year program described in paragraph (1)—

"(A) are made in all geographical areas of the inland waterways system; and

"(B) ensure efficient funding of inland waterways projects.

"(4) STRATEGIC REVIEW AND UPDATE.—Not later than 5 years after the date of enactment of this subsection, and not less frequently than once every 5 years thereafter, the Secretary, in coordination with the Users Board, shall—

"(A) submit to Congress and make publicly available a strategic review of the 20-year program in effect under this subsection, which shall identify and explain any changes to the project-specific recommendations contained in the previous 20-year program (including any changes to the prioritization criteria used to develop the updated recommendations); and

"(B) make revisions to the program, as appropriate.

"(e) PROJECT MANAGEMENT PLANS.—The chairperson of the Users Board and the project development team member appointed by the chairperson under subsection (b)(3) may sign the project management plan for the qualifying project or the study or design of a commercial navigation feature or component of the inland waterways and inland harbors of the United States.

"(f) ADMINISTRATION.—

"(1) IN GENERAL.—The Users Board shall be subject to the Federal Advisory Committee Act (5 U.S.C. App.), other

than section 14, and, with the consent of the appropriate agency head, the Users Board may use the facilities and services of any Federal agency.

"(2) MEMBERS NOT CONSIDERED SPECIAL GOVERNMENT EMPLOYEES.—For the purposes of complying with the Federal Advisory Committee Act (5 U.S.C. App.), the members of the Users Board shall not be considered special Government employees (as defined in section 202 of title 18, United States Code).

"(3) TRAVEL EXPENSES.—Non-Federal members of the Users Board while engaged in the performance of their duties away from their homes or regular places of business, may be allowed travel expenses, including per diem in lieu of subsistence, as authorized by section 5703 of title 5, United States Code.".

SEC. 2003. EFFICIENCY OF REVENUE COLLECTION.

Not later than 2 years after the date of enactment of this Act, the Comptroller General of the United States shall prepare a report on the efficiency of collecting the fuel tax for the Inland Waterways Trust Fund, which shall include—

(1) an evaluation of whether current methods of collection of the fuel tax result in full compliance with requirements of the law;

(2) whether alternative methods of collection would result in increased revenues into the Inland Waterways Trust Fund; and

(3) an evaluation of alternative collection options.

SEC. 2004. INLAND WATERWAYS REVENUE STUDIES.

(a) INLAND WATERWAYS CONSTRUCTION BONDS STUDY.—

(1) STUDY.—The Secretary, in coordination with the heads of appropriate Federal agencies, shall conduct a study on the potential benefits and implications of authorizing the issuance of federally tax-exempt bonds secured against the available proceeds, including projected annual receipts, in the Inland Waterways Trust Fund established by section 9506(a) of the Internal Revenue Code of 1986.

(2) CONTENTS.—In carrying out the study, the Secretary shall examine the implications of issuing such bonds, including the potential revenues that could be generated and the projected net cost to the Treasury, including loss of potential revenue.

(3) CONSULTATION.—In carrying out the study, the Secretary, at a minimum, shall consult with—

(A) representatives of the Inland Waterway Users Board established by section 302 of the Water Resources Development Act of 1986 (33 U.S.C. 2251);

(B) representatives of the commodities and bulk cargos that are currently shipped for commercial purposes on the segments of the inland and intracoastal waterways listed in section 206 of the Inland Waterways Revenue Act of 1978 (33 U.S.C. 1804);

(C) representatives of other users of locks and dams on the inland and intracoastal waterways, including persons owning, operating, using, or otherwise benefitting from—

(i) hydropower generation facilities;

(ii) electric utilities that rely on the waterways for cooling of existing electricity generation facilities;

(iii) municipal and industrial water supply;
(iv) recreation;
(v) irrigation water supply; or
(vi) flood damage reduction; and

(D) other stakeholders associated with the inland and intracoastal waterways, as identified by the Secretary.

(4) REPORT TO CONGRESS.—

(A) IN GENERAL.—Not later than 1 year after the date of enactment of this Act, the Secretary shall submit to the Committee on Environment and Public Works, the Committee on Finance, and the Committee on the Budget of the Senate and the Committee on Transportation and Infrastructure, the Committee on Ways and Means, and the Committee on the Budget of the House of Representatives, and make publicly available, a report on the results of the study.

(B) IDENTIFICATION OF ISSUES.—As part of the report, the Secretary shall identify any potential benefits or other implications of the issuance of bonds described in subsection (a)(1), including any potential changes in Federal or State law that may be necessary to provide such benefits or to address such implications.

(b) POTENTIAL REVENUE SOURCES FOR INLAND AND INTRACOASTAL WATERWAYS INFRASTRUCTURE.—

(1) IN GENERAL.—The Secretary shall conduct a study and submit to Congress a report on potential revenue sources from which funds could be collected to generate additional revenues for the Inland Waterways Trust Fund established by section 9506(a) of the Internal Revenue Code of 1986.

(2) SCOPE OF STUDY.—

(A) IN GENERAL.—In carrying out the study, the Secretary shall evaluate an array of potential revenue sources from which funds could be collected in amounts that, when combined with funds generated by section 4042 of the Internal Revenue Code of 1986, are sufficient to support one-half of annual construction expenditure levels of $380,000,000 for the authorized purposes of the Inland Waterways Trust Fund.

(B) POTENTIAL REVENUE SOURCES FOR STUDY.—In carrying out the study, the Secretary, at a minimum, shall—

(i) evaluate potential revenue sources identified in and documented by known authorities of the Inland Waterways System; and

(ii) review appropriate reports and associated literature related to revenue sources.

(3) CONDUCT OF STUDY.—In carrying out the study, the Secretary shall—

(A) take into consideration whether the potential revenues from other sources—

(i) are equitably associated with the construction, operation, and maintenance of inland and intracoastal waterway infrastructure, including locks, dams, and navigation channels; and

(ii) can be efficiently collected;

(B) consult with, at a minimum—

(i) representatives of the Inland Waterways Users Board; and

(ii) representatives of other nonnavigation beneficiaries of inland and intracoastal waterway infrastructure, including persons benefitting from—

(I) municipal water supply;
(II) hydropower;
(III) recreation;
(IV) industrial water supply;
(V) flood damage reduction;
(VI) agricultural water supply;
(VII) environmental restoration;
(VIII) local and regional economic development; or
(IX) local real estate interests; and

(iii) representatives of other interests, as identified by the Secretary; and

(C) provide the opportunity for public hearings in each of the geographic regions that contain segments of the inland and intracoastal waterways listed in section 206 of the Inland Waterways Revenue Act of 1978 (33 U.S.C. 1804).

(4) REPORT TO CONGRESS.—Not later than 1 year after the date of enactment of this Act, the Secretary shall submit to the Committee on Environment and Public Works, the Committee on Finance, and the Committee on the Budget of the Senate and the Committee on Transportation and Infrastructure, the Committee on Ways and Means, and the Committee on the Budget of the House of Representatives, and make publicly available, a report on the results of the study.

SEC. 2005. INLAND WATERWAYS STAKEHOLDER ROUNDTABLE.

(a) IN GENERAL.—The Secretary shall conduct an inland waterways stakeholder roundtable to provide for a review and evaluation of issues related to financial management of the inland and intracoastal waterways.

(b) SELECTION OF PARTICIPANTS.—

(1) IN GENERAL.—Not later than 45 days after the date on which the Secretary submits to Congress the report required by section 2004(b), the Secretary, in consultation with the Inland Waterways Users Board, shall select individuals to be invited to participate in the stakeholder roundtable.

(2) COMPOSITION.—The individuals selected under paragraph (1) shall include—

(A) representatives of the primary users, shippers, and suppliers utilizing the inland and intracoastal waterways for commercial purposes;

(B) representatives of State and Federal agencies having a direct and substantial interest in the commercial use of the inland and intracoastal waterways;

(C) representatives of other nonnavigation beneficiaries of the inland and intracoastal waterways infrastructure, including individuals benefitting from—

(i) municipal water supply;
(ii) hydropower;
(iii) recreation;
(iv) industrial water supply;
(v) flood damage reduction;
(vi) agricultural water supply;

(vii) environmental restoration;

(viii) local and regional economic development; or

(ix) local real estate interests; and

(D) other interested individuals with significant financial and engineering expertise and direct knowledge of the inland and coastal waterways.

(c) FRAMEWORK AND AGENDA.—The Secretary shall work with a group of the individuals selected under subsection (b) to develop the framework and agenda for the stakeholder roundtable.

(d) CONDUCT OF STAKEHOLDER ROUNDTABLE.—

(1) IN GENERAL.—Not later than 120 days after the date on which the Secretary submits to Congress the report required by section 2004(b), the Secretary shall conduct the stakeholder roundtable.

(2) ISSUES TO BE DISCUSSED.—The stakeholder roundtable shall provide for the review and evaluation described in subsection (a) and shall include the following:

(A) An evaluation of any recommendations that have been developed to address funding options for the inland and coastal waterways, including any recommendations in the report required under section 2004(b).

(B) An evaluation of the funding status of the inland and coastal waterways.

(C) Identification and evaluation of the ongoing and projected water infrastructure needs of the inland and coastal waterways.

(D) Identification of a process for meeting such needs, with timeline for addressing the funding challenges for the Inland Waterways Trust Fund.

(e) REPORT TO CONGRESS.—Not later than 180 days after the date on which the Secretary submits to Congress the report required by section 2004(b), the Secretary shall submit to Congress and make publicly available a report that contains—

(1) a summary of the stakeholder roundtable, including areas of concurrence on funding approaches and areas of disagreement in meeting funding needs; and

(2) recommendations developed by the Secretary for next steps to address the issues discussed at the stakeholder roundtable.

SEC. 2006. PRESERVING THE INLAND WATERWAY TRUST FUND.

(a) OLMSTED PROJECT REFORM.—

(1) DEFINITION OF OLMSTED PROJECT.—In this subsection, the term "Olmsted Project" means the project for navigation, Lower Ohio River, Locks and Dams 52 and 53, Illinois and Kentucky, authorized by section 3(a)(6) of the Water Resources Development Act of 1988 (102 Stat. 4013).

(2) OLMSTED PROJECT REFORM.—Notwithstanding section 3(a)(6) of the Water Resources Development Act of 1988 (102 Stat. 4013), for each fiscal year beginning after September 30, 2014, 15 percent of the cost of construction for the Olmsted Project shall be paid from amounts appropriated from the Inland Waterways Trust Fund.

(3) SENSE OF CONGRESS.—It is the sense of Congress that the appropriation for the Olmsted Project should be not less than $150,000,000 for each fiscal year until construction of the project is completed.

(4) REHABILITATION OF PROJECTS.—Section 205(1)(E)(ii) of the Water Resources Development Act of 1992 (33 U.S.C. 2327(1)(E)(ii)) is amended by striking "$8,000,000" and inserting "$20,000,000".

SEC. 2007. INLAND WATERWAYS OVERSIGHT.

(a) REPORT.—Not later than 1 year after the date of enactment of this Act, the Secretary shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives and make publicly available a report regarding the lessons learned from the experience of planning and constructing the Olmsted Project and how such lessons might apply to future inland waterway studies and projects.

(b) ANNUAL FINANCIAL REVIEW.—For any inland waterways project that the Secretary carries out that has an estimated total cost of $500,000,000 or more, the Secretary shall submit to the congressional committees referred to in subsection (a) an annual financial plan for the project. The plan shall be based on detailed annual estimates of the cost to complete the remaining elements of the project and on reasonable assumptions, as determined by the Secretary, of any future increases of the cost to complete the project.

(c) GOVERNMENT ACCOUNTABILITY OFFICE REPORT.—As soon as practicable after the date of enactment of this Act, the Comptroller General of the United States shall conduct, and submit to Congress a report describing the results of, a study to determine why, and to what extent, the project for navigation, Lower Ohio River, Locks and Dams 52 and 53, Illinois and Kentucky (commonly known as the "Olmsted Locks and Dam project"), authorized by section 3(a)(6) of the Water Resources Development Act of 1988 (102 Stat. 4013), has exceeded the budget for the project and the reasons why the project failed to be completed as scheduled, including an assessment of—

(1) engineering methods used for the project;

(2) the management of the project;

(3) contracting for the project;

(4) the cost to the United States of benefits foregone due to project delays; and

(5) such other contributory factors as the Comptroller General determines to be appropriate.

SEC. 2008. ASSESSMENT OF OPERATION AND MAINTENANCE NEEDS OF THE ATLANTIC INTRACOASTAL WATERWAY AND THE GULF INTRACOASTAL WATERWAY.

(a) IN GENERAL.—Not later than 90 days after the date of enactment of this Act, the Secretary shall assess the operation and maintenance needs of the Atlantic Intracoastal Waterway and the Gulf Intracoastal Waterway.

(b) TYPES OF ACTIVITIES.—In carrying out subsection (a), the Secretary shall assess the operation and maintenance needs of the Atlantic Intracoastal Waterway and the Gulf Intracoastal Waterway as used for the following purposes:

(1) Commercial navigation.

(2) Commercial fishing.

(3) Subsistence, including utilization by Indian tribes (as defined in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450b)) for subsistence and ceremonial purposes.

(4) Use as ingress and egress to harbors of refuge.

(5) Transportation of persons.

(6) Purposes relating to domestic energy production, including fabrication, servicing, and supply of domestic offshore energy production facilities.

(7) Activities of the Secretary of the department in which the Coast Guard is operating.

(8) Public health and safety related equipment for responding to coastal and inland emergencies.

(9) Recreation purposes.

(10) Any other authorized purpose.

(c) REPORT TO CONGRESS.—For fiscal year 2015, and biennially thereafter, in conjunction with the annual budget submission by the President to Congress under section 1105(a) of title 31, United States Code, the Secretary shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives and make publicly available a report that, with respect to the Atlantic Intracoastal Waterway and the Gulf Intracoastal Waterway—

(1) identifies the operation and maintenance costs required to achieve the authorized length, width, and depth;

(2) identifies the amount of funding requested in the President's budget for operation and maintenance costs; and

(3) identifies the unmet operation and maintenance needs of the Atlantic Intracoastal Waterway and the Gulf Intracoastal Waterway.

SEC. 2009. INLAND WATERWAYS RIVERBANK STABILIZATION.

(a) IN GENERAL.—Not later than 1 year after the date of enactment of this Act, and biennially thereafter, the Secretary shall conduct a study to determine the feasibility of—

(1) carrying out projects for the inland and intracoastal waterways for purposes of—

(A) flood damage reduction;

(B) emergency streambank and shoreline protection; and

(C) prevention and mitigation of shore damages attributable to navigation improvements; and

(2) modifying projects for the inland and intracoastal waterways for the purpose of improving the quality of the environment.

(b) RECOMMENDATIONS.—In conducting the study, the Secretary shall develop specific project recommendations and prioritize those recommendations based on—

(1) the extent of damage and land loss resulting from riverbank erosion;

(2) the rate of erosion;

(3) the significant threat of future flood risk to public property, public infrastructure, or public safety;

(4) the destruction of natural resources or habitats; and

(5) the potential cost savings for maintenance of the channel.

(c) DISPOSITION.—The Secretary may carry out any project identified in the study conducted pursuant to subsection (a) in accordance with the criteria for projects carried out under one of the following authorities:

(1) Section 14 of the Flood Control Act of 1946 (33 U.S.C. 701r).

(2) Section 205 of the Flood Control Act of 1948 (33 U.S.C. 701s).

(3) Section 111 of the River and Harbor Act of 1968 (33 U.S.C. 426i).

(4) Section 1135 of the Water Resources Development Act of 1986 (33 U.S.C. 2309a).

(d) ANNUAL REPORT.—For a project recommended pursuant to the study that cannot be carried out under any of the authorities specified in subsection (c), upon a determination by the Secretary of the feasibility of the project, the Secretary may include a recommendation concerning the project in the annual report submitted to Congress under section 7001.

SEC. 2010. UPPER MISSISSIPPI RIVER PROTECTION.

(a) DEFINITION OF UPPER ST. ANTHONY FALLS LOCK AND DAM.—In this section, the term "Upper St. Anthony Falls Lock and Dam" means the lock and dam located on Mississippi River Mile 853.9 in Minneapolis, Minnesota.

(b) MANDATORY CLOSURE.—Not later than 1 year after the date of enactment of this Act, the Secretary shall close the Upper St. Anthony Falls Lock and Dam.

(c) EMERGENCY OPERATIONS.—Nothing in this section prevents the Secretary from carrying out emergency lock operations necessary to mitigate flood damage.

SEC. 2011. CORPS OF ENGINEERS LOCK AND DAM ENERGY DEVELOPMENT.

Section 1117 of the Water Resources Development Act of 1986 (100 Stat. 4236) is amended to read as follows:

"SEC. 1117. W.D. MAYO LOCK AND DAM.

"(a) IN GENERAL.—The Cherokee Nation of Oklahoma may—

"(1) design and construct one or more hydroelectric generating facilities at the W.D. Mayo Lock and Dam on the Arkansas River, Oklahoma; and

"(2) market the electricity generated from any such facility.

"(b) PRECONSTRUCTION REQUIREMENTS.—

"(1) PERMITS.—Before the date on which construction of a hydroelectric generating facility begins under subsection (a), the Cherokee Nation shall obtain any permit required under Federal or State law, except that the Cherokee Nation shall be exempt from licensing requirements that may otherwise apply to construction, operation, or maintenance of the facility under the Federal Power Act (16 U.S.C. 791a et seq.).

"(2) REVIEW OF PLANS AND SPECIFICATIONS.—The Cherokee Nation may initiate the design or construction of a hydroelectric generating facility under subsection (a) only after the Secretary reviews and approves the plans and specifications for the design and construction.

"(c) PAYMENT OF DESIGN AND CONSTRUCTION COSTS.—

"(1) IN GENERAL.—The Secretary may accept funds offered by the Cherokee Nation and use such funds to carry out the

design and construction of a hydroelectric generating facility under subsection (a).

"(2) ALLOCATION OF COSTS.—The Cherokee Nation shall—

"(A) bear all costs associated with the design and construction of a hydroelectric generating facility under subsection (a); and

"(B) provide any funds necessary for the design and construction to the Secretary prior to the Secretary initiating any activities related to the design and construction.

"(d) ASSUMPTION OF LIABILITY.—The Cherokee Nation shall—

"(1) hold all title to a hydroelectric generating facility constructed under subsection (a) and may, subject to the approval of the Secretary, assign such title to a third party;

"(2) be solely responsible for—

"(A) the operation, maintenance, repair, replacement, and rehabilitation of the facility; and

"(B) the marketing of the electricity generated by the facility; and

"(3) release and indemnify the United States from any claims, causes of action, or liabilities that may arise out of any activity undertaken to carry out this section.

"(e) ASSISTANCE AVAILABLE.—The Secretary may provide technical and construction management assistance requested by the Cherokee Nation relating to the design and construction of a hydroelectric generating facility under subsection (a).

"(f) THIRD PARTY AGREEMENTS.—The Cherokee Nation may enter into agreements with the Secretary or a third party that the Cherokee Nation or the Secretary determines are necessary to carry out this section.".

SEC. 2012. RESTRICTED AREAS AT CORPS OF ENGINEERS DAMS.

Section 2 of the Freedom to Fish Act (127 Stat. 449) is amended—

(1) in subsection (b)(1) by striking "2 years after the date of enactment of this Act" and inserting "4 years after the date of enactment of the Water Resources Reform and Development Act of 2014";

(2) in the heading of subsection (c) by inserting "OR MODIFIED" after "NEW"; and

(3) in subsection (c)—

(A) in matter preceding paragraph (1) by inserting "new or modified" after "establishes any"; and

(B) in paragraph (3) by striking "2 years after the date of enactment of this Act" and inserting "4 years after the date of enactment of the Water Resources Reform and Development Act of 2014".

SEC. 2013. OPERATION AND MAINTENANCE OF FUEL TAXED INLAND WATERWAYS.

Section 102 of the Water Resources Development Act of 1986 (33 U.S.C. 2212) is amended—

(1) by redesignating subsection (c) as subsection (d); and

(2) by inserting after subsection (b) the following:

"(c) FLOODGATES ON THE INLAND WATERWAYS.—

"(1) OPERATION AND MAINTENANCE CARRIED OUT BY THE SECRETARY.—Notwithstanding any other provision of law, the Secretary shall be responsible for the operation and maintenance, including repair, of any flood gate, as well as any

pumping station constructed within the channel as a single unit with that flood gate, that—

"(A) was constructed as of the date of enactment of the Water Resources Reform and Development Act of 2014 as a feature of an authorized hurricane and storm damage reduction project; and

"(B) crosses an inland or intracoastal waterway described in section 206 of the Inland Waterways Revenue Act of 1978 (33 U.S.C. 1804).

"(2) NON-FEDERAL COST SHARE.—The non-Federal share of the cost of operation, maintenance, repair, rehabilitation, and replacement of any structure under this subsection shall be 35 percent.".

Subtitle B—Port and Harbor Maintenance

SEC. 2101. FUNDING FOR HARBOR MAINTENANCE PROGRAMS.

(a) DEFINITIONS.—In this section:

(1) TOTAL AMOUNT OF HARBOR MAINTENANCE TAXES RECEIVED.—The term "total amount of harbor maintenance taxes received" means, with respect to a fiscal year, the aggregate of amounts appropriated, transferred, or credited to the Harbor Maintenance Trust Fund under section 9505(a) of the Internal Revenue Code of 1986 for that fiscal year as set forth in the current year estimate provided in the President's budget request for the subsequent fiscal year, submitted pursuant to section 1105 of title 31, United States Code.

(2) TOTAL BUDGET RESOURCES.—The term "total budget resources" means the total amount made available by appropriations Acts from the Harbor Maintenance Trust Fund for a fiscal year for making expenditures under section 9505(c) of the Internal Revenue Code of 1986.

(b) TARGET APPROPRIATIONS.—

(1) IN GENERAL.—The target total budget resources made available to the Secretary from the Harbor Maintenance Trust Fund for a fiscal year shall be not less than the following:

(A) For fiscal year 2015, 67 percent of the total amount of harbor maintenance taxes received in fiscal year 2014.

(B) For fiscal year 2016, 69 percent of the total amount of harbor maintenance taxes received in fiscal year 2015.

(C) For fiscal year 2017, 71 percent of the total amount of harbor maintenance taxes received in fiscal year 2016.

(D) For fiscal year 2018, 74 percent of the total amount of harbor maintenance taxes received in fiscal year 2017.

(E) For fiscal year 2019, 77 percent of the total amount of harbor maintenance taxes received in fiscal year 2018.

(F) For fiscal year 2020, 80 percent of the total amount of harbor maintenance taxes received in fiscal year 2019.

(G) For fiscal year 2021, 83 percent of the total amount of harbor maintenance taxes received in fiscal year 2020.

(H) For fiscal year 2022, 87 percent of the total amount of harbor maintenance taxes received in fiscal year 2021.

(I) For fiscal year 2023, 91 percent of the total amount of harbor maintenance taxes received in fiscal year 2022.

(J) For fiscal year 2024, 95 percent of the total amount of harbor maintenance taxes received in fiscal year 2023.

(K) For fiscal year 2025, and each fiscal year thereafter, 100 percent of the total amount of harbor maintenance taxes received in the previous fiscal year.

(2) USE OF AMOUNTS.—The total budget resources described in paragraph (1) may be used only for making expenditures under section 9505(c) of the Internal Revenue Code of 1986.

(c) IMPACT ON OTHER FUNDS.—

(1) SENSE OF CONGRESS.—It is the sense of Congress that any increase in funding for harbor maintenance programs under this section shall result from an overall increase in appropriations for the civil works program of the Corps of Engineers and not from reductions in the appropriations for other programs, projects, and activities carried out by the Corps of Engineers for other authorized purposes.

(2) APPLICATION.—The target total budget resources for a fiscal year specified in subsection (b)(1) shall only apply in a fiscal year for which the level of appropriations provided for the civil works program of the Corps of Engineers in that fiscal year is increased, as compared to the previous fiscal year, by a dollar amount that is at least equivalent to the dollar amount necessary to address such target total budget resources in that fiscal year.

SEC. 2102. OPERATION AND MAINTENANCE OF HARBOR PROJECTS.

(a) IN GENERAL.—Section 210 of the Water Resources Development Act of 1986 (33 U.S.C. 2238) is amended by adding at the end the following:

"(c) OPERATION AND MAINTENANCE OF HARBOR PROJECTS.—

"(1) IN GENERAL.—To the maximum extent practicable, the Secretary shall make expenditures to pay for operation and maintenance costs of the harbors and inland harbors referred to in subsection (a)(2), including expenditures of funds appropriated from the Harbor Maintenance Trust Fund, based on an equitable allocation of funds among all such harbors and inland harbors.

"(2) CRITERIA.—

"(A) IN GENERAL.—In determining an equitable allocation of funds under paragraph (1), the Secretary shall—

"(i) consider the information obtained in the assessment conducted under subsection (e);

"(ii) consider the national and regional significance of harbor operations and maintenance; and

"(iii) as appropriate, consider national security and military readiness needs.

"(B) LIMITATION.—The Secretary shall not allocate funds under paragraph (1) based solely on the tonnage transiting through a harbor.

"(3) EMERGING HARBOR PROJECTS.—Notwithstanding any other provision of this subsection, in making expenditures under paragraph (1) for each of fiscal years 2015 through 2022, the Secretary shall allocate for operation and maintenance costs of emerging harbor projects an amount that is not less than 10 percent of the funds made available under this section for fiscal year 2012 to pay the costs described in subsection (a)(2).

"(4) MANAGEMENT OF GREAT LAKES NAVIGATION SYSTEM.—To sustain effective and efficient operation and maintenance

of the Great Lakes Navigation System, including any navigation feature in the Great Lakes that is a Federal responsibility with respect to operation and maintenance, the Secretary shall manage all of the individually authorized projects in the Great Lakes Navigation System as components of a single, comprehensive system, recognizing the interdependence of the projects.

"(d) PRIORITIZATION.—

"(1) PRIORITY.—

"(A) IN GENERAL.—For each of fiscal years 2015 through 2024, if priority funds are available, the Secretary shall use the priority funds as follows:

"(i) 90 percent of the priority funds shall be used for high- and moderate-use harbor projects.

"(ii) 10 percent of the priority funds shall be used for emerging harbor projects.

"(B) ADDITIONAL CONSIDERATIONS.—For each of fiscal years 2015 through 2024, of the priority funds available, the Secretary shall use—

"(i) not less than 5 percent of such funds for underserved harbor projects; and

"(ii) not less than 10 percent of such funds for projects that are located within the Great Lakes Navigation System.

"(C) UNDERSERVED HARBORS.—In determining which underserved harbor projects shall receive funds under this paragraph, the Secretary shall consider—

"(i) the total quantity of commerce supported by the water body on which the project is located; and

"(ii) the minimum width and depth that—

"(I) would be necessary at the underserved harbor project to provide sufficient clearance for fully loaded commercial vessels using the underserved harbor project to maneuver safely; and

"(II) does not exceed the constructed width and depth of the authorized navigation project.

"(2) EXPANDED USES.—

"(A) DEFINITION OF ELIGIBLE HARBOR OR INLAND HARBOR DEFINED.—In this paragraph, the term 'eligible harbor or inland harbor' means a harbor or inland harbor at which the total amount of harbor maintenance taxes collected in the immediately preceding 3 fiscal years exceeds the value of the work carried out for the harbor or inland harbor using amounts from the Harbor Maintenance Trust Fund during those 3 fiscal years.

"(B) USE OF EXPANDED USES FUNDS.—

"(i) FISCAL YEARS 2015 THROUGH 2024.—For each of fiscal years 2015 through 2024, of the priority funds available, the Secretary shall use not less than 10 percent of such funds for expanded uses carried out at an eligible harbor or inland harbor.

"(ii) SUBSEQUENT FISCAL YEARS.—For fiscal year 2025 and each fiscal year thereafter, the Secretary shall use not less than 10 percent of the priority funds available for expanded uses carried out at an eligible harbor or inland harbor.

"(C) PRIORITIZATION.—In allocating funds under this paragraph, the Secretary shall give priority to projects at eligible harbors or inland harbors for which the difference, calculated in dollars, is greatest between—

"(i) the total amount of funding made available for projects at that eligible harbor or inland harbor from the Harbor Maintenance Trust Fund in the immediately preceding 3 fiscal years; and

"(ii) the total amount of harbor maintenance taxes collected at that harbor or inland harbor in the immediately preceding 3 fiscal years.

"(3) REMAINING FUNDS.—

"(A) IN GENERAL.—For each of fiscal years 2015 through 2024, if after fully funding all projects eligible for funding under paragraphs (1)(B) and (2)(B)(i), priority funds made available under those paragraphs remain unobligated, the Secretary shall use those remaining funds to pay for operation and maintenance costs of any harbor or inland harbor referred to in subsection (a)(2) based on an equitable allocation of those funds among the harbors and inland harbors.

"(B) CRITERIA.—In determining an equitable allocation of funds under subparagraph (A), the Secretary shall—

"(i) use the criteria specified in subsection (c)(2)(A); and

"(ii) make amounts available in accordance with the requirements of paragraph (1)(A).

"(4) EMERGENCY EXPENDITURES.—Nothing in this subsection prohibits the Secretary from making an expenditure to pay for the operation and maintenance costs of a specific harbor or inland harbor, including the transfer of funding from the operation and maintenance of a separate project, if—

"(A) the Secretary determines that the action is necessary to address the navigation needs of a harbor or inland harbor where safe navigation has been severely restricted due to an unforeseen event; and

"(B) the Secretary provides within 90 days of the action notice and information on the need for the action to the Committee on Environment and Public Works and the Committee on Appropriations of the Senate and the Committee on Transportation and Infrastructure and the Committee on Appropriations of the House of Representatives.

"(e) ASSESSMENT OF HARBORS AND INLAND HARBORS.—

"(1) IN GENERAL.—Not later than 270 days after the date of enactment of this subsection, and biennially thereafter, the Secretary shall assess the operation and maintenance needs and uses of the harbors and inland harbors referred to in subsection (a)(2).

"(2) ASSESSMENT OF HARBOR NEEDS AND ACTIVITIES.—

"(A) TOTAL OPERATION AND MAINTENANCE NEEDS OF HARBORS.—In carrying out paragraph (1), the Secretary shall identify—

"(i) the total future costs required to achieve and maintain the constructed width and depth for the harbors and inland harbors referred to in subsection (a)(2); and

"(ii) the total expected costs for expanded uses at eligible harbors or inland harbors referred to in subsection (d)(2).

"(B) USES OF HARBORS AND INLAND HARBORS.—In carrying out paragraph (1), the Secretary shall identify current uses (and, to the extent practicable, assess the national, regional, and local benefits of such uses) of harbors and inland harbors referred to in subsection (a)(2), including the use of those harbors for—

"(i) commercial navigation, including the movement of goods;

"(ii) domestic trade;

"(iii) international trade;

"(iv) commercial fishing;

"(v) subsistence, including use by Indian tribes (as defined in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450b)) for subsistence and ceremonial purposes;

"(vi) use as a harbor of refuge;

"(vii) transportation of persons;

"(viii) purposes relating to domestic energy production, including the fabrication, servicing, or supply of domestic offshore energy production facilities;

"(ix) activities of the Secretary of the department in which the Coast Guard is operating;

"(x) activities of the Secretary of the Navy;

"(xi) public health and safety related equipment for responding to coastal and inland emergencies;

"(xii) recreation purposes; and

"(xiii) other authorized purposes.

"(3) REPORT TO CONGRESS.—

"(A) IN GENERAL.—For fiscal year 2016, and biennially thereafter, in conjunction with the President's annual budget submission to Congress under section 1105(a) of title 31, United States Code, the Secretary shall submit to the Committee on Environment and Public Works and the Committee on Appropriations of the Senate and the Committee on Transportation and Infrastructure and the Committee on Appropriations of the House of Representatives a report that, with respect to harbors and inland harbors referred to in subsection (a)(2)—

"(i) identifies the operation and maintenance costs associated with the harbors and inland harbors, including those costs required to achieve and maintain the constructed width and depth for the harbors and inland harbors and the costs for expanded uses at eligible harbors and inland harbors, on a project-by-project basis;

"(ii) identifies the amount of funding requested in the President's budget for the operation and maintenance costs associated with the harbors and inland harbors, on a project-by-project basis;

"(iii) identifies the unmet operation and maintenance needs associated with the harbors and inland harbors, on a project-by-project basis; and

"(iv) identifies the harbors and inland harbors for which the President will allocate funding over the subsequent 5 fiscal years for operation and maintenance activities, on a project-by-project basis, including the amounts to be allocated for such purposes.

"(B) PUBLIC AVAILABILITY.—The Secretary shall make the report submitted under subparagraph (A) available to the public, including on the Internet.

"(f) DEFINITIONS.—In this section:

"(1) CONSTRUCTED WIDTH AND DEPTH.—The term 'constructed width and depth' means the width and depth to which a project has been constructed, which may not exceed the authorized width and depth of the project.

"(2) EMERGING HARBOR PROJECT.—The term 'emerging harbor project' means a project that is assigned to a harbor or inland harbor referred to in subsection (a)(2) that transits less than 1,000,000 tons of cargo annually.

"(3) EXPANDED USES.—The term 'expanded uses' means the following activities:

"(A) The maintenance dredging of a berth in a harbor that is accessible to a Federal navigation project and that benefits commercial navigation at the harbor.

"(B) The maintenance dredging and disposal of legacy-contaminated sediment, and sediment unsuitable for open water disposal, if—

"(i) such dredging and disposal benefits commercial navigation at the harbor; and

"(ii) such sediment is located in and affects the maintenance of a Federal navigation project or is located in a berth that is accessible to a Federal navigation project.

"(4) GREAT LAKES NAVIGATION SYSTEM.—The term 'Great Lakes Navigation System' includes—

"(A)(i) Lake Superior;

"(ii) Lake Huron;

"(iii) Lake Michigan;

"(iv) Lake Erie; and

"(v) Lake Ontario;

"(B) all connecting waters between the lakes referred to in subparagraph (A) used for commercial navigation;

"(C) any navigation features in the lakes referred to in subparagraph (A) or waters described in subparagraph (B) that are a Federal operation or maintenance responsibility; and

"(D) areas of the Saint Lawrence River that are operated or maintained by the Federal Government for commercial navigation.

"(5) HARBOR MAINTENANCE TAX.—The term 'harbor maintenance tax' means the amounts collected under section 4461 of the Internal Revenue Code of 1986.

"(6) HIGH-USE HARBOR PROJECT.—The term 'high-use harbor project' means a project that is assigned to a harbor or inland harbor referred to in subsection (a)(2) that transits not less than 10,000,000 tons of cargo annually.

"(7) MODERATE-USE HARBOR PROJECT.—The term 'moderate-use harbor project' means a project that is assigned to a harbor

or inland harbor referred to in subsection (a)(2) that transits annually—

"(A) more than 1,000,000 tons of cargo; but

"(B) less than 10,000,000 tons of cargo.

"(8) PRIORITY FUNDS.—The term 'priority funds' means the difference between—

"(A) the total funds that are made available under this section to pay the costs described in subsection (a)(2) for a fiscal year; and

"(B) the total funds made available under this section to pay the costs described in subsection (a)(2) in fiscal year 2012.

"(9) UNDERSERVED HARBOR PROJECT.—

"(A) IN GENERAL.—The term 'underserved harbor project' means a project that is assigned to a harbor or inland harbor referred to in subsection (a)(2)—

"(i) that is a moderate-use harbor project or an emerging harbor project;

"(ii) that has been maintained at less than the constructed width and depth of the project during each of the preceding 6 fiscal years; and

"(iii) for which State and local investments in infrastructure have been made at those projects during the preceding 6 fiscal years.

"(B) ADMINISTRATION.—For purposes of this paragraph, State and local investments in infrastructure shall include infrastructure investments made using amounts made available for activities under section 105(a)(9) of the Housing and Community Development Act of 1974 (42 U.S.C. 5305(a)(9)).".

(b) OPERATION AND MAINTENANCE.—Section 101(b)(1) of the Water Resources Development Act of 1986 (33 U.S.C. 2211(b)(1)) is amended by striking "45 feet" and inserting "50 feet".

(c) CONFORMING AMENDMENT.—Section 9505(c)(1) of the Internal Revenue Code of 1986 is amended by striking "(as in effect on the date of the enactment of the Water Resources Development Act of 1996)".

SEC. 2103. CONSOLIDATION OF DEEP DRAFT NAVIGATION EXPERTISE.

Section 2033(e) of the Water Resources Development Act of 2007 (33 U.S.C. 2282a(e)) is amended by adding at the end the following:

"(3) DEEP DRAFT NAVIGATION PLANNING CENTER OF EXPERTISE.—

"(A) IN GENERAL.—The Secretary shall consolidate deep draft navigation expertise within the Corps of Engineers into a deep draft navigation planning center of expertise.

"(B) LIST.—Not later than 60 days after the date of the consolidation required under subparagraph (A), the Secretary shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a list of the grade levels and expertise of each of the personnel assigned to the center described in subparagraph (A).".

SEC. 2104. REMOTE AND SUBSISTENCE HARBORS.

Section 2006 of the Water Resources Development Act of 2007 (33 U.S.C. 2242) is amended—

(1) in subsection (a)—

(A) in paragraph (1)(B) by inserting "or Alaska" after "Hawaii"; and

(B) in paragraph (2)—

(i) by striking "community" and inserting "region"; and

(ii) by inserting ", as determined by the Secretary, including consideration of information provided by the non-Federal interest" after "improvement"; and

(2) by adding at the end the following:

"(c) PRIORITIZATION.—Projects recommended by the Secretary under subsection (a) shall be given equivalent budget consideration and priority as projects recommended solely by national economic development benefits.

"(d) DISPOSITION.—

"(1) IN GENERAL.—The Secretary may carry out any project identified in the study carried out pursuant to subsection (a) in accordance with the criteria for projects carried out under the authority of the Secretary under section 107 of the River and Harbor Act of 1960 (33 U.S.C. 577).

"(2) NON-FEDERAL INTERESTS.—In evaluating and implementing a project under this section, the Secretary shall allow a non-Federal interest to participate in the financing of a project in accordance with the criteria established for flood control projects under section 903(c) of the Water Resources Development Act of 1986 (Public Law 99–662; 100 Stat. 4184).

"(e) ANNUAL REPORT.—For a project that cannot be carried out under the authority specified in subsection (d), on a determination by the Secretary of the feasibility of the project under subsection (a), the Secretary may include a recommendation concerning the project in the annual report submitted to Congress under section 7001.".

SEC. 2105. ARCTIC DEEP DRAFT PORT DEVELOPMENT PARTNERSHIPS.

(a) IN GENERAL.—The Secretary may provide technical assistance to non-Federal public entities, including Indian tribes (as defined in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450b)), for the development, construction, operation, and maintenance of channels, harbors, and related infrastructure associated with deep draft ports for purposes of dealing with Arctic development and security needs.

(b) ACCEPTANCE OF FUNDS.—The Secretary is authorized to accept and expend funds provided by non-Federal public entities, including Indian tribes (as defined in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450b)), to carry out the technical assistance activities described in subsection (a).

(c) LIMITATION.—No assistance may be provided under this section until after the date on which the entity to which that assistance is to be provided enters into a written agreement with the Secretary that includes such terms and conditions as the Secretary determines to be appropriate and in the public interest.

(d) PRIORITIZATION.—The Secretary shall prioritize technical assistance provided under this section for Arctic deep draft ports

identified by the Secretary, the Secretary of Homeland Security, and the Secretary of Defense as important for Arctic development and security.

SEC. 2106. ADDITIONAL MEASURES AT DONOR PORTS AND ENERGY TRANSFER PORTS.

(a) DEFINITIONS.—In this section:

(1) CARGO CONTAINER.—The term "cargo container" means a cargo container that is 1 Twenty-foot Equivalent Unit.

(2) DONOR PORT.—The term "donor port" means a port—

(A) that is subject to the harbor maintenance fee under section 24.24 of title 19, Code of Federal Regulations (or a successor regulation);

(B) at which the total amount of harbor maintenance taxes collected comprise not less than $15,000,000 annually of the total funding of the Harbor Maintenance Trust Fund established under section 9505 of the Internal Revenue Code of 1986;

(C) that received less than 25 percent of the total amount of harbor maintenance taxes collected at that port in the previous 5 fiscal years; and

(D) that is located in a State in which more than 2,000,000 cargo containers were unloaded from or loaded on to vessels in fiscal year 2012.

(3) ENERGY COMMODITY.—The term "energy commodity" includes—

(A) petroleum products;

(B) natural gas;

(C) coal;

(D) wind and solar energy components; and

(E) biofuels.

(4) ENERGY TRANSFER PORT.—The term "energy transfer port" means a port—

(A) that is subject to the harbor maintenance fee under section 24.24 of title 19, Code of Federal Regulation (or any successor regulation); and

(B)(i) at which energy commodities comprised greater than 25 percent of all commercial activity by tonnage in fiscal year 2012; and

(ii) through which more than 40,000,000 tons of cargo were transported in fiscal year 2012.

(5) EXPANDED USES.—The term "expanded uses" has the meaning given the term in section 210(f) of the Water Resources Development Act of 1986 (33 U.S.C. 2238(f)).

(6) HARBOR MAINTENANCE TAX.—The term "harbor maintenance tax" has the meaning given the term in section 210(f) of the Water Resources Development Act of 1986 (33 U.S.C. 2238(f)).

(b) AUTHORITY.—

(1) IN GENERAL.—Subject to the availability of appropriations, the Secretary may provide to donor ports and energy transfer ports amounts in accordance with this section.

(2) LIMITATIONS.—Amounts provided under this section—

(A) for energy transfer ports shall be divided equally among all States with an energy transfer port; and

(B) shall be made available to a port as either a donor port or an energy transfer port and no port may receive

amounts as both a donor port and an energy transfer port.

(c) USE OF FUNDS.—Amounts provided under this section may be used by a donor port or an energy transfer port—

(1) to provide payments to importers entering cargo or shippers transporting cargo through that port, as calculated by U.S. Customs and Border Protection according to the amount of harbor maintenance taxes collected;

(2) for expanded uses; or

(3) for environmental remediation related to dredging berths and Federal navigation channels.

(d) ADMINISTRATION OF PAYMENTS.—If a donor port or an energy transfer port elects to provide payments to importers or shippers under subsection (c), the Secretary shall transfer the amount that would otherwise be provided to the port under this section that is equal to those payments to the Commissioner of U.S. Customs and Border Protection to provide the payments to the importers or shippers.

(e) REPORT TO CONGRESS.—

(1) IN GENERAL.—Not later than 18 months after the date of enactment of this section, the Secretary shall assess the impact of the authority provided by this section and submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives and make publicly available a report on the results of that assessment, including any recommendations for amending or reauthorizing the authority.

(2) FACTORS.—In carrying out the assessment under paragraph (1), the Secretary shall assess—

(A) the impact of the amounts provided and used under this section on those ports that received funds under this section; and

(B) any impact on domestic harbors and ports that did not receive funds under this section.

(f) AUTHORIZATION OF APPROPRIATIONS.—

(1) IN GENERAL.—There is authorized to be appropriated to carry out this section $50,000,000 for each of fiscal years 2015 through 2018.

(2) DIVISION BETWEEN DONOR PORTS AND ENERGY TRANSFER PORTS.—For each fiscal year, amounts made available to carry out this section shall be provided in equal amounts to donor ports and energy transfer ports.

(3) ADDITIONAL APPROPRIATIONS.—If the target total budget resources under subparagraphs (A) through (D) of section 2101(b)(1) are met for each of fiscal years 2015 through 2018, there is authorized to be appropriated to carry out this section $50,000,000 for each of fiscal years 2019 through 2022.

SEC. 2107. PRESERVING UNITED STATES HARBORS.

(a) IN GENERAL.—Upon a request from a non-Federal interest, the Secretary shall review a report developed by the non-Federal interest that provides an economic justification for Federal investment in the operation and maintenance of a federally authorized harbor or inland harbor (referred to in this section as a "federally authorized harbor").

(b) JUSTIFICATION OF INVESTMENT.—A report submitted under subsection (a) may provide for an economic justification of Federal

investment in the operation and maintenance of a federally authorized harbor based on—

(1) the projected economic benefits, including transportation savings and job creation; and

(2) other factors, including navigation safety, national security, and sustainability of subsistence harbors.

(c) WRITTEN RESPONSE.—Not later than 180 days after the date on which the Secretary receives a report under subsection (a), the Secretary shall provide to the non-Federal interest a written response to the report, including an assessment of the information provided by the non-Federal interest.

(d) PRIORITIZATION.—As the Secretary determines to be appropriate, the Secretary may use the information provided in the report under subsection (a) to justify additional operation and maintenance funding for a federally authorized harbor in accordance with section 101(b) of the Water Resources Development Act of 1986 (33 U.S.C. 2211(b)).

(e) LIMITATION ON STATUTORY CONSTRUCTION.—Nothing in this section may be construed to preclude the operation and maintenance of a federally authorized harbor under section 101(b) of the Water Resources Development Act of 1986 (33 U.S.C. 2211(b)).

TITLE III—SAFETY IMPROVEMENTS AND ADDRESSING EXTREME WEATHER EVENTS

Subtitle A—Dam Safety

SEC. 3001. DAM SAFETY.

(a) ADMINISTRATOR.—

(1) IN GENERAL.—The National Dam Safety Program Act (33 U.S.C. 467 et seq.) is amended by striking "Director" each place it appears and inserting "Administrator".

(2) CONFORMING AMENDMENT.—Section 2 of the National Dam Safety Program Act (33 U.S.C. 467) is amended—

(A) by striking paragraph (3);

(B) by redesignating paragraphs (1) and (2) as paragraphs (2) and (3), respectively; and

(C) by inserting before paragraph (2) (as redesignated by subparagraph (B)) the following:

"(1) ADMINISTRATOR.—The term 'Administrator' means the Administrator of the Federal Emergency Management Agency.".

(b) INSPECTION OF DAMS.—Section 3(b)(1) of the National Dam Safety Program Act (33 U.S.C. 467a(b)(1)) is amended by striking "or maintenance" and inserting "maintenance, condition, or provisions for emergency operations".

(c) NATIONAL DAM SAFETY PROGRAM.—

(1) OBJECTIVES.—Section 8(c) of the National Dam Safety Program Act (33 U.S.C. 467f(c)) is amended by striking paragraph (4) and inserting the following:

"(4) develop and implement a comprehensive dam safety hazard education and public awareness initiative to assist the public in preparing for, mitigating, responding to, and recovering from dam incidents;".

(2) BOARD.—Section 8(f)(4) of the National Dam Safety Program Act (33 U.S.C. 467f(f)(4)) is amended by inserting ", representatives from nongovernmental organizations," after "State agencies".

(d) PUBLIC AWARENESS AND OUTREACH FOR DAM SAFETY.—The National Dam Safety Program Act (33 U.S.C. 467 et seq.) is amended—

(1) by redesignating sections 11, 12, and 13 as sections 12, 13, and 14, respectively; and

(2) by inserting after section 10 (33 U.S.C. 467g–1) the following:

"SEC. 11. PUBLIC AWARENESS AND OUTREACH FOR DAM SAFETY.

"The Administrator, in consultation with other Federal agencies, State and local governments, dam owners, the emergency management community, the private sector, nongovernmental organizations and associations, institutions of higher education, and any other appropriate entities shall, subject to the availability of appropriations, carry out a nationwide public awareness and outreach initiative to assist the public in preparing for, mitigating, responding to, and recovering from dam incidents.".

(e) AUTHORIZATION OF APPROPRIATIONS.—

(1) NATIONAL DAM SAFETY PROGRAM.—

(A) ANNUAL AMOUNTS.—Section 14(a)(1) of the National Dam Safety Program Act (33 U.S.C. 467j(a)(1)) (as so redesignated) is amended by striking "$6,500,000" and all that follows through "2011" and inserting "$9,200,000 for each of fiscal years 2015 through 2019".

(B) MAXIMUM AMOUNT OF ALLOCATION.—Section 14(a)(2)(B) of the National Dam Safety Program Act (33 U.S.C. 467j(a)(2)(B)) (as so redesignated) is amended—

(i) by striking "The amount" and inserting the following:

"(i) IN GENERAL.—The amount"; and

(ii) by adding at the end the following:

"(ii) FISCAL YEAR 2015 AND SUBSEQUENT FISCAL YEARS.—For fiscal year 2015 and each subsequent fiscal year, the amount of funds allocated to a State under this paragraph may not exceed the amount of funds committed by the State to implement dam safety activities.".

(2) NATIONAL DAM INVENTORY.—Section 14(b) of the National Dam Safety Program Act (33 U.S.C. 467j(b)) (as so redesignated) is amended by striking "$650,000" and all that follows through "2011" and inserting "$500,000 for each of fiscal years 2015 through 2019".

(3) PUBLIC AWARENESS.—Section 14 of the National Dam Safety Program Act (33 U.S.C. 467j) (as so redesignated) is amended—

(A) by redesignating subsections (c) through (f) as subsections (d) through (g), respectively; and

(B) by inserting after subsection (b) the following:

"(c) PUBLIC AWARENESS.—There is authorized to be appropriated to carry out section 11 $1,000,000 for each of fiscal years 2015 through 2019.".

(4) RESEARCH.—Section 14(d) of the National Dam Safety Program Act (as so redesignated) is amended by striking

"$1,600,000" and all that follows through "2011" and inserting "$1,450,000 for each of fiscal years 2015 through 2019".

(5) DAM SAFETY TRAINING.—Section 14(e) of the National Dam Safety Program Act (as so redesignated) is amended by striking "$550,000" and all that follows through "2011" and inserting "$750,000 for each of fiscal years 2015 through 2019".

(6) STAFF.—Section 14(f) of the National Dam Safety Program Act (as so redesignated) is amended by striking "$700,000" and all that follows through "2011" and inserting "$1,000,000 for each of fiscal years 2015 through 2019".

(f) TECHNICAL AMENDMENT.—Section 14(a)(1) of the National Dam Safety Program Act (33 U.S.C. 467j(a)(1)) (as so redesignated) is amended by striking "sections 7, 8, and 11" and inserting "sections 7, 8, and 12".

Subtitle B—Levee Safety

SEC. 3011. SYSTEMWIDE IMPROVEMENT FRAMEWORK.

A levee system shall remain eligible for rehabilitation assistance under the authority provided by section 5 of the Act of August 18, 1941 (33 U.S.C. 701n) as long as the levee system sponsor continues to make satisfactory progress, as determined by the Secretary, on an approved systemwide improvement framework or letter of intent.

SEC. 3012. MANAGEMENT OF FLOOD RISK REDUCTION PROJECTS.

(a) IN GENERAL.—If 2 or more flood control projects are located within the same geographic area, the Secretary shall, at the request of the non-Federal interests for the affected projects, consider those projects as a single program for budgetary or project management purposes, if the Secretary determines that doing so would not be incompatible with the authorized project purposes.

(b) COST SHARE.—

(1) IN GENERAL.—If any work on a project to which subsection (a) applies is required solely because of impacts to that project from a navigation project, the cost of carrying out that work shall be shared in accordance with the cost-sharing requirements for the navigation project.

(2) USE OF AMOUNTS.—Work described in paragraph (1) may be carried out using amounts made available under subsection (a).

SEC. 3013. VEGETATION MANAGEMENT POLICY.

(a) DEFINITION OF GUIDELINES.—In this section, the term "guidelines" means the Corps of Engineers policy guidelines for management of vegetation on levees, including—

(1) Engineering Technical Letter 1110–2–571 entitled "Guidelines for Landscape Planting and Vegetation Management at Levees, Floodwalls, Embankment Dams, and Appurtenant Structures" and adopted April 10, 2009; and

(2) the draft policy guidance letter entitled "Process for Requesting a Variance from Vegetation Standards for Levees and Floodwalls" (77 Fed. Reg. 9637 (Feb. 17, 2012)).

(b) REVIEW.—The Secretary shall carry out a comprehensive review of the guidelines in order to determine whether current Federal policy relating to levee vegetation is appropriate for all regions of the United States.

(c) FACTORS.—

(1) IN GENERAL.—In carrying out the review, the Secretary shall consider—

(A) the varied interests and responsibilities in managing flood risks, including the need—

(i) to provide the greatest benefits for public safety with limited resources; and

(ii) to ensure that levee safety investments minimize environmental impacts and provide corresponding public safety benefits;

(B) the levee safety benefits that can be provided by woody vegetation;

(C) the preservation, protection, and enhancement of natural resources, including—

(i) the benefit of vegetation on levees in providing habitat for species of concern, including endangered, threatened, and candidate species; and

(ii) the impact of removing levee vegetation on compliance with other regulatory requirements;

(D) protecting the rights of Indian tribes pursuant to treaties and statutes;

(E) determining how vegetation impacts the performance of a levee or levee system during a storm or flood event;

(F) the available science and the historical record regarding the link between vegetation on levees and flood risk;

(G) the avoidance of actions requiring significant economic costs and environmental impacts; and

(H) other factors relating to the factors described in subparagraphs (A) through (F) identified in public comments that the Secretary determines to be appropriate.

(2) VARIANCE CONSIDERATIONS.—

(A) IN GENERAL.—In carrying out the review, the Secretary shall specifically consider factors that promote and allow for consideration of variances from guidelines on a Statewide, tribal, regional, or watershed basis, including variances based on—

(i) regional or watershed soil conditions;

(ii) hydrologic factors;

(iii) vegetation patterns and characteristics;

(iv) environmental resources, including endangered, threatened, or candidate species and related regulatory requirements;

(v) levee performance history, including historical information on original construction and subsequent operation and maintenance activities;

(vi) any effects on water supply;

(vii) any scientific evidence on the link between levee vegetation and levee safety;

(viii) institutional considerations, including implementation challenges and conflicts with or violations of Federal or State environmental laws;

(ix) the availability of limited funds for levee construction and rehabilitation;

(x) the economic and environmental costs of removing woody vegetation on levees; and

(xi) other relevant factors identified in public comments that the Secretary determines to be appropriate.

(B) SCOPE.—The scope of a variance approved by the Secretary may include a complete exemption to guidelines, if appropriate.

(d) COOPERATION AND CONSULTATION; RECOMMENDATIONS.—

(1) IN GENERAL.—The Secretary shall carry out the review under this section in consultation with other applicable Federal agencies, representatives of State, regional, local, and tribal governments, appropriate nongovernmental organizations, and the public.

(2) RECOMMENDATIONS.—

(A) REGIONAL INTEGRATION TEAMS.—Corps of Engineers Regional Integration Teams, representing districts, divisions, and headquarters, in consultation with State and Federal resource agencies, and with participation by local agencies, shall submit to the Secretary any recommendations for vegetation management policies for levees that conform with Federal and State laws and other applicable requirements, including recommendations relating to the review of guidelines under subsection (b) and the consideration of variances under subsection (c)(2).

(B) STATE, TRIBAL, REGIONAL, AND LOCAL ENTITIES.—The Secretary shall consider and accept recommendations from any State, tribal, regional, or local entity for vegetation management policies for levees that conform with Federal and State laws and other applicable requirements, including recommendations relating to the review of guidelines under subsection (b) and the consideration of variances under subsection (c)(2).

(e) INDEPENDENT CONSULTATION.—

(1) IN GENERAL.—As part of the review, the Secretary shall solicit and consider the views of independent experts on the engineering, environmental, and institutional considerations underlying the guidelines, including the factors described in subsection (c) and any information obtained by the Secretary under subsection (d).

(2) AVAILABILITY OF VIEWS.—The views of the independent experts obtained under paragraph (1) shall be—

(A) made available to the public; and

(B) included in supporting materials issued in connection with the revised guidelines required under subsection (f).

(f) REVISION OF GUIDELINES.—

(1) IN GENERAL.—Not later than 18 months after the date of enactment of this Act, the Secretary shall—

(A) revise the guidelines based on the results of the review, including—

(i) recommendations received as part of the consultation described in subsection (d)(1); and

(ii) the views received under subsection (e);

(B) provide the public not less than 30 days to review and comment on draft guidelines before issuing final guidelines; and

(C) submit to Congress and make publicly available a report that contains a summary of the activities of the

Secretary and a description of the findings of the Secretary under this section.

(2) CONTENT; INCORPORATION INTO MANUAL.—The revised guidelines shall—

(A) provide a practical, flexible process for approving Statewide, tribal, regional, or watershed variances from the guidelines that—

(i) reflect due consideration of the factors described in subsection (c); and

(ii) incorporate State, tribal, and regional vegetation management guidelines for specific areas that—

(I) are consistent with the guidelines; and

(II) have been adopted through a formal public process; and

(B) be incorporated into the manual proposed under section 5(c) of the Act of August 18, 1941 (33 U.S.C. 701n(c)).

(3) FAILURE TO MEET DEADLINES.—If the Secretary fails to submit a report by the required deadline under this subsection, the Secretary shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a detailed explanation of—

(A) why the deadline was missed;

(B) solutions needed to meet the deadline; and

(C) a projected date for submission of the report.

(g) INTERIM ACTIONS.—

(1) IN GENERAL.—Until the date on which revisions to the guidelines are adopted in accordance with subsection (f), the Secretary shall not require the removal of existing vegetation as a condition or requirement for any approval or funding of a project, or any other action, unless the specific vegetation has been demonstrated to present an unacceptable safety risk.

(2) REVISIONS.—Beginning on the date on which the revisions to the guidelines are adopted in accordance with subsection (f), the Secretary shall reconsider, on request of an affected entity, any previous action of the Corps of Engineers in which the outcome was affected by the former guidelines.

SEC. 3014. LEVEE CERTIFICATIONS.

(a) IMPLEMENTATION OF FLOOD PROTECTION STRUCTURE ACCREDITATION TASK FORCE.—In carrying out section 100226 of Public Law 112–141 (42 U.S.C. 4101 note; 126 Stat. 942), the Secretary shall—

(1) ensure that at least 1 program activity carried out under the inspection of completed works program of the Corps of Engineers provides adequate information to the Secretary to reach a levee accreditation decision under section 65.10 of title 44, Code of Federal Regulations (or successor regulation); and

(2) to the maximum extent practicable, carry out activities under the inspection of completed works program of the Corps of Engineers in alignment with the schedule established for the national flood insurance program established under chapter 1 of the National Flood Insurance Act of 1968 (42 U.S.C. 4011 et seq.).

(b) ACCELERATED LEVEE SYSTEM EVALUATIONS.—

(1) IN GENERAL.—On receipt of a request from a non-Federal interest, the Secretary may carry out a levee system evaluation of a federally authorized levee for purposes of the national flood insurance program established under chapter 1 of the National Flood Insurance Act of 1968 (42 U.S.C. 4011 et seq.) if the evaluation will be carried out earlier than such an evaluation would be carried out under subsection (a).

(2) REQUIREMENTS.—A levee system evaluation under paragraph (1) shall—

(A) at a minimum, comply with section 65.10 of title 44, Code of Federal Regulations (as in effect on the date of enactment of this Act); and

(B) be carried out in accordance with such procedures as the Secretary, in consultation with the Administrator of the Federal Emergency Management Agency, may establish.

(3) FUNDING.—

(A) IN GENERAL.—The Secretary may use amounts made available under section 22 of the Water Resources Development Act of 1974 (42 U.S.C. 1962d–16) to carry out this subsection.

(B) COST SHARE.—The Secretary shall apply the cost share under section 22(b) of the Water Resources Development Act of 1974 (42 U.S.C. 1962d–16(b)) to any activities carried out under this subsection.

SEC. 3015. PLANNING ASSISTANCE TO STATES.

Section 22 of the Water Resources Development Act of 1974 (42 U.S.C. 1962d–16) is amended—

(1) in subsection (a)—

(A) in paragraph (1)—

(i) by inserting "or other non-Federal interest working with a State" after "cooperate with any State"; and

(ii) by inserting ", including plans to comprehensively address water resources challenges," after "of such State"; and

(B) in paragraph (2)(A), by striking ", at Federal expense,";

(2) in subsection (b)—

(A) in paragraph (1), by striking "subsection (a)(1)" each place it appears and inserting "subsection (a)";

(B) by redesignating paragraphs (2) and (3) as paragraphs (3) and (4), respectively; and

(C) by inserting after paragraph (1) the following:

"(2) CONTRIBUTED FUNDS.—The Secretary may accept and expend funds in excess of the fees established under paragraph (1) that are provided by a State or other non-Federal interest for assistance under this section."; and

(3) in subsection (c)—

(A) in paragraph (1)—

(i) by striking "$10,000,000" and inserting "$30,000,000"; and

(ii) by striking "$2,000,000" and inserting "$5,000,000 in Federal funds"; and

(B) in paragraph (2), by striking "$5,000,000" and inserting "$15,000,000".

SEC. 3016. LEVEE SAFETY.

(a) PURPOSES.—Section 9001 of the Water Resources Development Act of 2007 (33 U.S.C. 3301 note) is amended—

(1) in the section heading, by inserting "**; PURPOSES**" after "**TITLE**";

(2) by striking "This title" and inserting the following: "(a) SHORT TITLE.—This title"; and

(3) by adding at the end the following:

"(b) PURPOSES.—The purposes of this title are—

"(1) to ensure that human lives and property that are protected by new and existing levees are safe;

"(2) to encourage the use of appropriate engineering policies, procedures, and technical practices for levee site investigation, design, construction, operation and maintenance, inspection, assessment, and emergency preparedness;

"(3) to develop and support public education and awareness projects to increase public acceptance and support of levee safety programs and provide information;

"(4) to build public awareness of the residual risks associated with living in levee protected areas;

"(5) to develop technical assistance materials, seminars, and guidelines to improve the security of levees of the United States; and

"(6) to encourage the establishment of effective State and tribal levee safety programs.".

(b) DEFINITIONS.—Section 9002 of the Water Resources Development Act of 2007 (33 U.S.C. 3301) is amended—

(1) by redesignating paragraphs (1), (2), (3), (4), (5), and (6), as paragraphs (3), (6), (7), (14), (15), and (16), respectively;

(2) by inserting before paragraph (3) (as redesignated by paragraph (1)) the following:

"(1) ADMINISTRATOR.—The term 'Administrator' means the Administrator of the Federal Emergency Management Agency.

"(2) CANAL STRUCTURE.—

"(A) IN GENERAL.—The term 'canal structure' means an embankment, wall, or structure along a canal or man-made watercourse that—

"(i) constrains water flows;

"(ii) is subject to frequent water loading; and

"(iii) is an integral part of a flood risk reduction system that protects the leveed area from flood waters associated with hurricanes, precipitation events, seasonal high water, and other weather-related events.

"(B) EXCLUSION.—The term 'canal structure' does not include a barrier across a watercourse.";

(3) by inserting after paragraph (3) (as redesignated by paragraph (1)) the following:

"(4) FLOODPLAIN MANAGEMENT.—The term 'floodplain management' means the operation of a community program of corrective and preventative measures for reducing flood damage.

"(5) INDIAN TRIBE.—The term 'Indian tribe' has the meaning given the term in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450b).''; and

(4) by striking paragraph (7) (as redesignated by paragraph (1)) and inserting the following:

"(7) LEVEE.—

"(A) IN GENERAL.—The term 'levee' means a manmade barrier (such as an embankment, floodwall, or other structure)—

"(i) the primary purpose of which is to provide hurricane, storm, or flood protection relating to seasonal high water, storm surges, precipitation, or other weather events; and

"(ii) that is normally subject to water loading for only a few days or weeks during a calendar year.

"(B) INCLUSIONS.—The term 'levee' includes a levee system, including—

"(i) levees and canal structures that—

"(I) constrain water flows;

"(II) are subject to more frequent water loading; and

"(III) do not constitute a barrier across a watercourse; and

"(ii) roadway and railroad embankments, but only to the extent that the embankments are integral to the performance of a flood damage reduction system.

"(C) EXCLUSIONS.—The term 'levee' does not include—

"(i) a roadway or railroad embankment that is not integral to the performance of a flood damage reduction system;

"(ii) a canal constructed completely within natural ground without any manmade structure (such as an embankment or retaining wall to retain water or a case in which water is retained only by natural ground);

"(iii) a canal regulated by a Federal or State agency in a manner that ensures that applicable Federal safety criteria are met;

"(iv) a levee or canal structure—

"(I) that is not a part of a Federal flood damage reduction system;

"(II) that is not recognized under the National Flood Insurance Program as providing protection from the 1-percent-annual-chance or greater flood;

"(III) that is not greater than 3 feet high;

"(IV) the population in the leveed area of which is less than 50 individuals; and

"(V) the leveed area of which is less than 1,000 acres; or

"(v) any shoreline protection or river bank protection system (such as revetments or barrier islands).

"(8) LEVEE FEATURE.—The term 'levee feature' means a structure that is critical to the functioning of a levee, including—

"(A) an embankment section;

"(B) a floodwall section;

"(C) a closure structure;

"(D) a pumping station;

"(E) an interior drainage work; and

"(F) a flood damage reduction channel.

"(9) LEVEE SYSTEM.—The term 'levee system' means 1 or more levee segments, including all levee features that are interconnected and necessary to ensure protection of the associated leveed areas—

"(A) that collectively provide flood damage reduction to a defined area; and

"(B) the failure of 1 of which may result in the failure of the entire system.

"(10) NATIONAL LEVEE DATABASE.—The term 'national levee database' means the levee database established under section 9004.

"(11) PARTICIPATING PROGRAM.—The term 'participating program' means a levee safety program developed by a State or Indian tribe that includes the minimum components necessary for recognition by the Secretary.

"(12) REHABILITATION.—The term 'rehabilitation' means the repair, replacement, reconstruction, removal of a levee, or reconfiguration of a levee system, including a setback levee, that is carried out to reduce flood risk or meet national levee safety guidelines.

"(13) RISK.—The term 'risk' means a measure of the probability and severity of undesirable consequences.".

(c) COMMITTEE ON LEVEE SAFETY.—Section 9003 of the Water Resources Development Act of 2007 (33 U.S.C. 3302) is amended—

(1) in subsection (b)—

(A) by striking paragraphs (1) and (2) and inserting the following:

"(1) NONVOTING MEMBERS.—The following 2 nonvoting members:

"(A) The Secretary (or a designee of the Secretary).

"(B) The Administrator (or a designee of the Administrator).";

(B) by redesignating paragraph (3) as paragraph (2); and

(C) in paragraph (2) (as redesignated by subparagraph (B)) by inserting "voting" after "14";

(2) by redesignating subsection (g) as subsection (h); and

(3) by striking subsections (c) through (f) and inserting the following:

"(c) ADMINISTRATION.—

"(1) TERMS OF VOTING MEMBERS.—

"(A) IN GENERAL.—A voting member of the committee shall be appointed for a term of 3 years, except that, of the members first appointed—

"(i) 5 shall be appointed for a term of 1 year;

"(ii) 5 shall be appointed for a term of 2 years; and

"(iii) 4 shall be appointed for a term of 3 years.

"(B) REAPPOINTMENT.—A voting member of the committee may be reappointed to the committee, as the Secretary determines to be appropriate.

"(C) VACANCIES.—A vacancy on the committee shall be filled in the same manner as the original appointment was made.

"(2) CHAIRPERSON.—

"(A) IN GENERAL.—The voting members of the committee shall appoint a chairperson from among the voting members of the committee.

"(B) TERM.—The chairperson shall serve a term of not more than 2 years.

"(d) STANDING COMMITTEES.—

"(1) IN GENERAL.—The committee may establish standing committees comprised of volunteers from all levels of government and the private sector, to advise the committee regarding specific levee safety issues, including participating programs, technical issues, public education and awareness, and safety and the environment.

"(2) MEMBERSHIP.—The committee shall recommend to the Secretary for approval individuals for membership on the standing committees.

"(e) DUTIES AND POWERS.—The committee—

"(1) shall submit to the Secretary and Congress an annual report regarding the effectiveness of the levee safety initiative in accordance with section 9006; and

"(2) may secure from other Federal agencies such services, and enter into such contracts, as the committee determines to be necessary to carry out this subsection.

"(f) TASK FORCE COORDINATION.—The committee shall, to the maximum extent practicable, coordinate the activities of the committee with the Federal Interagency Floodplain Management Task Force.

"(g) COMPENSATION.—

"(1) FEDERAL EMPLOYEES.—Each member of the committee who is an officer or employee of the United States—

"(A) shall serve without compensation in addition to compensation received for the services of the member as an officer or employee of the United States; but

"(B) shall be allowed a per diem allowance for travel expenses, at rates authorized for an employee of an agency under subchapter I of chapter 57 of title 5, United States Code, while away from the home or regular place of business of the member in the performance of the duties of the committee.

"(2) NON-FEDERAL EMPLOYEES.—To the extent amounts are made available to carry out this section in appropriations Acts, the Secretary shall provide to each member of the committee who is not an officer or employee of the United States a stipend and a per diem allowance for travel expenses, at rates authorized for an employee of an agency under subchapter I of chapter 57 of title 5, United States Code, while away from the home or regular place of business of the member in performance of services for the committee.

"(3) STANDING COMMITTEE MEMBERS.—Each member of a standing committee shall serve in a voluntary capacity.".

(d) INVENTORY OF LEVEES.—Section 9004 of the Water Resources Development Act of 2007 (33 U.S.C. 3303) is amended—

(1) in subsection (a)(2)(A) by striking "and, for non-Federal levees, such information on levee location as is provided to the Secretary by State and local governmental agencies" and inserting "and updated levee information provided by States, Indian tribes, Federal agencies, and other entities"; and

(2) by adding at the end the following:

"(c) LEVEE REVIEW.—

"(1) IN GENERAL.—The Secretary shall carry out a one-time inventory and review of all levees identified in the national levee database.

"(2) NO FEDERAL INTEREST.—The inventory and inspection under paragraph (1) does not create a Federal interest in the construction, operation, or maintenance of any levee that is included in the inventory or inspected under this subsection.

"(3) REVIEW CRITERIA.—In carrying out the inventory and review, the Secretary shall use the levee safety action classification criteria to determine whether a levee should be classified in the inventory as requiring a more comprehensive inspection.

"(4) STATE AND TRIBAL PARTICIPATION.—At the request of a State or Indian tribe with respect to any levee subject to review under this subsection, the Secretary shall—

"(A) allow an official of the State or Indian tribe to participate in the review of the levee; and

"(B) provide information to the State or Indian tribe relating to the location, construction, operation, or maintenance of the levee.

"(5) EXCEPTIONS.—In carrying out the inventory and review under this subsection, the Secretary shall not be required to review any levee that has been inspected by a State or Indian tribe using the same methodology described in paragraph (3) during the 1-year period immediately preceding the date of enactment of this subsection if the Governor of the State or chief executive of the tribal government, as applicable, requests an exemption from the review.".

(e) LEVEE SAFETY INITIATIVE.—

(1) IN GENERAL.—Sections 9005 and 9006 of the Water Resources Development Act of 2007 (33 U.S.C. 3304, 3305) are redesignated as sections 9007 and 9008, respectively.

(2) LEVEE SAFETY INITIATIVE.—Title IX of the Water Resources Development Act of 2007 (33 U.S.C. 3301 et seq.) is amended by inserting after section 9004 the following:

"SEC. 9005. LEVEE SAFETY INITIATIVE.

"(a) ESTABLISHMENT.—The Secretary, in consultation with the Administrator, shall carry out a levee safety initiative.

"(b) MANAGEMENT.—The Secretary shall appoint—

"(1) an administrator of the levee safety initiative; and

"(2) such staff as are necessary to implement the initiative.

"(c) LEVEE SAFETY GUIDELINES.—

"(1) ESTABLISHMENT.—Not later than 1 year after the date of enactment of this subsection, the Secretary, in consultation with the Administrator and in coordination with State, local, and tribal governments and organizations with expertise in levee safety, shall establish a set of voluntary, comprehensive, national levee safety guidelines that—

"(A) are available for common, uniform use by all Federal, State, tribal, and local agencies;

"(B) incorporate policies, procedures, standards, and criteria for a range of levee types, canal structures, and related facilities and features; and

"(C) provide for adaptation to local, regional, or watershed conditions.

"(2) REQUIREMENT.—The policies, procedures, standards, and criteria under paragraph (1)(B) shall be developed taking into consideration the levee hazard potential classification system established under subsection (d).

"(3) INCORPORATION.—The guidelines shall address, to the maximum extent practicable—

"(A) the activities and practices carried out by State, local, and tribal governments, and the private sector to safely build, regulate, operate, and maintain levees; and

"(B) Federal activities that facilitate State efforts to develop and implement effective State programs for the safety of levees, including levee inspection, levee rehabilitation, locally developed floodplain management, and public education and training programs.

"(4) CONSIDERATION BY FEDERAL AGENCIES.—To the maximum extent practicable, all Federal agencies shall consider the levee safety guidelines in carrying out activities relating to the management of levees.

"(5) PUBLIC COMMENT.—Prior to finalizing the guidelines under this subsection, the Secretary shall—

"(A) issue draft guidelines for public comment, including comment by States, non-Federal interests, and other appropriate stakeholders; and

"(B) consider any comments received in the development of final guidelines.

"(d) HAZARD POTENTIAL CLASSIFICATION SYSTEM.—

"(1) ESTABLISHMENT.—The Secretary shall establish a hazard potential classification system for use under the levee safety initiative and participating programs.

"(2) REVISION.—The Secretary shall review and, as necessary, revise the hazard potential classification system not less frequently than once every 5 years.

"(3) CONSISTENCY.—The hazard potential classification system established pursuant to this subsection shall be consistent with and incorporated into the levee safety action classification tool developed by the Corps of Engineers.

"(e) TECHNICAL ASSISTANCE AND MATERIALS.—

"(1) ESTABLISHMENT.—The Secretary, in consultation with the Administrator, shall provide technical assistance and training to promote levee safety and assist States, communities, and levee owners in—

"(A) developing levee safety programs;

"(B) identifying and reducing flood risks associated with levees;

"(C) identifying local actions that may be carried out to reduce flood risks in leveed areas; and

"(D) rehabilitating, improving, replacing, reconfiguring, modifying, and removing levees and levee systems.

"(2) ELIGIBILITY.—To be eligible to receive technical assistance under this subsection, a State shall—

"(A) be in the process of establishing or have in effect a State levee safety program under which a State levee safety agency, in accordance with State law, carries out the guidelines established under subsection (c)(1); and

"(B) allocate sufficient funds in the budget of that State to carry out that State levee safety program.

"(3) WORK PLANS.—The Secretary shall enter into an agreement with each State receiving technical assistance under this subsection to develop a work plan necessary for the State levee safety program of that State to reach a level of program performance that meets the guidelines established under subsection (c)(1).

"(f) PUBLIC EDUCATION AND AWARENESS.—

"(1) IN GENERAL.—The Secretary, in coordination with the Administrator, shall carry out public education and awareness efforts relating to the levee safety initiative.

"(2) CONTENTS.—In carrying out the efforts under paragraph (1), the Secretary and the Administrator shall—

"(A) educate individuals living in leveed areas regarding the risks of living in those areas; and

"(B) promote consistency in the transmission of information regarding levees among Federal agencies and regarding risk communication at the State and local levels.

"(g) STATE AND TRIBAL LEVEE SAFETY PROGRAM.—

"(1) GUIDELINES.—

"(A) IN GENERAL.—Not later than 1 year after the date of enactment of this subsection, in consultation with the Administrator, the Secretary shall issue guidelines that establish the minimum components necessary for recognition of a State or tribal levee safety program as a participating program.

"(B) GUIDELINE CONTENTS.—The guidelines under subparagraph (A) shall include provisions and procedures requiring each participating State and Indian tribe to certify to the Secretary that the State or Indian tribe, as applicable—

"(i) has the authority to participate in the levee safety initiative;

"(ii) can receive funds under this title;

"(iii) has adopted any levee safety guidelines developed under this title;

"(iv) will carry out levee inspections;

"(v) will carry out, consistent with applicable requirements, flood risk management and any emergency action planning procedures the Secretary determines to be necessary relating to levees;

"(vi) will carry out public education and awareness activities consistent with the efforts carried out under subsection (f); and

"(vii) will collect and share information regarding the location and condition of levees, including for inclusion in the national levee database.

"(C) PUBLIC COMMENT.—Prior to finalizing the guidelines under this paragraph, the Secretary shall—

"(i) issue draft guidelines for public comment; and

"(ii) consider any comments received in the development of final guidelines.

"(2) ASSISTANCE TO STATES.—

"(A) ESTABLISHMENT.—The Administrator may provide assistance, subject to the availability of funding specified in appropriations Acts for Federal Emergency Management Agency activities pursuant to this title and subject to amounts available under subparagraph (E), to States and

Indian tribes in establishing participating programs, conducting levee inventories, and improving levee safety programs in accordance with subparagraph (B).

"(B) REQUIREMENTS.—To be eligible to receive assistance under this section, a State or Indian tribe shall—

"(i) meet the requirements of a participating program established by the guidelines issued under paragraph (1);

"(ii) use not less than 25 percent of any amounts received to identify and assess non-Federal levees within the State or on land of the Indian tribe;

"(iii) submit to the Secretary and Administrator any information collected by the State or Indian tribe in carrying out this subsection for inclusion in the national levee safety database; and

"(iv) identify actions to address hazard mitigation activities associated with levees and leveed areas identified in the hazard mitigation plan of the State approved by the Administrator of the Federal Emergency Management Agency under the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5121 et seq.).

"(C) MEASURES TO ASSESS EFFECTIVENESS.—

"(i) IN GENERAL.—Not later than 1 year after the date of enactment of this subsection, the Administrator shall implement quantifiable performance measures and metrics to assess the effectiveness of the assistance provided in accordance with subparagraph (A).

"(ii) CONSIDERATIONS.—In assessing the effectiveness of assistance under clause (i), the Administrator shall consider the degree to which the State or tribal program—

"(I) ensures that human lives and property that are protected by new and existing levees are safe;

"(II) encourages the use of appropriate engineering policies, procedures, and technical practices for levee site investigation, design, construction, operation and maintenance, inspection, assessment, and emergency preparedness;

"(III) develops and supports public education and awareness projects to increase public acceptance and support of levee safety programs and provide information;

"(IV) builds public awareness of the residual risks associated with living in levee protected areas; and

"(V) develops technical assistance materials, seminars, and guidelines to improve the security of levees of the United States.

"(D) MAINTENANCE OF EFFORT.—Technical assistance or grants may not be provided to a State under this subsection during a fiscal year unless the State enters into an agreement with the Administrator to ensure that the State will maintain during that fiscal year aggregate expenditures for programs to ensure levee safety that equal or exceed the average annual level of such expenditures

for the State for the 2 fiscal years preceding that fiscal year.

"(E) AUTHORIZATION OF APPROPRIATIONS.—

"(i) IN GENERAL.—There is authorized to be appropriated to the Administrator to carry out this subsection $25,000,000 for each of fiscal years 2015 through 2019.

"(ii) ALLOCATION.—For each fiscal year, amounts made available under this subparagraph shall be allocated among the States and Indian tribes as follows:

"(I) ⅓ among States and Indian tribes that qualify for assistance under this subsection.

"(II) ⅔ among States and Indian tribes that qualify for assistance under this subsection, to each such State or Indian tribe in the proportion that—

"(aa) the miles of levees in the State or on the land of the Indian tribe that are listed on the inventory of levees; bears to

"(bb) the miles of levees in all States and on the land of all Indian tribes that are in the national levee database.

"(iii) MAXIMUM AMOUNT OF ALLOCATION.—The amounts allocated to a State or Indian tribe under this subparagraph shall not exceed 50 percent of the reasonable cost of implementing the State or tribal levee safety program.

"(F) PROHIBITION.—No amounts made available to the Administrator under this title shall be used for levee construction, rehabilitation, repair, operations, or maintenance.

"(h) LEVEE REHABILITATION ASSISTANCE PROGRAM.—

"(1) ESTABLISHMENT.—The Secretary shall provide assistance to States, Indian tribes, and local governments relating to addressing flood mitigation activities that result in an overall reduction in flood risk.

"(2) REQUIREMENTS.—To be eligible to receive assistance under this subsection, a State, Indian tribe, or local government shall—

"(A) participate in, and comply with, all applicable Federal floodplain management and flood insurance programs;

"(B) have in place a hazard mitigation plan that—

"(i) includes all levee risks; and

"(ii) complies with the Disaster Mitigation Act of 2000 (Public Law 106–390; 114 Stat. 1552);

"(C) submit to the Secretary an application at such time, in such manner, and containing such information as the Secretary may require;

"(D) commit to provide normal operation and maintenance of the project for the 50 year-period following completion of rehabilitation; and

"(E) comply with such minimum eligibility requirements as the Secretary, in consultation with the committee, may establish to ensure that each owner and operator of a levee under a participating State or tribal levee safety program—

"(i) acts in accordance with the guidelines developed under subsection (c); and

"(ii) carries out activities relating to the public in the leveed area in accordance with the hazard mitigation plan described in subparagraph (B).

"(3) FLOODPLAIN MANAGEMENT PLANS.—

"(A) IN GENERAL.—Not later than 1 year after the date of execution of a project agreement for assistance under this subsection, a State, Indian tribe, or local government shall prepare a floodplain management plan in accordance with the guidelines under subparagraph (D) to reduce the impacts of future flood events in each applicable leveed area.

"(B) INCLUSIONS.—A plan under subparagraph (A) shall address—

"(i) potential measures, practices, and policies to reduce loss of life, injuries, damage to property and facilities, public expenditures, and other adverse impacts of flooding in each applicable leveed area;

"(ii) plans for flood fighting and evacuation; and

"(iii) public education and awareness of flood risks.

"(C) IMPLEMENTATION.—Not later than 1 year after the date of completion of construction of the applicable project, a floodplain management plan prepared under subparagraph (A) shall be implemented.

"(D) GUIDELINES.—Not later than 180 days after the date of enactment of this subsection, the Secretary, in consultation with the Administrator, shall develop such guidelines for the preparation of floodplain management plans prepared under this paragraph as the Secretary determines to be appropriate.

"(E) TECHNICAL SUPPORT.—The Secretary may provide technical support for the development and implementation of floodplain management plans prepared under this paragraph.

"(4) USE OF FUNDS.—

"(A) IN GENERAL.—Assistance provided under this subsection may be used—

"(i) for any rehabilitation activity to maximize overall risk reduction associated with a levee under a participating State or tribal levee safety program; and

"(ii) only for a levee that is not federally operated and maintained.

"(B) PROHIBITION.—Assistance provided under this subsection shall not be used—

"(i) to perform routine operation or maintenance for a levee; or

"(ii) to make any modification to a levee that does not result in an improvement to public safety.

"(5) NO PROPRIETARY INTEREST.—A contract for assistance provided under this subsection shall not be considered to confer any proprietary interest on the United States.

"(6) COST SHARE.—The maximum Federal share of the cost of any assistance provided under this subsection shall be 65 percent.

"(7) PROJECT LIMIT.—The maximum amount of Federal assistance for a project under this subsection shall be $10,000,000.

"(8) LIMITATION.—A project shall not receive Federal assistance under this subsection more than 1 time.

"(9) FEDERAL INTEREST.—For a project that is not a project eligible for rehabilitation assistance under section 5 of the Act of August 18, 1941 (33 U.S.C. 701n), the Secretary shall determine that the proposed rehabilitation is in the Federal interest prior to providing assistance for such rehabilitation.

"(10) OTHER LAWS.—Assistance provided under this subsection shall be subject to all applicable laws (including regulations) that apply to the construction of a civil works project of the Corps of Engineers.

"(i) EFFECT OF SECTION.—Nothing in this section—

"(1) affects the requirement under section 100226(b)(2) of Public Law 112–141 (42 U.S.C. 4101 note; 126 Stat. 942); or

"(2) confers any regulatory authority on—

"(A) the Secretary; or

"(B) the Administrator, including for the purpose of setting premium rates under the national flood insurance program established under chapter 1 of the National Flood Insurance Act of 1968 (42 U.S.C. 4011 et seq.).

"SEC. 9006. REPORTS.

"(a) STATE OF LEVEES.—

"(1) IN GENERAL.—Not later than 1 year after the date of enactment of this subsection, and biennially thereafter, the Secretary in coordination with the committee, shall submit to Congress and make publicly available a report describing the state of levees in the United States and the effectiveness of the levee safety initiative, including—

"(A) progress achieved in implementing the levee safety initiative;

"(B) State and tribal participation in the levee safety initiative;

"(C) recommendations to improve coordination of levee safety, floodplain management, and environmental protection concerns, including—

"(i) identifying and evaluating opportunities to coordinate public safety, floodplain management, and environmental protection activities relating to levees; and

"(ii) evaluating opportunities to coordinate environmental permitting processes for operation and maintenance activities at existing levee projects in compliance with all applicable laws; and

"(D) any recommendations for legislation and other congressional actions necessary to ensure national levee safety.

"(2) INCLUSION.—Each report under paragraph (1) shall include a report of the committee that describes the independent recommendations of the committee for the implementation of the levee safety initiative.

"(b) NATIONAL DAM AND LEVEE SAFETY PROGRAM.—Not later than 3 years after the date of enactment of this subsection, to

the maximum extent practicable, the Secretary and the Administrator, in coordination with the committee, shall submit to Congress and make publicly available a report that includes recommendations regarding the advisability and feasibility of, and potential approaches for, establishing a joint national dam and levee safety program.

"(c) ALIGNMENT OF FEDERAL PROGRAMS RELATING TO LEVEES.—Not later than 2 years after the date of enactment of this subsection, the Comptroller General of the United States shall submit to Congress a report on opportunities for alignment of Federal programs to provide incentives to State, tribal, and local governments and individuals and entities—

"(1) to promote shared responsibility for levee safety;

"(2) to encourage the development of strong State and tribal levee safety programs;

"(3) to better align the levee safety initiative with other Federal flood risk management programs; and

"(4) to promote increased levee safety through other Federal programs providing assistance to State and local governments.

"(d) LIABILITY FOR CERTAIN LEVEE ENGINEERING PROJECTS.—Not later than 1 year after the date of enactment of this subsection, the Secretary shall submit to Congress and make publicly available a report that includes recommendations that identify and address any legal liability associated with levee engineering projects that prevent—

"(1) levee owners from obtaining needed levee engineering services; or

"(2) development and implementation of a State or tribal levee safety program.".

(f) AUTHORIZATION OF APPROPRIATIONS.—Section 9008 of the Water Resources Development Act of 2007 (as redesignated by subsection (e)(1)) is amended—

(1) by striking "are" and inserting "is"; and

(2) by striking "Secretary" and all that follows through the period at the end and inserting the following:

"Secretary—

"(1) to carry out sections 9003, 9005(c), 9005(d), 9005(e), and 9005(f), $4,000,000 for each of fiscal years 2015 through 2019;

"(2) to carry out section 9004, $20,000,000 for each of fiscal years 2015 through 2019; and

"(3) to carry out section 9005(h), $30,000,000 for each of fiscal years 2015 through 2019.".

SEC. 3017. REHABILITATION OF EXISTING LEVEES.

(a) IN GENERAL.—The Secretary shall carry out measures that address consolidation, settlement, subsidence, sea level rise, and new datum to restore federally authorized hurricane and storm damage reduction projects that were constructed as of the date of enactment of this Act to the authorized levels of protection of the projects if the Secretary determines the necessary work is technically feasible, environmentally acceptable, and economically justified.

(b) LIMITATION.—This section shall only apply to those projects for which the executed project partnership agreement provides that the non-Federal interest is not required to perform future measures to restore the project to the authorized level of protection of the

project to account for subsidence and sea-level rise as part of the operation, maintenance, repair, replacement, and rehabilitation responsibilities.

(c) COST SHARE.—

(1) IN GENERAL.—The non-Federal share of the cost of construction of a project carried out under this section shall be determined as provided in subsections (a) through (d) of section 103 of the Water Resources Development Act of 1986 (33 U.S.C. 2213).

(2) CERTAIN ACTIVITIES.—The non-Federal share of the cost of operations, maintenance, repair, replacement, and rehabilitation for a project carried out under this section shall be 100 percent.

(d) REPORT TO CONGRESS.—Not later than 5 years after the date of enactment of this Act, the Secretary shall include in the annual report developed under section 7001—

(1) any recommendations relating to the continued need for the authority provided under this section;

(2) a description of the measures carried out under this section;

(3) any lessons learned relating to the measures implemented under this section; and

(4) best practices for carrying out measures to restore hurricane and storm damage reduction projects.

(e) TERMINATION OF AUTHORITY.—The authority of the Secretary under this subsection terminates on the date that is 10 years after the date of enactment of this Act.

Subtitle C—Additional Safety Improvements and Risk Reduction Measures

SEC. 3021. USE OF INNOVATIVE MATERIALS.

Section 8(d) of the Water Resources Development Act of 1988 (33 U.S.C. 2314) is amended by striking "materials" and all that follows through the period at the end and inserting "methods, or materials, including roller compacted concrete, geosynthetic materials, and advanced composites, that the Secretary determines are appropriate to carry out this section.".

SEC. 3022. DURABILITY, SUSTAINABILITY, AND RESILIENCE.

In carrying out the activities of the Corps of Engineers, the Secretary, to the maximum extent practicable, shall encourage the use of durable and sustainable materials and resilient construction techniques that—

(1) allow a water resources infrastructure project—

(A) to resist hazards due to a major disaster; and

(B) to continue to serve the primary function of the water resources infrastructure project following a major disaster;

(2) reduce the magnitude or duration of a disruptive event to a water resources infrastructure project; and

(3) have the absorptive capacity, adaptive capacity, and recoverability to withstand a potentially disruptive event.

SEC. 3023. STUDY ON RISK REDUCTION.

(a) IN GENERAL.—Not later than 18 months after the date of enactment of this Act, the Secretary, in coordination with the Secretary of the Interior and the Secretary of Commerce, shall enter into an arrangement with the National Academy of Sciences to carry out a study and make recommendations relating to infrastructure and coastal restoration options for reducing risk to human life and property from extreme weather events, such as hurricanes, coastal storms, and inland flooding.

(b) CONSIDERATIONS.—The study under subsection (a) shall include—

(1) an analysis of strategies and water resources projects, including authorized water resources projects that have not yet been constructed, and other projects implemented in the United States and worldwide to respond to risk associated with extreme weather events;

(2) an analysis of—

(A) historical extreme weather events;

(B) the ability of existing infrastructure to mitigate risks associated with extreme weather events; and

(C) the reduction in long-term costs and vulnerability to infrastructure through the use of resilient construction techniques;

(3) identification of proven, science-based approaches and mechanisms for ecosystem protection and identification of natural resources likely to have the greatest need for protection, restoration, and conservation so that the infrastructure and restoration projects can continue safeguarding the communities in, and sustaining the economy of, the United States;

(4) an estimation of the funding necessary to improve infrastructure in the United States to reduce risk associated with extreme weather events;

(5) an analysis of the adequacy of current funding sources and the identification of potential new funding sources to finance the necessary infrastructure improvements referred to in paragraph (3); and

(6) an analysis of the Federal, State, and local costs of natural disasters and the potential cost-savings associated with implementing mitigation measures.

(c) COORDINATION.—The National Academy of Sciences may cooperate with the National Academy of Public Administration to carry out 1 or more aspects of the study under subsection (a).

(d) PUBLICATION.—Not later than 30 days after completion of the study under subsection (a), the National Academy of Sciences shall—

(1) submit a copy of the study to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives; and

(2) make a copy of the study available on a publicly accessible Internet site.

SEC. 3024. MANAGEMENT OF FLOOD, DROUGHT, AND STORM DAMAGE.

(a) IN GENERAL.—Not later than 1 year after the date of enactment of this Act, the Comptroller General shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House

of Representatives a study of the strategies used by the Corps of Engineers for the comprehensive management of water resources in response to floods, storms, and droughts, including an historical review of the ability of the Corps of Engineers to manage and respond to historical drought, storm, and flood events.

(b) CONSIDERATIONS.—The study under subsection (a) shall address—

(1) the extent to which existing water management activities of the Corps of Engineers can better meet the goal of addressing future flooding, drought, and storm damage risks, which shall include analysis of all historical extreme weather events that have been recorded during the previous 5 centuries as well as in the geological record;

(2) whether existing water resources projects built or maintained by the Corps of Engineers, including dams, levees, floodwalls, flood gates, and other appurtenant infrastructure were designed to adequately address flood, storm, and drought impacts and the extent to which the water resources projects have been successful at addressing those impacts;

(3) any recommendations for approaches for repairing, rebuilding, or restoring infrastructure, land, and natural resources that consider the risks and vulnerabilities associated with past and future extreme weather events;

(4) whether a reevaluation of existing management approaches of the Corps of Engineers could result in greater efficiencies in water management and project delivery that would enable the Corps of Engineers to better prepare for, contain, and respond to flood, storm, and drought conditions;

(5) any recommendations for improving the planning processes of the Corps of Engineers to provide opportunities for comprehensive management of water resources that increases efficiency and improves response to flood, storm, and drought conditions;

(6) any recommendations on the use of resilient construction techniques to reduce future vulnerability from flood, storm, and drought conditions; and

(7) any recommendations for improving approaches to rebuilding or restoring infrastructure and natural resources that contribute to risk reduction, such as coastal wetlands, to prepare for flood and drought.

SEC. 3025. POST-DISASTER WATERSHED ASSESSMENTS.

(a) WATERSHED ASSESSMENTS.—

(1) IN GENERAL.—In an area that the President has declared a major disaster in accordance with section 401 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5170), the Secretary may carry out a watershed assessment to identify, to the maximum extent practicable, specific flood risk reduction, hurricane and storm damage reduction, ecosystem restoration, or navigation project recommendations that will help to rehabilitate and improve the resiliency of damaged infrastructure and natural resources to reduce risks to human life and property from future natural disasters.

(2) EXISTING PROJECTS.—A watershed assessment carried out paragraph (1) may identify existing projects being carried

out under 1 or more of the authorities referred to in subsection (b)(1).

(3) DUPLICATE WATERSHED ASSESSMENTS.—In carrying out a watershed assessment under paragraph (1), the Secretary shall use all existing watershed assessments and related information developed by the Secretary or other Federal, State, or local entities.

(b) PROJECTS.—

(1) IN GENERAL.—The Secretary may carry out projects identified under a watershed assessment under subsection (a) in accordance with the criteria for projects carried out under one of the following authorities:

(A) Section 205 of the Flood Control Act of 1948 (33 U.S.C. 701s).

(B) Section 111 of the River and Harbor Act of 1968 (33 U.S.C. 426i).

(C) Section 206 of the Water Resources Development Act of 1996 (33 U.S.C. 2330).

(D) Section 1135 of the Water Resources Development Act of 1986 (33 U.S.C. 2309a).

(E) Section 107 of the River and Harbor Act of 1960 (33 U.S.C. 577).

(F) Section 3 of the Act of August 13, 1946 (33 U.S.C. 426g).

(2) ANNUAL PLAN.—For each project that does not meet the criteria under paragraph (1), the Secretary shall include a recommendation relating to the project in the annual report submitted to Congress by the Secretary in accordance with section 7001.

(3) EXISTING PROJECTS.—In carrying out a project under paragraph (1), the Secretary shall—

(A) to the maximum extent practicable, use all existing information and studies available for the project; and

(B) not require any element of a study completed for the project prior to the disaster to be repeated.

(c) REQUIREMENTS.—All requirements applicable to a project under the Acts described in subsection (b) shall apply to the project.

(d) LIMITATIONS ON ASSESSMENTS.—A watershed assessment under subsection (a) shall be initiated not later than 2 years after the date on which the major disaster declaration is issued.

SEC. 3026. HURRICANE AND STORM DAMAGE REDUCTION STUDY.

(a) IN GENERAL.—As part of the study for flood and storm damage reduction related to natural disasters to be carried out by the Secretary under title II of division A of the Disaster Relief Appropriations Act, 2013, under the heading "Department of the Army—Corps of Engineers—Civil—Investigations" (127 Stat. 5), the Secretary shall make specific project recommendations.

(b) CONSULTATION.—In making recommendations pursuant to this section, the Secretary may consult with key stakeholders, including State, county, and city governments, and, as applicable, State and local water districts, and in the case of recommendations concerning projects that substantially affect communities served by historically Black colleges and universities, Tribal Colleges and Universities, and other minority-serving institutions, the Secretary shall consult with those colleges, universities, and institutions.

(c) REPORT.—The Secretary shall include any recommendations of the Secretary under this section in the annual report submitted to Congress by the Secretary in accordance with section 7001.

SEC. 3027. EMERGENCY COMMUNICATION OF RISK.

(a) DEFINITIONS.—In this section:

(1) AFFECTED GOVERNMENT.—The term "affected government" means a State, local, or tribal government with jurisdiction over an area that will be affected by a flood.

(2) ANNUAL OPERATING PLAN.—The term "annual operating plan" means a plan prepared by the Secretary that describes potential water condition scenarios for a river basin for a year.

(b) COMMUNICATION.—In any river basin where the Secretary carries out flood risk management activities subject to an annual operating plan, the Secretary shall establish procedures for providing the public and affected governments, including Indian tribes, in the river basin with—

(1) timely information regarding expected water levels;

(2) advice regarding appropriate preparedness actions;

(3) technical assistance; and

(4) any other information or assistance determined appropriate by the Secretary.

(c) PUBLIC AVAILABILITY OF INFORMATION.—To the maximum extent practicable, the Secretary, in coordination with the Administrator of the Federal Emergency Management Agency, shall make the information required under subsection (b) available to the public through widely used and readily available means, including on the Internet.

(d) PROCEDURES.—The Secretary shall use the procedures established under subsection (b) only when precipitation or runoff exceeds those calculations considered as the lowest risk to life and property contemplated by the annual operating plan.

SEC. 3028. SAFETY ASSURANCE REVIEW.

Section 2035 of the Water Resources Development Act of 2007 (33 U.S.C. 2344) is amended by adding at the end the following:

"(g) NONAPPLICABILITY OF FACA.—The Federal Advisory Committee Act (5 U.S.C. App.) shall not apply to a safety assurance review conducted under this section.".

SEC. 3029. EMERGENCY RESPONSE TO NATURAL DISASTERS.

(a) EMERGENCY RESPONSE TO NATURAL DISASTERS.—Section 5(a)(1) of the Act of August 18, 1941 (33 U.S.C. 701n(a)(1)), is amended in the first sentence—

(1) by inserting "and subject to the condition that the Chief of Engineers may include modifications to the structure or project" after "work for flood control"; and

(2) by striking "structure damaged or destroyed by wind, wave, or water action of other than an ordinary nature when in the discretion of the Chief of Engineers such repair and restoration is warranted for the adequate functioning of the structure for hurricane or shore protection" and inserting "structure or project damaged or destroyed by wind, wave, or water action of other than an ordinary nature to the design level of protection when, in the discretion of the Chief of Engineers, such repair and restoration is warranted for the adequate functioning of the structure or project for hurricane or shore protection, subject to the condition that the Chief of Engineers

may include modifications to the structure or project to address major deficiencies or implement nonstructural alternatives to the repair or restoration of the structure if requested by the non-Federal sponsor".

(b) REVIEW OF EMERGENCY RESPONSE AUTHORITIES.—

(1) IN GENERAL.—The Secretary shall undertake a review of implementation of section 5 of the Act of August 18, 1941 (33 U.S.C. 701n), to evaluate the alternatives available to the Secretary to ensure—

(A) the safety of affected communities to future flooding and storm events;

(B) the resiliency of water resources development projects to future flooding and storm events;

(C) the long-term cost-effectiveness of water resources development projects that provide flood control and hurricane and storm damage reduction benefits; and

(D) the policy goals and objectives that have been outlined by the President as a response to recent extreme weather events, including Hurricane Sandy, that relate to preparing for future floods are met.

(2) SCOPE OF REVIEW.—In carrying out the review, the Secretary shall—

(A) review the historical precedents and implementation of section 5 of that Act, including those actions undertaken by the Secretary, over time, under that section—

(i) to repair or restore a project; and

(ii) to increase the level of protection for a damaged project to address future conditions;

(B) evaluate the difference between adopting, as an appropriate standard under section 5 of that Act, the repair or restoration of a project to pre-flood or pre-storm levels and the repair or restoration of a project to a design level of protection, including an assessment for each standard of—

(i) the implications on populations at risk of flooding or damage;

(ii) the implications on probability of loss of life;

(iii) the implications on property values at risk of flooding or damage;

(iv) the implications on probability of increased property damage and associated costs;

(v) the implications on local and regional economies; and

(vi) the estimated total cost and estimated cost savings;

(C) review and evaluate the historic and potential uses, and economic feasibility for the life of the project, of nonstructural alternatives, including natural features such as dunes, coastal wetlands, floodplains, marshes, and mangroves, to reduce the damage caused by floods, storm surges, winds, and other aspects of extreme weather events, and to increase the resiliency and long-term cost-effectiveness of water resources development projects;

(D) incorporate the science on expected rates of sea-level rise and extreme weather events;

(E) incorporate the work completed by the Hurricane Sandy Rebuilding Task Force, established by Executive Order No. 13632 (77 Fed. Reg. 74341); and

(F) review the information obtained from the report developed under subsection (c)(1).

(c) REPORTS.—

(1) BIENNIAL REPORT TO CONGRESS.—

(A) IN GENERAL.—Not later than 2 years after the date of enactment of this Act and every 2 years thereafter, the Secretary shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a report detailing the amounts expended in the previous 5 fiscal years to carry out Corps of Engineers projects under section 5 of the Act of August 18, 1941 (33 U.S.C. 701n).

(B) INCLUSIONS.—A report under subparagraph (A) shall, at a minimum, include a description of—

(i) each structure, feature, or project for which amounts are expended, including the type of structure, feature, or project and cost of the work; and

(ii) how the Secretary has repaired, restored, replaced, or modified each structure, feature, or project or intends to restore the structure, feature, or project to the design level of protection for the structure, feature, or project.

(2) REPORT ON REVIEW OF EMERGENCY RESPONSE AUTHORITIES.—Not later than 18 months after the date of enactment of this Act, the Secretary shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives and make publicly available a report on the results of the review under subsection (b).

TITLE IV—RIVER BASINS AND COASTAL AREAS

SEC. 4001. RIVER BASIN COMMISSIONS.

Section 5019 of the Water Resources Development Act of 2007 (121 Stat. 1201) is amended by striking subsection (b) and inserting the following:

"(b) AUTHORIZATION TO ALLOCATE.—

"(1) IN GENERAL.—The Secretary shall allocate funds to the Susquehanna River Basin Commission, the Delaware River Basin Commission, and the Interstate Commission on the Potomac River Basin to fulfill the equitable funding requirements of the respective interstate compacts.

"(2) AMOUNTS.—For each fiscal year, the Secretary shall allocate to each Commission described in paragraph (1) an amount equal to the amount determined by the Commission in accordance with the respective interstate compact approved by Congress.

"(3) NOTIFICATION.—If the Secretary does not allocate funds for a given fiscal year in accordance with paragraph (2), the Secretary, in conjunction with the subsequent submission by the President of the budget to Congress under section 1105(a)

of title 31, United States Code, shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a notice that describes—

"(A) the reasons why the Secretary did not allocate funds in accordance with paragraph (2) for that fiscal year; and

"(B) the impact of that decision not to allocate funds on each area of jurisdiction of each Commission described in paragraph (1), including with respect to—

"(i) water supply allocation;
"(ii) water quality protection;
"(iii) regulatory review and permitting;
"(iv) water conservation;
"(v) watershed planning;
"(vi) drought management;
"(vii) flood loss reduction;
"(viii) recreation; and
"(ix) energy development.".

SEC. 4002. MISSISSIPPI RIVER.

(a) MISSISSIPPI RIVER FORECASTING IMPROVEMENTS.—

(1) IN GENERAL.—The Secretary, in consultation with the Secretary of the department in which the Coast Guard is operating, the Director of the United States Geological Survey, the Administrator of the National Oceanic and Atmospheric Administration, and the Director of the National Weather Service, as applicable, shall improve forecasting on the Mississippi River by—

(A) updating forecasting technology deployed on the Mississippi River and its tributaries through—

(i) the construction of additional automated river gages;

(ii) the rehabilitation of existing automated and manual river gages; and

(iii) the replacement of manual river gages with automated gages, as the Secretary determines to be necessary;

(B) constructing additional sedimentation ranges on the Mississippi River and its tributaries; and

(C) deploying additional automatic identification system base stations at river gage sites.

(2) PRIORITIZATION.—In carrying out this subsection, the Secretary shall prioritize the sections of the Mississippi River on which additional and more reliable information would have the greatest impact on maintaining navigation on the Mississippi River.

(3) REPORT.—Not later than 1 year after the date of enactment of this Act, the Secretary shall submit to Congress and make publicly available a report on the activities carried out by the Secretary under this subsection.

(b) MIDDLE MISSISSIPPI RIVER PILOT PROGRAM.—

(1) IN GENERAL.—In accordance with the project for navigation, Mississippi River between the Ohio and Missouri Rivers (Regulating Works), Missouri and Illinois, authorized by the Act of June 25, 1910 (36 Stat. 631, chapter 382) (commonly known as the "River and Harbor Act of 1910"), the Act of

January 1, 1927 (44 Stat. 1010, chapter 47) (commonly known as the "River and Harbor Act of 1927"), and the Act of July 3, 1930 (46 Stat. 918, chapter 847), the Secretary may study improvements to navigation and aquatic ecosystem restoration in the middle Mississippi River.

(2) DISPOSITION.—

(A) IN GENERAL.—The Secretary may carry out any project identified pursuant to paragraph (1) in accordance with the criteria for projects carried out under one of the following authorities:

(i) Section 206 of the Water Resources Development Act of 1996 (33 U.S.C. 2330).

(ii) Section 1135 of the Water Resources Development Act of 1986 (33 U.S.C. 2309a).

(iii) Section 107 of the River and Harbor Act of 1960 (33 U.S.C. 577).

(iv) Section 104(a) of the River and Harbor Act of 1958 (33 U.S.C. 610(a)).

(B) REPORT.—For each project that does not meet the criteria under subparagraph (A), the Secretary shall include a recommendation relating to the project in the annual report submitted to Congress by the Secretary in accordance with section 7001.

(c) GREATER MISSISSIPPI RIVER BASIN SEVERE FLOODING AND DROUGHT MANAGEMENT STUDY.—

(1) DEFINITION OF GREATER MISSISSIPPI RIVER BASIN.—In this subsection, the term "greater Mississippi River Basin" means the area covered by hydrologic units 5, 6, 7, 8, 10, and 11, as identified by the United States Geological Survey as of the date of enactment of this Act.

(2) IN GENERAL.—The Secretary shall carry out a study of the greater Mississippi River Basin—

(A) to improve the coordinated and comprehensive management of water resource projects in the greater Mississippi River Basin relating to severe flooding and drought conditions; and

(B) to identify and evaluate—

(i) modifications to those water resource projects, consistent with the authorized purposes of those projects; and

(ii) the development of new water resource projects to improve the reliability of navigation and more effectively reduce flood risk.

(3) REPORT.—Not later than 3 years after the date of enactment of this Act, the Secretary shall submit to Congress and make publicly available a report on the study carried out under this subsection.

(4) SAVINGS CLAUSE.—Nothing in this subsection impacts the operations and maintenance of the Missouri River Mainstem System, as authorized by the Act of December 22, 1944 (commonly known as the "Flood Control Act of 1944")(58 Stat. 897, chapter 665).

(d) FLEXIBILITY IN MAINTAINING NAVIGATION.—

(1) EXTREME LOW WATER EVENT DEFINED.—In this subsection, the term "extreme low water event" means an extended period of time during which low water threatens the safe

commercial use of the Mississippi River for navigation, including the use and availability of fleeting areas.

(2) REPORT ON AREAS FOR ACTION.—

(A) IN GENERAL.—Not later than 1 year after the date of enactment of this Act, the Secretary, in consultation with the Secretary of the department in which the Coast Guard is operating, shall complete and make publicly available a report identifying areas that are unsafe and unreliable for commercial navigation during extreme low water events along the authorized Federal navigation channel on the Mississippi River and measures to address those restrictions.

(B) INCLUSIONS.—The report under subparagraph (A) shall—

(i) consider data from the most recent extreme low water events that impacted navigation along the authorized Federal navigation channel on the Mississippi River;

(ii) identify locations for potential modifications, including improvements outside the authorized navigation channel, that will alleviate hazards at areas that constrain navigation during extreme low water events along the authorized Federal navigation channel on the Mississippi River; and

(iii) include recommendations for possible actions to address constrained navigation during extreme low water events.

(3) AUTHORIZED ACTIVITIES.—If the Secretary, in consultation with the Secretary of the department in which the Coast Guard is operating, determines it to be critical to maintaining safe and reliable navigation within the authorized Federal navigation channel on the Mississippi River, the Secretary may carry out activities outside the authorized Federal navigation channel along the Mississippi River, including the construction and operation of maintenance of fleeting areas, that—

(A) are necessary for safe and reliable navigation in the Federal channel; and

(B) have been identified in the report under paragraph (2).

(4) RESTRICTION.—The Secretary shall only carry out activities authorized under paragraph (3) for such period of time as is necessary to maintain reliable navigation during the extreme low water event.

(5) NOTIFICATION.—Not later than 60 days after initiating an activity under this subsection, the Secretary shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a notice that includes—

(A) a description of the activities undertaken, including the costs associated with the activities; and

(B) a comprehensive description of how the activities are necessary for maintaining safe and reliable navigation of the Federal channel.

SEC. 4003. MISSOURI RIVER.

(a) UPPER MISSOURI BASIN FLOOD AND DROUGHT MONITORING.—

(1) IN GENERAL.—The Secretary, in coordination with the Administrator of the National Oceanic and Atmospheric Administration, the Chief of the Natural Resources Conservation Service, the Director of the United States Geological Survey, and the Commissioner of the Bureau of Reclamation, shall carry out activities to improve and support management of Corps of Engineers water resources development projects, including—

(A) soil moisture and snowpack monitoring in the Upper Missouri River Basin to reduce flood risk and improve river and water resource management in the Upper Missouri River Basin, as outlined in the February 2013 report entitled "Upper Missouri Basin Monitoring Committee—Snow Sampling and Instrumentation Recommendations";

(B) restoring and maintaining existing mid- and high-elevation snowpack monitoring sites operated under the SNOTEL program of the Natural Resources Conservation Service; and

(C) operating streamflow gages and related interpretive studies in the Upper Missouri River Basin under the cooperative water program and the national streamflow information program of the United States Geological Service.

(2) USE OF FUNDS.—Amounts made available to the Secretary to carry out activities under this subsection shall be used to supplement but not supplant other related activities of Federal agencies that are carried out within the Missouri River Basin.

(3) COOPERATIVE AGREEMENTS.—

(A) IN GENERAL.—The Secretary may enter into cooperative agreements with other Federal agencies to carry out this subsection.

(B) MAINTENANCE OF EFFORT.—The Secretary may only enter into a cooperative agreement with another Federal agency under this paragraph if such agreement specifies that the agency will maintain aggregate expenditures in the Missouri River Basin for existing programs that implement activities described in paragraph (1) at a level that is equal to or exceeds the aggregate expenditures for the fiscal year immediately preceding the fiscal year in which such agreement is signed.

(4) REPORT.—Not later than 1 year after the date of enactment of this Act, the Comptroller General of the United States, in consultation with the Secretary, shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a report that—

(A) identifies progress made by the Secretary and other Federal agencies in implementing the recommendations contained in the report described in paragraph (1)(A) with respect to enhancing soil moisture and snowpack monitoring in the Upper Missouri Basin;

(B) includes recommendations—

(i) to enhance soil moisture and snowpack monitoring in the Upper Missouri Basin that would enhance

water resources management, including managing flood risk, in that basin; and

(ii) on the most efficient manner of collecting and sharing data to assist Federal agencies with water resources management responsibilities;

(C) identifies the expected costs and timeline for implementing the recommendations described in subparagraph (B)(i); and

(D) identifies the role of States and other Federal agencies in gathering necessary soil moisture and snowpack monitoring data.

(b) MISSOURI RIVER BETWEEN FORT PECK DAM, MONTANA AND GAVINS POINT DAM, SOUTH DAKOTA AND NEBRASKA.—Section 9(f) of the Act of December 22, 1944 (commonly known as the "Flood Control Act of 1944") (58 Stat. 891, chapter 665; 102 Stat. 4031) is amended in the second sentence by striking "$3,000,000" and inserting "$5,000,000".

(c) MISSOURI RIVER RECOVERY IMPLEMENTATION COMMITTEE EXPENSES REIMBURSEMENT.—Section 5018(b)(5) of the Water Resources Development Act of 2007 (121 Stat. 1200) is amended by striking subparagraph (B) and inserting the following:

"(B) TRAVEL EXPENSES.—Subject to the availability of funds, the Secretary may reimburse a member of the Committee for travel expenses, including per diem in lieu of subsistence, at rates authorized for an employee of a Federal agency under subchapter I of chapter 57 of title 5, United States Code, while away from the home or regular place of business of the member in performance of services for the Committee.".

(d) UPPER MISSOURI SHORELINE STABILIZATION.—

(1) IN GENERAL.—The Secretary shall conduct a study to determine the feasibility of carrying out projects to address shoreline erosion in the Upper Missouri River Basin (including the States of South Dakota, North Dakota, and Montana) resulting from the operation of a reservoir constructed under the Pick-Sloan Missouri River Basin Program (authorized by section 9 of the Act of December 22, 1944 (commonly known as the "Flood Control Act of 1944") (58 Stat. 891, chapter 665)).

(2) CONTENTS.—The study carried out under paragraph (1) shall, to the maximum extent practicable—

(A) use previous assessments completed by the Corps of Engineers or other Federal agencies; and

(B) assess the infrastructure needed to—

(i) reduce shoreline erosion;

(ii) mitigate additional loss of land;

(iii) contribute to environmental and ecosystem improvement; and

(iv) protect existing community infrastructure, including roads and water and waste-water related infrastructure.

(3) DISPOSITION.—The Secretary may carry out projects identified in the study under paragraph (1) in accordance with the criteria for projects carried out under section 14 of the Flood Control Act of 1946 (33 U.S.C. 701r).

(4) ANNUAL REPORT.—For each project identified in the study under paragraph (1) that cannot be carried out under

any of the authorities specified in paragraph (3), upon determination by the Secretary of the feasibility of the project, the Secretary may include a recommendation relating to the project in the annual report submitted to Congress under section 7001.

(5) COORDINATION.—In carrying out this subsection, the Secretary shall consult and coordinate with the appropriate State or tribal agency for the area in which the project is located.

(6) PAYMENT OPTIONS.—The Secretary shall allow the full non-Federal contribution for a project under this subsection to be paid in accordance with section 103(k) of the Water Resources Development Act of 1986 (33 U.S.C. 2213(k)).

(e) MISSOURI RIVER FISH AND WILDLIFE MITIGATION.—The Secretary shall include in the first budget of the United States Government submitted by the President under section 1105 of title 31, United States Code, after the date of enactment of this Act, and biennially thereafter, a report that describes activities carried out by the Secretary relating to the project for mitigation of fish and wildlife losses, Missouri River Bank Stabilization and Navigation Project, Missouri, Kansas, Iowa, and Nebraska, authorized by section 601(a) of the Water Resources Development Act of 1986 (100 Stat. 4143), including—

(1) an inventory of all actions taken by the Secretary in furtherance of the project, including an inventory of land owned or acquired by the Secretary;

(2) a description, including a prioritization, of the specific actions proposed to be undertaken by the Secretary for the subsequent fiscal year in furtherance of the project;

(3) an assessment of the progress made in furtherance of the project, including—

(A) a description of how each of the actions identified under paragraph (1) have impacted the progress; and

(B) the status of implementation of any applicable requirements of the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.), including any applicable biological opinions; and

(4) an assessment of additional actions or authority necessary to achieve the results of the project.

(f) LOWER YELLOWSTONE.—Section 3109 of the Water Resources Development Act of 2007 (121 Stat. 1135) is amended—

(1) by striking "The Secretary may" and inserting the following:

"(a) IN GENERAL.—The Secretary may"; and

(2) by adding at the end the following:

"(b) LOCAL PARTICIPATION.—In carrying out subsection (a), the Secretary shall consult with, and consider the activities being carried out by—

"(1) other Federal agencies;

"(2) conservation districts;

"(3) the Yellowstone River Conservation District Council; and

"(4) the State of Montana.".

SEC. 4004. ARKANSAS RIVER.

(a) PROJECT GOAL.—The goal for operation of the McClellan-Kerr Arkansas River navigation system, Arkansas and Oklahoma,

shall be to maximize the use of the system in a balanced approach that incorporates advice from representatives from all project purposes to ensure that the full value of the system is realized by the United States.

(b) MCCLELLAN-KERR ARKANSAS RIVER NAVIGATION SYSTEM ADVISORY COMMITTEE.—

(1) IN GENERAL.—In accordance with the Federal Advisory Committee Act (5 U.S.C. App.), the Secretary shall establish an advisory committee for the McClellan-Kerr Arkansas River navigation system, Arkansas and Oklahoma project authorized by the first section of the Act of July 24, 1946 (60 Stat. 635, chapter 595).

(2) DUTIES.—The advisory committee shall—

(A) serve in an advisory capacity only; and

(B) provide information and recommendations to the Corps of Engineers relating to the efficiency, reliability, and availability of the operations of the McClellan-Kerr Arkansas River navigation system.

(3) SELECTION AND COMPOSITION.—The advisory committee shall be—

(A) selected jointly by the Little Rock district engineer and the Tulsa district engineer; and

(B) composed of members that equally represent the McClellan-Kerr Arkansas River navigation system project purposes.

(4) AGENCY RESOURCES.—The Little Rock district and the Tulsa district of the Corps of Engineers, under the supervision of the southwestern division, shall jointly provide the advisory committee with adequate staff assistance, facilities, and resources.

(5) TERMINATION.—

(A) IN GENERAL.—Subject to subparagraph (B), the advisory committee shall terminate on the date on which the Secretary submits a report to Congress demonstrating increases in the efficiency, reliability, and availability of the McClellan-Kerr Arkansas River navigation system.

(B) RESTRICTION.—The advisory committee shall terminate not less than 2 calendar years after the date on which the advisory committee is established.

SEC. 4005. COLUMBIA BASIN.

Section 536(g) of the Water Resources Development Act of 2000 (114 Stat. 2661) is amended by striking "$30,000,000" and inserting "$50,000,000".

SEC. 4006. RIO GRANDE.

Section 5056 of the Water Resources Development Act of 2007 (121 Stat. 1213) is amended—

(1) in subsection (b)(2)—

(A) in the matter preceding subparagraph (A), by striking "2008" and inserting "2014"; and

(B) in subparagraph (C), by inserting "and an assessment of needs for other related purposes in the Rio Grande Basin, including flood damage reduction" after "assessment";

(2) in subsection (c)(2)—

(A) by striking "an interagency agreement with" and inserting "1 or more interagency agreements with the Secretary of State and"; and

(B) by inserting "or the U.S. Section of the International Boundary and Water Commission" after "the Department of the Interior"; and

(3) in subsection (f), by striking "2011" and inserting "2019".

SEC. 4007. NORTHERN ROCKIES HEADWATERS.

(a) IN GENERAL.—The Secretary shall conduct a study to determine the feasibility of carrying out projects for aquatic ecosystem restoration and flood risk reduction that will mitigate the impacts of extreme weather events, including floods and droughts, on communities, water users, and fish and wildlife located in and along the headwaters of the Columbia, Missouri, and Yellowstone Rivers (including the tributaries of those rivers) in the States of Idaho and Montana.

(b) INCLUSIONS.—The study under subsection (a) shall, to the maximum extent practicable—

(1) emphasize the protection and enhancement of natural riverine processes; and

(2) assess the individual and cumulative needs associated with—

(A) floodplain restoration and reconnection;

(B) floodplain and riparian area protection through the use of conservation easements;

(C) instream flow restoration projects;

(D) fish passage improvements;

(E) channel migration zone mapping; and

(F) invasive weed management.

(c) DISPOSITION.—

(1) IN GENERAL.—The Secretary may carry out any project identified in the study pursuant to subsection (a) in accordance with the criteria for projects carried out under one of the following authorities:

(A) Section 206 of the Water Resources Development Act of 1996 (33 U.S.C. 2330).

(B) Section 1135 of the Water Resources Development Act of 1986 (33 U.S.C. 2309a).

(C) Section 104(a) of the River and Harbor Act of 1958 (33 U.S.C. 610(a)).

(D) Section 205 of the Flood Control Act of 1948 (33 U.S.C. 701s).

(2) REPORT.—For each project that does not meet the criteria under paragraph (1), the Secretary shall include a recommendation relating to the project in the annual report submitted to Congress by the Secretary in accordance with section 7001.

(d) COORDINATION.—In carrying out this section, the Secretary—

(1) shall consult and coordinate with the appropriate agency for each State and Indian tribe; and

(2) may enter into cooperative agreements with those State or tribal agencies described in paragraph (1).

(e) LIMITATIONS.—Nothing in this section invalidates, preempts, or creates any exception to State water law, State water rights, or Federal or State permitted activities or agreements in the States

of Idaho and Montana or any State containing tributaries to rivers in those States.

SEC. 4008. RURAL WESTERN WATER.

Section 595 of the Water Resources Development Act of 1999 (113 Stat. 383) is amended—

(1) by striking subsection (c) and inserting the following:

"(c) FORM OF ASSISTANCE.—Assistance under this section may be in the form of—

"(1) design and construction assistance for water-related environmental infrastructure and resource protection and development in Idaho, Montana, rural Nevada, New Mexico, rural Utah, and Wyoming, including projects for—

"(A) wastewater treatment and related facilities;

"(B) water supply and related facilities;

"(C) environmental restoration; and

"(D) surface water resource protection and development; and

"(2) technical assistance to small and rural communities for water planning and issues relating to access to water resources."; and

(2) by striking subsection (h) and inserting the following:

"(h) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this section for the period beginning with fiscal year 2001, $435,000,000, which shall—

"(1) be made available to the States and locales described in subsection (b) consistent with program priorities determined by the Secretary in accordance with criteria developed by the Secretary to establish the program priorities; and

"(2) remain available until expended.".

SEC. 4009. NORTH ATLANTIC COASTAL REGION.

(a) IN GENERAL.—The Secretary shall conduct a study to determine the feasibility of carrying out projects to restore aquatic ecosystems within the coastal waters of the Northeastern United States from the State of Virginia to the State of Maine, including associated bays, estuaries, and critical riverine areas.

(b) STUDY.—In carrying out the study under subsection (a), the Secretary shall—

(1) as appropriate, coordinate with the heads of other appropriate Federal agencies, the Governors of the coastal States from Virginia to Maine, nonprofit organizations, and other interested parties;

(2) identify projects for aquatic ecosystem restoration based on an assessment of the need and opportunities for aquatic ecosystem restoration within the coastal waters of the Northeastern States described in subsection (a); and

(3) use, to the maximum extent practicable, any existing plans and data.

(c) DISPOSITION.—

(1) IN GENERAL.—The Secretary may carry out any project identified in the study pursuant to subsection (a) in accordance with the criteria for projects carried out under one of the following authorities:

(A) Section 206 of the Water Resources Development Act of 1996 (33 U.S.C. 2330).

(B) Section 1135 of the Water Resources Development Act of 1986 (33 U.S.C. 2309a).

(C) Section 3 of the Act of August 13, 1946 (33 U.S.C. 426g).

(D) Section 204 of the Water Resources Development Act of 1992 (33 U.S.C. 2326).

(2) REPORT.—For each project that does not meet the criteria under paragraph (1), the Secretary shall include a recommendation relating to the project in the annual report submitted to Congress by the Secretary in accordance with section 7001.

SEC. 4010. CHESAPEAKE BAY.

(a) IN GENERAL.—Section 510 of the Water Resources Development Act of 1996 (Public Law 104–303; 110 Stat. 3759; 121 Stat. 1202) is amended—

(1) in subsection (a)—

(A) in paragraph (1)—

(i) by striking "pilot program" and inserting "program"; and

(ii) by inserting "in the basin States described in subsection (f) and the District of Columbia" after "interests"; and

(B) by striking paragraph (2) and inserting the following:

"(2) FORM.—The assistance under paragraph (1) shall be in the form of design and construction assistance for water-related resource protection and restoration projects affecting the Chesapeake Bay estuary, based on the comprehensive plan under subsection (b), including projects for—

"(A) sediment and erosion control;

"(B) protection of eroding shorelines;

"(C) ecosystem restoration, including restoration of submerged aquatic vegetation;

"(D) protection of essential public works;

"(E) beneficial uses of dredged material; and

"(F) other related projects that may enhance the living resources of the estuary.";

(2) by striking subsection (b) and inserting the following: "(b) COMPREHENSIVE PLAN.—

"(1) IN GENERAL.—Not later than 2 years after the date of enactment of the Water Resources Reform and Development Act of 2014, the Secretary, in cooperation with State and local governmental officials and affected stakeholders, shall develop a comprehensive Chesapeake Bay restoration plan to guide the implementation of projects under subsection (a)(2).

"(2) COORDINATION.—The restoration plan described in paragraph (1) shall, to the maximum extent practicable, consider and avoid duplication of any ongoing or planned actions of other Federal, State, and local agencies and nongovernmental organizations.

"(3) PRIORITIZATION.—The restoration plan described in paragraph (1) shall give priority to projects eligible under subsection (a)(2) that will also improve water quality or quantity or use natural hydrological features and systems.";

(3) in subsection (c)—

(A) in paragraph (1), by striking "to provide" and all that follows through the period at the end and inserting "for the design and construction of a project carried out

pursuant to the comprehensive Chesapeake Bay restoration plan described in subsection (b).";

(B) in paragraph (2)(A), by striking "facilities or resource protection and development plan" and inserting "resource protection and restoration plan"; and

(C) by adding at the end the following:

"(3) PROJECTS ON FEDERAL LAND.—A project carried out pursuant to the comprehensive Chesapeake Bay restoration plan described in subsection (b) that is located on Federal land shall be carried out at the expense of the Federal agency that owns the land on which the project will be a carried out.

"(4) NON-FEDERAL CONTRIBUTIONS.—A Federal agency carrying out a project described in paragraph (3) may accept contributions of funds from non-Federal entities to carry out that project.";

(4) by striking subsection (e) and inserting the following:

"(e) COOPERATION.—In carrying out this section, the Secretary shall cooperate with—

"(1) the heads of appropriate Federal agencies, including—

"(A) the Administrator of the Environmental Protection Agency;

"(B) the Secretary of Commerce, acting through the Administrator of the National Oceanographic and Atmospheric Administration;

"(C) the Secretary of the Interior, acting through the Director of the United States Fish and Wildlife Service; and

"(D) the heads of such other Federal agencies as the Secretary determines to be appropriate; and

"(2) agencies of a State or political subdivision of a State, including the Chesapeake Bay Commission.";

(5) by striking subsection (f) and inserting the following:

"(f) PROJECTS.—The Secretary shall establish, to the maximum extent practicable, at least 1 project under this section in—

"(1) regions within the Chesapeake Bay watershed of each of the basin States of Delaware, Maryland, New York, Pennsylvania, Virginia, and West Virginia; and

"(2) the District of Columbia.";

(6) by striking subsection (h); and

(7) by redesignating subsection (i) as subsection (h).

(b) CHESAPEAKE BAY OYSTER RESTORATION.—Section 704(b) of Water Resources Development Act of 1986 (33 U.S.C. 2263(b)) is amended—

(1) in paragraph (1), by striking "$50,000,000" and inserting "$60,000,000"; and

(2) in paragraph (4), by striking subparagraph (B) and inserting the following:

"(B) FORM.—The non-Federal share may be provided through in-kind services, including—

"(i) the provision by the non-Federal interest of shell stock material that is determined by the Secretary to be suitable for use in carrying out the project; and

"(ii) in the case of a project carried out under paragraph (2)(D) after the date of enactment of this

clause, land conservation or restoration efforts undertaken by the non-Federal interest that the Secretary determines provide water quality benefits that—

"(I) enhance the viability of oyster restoration efforts;

"(II) are integral to the project; and

"(III) are cost effective.".

SEC. 4011. LOUISIANA COASTAL AREA.

(a) REVIEW OF COASTAL MASTER PLAN.—Section 7002(c) of the Water Resources Development Act of 2007 (121 Stat. 1271) is amended by inserting ", or the plan entitled 'Louisiana Comprehensive Master Plan for a Sustainable Coast' prepared by the State of Louisiana and accepted by the Louisiana Coastal Protection and Restoration Authority (including any subsequent amendments or revisions)" before the period at the end.

(b) INTERIM USE OF PLAN.—

(1) DEFINITIONS.—In this subsection:

(A) ANNUAL REPORT.—The term "annual report" has the meaning given the term in section 7001(f).

(B) FEASIBILITY REPORT; FEASIBILITY STUDY.—The terms "feasibility report" and "feasibility study" have the meanings given those terms in section 7001(f).

(2) REVIEW.—The Secretary shall—

(A) review the plan entitled 'Louisiana's Comprehensive Master Plan for a Sustainable Coast' prepared by the State of Louisiana and accepted by the Louisiana Coastal Protection and Restoration Authority Board (including any subsequent amendments or revisions); and

(B) in consultation with the State of Louisiana, identify and conduct feasibility studies for up to 10 projects included in the plan described in subparagraph (A).

(3) RECOMMENDATIONS.—The Secretary shall include in the subsequent annual report, in accordance with section 7001—

(A) any proposed feasibility study initiated under paragraph (2)(B); and

(B) any feasibility report for a project identified under paragraph (2)(B).

(4) ADMINISTRATION.—Section 7008 of the Water Resources Development Act of 2007 (121 Stat. 1278) shall not apply to any feasibility study carried out under this subsection.

(c) SCIENCE AND TECHNOLOGY.—Section 7006(a)(2) of the Water Resources Development Act of 2007 (121 Stat. 1274) is amended—

(1) by redesignating subparagraphs (C) and (D) as subparagraphs (D) and (E), respectively; and

(2) by inserting after subparagraph (B) the following:

"(C) to examine a systemwide approach to coastal sustainability;".

SEC. 4012. RED RIVER BASIN.

(a) IN GENERAL.—In the case of a reservoir located within the Red River Basin for which the Department of the Army is authorized to provide for municipal and industrial water supply storage and irrigation storage, the Secretary may reassign unused irrigation storage to storage for municipal and industrial water supply for use by a State or local interest that has entered into an agreement with the Secretary for water supply storage at that reservoir prior to the date of enactment of this Act.

(b) ADMINISTRATION.—Any assignment under subsection (a) shall be subject to such terms and conditions as the Secretary determines to be appropriate and necessary in the public interest.

SEC. 4013. TECHNICAL CORRECTIONS.

(a) RARITAN RIVER.—Section 102 of the Energy and Water Development Appropriations Act, 1998 (Public Law 105–62; 111 Stat. 1327), is repealed.

(b) DES MOINES, BOONE, AND RACCOON RIVERS.—The boundaries for the project referred to as the Des Moines Recreational River and Greenbelt, Iowa, under the heading "CORPS OF ENGINEERS—CIVIL" under the heading "DEPARTMENT OF THE ARMY" under the heading "DEPARTMENT OF DEFENSE—CIVIL" in chapter IV of title I of the Supplemental Appropriations Act, 1985 (99 Stat. 313), are revised to include the entirety of sections 19 and 29, situated in T. 89 N., R. 28 W.

(c) SOUTH FLORIDA COASTAL AREA.—Section 109 of title I of division B of the Miscellaneous Appropriations Act, 2001 (114 Stat. 2763A–221; 121 Stat. 1217) is amended—

(1) in subsection (a), by inserting "and unincorporated communities" after "municipalities";

(2) by redesignating subsection (f) as subsection (g); and

(3) by inserting after subsection (e) the following:

"(f) PRIORITY.—In providing assistance under this section, the Secretary shall give priority to projects sponsored by current non-Federal interests, incorporated communities in Monroe County, Monroe County, and the State of Florida.".

(d) TRINITY RIVER AND TRIBUTARIES.—Section 5141(a)(2) of the Water Resources Development Act of 2007 (121 Stat. 1253) is amended by inserting "and the Interior Levee Drainage Study Phase–II report, Dallas, Texas, dated January 2009," after "September 2006,".

(e) CENTRAL AND SOUTHERN FLORIDA CANAL.—

(1) IN GENERAL.—The Secretary shall consider any amounts and associated program income provided prior to the date of enactment of this Act by the Secretary of the Interior to the non-Federal interest for the acquisition of areas identified in section 316(b)(2) of the Water Resources Development Act of 1996 (110 Stat. 3715)—

(A) as satisfying the requirements of that paragraph; and

(B) as part of the Federal share of the cost of implementing the plan under that subsection.

(2) NON-FEDERAL COST SHARE.—The non-Federal interest shall receive credit for land, easements, rights-of-way, and relocations provided for the project as part of the non-Federal share of the cost of implementing the plan under section 316(b)(2) of the Water Resources Development Act of 1996 (110 Stat. 3715).

(3) CONFORMING AMENDMENT.—Section 316(b)(2) of the Water Resources Development Act of 1996 (110 Stat. 3715) is amended in the first sentence by striking "shall pay" and inserting "may pay up to".

(f) SOUTH PLATTE RIVER WATERSHED.—Section 116 of the Energy and Water Development and Related Agencies Appropriations Act, 2009 (123 Stat. 608) is amended in the matter preceding

the proviso by inserting "(or a designee of the Department)" after "Colorado Department of Natural Resources".

(g) POTOMAC RIVER.—Section 84(a) of the Water Resources Development Act of 1974 (88 Stat. 35) is amended by striking paragraph (1) and inserting the following:

"(1) A channel capacity sufficient to pass the 100-year flood event, as identified in the document entitled 'Four Mile Run Watershed Feasibility Report' and dated January 2014.".

SEC. 4014. OCEAN AND COASTAL RESILIENCY.

(a) IN GENERAL.—The Secretary shall conduct studies to determine the feasibility of carrying out Corps of Engineers projects in coastal zones to enhance ocean and coastal ecosystem resiliency.

(b) STUDY.—In carrying out the study under subsection (a), the Secretary shall—

(1) as appropriate, coordinate with the heads of other appropriate Federal agencies, the Governors and other chief executive officers of the coastal states, nonprofit organizations, and other interested parties;

(2) identify Corps of Engineers projects in coastal zones for enhancing ocean and coastal ecosystem resiliency based on an assessment of the need and opportunities for, and feasibility of, the projects;

(3) to the maximum extent practicable, use any existing Corps of Engineers plans and data; and

(4) not later than 365 days after initial appropriations for this section, and every five years thereafter subject to the availability of appropriations, complete a study authorized under subsection (a).

(c) DISPOSITION.—

(1) IN GENERAL.—The Secretary may carry out a project identified in the study pursuant to subsection (a) in accordance with the criteria for projects carried out under one of the following authorities:

(A) Section 206(a)–(d) of the Water Resources Development Act of 1996 (33 U.S.C. 2330(a)–(d)).

(B) Section 1135(a)–(g) and (i) of the Water Resources Development Act of 1986 (33 U.S.C. 2309a(a)–(g) and (i)).

(C) Section 3(a)–(b), and (c)(1) of the Act of August, 13 1946 (33 U.S.C. 426g(a)–(b), and (c)(1)).

(D) Section 204(a)–(f) of the Water Resources Development Act of 1992 (33 U.S.C. 2326(a)–(f)).

(2) REPORT.—For each project that does not meet the criteria under paragraph (1), the Secretary shall include a recommendation relating to the project in the annual report submitted to Congress by the Secretary in accordance with section 7001.

(d) REQUESTS FOR PROJECTS.—The Secretary may carry out a project for a coastal state under this section only at the request of the Governor or chief executive officer of the coastal state, as appropriate.

(e) DEFINITION.—In this section, the terms "coastal zone" and "coastal state" have the meanings given such terms in section 304 of the Coastal Zone Management Act of 1972 (16 U.S.C. 1453), as in effect on the date of enactment of this Act.

TITLE V—WATER INFRASTRUCTURE FINANCING

Subtitle A—State Water Pollution Control Revolving Funds

SEC. 5001. GENERAL AUTHORITY FOR CAPITALIZATION GRANTS.

Section 601(a) of the Federal Water Pollution Control Act (33 U.S.C. 1381(a)) is amended by striking "for providing assistance" and all that follows through the period at the end and inserting the following: "to accomplish the objectives, goals, and policies of this Act by providing assistance for projects and activities identified in section 603(c).".

SEC. 5002. CAPITALIZATION GRANT AGREEMENTS.

Section 602(b) of the Federal Water Pollution Control Act (33 U.S.C. 1382(b)) is amended—

(1) in paragraph (6)—

(A) by striking "section 603(c)(1) of";

(B) by striking "before fiscal" and all that follows through "grants under this title and" and inserting "with assistance made available by a State water pollution control revolving fund authorized under this title, or";

(C) by inserting ", or both," after "205(m) of this Act"; and

(D) by striking "201(b)" and all that follows through "511(c)(1)," and inserting "511(c)(1)";

(2) in paragraph (9), by striking "standards; and" and inserting "standards, including standards relating to the reporting of infrastructure assets;";

(3) in paragraph (10), by striking the period at the end and inserting a semicolon; and

(4) by adding at the end the following:

"(11) the State will establish, maintain, invest, and credit the fund with repayments, such that the fund balance will be available in perpetuity for activities under this Act;

"(12) any fees charged by the State to recipients of assistance that are considered program income will be used for the purpose of financing the cost of administering the fund or financing projects or activities eligible for assistance from the fund;

"(13) beginning in fiscal year 2016, the State will require as a condition of providing assistance to a municipality or intermunicipal, interstate, or State agency that the recipient of such assistance certify, in a manner determined by the Governor of the State, that the recipient—

"(A) has studied and evaluated the cost and effectiveness of the processes, materials, techniques, and technologies for carrying out the proposed project or activity for which assistance is sought under this title; and

"(B) has selected, to the maximum extent practicable, a project or activity that maximizes the potential for efficient water use, reuse, recapture, and conservation, and energy conservation, taking into account—

"(i) the cost of constructing the project or activity;

"(ii) the cost of operating and maintaining the project or activity over the life of the project or activity; and

"(iii) the cost of replacing the project or activity; and

"(14) a contract to be carried out using funds directly made available by a capitalization grant under this title for program management, construction management, feasibility studies, preliminary engineering, design, engineering, surveying, mapping, or architectural related services shall be negotiated in the same manner as a contract for architectural and engineering services is negotiated under chapter 11 of title 40, United States Code, or an equivalent State qualifications-based requirement (as determined by the Governor of the State).".

SEC. 5003. WATER POLLUTION CONTROL REVOLVING LOAN FUNDS.

Section 603 of the Federal Water Pollution Control Act (33 U.S.C. 1383) is amended—

(1) by striking subsection (c) and inserting the following:

"(c) PROJECTS AND ACTIVITIES ELIGIBLE FOR ASSISTANCE.—The amounts of funds available to each State water pollution control revolving fund shall be used only for providing financial assistance—

"(1) to any municipality or intermunicipal, interstate, or State agency for construction of publicly owned treatment works (as defined in section 212);

"(2) for the implementation of a management program established under section 319;

"(3) for development and implementation of a conservation and management plan under section 320;

"(4) for the construction, repair, or replacement of decentralized wastewater treatment systems that treat municipal wastewater or domestic sewage;

"(5) for measures to manage, reduce, treat, or recapture stormwater or subsurface drainage water;

"(6) to any municipality or intermunicipal, interstate, or State agency for measures to reduce the demand for publicly owned treatment works capacity through water conservation, efficiency, or reuse;

"(7) for the development and implementation of watershed projects meeting the criteria set forth in section 122;

"(8) to any municipality or intermunicipal, interstate, or State agency for measures to reduce the energy consumption needs for publicly owned treatment works;

"(9) for reusing or recycling wastewater, stormwater, or subsurface drainage water;

"(10) for measures to increase the security of publicly owned treatment works; and

"(11) to any qualified nonprofit entity, as determined by the Administrator, to provide assistance to owners and operators of small and medium publicly owned treatment works—

"(A) to plan, develop, and obtain financing for eligible projects under this subsection, including planning, design, and associated preconstruction activities; and

"(B) to assist such treatment works in achieving compliance with this Act.";

(2) in subsection (d)—

(A) in paragraph (1)—

(i) in subparagraph (A), by striking "20 years" and inserting "the lesser of 30 years and the projected useful life (as determined by the State) of the project to be financed with the proceeds of the loan";

(ii) in subparagraph (B), by striking "not later than 20 years after project completion" and inserting "upon the expiration of the term of the loan";

(iii) in subparagraph (C), by striking "and" at the end;

(iv) in subparagraph (D), by inserting "and" after the semicolon at the end; and

(v) by adding at the end the following:

"(E) for a treatment works proposed for repair, replacement, or expansion, and eligible for assistance under subsection (c)(1), the recipient of a loan shall—

"(i) develop and implement a fiscal sustainability plan that includes—

"(I) an inventory of critical assets that are a part of the treatment works;

"(II) an evaluation of the condition and performance of inventoried assets or asset groupings;

"(III) a certification that the recipient has evaluated and will be implementing water and energy conservation efforts as part of the plan; and

"(IV) a plan for maintaining, repairing, and, as necessary, replacing the treatment works and a plan for funding such activities; or

"(ii) certify that the recipient has developed and implemented a plan that meets the requirements under clause (i);"; and

(B) in paragraph (7), by inserting ", $400,000 per year, or ⅕ percent per year of the current valuation of the fund, whichever amount is greatest, plus the amount of any fees collected by the State for such purpose regardless of the source" before the period at the end; and

(3) by adding at the end the following:

"(i) ADDITIONAL SUBSIDIZATION.—

"(1) IN GENERAL.—In any case in which a State provides assistance to a municipality or intermunicipal, interstate, or State agency under subsection (d), the State may provide additional subsidization, including forgiveness of principal and negative interest loans—

"(A) to benefit a municipality that—

"(i) meets the affordability criteria of the State established under paragraph (2); or

"(ii) does not meet the affordability criteria of the State if the recipient—

"(I) seeks additional subsidization to benefit individual ratepayers in the residential user rate class;

"(II) demonstrates to the State that such ratepayers will experience a significant hardship from the increase in rates necessary to finance the

project or activity for which assistance is sought; and

"(III) ensures, as part of an assistance agreement between the State and the recipient, that the additional subsidization provided under this paragraph is directed through a user charge rate system (or other appropriate method) to such ratepayers; or

"(B) to implement a process, material, technique, or technology—

"(i) to address water-efficiency goals;

"(ii) to address energy-efficiency goals;

"(iii) to mitigate stormwater runoff; or

"(iv) to encourage sustainable project planning, design, and construction.

"(2) AFFORDABILITY CRITERIA.—

"(A) ESTABLISHMENT.—

"(i) IN GENERAL.—Not later than September 30, 2015, and after providing notice and an opportunity for public comment, a State shall establish affordability criteria to assist in identifying municipalities that would experience a significant hardship raising the revenue necessary to finance a project or activity eligible for assistance under subsection (c)(1) if additional subsidization is not provided.

"(ii) CONTENTS.—The criteria under clause (i) shall be based on income and unemployment data, population trends, and other data determined relevant by the State, including whether the project or activity is to be carried out in an economically distressed area, as described in section 301 of the Public Works and Economic Development Act of 1965 (42 U.S.C. 3161).

"(B) EXISTING CRITERIA.—If a State has previously established, after providing notice and an opportunity for public comment, affordability criteria that meet the requirements of subparagraph (A)—

"(i) the State may use the criteria for the purposes of this subsection; and

"(ii) those criteria shall be treated as affordability criteria established under this paragraph.

"(C) INFORMATION TO ASSIST STATES.—The Administrator may publish information to assist States in establishing affordability criteria under subparagraph (A).

"(3) LIMITATIONS.—

"(A) IN GENERAL.—A State may provide additional subsidization in a fiscal year under this subsection only if the total amount appropriated for making capitalization grants to all States under this title for the fiscal year exceeds $1,000,000,000.

"(B) ADDITIONAL LIMITATION.—

"(i) GENERAL RULE.—Subject to clause (ii), a State may use not more than 30 percent of the total amount received by the State in capitalization grants under this title for a fiscal year for providing additional subsidization under this subsection.

"(ii) EXCEPTION.—If, in a fiscal year, the amount appropriated for making capitalization grants to all

States under this title exceeds $1,000,000,000 by a percentage that is less than 30 percent, clause (i) shall be applied by substituting that percentage for 30 percent.

"(C) APPLICABILITY.—The authority of a State to provide additional subsidization under this subsection shall apply to amounts received by the State in capitalization grants under this title for fiscal years beginning after September 30, 2014.

"(D) CONSIDERATION.—If the State provides additional subsidization to a municipality or intermunicipal, interstate, or State agency under this subsection that meets the criteria under paragraph (1)(A), the State shall take the criteria set forth in section 602(b)(5) into consideration.".

SEC. 5004. REQUIREMENTS.

Title VI of the Federal Water Pollution Control Act (33 U.S.C. 1381 et seq.) is amended by adding at the end the following:

"SEC. 608. REQUIREMENTS.

"(a) IN GENERAL.—Funds made available from a State water pollution control revolving fund established under this title may not be used for a project for the construction, alteration, maintenance, or repair of treatment works unless all of the iron and steel products used in the project are produced in the United States.

"(b) DEFINITION OF IRON AND STEEL PRODUCTS.—In this section, the term 'iron and steel products' means the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, construction materials.

"(c) APPLICATION.—Subsection (a) shall not apply in any case or category of cases in which the Administrator finds that—

"(1) applying subsection (a) would be inconsistent with the public interest;

"(2) iron and steel products are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or

"(3) inclusion of iron and steel products produced in the United States will increase the cost of the overall project by more than 25 percent.

"(d) WAIVER.—If the Administrator receives a request for a waiver under this section, the Administrator shall make available to the public, on an informal basis, a copy of the request and information available to the Administrator concerning the request, and shall allow for informal public input on the request for at least 15 days prior to making a finding based on the request. The Administrator shall make the request and accompanying information available by electronic means, including on the official public Internet site of the Environmental Protection Agency.

"(e) INTERNATIONAL AGREEMENTS.—This section shall be applied in a manner consistent with United States obligations under international agreements.

"(f) MANAGEMENT AND OVERSIGHT.—The Administrator may retain up to 0.25 percent of the funds appropriated for this title for management and oversight of the requirements of this section.

"(g) EFFECTIVE DATE.—This section does not apply with respect to a project if a State agency approves the engineering plans and specifications for the project, in that agency's capacity to approve such plans and specifications prior to a project requesting bids, prior to the date of enactment of the Water Resources Reform and Development Act of 2014.".

SEC. 5005. REPORT ON THE ALLOTMENT OF FUNDS.

(a) REVIEW.—The Administrator of the Environmental Protection Agency shall conduct a review of the allotment formula in effect on the date of enactment of this Act for allocation of funds authorized under title VI of the Federal Water Pollution Control Act (33 U.S.C. 1381 et seq.) to determine whether that formula adequately addresses the water quality needs of eligible States, territories, and Indian tribes, based on—

(1) the most recent survey of needs developed by the Administrator under section 516(b) of that Act (33 U.S.C. 1375(b)); and

(2) any other information the Administrator considers appropriate.

(b) REPORT.—Not later than 18 months after the date of enactment of this Act, the Administrator shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives and make publicly available a report on the results of the review under subsection (a), including any recommendations for changing the allotment formula.

SEC. 5006. EFFECTIVE DATE.

This subtitle, including any amendments made by the subtitle, shall take effect on October 1, 2014.

Subtitle B—General Provisions

SEC. 5011. WATERSHED PILOT PROJECTS.

Section 122 of the Federal Water Pollution Control Act (33 U.S.C. 1274) is amended—

(1) in the section heading, by striking "**WET WEATHER**";

(2) in subsection (a)—

(A) in the matter preceding paragraph (1)—

(i) by striking "for treatment works" and inserting "to a municipality or municipal entity"; and

(ii) by striking "of wet weather discharge control";

(B) in paragraph (2), by striking "in reducing such pollutants" and all that follows before the period at the end and inserting "to manage, reduce, treat, recapture, or reuse municipal stormwater, including techniques that utilize infiltration, evapotranspiration, and reuse of stormwater onsite"; and

(C) by adding at the end the following:

"(3) WATERSHED PARTNERSHIPS.—Efforts of municipalities and property owners to demonstrate cooperative ways to address nonpoint sources of pollution to reduce adverse impacts on water quality.

"(4) INTEGRATED WATER RESOURCE PLAN.—The development of an integrated water resource plan for the coordinated management and protection of surface water, ground water,

and stormwater resources on a watershed or subwatershed basis to meet the objectives, goals, and policies of this Act.

"(5) MUNICIPALITY-WIDE STORMWATER MANAGEMENT PLANNING.—The development of a municipality-wide plan that identifies the most effective placement of stormwater technologies and management approaches, to reduce water quality impairments from stormwater on a municipality-wide basis.

"(6) INCREASED RESILIENCE OF TREATMENT WORKS.—Efforts to assess future risks and vulnerabilities of publicly owned treatment works to manmade or natural disasters, including extreme weather events and sea-level rise, and to carry out measures, on a systemwide or area-wide basis, to increase the resiliency of publicly owned treatment works.";

(3) by striking subsection (c);

(4) by redesignating subsection (d) as subsection (c); and

(5) in subsection (c) (as so redesignated) by striking "5 years after the date of enactment of this section," and inserting "October 1, 2015,".

SEC. 5012. DEFINITION OF TREATMENT WORKS.

(a) GRANTS FOR CONSTRUCTION OF TREATMENT WORKS.—Section 212(2)(A) of the Federal Water Pollution Control Act (33 U.S.C. 1292(2)(A)) is amended—

(1) by striking "any works, including site";

(2) by striking "is used for ultimate" and inserting "will be used for ultimate"; and

(3) by inserting before the period at the end the following: "and acquisition of other land, and interests in land, that are necessary for construction".

(b) DEFINITIONS.—Section 502 of the Federal Water Pollution Control Act (33 U.S.C. 1362) is amended by adding at the end the following:

"(26) TREATMENT WORKS.—The term 'treatment works' has the meaning given the term in section 212.".

(c) EFFECTIVE DATE.—The amendments made by this section shall take effect on October 1, 2014.

SEC. 5013. FUNDING FOR INDIAN PROGRAMS.

Section 518(c) of the Federal Water Pollution Control Act (33 U.S.C. 1377(c)) is amended—

(1) by striking "The Administrator" and inserting the following:

"(1) FISCAL YEARS 1987–2014.—The Administrator";

(2) in paragraph (1) (as so designated)—

(A) by striking "each fiscal year beginning after September 30, 1986," and inserting "each of fiscal years 1987 through 2014,"; and

(B) by striking the second sentence; and

(3) by adding at the end the following:

"(2) FISCAL YEAR 2015 AND THEREAFTER.—For fiscal year 2015 and each fiscal year thereafter, the Administrator shall reserve, before allotments to the States under section 604(a), not less than 0.5 percent and not more than 2.0 percent of the funds made available to carry out title VI.

"(3) USE OF FUNDS.—Funds reserved under this subsection shall be available only for grants for projects and activities eligible for assistance under section 603(c) to serve—

"(A) Indian tribes (as defined in subsection (h));

"(B) former Indian reservations in Oklahoma (as determined by the Secretary of the Interior); and

"(C) Native villages (as defined in section 3 of the Alaska Native Claims Settlement Act (43 U.S.C. 1602)).".

SEC. 5014. WATER INFRASTRUCTURE PUBLIC-PRIVATE PARTNERSHIP PILOT PROGRAM.

(a) IN GENERAL.—The Secretary shall establish a pilot program to evaluate the cost effectiveness and project delivery efficiency of allowing non-Federal pilot applicants to carry out authorized water resources development projects for coastal harbor improvement, channel improvement, inland navigation, flood damage reduction, aquatic ecosystem restoration, and hurricane and storm damage reduction.

(b) PURPOSES.—The purposes of the pilot program established under subsection (a) are—

(1) to identify cost-saving project delivery alternatives that reduce the backlog of authorized Corps of Engineers projects; and

(2) to evaluate the technical, financial, and organizational benefits of allowing a non-Federal pilot applicant to carry out and manage the design or construction (or both) of 1 or more of such projects.

(c) SUBSEQUENT APPROPRIATIONS.—Any activity undertaken under this section is authorized only to the extent specifically provided for in subsequent appropriations Acts.

(d) ADMINISTRATION.—In carrying out the pilot program established under subsection (a), the Secretary shall—

(1) identify for inclusion in the program at least 15 projects that are authorized for construction for coastal harbor improvement, channel improvement, inland navigation, flood damage reduction, or hurricane and storm damage reduction;

(2) notify in writing the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives of each project identified under paragraph (1);

(3) in consultation with the non-Federal pilot applicant associated with each project identified under paragraph (1), develop a detailed project management plan for the project that outlines the scope, financing, budget, design, and construction resource requirements necessary for the non-Federal pilot applicant to execute the project, or a separable element of the project;

(4) at the request of the non-Federal pilot applicant associated with each project identified under paragraph (1), enter into a project partnership agreement with the non-Federal pilot applicant under which the non-Federal pilot applicant is provided full project management control for the financing, design, or construction (or any combination thereof) of the project, or a separable element of the project, in accordance with plans approved by the Secretary;

(5) following execution of a project partnership agreement under paragraph (4) and completion of all work under the agreement, issue payment, in accordance with subsection (g), to the relevant non-Federal pilot applicant for that work; and

(6) regularly monitor and audit each project carried out under the program to ensure that all activities related to the

project are carried out in compliance with plans approved by the Secretary and that construction costs are reasonable.

(e) SELECTION CRITERIA.—In identifying projects under subsection (d)(1), the Secretary shall consider the extent to which the project—

(1) is significant to the economy of the United States;

(2) leverages Federal investment by encouraging non-Federal contributions to the project;

(3) employs innovative project delivery and cost-saving methods;

(4) received Federal funds in the past and experienced delays or missed scheduled deadlines;

(5) has unobligated Corps of Engineers funding balances; and

(6) has not received Federal funding for recapitalization and modernization since the project was authorized.

(f) DETAILED PROJECT SCHEDULE.—Not later than 180 days after entering into a project partnership agreement under subsection (d)(4), a non-Federal pilot applicant, to the maximum extent practicable, shall submit to the Secretary a detailed project schedule for the relevant project, based on estimated funding levels, that specifies deadlines for each milestone with respect to the project.

(g) PAYMENT.—Payment to the non-Federal pilot applicant for work completed pursuant to a project partnership agreement under subsection (d)(4) may be made from—

(1) if applicable, the balance of the unobligated amounts appropriated for the project; and

(2) other amounts appropriated to the Corps of Engineers, subject to the condition that the total amount transferred to the non-Federal pilot applicant may not exceed the estimate of the Federal share of the cost of construction, including any required design.

(h) TECHNICAL ASSISTANCE.—At the request of a non-Federal pilot applicant participating in the pilot program established under subsection (a), the Secretary may provide to the non-Federal pilot applicant, if the non-Federal pilot applicant contracts with and compensates the Secretary, technical assistance with respect to—

(1) a study, engineering activity, or design activity related to a project carried out by the non-Federal pilot applicant under the program; and

(2) obtaining permits necessary for such a project.

(i) IDENTIFICATION OF IMPEDIMENTS.—

(1) IN GENERAL.—The Secretary shall—

(A) except as provided in paragraph (2), identify any procedural requirements under the authority of the Secretary that impede greater use of public-private partnerships and private investment in water resources development projects;

(B) develop and implement, on a project-by-project basis, procedures and approaches that—

(i) address such impediments; and

(ii) protect the public interest and any public investment in water resources development projects that involve public-private partnerships or private investment in water resources development projects; and

(C) not later than 1 year after the date of enactment of this section, issue rules to carry out the procedures and approaches developed under subparagraph (B).

(2) RULE OF CONSTRUCTION.—Nothing in this section allows the Secretary to waive any requirement under—

(A) sections 3141 through 3148 and sections 3701 through 3708 of title 40, United States Code;

(B) the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.); or

(C) any other provision of Federal law.

(j) PUBLIC BENEFIT STUDIES.—

(1) IN GENERAL.—Before entering into a project partnership agreement under subsection (d)(4), the Secretary shall conduct an assessment of whether, and provide justification in writing to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives that, the proposed agreement provides better public and financial benefits than a similar transaction using public funding or financing.

(2) REQUIREMENTS.—An assessment under paragraph (1) shall—

(A) be completed in a period of not more than 90 days;

(B) take into consideration any supporting materials and data submitted by the relevant non-Federal pilot applicant and other stakeholders; and

(C) determine whether the proposed project partnership agreement is in the public interest by determining whether the agreement will provide public and financial benefits, including expedited project delivery and savings for taxpayers.

(k) NON-FEDERAL FUNDING.—The non-Federal pilot applicant may finance the non-Federal share of a project carried out under the pilot program established under subsection (a).

(l) APPLICABILITY OF FEDERAL LAW.—Any provision of Federal law that would apply to the Secretary if the Secretary were carrying out a project shall apply to a non-Federal pilot applicant carrying out a project under this section.

(m) COST SHARE.—Nothing in this section affects a cost-sharing requirement under Federal law that is applicable to a project carried out under the pilot program established under subsection (a).

(n) REPORT.—Not later than 3 years after the date of enactment of this Act, the Secretary shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives and make publicly available a report describing the results of the pilot program established under subsection (a), including any recommendations of the Secretary concerning whether the program or any component of the program should be implemented on a national basis.

(o) NON-FEDERAL PILOT APPLICANT DEFINED.—In this section, the term "non-Federal pilot applicant" means—

(1) the non-Federal sponsor of the water resources development project;

(2) a non-Federal interest, as defined in section 221 of the Flood Control Act of 1970 (42 U.S.C. 1982d–5b); or

(3) a private entity with the consent of the local government in which the project is located or that is otherwise affected by the project.

Subtitle C—Innovative Financing Pilot Projects

SEC. 5021. SHORT TITLE.

This subtitle may be cited as the "Water Infrastructure Finance and Innovation Act of 2014".

SEC. 5022. DEFINITIONS.

In this subtitle:

(1) ADMINISTRATOR.—The term "Administrator" means the Administrator of the Environmental Protection Agency.

(2) COMMUNITY WATER SYSTEM.—The term "community water system" has the meaning given the term in section 1401 of the Safe Drinking Water Act (42 U.S.C. 300f).

(3) FEDERAL CREDIT INSTRUMENT.—The term "Federal credit instrument" means a secured loan or loan guarantee authorized to be made available under this subtitle with respect to a project.

(4) INVESTMENT-GRADE RATING.—The term "investment-grade rating" means a rating of BBB minus, Baa3, bbb minus, BBB (low), or higher assigned by a rating agency to project obligations.

(5) LENDER.—

(A) IN GENERAL.—The term "lender" means any non-Federal qualified institutional buyer (as defined in section 230.144A(a) of title 17, Code of Federal Regulations (or a successor regulation), known as Rule 144A(a) of the Securities and Exchange Commission and issued under the Securities Act of 1933 (15 U.S.C. 77a et seq.)).

(B) INCLUSIONS.—The term "lender" includes—

(i) a qualified retirement plan (as defined in section 4974(c) of the Internal Revenue Code of 1986) that is a qualified institutional buyer; and

(ii) a governmental plan (as defined in section 414(d) of the Internal Revenue Code of 1986) that is a qualified institutional buyer.

(6) LOAN GUARANTEE.—The term "loan guarantee" means any guarantee or other pledge by the Secretary or the Administrator to pay all or part of the principal of, and interest on, a loan or other debt obligation issued by an obligor and funded by a lender.

(7) OBLIGOR.—The term "obligor" means an eligible entity that is primarily liable for payment of the principal of, or interest on, a Federal credit instrument.

(8) PROJECT OBLIGATION.—

(A) IN GENERAL.—The term "project obligation" means any note, bond, debenture, or other debt obligation issued by an obligor in connection with the financing of a project.

(B) EXCLUSION.—The term "project obligation" does not include a Federal credit instrument.

(9) RATING AGENCY.—The term "rating agency" means a credit rating agency registered with the Securities and

Exchange Commission as a nationally recognized statistical rating organization (as defined in section 3(a) of the Securities Exchange Act of 1934 (15 U.S.C. 78c(a))).

(10) SECURED LOAN.—The term "secured loan" means a direct loan or other debt obligation issued by an obligor and funded by the Secretary or Administrator, as applicable, in connection with the financing of a project under section 5029.

(11) STATE.—The term "State" means—

(A) a State;

(B) the District of Columbia;

(C) the Commonwealth of Puerto Rico; and

(D) any other territory or possession of the United States.

(12) STATE INFRASTRUCTURE FINANCING AUTHORITY.—The term "State infrastructure financing authority" means the State entity established or designated by the Governor of a State to receive a capitalization grant provided by, or otherwise carry out the requirements of, title VI of the Federal Water Pollution Control Act (33 U.S.C. 1381 et. seq.) or section 1452 of the Safe Drinking Water Act (42 U.S.C. 300j–12).

(13) SUBSIDY AMOUNT.—The term "subsidy amount" means the amount of budget authority sufficient to cover the estimated long-term cost to the Federal Government of a Federal credit instrument, as calculated on a net present value basis, excluding administrative costs and any incidental effects on governmental receipts or outlays in accordance with the Federal Credit Reform Act of 1990 (2 U.S.C. 661 et seq.).

(14) SUBSTANTIAL COMPLETION.—The term "substantial completion", with respect to a project, means the earliest date on which a project is considered to perform the functions for which the project is designed.

(15) TREATMENT WORKS.—The term "treatment works" has the meaning given the term in section 212 of the Federal Water Pollution Control Act (33 U.S.C. 1292).

SEC. 5023. AUTHORITY TO PROVIDE ASSISTANCE.

(a) IN GENERAL.—The Secretary and the Administrator may provide financial assistance under this subtitle to carry out pilot projects, which shall be selected to ensure a diversity of project types and geographical locations.

(b) RESPONSIBILITY.—

(1) SECRETARY.—The Secretary shall carry out all pilot projects under this subtitle that are eligible projects under section 5026(1).

(2) ADMINISTRATOR.—The Administrator shall carry out all pilot projects under this subtitle that are eligible projects under paragraphs (2), (3), (4), (5), (6), and (8) of section 5026.

(3) OTHER PROJECTS.—The Secretary or the Administrator, as applicable, may carry out eligible projects under paragraph (7) or (9) of section 5026.

SEC. 5024. APPLICATIONS.

(a) IN GENERAL.—To receive assistance under this subtitle, an eligible entity shall submit to the Secretary or the Administrator, as applicable, an application at such time, in such manner, and containing such information as the Secretary or the Administrator may require.

(b) COMBINED PROJECTS.—In the case of an eligible project described in paragraph (8) or (9) of section 5026, the Secretary or the Administrator, as applicable, shall require the eligible entity to submit a single application for the combined group of projects.

SEC. 5025. ELIGIBLE ENTITIES.

The following entities are eligible to receive assistance under this subtitle:

(1) A corporation.

(2) A partnership.

(3) A joint venture.

(4) A trust.

(5) A Federal, State, or local governmental entity, agency, or instrumentality.

(6) A tribal government or consortium of tribal governments.

(7) A State infrastructure financing authority.

SEC. 5026. PROJECTS ELIGIBLE FOR ASSISTANCE.

The following projects may be carried out with amounts made available under this subtitle:

(1) Any project for flood damage reduction, hurricane and storm damage reduction, environmental restoration, coastal or inland harbor navigation improvement, or inland and intracoastal waterways navigation improvement that the Secretary determines is technically sound, economically justified, and environmentally acceptable, including—

(A) a project to reduce flood damage;

(B) a project to restore aquatic ecosystems;

(C) a project to improve the inland and intracoastal waterways navigation system of the United States; and

(D) a project to improve navigation of a coastal or inland harbor of the United States, including channel deepening and construction of associated general navigation features.

(2) 1 or more activities that are eligible for assistance under section 603(c) of the Federal Water Pollution Control Act (33 U.S.C. 1383(c)), notwithstanding the public ownership requirement under paragraph (1) of that subsection.

(3) 1 or more activities described in section 1452(a)(2) of the Safe Drinking Water Act (42 U.S.C. 300j–12(a)(2)).

(4) A project for enhanced energy efficiency in the operation of a public water system or a publicly owned treatment works.

(5) A project for repair, rehabilitation, or replacement of a treatment works, community water system, or aging water distribution or waste collection facility (including a facility that serves a population or community of an Indian reservation).

(6) A brackish or sea water desalination project, a managed aquifer recharge project, or a water recycling project.

(7) Acquisition of real property or an interest in real property—

(A) if the acquisition is integral to a project described in paragraphs (1) through (6); or

(B) pursuant to an existing plan that, in the judgment of the Administrator or the Secretary, as applicable, would mitigate the environmental impacts of water resources infrastructure projects otherwise eligible for assistance under this section.

(8) A combination of projects, each of which is eligible under paragraph (2) or (3), for which a State infrastructure financing authority submits to the Administrator a single application.

(9) A combination of projects secured by a common security pledge, each of which is eligible under paragraph (1), (2), (3), (4), (5), (6), or (7), for which an eligible entity, or a combination of eligible entities, submits a single application.

SEC. 5027. ACTIVITIES ELIGIBLE FOR ASSISTANCE.

For purposes of this subtitle, an eligible activity with respect to an eligible project includes the cost of—

(1) development-phase activities, including planning, feasibility analysis (including any related analysis necessary to carry out an eligible project), revenue forecasting, environmental review, permitting, preliminary engineering and design work, and other preconstruction activities;

(2) construction, reconstruction, rehabilitation, and replacement activities;

(3) the acquisition of real property or an interest in real property (including water rights, land relating to the project, and improvements to land), environmental mitigation (including acquisitions pursuant to section 5026(7)), construction contingencies, and acquisition of equipment; and

(4) capitalized interest necessary to meet market requirements, reasonably required reserve funds, capital issuance expenses, and other carrying costs during construction.

SEC. 5028. DETERMINATION OF ELIGIBILITY AND PROJECT SELECTION.

(a) ELIGIBILITY REQUIREMENTS.—To be eligible to receive financial assistance under this subtitle, a project shall meet the following criteria, as determined by the Secretary or Administrator, as applicable:

(1) CREDITWORTHINESS.—

(A) IN GENERAL.—The project and obligor shall be creditworthy, which shall be determined by the Secretary or the Administrator, as applicable.

(B) CONSIDERATIONS.—In determining the creditworthiness of a project and obligor, the Secretary or the Administrator, as applicable, shall take into consideration relevant factors, including—

(i) the terms, conditions, financial structure, and security features of the proposed financing;

(ii) the dedicated revenue sources that will secure or fund the project obligations;

(iii) the financial assumptions upon which the project is based; and

(iv) the financial soundness and credit history of the obligor.

(C) SECURITY FEATURES.—The Secretary or the Administrator, as applicable, shall ensure that any financing for the project has appropriate security features, such as a rate covenant, supporting the project obligations to ensure repayment.

(D) RATING OPINION LETTERS.—

(i) PRELIMINARY RATING OPINION LETTER.—The Secretary or the Administrator, as applicable, shall

require each project applicant to provide, at the time of application, a preliminary rating opinion letter from at least 1 rating agency indicating that the senior obligations of the project (which may be the Federal credit instrument) have the potential to achieve an investment-grade rating.

(ii) FINAL RATING OPINION LETTERS.—The Secretary or the Administrator, as applicable, shall require each project applicant to provide, prior to final acceptance and financing of the project, final rating opinion letters from at least 2 rating agencies indicating that the senior obligations of the project have an investment-grade rating.

(E) SPECIAL RULE FOR CERTAIN COMBINED PROJECTS.—The Administrator shall develop a credit evaluation process for a Federal credit instrument provided to a State infrastructure financing authority for a project under section 5026(8) or an entity for a project under section 5026(9), which may include requiring the provision of a final rating opinion letter from at least 2 rating agencies.

(2) ELIGIBLE PROJECT COSTS.—

(A) IN GENERAL.—Subject to subparagraph (B), the eligible project costs of a project shall be reasonably anticipated to be not less than $20,000,000.

(B) SMALL COMMUNITY WATER INFRASTRUCTURE PROJECTS.—For a project described in paragraph (2) or (3) of section 5026 that serves a community of not more than 25,000 individuals, the eligible project costs of a project shall be reasonably anticipated to be not less than $5,000,000.

(3) DEDICATED REVENUE SOURCES.—The Federal credit instrument for the project shall be repayable, in whole or in part, from dedicated revenue sources that also secure the project obligations.

(4) PUBLIC SPONSORSHIP OF PRIVATE ENTITIES.—

(A) IN GENERAL.—If an eligible project is carried out by an entity that is not a State or local government or an agency or instrumentality of a State or local government or a tribal government or consortium of tribal governments, the project shall be publicly sponsored.

(B) PUBLIC SPONSORSHIP.—For purposes of this subtitle, a project shall be considered to be publicly sponsored if the obligor can demonstrate, to the satisfaction of the Secretary or the Administrator, as appropriate, that the project applicant has consulted with the affected State, local, or tribal government in which the project is located, or is otherwise affected by the project, and that such government supports the proposed project.

(5) LIMITATION.—No project receiving Federal credit assistance under this subtitle may be financed (directly or indirectly), in whole or in part, with proceeds of any obligation—

(A) the interest on which is exempt from the tax imposed under chapter 1 of the Internal Revenue Code of 1986; or

(B) with respect to which credit is allowable under subpart I or J of part IV of subchapter A of chapter 1 of such Code.

(6) USE OF EXISTING FINANCING MECHANISMS.—

(A) NOTIFICATION.—For each eligible project for which the Administrator has authority under paragraph (2) or (3) of section 5023(b) and for which the Administrator has received an application for financial assistance under this subtitle, the Administrator shall notify, not later than 30 days after the date on which the Administrator receives a complete application, the applicable State infrastructure financing authority of the State in which the project is located that such application has been submitted.

(B) DETERMINATION.—If, not later than 60 days after the date of receipt of a notification under subparagraph (A), a State infrastructure financing authority notifies the Administrator that the State infrastructure financing authority intends to commit funds to the project in an amount that is equal to or greater than the amount requested under the application, the Administrator may not provide any financial assistance for that project under this subtitle unless—

(i) by the date that is 180 days after the date of receipt of a notification under subparagraph (A), the State infrastructure financing authority fails to enter into an assistance agreement to provide funds for the project; or

(ii) the financial assistance to be provided by the State infrastructure financing authority will be at rates and terms that are less favorable than the rates and terms for financial assistance provided under this subtitle.

(7) OPERATION AND MAINTENANCE PLAN.—

(A) IN GENERAL.—The Secretary or the Administrator, as applicable, shall determine whether an applicant for assistance under this subtitle has developed, and identified adequate revenues to implement, a plan for operating, maintaining, and repairing the project over the useful life of the project.

(B) SPECIAL RULE.—An eligible project described in section 5026(1) that has not been specifically authorized by Congress shall not be eligible for Federal assistance for operations and maintenance.

(b) SELECTION CRITERIA.—

(1) ESTABLISHMENT.—The Secretary or the Administrator, as applicable, shall establish criteria for the selection of projects that meet the eligibility requirements of subsection (a), in accordance with paragraph (2).

(2) CRITERIA.—The selection criteria shall include the following:

(A) The extent to which the project is nationally or regionally significant, with respect to the generation of economic and public benefits, such as—

(i) the reduction of flood risk;

(ii) the improvement of water quality and quantity, including aquifer recharge;

(iii) the protection of drinking water, including source water protection; and

(iv) the support of international commerce.

(B) The extent to which the project financing plan includes public or private financing in addition to assistance under this subtitle.

(C) The likelihood that assistance under this subtitle would enable the project to proceed at an earlier date than the project would otherwise be able to proceed.

(D) The extent to which the project uses new or innovative approaches.

(E) The amount of budget authority required to fund the Federal credit instrument made available under this subtitle.

(F) The extent to which the project—

(i) protects against extreme weather events, such as floods or hurricanes; or

(ii) helps maintain or protect the environment.

(G) The extent to which a project serves regions with significant energy exploration, development, or production areas.

(H) The extent to which a project serves regions with significant water resource challenges, including the need to address—

(i) water quality concerns in areas of regional, national, or international significance;

(ii) water quantity concerns related to groundwater, surface water, or other water sources;

(iii) significant flood risk;

(iv) water resource challenges identified in existing regional, State, or multistate agreements; or

(v) water resources with exceptional recreational value or ecological importance.

(I) The extent to which the project addresses identified municipal, State, or regional priorities.

(J) The readiness of the project to proceed toward development, including a demonstration by the obligor that there is a reasonable expectation that the contracting process for construction of the project can commence by not later than 90 days after the date on which a Federal credit instrument is obligated for the project under this subtitle.

(K) The extent to which assistance under this subtitle reduces the contribution of Federal assistance to the project.

(3) SPECIAL RULE FOR CERTAIN COMBINED PROJECTS.—For a project described in section 5026(8), the Administrator shall only consider the criteria described in subparagraphs (B) through (K) of paragraph (2).

(c) FEDERAL REQUIREMENTS.—Nothing in this section supersedes the applicability of other requirements of Federal law (including regulations).

SEC. 5029. SECURED LOANS.

(a) AGREEMENTS.—

(1) IN GENERAL.—Subject to paragraphs (2) and (3), the Secretary or the Administrator, as applicable, may enter into agreements with 1 or more obligors to make secured loans, the proceeds of which shall be used to finance eligible project costs of any project selected under section 5028.

(2) FINANCIAL RISK ASSESSMENT.—Before entering into an agreement under this subsection for a secured loan, the Secretary or the Administrator, as applicable, in consultation with the Director of the Office of Management and Budget and each rating agency providing a rating opinion letter under section 5028(a)(1)(D), shall determine an appropriate capital reserve subsidy amount for the secured loan, taking into account each such rating opinion letter.

(3) INVESTMENT-GRADE RATING REQUIREMENT.—The execution of a secured loan under this section shall be contingent on receipt by the senior obligations of the project of an investment-grade rating.

(b) TERMS AND LIMITATIONS.—

(1) IN GENERAL.—A secured loan provided for a project under this section shall be subject to such terms and conditions, and contain such covenants, representations, warranties, and requirements (including requirements for audits), as the Secretary or the Administrator, as applicable, determines to be appropriate.

(2) MAXIMUM AMOUNT.—The amount of a secured loan under this section shall not exceed the lesser of—

(A) an amount equal to 49 percent of the reasonably anticipated eligible project costs; and

(B) if the secured loan does not receive an investment-grade rating, the amount of the senior project obligations of the project.

(3) PAYMENT.—A secured loan under this section—

(A) shall be payable, in whole or in part, from State or local taxes, user fees, or other dedicated revenue sources that also secure the senior project obligations of the relevant project;

(B) shall include a rate covenant, coverage requirement, or similar security feature supporting the project obligations; and

(C) may have a lien on revenues described in subparagraph (A), subject to any lien securing project obligations.

(4) INTEREST RATE.—The interest rate on a secured loan under this section shall be not less than the yield on United States Treasury securities of a similar maturity to the maturity of the secured loan on the date of execution of the loan agreement.

(5) MATURITY DATE.—

(A) IN GENERAL.—The final maturity date of a secured loan under this section shall be the earlier of—

(i) the date that is 35 years after the date of substantial completion of the relevant project (as determined by the Secretary or the Administrator, as applicable); and

(ii) if the useful life of the project (as determined by the Secretary or Administrator, as applicable) is less than 35 years, the useful life the project.

(B) SPECIAL RULE FOR STATE INFRASTRUCTURE FINANCING AUTHORITIES.—The final maturity date of a secured loan to a State infrastructure financing authority under this section shall be not later than 35 years after the date on which amounts are first disbursed.

(6) NONSUBORDINATION.—A secured loan under this section shall not be subordinated to the claims of any holder of project obligations in the event of bankruptcy, insolvency, or liquidation of the obligor of the project.

(7) FEES.—The Secretary or the Administrator, as applicable, may establish fees at a level sufficient to cover all or a portion of the costs to the Federal Government of making a secured loan under this section.

(8) NON-FEDERAL SHARE.—The proceeds of a secured loan under this section may be used to pay any non-Federal share of project costs required if the loan is repayable from non-Federal funds.

(9) MAXIMUM FEDERAL INVOLVEMENT.—

(A) IN GENERAL.—Except as provided in subparagraph (B), for each project for which assistance is provided under this subtitle, the total amount of Federal assistance shall not exceed 80 percent of the total project cost.

(B) EXCEPTIONS.—Subparagraph (A) shall not apply to any rural water project—

(i) that is authorized to be carried out by the Secretary of the Interior;

(ii) that includes among its beneficiaries a federally recognized Indian tribe; and

(iii) for which the authorized Federal share of the total project costs is greater than the amount described in subparagraph (A).

(c) REPAYMENT.—

(1) SCHEDULE.—The Secretary or the Administrator, as applicable, shall establish a repayment schedule for each secured loan provided under this section, based on the projected cash flow from project revenues and other repayment sources.

(2) COMMENCEMENT.—

(A) IN GENERAL.—Scheduled loan repayments of principal or interest on a secured loan under this section shall commence not later than 5 years after the date of substantial completion of the project (as determined by the Secretary or Administrator, as applicable).

(B) SPECIAL RULE FOR STATE INFRASTRUCTURE FINANCING AUTHORITIES.—Scheduled loan repayments of principal or interest on a secured loan to a State infrastructure financing authority under this subtitle shall commence not later than 5 years after the date on which amounts are first disbursed.

(3) DEFERRED PAYMENTS.—

(A) AUTHORIZATION.—If, at any time after the date of substantial completion of a project for which a secured loan is provided under this section, the project is unable to generate sufficient revenues to pay the scheduled loan repayments of principal and interest on the secured loan, the Secretary or the Administrator, as applicable, subject to subparagraph (C), may allow the obligor to add unpaid principal and interest to the outstanding balance of the secured loan.

(B) INTEREST.—Any payment deferred under subparagraph (A) shall—

(i) continue to accrue interest in accordance with subsection (b)(4) until fully repaid; and

(ii) be scheduled to be amortized over the remaining term of the secured loan.

(C) CRITERIA.—

(i) IN GENERAL.—Any payment deferral under subparagraph (A) shall be contingent on the project meeting such criteria as the Secretary or the Administrator, as applicable, may establish.

(ii) REPAYMENT STANDARDS.—The criteria established under clause (i) shall include standards for reasonable assurance of repayment.

(4) PREPAYMENT.—

(A) USE OF EXCESS REVENUES.—Any excess revenues that remain after satisfying scheduled debt service requirements on the project obligations and secured loan and all deposit requirements under the terms of any trust agreement, bond resolution, or similar agreement securing project obligations may be applied annually to prepay a secured loan under this section without penalty.

(B) USE OF PROCEEDS OF REFINANCING.—A secured loan under this section may be prepaid at any time without penalty from the proceeds of refinancing from non-Federal funding sources.

(d) SALE OF SECURED LOANS.—

(1) IN GENERAL.—Subject to paragraph (2), as soon as practicable after the date of substantial completion of a project and after providing a notice to the obligor, the Secretary or the Administrator, as applicable, may sell to another entity or reoffer into the capital markets a secured loan for a project under this section, if the Secretary or the Administrator, as applicable, determines that the sale or reoffering can be made on favorable terms.

(2) CONSENT OF OBLIGOR.—In making a sale or reoffering under paragraph (1), the Secretary or the Administrator, as applicable, may not change the original terms and conditions of the secured loan without the written consent of the obligor.

(e) LOAN GUARANTEES.—

(1) IN GENERAL.—The Secretary or the Administrator, as applicable, may provide a loan guarantee to a lender in lieu of making a secured loan under this section, if the Secretary or the Administrator, as applicable, determines that the budgetary cost of the loan guarantee is substantially the same as that of a secured loan.

(2) TERMS.—The terms of a loan guarantee provided under this subsection shall be consistent with the terms established in this section for a secured loan, except that the rate on the guaranteed loan and any prepayment features shall be negotiated between the obligor and the lender, with the consent of the Secretary or the Administrator, as applicable.

SEC. 5030. PROGRAM ADMINISTRATION.

(a) REQUIREMENT.—The Secretary or the Administrator, as applicable, shall establish a uniform system to service the Federal credit instruments made available under this subtitle.

(b) FEES.—

(1) IN GENERAL.—The Secretary or the Administrator, as applicable, may collect and spend fees, contingent on authority

being provided in appropriations Acts, at a level that is sufficient to cover—

(A) the costs of services of expert firms retained pursuant to subsection (d); and

(B) all or a portion of the costs to the Federal Government of servicing the Federal credit instruments provided under this subtitle.

(c) SERVICER.—

(1) IN GENERAL.—The Secretary or the Administrator, as applicable, may appoint a financial entity to assist the Secretary or the Administrator in servicing the Federal credit instruments provided under this subtitle.

(2) DUTIES.—A servicer appointed under paragraph (1) shall act as the agent for the Secretary or the Administrator, as applicable.

(3) FEE.—A servicer appointed under paragraph (1) shall receive a servicing fee, subject to approval by the Secretary or the Administrator, as applicable.

(d) ASSISTANCE FROM EXPERTS.—The Secretary or the Administrator, as applicable, may retain the services, including counsel, of organizations and entities with expertise in the field of municipal and project finance to assist in the underwriting and servicing of Federal credit instruments provided under this subtitle.

(e) APPLICABILITY OF OTHER LAWS.—Section 513 of the Federal Water Pollution Control Act (33 U.S.C. 1372) applies to the construction of a project carried out, in whole or in part, with assistance made available through a Federal credit instrument under this subtitle in the same manner that section applies to a treatment works for which a grant is made available under that Act.

SEC. 5031. STATE, TRIBAL, AND LOCAL PERMITS.

The provision of financial assistance for a project under this subtitle shall not—

(1) relieve any recipient of the assistance of any obligation to obtain any required State, local, or tribal permit or approval with respect to the project;

(2) limit the right of any unit of State, local, or tribal government to approve or regulate any rate of return on private equity invested in the project; or

(3) otherwise supersede any State, local, or tribal law (including any regulation) applicable to the construction or operation of the project.

SEC. 5032. REGULATIONS.

The Secretary or the Administrator, as applicable, may promulgate such regulations as the Secretary or Administrator determines to be appropriate to carry out this subtitle.

SEC. 5033. FUNDING.

(a) IN GENERAL.—There is authorized to be appropriated to each of the Secretary and the Administrator to carry out this subtitle, to remain available until expended—

(1) $20,000,000 for fiscal year 2015;
(2) $25,000,000 for fiscal year 2016;
(3) $35,000,000 for fiscal year 2017;
(4) $45,000,000 for fiscal year 2018; and
(5) $50,000,000 for fiscal year 2019.

(b) ADMINISTRATIVE COSTS.—Of the funds made available to carry out this subtitle, the Secretary or the Administrator, as applicable, may use for the administration of this subtitle, including for the provision of technical assistance to aid project sponsors in obtaining the necessary approvals for the project, not more than $2,200,000 for each of fiscal years 2015 through 2019.

(c) SMALL COMMUNITY WATER INFRASTRUCTURE PROJECTS.—

(1) IN GENERAL.—For each fiscal year, the Secretary or the Administrator, as applicable, shall set aside not less than 15 percent of the amounts made available for that fiscal year under this section for small community water infrastructure projects described in section 5028(a)(2)(B).

(2) ADMINISTRATION.—Any amounts set aside under paragraph (1) that remain unobligated on June 1 of the fiscal year for which the amounts are set aside shall be available for obligation by the Secretary or the Administrator, as applicable, for projects other than small community water infrastructure projects.

(d) ADDITIONAL FUNDING.—Notwithstanding section 5029(b)(2), the Secretary or the Administrator, as applicable, may make available up to 25 percent of the amounts made available for each fiscal year under this section for loans in excess of 49 percent of the total project costs.

SEC. 5034. REPORTS ON PILOT PROGRAM IMPLEMENTATION.

(a) AGENCY REPORTING.—As soon as practicable after each fiscal year for which amounts are made available to carry out this subtitle, the Secretary and the Administrator shall publish on a dedicated, publicly accessible Internet site—

(1) each application received for assistance under this subtitle; and

(2) a list of the projects selected for assistance under this subtitle, including—

(A) a description of each project;

(B) the amount of financial assistance provided for each project; and

(C) the basis for the selection of each project with respect to the requirements of this subtitle.

(b) REPORTS TO CONGRESS.—

(1) IN GENERAL.—Not later than 4 years after the date of enactment of this Act, the Comptroller General of the United States shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a report summarizing for the projects that are receiving, or have received, assistance under this subtitle—

(A) the applications received for assistance under this subtitle;

(B) the projects selected for assistance under this subtitle, including a description of the projects and the basis for the selection of those projects with respect to the requirements of this subtitle;

(C) the type and amount of financial assistance provided for each project selected for assistance under this subtitle;

(D) the financial performance of each project selected for assistance under this subtitle, including an evaluation of whether the objectives of this subtitle are being met;

(E) the benefits and impacts of implementation of this subtitle, including the public benefit provided by the projects selected for assistance under this subtitle, including, as applicable, water quality and water quantity improvement, the protection of drinking water, and the reduction of flood risk; and

(F) an evaluation of the feasibility of attracting non-Federal public or private financing for water infrastructure projects as a result of the implementation of this subtitle.

(2) RECOMMENDATIONS.—The report under paragraph (1) shall include—

(A) an evaluation of the impacts (if any) of the limitation under section 5028(a)(5) on the ability of eligible entities to finance water infrastructure projects under this subtitle;

(B) a recommendation as to whether the objectives of this subtitle would be best served—

(i) by continuing the authority of the Secretary or the Administrator, as applicable, to provide assistance under this subtitle;

(ii) by establishing a Government corporation or Government-sponsored enterprise to provide assistance in accordance with this subtitle; or

(iii) by terminating the authority of the Secretary and the Administrator under this subtitle and relying on the capital markets to fund the types of infrastructure investments assisted by this subtitle without Federal participation; and

(C) any proposed changes to improve the efficiency and effectiveness of this subtitle in providing financing for water infrastructure projects, taking into consideration the recommendations made under subparagraphs (A) and (B).

SEC. 5035. REQUIREMENTS.

(a) IN GENERAL.—Except as provided in subsection (c), none of the amounts made available under this subtitle may be used for the construction, alteration, maintenance, or repair of a project eligible for assistance under this subtitle unless all of the iron and steel products used in the project are produced in the United States.

(b) DEFINITION OF IRON AND STEEL PRODUCTS.—In this section, the term "iron and steel products" means the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and construction materials.

(c) APPLICATION.—Subsection (a) shall not apply in any case or category of cases in which the Administrator finds that—

(1) applying subsection (a) would be inconsistent with the public interest;

(2) iron and steel products are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or

(3) inclusion of iron and steel products produced in the United States will increase the cost of the overall project by more than 25 percent.

(d) WAIVER.—If the Administrator receives a request for a waiver under this section, the Administrator shall make available to the public, on an informal basis, a copy of the request and information available to the Administrator concerning the request, and shall allow for informal public input on the request for at least 15 days prior to making a finding based on the request. The Administrator shall make the request and accompanying information available by electronic means, including on the official public Internet Web site of the Environmental Protection Agency.

(e) INTERNATIONAL AGREEMENTS.—This section shall be applied in a manner consistent with United States obligations under international agreements.

TITLE VI—DEAUTHORIZATION AND BACKLOG PREVENTION

SEC. 6001. DEAUTHORIZATION OF INACTIVE PROJECTS.

(a) PURPOSES.—The purposes of this section are—

(1) to identify $18,000,000,000 in water resources development projects authorized by Congress that are no longer viable for construction due to—

(A) a lack of local support;

(B) a lack of available Federal or non-Federal resources; or

(C) an authorizing purpose that is no longer relevant or feasible;

(2) to create an expedited and definitive process to deauthorize water resources development projects that are no longer viable for construction; and

(3) to allow the continued authorization of water resources development projects that are viable for construction.

(b) COMPREHENSIVE STATUS REPORTS.—Section 1001(b) of the Water Resources Development Act of 1986 (33 U.S.C. 579a(b)) is amended by adding at the end the following:

"(3) MINIMUM FUNDING LIST.—At the end of each fiscal year, the Secretary shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives, and make available on a publicly accessible Internet site in a manner that is downloadable, searchable, and sortable, a list of—

"(A) projects or separable elements of projects authorized for construction for which funding has been obligated during the current fiscal year or any of the 6 preceding fiscal years;

"(B) the amount of funding obligated for each such project or separable element per fiscal year;

"(C) the current phase of each such project or separable element of a project; and

"(D) the amount required to complete the current phase of each such project or separable element.

"(4) COMPREHENSIVE BACKLOG REPORT.—

"(A) IN GENERAL.—The Secretary shall compile and publish a complete list of all projects and separable elements of projects of the Corps of Engineers that are authorized for construction but have not been completed.

"(B) REQUIRED INFORMATION.—The Secretary shall include on the list developed under subparagraph (A) for each project and separable element on that list—

"(i) the date of authorization of the project or separable element, including any subsequent modifications to the original authorization;

"(ii) the original budget authority for the project or separable element;

"(iii) a brief description of the project or separable element;

"(iv) the estimated date of completion of the project or separable element;

"(v) the estimated cost of completion of the project or separable element; and

"(vi) any amounts appropriated for the project or separable element that remain unobligated.

"(C) PUBLICATION.—

"(i) IN GENERAL.—Not later than 1 year after the date of enactment of this paragraph, the Secretary shall submit a copy of the list developed under subparagraph (A) to—

"(I) the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives; and

"(II) the Director of the Office of Management and Budget.

"(ii) PUBLIC AVAILABILITY.—Beginning on the date the Secretary submits the report to Congress under clause (i), the Secretary shall make a copy of the list available on a publicly accessible Internet site in a manner that is downloadable, searchable, and sortable.".

(c) INTERIM DEAUTHORIZATION LIST.—

(1) IN GENERAL.—The Secretary shall develop an interim deauthorization list that identifies each water resources development project, or separable element of a project, authorized for construction before November 8, 2007, for which—

(A) construction was not initiated before the date of enactment of this Act; or

(B) construction was initiated before the date of enactment of this Act, but for which no funds, Federal or non-Federal, were obligated for construction of the project or separable element of the project during the current fiscal year or any of the 6 preceding fiscal years.

(2) SPECIAL RULE FOR PROJECTS RECEIVING FUNDS FOR POST-AUTHORIZATION STUDY.—A project or separable element of a project may not be identified on the interim deauthorization list, or the final deauthorization list developed under subsection (d), if the project or separable element received funding for a post-authorization study during the current fiscal year or any of the 6 preceding fiscal years.

(3) PUBLIC COMMENT AND CONSULTATION.—

(A) IN GENERAL.—The Secretary shall solicit comments from the public and the Governors of each applicable State on the interim deauthorization list developed under paragraph (1).

(B) COMMENT PERIOD.—The public comment period shall be 90 days.

(4) SUBMISSION TO CONGRESS; PUBLICATION.—Not later than 90 days after the date of submission of the list required by section 1001(b)(4)(A) of the Water Resources Development Act of 1986 (as added by subsection (b)), the Secretary shall—

(A) submit the interim deauthorization list to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives; and

(B) publish the interim deauthorization list in the Federal Register.

(d) FINAL DEAUTHORIZATION LIST.—

(1) IN GENERAL.—The Secretary shall develop a final deauthorization list of each water resources development project, or separable element of a project, described in subsection (c)(1) that is identified pursuant to this subsection.

(2) DEAUTHORIZATION AMOUNT.—

(A) IN GENERAL.—The Secretary shall include on the final deauthorization list projects and separable elements of projects that have, in the aggregate, an estimated Federal cost to complete that is at least $18,000,000,000.

(B) DETERMINATION OF FEDERAL COST TO COMPLETE.—For purposes of subparagraph (A), the Federal cost to complete shall take into account any allowances authorized by section 902 of the Water Resources Development Act of 1986 (33 U.S.C. 2280), as applied to the most recent project schedule and cost estimate.

(3) IDENTIFICATION OF PROJECTS.—

(A) SEQUENCING OF PROJECTS.—

(i) IN GENERAL.—The Secretary shall identify projects and separable elements of projects for inclusion on the final deauthorization list according to the order in which the projects and separable elements of the projects were authorized, beginning with the earliest authorized projects and separable elements of projects and ending once the last project or separable element of a project necessary to meet the aggregate amount under paragraph (2) is identified.

(ii) FACTORS TO CONSIDER.—The Secretary may identify projects and separable elements of projects in an order other than that established by clause (i) if the Secretary determines, on a case-by-case basis, that a project or separable element of a project is critical for interests of the United States, based on the possible impact of the project or separable element of the project on public health and safety, the national economy, or the environment.

(iii) CONSIDERATION OF PUBLIC COMMENTS.—In making determinations under clause (ii), the Secretary shall consider any comments received under subsection (c)(3).

(B) APPENDIX.—The Secretary shall include as part of the final deauthorization list an appendix that—

(i) identifies each project or separable element of a project on the interim deauthorization list developed under subsection (c) that is not included on the final deauthorization list; and

(ii) describes the reasons why the project or separable element is not included.

(4) SUBMISSION TO CONGRESS; PUBLICATION.—Not later than 120 days after the date on which the public comment period under subsection (c)(3) expires, the Secretary shall—

(A) submit the final deauthorization list and the appendix to the final deauthorization list to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives; and

(B) publish the final deauthorization list and the appendix to the final deauthorization list in the Federal Register.

(e) DEAUTHORIZATION; CONGRESSIONAL REVIEW.—

(1) IN GENERAL.—After the expiration of the 180-day period beginning on the date of submission of the final deauthorization report under subsection (d), a project or separable element of a project identified in the report is hereby deauthorized, unless Congress passes a joint resolution disapproving the final deauthorization report prior to the end of such period.

(2) NON-FEDERAL CONTRIBUTIONS.—

(A) IN GENERAL.—A project or separable element of a project identified in the final deauthorization report under subsection (d) shall not be deauthorized under this subsection if, before the expiration of the 180-day period referred to in paragraph (1), the non-Federal interest for the project or separable element of the project provides sufficient funds to complete the project or separable element of the project.

(B) TREATMENT OF PROJECTS.—Notwithstanding subparagraph (A), each project and separable element of a project identified in the final deauthorization report shall be treated as deauthorized for purposes of the aggregate deauthorization amount specified in subsection (d)(2).

(f) GENERAL PROVISIONS.—

(1) DEFINITIONS.—In this section:

(A) POST-AUTHORIZATION STUDY.—The term "post-authorization study" means—

(i) a feasibility report developed under section 905 of the Water Resources Development Act of 1986 (33 U.S.C. 2282);

(ii) a feasibility study, as defined in section 105(d) of the Water Resources Development Act of 1986 (33 U.S.C. 2215(d)); or

(iii) a review conducted under section 216 of the Flood Control Act of 1970 (33 U.S.C. 549a), including an initial appraisal that—

(I) demonstrates a Federal interest; and

(II) requires additional analysis for the project or separable element.

(B) WATER RESOURCES DEVELOPMENT PROJECT.—The term "water resources development project" includes an environmental infrastructure assistance project or program of the Corps of Engineers.

(2) TREATMENT OF PROJECT MODIFICATIONS.—For purposes of this section, if an authorized water resources development project or separable element of the project has been modified by an Act of Congress, the date of the authorization of the project or separable element shall be deemed to be the date of the most recent such modification.

SEC. 6002. REVIEW OF CORPS OF ENGINEERS ASSETS.

(a) ASSESSMENT AND INVENTORY.—Not later than 1 year after the date of enactment of this Act, the Secretary shall conduct an assessment of all properties under the control of the Corps of Engineers and develop an inventory of the properties that are not needed for the missions of the Corps of Engineers.

(b) CRITERIA.—In conducting the assessment and developing the inventory under subsection (a), the Secretary shall use the following criteria:

(1) The extent to which the property aligns with the current missions of the Corps of Engineers.

(2) The economic impact of the property on existing communities in the vicinity of the property.

(3) The extent to which the utilization rate for the property is being maximized and is consistent with nongovernmental industry standards for the given function or operation.

(4) The extent to which the reduction or elimination of the property could reduce operation and maintenance costs of the Corps of Engineers.

(5) The extent to which the reduction or elimination of the property could reduce energy consumption by the Corps of Engineers.

(c) NOTIFICATION.—As soon as practicable following completion of the inventory of properties under subsection (a), the Secretary shall provide the inventory to the Administrator of General Services.

(d) REPORT TO CONGRESS.—Not later than 30 days after the date of the notification under subsection (c), the Secretary shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives and make publicly available a report containing the findings of the Secretary with respect to the assessment and inventory required under subsection (a).

SEC. 6003. BACKLOG PREVENTION.

(a) PROJECT DEAUTHORIZATION.—

(1) IN GENERAL.—A water resources development project, or separable element of such a project, authorized for construction by this Act shall not be authorized after the last day of the 7-year period beginning on the date of enactment of this Act unless funds have been obligated for construction of such project during that period.

(2) IDENTIFICATION OF PROJECTS.—Not later than 60 days after the expiration of the 7-year period referred to in paragraph (1), the Secretary shall submit to the Committee on Environment and Public Works of the Senate and the Committee

on Transportation and Infrastructure of the House of Representatives a report that identifies the projects deauthorized under paragraph (1).

(b) REPORT TO CONGRESS.—Not later than 60 days after the expiration of the 12-year period beginning on the date of enactment of this Act, the Secretary shall submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives, and make available to the public, a report that contains—

(1) a list of any water resources development projects authorized by this Act for which construction has not been completed during that period;

(2) a description of the reasons the projects were not completed;

(3) a schedule for the completion of the projects based on expected levels of appropriations; and

(4) a 5-year and 10-year projection of construction backlog and any recommendations to Congress regarding how to mitigate current problems and the backlog.

SEC. 6004. DEAUTHORIZATIONS.

(a) IN GENERAL.—

(1) WALNUT CREEK (PACHECO CREEK), CALIFORNIA.—The portions of the project for flood protection on Walnut Creek, California, constructed under section 203 of the Flood Control Act of 1960 (Public Law 86–645; 74 Stat. 488), consisting of the Walnut Creek project from Sta 0+00 to Sta 142+00 and the upstream extent of the Walnut Creek project along Pacheco Creek from Sta 0+00 to Sta 73+50 are no longer authorized beginning on the date of enactment of this Act.

(2) WALNUT CREEK (SAN RAMON CREEK), CALIFORNIA.—The portion of the project for flood protection on Walnut Creek, California, constructed under section 203 of the Flood Control Act of 1960 (Public Law 86–645; 74 Stat. 488), consisting of the culvert constructed by the Department of the Army on San Ramon Creek from Sta 4+27 to Sta 14+27 is no longer authorized beginning on the date of enactment of this Act.

(3) EIGHTMILE RIVER, CONNECTICUT.—

(A) The portion of the project for navigation, Eightmile River, Connecticut, authorized by the first section of the Act of June 25, 1910 (36 Stat. 633, chapter 382) (commonly known as the "River and Harbor Act of 1910"), that begins at a point of the existing 8-foot channel limit with coordinates N701002.39, E1109247.73, thence running north 2 degrees 19 minutes 57.1 seconds east 265.09 feet to a point N701267.26, E1109258.52, thence running north 7 degrees 47 minutes 19.3 seconds east 322.32 feet to a point N701586.60, E1109302.20, thence running north 90 degrees 0 minutes 0 seconds east 65.61 to a point N701586.60, E1109367.80, thence running south 7 degrees 47 minutes 19.3 seconds west 328.11 feet to a point N701261.52, E1109323.34, thence running south 2 degrees 19 minutes 57.1 seconds west 305.49 feet to an end at a point N700956.28, E1109310.91 on the existing 8-foot channel limit, shall be reduced to a width of 65 feet and the channel realigned to follow the deepest available water.

(B) The project referred to in subparagraph (A) beginning at a point N701296.72, E1109262.55 and running north 45 degrees 4 minutes 2.8 seconds west 78.09 feet to a point N701341.18, E1109217.98, thence running north 5 degrees 8 minutes 34.6 seconds east 180.14 feet to a point N701520.59, E1109234.13, thence running north 54 degrees 5 minutes 50.1 seconds east 112.57 feet to a point N701568.04, E1109299.66, thence running south 7 degrees 47 minutes 18.4 seconds west 292.58 feet to the point of origin; and the remaining area north of the channel realignment beginning at a point N700956.28, E1109310.91 thence running north 2 degrees 19 minutes 57.1 seconds east 305.49 feet west to a point N701261.52, E1109323.34 north 7 degrees 47 minutes 18.4 seconds east 328.11 feet to a point N701586.60, E1109367.81 thence running north 90 degrees 0 minutes 0 seconds east 7.81 feet to a point N701586.60, E1109375.62 thence running south 5 degrees 8 minutes 34.6 seconds west 626.29 feet to a point N700962.83, E1109319.47 thence south 52 degrees 35 minutes 36.5 seconds 10.79 feet to the point of origin is no longer authorized beginning on the date of enactment of this Act.

(4) HILLSBOROUGH (HILLSBORO) BAY AND RIVER, FLORIDA.—The portions of the project for navigation, Hillsborough (Hillsboro) Bay and River, Florida, authorized by the Act of March 3, 1899 (30 Stat. 1126; chapter 425), that extend on either side of the Hillsborough River from the Kennedy Boulevard bridge to the mouth of the river that cause the existing channel to exceed 100 feet in width are no longer authorized beginning on the date of enactment of this Act.

(5) KAHULUI WASTEWATER RECLAMATION FACILITY, MAUI, HAWAII.—The project authorized pursuant to section 14 of the Flood Control Act of 1946 (33 U.S.C. 701r) to provide shoreline protection for the Kahului Wastewater Reclamation Facility, located on the Island of Maui in the State of Hawaii is no longer authorized beginning on the date of enactment of this Act.

(6) LUCAS-BERG PIT, ILLINOIS WATERWAY AND GRANT CALUMET RIVER, ILLINOIS.—The portion of the project for navigation, Illinois Waterway and Grand Calumet River, Illinois, authorized by the first section of the Act of July 24, 1946 (60 Stat. 636; chapter 595), that consists of the Lucas-Berg Pit confined disposal facility, Illinois is no longer authorized beginning on the date of enactment of this Act.

(7) PORT OF IBERIA, LOUISIANA.—Section 1001(25) of the Water Resources Development Act of 2007 (121 Stat. 1053) is amended by striking "; except that" and all that follows before the period at the end.

(8) ROCKLAND HARBOR, MAINE.—The project for navigation, Rockland Harbor, Maine, authorized by the Act of June 3, 1896 (29 Stat. 202; chapter 314), and described as follows is no longer authorized beginning on the date of enactment of this Act:

(A) Beginning at the point in the 14-foot turning basin limit with coordinates N162,927.61, E826,210.16.

(B) Thence running north 45 degrees 45 minutes 15.6 seconds east 287.45 feet to a point N163,128.18, E826,416.08.

(C) Thence running south 13 degrees 17 minutes 53.3 seconds east 129.11 feet to a point N163,002.53, E826,445.77.

(D) Thence running south 45 degrees 45 minutes 18.4 seconds west 221.05 feet to a point N162,848.30, E826,287.42.

(E) Thence running north 44 degrees 14 minutes 59.5 seconds west 110.73 feet to the point of origin.

(9) THOMASTON HARBOR, GEORGES RIVER, MAINE.—The portion of the project for navigation, Georges River, Maine (Thomaston Harbor), authorized by the first section of the Act of June 3, 1896 (29 Stat. 215, chapter 314), and modified by section 317 of the Water Resources Development Act of 2000 (Public Law 106–541; 114 Stat. 2604), that lies northwesterly of a line commencing at point N87,220.51, E321,065.80 thence running northeasterly about 125 feet to a point N87,338.71, E321,106.46 is no longer authorized beginning on the date of enactment of this Act.

(10) CORSICA RIVER, QUEEN ANNE'S COUNTY, MARYLAND.—The portion of the project for improving the Corsica River, Maryland, authorized by the first section of the Act of July 25, 1912 (37 Stat. 205; chapter 253), and described as follows is no longer authorized beginning on the date of enactment of this Act: Approximately 2,000 feet of the eastern section of the project channel extending from—

(A) centerline station 0+000 (coordinates N506350.60, E1575013.60); to

(B) station 2+000 (coordinates N508012.39, E1574720.18).

(11) GOOSE CREEK, SOMERSET COUNTY, MARYLAND.—The project for navigation, Goose Creek, Somerset County, Maryland, carried out pursuant to section 107 of the Rivers and Harbor Act of 1960 (33 U.S.C. 577), is realigned as follows: Beginning at Goose Creek Channel Geometry Centerline of the 60-foot-wide main navigational ship channel, Centerline Station No. 0+00, coordinates North 157851.80, East 1636954.70, as stated and depicted on the Condition Survey Goose Creek, Sheet 1 of 1, prepared by the United States Army Corps of Engineers, Baltimore District, July 2003; thence departing the aforementioned centerline traveling the following courses and distances: S. 64 degrees 49 minutes 06 seconds E., 1583.82 feet to a point, on the outline of said 60-foot-wide channel thence binding on said out-line the following four courses and distances: S. 63 degrees 26 minutes 06 seconds E., 1460.05 feet to a point, thence; N. 50 degrees 38 minutes 26 seconds E., 973.28 feet to a point, thence; N. 26 degrees 13 minutes 09 seconds W., 240.39 feet to a point on the Left Toe of the 60-foot-wide main navigational channel at computed Centerline Station No. 42+57.54, coordinates North 157357.84, East 1640340.23. Geometry Left Toe of the 60-foot-wide main navigational ship channel, Left Toe Station No. 0+00, coordinates North 157879.00, East 1636967.40, as stated and depicted on the Condition Survey Goose Creek, Sheet 1 of 1, prepared

by the United States Army Corps of Engineers, Baltimore District, August 2010; thence departing the aforementioned centerline traveling the following courses and distances: S. 64 degrees 49 minutes 12 seconds E., 1583.91 feet to a point, on the outline of said 60-foot-wide channel thence binding on said out-line the following eight courses and distances: S. 63 degrees 25 minutes 38 seconds E., 1366.25 feet to a point, thence; N. 83 degrees 36 minutes 24 seconds E., 125.85 feet to a point, thence; N. 50 degrees 38 minutes 26 seconds E., 805.19 feet to a point, thence; N. 12 degrees 12 minutes 29 seconds E., 78.33 feet to a point thence; N. 26 degrees 13 minutes 28 seconds W., 46.66 feet to a point thence; S. 63 degrees 45 minutes 41 seconds W., 54.96 feet to a point thence; N. 26 degrees 13 minutes 24 seconds W., 119.94 feet to a point on the Left Toe of the 60-foot-wide main navigational channel at computed Centerline Station No. 41+81.10, coordinates North 157320.30, East 1640264.00. Geometry Right Toe of the 60-foot-wide main navigational ship channel, Right Toe Station No. 0+00, coordinates North 157824.70, East 1636941.90, as stated and depicted on the Condition Survey Goose Creek, Sheet 1 of 1, prepared by the United States Army Corps of Engineers, Baltimore District, August 2010; thence departing the aforementioned centerline traveling the following courses and distances: S. 64 degrees 49 minutes 06 seconds E., 1583.82 feet to a point, on the outline of said 60-foot-wide channel thence binding on said out-line the following six courses and distances: S. 63 degrees 25 minutes 47 seconds E., 1478.79 feet to a point, thence; N. 50 degrees 38 minutes 26 seconds E., 1016.69 feet to a point, thence; N. 26 degrees 14 minutes 49 seconds W., 144.26 feet to a point, thence; N. 63 degrees 54 minutes 03 seconds E., 55.01 feet to a point thence; N. 26 degrees 12 minutes 08 seconds W., 120.03 feet to a point a point on the Right Toe of the 60-foot-wide main navigational channel at computed Centerline Station No. 43+98.61, coordinates North 157395.40, East 1640416.50.

(12) LOWER THOROUGHFARE, DEAL ISLAND, MARYLAND.—The portion of the project for navigation, Lower Thoroughfare, Maryland, authorized by the Act of June 25, 1910 (36 Stat. 639, chapter 382) (commonly known as the "River and Harbor Act of 1910"), that begins at Lower Thoroughfare Channel Geometry Centerline of the 60-foot-wide main navigational ship channel, Centerline Station No. 44+88, coordinates North 170435.62, East 1614588.93, as stated and depicted on the Condition Survey Lower Thoroughfare, Deal Island, Sheet 1 of 3, prepared by the United States Army Corps of Engineers, Baltimore District, August 2010; thence departing the aforementioned centerline traveling the following courses and distances: S. 42 degrees 20 minutes 44 seconds W., 30.00 feet to a point, on the outline of said 60-foot-wide channel thence binding on said out-line the following four courses and distances: N. 64 degrees 08 minutes 55 seconds W., 53.85 feet to a point, thence; N. 42 degrees 20 minutes 43 seconds W., 250.08 feet to a point, thence; N. 47 degrees 39 minutes 03 seconds E., 20.00 feet to a point, thence; S. 42 degrees 20 minutes 44 seconds E., 300.07 feet to a point binding on the Left Toe of the 60-foot-wide main navigational channel at computed Centerline Station No. 43+92.67, coordinates North 170415.41, 1614566.76;

thence; continuing with the aforementioned centerline the following courses and distances: S. 42 degrees 20 minutes 42 seconds W., 30.00 feet to a point, on the outline of said 60-foot-wide channel thence binding on said out-line the following four courses and distances: N. 20 degrees 32 minutes 06 seconds W., 53.85 feet to a point, thence; N. 42 degrees 20 minutes 49 seconds W., 250.08 feet to a point, thence; S. 47 degrees 39 minutes 03 seconds W., 20.00 feet to a point, thence; S. 42 degrees 20 minutes 46 seconds E., 300.08 feet to a point binding on the Left Toe of the 60-foot-wide main navigational channel at computed Centerline Station No. 43+92.67, coordinates North 170415.41, 1614566.76 is no longer authorized beginning on the date of enactment of this Act.

(13) GLOUCESTER HARBOR AND ANNISQUAM RIVER, MASSACHUSETTS.—The portions of the project for navigation, Gloucester Harbor and Annisquam River, Massachusetts, authorized by section 2 of the Act of March 2, 1945 (59 Stat. 12; chapter 19), consisting of an 8-foot anchorage area in Lobster Cove, and described as follows are no longer authorized beginning on the date of enactment of this Act:

(A) Beginning at a bend along the easterly limit of the existing project, N3063230.31, E878283.77, thence running northwesterly about 339 feet to a point, N3063478.86, E878053.83, thence running northwesterly about 281 feet to a bend on the easterly limit of the existing project, N3063731.88, E877932.54, thence running southeasterly about 612 feet along the easterly limit of the existing project to the point of origin.

(B) Beginning at a bend along the easterly limit of the existing project, N3064065.80, E878031.45, thence running northwesterly about 621 feet to a point, N3064687.05, E878031.13, thence running southwesterly about 122 feet to a point, N3064686.98, E877908.85, thence running southeasterly about 624 feet to a point, N3064063.31, E877909.17, thence running southwesterly about 512 feet to a point, N3063684.73, E877564.56, thence running about 741 feet to a point along the westerly limit of the existing project, N3063273.98, E876947.77, thence running northeasterly about 533 feet to a bend along the westerly limit of the existing project, N3063585.62, E877380.63, thence running about 147 feet northeasterly to a bend along the westerly limit of the project, N3063671.29, E877499.63, thence running northeasterly about 233 feet to a bend along the westerly limit of the existing project, N3063840.60, E877660.29, thence running about 339 feet northeasterly to a bend along the westerly limit of the existing project, N3064120.34, E877852.55, thence running about 573 feet to a bend along the westerly limit of the existing project, N3064692.98, E877865.04, thence running about 113 feet to a bend along the northerly limit of the existing project, N3064739.51, E877968.31, thence running 145 feet southeasterly to a bend along the northerly limit of the existing project, N3064711.19, E878110.69, thence running about 650 feet along the easterly limit of the existing project to the point of origin.

(14) CLATSOP COUNTY DIKING DISTRICT NO. 10, KARLSON ISLAND, OREGON.—The Diking District No. 10, Karlson Island

portion of the project for raising and improving existing levees in Clatsop County, Oregon, authorized by section 5 of the Act of June 22, 1936 (49 Stat. 1590) is no longer authorized beginning on the date of enactment of this Act.

(15) NUMBERG DIKE NO. 34 LEVEED AREA, CLATSOP COUNTY DIKING DISTRICT NO. 13, CLATSOP COUNTY, OREGON (WALLUSKI-YOUNGS).—The Numberg Dike No. 34 leveed area, Clatsop County Diking District, No. 13, Walluski River and Youngs River dikes, portion of the project for raising and improving existing levees in Clatsop County, Oregon, authorized by section 5 of the Act of June 22, 1936 (49 Stat. 1590) is no longer authorized beginning on the date of enactment of this Act.

(16) EAST FORK OF TRINITY RIVER, TEXAS.—The portion of the project for flood protection on the East Fork of the Trinity River, Texas, authorized by section 203 of the Flood Control Act of 1962 (76 Stat. 1185), that consists of the 2 levees identified as Kaufman County Levees K5E and K5W is no longer authorized beginning on the date of enactment of this Act.

(17) BURNHAM CANAL, WISCONSIN.—The portion of the project for navigation, Milwaukee Harbor Project, Milwaukee, Wisconsin, known as the Burnham Canal, authorized by the first section of the Act of March 3, 1843 (5 Stat. 619; chapter 85), and described as follows is no longer authorized beginning on the date of enactment of this Act:

(A) Beginning at channel point #415a N381768.648, E2524554.836, a distance of about 170.58 feet.

(B) Thence running south 53 degrees 43 minutes 41 seconds west to channel point #417 N381667.728, E2524417.311, a distance of about 35.01 feet.

(C) Thence running south 34 degrees 10 minutes 40 seconds west to channel point #501 N381638.761, E2524397.639, a distance of about 139.25 feet.

(D) Thence running south 34 degrees 10 minutes 48 seconds west to channel point #503 N381523.557, E2524319.406, a distance of about 235.98 feet.

(E) Thence running south 32 degrees 59 minutes 13 seconds west to channel point #505 N381325.615, E2524190.925, a distance of about 431.29 feet.

(F) Thence running south 32 degrees 36 minutes 05 seconds west to channel point #509 N380962.276, E2523958.547, a distance of about 614.52 feet.

(G) Thence running south 89 degrees 05 minutes 00 seconds west to channel point #511 N380952.445, E2523344.107, a distance of about 74.68 feet.

(H) Thence running north 89 degrees 04 minutes 59 seconds west to channel point #512 N381027.13, E2523342.91, a distance of about 533.84 feet.

(I) Thence running north 89 degrees 05 minutes 00 seconds east to channel point #510 N381035.67, E2523876.69, a distance of about 47.86 feet.

(J) Thence running north 61 degrees 02 minutes 07 seconds east to channel point #508 N381058.84, E2523918.56, a distance of about 308.55 feet.

(K) Thence running north 36 degrees 15 minutes 29 seconds east to channel point #506 N381307.65, E2524101.05, a distance of about 199.98 feet.

(L) Thence running north 32 degrees 59 minutes 12 seconds east to channel point #504 N381475.40, E2524209.93, a distance of about 195.14 feet.

(M) Thence running north 26 degrees 17 minutes 22 seconds east to channel point #502 N381650.36, E2524296.36, a distance of about 81.82 feet.

(N) Thence running north 88 degrees 51 minutes 05 seconds west to channel point #419 N381732.17, E2524294.72, a distance of about 262.65 feet.

(O) Thence running north 82 degrees 01 minutes 02 seconds east to channel point #415a, the point of origin.

(18) MANITOWOC HARBOR, WISCONSIN.—The portion of the project for navigation, Manitowoc River, Manitowoc, Wisconsin, authorized by the Act of August 30, 1852 (10 Stat. 58; chapter 104), and described as follows is no longer authorized beginning on the date of enactment of this Act: The triangular area bound by—

(A) 44.09893383N and 087.66854912W;

(B) 44.09900535N and 087.66864372W; and

(C) 44.09857884N and 087.66913123W.

(b) SEWARD WATERFRONT, SEWARD, ALASKA.—

(1) IN GENERAL.—Subject to paragraph (2), the portion of the project for navigation, Seward Harbor, Alaska, identified as Tract H, Seward Original Townsite, Waterfront Park Replat, Plat No 2012–4, Seward Recording District, shall not be subject to navigation servitude beginning on the date of enactment of this Act.

(2) ENTRY BY FEDERAL GOVERNMENT.—The Federal Government may enter upon the property referred to in paragraph (1) to carry out any required operation and maintenance of the general navigation features of the project referred to in paragraph (1).

(c) PORT OF HOOD RIVER, OREGON.—

(1) EXTINGUISHMENT OF PORTIONS OF EXISTING FLOWAGE EASEMENT.—With respect to the properties described in paragraph (2), beginning on the date of enactment of this Act, the flowage easement identified as Tract 1200E–6 on the Easement Deed recorded as Instrument No. 740320 is extinguished above elevation 79.39 feet (NGVD 29) the Ordinary High Water Line.

(2) AFFECTED PROPERTIES.—The properties referred to in paragraph (1), as recorded in Hood River County, Oregon, are as follows:

(A) Instrument Number 2010–1235.

(B) Instrument Number 2010–02366.

(C) Instrument Number 2010–02367.

(D) Parcel 2 of Partition Plat #2011–12P.

(E) Parcel 1 of Partition Plat 2005–26P.

(3) FEDERAL LIABILITIES; CULTURAL, ENVIRONMENTAL, AND OTHER REGULATORY REVIEWS.—

(A) FEDERAL LIABILITY.—The United States shall not be liable for any injury caused by the extinguishment of the easement under this subsection.

(B) CULTURAL AND ENVIRONMENTAL REGULATORY ACTIONS.—Nothing in this subsection establishes any cultural or environmental regulation relating to the properties described in paragraph (2).

(4) EFFECT ON OTHER RIGHTS.—Nothing in this subsection affects any remaining right or interest of the Corps of Engineers in the properties described in paragraph (2).

SEC. 6005. LAND CONVEYANCES.

(a) OAKLAND INNER HARBOR TIDAL CANAL, CALIFORNIA.—Section 3182(b)(1) of the Water Resources Development Act of 2007 (Public Law 110–114; 121 Stat. 1165) is amended—

(1) in subparagraph (A) by inserting ", or to a multicounty public entity that is eligible to hold title to real property" after "To the city of Oakland"; and

(2) in subparagraphs (B) and (C) by inserting "multicounty public entity or other" before "public entity".

(b) ST. CHARLES COUNTY, MISSOURI, LAND EXCHANGE.—

(1) DEFINITIONS.—In this subsection:

(A) FEDERAL LAND.—The term "Federal land" means approximately 84 acres of land, as identified by the Secretary, that is a portion of the approximately 227 acres of land leased from the Corps of Engineers by Ameren Corporation for the Portage Des Sioux Power Plant in St. Charles County, Missouri (Lease No. DA-23-065–CIVENG–64–651, Pool 26).

(B) NON-FEDERAL LAND.—The term "non-Federal land" means the approximately 68 acres of land owned by Ameren Corporation in Jersey County, Illinois, contained within the north half of section 23, township 6 north, range 11 west of the third principal meridian.

(2) LAND EXCHANGE.—On conveyance by Ameren Corporation to the United States of all right, title, and interest in and to the non-Federal land, the Secretary shall convey to Ameren Corporation all right, title, and interest of the United States in and to the Federal land.

(3) SPECIFIC CONDITIONS.—

(A) DEEDS.—

(i) DEED TO NON-FEDERAL LAND.—The Secretary may only accept conveyance of the non-Federal land by warranty deed, as determined acceptable by the Secretary.

(ii) DEED TO FEDERAL LAND.—The Secretary shall convey the Federal land to Ameren Corporation by quitclaim deed.

(B) CASH PAYMENT.—If the appraised fair market value of the Federal land, as determined by the Secretary, exceeds the appraised fair market value of the non-Federal land, as determined by the Secretary, Ameren Corporation shall make a cash payment to the United States reflecting the difference in the appraised fair market values.

(c) TULSA PORT OF CATOOSA, ROGERS COUNTY, OKLAHOMA, LAND EXCHANGE.—

(1) DEFINITIONS.—In this subsection:

(A) FEDERAL LAND.—The term "Federal land" means the approximately 87 acres of land situated in Rogers County, Oklahoma, contained within United States Tracts 413 and 427 and acquired for the McClellan-Kerr Arkansas Navigation System.

(B) NON-FEDERAL LAND.—The term "non-Federal land" means the approximately 34 acres of land situated in

Rogers County, Oklahoma, and owned by the Tulsa Port of Catoosa that lie immediately south and east of the Federal land.

(2) LAND EXCHANGE.—On conveyance by the Tulsa Port of Catoosa to the United States of all right, title, and interest in and to the non-Federal land, the Secretary shall convey to the Tulsa Port of Catoosa all right, title, and interest of the United States in and to the Federal land.

(3) SPECIFIC CONDITIONS.—

(A) DEEDS.—

(i) DEED TO NON-FEDERAL LAND.—The Secretary may only accept conveyance of the non-Federal land by warranty deed, as determined acceptable by the Secretary.

(ii) DEED TO FEDERAL LAND.—The Secretary shall convey the Federal land to the Tulsa Port of Catoosa by quitclaim deed and subject to any reservations, terms, and conditions the Secretary determines necessary to allow the United States to operate and maintain the McClellan-Kerr Arkansas River Navigation System.

(iii) CASH PAYMENT.—If the appraised fair market value of the Federal land, as determined by the Secretary, exceeds the appraised fair market value of the non-Federal land, as determined by the Secretary, the Tulsa Port of Catoosa shall make a cash payment to the United States reflecting the difference in the appraised fair market values.

(d) HAMMOND BOAT BASIN, WARRENTON, OREGON.—

(1) DEFINITIONS.—In this subsection:

(A) CITY.—The term "City" means the city of Warrenton, located in Clatsop County, Oregon.

(B) MAP.—The term "map" means the map contained in Exhibit A of Department of the Army Lease No. DACW57–1–88–0033 (or a successor instrument).

(2) CONVEYANCE AUTHORITY.—Subject to the provisions of this subsection, the Secretary shall convey to the City by quitclaim deed, and without consideration, all right, title, and interest of the United States in and to the parcel of land described in paragraph (3).

(3) DESCRIPTION OF LAND.—

(A) IN GENERAL.—Except as provided in subparagraph (B), the land referred to in paragraph (2) is the parcel totaling approximately 59 acres located in the City, together with any improvements thereon, including the Hammond Marina (as described in the map).

(B) EXCLUSION.—The land referred to in paragraph (2) shall not include the site provided for the fisheries research support facility of the National Marine Fisheries Service.

(C) AVAILABILITY OF MAP.—The map shall be on file in the Portland District Office of the Corps of Engineers.

(4) TERMS AND CONDITIONS.—As a condition of the conveyance under this subsection, the Secretary may impose a requirement that the City assume full responsibility for operating and maintaining the channel and the breakwater.

(5) REVERSION.—If the Secretary determines that the land conveyed under this subsection ceases to be owned by the public, all right, title, and interest in and to the land shall revert, at the discretion of the Secretary, to the United States.

(6) DEAUTHORIZATION.—After the land is conveyed under this subsection, the land shall no longer be a portion of the project for navigation, Hammond Small Boat Basin, Oregon, authorized by section 107 of the Rivers and Harbor Act of 1960 (33 U.S.C. 577).

(e) CRANEY ISLAND DREDGED MATERIAL MANAGEMENT AREA, PORTSMOUTH, VIRGINIA.—

(1) IN GENERAL.—Subject to the conditions described in this subsection, the Secretary may convey to the Commonwealth of Virginia, by quitclaim deed and without consideration, all right, title, and interest of the United States in and to 2 parcels of land situated within the project for navigation, Craney Island Eastward Expansion, Norfolk Harbor and Channels, Hampton Roads, Virginia, authorized by section 1001(45) of the Water Resources Development Act of 2007 (Public Law 110–114; 121 Stat. 1057), together with any improvements thereon.

(2) LANDS TO BE CONVEYED.—

(A) IN GENERAL.—The 2 parcels of land to be conveyed under this subsection include a parcel consisting of approximately 307.82 acres of land and a parcel consisting of approximately 13.33 acres of land, both located along the eastern side of the Craney Island Dredged Material Management Area in Portsmouth, Virginia.

(B) USE.—The 2 parcels of land described in subparagraph (A) may be used by the Commonwealth of Virginia exclusively for the purpose of port expansion, including the provision of road and rail access and the construction of a shipping container terminal.

(3) REVERSION.—If the Secretary determines that the land conveyed under this subsection ceases to be owned by the public or is used for any purpose that is inconsistent with paragraph (2), all right, title, and interest in and to the land shall revert, at the discretion of the Secretary, to the United States.

(f) CITY OF ASOTIN, WASHINGTON.—

(1) IN GENERAL.—The Secretary shall convey to the city of Asotin, Asotin County, Washington, without monetary consideration, all right, title, and interest of the United States in and to the land described in paragraph (3).

(2) REVERSION.—If the land transferred under this subsection ceases at any time to be used for a public purpose, the land shall revert to the United States.

(3) DESCRIPTION.—The land to be conveyed to the city of Asotin, Washington, under this subsection are—

(A) the public ball fields designated as Tracts 1503, 1605, 1607, 1609, 1611, 1613, 1615, 1620, 1623, 1624, 1625, 1626, and 1631; and

(B) other leased areas designated as Tracts 1506, 1522, 1523, 1524, 1525, 1526, 1527, 1529, 1530, 1531, and 1563.

(g) GENERALLY APPLICABLE PROVISIONS.—

(1) SURVEY TO OBTAIN LEGAL DESCRIPTION.—The exact acreage and the legal description of any real property to be conveyed

under this section shall be determined by a survey that is satisfactory to the Secretary.

(2) APPLICABILITY OF PROPERTY SCREENING PROVISIONS.—Section 2696 of title 10, United States Code, shall not apply to any conveyance under this section.

(3) ADDITIONAL TERMS AND CONDITIONS.—The Secretary may require that any conveyance under this section be subject to such additional terms and conditions as the Secretary considers necessary and appropriate to protect the interests of the United States.

(4) COSTS OF CONVEYANCE.—An entity to which a conveyance is made under this section shall be responsible for all reasonable and necessary costs, including real estate transaction and environmental documentation costs, associated with the conveyance.

(5) LIABILITY.—An entity to which a conveyance is made under this section shall hold the United States harmless from any liability with respect to activities carried out, on or after the date of the conveyance, on the real property conveyed. The United States shall remain responsible for any liability with respect to activities carried out, before such date, on the real property conveyed.

(h) RELEASE OF USE RESTRICTIONS.—Notwithstanding any other provision of law, the Tennessee Valley Authority shall, without monetary consideration, grant releases from real estate restrictions established pursuant to section 4(k)(b) of the Tennessee Valley Authority Act of 1933 (16 U.S.C. 831c(k)(b)) with respect to tracts of land identified in section 4(k)(b) of that Act, subject to the condition that such releases shall be granted in a manner consistent with applicable Tennessee Valley Authority policies.

TITLE VII—WATER RESOURCES INFRASTRUCTURE

SEC. 7001. ANNUAL REPORT TO CONGRESS.

(a) IN GENERAL.—Not later than February 1 of each year, the Secretary shall develop and submit to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives an annual report, to be entitled "Report to Congress on Future Water Resources Development", that identifies the following:

(1) FEASIBILITY REPORTS.—Each feasibility report that meets the criteria established in subsection (c)(1)(A).

(2) PROPOSED FEASIBILITY STUDIES.—Any proposed feasibility study submitted to the Secretary by a non-Federal interest pursuant to subsection (b) that meets the criteria established in subsection (c)(1)(A).

(3) PROPOSED MODIFICATIONS.—Any proposed modification to an authorized water resources development project or feasibility study that meets the criteria established in subsection (c)(1)(A) that—

(A) is submitted to the Secretary by a non-Federal interest pursuant to subsection (b); or

(B) is identified by the Secretary for authorization.

(b) REQUESTS FOR PROPOSALS.—

(1) PUBLICATION.—Not later than May 1 of each year, the Secretary shall publish in the Federal Register a notice requesting proposals from non-Federal interests for proposed feasibility studies and proposed modifications to authorized water resources development projects and feasibility studies to be included in the annual report.

(2) DEADLINE FOR REQUESTS.—The Secretary shall include in each notice required by this subsection a requirement that non-Federal interests submit to the Secretary any proposals described in paragraph (1) by not later than 120 days after the date of publication of the notice in the Federal Register in order for the proposals to be considered for inclusion in the annual report.

(3) NOTIFICATION.—On the date of publication of each notice required by this subsection, the Secretary shall—

(A) make the notice publicly available, including on the Internet; and

(B) provide written notification of the publication to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives.

(c) CONTENTS.—

(1) FEASIBILITY REPORTS, PROPOSED FEASIBILITY STUDIES, AND PROPOSED MODIFICATIONS.—

(A) CRITERIA FOR INCLUSION IN REPORT.—The Secretary shall include in the annual report only those feasibility reports, proposed feasibility studies, and proposed modifications to authorized water resources development projects and feasibility studies that—

(i) are related to the missions and authorities of the Corps of Engineers;

(ii) require specific congressional authorization, including by an Act of Congress;

(iii) have not been congressionally authorized;

(iv) have not been included in any previous annual report; and

(v) if authorized, could be carried out by the Corps of Engineers.

(B) DESCRIPTION OF BENEFITS.—

(i) DESCRIPTION.—The Secretary shall describe in the annual report, to the extent applicable and practicable, for each proposed feasibility study and proposed modification to an authorized water resources development project or feasibility study included in the annual report, the benefits, as described in clause (ii), of each such study or proposed modification (including the water resources development project that is the subject of the proposed feasibility study or the proposed modification to an authorized feasibility study).

(ii) BENEFITS.—The benefits (or expected benefits, in the case of a proposed feasibility study) described in this clause are benefits to—

(I) the protection of human life and property;

(II) improvement to transportation;

(III) the national economy;

(IV) the environment; or

(V) the national security interests of the United States.

(C) IDENTIFICATION OF OTHER FACTORS.—The Secretary shall identify in the annual report, to the extent practicable—

(i) for each proposed feasibility study included in the annual report, the non-Federal interest that submitted the proposed feasibility study pursuant to subsection (b); and

(ii) for each proposed feasibility study and proposed modification to an authorized water resources development project or feasibility study included in the annual report, whether the non-Federal interest has demonstrated—

(I) that local support exists for the proposed feasibility study or proposed modification to an authorized water resources development project or feasibility study (including the water resources development project that is the subject of the proposed feasibility study or the proposed modification to an authorized feasibility study); and

(II) the financial ability to provide the required non-Federal cost share.

(2) TRANSPARENCY.—The Secretary shall include in the annual report, for each feasibility report, proposed feasibility study, and proposed modification to an authorized water resources development project or feasibility study included under paragraph (1)(A)—

(A) the name of the associated non-Federal interest, including the name of any non-Federal interest that has contributed, or is expected to contribute, a non-Federal share of the cost of—

(i) the feasibility report;

(ii) the proposed feasibility study;

(iii) the authorized feasibility study for which the modification is proposed; or

(iv) construction of—

(I) the water resources development project that is the subject of—

(aa) the feasibility report;

(bb) the proposed feasibility study; or

(cc) the authorized feasibility study for which a modification is proposed; or

(II) the proposed modification to an authorized water resources development project;

(B) a letter or statement of support for the feasibility report, proposed feasibility study, or proposed modification to an authorized water resources development project or feasibility study from each associated non-Federal interest;

(C) the purpose of the feasibility report, proposed feasibility study, or proposed modification to an authorized water resources development project or feasibility study;

(D) an estimate, to the extent practicable, of the Federal, non-Federal, and total costs of—

(i) the proposed modification to an authorized feasibility study; and

(ii) construction of—

(I) the water resources development project that is the subject of—

(aa) the feasibility report; or

(bb) the authorized feasibility study for which a modification is proposed, with respect to the change in costs resulting from such modification; or

(II) the proposed modification to an authorized water resources development project; and

(E) an estimate, to the extent practicable, of the monetary and nonmonetary benefits of—

(i) the water resources development project that is the subject of—

(I) the feasibility report; or

(II) the authorized feasibility study for which a modification is proposed, with respect to the benefits of such modification; or

(ii) the proposed modification to an authorized water resources development project.

(3) CERTIFICATION.—The Secretary shall include in the annual report a certification stating that each feasibility report, proposed feasibility study, and proposed modification to an authorized water resources development project or feasibility study included in the annual report meets the criteria established in paragraph (1)(A).

(4) APPENDIX.—The Secretary shall include in the annual report an appendix listing the proposals submitted under subsection (b) that were not included in the annual report under paragraph (1)(A) and a description of why the Secretary determined that those proposals did not meet the criteria for inclusion under such paragraph.

(d) SPECIAL RULE FOR INITIAL ANNUAL REPORT.—Notwithstanding any other deadlines required by this section, the Secretary shall—

(1) not later than 60 days after the date of enactment of this Act, publish in the Federal Register a notice required by subsection (b)(1); and

(2) include in such notice a requirement that non-Federal interests submit to the Secretary any proposals described in subsection (b)(1) by not later than 120 days after the date of publication of such notice in the Federal Register in order for such proposals to be considered for inclusion in the first annual report developed by the Secretary under this section.

(e) PUBLICATION.—Upon submission of an annual report to Congress, the Secretary shall make the annual report publicly available, including through publication on the Internet.

(f) DEFINITIONS.—In this section:

(1) ANNUAL REPORT.—The term "annual report" means a report required by subsection (a).

(2) FEASIBILITY REPORT.—

(A) IN GENERAL.—The term "feasibility report" means a final feasibility report developed under section 905 of the Water Resources Development Act of 1986 (33 U.S.C. 2282).

(B) INCLUSIONS.—The term "feasibility report" includes—

(i) a report described in section 105(d)(2) of the Water Resources Development Act of 1986 (33 U.S.C. 2215(d)(2)); and

(ii) where applicable, any associated report of the Chief of Engineers.

(3) FEASIBILITY STUDY.—The term "feasibility study" has the meaning given that term in section 105 of the Water Resources Development Act of 1986 (33 U.S.C. 2215).

(4) NON-FEDERAL INTEREST.—The term "non-Federal interest" has the meaning given that term in section 221 of the Flood Control Act of 1970 (42 U.S.C. 1962d–5b).

SEC. 7002. AUTHORIZATION OF FINAL FEASIBILITY STUDIES.

The following final feasibility studies for water resources development and conservation and other purposes are authorized to be carried out by the Secretary substantially in accordance with the plan, and subject to the conditions, described in the respective reports designated in this section:

(1) NAVIGATION.—

A. State	B. Name	C. Date of Report of Chief of Engineers	D. Estimated Costs
1. TX, LA	Sabine Neches Waterway, Southeast Texas and Southwest Louisiana	July 22, 2011	Federal: $748,070,000 Non-Federal: $365,970,000 Total: $1,114,040,000
2. FL	Jacksonville Harbor-Milepoint	Apr. 30, 2012	Federal: $27,870,000 Non-Federal: $9,290,000 Total: $37,160,000
3. GA	Savannah Harbor Expansion Project	Aug. 17, 2012	Federal: $492,000,000 Non-Federal: $214,000,000 Total: $706,000,000
4. TX	Freeport Harbor	Jan. 7, 2013	Federal: $121,000,000 Non-Federal: $118,300,000 Total: $239,300,000

A. State	B. Name	C. Date of Report of Chief of Engineers	D. Estimated Costs
5. FL	Canaveral Harbor (Sect 203 Sponsor Report)	Feb. 25, 2013	Federal: $29,240,000 Non-Federal: $11,830,000 Total: $41,070,000
6. MA	Boston Harbor	Sept. 30, 2013	Federal: $216,470,000 Non-Federal: $94,510,000 Total: $310,980,000
7. FL	Lake Worth Inlet	Apr. 16, 2014	Federal: $57,556,000 Non-Federal: $30,975,000 Total: $88,531,000
8. FL	Jacksonville Harbor	Apr. 16, 2014	Federal: $362,000,000 Non-Federal: $238,900,000 Total: $600,900,000

(2) FLOOD RISK MANAGEMENT.—

A. State	B. Name	C. Date of Report of Chief of Engineers	D. Estimated Costs
1. KS	Topeka	Aug. 24, 2009	Federal: $17,360,000 Non-Federal: $9,350,000 Total: $26,710,000

A. State	B. Name	C. Date of Report of Chief of Engineers	D. Estimated Costs
2. CA	American River Watershed, Common Features Project, Natomas Basin	Dec. 30, 2010	Federal: $760,630,000 Non-Federal: $386,650,000 Total: $1,147,280,000
3. IA	Cedar River, Cedar Rapids	Jan. 27, 2011	Federal: $73,130,000 Non-Federal: $39,380,000 Total: $112,510,000
4. MN, ND	Fargo-Moorhead Metro	Dec. 19, 2011	Federal: $846,700,000 Non-Federal: $1,077,600,000 Total: $1,924,300,000
5. KY	Ohio River Shoreline, Paducah	May 16, 2012	Federal: $13,170,000 Non-Federal: $7,090,000 Total: $20,260,000
6. MO	Jordan Creek, Springfield	Aug. 26, 2013	Federal: $13,560,000 Non-Federal: $7,300,000 Total: $20,860,000
7. CA	Orestimba Creek, San Joaquin River Basin	Sept. 25, 2013	Federal: $23,680,000 Non-Federal: $21,650,000 Total: $45,330,000
8. CA	Sutter Basin	Mar. 12, 2014	Federal: $255,270,000 Non-Federal: $433,660,000 Total: $688,930,000
9. NV	Truckee Meadows	Apr. 11, 2014	Federal: $181,652,000 Non-Federal: $99,168,000 Total: $280,820,000

(3) HURRICANE AND STORM DAMAGE RISK REDUCTION.—

A. State	B. Name	C. Date of Report of Chief of Engineers	D. Estimated Initial Costs and Estimated Renourishment Costs
1. NC	West Onslow Beach and New River Inlet (Topsail Beach)	Sept. 28, 2009	Initial Federal: $29,900,000 Initial Non-Federal: $16,450,000 Initial Total: $46,350,000 Renourishment Federal: $69,410,000 Renourishment Non-Federal: $69,410,000 Renourishment Total: $138,820,000
2. NC	Surf City and North Topsail Beach	Dec. 30, 2010	Initial Federal: $84,770,000 Initial Non-Federal: $45,650,000 Initial Total: $130,420,000 Renourishment Federal: $122,220,000 Renourishment Non-Federal: $122,220,000 Renourishment Total: $244,440,000
3. CA	San Clemente Shoreline	Apr. 15, 2012	Initial Federal: $7,420,000 Initial Non-Federal: $3,990,000 Initial Total: $11,410,000 Renourishment Federal: $43,835,000 Renourishment Non-Federal: $43,835,000 Renourishment Total: $87,670,000

A. State	B. Name	C. Date of Report of Chief of Engineers	D. Estimated Initial Costs and Estimated Renourishment Costs
4. FL	Walton County	July 16, 2013	Initial Federal: $17,945,000 Initial Non-Federal: $46,145,000 Initial Total: $64,090,000 Renourishment Federal: $24,740,000 Renourishment Non-Federal: $82,820,000 Renourishment Total: $107,560,000
5. LA	Morganza to the Gulf	July 8, 2013	Federal: $6,695,400,000 Non-Federal: $3,604,600,000 Total: $10,300,000,000

(4) HURRICANE AND STORM DAMAGE RISK REDUCTION AND ENVIRONMENTAL RESTORATION.—

A. State	B. Name	C. Date of Report of Chief of Engineers	D. Estimated Costs
1. MS	Mississippi Coastal Improvement Program (MSCIP) Hancock, Harrison, and Jackson Counties	Sept. 15, 2009	Federal: $693,300,000 Non-Federal: $373,320,000 Total: $1,066,620,000

(5) ENVIRONMENTAL RESTORATION.—

A. State	B. Name	C. Date of Report of Chief of Engineers	D. Estimated Costs
1. MD	Mid-Chesapeake Bay Island	Aug. 24, 2009	Federal: $1,240,750,000 Non-Federal: $668,100,000 Total: $1,908,850,000
2. FL	Central and Southern Florida Project, Comprehensive Everglades Restoration Plan, Caloosahatchee River (C–43) West Basin Storage Project, Hendry County	Mar. 11, 2010 and Jan. 6, 2011	Federal: $313,300,000 Non-Federal: $313,300,000 Total: $626,600,000
3. LA	Louisiana Coastal Area	Dec. 30, 2010	Federal: $1,026,000,000 Non-Federal: $601,000,000 Total: $1,627,000,000
4. MN	Marsh Lake	Dec. 30, 2011	Federal: $6,760,000 Non-Federal: $3,640,000 Total: $10,400,000

A. State	B. Name	C. Date of Report of Chief of Engineers	D. Estimated Costs
5. FL	Central and Southern Florida Project, Comprehensive Everglades Restoration Plan, C–111 Spreader Canal Western Project	Jan. 30, 2012	Federal: $87,280,000 Non-Federal: $87,280,000 Total: $174,560,000
6. FL	CERP Biscayne Bay Coastal Wetland, Florida	May 2, 2012	Federal: $98,510,000 Non-Federal: $98,510,000 Total: $197,020,000
7. FL	Central and Southern Florida Project, Broward County Water Preserve Area	May 21, 2012	Federal: $448,070,000 Non-Federal: $448,070,000 Total: $896,140,000
8. LA	Louisiana Coastal Area-Barataria Basin Barrier	June 22, 2012	Federal: $321,750,000 Non-Federal: $173,250,000 Total: $495,000,000
9. NC	Neuse River Basin	Apr. 23, 2013	Federal: $23,830,000 Non-Federal: $12,830,000 Total: $36,660,000

A. State	B. Name	C. Date of Report of Chief of Engineers	D. Estimated Costs
10. VA	Lynnhaven River	Mar. 27, 2014	Federal: $22,821,500 Non-Federal: $12,288,500 Total: $35,110,000
11. OR	Willamette River Floodplain Restoration	Jan. 6, 2014	Federal: $27,401,000 Non-Federal: $14,754,000 Total: $42,155,000

SEC. 7003. AUTHORIZATION OF PROJECT MODIFICATIONS RECOMMENDED BY THE SECRETARY.

The following project modifications for water resources development and conservation and other purposes are authorized to be carried out by the Secretary substantially in accordance with the recommendations of the Secretary, as specified in the letters referred to in this section:

A. State	B. Name	C. Date of Secretary's Recommendation Letter	D. Updated Authorization Project Costs
1. MN	Roseau River	Jan. 24, 2013	Estimated Federal: $25,455,000 Estimated non-Federal: $18,362,000 Total: $43,817,000
2. IL	Wood River Levee System Reconstruction	May 7, 2013	Estimated Federal: $16,678,000 Estimated non-Federal: $8,980,000 Total: $25,658,000

A. State	B. Name	C. Date of Secretary's Recommendation Letter	D. Updated Authorization Project Costs
3. TX	Corpus Christi Ship Channel	Aug. 8, 2013	Estimated Federal: $182,582,000 Estimated non-Federal: $170,649,000 Total: $353,231,000
4. IA	Des Moines River and Raccoon River Project	Feb. 12, 2014	Estimated Federal: $14,990,300 Estimated non-Federal: $8,254,700 Total: $23,245,000
5. MD	Poplar Island	Feb. 26, 2014	Estimated Federal: $868,272,000 Estimated non-Federal: $365,639,000 Total: $1,233,911,000
6. IL	Lake Michigan (Chicago Shoreline)	Mar. 18, 2014	Estimated Federal: $185,441,000 Estimated non-Federal: $355,105,000 Total: $540,546,000
7. NE	Western Sarpy and Clear Creek	Mar. 20, 2014	Estimated Federal: $28,128,800 Estimated non-Federal: $15,146,300 Total: $43,275,100
8. MO	Cape Girardeau	Apr. 14, 2014	Estimated Federal: $17,687,000 Estimated non-Federal: $746,000 Total: $18,433,000

SEC. 7004. EXPEDITED CONSIDERATION IN THE HOUSE AND SENATE.

(a) CONSIDERATION IN THE HOUSE OF REPRESENTATIVES.—

(1) DEFINITION OF INTERIM AUTHORIZATION BILL.—In this subsection, the term "interim authorization bill" means a bill

of the 113th Congress introduced after the date of enactment of this Act in the House of Representatives by the chair of the Committee on Transportation and Infrastructure which—

(A) has the following title: "A bill to provide for the authorization of certain water resources development or conservation projects outside the regular authorization cycle."; and

(B) only contains—

(i) authorization for 1 or more water resources development or conservation projects for which a final report of the Chief of Engineers has been completed; or

(ii) deauthorization for 1 or more water resources development or conservation projects.

(2) EXPEDITED CONSIDERATION.—If an interim authorization bill is not reported by a committee to which it is referred within 30 calendar days, the committee shall be discharged from its further consideration and the bill shall be referred to the appropriate calendar.

(b) CONSIDERATION IN THE SENATE.—

(1) POLICY.—The benefits of water resource projects designed and carried out in an economically justifiable, environmentally acceptable, and technically sound manner are important to the economy and environment of the United States and recommendations to Congress regarding those projects should be expedited for approval in a timely manner.

(2) APPLICABILITY.—The procedures under this subsection apply to projects for water resources development, conservation, and other purposes, subject to the conditions that—

(A) each project is carried out—

(i) substantially in accordance with the plan identified in the report of the Chief of Engineers for the project; and

(ii) subject to any conditions described in the report for the project; and

(B)(i) a report of the Chief of Engineers has been completed; and

(ii) after the date of enactment of this Act, the Assistant Secretary of the Army for Civil Works has submitted to Congress a recommendation to authorize construction of the project.

(3) EXPEDITED CONSIDERATION.—

(A) IN GENERAL.—A bill shall be eligible for expedited consideration in accordance with this subsection if the bill—

(i) authorizes a project that meets the requirements described in paragraph (2); and

(ii) is referred to the Committee on Environment and Public Works of the Senate.

(B) COMMITTEE CONSIDERATION.—

(i) IN GENERAL.—Not later than January 31st of the second session of each Congress, the Committee on Environment and Public Works of the Senate shall—

(I) report all bills that meet the requirements of subparagraph (A); or

(II) introduce and report a measure to authorize any project that meets the requirements described in paragraph (2).

(ii) FAILURE TO ACT.—Subject to clause (iii), if the committee fails to act on a bill that meets the requirements of subparagraph (A) by the date specified in clause (i), the bill shall be discharged from the committee and placed on the calendar of the Senate.

(iii) EXCEPTIONS.—Clause (ii) shall not apply if—

(I) in the 180-day period immediately preceding the date specified in clause (i), the full committee holds a legislative hearing on a bill to authorize all projects that meet the requirements described in paragraph (2);

(II)(aa) the committee favorably reports a bill to authorize all projects that meet the requirements described in paragraph (2); and

(bb) the bill described in item (aa) is placed on the calendar of the Senate; or

(III) a bill that meets the requirements of subparagraph (A) is referred to the committee not earlier than 30 days before the date specified in clause (i).

(4) TERMINATION.—The procedures for expedited consideration under this subsection terminate on December 31, 2018.

(c) RULES OF THE SENATE AND HOUSE OF REPRESENTATIVES.—This section is enacted by Congress—

(1) as an exercise of the rulemaking power of the Senate and House of Representatives, respectively, and as such it is deemed a part of the rules of each House, respectively, but applicable only with respect to the procedure to be followed in that House in the case of a bill addressed by this section, and it supersedes other rules only to the extent that it is inconsistent with such rules; and

(2) with full recognition of the constitutional right of either House to change the rules (so far as relating to the procedure of that House) at any time, in the same manner, and to the same extent as in the case of any other rule of that House.

Speaker of the House of Representatives.

Vice President of the United States and
President of the Senate.

BookletChart™

Rochester Harbor – Genesee River to Head of Navigation

NOAA Chart 14815

A reduced-scale NOAA nautical chart for small boaters

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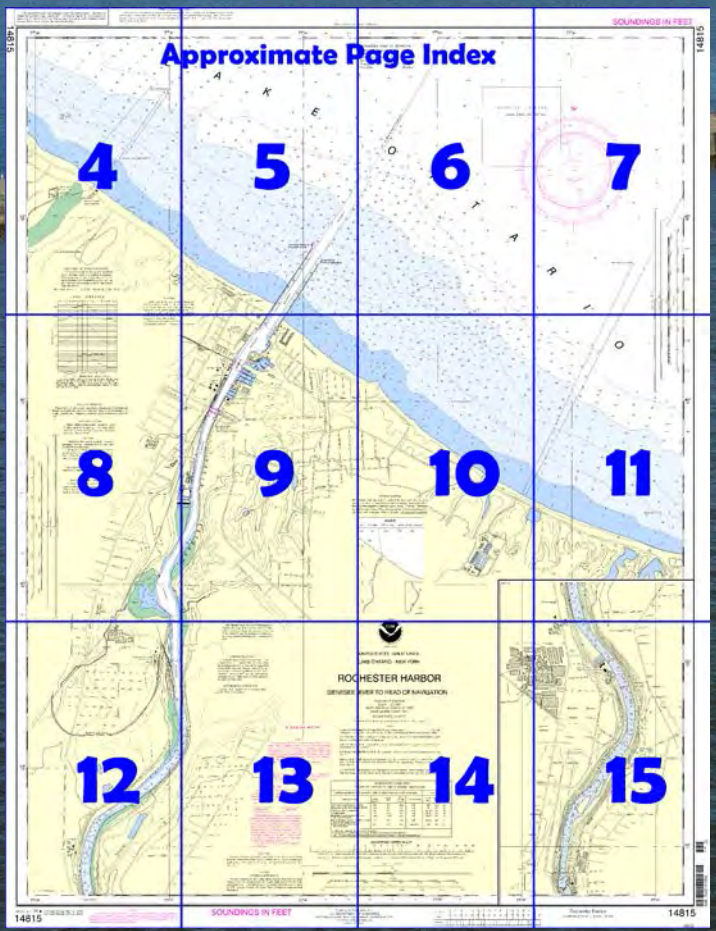
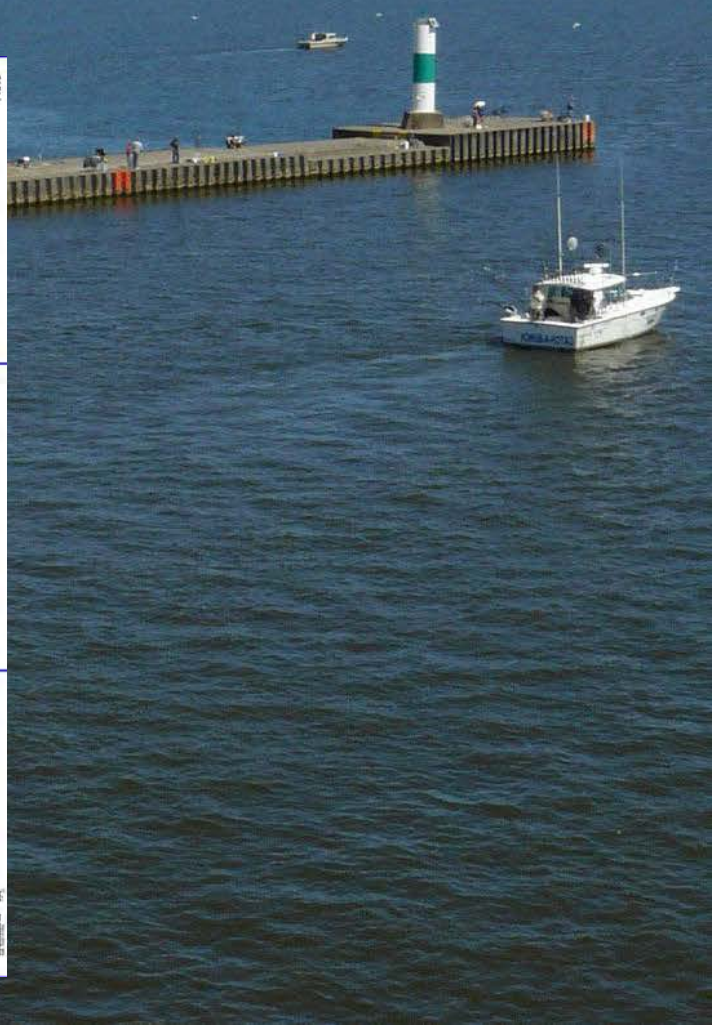




Published by the
National Oceanic and Atmospheric Administration
National Ocean Service
Office of Coast Survey
www.NauticalCharts.NOAA.gov
888-990-NOAA

What are Nautical Charts?

Nautical charts are a fundamental tool of marine navigation. They show water depths, obstructions, buoys, other aids to navigation, and much more. The information is shown in a way that promotes safe and efficient navigation. Chart carriage is mandatory on the commercial ships that carry America's commerce. They are also used on every Navy and Coast Guard ship, fishing and passenger vessels, and are widely carried by recreational boaters.

What is a BookletChart™?

This BookletChart is made to help recreational boaters locate themselves on the water. It has been reduced in scale for convenience, but otherwise contains all the information of the full-scale nautical chart. The bar scales have also been reduced, and are accurate when used to measure distances in this BookletChart. See the Note at the bottom of page 5 for the reduction in scale applied to this chart.

Whenever possible, use the official, full scale NOAA nautical chart for navigation. Nautical chart sales agents are listed on the Internet at http://www.NauticalCharts.NOAA.gov.

This BookletChart does NOT fulfill chart carriage requirements for regulated commercial vessels under Titles 33 and 44 of the Code of Federal Regulations.

Notice to Mariners Correction Status

This BookletChart has been updated for chart corrections published in the U.S. Coast Guard Local Notice to Mariners, the National Geospatial Intelligence Agency Weekly Notice to Mariners, and, where applicable, the Canadian Coast Guard Notice to Mariners. Additional chart corrections have been made by NOAA in advance of their publication in a Notice to Mariners. The last Notices to Mariners applied to this chart are listed in the Note at the bottom of page 7. Coast Pilot excerpts are not being corrected.

For latest Coast Pilot excerpt visit the Office of Coast Survey website at http://www.nauticalcharts.noaa.gov/nsd/searchbychart.php?chart=14815

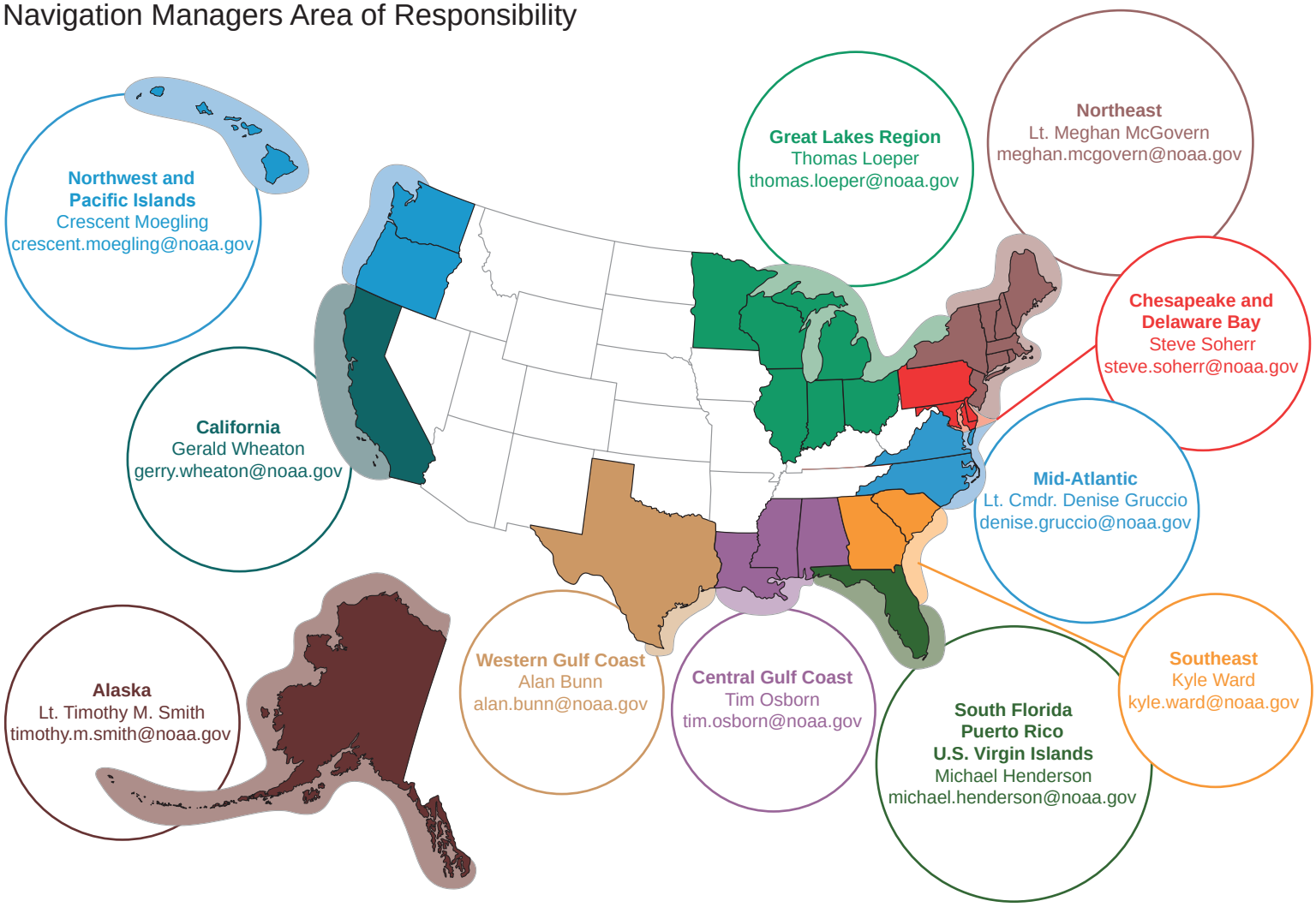


(Selected Excerpts from Coast Pilot)
From Irondequoit Bay west-northwest for 3.8 miles to the mouth of the Genesee River, deep water is about 0.5 mile offshore. A rock covered ½ foot is close inshore about 0.7 mile southeast of the Genesee River entrance.
Rochester Harbor, at the mouth of the **Genesee River**, is 54 miles west of Oswego Harbor and about 7 miles north of the main business district of the city of **Rochester, NY**. The river is navigable for about 5.5 miles above the mouth. The first of a group of dams is about 7 miles upstream from Lake Ontario. There is no navigable connection between the lower portion of the Genesee River and the New York State Canal, which connects with the river about 11 miles upstream from the lake. The surface elevation of the river falls more than 260 feet between the Rochester Terminal of the New York State Canal System and the head of navigation of the lower portion of the river below the dams.
An unmarked **dumping ground** with a least reported depth of 35 feet is about 1.8 miles northeast of the mouth of the Genesee River.
Prominent features.–The lighted stacks at the powerplant 1.6 miles west-northwest of the river mouth, the stacks at the sewage treatment plant 1.9 miles southeast of the river mouth, and the tall apartment building 1.1 miles southwest of the river mouth are the most prominent objects from offshore.
Rochester Harbor Light (43°15'48"N., 77°36'00"W.), 40 feet above the water, is shown from a white cylindrical tower with red band on the outer end of the west pier.
Channels.–From Lake Ontario, the river is entered through a dredged channel that leads between two piers, thence upstream for 2.6 miles above the mouth. There are two turning basins, one just inside the mouth and the other 2 miles above the mouth on the west side of the channel; the upper turning basin is no longer maintained. The outer ends of the entrance piers are marked by lights; mooring is only allowed on the lakeside of the piers. (See Notice to Mariners and latest edition of charts for controlling depths.)
Dangers.–It is reported that northeast winds sometimes create waves as high as 6 feet which reflect through the entrance channel between the piers, making navigation into the harbor difficult. River currents sometimes compound this problem. A dangerous sunken wreck is 0.8 mile east-northeast of Rochester Harbor Light.
Bridges.–Two bridges cross the dredged section of the Genesee River. The CSX Transportation Railroad bridge 0.9 mile above the pierheads has a swing span with a clearance of 10 feet. The O'Rorke bridge, 1.25 miles above the pierheads, has a bascule span with a clearance of 41 feet (45 feet at center). (See **33 CFR 117.1 through 117.59 and 117.785**, chapter 2, for drawbridge regulations.) Overhead power cables crossing the river 2.8 miles above the pierheads have a clearance of 141 feet. Above the limit of the Federal project, a pipeline bridge, about 5.1 miles above the pierheads, has a fixed span with a clearance of 86 feet. The Ridge Road (U.S. Route 104) bridge, about 5.5 miles above the pierheads, has a fixed span with a clearance of 160 feet. The Driving Park Avenue bridge, 6.4 miles above the pierheads, has fixed span with unknown clearance.
Supplies.–Some marine supplies, water, provisions, and diesel fuel can be obtained at Rochester.
Small-craft facilities.–Marinas at Rochester provide transient berths, gasoline, diesel fuel, water, ice, electricity, sewage pump-out, marine supplies, launching ramps, mobile lifts to 40 tons, and hull, engine, and electronic repairs. In 1977, depths of 2 to 12 feet were reported alongside the berths.
Communications.–Rochester is served by rail, air, and bus. Rochester-Monroe County Airport is about 10 miles south-southwest of the river entrance.

U.S. Coast Guard Rescue Coordination Center
24 hour Regional Contact for Emergencies

RCC Cleveland	Commander 9th CG District Cleveland, OH	(216) 902-6117

Navigation Managers Area of Responsibility

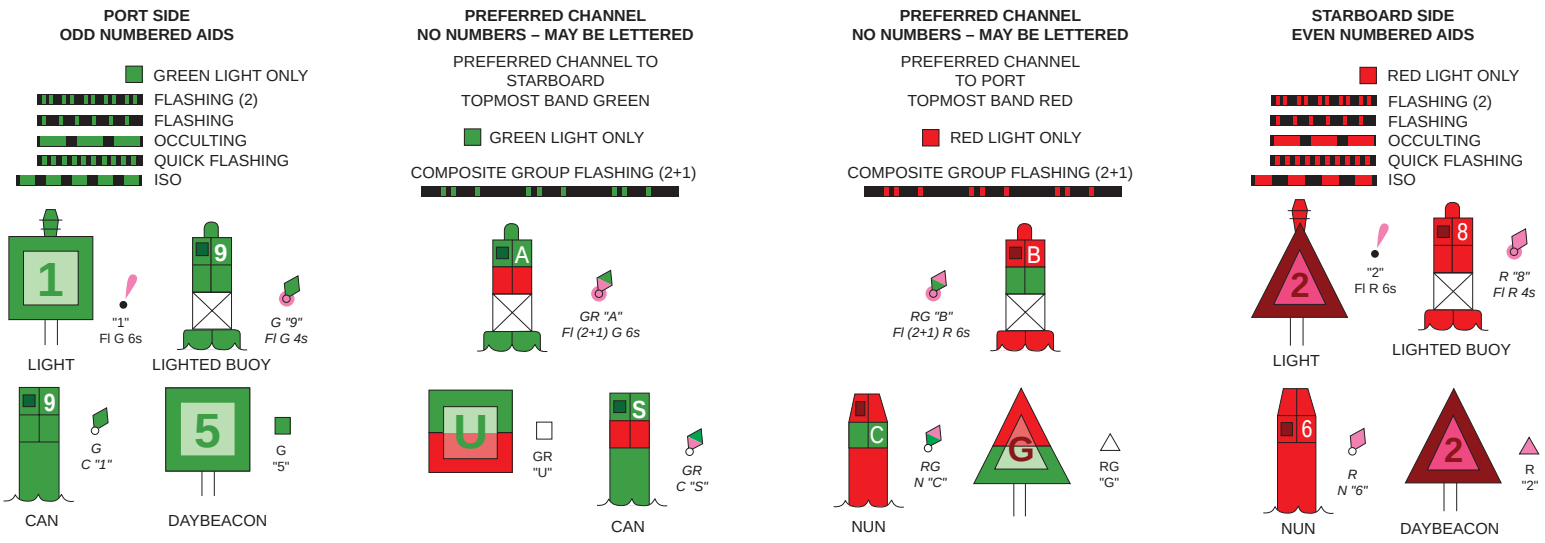


NOAA's navigation managers serve as ambassadors to the maritime community. They help identify navigational challenges facing professional and recreational mariners, and provide NOAA resources and information for safe navigation. For additional information, please visit *nauticalcharts.noaa.gov/service/navmanagers*

To make suggestions or ask questions online, go to *nauticalcharts.noaa.gov/inquiry*.
To report a chart discrepancy, please use *ocsdata.ncd.noaa.gov/idrs/discrepancy.aspx*.

Lateral System As Seen Entering From Seaward

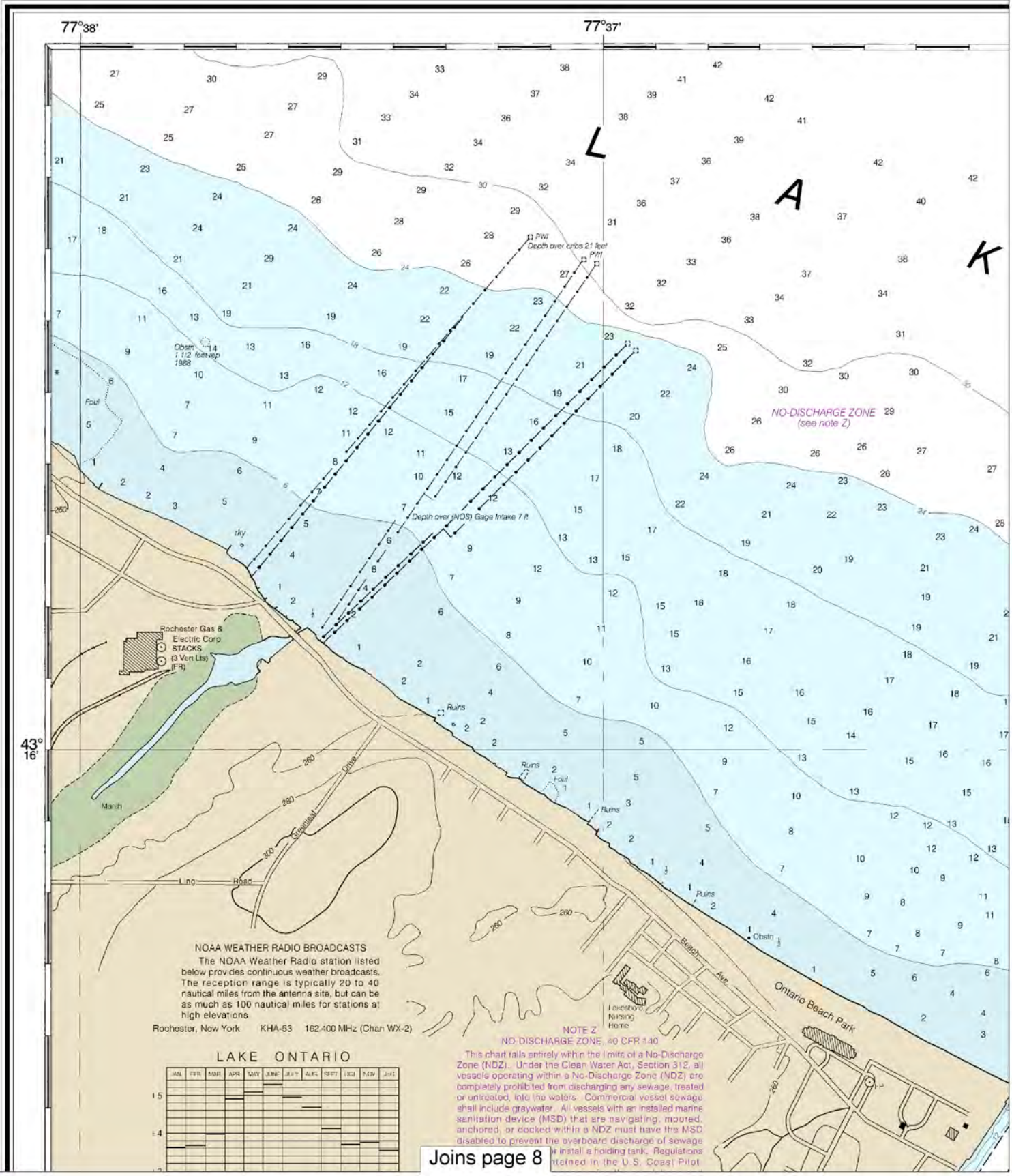
on navigable waters except Western Rivers



For more information on aids to navigation, including those on Western Rivers, please consult the latest USCG Light List for your area. These volumes are available online at *http://www.navcen.uscg.gov*

NOAA encourages users to submit inquiries, discrepancies or comments about this chart at http://www.nauticalcharts.noaa.gov/staff/contact.htm

14815



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4

Note: Chart grid lines are aligned with true north.

Printed at reduced scale. ~~SCALE 1:10,000~~ See Note on page 5.

Nautical Miles
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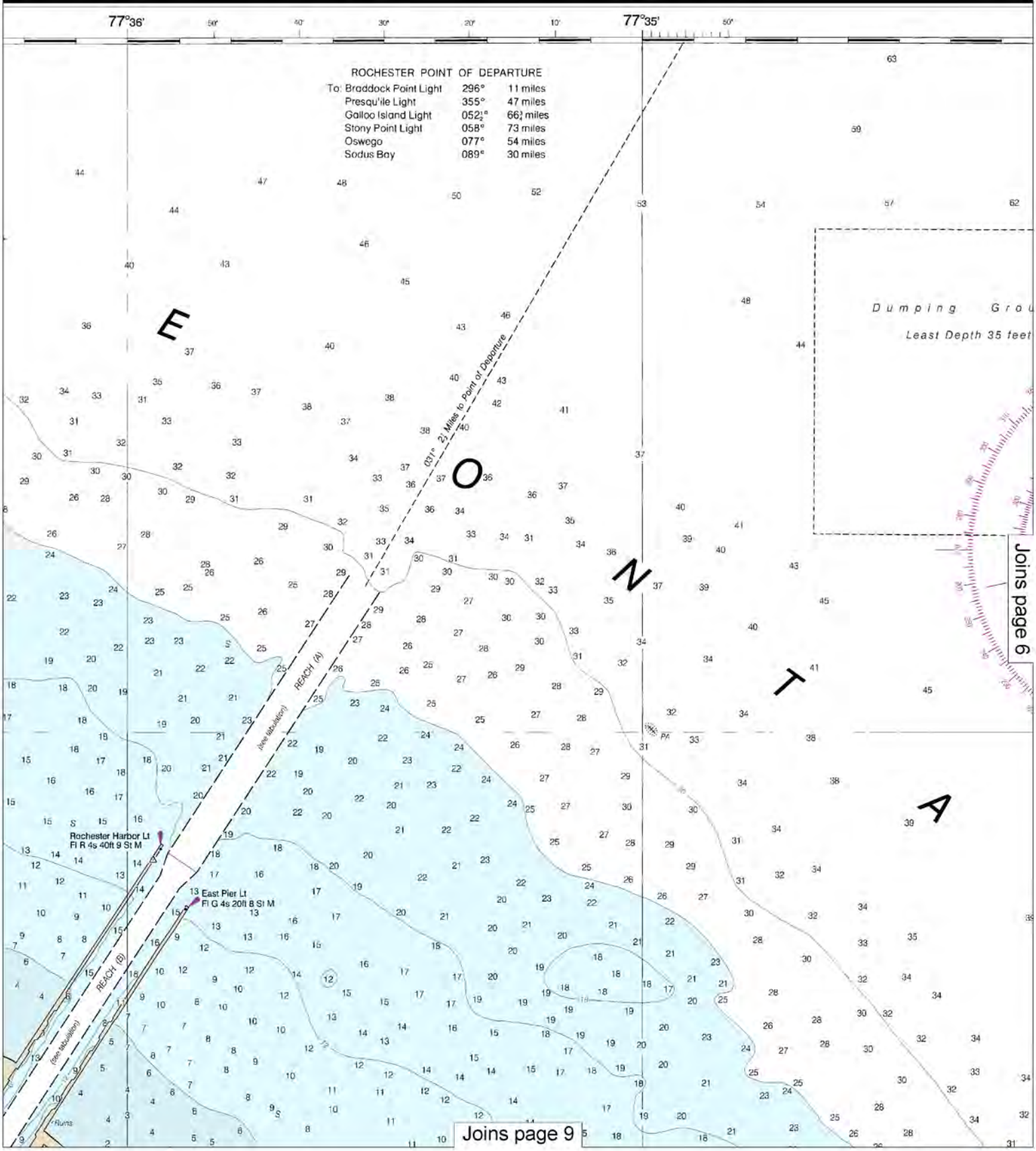
Formerly LS 238, 1st Ed., July 1902 KAPP 1130



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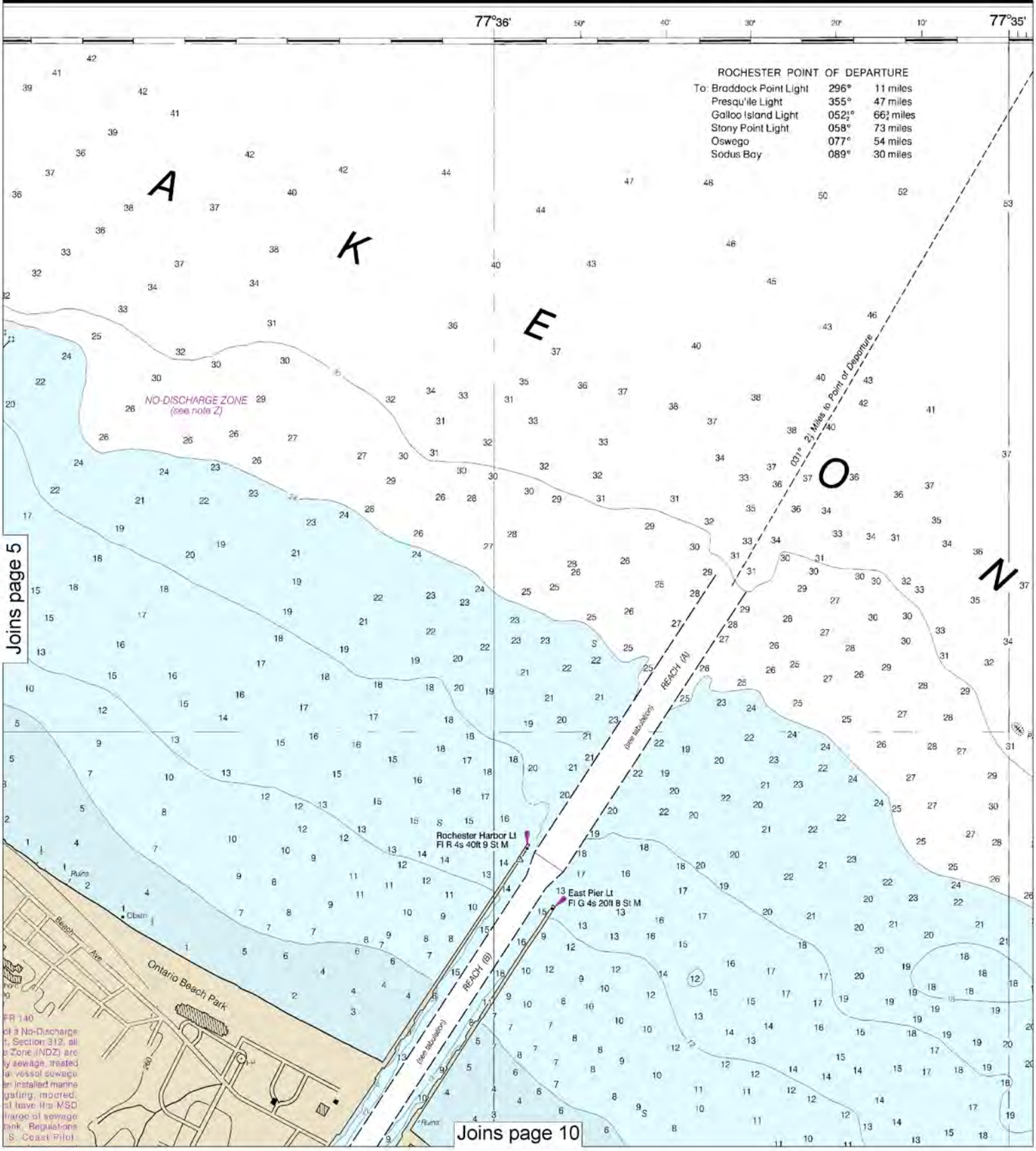

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Note: Chart grid lines are aligned with true north.

Printed at reduced scale. ~~SCALE 1:10,000~~

Nautical Miles
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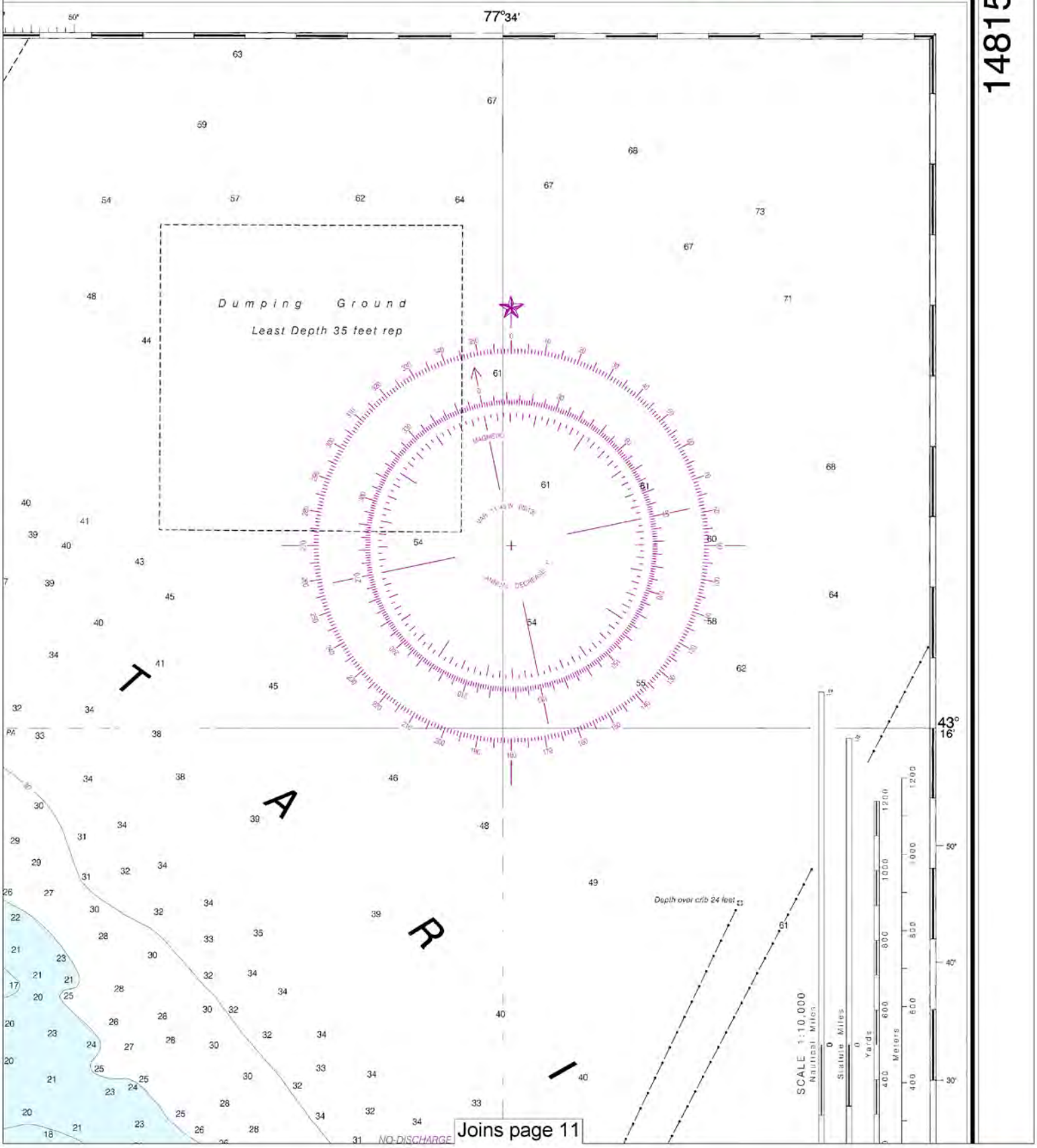
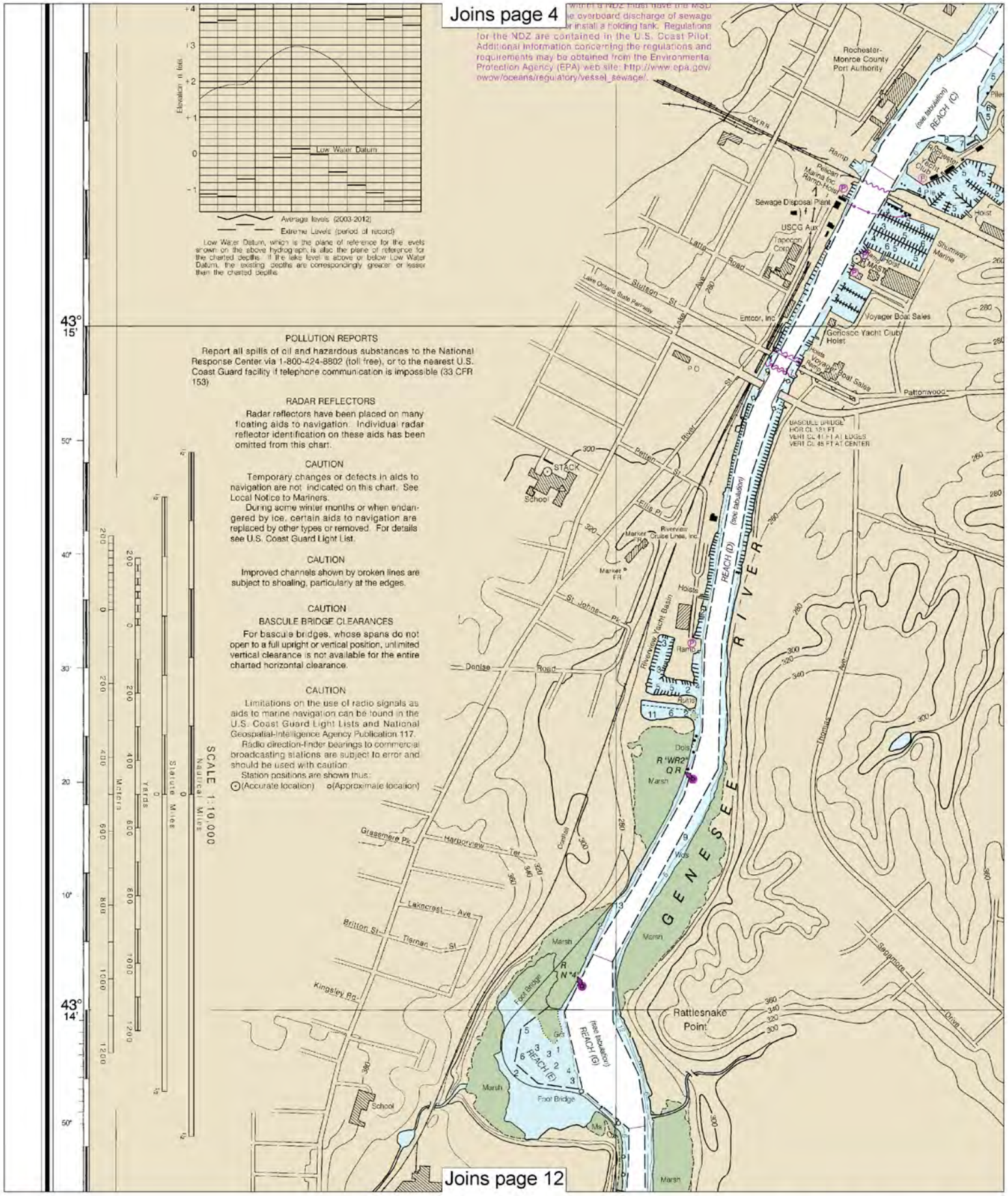
See Note on page 5.



Mariners published after the dates shown in the lower left hand corner are available at
nauticalcharts.noaa.gov

Last Correction: 7/21/2014. Cleared through:
LNM: 4414 (11/4/2014), NM: 4714 (11/22/2014), CHS: 0914 (9/26/2014)



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Note: Chart grid lines are aligned with true north.

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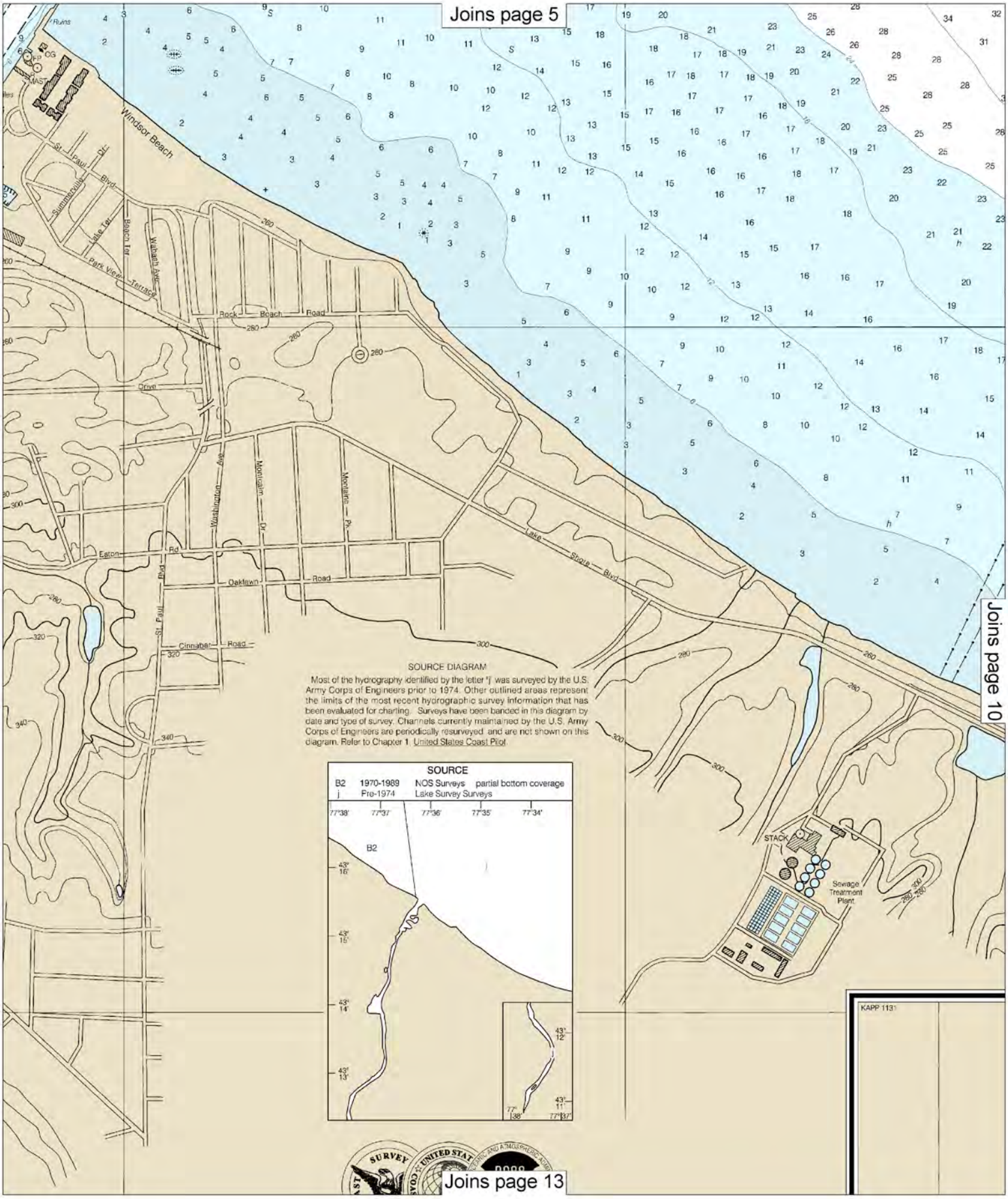

Joins page 5
Joins page 10
Joins page 13
Windsor Beach
St. Paul Blvd
Summerville Dr
Lake Ter
Beach Ter
Wabash Ave
Park View Terrace
Rock Beach Road
Drive
Washington Ave
Montcalm Dr
Montaine Pk
Lake Shore Blvd
Eaton Rd
Oaklawn Road
St. Paul Blvd
Cinnabar Road
STACK
Sewage Treatment Plant
KAPP 1131
SOURCE DIAGRAM
Most of the hydrography identified by the letter "j" was surveyed by the U.S. Army Corps of Engineers prior to 1974. Other outlined areas represent the limits of the most recent hydrographic survey information that has been evaluated for charting. Surveys have been banded in this diagram by date and type of survey. Channels currently maintained by the U.S. Army Corps of Engineers are periodically resurveyed and are not shown on this diagram. Refer to Chapter 1, United States Coast Pilot.
SOURCE
B2 1970-1989 NOS Surveys partial bottom coverage
j Pre-1974 Lake Survey Surveys
77°38' 77°37' 77°36' 77°35' 77°34'
B2
43° 16'
43° 15'
43° 14'
43° 13'
43° 12'
43° 11'
77° 38'
77° 37'



Note: Chart grid lines are aligned with true north.

Printed at reduced scale. ~~SCALE 1:10,000~~

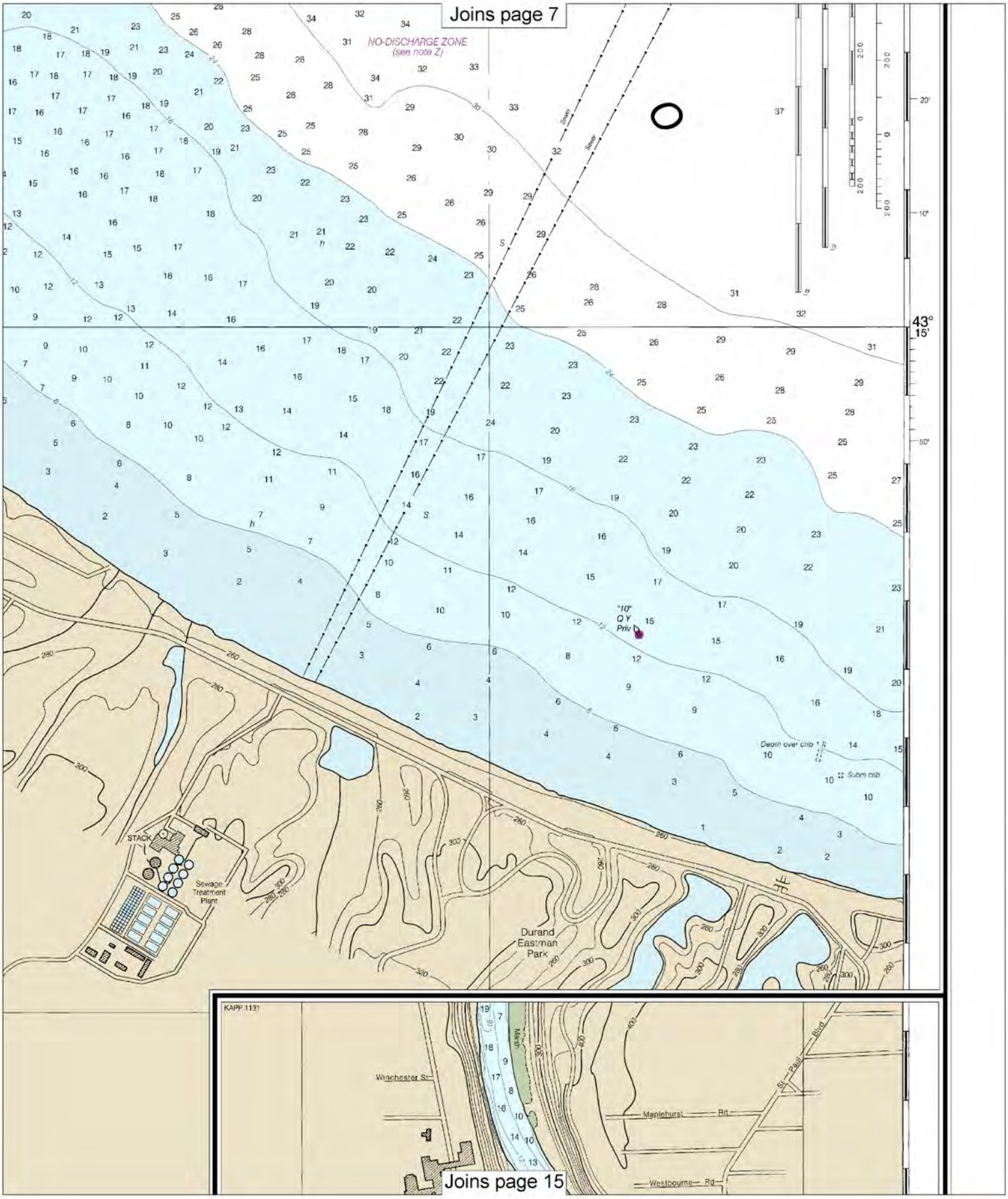
Nautical Miles

0

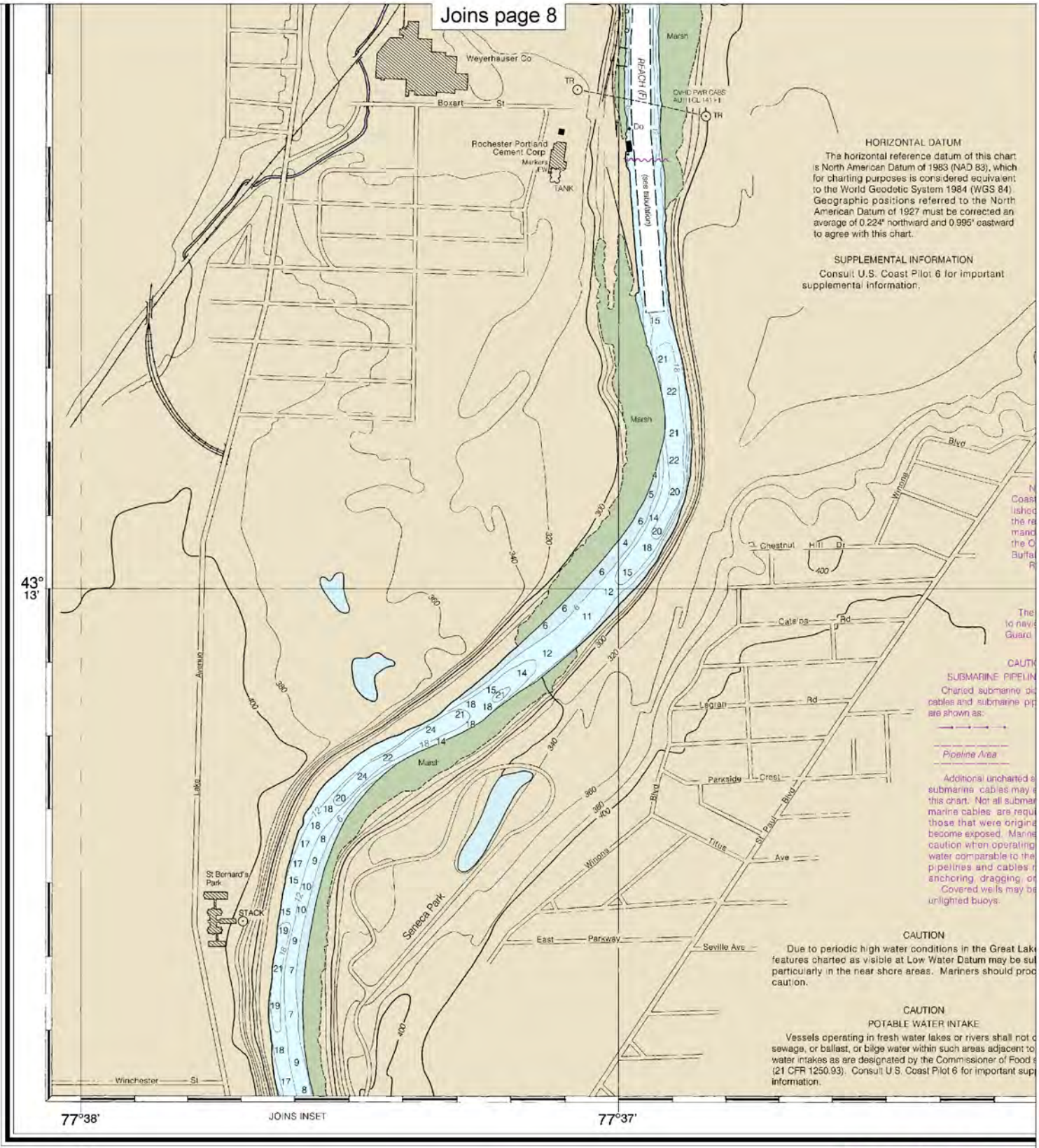
Yards

200 0 200 400 600 800 1000 1200

See Note on page 5.


Joins page 7
NO-DISCHARGE ZONE
(see note Z)
43° 15'
"10" Q Y Priv
Depth over crib 1.8
Submerged crib
STACK
Sewage Treatment Plant
Durand Eastman Park
KAPP 1131
Winchester St
Maplehurst Rd
St Paul Blvd
Westbourne Rd
Joins page 15

Joins page 8



24th Ed., Dec. / 13
14815

CAUTION
This chart has been corrected from the Notice to Mariners (NM) published weekly by the National Geospatial-Intelligence Agency and the Local Notice to Mariners (LNM) issued periodically by each U.S. Coast Guard district to the dates shown in the lower left hand corner. Chart updates corrected from Notice to Mariners published after the dates shown in the lower left hand corner are available at [illegible]

SOUNDINGS I

Last Correction: 7/21/2014. Cleared through:
LNM: 4414 (11/4/2014), NM: 4714 (11/22/2014), CHS: 0914 (9/26/2014)

Note: Chart grid lines are aligned with true north.

Printed at reduced scale. ~~SCALE 1:10,000~~

Nautical Miles
0

Yards
200 0 200 400 600 800 1000 1200

See Note on page 5.

Joins page 9

THE NATION'S CHARTMAKER SINCE 1807

UNITED STATES - GREAT LAKES

LAKE ONTARIO - NEW YORK

ROCHESTER HARBOR

GENESEE RIVER TO HEAD OF NAVIGATION

Polyconic Projection
Scale 1:10,000
North American Datum of 1983
(World Geodetic System 1984)

SOUNDINGS IN FEET

Additional information can be obtained at nauticalcharts.noaa.gov.

Ⓟ Pump-out facilities

NOTE A

Navigation regulations are published in Chapter 2, U.S. ast Pilot 6. Additions or revisions to Chapter 2 are published in the Notice to Mariners. Information concerning regulations may be obtained at the Office of the Commander, 9th Coast Guard District in Cleveland, Ohio or at Office of the District Engineer, Corps of Engineers in falo, New York.
Refer to charted regulation section numbers

WARNING

e prudent mariner will not rely solely on any single aid vigation, particularly on floating aids. See U.S. Coast d Light List and U.S. Coast Pilot for details.

TION
INES AND CABLES
ipelines and submarine
pipeline and cable areas

Cable Area

submarine pipelines and
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NOTES

PLANE OF REFERENCE OF THIS CHART (Low Water Datum)..... 243.3ft.
Referred to mean water level at Rimouski, Quebec, International Great Lakes Datum (1985).

SAILING DIRECTIONS. Bearings of sailing courses are true and distances given thereon are in statute miles between points of departure.

AIDS TO NAVIGATION. Consult U.S. Coast Guard Light List for supplemental information concerning aids to navigation.

SYMBOLS AND ABBREVIATIONS. For complete list of symbols and abbreviations see Chart No. 1

BRIDGE AND OVERHEAD CABLE CLEARANCES. When the water surface is above Low Water Datum, bridge and overhead clearances are reduced correspondingly. For clearances see U.S. Coast Pilot 6

AUTHORITIES. Hydrography and Topography by the National Ocean Service, Coast Survey, with additional data from the Corps of Engineers, Geological Survey, and U.S. Coast Guard.

ROCHESTER HARBOR CHANNEL DEPTHS

TABULATED FROM SURVEYS BY THE CORPS OF ENGINEERS - REPORT OF APR 2014 AND SURVEYS TO APR 2014

CONTROLLING DEPTHS FROM SEAWARD IN FEET AT GREAT LAKES LOW WATER DATUM (LWD)					PROJECT DIMENSIONS		
NAME OF CHANNEL	LEFT OUTSIDE QUARTER	MIDDLE HALF	RIGHT OUTSIDE QUARTER	DATE OF SURVEY	WIDTH (FEET)	LENGTH (FEET)	DEPTH LWD (FEET)
A. LAKE APPROACH CHANNEL	17.2	17.7	18.3	4-14	300	2800	22
B. ENTRANCE CHANNEL	9.5	15.6	12.4	4-14	200-600	4400	21
C. LOWER TURNING BASIN	4.3	5.5	8.3	4-14	200-600	4400	21
D. GENESEE RIVER	2.6	13.1	2.6	4-14	150-270	7500	21
E. UPPER TURNING BASIN		NOT SOUNDED			0-500	800	*
F. GENESEE RIVER, UPSTREAM TO DREDGING LIMIT	11.8	11.9	11.0	4-14	150-270	1580	21
GENESEE RIVER, UPSTREAM 1200 FEET OF NAVIGATION *	11.4	11.5	11.1	4-14	150	1200	*
G. UPPER TURNING BASIN	12.8	2.0	2.0	4-14	150-270	1600	21

* NOT MAINTAINED
NOTE - CONSULT THE CORPS OF ENGINEERS FOR CHANGES SUBSEQUENT TO THE ABOVE INFORMATION

SCALE 1:10,000

Nautical Miles
½ 0 ½

Statute Miles
½ 0 ½

Yards
200 0 200 400 600 800 1000 1200

Meters
200 0 200 400 600 800 1000 1200

77°36' 50" 40" 30" 20" 10" 77°35' 50"

N

Eastman

Driving

77°38'

Joins page 14

IN FEET

Published at Washington, D.C.
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE
COAST SURVEY

FATHOMS 1 2 3 4 5 6 7 8 9 10 11 12 13 14
FEET 6 12 18 24 30 36 42 48 54 60 66 72 78 84
METERS 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26

Joins page 10

Joins page 13

THE NATION'S CHARTMAKER SINCE 1807

UNITED STATES - GREAT LAKES

LAKE ONTARIO - NEW YORK

ROCHESTER HARBOR

GENESEE RIVER TO HEAD OF NAVIGATI

Polyconic Projection
Scale 1:10,000
North American Datum of 1983
(World Geodetic System 1984)

SOUNDINGS IN FEET

Additional information can be obtained at nauticalcharts.noaa.gov

HORIZONTAL DATUM

The horizontal reference datum of this chart is North American Datum of 1983 (NAD 83), which for charting purposes is considered equivalent to the World Geodetic System 1984 (WGS 84). Geographic positions referred to the North American Datum of 1927 must be corrected an average of 0.224" northward and 0.995" eastward to agree with this chart.

SUPPLEMENTAL INFORMATION

Consult U.S. Coast Pilot 6 for important supplemental information.

NOTE A

Navigation regulations are published in Chapter 2, U.S. Coast Pilot 6. Additions or revisions to Chapter 2 are published in the Notice to Mariners. Information concerning the regulations may be obtained at the Office of the Commander, 9th Coast Guard District in Cleveland, Ohio or at the Office of the District Engineer, Corps of Engineers in Buffalo, New York.

Refer to charted regulation section numbers.

WARNING

The prudent mariner will not rely solely on any single aid to navigation, particularly on floating aids. See U.S. Coast Guard Light List and U.S. Coast Pilot for details.

CAUTION

SUBMARINE PIPELINES AND CABLES

Charted submarine pipelines and submarine cables and submarine pipeline and cable areas are shown as:

Pipeline Area *Cable Area*

Additional uncharted submarine pipelines and submarine cables may exist within the area of this chart. Not all submarine pipelines and submarine cables are required to be buried, and those that were originally buried may have become exposed. Mariners should use extreme caution when operating vessels in depths of water comparable to their draft in areas where pipelines and cables may exist, and when anchoring, dragging, or trawling.

Covered wells may be marked by lighted or unlighted buoys.

CAUTION

Due to periodic high water conditions in the Great Lakes, some features charted as visible at Low Water Datum may be submerged, particularly in the near shore areas. Mariners should proceed with caution.

CAUTION

POTABLE WATER INTAKE

Vessels operating in fresh water lakes or rivers shall not discharge sewage, or ballast, or bilge water within such areas adjacent to domestic water intakes as are designated by the Commissioner of Food and Drugs (21 CFR 1250.93). Consult U.S. Coast Pilot 6 for important supplemental information.

NOTES

PLANE OF REFERENCE OF THIS CHART (Low Water Datum)..... 243.3ft. Referred to mean water level at Rimouski, Quebec, International Great Lakes Datum (1985).

SAILING DIRECTIONS. Bearings of sailing courses are true and distances given thereon are in statute miles between points of departure.

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SYMBOLS AND ABBREVIATIONS. For complete list of symbols and abbreviations see Chart No. 1

BRIDGE AND OVERHEAD CABLE CLEARANCES. When the water surface is above Low Water Datum, bridge and overhead clearances are reduced correspondingly. For clearances see U.S. Coast Pilot 6

AUTHORITIES. Hydrography and Topography by the National Ocean Service, Coast Survey, with additional data from the Corps of Engineers, Geological Survey, and U.S. Coast Guard.

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B. ENTRANCE CHANNEL	9.5	15.6	12.4	4-14	200-600	4400	
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* NOT MAINTAINED
NOTE - CONSULT THE CORPS OF ENGINEERS FOR CHANGES SUBSEQUENT TO THE ABOVE INFORMATION

SCALE 1:10,000
Nautical Miles
½ 0
Statute Miles
½ 0
Yards
200 0 200 400 600 800 1000
Meters
200 0 200 400 600 800 100

77°36' 50" 40" 30" 20" 10" 77°35'

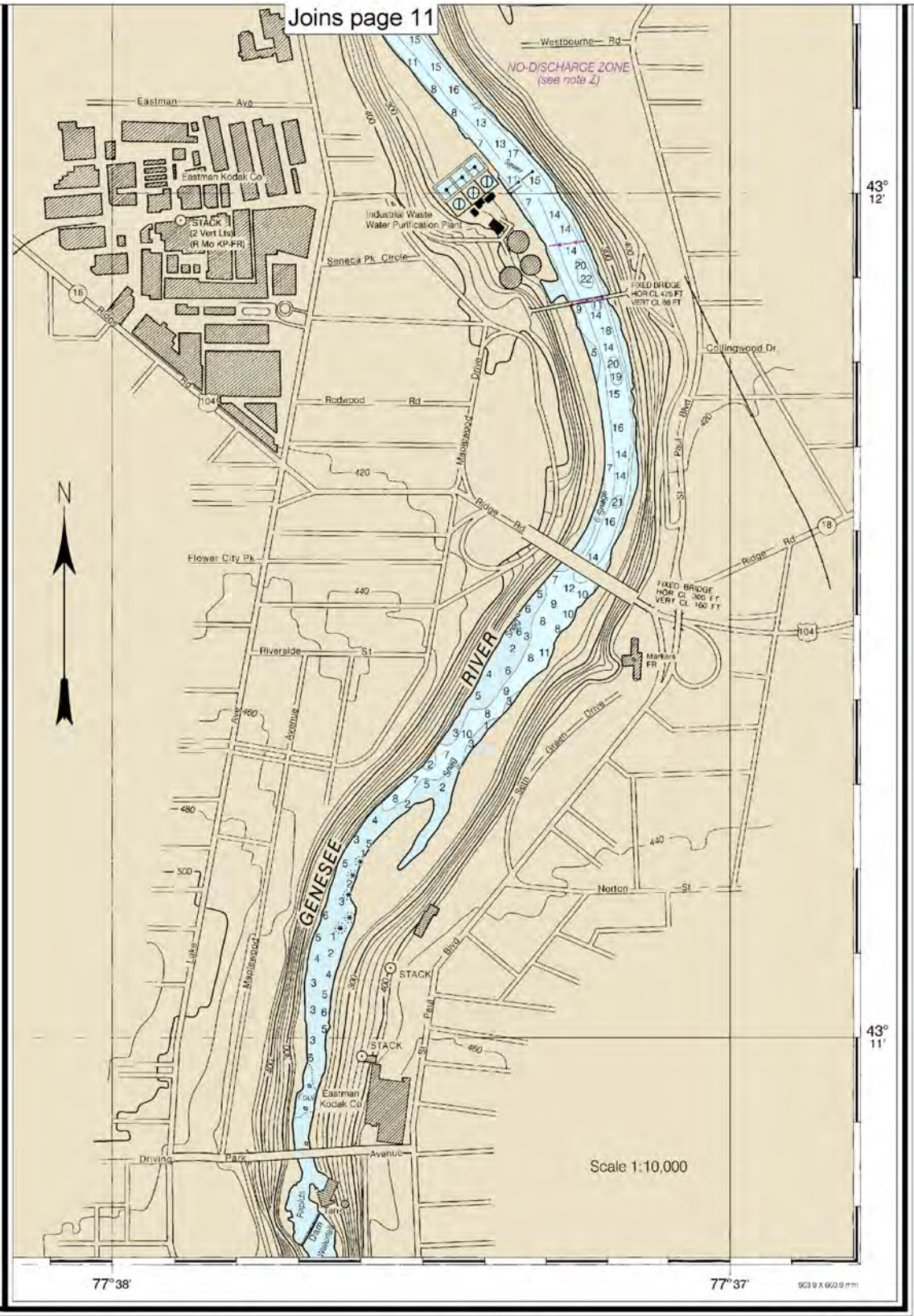
SOUNDINGS IN FEET

Published at Washington, D.C.
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE
COAST SURVEY

Note: Chart grid lines are aligned with true north.

Printed at reduced scale. ~~SCALE 1:10,000~~ See Note on page 5.

Nautical Miles
0
Yards
200 0 200 400 600 800 1000 1200



FATHOMS | FEET | METERS

Rochester Harbor

SOUNDINGS IN FEET - SCALE 1:10,000

14815

EMERGENCY INFORMATION

VHF Marine Radio channels for use on the waterways:

Channel 6 – Inter-ship safety communications.
Channel 9 – Communications between boats and ship-to-coast.
Channel 13 – Navigation purposes at bridges, locks, and harbors.
Channel 16 – Emergency, distress and safety calls to Coast Guard and others, and to initiate calls to other vessels. Contact the other vessel, agree to another channel, and then switch.
Channel 22A – Calls between the Coast Guard and the public. Severe weather warnings, hazards to navigation and safety warnings are broadcast here.
Channels 68, 69, 71, 72 and 78A – Recreational boat channels.

Getting and Giving Help — Signal other boaters using visual distress signals (flares, orange flag, lights, arm signals); whistles; horns; and on your VHF radio. You are required by law to help boaters in trouble. Respond to distress signals, but do not endanger yourself.

Distress Call Procedures

- Make sure radio is on.
- Select Channel 16.
- Press/Hold the transmit button.
- Clearly say: "MAYDAY, MAYDAY, MAYDAY."
- Also give: Vessel Name and/or Description; Position and/or Location; Nature of Emergency; Number of People on Board.
- Release transmit button.
- Wait for 10 seconds — If no response Repeat MAYDAY call.

HAVE ALL PERSONS PUT ON LIFE JACKETS!

All Hazards NOAA Weather Radio NOAA's National Weather Service

NOAA Weather Radio All Hazards (NWR) is a nationwide network of radio stations broadcasting continuous weather information directly from the nearest National Weather Service office. NWR broadcasts official Weather Service warnings, watches, forecasts and other hazard information 24 hours a day, 7 days a week.
http://www.nws.noaa.gov/nwr/

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Tides and Currents	—	**http://tidesandcurrents.noaa.gov**
Marine Forecasts	—	**http://www.nws.noaa.gov/om/marine/home.htm**
National Data Buoy Center	—	**http://www.ndbc.noaa.gov/**
NowCoast web portal for coastal conditions	—	**http://www.nowcoast.noaa.gov/**
National Weather Service	—	**http://www.weather.gov/**
National Hurrican Center	—	**http://www.nhc.noaa.gov/**
Pacific Tsunami Warning Center	—	**http://ptwc.weather.gov/**
Contact Us	—	**http://www.nauticalcharts.noaa.gov/staff/contact.htm**

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This Booklet chart has been designed for duplex printing (printed on front and back of one sheet). If a duplex option is not available on your printer, you may print each sheet and arrange them back-to-back to allow for the proper layout when viewing.

NOAA's Office of Coast Survey The Nation's Chartmaker


Great Lakes
RESTORATION
Great Lakes Restoration Initiative
Action Plan II
September 2014

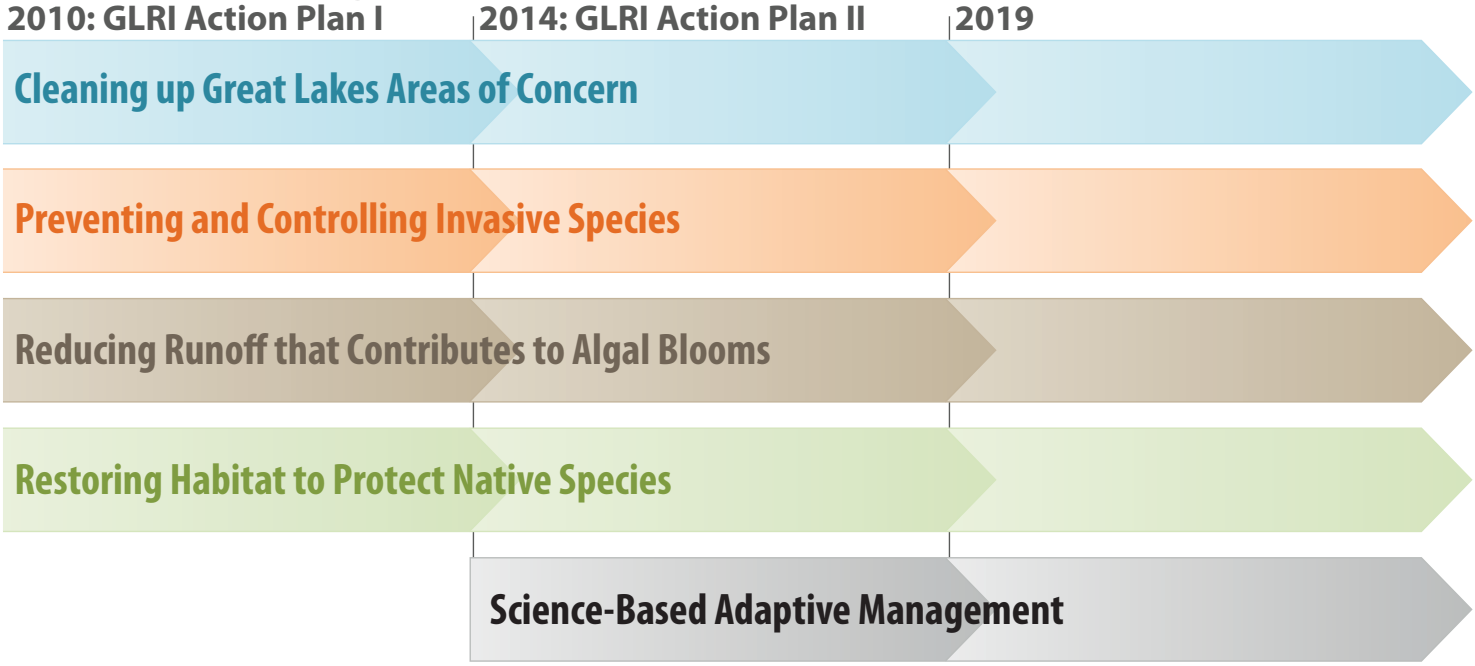
Great Lakes RESTORATION

The Great Lakes Restoration Initiative was launched in 2010 to accelerate efforts to protect and restore the largest system of fresh surface water in the world — to provide additional resources to make progress toward the most critical long-term goals for this important ecosystem.

The Great Lakes Restoration Initiative has been a catalyst for unprecedented federal agency coordination — through the Interagency Task Force and the Regional Working Group, which are led by EPA. This coordination has produced unprecedented results. Great Lakes Restoration Initiative resources have supplemented agency base budgets to fund the cleanup actions required to delist five Great Lakes Areas of Concern and to formally delist the Presque Isle Bay Area of Concern — a major change from the 25 years before the Initiative, during which only one Area of Concern was cleaned up and delisted. Great Lakes Restoration Initiative resources have also been used to double the acreage enrolled in agricultural conservation programs in watersheds where phosphorus runoff contributes to harmful algal blooms in western Lake Erie, Saginaw Bay and Green Bay. So far, Great Lakes Restoration Initiative resources have been used to fund over 2,000 projects to improve water quality, to protect and restore native habitat and species, to prevent and control invasive species and to address other Great Lakes environmental problems.

During the next five years, federal agencies plan to continue to use Great Lakes Restoration Initiative resources to strategically target the biggest threats to the Great Lakes ecosystem and to accelerate progress toward long term goals — by combining Great Lakes Restoration Initiative resources with agency base budgets and by using these resources to work with nonfederal partners to implement protection and restoration projects. To guide this work, federal agencies have drafted GLRI Action Plan II, which summarizes the actions that federal agencies plan to implement during FY15-19 using Great Lakes Restoration Initiative funding. GLRI Action Plan II outlines the next phase of work on Great Lakes environmental problems and associated human health issues — many of which will take decades to resolve. GLRI Action Plan II lays out the necessary next steps to get us closer to the day when we will be able to achieve our long-term goals for the Great Lakes and our commitments under the U.S.-Canada Great Lakes Water Quality Agreement.

The Great Lakes Restoration Initiative is Accelerating Great Lakes Protection and Restoration



GLRI Action Plan II

GLRI Action Plan II summarizes the actions that federal agencies plan to implement during FY15-19 using Great Lakes Restoration Initiative funding — actions to protect and restore the largest fresh surface water system in the world. These actions will build on restoration and protection work carried out under the first GLRI Action Plan, with a major focus on:

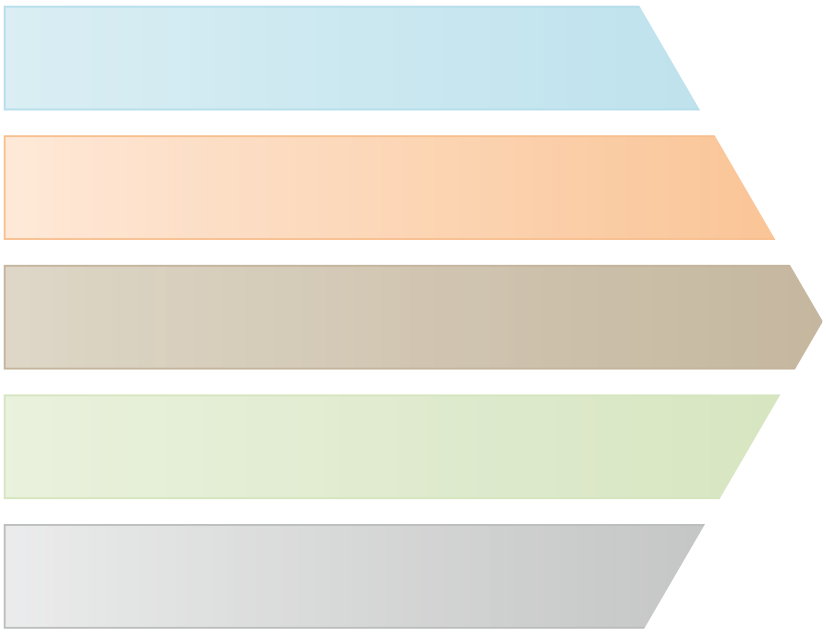
- Cleaning up Great Lakes Areas of Concern
- Preventing and controlling invasive species
- Reducing nutrient runoff that contributes to harmful/nuisance algal blooms
- Restoring habitat to protect native species

GLRI Action Plan II incorporates a science-based adaptive management framework that will be used to prioritize ecosystem problems to be targeted with GLRI resources, to select projects to address those problems and to assess the effectiveness of GLRI projects (see pages 28-29). Measures of Progress have been developed to track all actions implemented under GLRI Action Plan II. These Measures of Progress focus on outputs and/or outcomes that can be measured over the five year period covered by this Action Plan, rather than the longer term ecological benefits that will be produced by GLRI-funded projects and will take years to document in an ecosystem as large and complex as the Great Lakes. There are ten Measures of Progress with annual targets and other Measures of Progress that will be reported annually to track progress toward long term goals (see below) that will take more than five years to reach.

GLRI Action Plan II commits agencies to develop and incorporate climate resiliency criteria in project selection processes. Agencies will develop standard criteria to ensure climate resiliency of GLRI-funded projects (see pages 24-25).

GLRI Action Plan II includes many ideas developed during the first five years of the Great Lakes Restoration Initiative that were contributed by the Great Lakes Advisory Board, the U.S. EPA Science Advisory Board, the U.S. Government Accountability Office, the Congressional Research Service, states, tribes, municipalities and the general public. All of the federal agencies involved in the Great Lakes Restoration Initiative are grateful for these recommendations and will be actively seeking additional input as part of the science-based adaptive management cycle — as we implement and improve the Great Lakes Restoration Initiative and as we work with our many partners to protect and restore the Great Lakes.

Long Term Goals for the Great Lakes Ecosystem



Fish safe to eat

Water safe for recreation

Safe source of drinking water

All Areas of Concern delisted

Harmful/nuisance algal blooms eliminated

No new self-sustaining invasive species

Existing invasive species controlled

Native habitat protected and restored to sustain native species

FY15-19 Great Lakes Restoration Initiative Action Plan Summary*

Focus Areas	Objectives	Commitments
Toxic Substances and Areas of Concern	Remediate, restore and delist Areas of Concern	• Implement management actions necessary to remove Beneficial Use Impairments and delist Areas of Concern
	Increase knowledge about contaminants in Great Lakes fish and wildlife	• Reduce human exposure to contaminants from Great Lakes fish consumption • Identify emerging contaminants and assess impacts on Great Lakes fish and wildlife
Invasive Species	Prevent new introductions of invasive species	• Block pathways through which aquatic invasive species can be introduced to the Great Lakes ecosystem • Conduct early detection monitoring activities • Work with Great Lakes states to conduct rapid response actions or exercises
	Control established invasive species	• Implement control projects for GLRI-targeted invasive species
	Develop invasive species control technologies and refine management techniques	• Develop/enhance technologies and methods to prevent the introduction and to control the spread of invasive species • Develop/enhance invasive species specific collaboratives to support rapid responses and communicate the latest control and management techniques
Nonpoint Source Pollution Impacts on Nearshore Health	Reduce nutrient loads from agricultural watersheds	• Implement agricultural practices or other nutrient reduction practices in GLRI targeted watersheds.
	Reduce untreated runoff from urban watersheds	• Implement watershed management projects in urban areas that have adopted a watershed strategy
Habitats and Species	Protect, restore and enhance habitats to help sustain healthy populations of native species	• Remove or bypass barriers on Great Lakes tributaries to facilitate fish passage • Protect, restore and enhance Great Lakes coastal wetlands • Protect, restore and enhance GLRI-targeted habitats in the Great Lakes basin
	Maintain, restore and enhance populations of native species	• Promote the recovery of priority federally-listed endangered, threatened and candidate species • Promote self-sustaining populations of GLRI-targeted native non-threatened and non-endangered species
Foundations for Future Restoration Actions	Ensure climate resiliency of GLRI-funded projects	• Develop and incorporate climate resiliency criteria in project selection processes
	Educate the next generation about the Great Lakes ecosystem	• Promote Great Lakes-based ecosystem education and stewardship, with a focus on educator training
	Implement a science-based adaptive management approach for GLRI	• Evaluate the effectiveness of GLRI-funded projects • Assess the overall health of the Great Lakes ecosystem and identify the most significant remaining problems • Identify watersheds, habitats, and species to be targeted by the GLRI • Report on GLRI progress and Great Lakes ecosystem health

**Objectives and targets in this plan may be adjusted annually based on appropriations and performance.*

Measures of Progress**

- Areas of Concern where all management actions necessary for delisting have been implemented
- Area of Concern Beneficial Use Impairments Removed

- Number of people provided information on the risks and benefits of Great Lakes fish consumption by GLRI-funded projects
- Number of GLRI-funded projects that identify and/or assess impacts of emerging contaminants on Great Lakes fish and wildlife

- Number of GLRI-funded projects that block pathways through which aquatic invasive species can be introduced to the Great Lakes ecosystem
- Number of GLRI-funded early detection monitoring activities conducted
- Number of GLRI-funded Great Lakes rapid responses or exercises conducted

- Number of acres controlled by GLRI-funded projects
- Number of tributary miles protected by GLRI-funded projects

- Number of technologies and methods field tested by GLRI-funded projects
- Number of collaboratives developed/enhanced with GLRI funding

- Number of GLRI-funded nutrient and sediment reduction projects in targeted watersheds (measured in acres)
- Projected phosphorus reductions from GLRI-funded projects in targeted watersheds (measured in pounds)
- Measured nutrient and sediment reductions from monitored GLRI-funded projects in targeted watersheds (measured in pounds)

- Number of GLRI-funded projects implemented to reduce the impacts of untreated urban runoff on the Great Lakes
- Projected volume of untreated urban runoff captured or treated by GLRI-funded projects
- Measured volume of untreated urban runoff captured or treated by monitored GLRI-funded projects

- Number of miles of Great Lakes tributaries reopened by GLRI-funded projects
- Number of miles of Great Lakes shoreline and riparian corridors protected, restored and enhanced by GLRI-funded projects
- Number of acres of Great Lakes coastal wetlands protected, restored and enhanced by GLRI-funded projects
- Number of acres of other habitats in the Great Lakes basin protected, restored and enhanced by GLRI-funded projects

- Number of GLRI-funded projects that promote recovery of federally-listed endangered, threatened, and candidate species
- Number of GLRI-funded projects that promote populations of native non-threatened and non-endangered species self-sustaining in the wild

- By 2016, a standardized set of climate resiliency criteria will be developed for GLRI-projects
- Starting in 2017, projects will include climate resiliency criteria in planning and implementation

- Number of educators trained through GLRI-funded projects
- Number of people educated on the Great Lakes ecosystem through GLRI-funded place-based experiential learning activities

- Project evaluations completed and used to prioritize GLRI funding decisions each year
- Annual Great Lakes monitoring conducted and used to prioritize GLRI funding decisions each year
- GLRI-targeted watersheds, habitats and species identified and used to prioritize GLRI funding decisions
- Issue annual GLRI Reports to Congress and the President
- Issue Great Lakes Water Quality Agreement Triennial Progress Reports of the Parties
- Issue triennial State of the Lakes reports
- Periodically update publicly available online information about the GLRI

***Most GLRI Action Plan II Measures of Progress track outputs and/or outcomes produced solely by GLRI-funded projects. AOC-related measures track results produced using GLRI funding and, in some cases, using other sources of funding, as well. Many GLRI-funded projects supplement other Great Lakes restoration activities that are funded by agency base budgets and are reported independently by agencies. Action Plan II Measures of Progress include: several Action Plan I Measures of Progress; several Action Plan I Measures of Progress that have been modified to accurately track actions funded by GLRI; and a number of new Measures of Progress.*

Toxic Substances and Areas of Concern

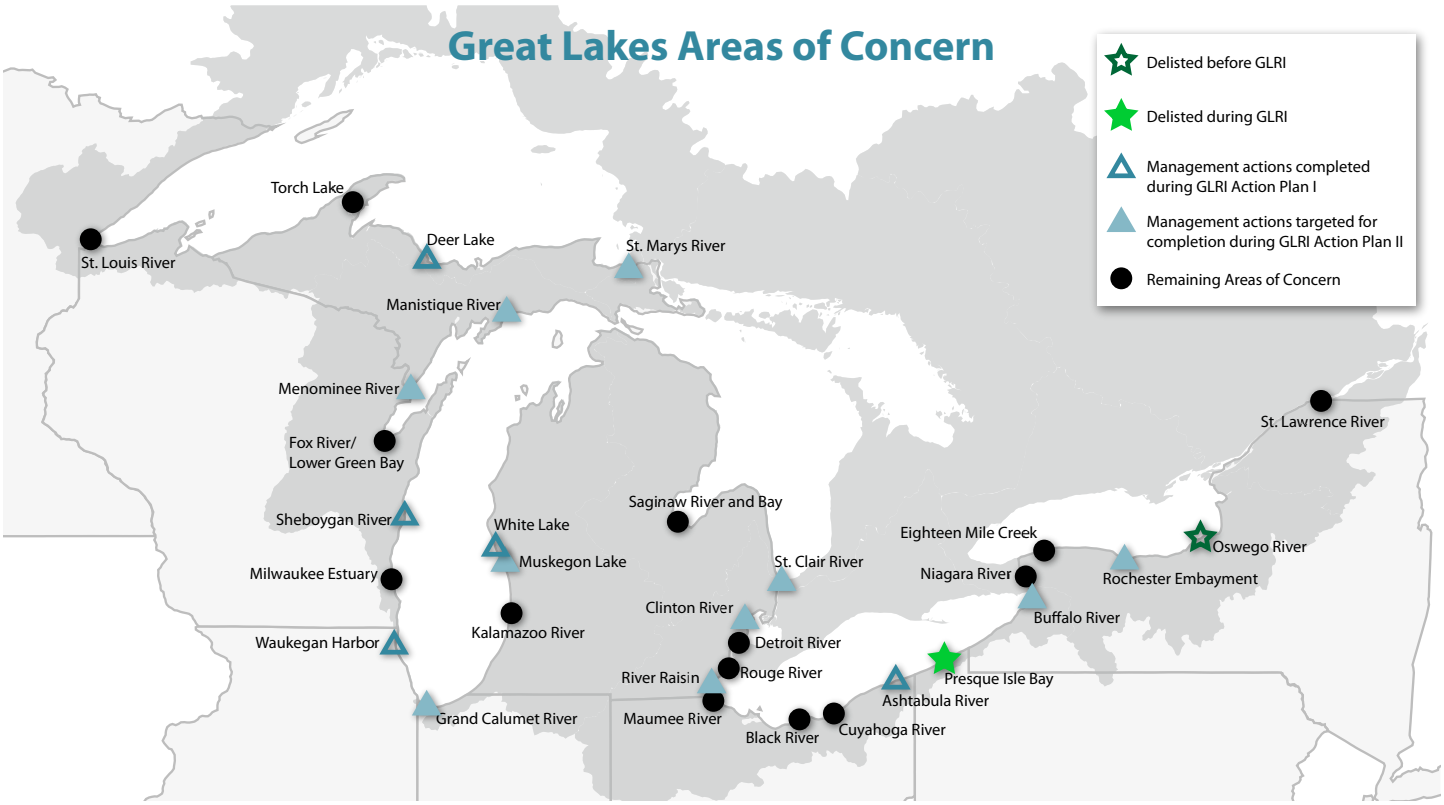
Objective

Remediate, restore and delist Areas of Concern

Commitment

- Implement management actions necessary to remove Beneficial Use Impairments and delist Areas of Concern

Great Lakes Areas of Concern



During the first five years of the Great Lakes Restoration Initiative, federal agencies and their partners completed all of the management actions required to remove five Areas of Concern from the list of areas designated as the most contaminated sites on the Great Lakes by the 1987 Great Lakes Water Quality Agreement:

- Ashtabula River
- Deer Lake
- Sheboygan River
- Waukegan Harbor
- White Lake

The Presque Isle Bay Area of Concern was also delisted in 2013 — only the second delisting on the U.S. side of the border since Areas of Concern were designated pursuant to the 1987 Great Lakes Water Quality Agreement.

Under GLRI Action Plan II, federal agencies and their partners will continue to remediate and restore Areas of Concern. Federal agencies will implement critical management actions in all of the remaining AOCs and will complete all management actions required to delist the following ten:

- Buffalo River
- Clinton River
- Grand Calumet River
- Manistique River
- Menominee River
- Muskegon Lake
- River Raisin
- Rochester Embayment
- St. Clair River
- St. Marys River

Remediation and restoration in these Areas of Concern will include dredging contaminated sediment and restoring habitat (e.g., improving fish passage, restoring wetlands and removing dams).

Measures of Progress with Annual Targets*	Baseline/ Universe	2015 Target	2016 Target	2017 Target	2018 Target	2019 Target
• Areas of Concern where all management actions necessary for delisting have been implemented (cumulative)	Baseline: 7 Universe: 31	8	9	11	12	17
• Area of Concern Beneficial Use Impairments Removed (cumulative)	Baseline: 52 Universe: 255	60	65	72	78	85

** AOC-related measures track results produced using GLRI funding and, in some cases, using other sources of funding, as well*

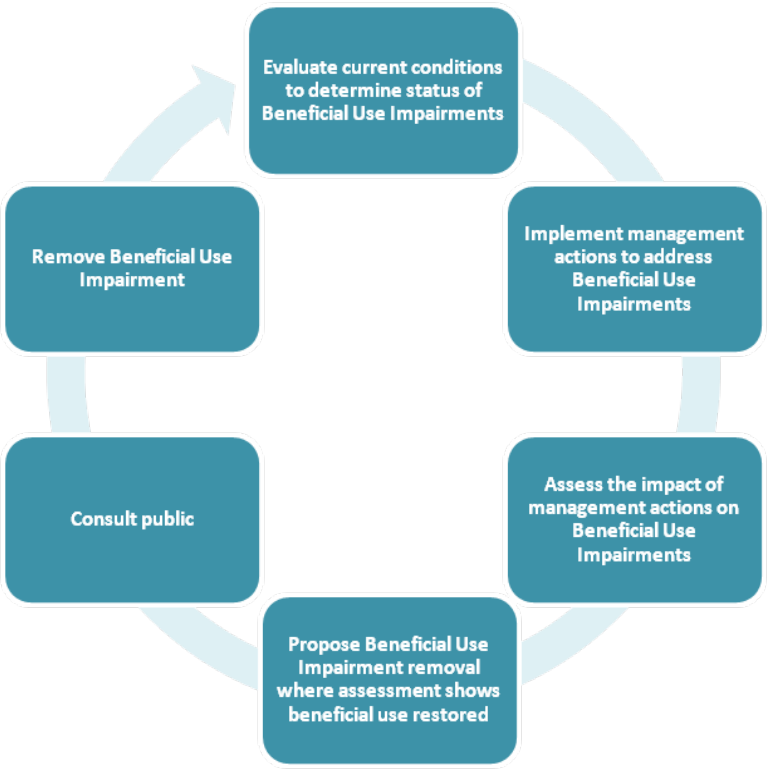
During the first five years of the Great Lakes Restoration Initiative, federal agencies and their partners removed 42 Beneficial Use Impairments in 17 Areas of Concern — quadrupling the number of Beneficial Use Impairments removed in the preceding 22 years.

Under GLRI Action Plan II, federal agencies and their partners* will continue to remove 34 additional Beneficial Use Impairments in the remaining 29 Areas of Concern. These Beneficial Use Impairments include beach closings, restrictions on drinking water consumption, nuisance algal blooms, restrictions on dredging, fish and wildlife deformities, restrictions on fish and wildlife consumption, loss of fish and wildlife habitat.

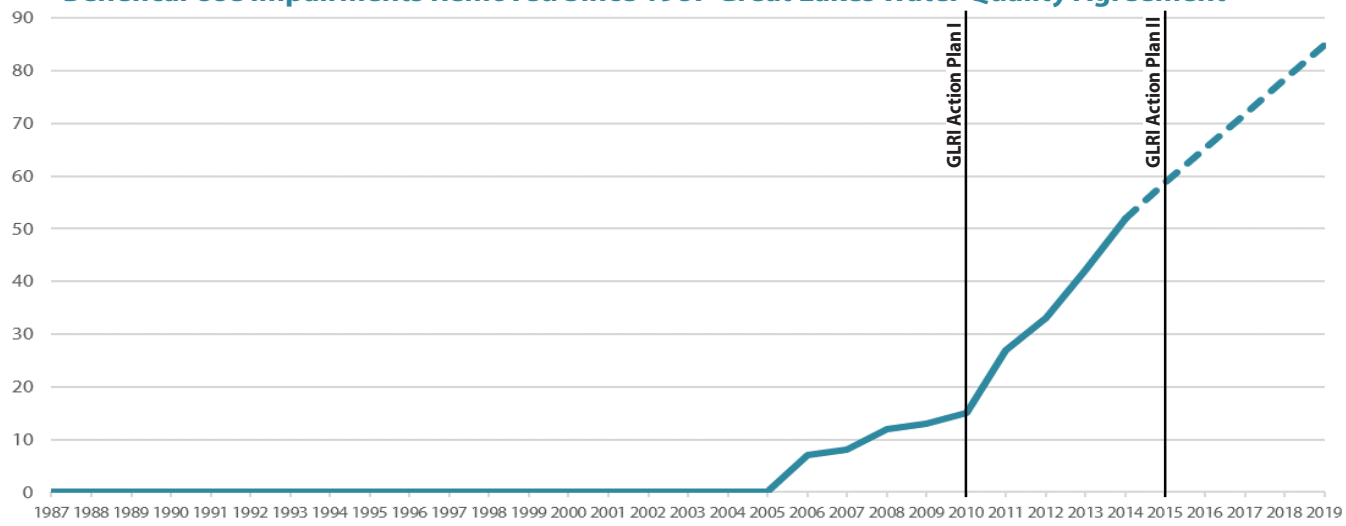
The process for removing Beneficial Use Impairments and delisting Areas of Concern starts with a scientific assessment to determine the extent to which beneficial uses are impaired and the types of management actions required to remediate the Area of Concern. After management actions are implemented, a scientific assessment is conducted to determine whether beneficial uses have been restored. An Area of Concern is eligible to be delisted when all Beneficial Use Impairments have been removed.

**Including local Area of Concern advisory groups.*

Removing Beneficial Use Impairments in Areas of Concern



Benefical Use Impairments Removed Since 1987 Great Lakes Water Quality Agreement



Toxic Substances and Areas of Concern

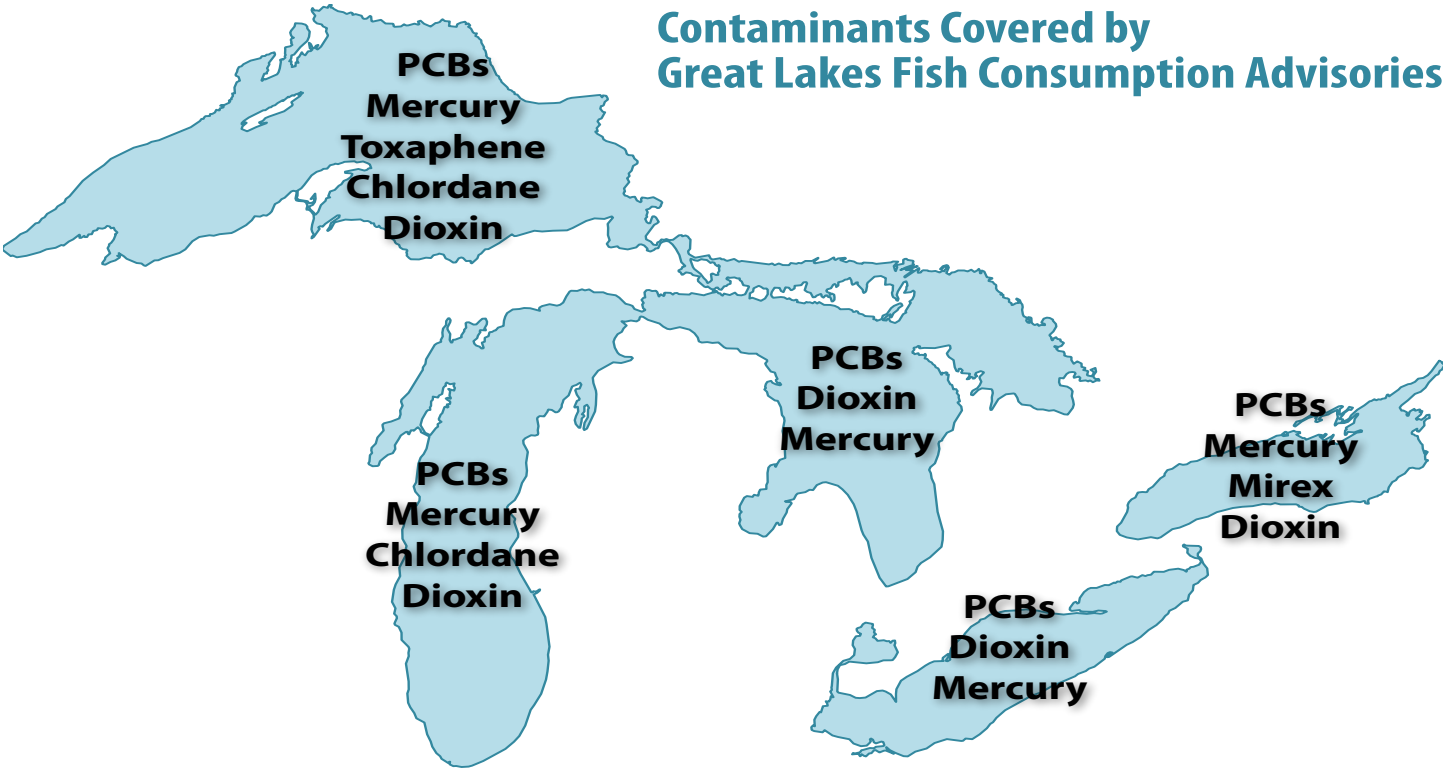
Objective

Increase knowledge about contaminants in Great Lakes fish and wildlife

Commitment

- Reduce human exposure to contaminants from Great Lakes fish consumption
- Identify emerging contaminants and assess impacts on Great Lakes fish and wildlife

Contaminants Covered by Great Lakes Fish Consumption Advisories



During the first five years of the Great Lakes Restoration Initiative, federal agencies and their partners implemented projects to protect human health from contaminants in Great Lakes fish while clean up efforts continued. Federal agencies and their partners updated fish consumption advisories and provided improved public information on the health risks and benefits of Great Lakes fish consumption.

Federal agencies and their partners focused outreach on those populations with the highest risk of contaminant exposure, including:

- Women who may become pregnant
- Children
- Urban anglers
- Tribal communities, and
- People who rely heavily on Great Lakes fish in their diets.

Federally funded research documented elevated blood mercury levels in some newborns in the western Lake Superior basin. Additional GLRI funding was provided to train healthcare professionals to advise patients about safe fish consumption choices (*e.g.*, testing the effectiveness of fish consumption advisories; working with health care providers to "screen" patients for fish consumption practices and blood contaminant levels).

Under the GLRI Action Plan II, federal agencies and their partners will continue to provide improved information on the health risks and benefits of Great Lakes fish consumption. Targeted outreach to high-risk fish consuming populations will be used to promote healthy fish consumption choices that minimize the risk of contaminant exposure. Outreach activities will incorporate culture, ethnicity, gender, age, and other factors to maximize the effectiveness of fish consumption advisories.

Measures of Progress

- Number of people provided information on the risks and benefits of Great Lakes fish consumption by GLRI-funded projects
- Number of GLRI-funded projects that identify and/or assess impacts of emerging contaminants on Great Lakes fish and wildlife

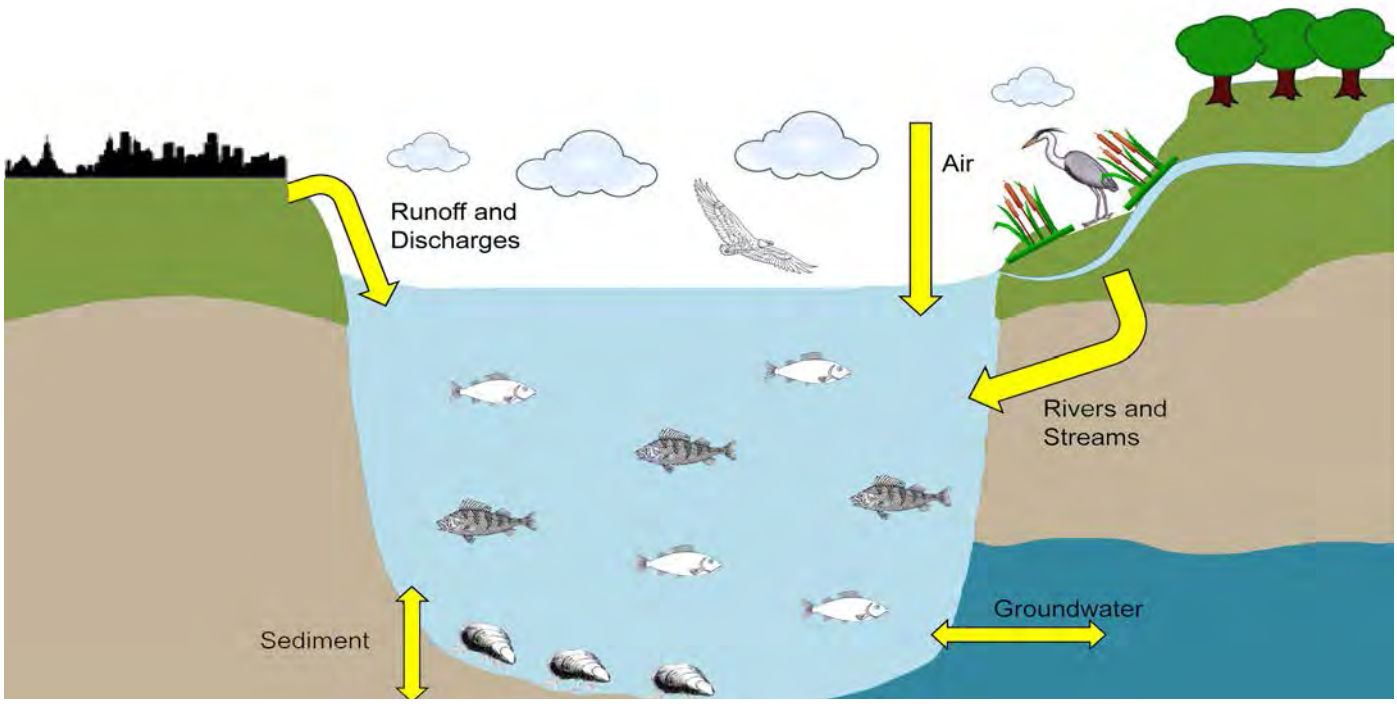
During the first five years of the Great Lakes Restoration Initiative, federal agencies and their partners characterized and assessed risks that emerging contaminants may pose to Great Lakes fish and wildlife. Agencies and their partners were able to gain a better understanding of the presence and distribution of emerging contaminants, potential routes of exposure and potential impacts on fish and wildlife.

Under GLRI Action Plan II, federal agencies and their partners will continue to further evaluate emerging contaminants that have the greatest potential to adversely impact Great Lakes fish and wildlife – impacts which may also result in ecological, economic and recreational consequences. Federal agencies will assess the extent to which identified risks may impede environmental quality and resource management goals. Agencies and their partners will conduct laboratory and/or field studies to evaluate biological effects from chemical mixtures, evaluate long term exposure of fish to contaminants, conduct additional field sampling where effects are being observed and sample other high priority wildlife such as migratory birds, mussels and amphibians. These projects will be evaluated on an annual basis and the results will be used to prioritize the design and implementation of future laboratory and field studies.

Potential Impacts of Emerging Contaminants on Great Lakes Fish and Wildlife

- Increased feminization (vitellogenin) in male fish and decrease in overall size and ability to compete for mates
- Irregular courtship and nest guarding behavior
- Decrease in reaction time and predator escape response
- Decreased population genetic diversity
- Declines in prey species populations as well as sportfish populations

Contaminant Pathways



Invasive Species

Objective

Prevent new introductions of invasive species

Commitment

- Work with Great Lakes states to conduct rapid response actions or exercises
- Block pathways through which aquatic invasive species can be introduced to the Great Lakes ecosystem
- Conduct early detection monitoring activities

During the first five years of the Great Lakes Restoration Initiative, federal agencies and their partners engaged in an unprecedented level of activity to prevent new introductions of invasive species in the Great Lakes ecosystem. Agencies and their partners prevented bighead and silver carp from becoming established in the Great Lakes ecosystem. Surveillance programs formed the foundation for a multi-species early detection network. Partner agencies responded to several detections, including red swamp crayfish in Wisconsin, grass carp in Michigan, Hydrilla in New York and eDNA for silver and bighead carp in the Chicago Area Waterway System. Federal agencies and their state partners have reduced the risk of invasive species in ballast water discharges. No new introductions have occurred through the ballast water pathway since 2006. Federal agencies and their partners have conducted species risk assessments for organisms posing risks to the Great Lakes ecosystem. Public education efforts have helped boaters, anglers and other resource users prevent the spread of invasive species.

How Can Invasive Species Get into the Great Lakes?

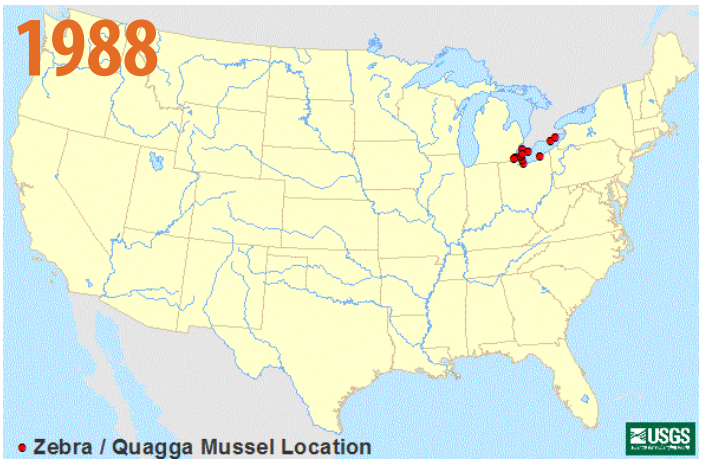
- Canals and waterways
- Recreational boating
- Commercial shipping
- Illegal trade of banned species
- Release of aquarium species
- Release of live bait
- Spread of plant species purchased through nurseries, internet sales and water garden trade

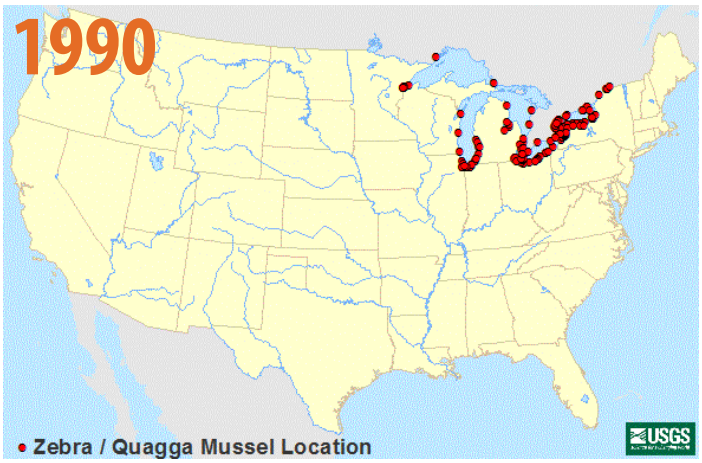
Protecting the Great Lakes from Asian Carp

The Great Lakes Restoration Initiative provides support to the Asian Carp Regional Coordinating Committee, which has implemented the Asian Carp Control Strategy Framework — including surveillance, response actions and testing of new control technologies. More information about the ACRCC is available at http://www.asiancarp.us.

Preventing the Introduction of Invasive Species into the Great Lakes Protects the Entire Nation

The rapid spread of invasive zebra and quagga mussels in the United States illustrates that invasive species can spread very quickly. Consequently, preventing the introduction of invasive species is critically important.





Measure of Progress with Annual Targets	Baseline/ Universe	2015 Target	2016 Target	2017 Target	2018 Target	2019 Target
• Number of GLRI-funded Great Lakes rapid responses or exercises conducted*	Baseline: 0 Universe: N/A	8	8	8	8	8

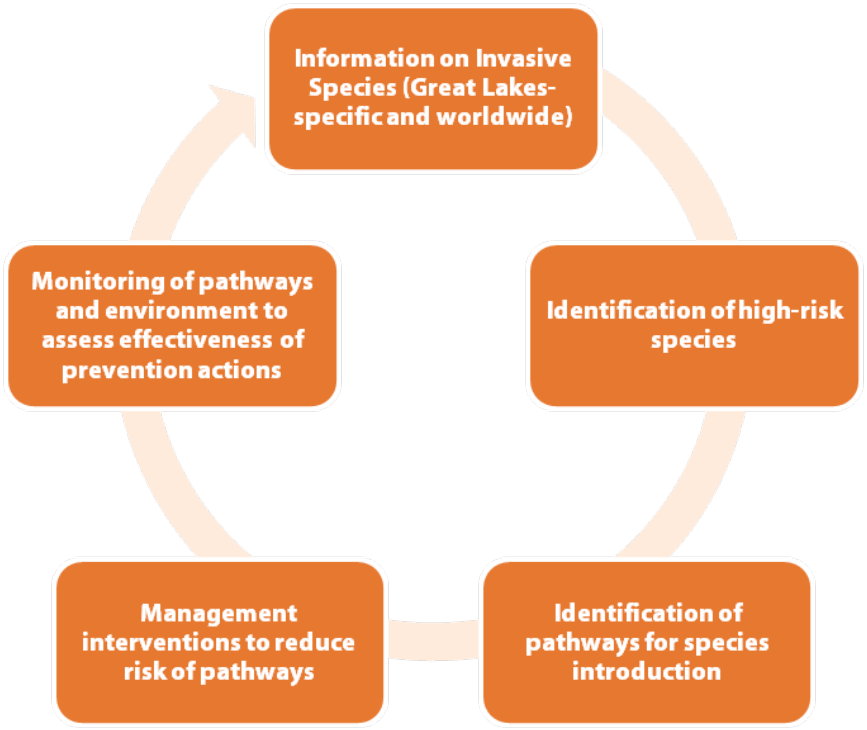
Additional Measures of Progress

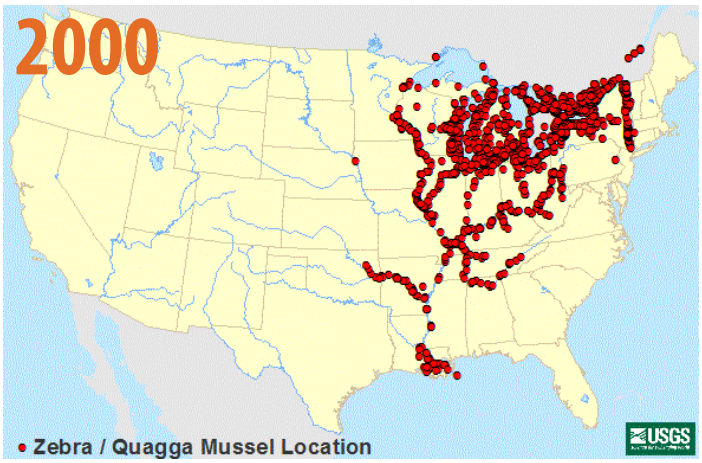
- Number of GLRI-funded projects that block pathways through which aquatic invasive species can be introduced to the Great Lakes ecosystem
- Number of GLRI-funded early detection monitoring activities conducted

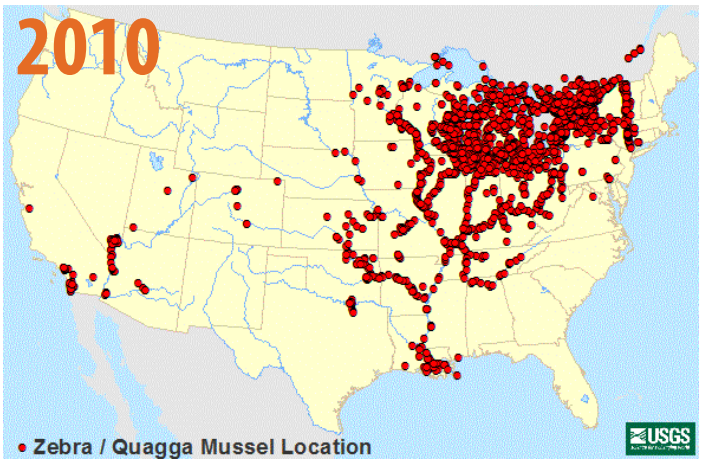
**This Measure of Progress is a modification of an Action Plan I Measure of Progress that has been modified to more accurately track actions funded by GLRI. The baseline is zero because the new Action Plan II Measure of Progress is not the same metric as the Action Plan I Measure of Progress.*

Under GLRI Action Plan II, federal agencies and their partners will continue to prevent new invasive species from establishing self-sustaining populations in the Great Lakes ecosystem. Federal agencies and their partners will work to increase the effectiveness of existing surveillance programs by establishing a coordinated, multi-species early detection network. Federal agencies will support state and tribal efforts to develop and implement Aquatic Nuisance Species Management Plans which will be used for annual "readiness exercises" and actual responses to new detections of invasive species. Competitive grant programs will continue to be used to fund new initiatives to block pathways through which invasive species can be introduced to the Great Lakes ecosystem. Risk assessments will continue to be refined to inform the targeting of species, pathways and sites for early detection monitoring. Because the Great Lakes can be a freshwater invasion pathway to the 31 states within the Mississippi River watershed and beyond, these prevention efforts will also benefit the entire Nation.

Assessing the Risk of Invasive Species







Invasive Species

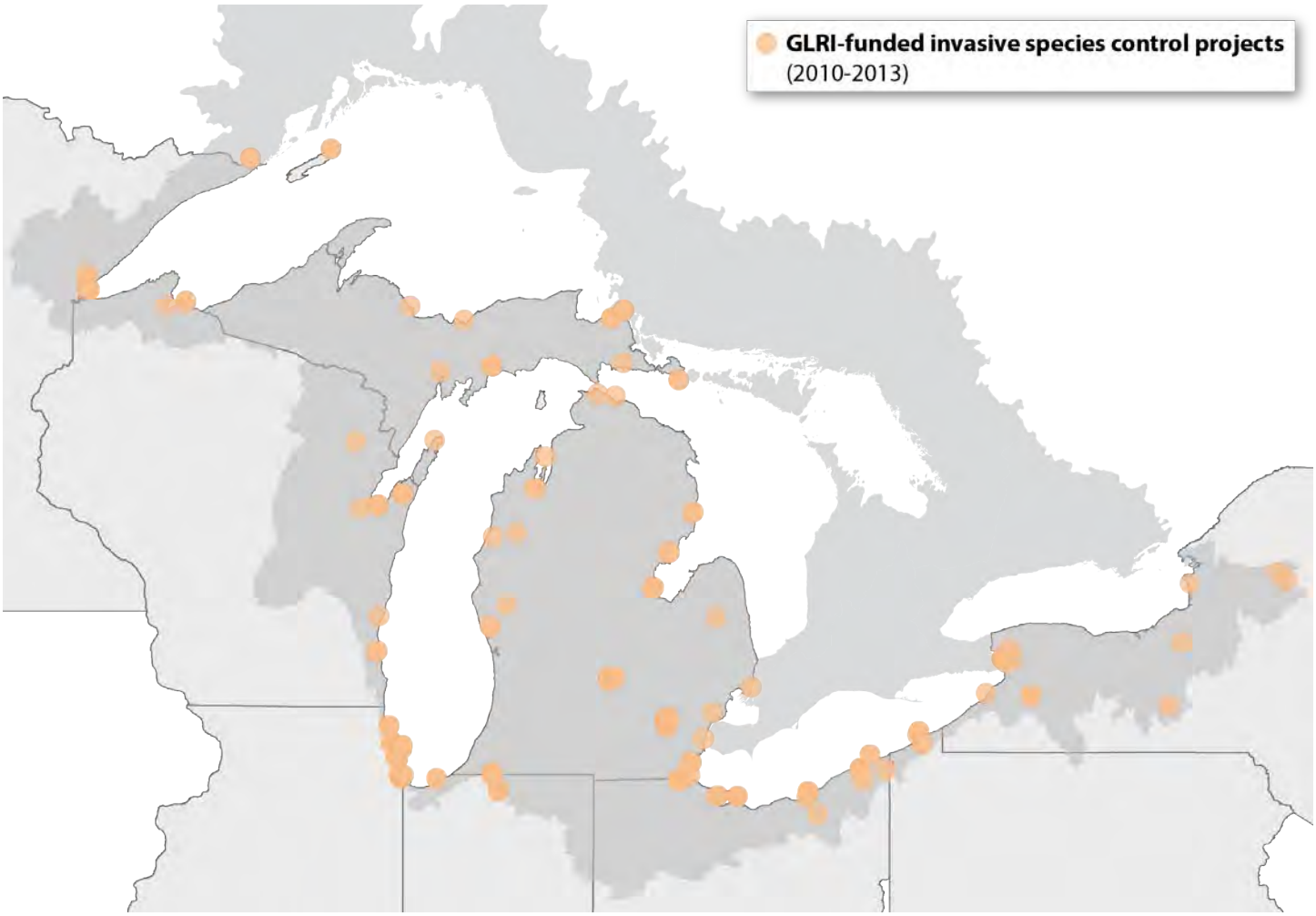
Objective

Control established invasive species

Commitment

- Implement control projects for GLRI-targeted invasive species

Controlling Invasive Species in the Great Lakes Basin



During the first five years of the Great Lakes Restoration Initiative, federal agencies and their partners controlled invasive species including:

- baby's breath
- bighead carp
- buckthorn
- emerald ash borer
- Eurasian watermilfoil
- garlic mustard
- grass carp
- Japanese barberry
- Japanese knotweed
- lyme grass
- invasive strains of Phragmites
- purple loosestrife
- silver carp
- sea lamprey
- wild parsnip

These control projects were done with partners who will continue maintenance and stewardship beyond the duration of the federally funded projects. Most projects will require additional, low-level maintenance as sites progress toward full recovery.

Measure of Progress with Annual Targets	Baseline/ Universe	2015 Target	2016 Target	2017 Target	2018 Target	2019 Target
• Number of aquatic/terrestrial acres controlled by GLRI-funded projects	Baseline: 36,000 Universe: N/A	50,000	60,000	70,000	80,000	90,000

Additional Measure of Progress

• Number of tributary miles protected by GLRI-funded projects

Under GLRI Action Plan II, federal agencies and their partners will continue to restore sites degraded by aquatic, wetland and terrestrial invasive species. Federal agencies will implement control projects in national forests, parks and wildlife refuges where they have direct implementation responsibility. These federal land management agencies will also partner with states and neighboring communities to promote larger scale protection and restoration through the Midwest Invasive Plant Network and the Cooperative Weed Management Area control programs. The Great Lakes Sea Lamprey Control Program will expand the strategic use of tributary barriers and traps as an alternative to chemical control methods. The location of these barriers will be determined by considering both the benefits of additional sea lamprey control and habitat connectivity concerns. Invasive species control projects will be evaluated on an annual basis and the results of these evaluations will be used to prioritize the design, location and implementation of future invasive species control projects.



Supporting Sustainable Invasive Species Control through Community Projects

The GLRI is actively building the capability of Great Lakes communities to manage invasive species through funding on-the-ground and in-the-water control projects by supporting step 3 of this process.

Step 1
- Identify project site

Step 2
- Develop plans for short-term control and long-term stewardship

Step 3
- Provide funding for initial control activities and the assessment of project effectiveness. Project implementation also provides opportunities for communities to:
  - create volunteer stewardship program
  - provide job skills training
  - provide employment opportunities, including the use of "civilian conservation corps" type initiatives

Step 4
- Maintain significantly improved site through community stewardship

Invasive Species

Objective

Develop invasive species control technologies and refine management techniques

Commitment

- Develop/enhance technologies and methods to prevent the introduction and to control the spread of invasive species
- Develop/enhance invasive species specific collaboratives to support rapid responses and communicate the latest control and management techniques

The Importance of Developing Invasive Species Control Technologies

A number of effective control technologies have been developed to control invasive species in the Great Lakes. One of the longest-running and most effective invasive control technology programs is the sea lamprey control program. Its success is largely due to a multi-year effort to test almost 6,000 chemical compounds to identify the compound that most effectively controls sea lampreys without harming other species. The Great Lakes Restoration Initiative is working to further refine sea lamprey control techniques and is working to develop targeted control methods for other invasive species impacting the Great Lakes ecosystem.



Developing Invasive Species Control Technology for the Great Lakes Ecosystem

Focus of GLRI Support

GLRI provides support for invasive species control technologies with proven potential that require additional testing.

- Phase 1: • Develop conceptual designs
- Phase 2: • Complete proof-of-concept studies
- Phase 3: • Perform lab testing and small scale field testing
- Phase 4: • Demonstrate control technology on a large-scale in the Great Lakes Ecosystem
- Phase 5: • Deploy technology

Measures of Progress

- Number of technologies and methods field tested by GLRI-funded projects
- Number of collaboratives developed/enhanced with GLRI funding

During the first five years of the Great Lakes Restoration Initiative, federal agencies and their partners worked to develop and enhance several invasive species control technologies. Researchers worked to develop Asian carp control techniques that target Asian carp without harming other fish species and worked to develop techniques to detect, attract and remove Asian carp to improve the effectiveness of control methods. For example, seismic pressure (aka, "waterguns") and carbon dioxide have been demonstrated to act as barriers that prevent the movement of Asian carp and may also be used to herd invasive fish to increase the effectiveness of other control technologies. Sea lamprey pheromones were synthesized and field-tested to assess whether pheromones can be used to improve trapping efficiency. New procedures were developed and refined for testing the efficacy of ballast water treatment systems in the Great Lakes and several promising ballast water management systems were performance tested. Researchers also investigated the use of a common soil bacterium to limit the spread of zebra mussels in a manner that has minimal impacts on native mussels and other organisms. Researchers also tested "gene silencing" technology to control the spread of invasive Phragmites.

A Model for Great Lakes Invasive Species Specific Collaboration



Under GLRI Action Plan II, federal agencies and their partners will continue to develop and enhance technologies to control Great Lakes invasive species. Federal agencies will also develop and enhance invasive species "collaboratives" to support rapid responses and to communicate the latest control and management techniques. The Great Lakes Phragmites Collaborative is a model for this work (http://greatlakesphragmites.net/). This collaborative facilitates communication across the region and serves as a resource center for information on Phragmites biology, management and academic research. Species-specific collaborations will be established or enhanced for Phragmites, monecious Hydrilla and grass carp, as well as other invasive species.

Nonpoint Source Pollution Impacts on Nearshore Health

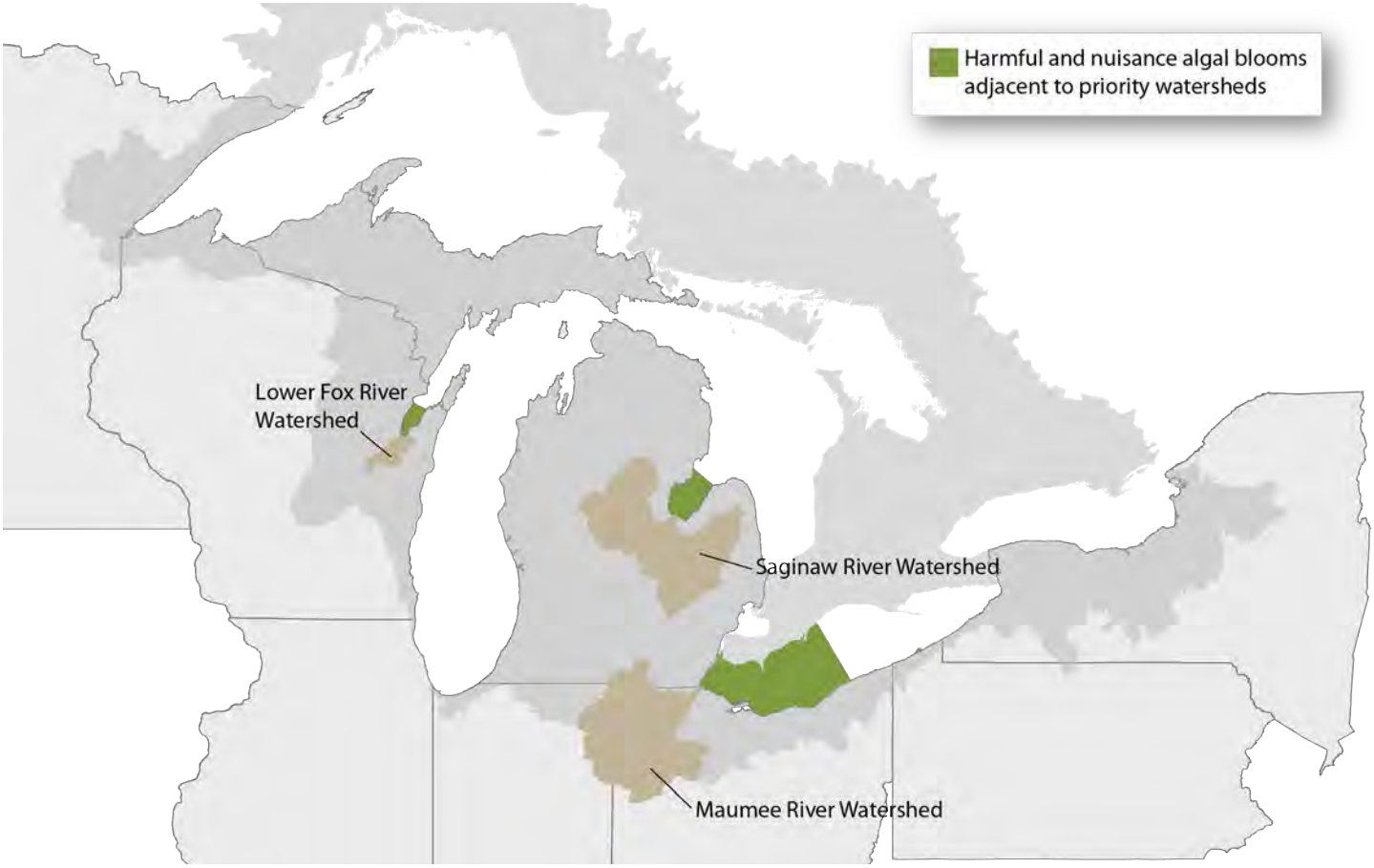
Objective

Reduce nutrient loads from agricultural watersheds

Commitment

- Implement agricultural practices or other nutrient reduction practices in GLRI targeted watersheds.

Great Lakes Restoration Initiative Priority Watersheds During 2010-2014



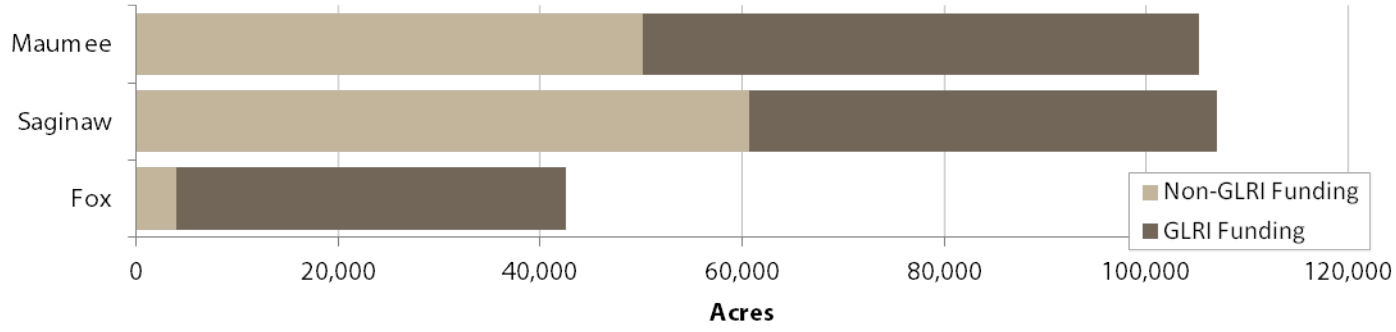
During the first five years of the Great Lakes Restoration Initiative, federal agencies and their partners targeted activities to reduce the largest nonpoint source of phosphorus inputs to Great Lakes nearshore areas: nutrient runoff from agricultural lands. Excess phosphorus loadings threaten the Great Lakes ecosystem by contributing to harmful algal blooms that can cause human health effects, drinking water impairments, beach closures, exacerbate dead zones and result in loss of recreational opportunities. Under GLRI Action Plan I, federal agencies and their partners provided farmers with financial and technical resources to implement conservation systems to reduce nutrient runoff and to control soil erosion. Federal agencies used GLRI support to more than double the number of acres of farmland enrolled in agricultural conservation programs in GLRI priority watersheds. These programs help producers reduce phosphorus in runoff that impacts the Great Lakes nearshore waters, contributing to nuisance and harmful algal blooms and hypoxia. GLRI partners conducted edge-of-field monitoring to evaluate the impact of various agricultural conservation measures on water quality. Water quality baseline data was collected downstream of fields to be used in later studies to gauge long-term changes in water quality associated with nutrient reduction activities.

Measure of Progress with Annual Targets	Baseline/ Universe	2015 Target	2016 Target	2017 Target	2018 Target	2019 Target
• Projected phosphorus reductions from GLRI-funded projects in targeted watersheds (measured in pounds)	Baseline: 0 Universe: N/A	130,000	310,000	525,000	795,000	1,070,000

Additional Measures of Progress

- Number of GLRI-funded nutrient and sediment reduction projects in targeted watersheds (measured in acres)
- Measured nutrient and sediment reductions from monitored GLRI-funded projects in targeted watersheds (measured in pounds)

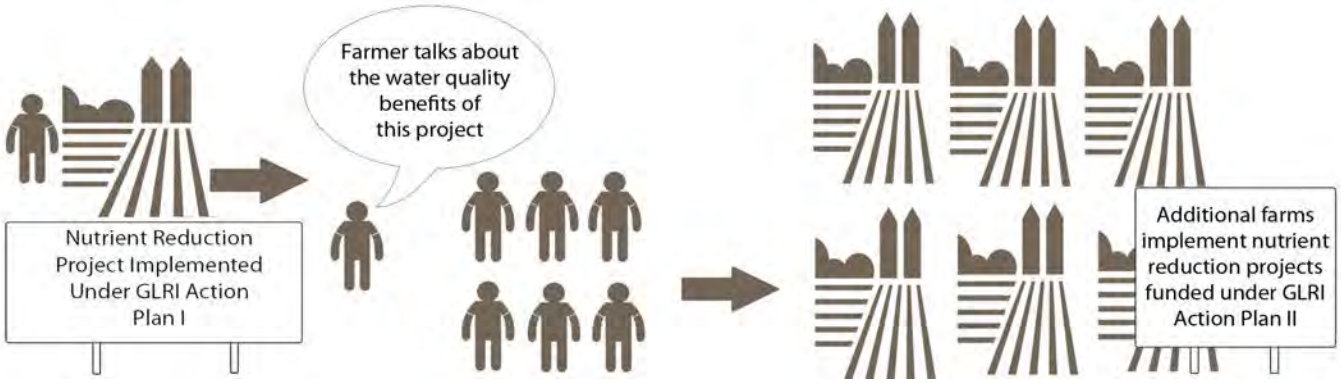
GLRI Funding Supplements Other Federal Programs: GLRI Doubled the Acres Enrolled in Agricultural Conservation Programs in Priority Watersheds



Under GLRI Action Plan II, federal agencies and their partners will continue to reduce nutrient runoff in watersheds targeted through the GLRI science-based adaptive management process. The work will:

- Advance drinking water source protection.
- Increase voluntary agricultural conservation practices to achieve downstream water quality improvements.
- Track nutrient and sediment reductions achieved through conservation practices.
- Use voluntary, incentive-based and existing regulatory approaches to reduce nutrient losses.
- Encourage producers and agribusinesses to adopt innovative technologies and approaches to reduce nutrient runoff and soil losses.
- Educate agricultural producers about the links between long-term productivity, nutrient conservation and water quality.

GLRI nutrient runoff reduction projects will be evaluated on an annual basis to prioritize the type, location and longevity of future nutrient reduction work. In addition, GLRI partners will assess the extent to which harmful algal blooms are impacted by phosphorus loading, in-lake mixing, climate change and invasive species. The relationship between algal blooms and hypoxia will also be assessed.



Nonpoint Source Pollution Impacts on Nearshore Health

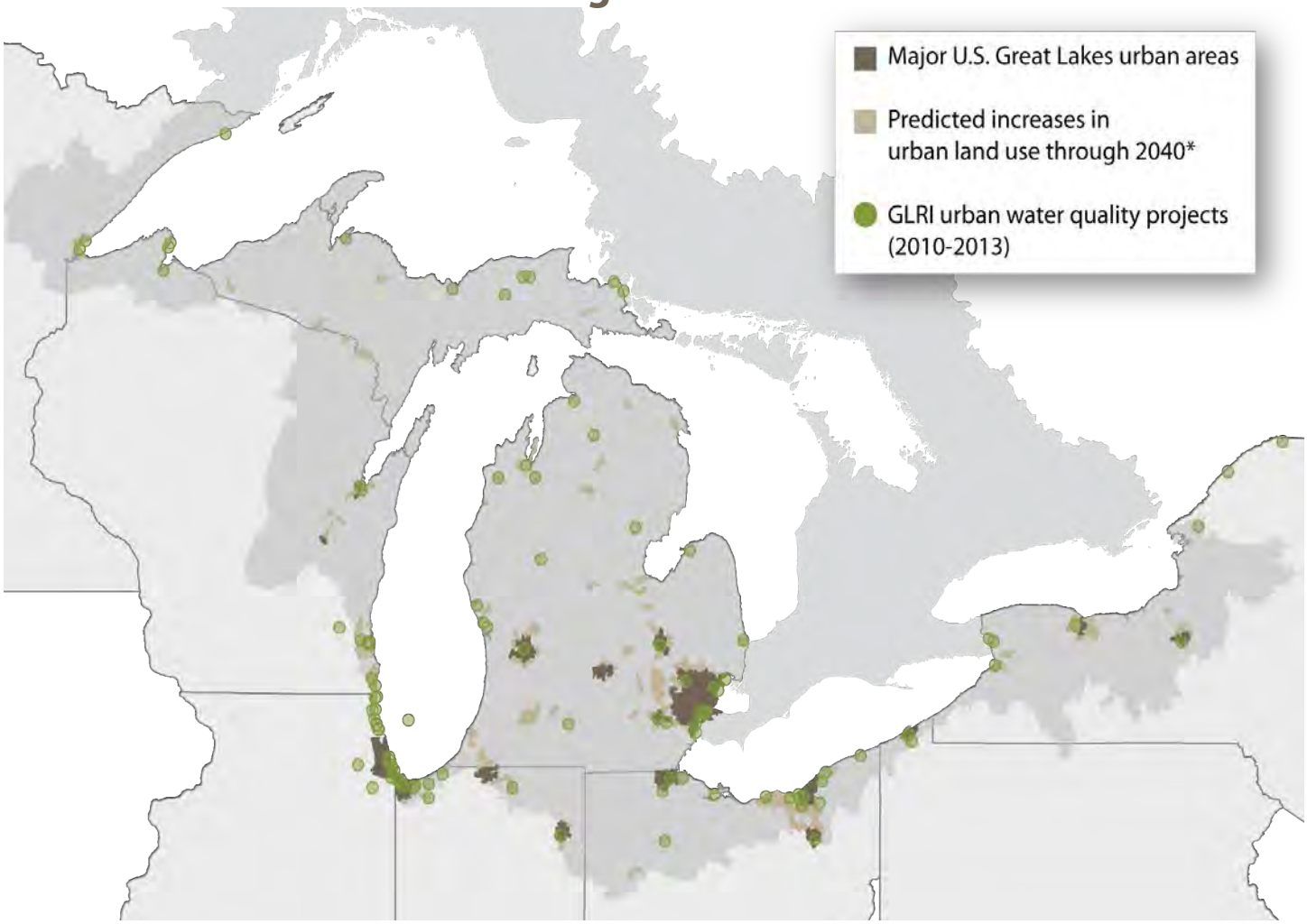
Objective

Reduce untreated runoff from urban watersheds

Commitment

- Implement watershed management projects in urban areas that have adopted a watershed strategy

Reducing Urban Runoff



GLRI Action Plan I projects in urban areas reduced polluted runoff to Great Lakes tributaries and nearshore waters. GLRI Action Plan II projects implemented under this prinicipal initiative will focus on major urban areas and on areas where urbanization is expected to increase in the near future.

During the first five years of the Great Lakes Restoration Initiative, federal agencies and their partners implemented projects in urban areas to reduce sediment, nutrient, toxic contaminant and pathogen loadings to Great Lakes tributaries and nearshore waters. The GLRI funded green infrastructure projects in Great Lakes shoreline cities to reduce untreated stormwater runoff and to improve nearshore water quality. These green infrastructure projects reduce flooding, increase greenspace in urban areas and return vacant properties to productive use. Watershed management projects were also implemented to stabilize stream banks, increase forest cover, restore wetlands and improve water quality at beaches in urban areas.

**Urban land use predictions generated through the USGS Climate Change Impacts Program and provided by Dr. Bryan C. Pijanowski, Purdue University (http://ltm.agriculture.purdue.edu/)*

Measure of Progress with Annual Targets	Baseline/ Universe	2015 Target	2016 Target	2017 Target	2018 Target	2019 Target
• Projected volume of untreated urban runoff captured or treated by GLRI-funded projects (measured in millions of gallons)	Baseline: 0 Universe: N/A	30	70	120	185	250

Additional Measures of Progress

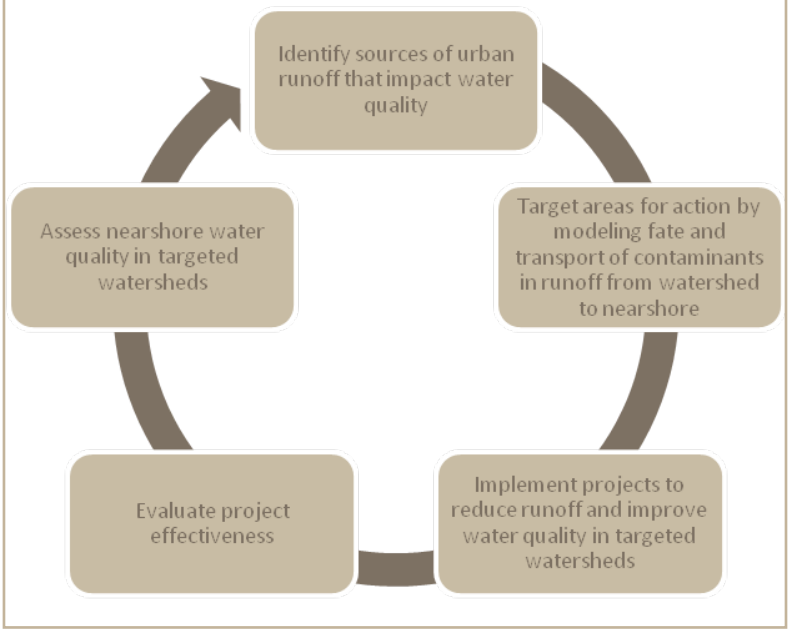
- Number of GLRI-funded projects implemented to reduce the impacts of untreated urban runoff on the Great Lakes
- Measured volume of untreated urban runoff captured or treated by monitored GLRI-funded projects

Under GLRI Action Plan II, federal agencies and their partners will continue to implement watershed management and green infrastructure projects to reduce the impacts of polluted urban runoff on nearshore water quality at beaches and in other coastal areas. These projects will capture or slow the flow of untreated runoff and filter out sediment, nutrients, toxic contaminants, pathogens and other pollutants prior to entering Great Lakes tributaries and nearshore waters.

Federal agencies and their partners will build green infrastructure, install tributary buffers, restore coastal wetlands, and re-vegetate and re-forest areas near Great Lakes coasts and tributaries.

These and other actions to reduce untreated runoff will be implemented in urban areas that have adopted watershed management strategies. Urban runoff reduction projects will be evaluated to determine their effectiveness. This information along with the assessment of water quality will be used to target future actions.

Reducing Runoff and Improving Nearshore Health in Urban Watersheds



Green Infrastructure Captures and Filters Urban Runoff



Image courtesy of Chicago Department of Transportation

Habitats and Species

Objective

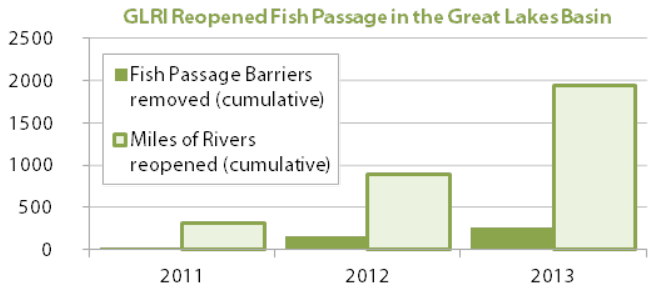
Protect, restore and enhance habitats to help sustain healthy populations of native species

Commitment

- Remove or bypass barriers on Great Lakes tributaries to facilitate fish passage
- Protect, restore and enhance Great Lakes coastal wetlands
- Protect, restore and enhance GLRI-targeted habitats in the Great Lakes basin



Great Lakes Restoration Initiative Habitat Restoration and Species Protection Projects (2010-2013)





During the first five years of the Great Lakes Restoration Initiative, federal agencies and their partners, including states and tribes, worked to protect, restore and enhance habitat in the Great Lakes basin. Projects were implemented to maintain healthy populations of native species in aquatic and terrestrial habitats. More than 600 habitat protection, restoration, and enhancement projects were implemented throughout the Great Lakes basin by federal agencies and their partners. More than 80,000 acres of wetlands and 33,000 acres of coastal, upland, and island habitat were protected, restored and enhanced. Over 250 barriers were removed or bypassed in Great Lakes tributaries, enabling access by fish and other aquatic organisms to over 1,900 additional miles of river. Data was also collected to document baseline conditions for fish, amphibian, invertebrate, bird, plant and water quality for all coastal wetlands in order to inform protection and restoration decisions.

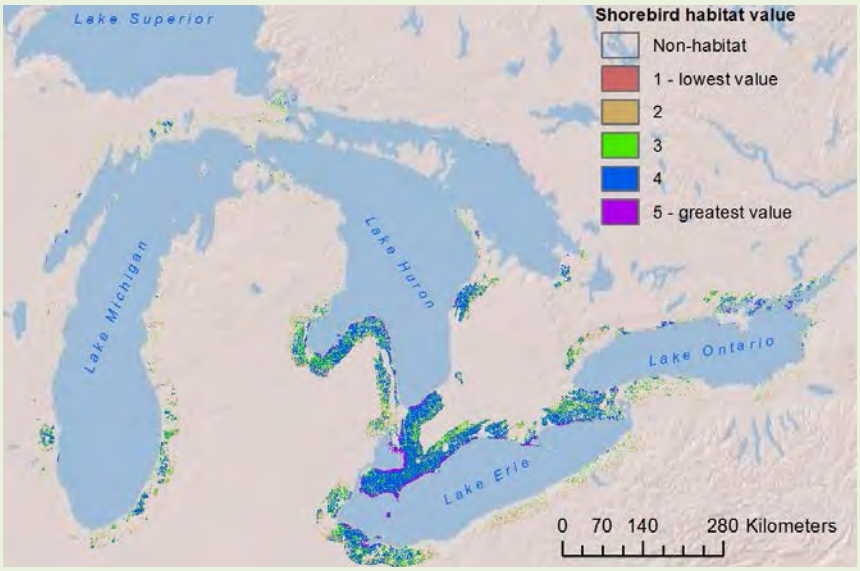
Measures of Progress with Annual Targets	Baseline/Universe	2015 Target	2016 Target	2017 Target	2018 Target	2019 Target
• Number of miles of Great Lakes tributaries reopened by GLRI-funded projects	Baseline: 1,900 Universe: N/A	2,200	2,500	2,800	3,100	3,400
• Number of miles of Great Lakes shoreline and riparian corridors protected, restored and enhanced by GLRI-funded projects*	Baseline: 0 Universe: N/A	75	100	175	225	300
• Number of acres of Great Lakes coastal wetlands protected, restored and enhanced by GLRI-funded projects*	Baseline: 0 Universe: 260,000	7,000	15,000	30,000	52,000	60,000
• Number of acres of other habitats in the Great Lakes basin protected, restored and enhanced by GLRI-funded projects	Baseline: 117,000 Universe: 1,290,000	127,000	147,000	167,000	187,000	207,000

**This Measure of Progress is a modification of an Action Plan I Measure of Progress that has been modified to more accurately track actions funded by GLRI. The baseline is zero because the new Action Plan II Measure of Progress is not the same metric as the Action Plan I Measure of Progress.*

Under GLRI Action Plan II, federal agencies and their partners will implement protection, restoration and enhancement projects focused on open water, nearshore, connecting channels, coastal wetland and other habitats in the Great Lakes basin. Projects will include:

- Removing dams and replacing culverts to create fish habitat and reconnect migratory species to Great Lakes tributaries
- Restoring riparian and in-stream habitat to prevent erosion and to create sufficient habitat for aquatic species
- Protecting and restoring coastal wetlands
- Restoring habitat necessary to sustain populations of migratory native species
- Implementing offshore reef rehabilitation projects to promote natural fish spawning, and
- Protecting, restoring, and managing existing wetlands and high-quality upland areas to sustain diverse, complex, and interconnected habitats for species reproduction, growth, and seasonal refuge.

The process for protecting, restoring and enhancing habitats will begin with identifying projects based on priorities in the Lake Biodiversity Conservation Strategies and other regional-scale conservation strategies. Projects will contribute to the complexity of habitat types necessary to sustain populations of native species. A range of habitat assessment and evaluation activities will inform the prioritization, execution, and measurement of GLRI actions. The activities will also provide information on ecosystem processes, stressors and changing conditions due to emerging problem such as urban growth and climate change.



Great Lakes Migratory Bird Stopover Habitat

Migratory stopover sites are places where migrating birds stop to rest, refuel and seek shelter en route between breeding and wintering areas. The map shows the best sites on the Great Lakes shoreline (in blue and purple) that can shelter and provide food for these birds. GLRI is protecting, restoring and enhancing the sites most suitable for migratory birds.

Ewert et. al., On a Wing and a GIS Layer: Prioritizing Migratory Bird Stopover Habitat along Great Lakes Shorelines, November 2012

Habitats and Species

Objective

Maintain, restore and enhance populations of native species

Commitment

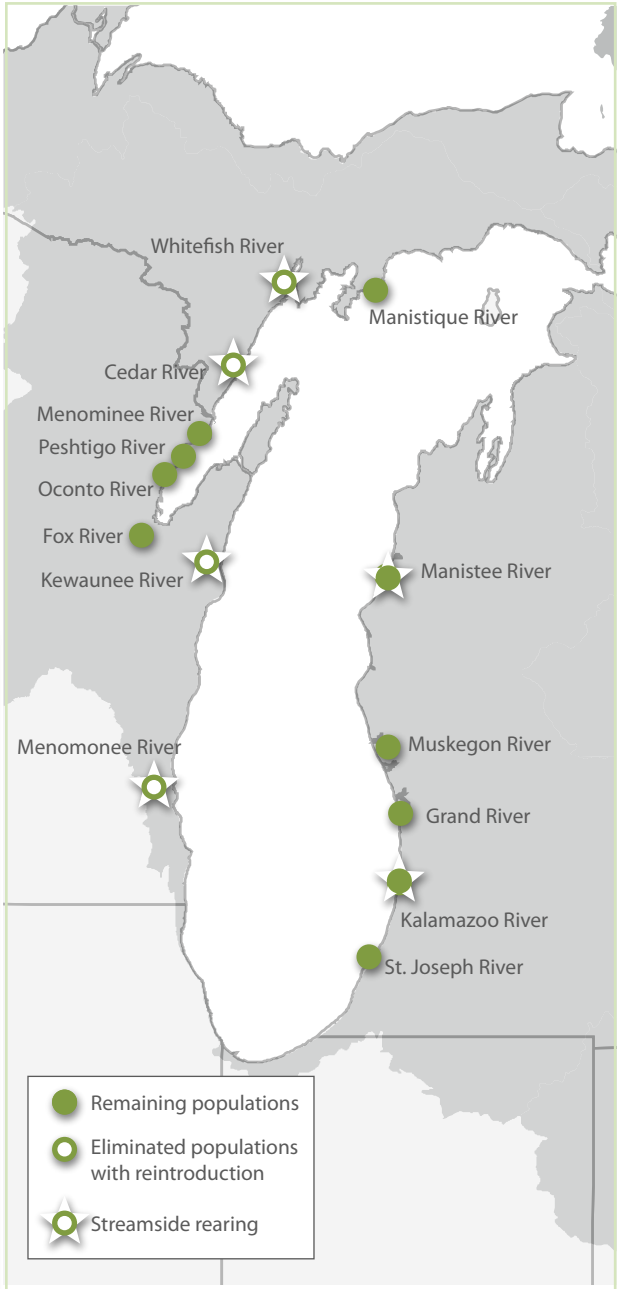
- Promote the recovery of priority federally-listed endangered, threatened and candidate species
- Promote self-sustaining populations of GLRI-targeted native, non-threatened and non-endangered species

During the first five years of the Great Lakes Restoration Initiative, federal agencies and their partners worked to maintain, restore and enhance populations of native fish and wildlife species. The following actions were taken to conserve native species that were once broadly distributed across the lakes:

- Assisting with the delisting of the federally endangered Lake Erie water snake;
- Improving conditions for the following endangered and threatened species: bog turtle, Canada lynx, copperbelly water snake, Eastern Massasauga rattlesnake, Hines emerald dragonfly, Karner blue butterfly, Kirtland's warbler, lakeside daisy, Mitchell's satyr butterfly, piping plover, and Pitchers thistle; and,
- Implementing projects that led to 48 populations of native aquatic non-threatened and non-endangered species becoming self-sustaining in the wild.



The Great Lakes Restoration Initiative is supporting projects to protect endangered populations of **piping plover** in the Great Lakes region. At Wilderness State Park in Michigan, recovery efforts were implemented to support 3-6 pairs of piping plover. At Sleeping Bear Dunes National Lakeshore, federal agencies and their partners are protecting and monitoring the largest concentration of breeding piping plover in the Great Lakes region.



Lake sturgeon *declined dramatically in the late 1800s due to overfishing, pollution and habitat loss. Though many populations were wiped out long ago, lake sturgeon still persist in ten rivers around Lake Michigan at a small fraction of their historic abundance. GLRI is supporting stream-side rearing units around the Lake to reintroduce or supplement juvenile lake sturgeon in Lake Michigan rivers.*

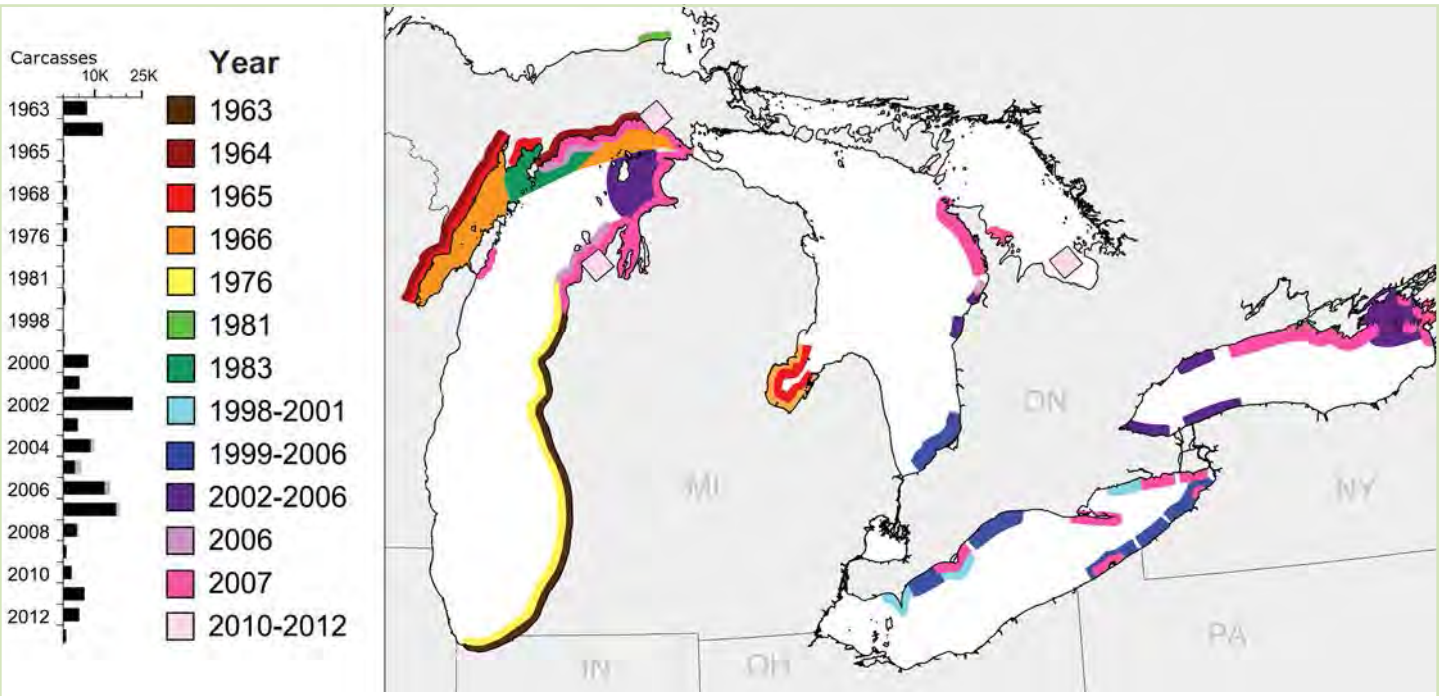
Measures of Progress

- Number of GLRI-funded projects that promote recovery of federally-listed endangered, threatened, and candidate species
- Number of GLRI-funded projects that promote populations of native non-threatened and non-endangered species self-sustaining in the wild

Under GLRI Action Plan II, federal agencies and their partners will work to maintain, restore and enhance populations of native fish and wildlife species. Projects will:

- Protect and restore species diversity
- Reintroduce populations of native species to restored habitats and evaluate their survival
- Protect or restore species that are culturally significant to tribes in the Great Lakes region
- Manage invasive species that inhibit the sustainability of native species
- Pioneer species propagation and relocation techniques, and
- Implement other activities necessary for the eventual recovery of federal and state threatened and endangered species

These GLRI-funded species protection, restoration and enhancement projects will be targeted based on Great Lakes restoration and conservation plans. These projects will often be conducted in tandem with GLRI-funded habitat projects. Federal agencies and their partners will evaluate population dynamics, biological complexity, and within-species diversity to aid in successfully maintaining fish and wildlife communities. These projects will be evaluated on an annual basis and the results of these evaluations will be used to prioritize the locations and species to be targeted in the future.



Botulism outbreaks *cause extensive mortality of fish and fish-eating birds in the Great Lakes. Although periodic outbreaks have occurred in the Great Lakes since the 1960s, outbreaks have become more common and widespread since 1999 — particularly in Lakes Michigan, Erie, and Ontario. Botulism has been responsible for over 80,000 bird deaths on the Great Lakes since 1999. GLRI projects are identifying the causes of and potential solutions to this problem. (Redrawn from Zuccarino-Crowe 2009. Bird carcass data from USGS, Michigan Department of Natural Resources, Canadian Wildlife Health Center and the Canadian Wildlife Health Service.)*

Foundations for Future Restoration Actions

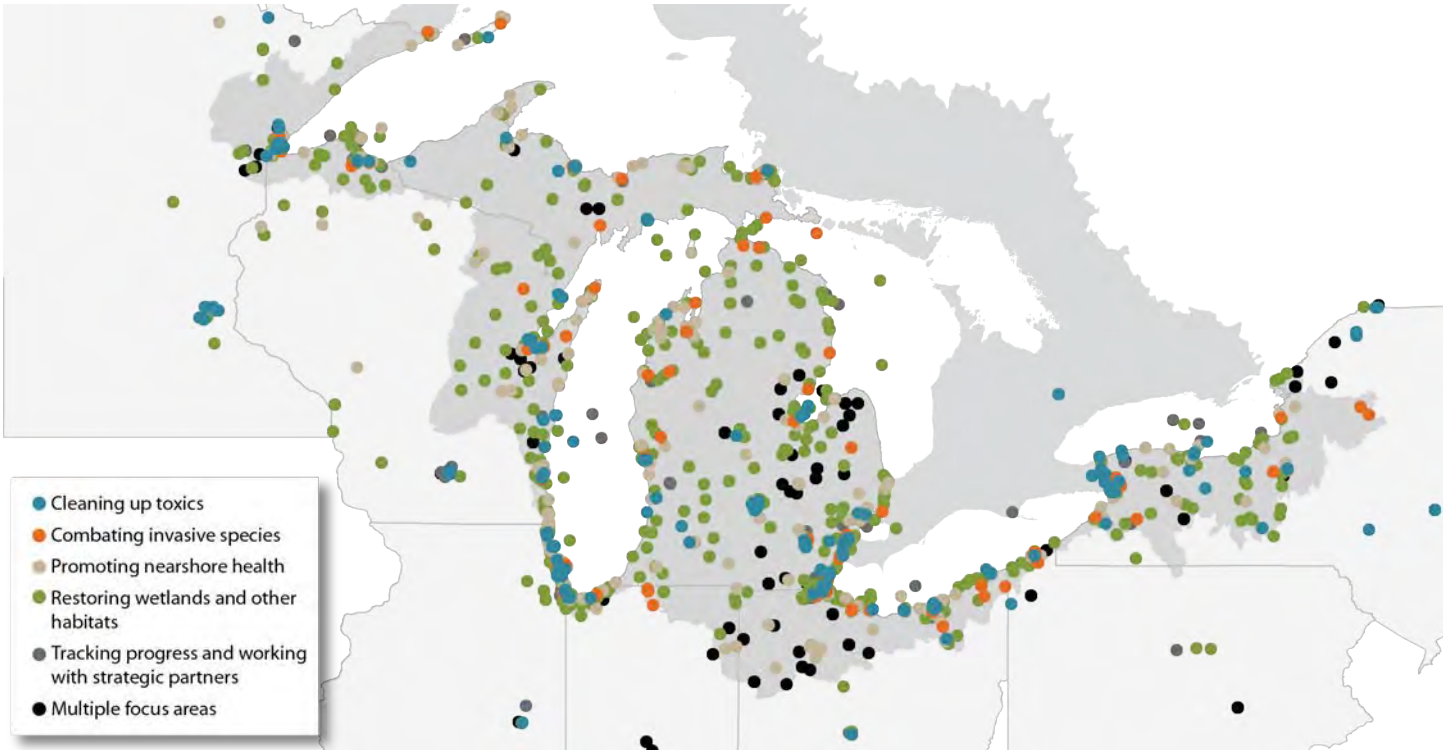
Objective

Ensure climate resiliency of GLRI-funded projects

Commitment

• Incorporate climate resiliency criteria in project selection processes

Great Lakes Restoration Initiative Projects Funded During 2010 - 2013



During the first five years of the Great Lakes Restoration Initiative, federal agencies funded over 2,000 projects across the Great Lakes basin. These projects address the most urgent issues in the Great Lakes: cleaning up toxics and areas of concern, combating invasive species, promoting nearshore health by protecting watersheds from polluted runoff and restoring wetlands and other habitats.

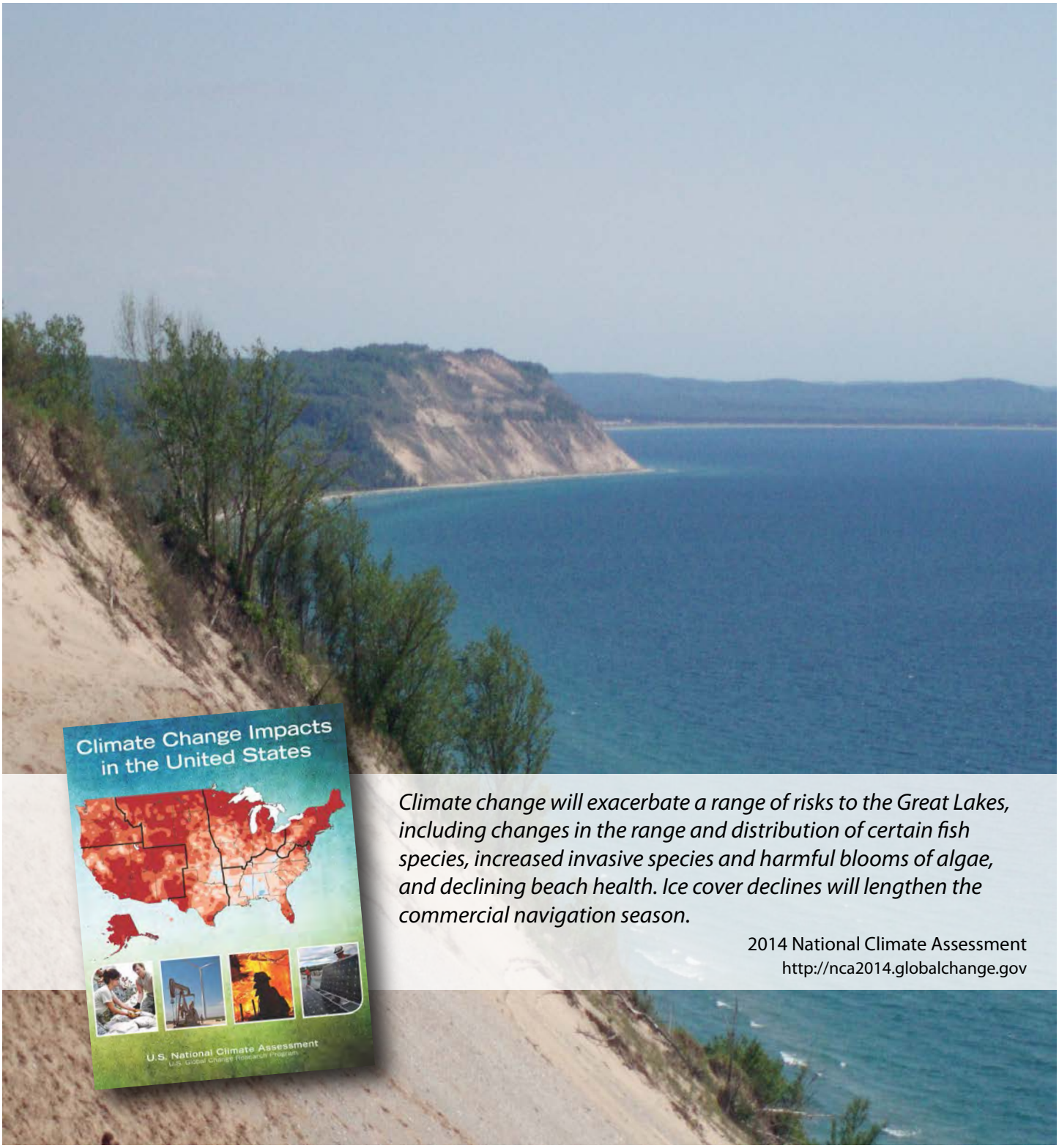
The Government Accountability Office and the EPA Science Advisory Board recommend that federal agencies consider the potential impacts of climate change on the restoration and protection work funded by GLRI. The Great Lakes Advisory Board recommends that the GLRI Action Plan:

> …acknowledge that climate change, and the resulting changes to local meteorology, can compromise the long-term effectiveness of the restoration work being done through the GLRI. To ensure the long-term viability of any specific restoration project, the GLRI awarding agency should consider how each proposed project may be affected by any impacts of climate change. This is best done during the project selection process.

Under GLRI Action Plan II, federal agencies will develop standardized climate resiliency criteria that will be used to design and select GLRI projects. The standardized criteria will be developed using lessons learned from previous and ongoing GLRI-projects and will also draw on federal agencies' climate adaptation plans and other project assessment tools that measure resiliency. These criteria will ensure, for example, that GLRI restoration projects incorporate plant and tree species that are suitable for current and projected future climatic conditions. Similarly, these criteria will be used to design watershed restoration projects to take into account potential impacts of more frequent or intense storms on water flow, erosion and runoff. Information about the climate resiliency criteria will be distributed to GLRI partners so that climate change resiliency can be incorporated into the early stages of the GLRI project development process. The federal agencies will review the standardized climate resiliency criteria on an annual basis and incorporate updated climate change information.

Measures of Progress

- By 2016, a standardized set of climate resiliency criteria will be developed for GLRI-projects
- Starting in 2017, projects will include climate resiliency criteria in planning and implementation



Climate change will exacerbate a range of risks to the Great Lakes, including changes in the range and distribution of certain fish species, increased invasive species and harmful blooms of algae, and declining beach health. Ice cover declines will lengthen the commercial navigation season.

2014 National Climate Assessment
http://nca2014.globalchange.gov

Foundations for Future Restoration Actions

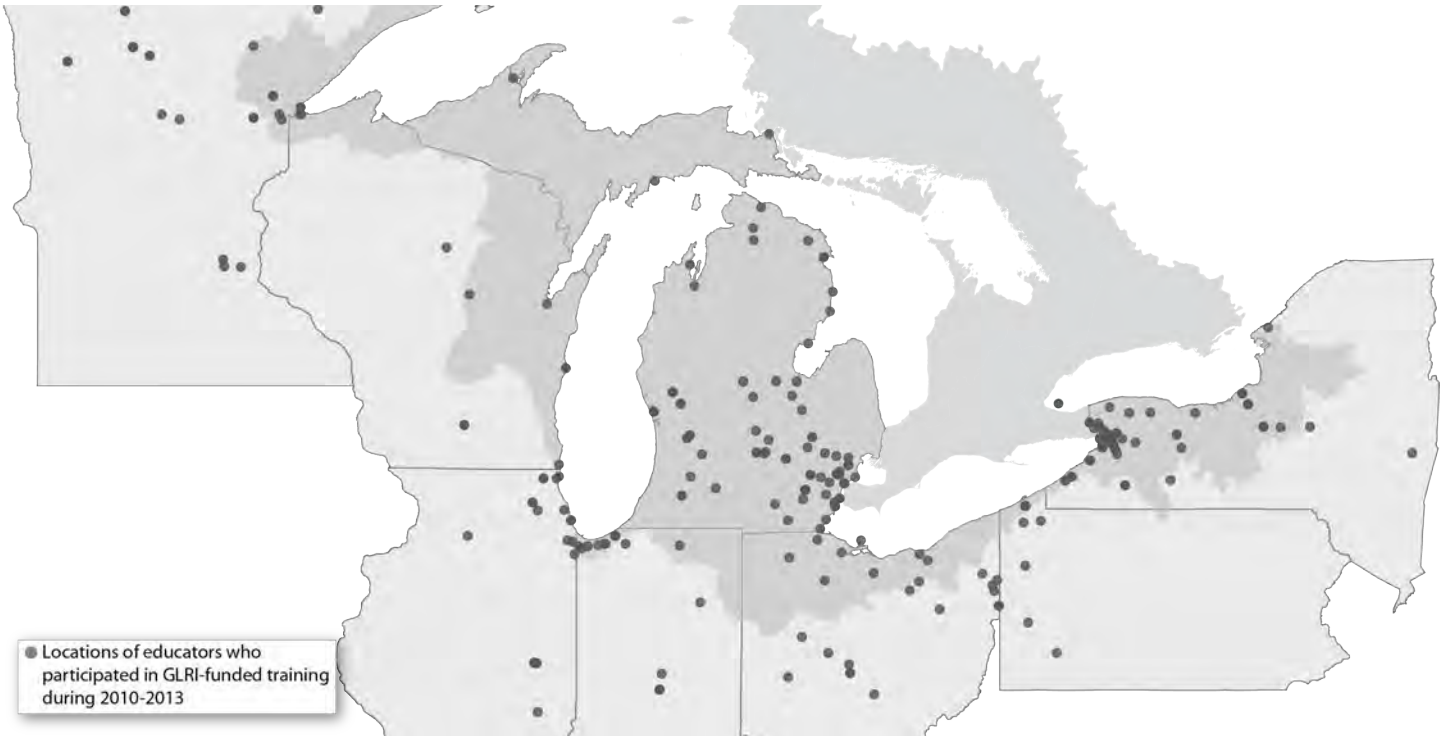
Objective

Educate the next generation about the Great Lakes ecosystem

Commitment

- Promote Great Lakes-based ecosystem education and stewardship, with a focus on educator training

Great Lakes Restoration Initiative Trains Educators Across the Great Lakes Region



During the first five years of the Great Lakes Restoration Initiative, federal agencies and their partners implemented a number of efforts to promote Great Lakes-based environmental education and stewardship, including:

- The Center for Great Lakes Literacy (CGLL) was established by the Great Lakes Sea Grant Network to develop a community of Great Lakes-literate educators, students, scientists, environmental professionals and citizen volunteers dedicated to improved Great Lakes stewardship.
- The Great Lakes Bay Watershed Education and Training Program (B-WET) was created to promote hands-on environmental activities that are aligned with academic learning standards.

Collectively, CGLL, B-WET and other education projects have resulted in over 850 educational institutions incorporating Great Lakes specific material into their broader environmental education curricula. It is estimated that more than 115,000 students have participated in these classes.



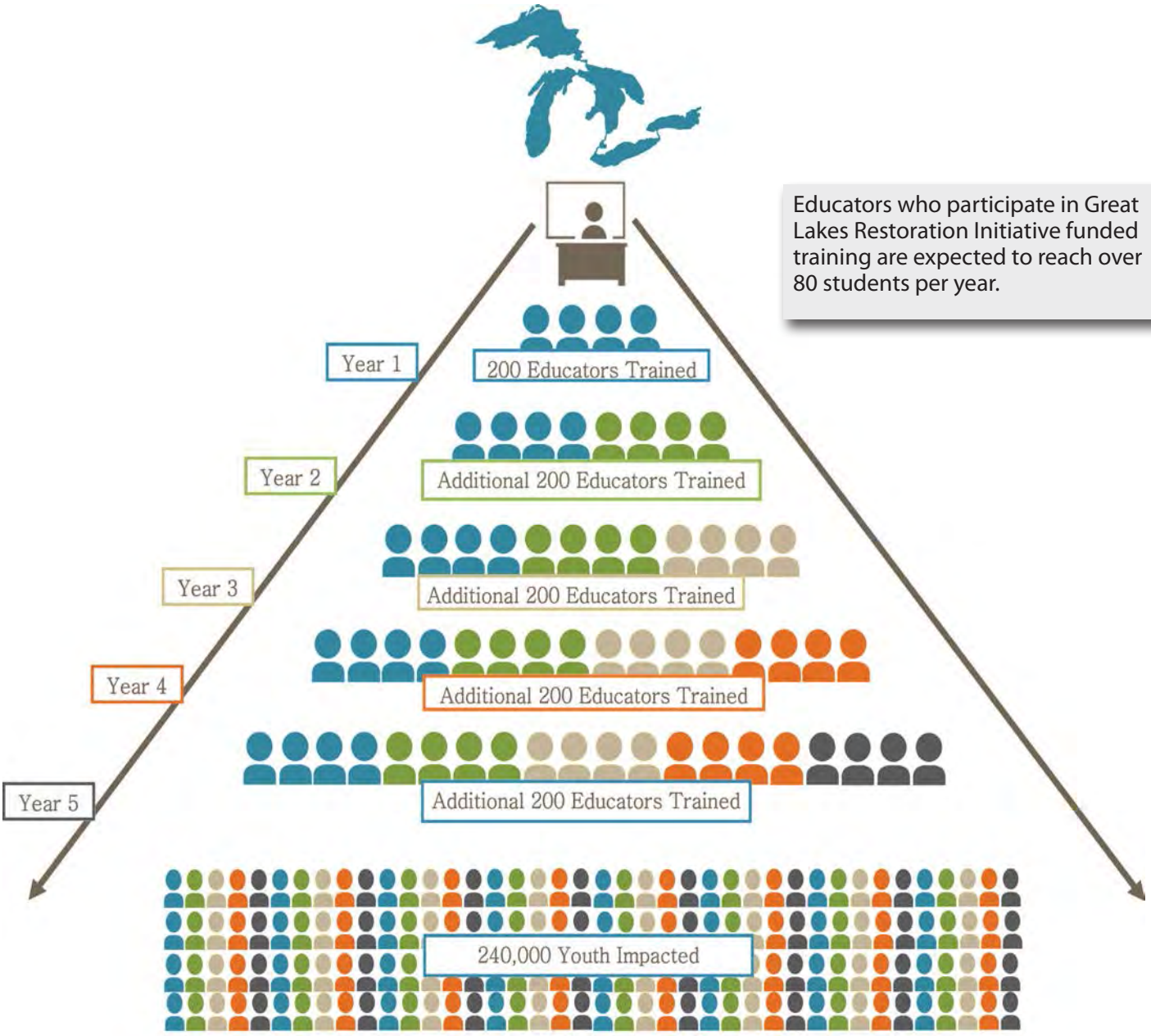
The Great Lakes Restoration Initiative Funds Great Lakes Sea Grant "Teach the Teachers" Projects

During the summer of 2013, elementary and high-school teachers from five states participated in a seven day Shipboard and Shore line Science workshop on Lake Ontario aboard the Lake Guardian, a U.S. Environmental Protection Agency (EPA) research vessel. The teachers assisted with collecting water and bottom sediment samples at numerous nearshore and offshore field stations including sites near Toronto, Rochester, Oswego, Clayton and the Thousand Islands Biological Station. This workshop was one of several courses for environmental educators funded through the Great Lakes Restoration Initiative.

Measures of Progress

- Number of educators trained through GLRI-funded projects
- Number of people educated on the Great Lakes ecosystem through GLRI-funded place-based experiential learning activities

Under GLRI Action Plan II, federal agencies and their partners will continue to promote Great Lakes-based ecosystem education and stewardship for K-12 school students and other interested audiences (e.g., courses at parks, nature centers, museums and zoos). GLRI partners will work with existing environmental education programs, foster the growth of new programs, and align new and/or existing curricula with the Great Lakes Literacy Principles as well as state and national academic learning standards. There will be an emphasis on training educators in order to maximize the number of students engaged over time. Federal agencies that are stewards of lands and waters important to the Great Lakes ecosystem will also provide place-based experiential learning to the public. GLRI projects will include an evaluation component to ensure that the education programs directed towards educators are ultimately implemented in the classroom.



Educators who participate in Great Lakes Restoration Initiative funded training are expected to reach over 80 students per year.

Foundations for Future Restoration Actions

Objective

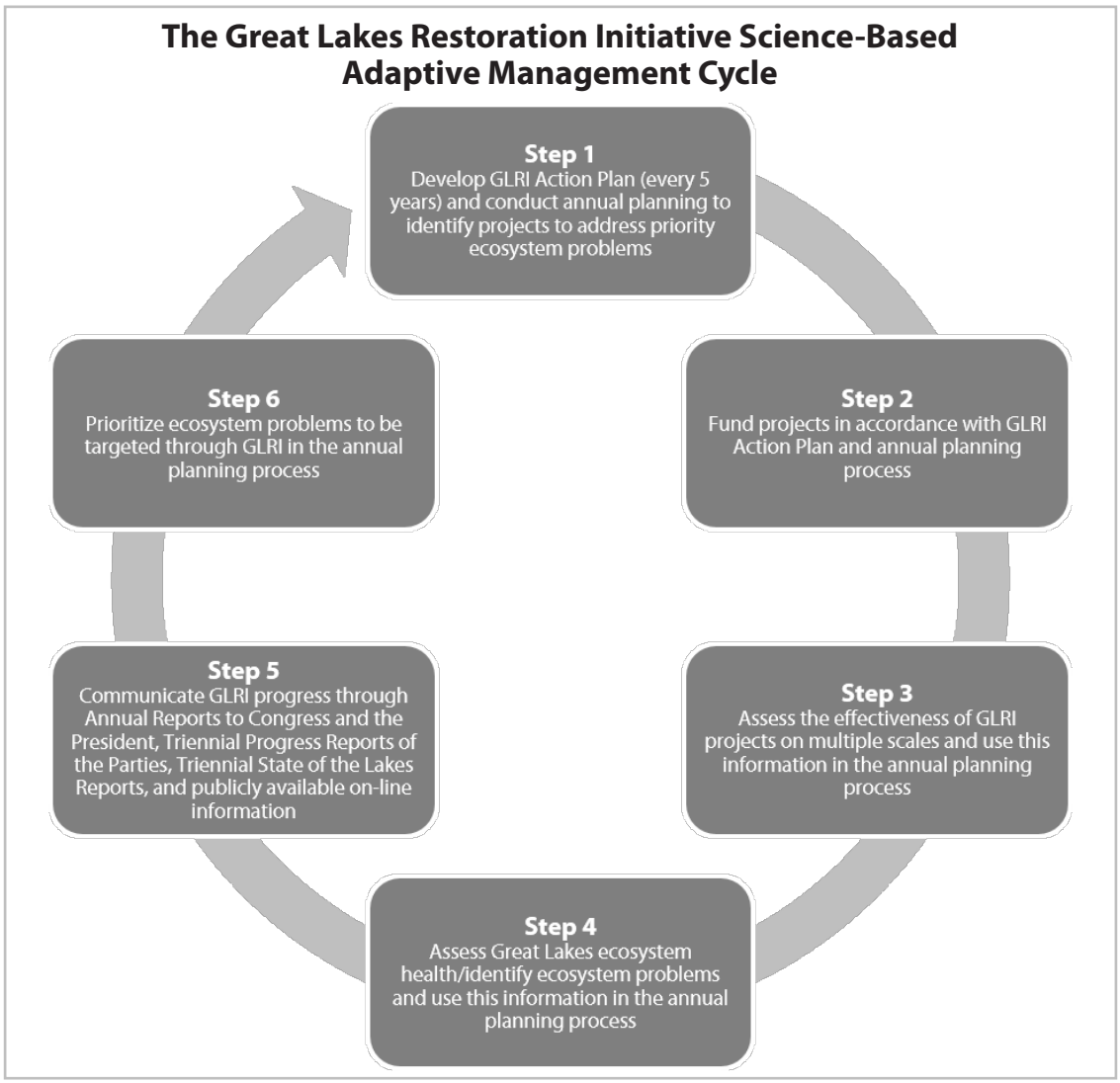
Implement a science-based adaptive management approach for GLRI

Commitments

- Evaluate the effectiveness of GLRI-funded projects
- Assess the overall health of the Great Lakes ecosystem and identify the most significant remaining problems
- Identify watersheds, habitats, and species to be targeted by the GLRI
- Report on GLRI progress and Great Lakes ecosystem health

The GLRI science-based adaptive management process is intended to guide restoration and protection actions by using the best available science and applying lessons learned from past and ongoing GLRI projects and programs. Federal agencies involved in the GLRI will use this science-based adaptive management cycle to identify the most critical environmental problems in the Great Lakes ecosystem and to select projects that will most effectively address those problems. As part of this process, federal agencies will consult with their state and tribal partners and will seek input from the Great Lakes Advisory Board, the scientific community, Lakewide Action and Management Plan partnerships and the general public.

The cycle consists of two science-based planning processes — one that occurs every five years and one that is implemented annually. Every five years, federal agencies develop a GLRI Action Plan to establish principal initiatives, commitments, metrics and long-term goals. Federal agencies also conduct annual planning to identify specific projects and programs to target the highest priority problems in the Great Lakes ecosystem.



Measures of Progress

- Project evaluations completed and used to prioritize GLRI funding decisions each year
- Annual Great Lakes monitoring conducted and used to prioritize GLRI funding decisions each year
- GLRI-targeted watersheds, habitats and species identified and used to prioritize GLRI funding decisions
- Issue annual GLRI Reports to Congress and the President
- Issue Great Lakes Water Quality Agreement Triennial Progress Reports of the Parties
- Issue triennial State of the Lakes reports
- Periodically update publicly available online information about the GLRI

Step 1: Conduct annual planning to identify projects to address priority ecosystem problems consistent with the GLRI Action Plan.

Federal agencies prepare a GLRI Action Plan that establishes long-term goals, objectives, commitments and measures of progress. Federal agencies also conduct an annual planning process to prioritize restoration and protection work to address the most critical Great Lakes ecosystem problems. The annual planning process identifies specific projects and programs to target priority Great Lakes ecosystem problems. The annual planning process relies on the best available scientific information on the current state of Great Lakes ecosystem health and an assessment of the effectiveness of past GLRI projects.

Step 2: Fund projects in accordance with the GLRI Action Plan and annual planning process.

Federal agencies fund individual restoration and protection projects in accordance the GLRI Action Plan and the annual planning process. Individual agencies use grants, contracts, cooperative agreements and direct implementation to fund projects within each agency's area of expertise. For example, the Fish and Wildlife Service focuses on habitat restoration and species protection work and the Natural Resources Conservation Service focuses on soil and water conservation projects that reduce nutrient loading in the Great Lakes basin. In addition, agencies often use GLRI funds to leverage projects funded by their base budgets and vice versa.

Step 3: Assess effectiveness of GLRI projects on multiple scales.

Every project is evaluated upon completion to ensure that it was implemented as proposed. Select projects are assessed to determine project effectiveness so that future GLRI investments are maximized taking into account "lessons learned." Project assessments can occur on an individual project basis or, where feasible, on an "aggregation of projects" basis. Information from these assessments will be used in the annual planning process.

Step 4: Assess Great Lakes ecosystem health and identify ecosystem problems.

Federal agencies and partners assess ecosystem health on a periodic basis in order to measure progress towards the long-term goals identified at the beginning of this action plan and to continually identify the most significant ongoing and emerging problems in the Great Lakes ecosystem. Federal agencies conduct monitoring activities (e.g., water quality monitoring, fish monitoring, air monitoring, human health monitoring) that produce information used in these assessments. This information will be used in the annual planning process.

Step 5: Communicate GLRI progress through Annual Reports to Congress and the President, Triennial Progress Reports of the Parties, Triennial State of the Lakes Reports, and publicly available on-line information.

Because of the tremendous interest in the health of the Great Lakes, federal agencies periodically produce a variety of reports on GLRI activities and ecological indicators of the overall health of the Great Lakes ecosystem. Agencies also frequently update publicly available on-line information about the Great Lakes and the GLRI.

Step 6: Prioritize ecosystem problems to be targeted through GLRI.

Every year, federal agencies restart the adaptive management cycle by modifying priorities, as appropriate, based on knowledge gained by assessing completed GLRI projects and by assessing the health of the Great Lakes ecosystem and the long-term goals identified at the beginning of this action plan.

Great Lakes Interagency Task Force



COASTAL FISH & WILDLIFE HABITAT RATING FORM

Name of Area:	**Genesee River**
Designated:	**October 15, 1987**
County:	**Monroe**
Town(s):	**Rochester**
7½' Quadrangle(s):	**Rochester East, NY; Rochester West, NY**

Score	Criterion
20	Ecosystem Rarity (ER) One of 4 major New York tributaries of Lake Ontario; unusual in the Great Lakes Plain ecological region, but rarity is reduced by human disturbances. Geometric mean: $(16 \times 25)^{½}$
0	Species Vulnerability (SV) Spotted salamander (SC) and spotted turtle (SC) have been observed but the extent of use not well documented.
16	Human Use (HU) A major recreational fishing area on Lake Ontario, attracting anglers from throughout New York State and beyond. Locally important for birdwatching and informal nature study.
9	Population Level (PL) Concentrations of spawning slamonids are among the largest occuring in New York's Great Lakes tributaries; unusual in the ecological region.
1.2	Replaceability (R) Irreplaceable

SIGNIFICANCE VALUE = [(ER + SV + HU + PL) X R] = **54**

SIGNIFICANT COASTAL FISH AND WILDLIFE HABITATS PROGRAM
A PART OF THE NEW YORK COASTAL MANAGEMENT PROGRAM

BACKGROUND

New York State's Coastal Management Program (CMP) includes a total of 44 policies which are applicable to development and use proposals within or affecting the State's coastal area. Any activity that is subject to review under Federal or State laws, or under applicable local laws contained in an approved local waterfront revitalization program will be judged for its consistency with these policies.

Once a determination is made that the proposed action is subject to consistency review, a specific policy aimed at the protection of fish and wildlife resources of statewide significance applies. The specific policy statement is as follows: "Significant coastal fish and wildlife habitats will be protected, preserved, and, where practical, restored so as to maintain their viability as habitats." The New York State Department of Environmental Conservation (DEC) evaluates the significance of coastal fish and wildlife habitats, and following a recommenda-tion from the DEC, the Department of State designates and maps specific areas. Although designated habitat areas are delineated on the coastal area map, the applicability of this policy does not depend on the specific location of the habitat, but on the determination that the proposed action is subject to consistency review.

Significant coastal fish and wildlife habitats are evaluated, designated and mapped under the authority of the Coastal Management Program's enabling legislation, the Waterfront Revitalization and Coastal Resources Act (Executive Law of New York, Article 42). These designations are subsequently incorporated in the Coastal Management Program under authority provided by the Federal Coastal Zone Management Act.

This narrative, along with its accompanying map, constitutes a record of the basis for this significant coastal fish and wildlife habitat's designation and provides specific information regarding the fish and wildlife resources that depend on this area. General information is also provided to assist in evaluating impacts of proposed activities on parameters which are essential to the habitat's values. This information is to be used in conjunction with the habitat impairment test found in the impact assessment section to determine whether the proposed activities are consistent with the significant coastal habitats policy.

DESIGNATED HABITAT: GENESSEE RIVER

LOCATION AND DESCRIPTION OF HABITAT:

The Genesee River is a major tributary of Lake Ontario, located in the City of Rochester, Monroe County (7.5' Quadrangles: Rochester West, N.Y.; and Rochester East, N.Y.). The fish and wildlife habitat is an approximate six and one-half mile segment of the river, extending from Lake Ontario to "Lower Falls" (located just above Driving Park Avenue), which is a natural impassable barrier to fish. The Genesee River is a large, warmwater river, with a drainage area of nearly 2,500 square miles, and an average annual discharge of approximately 2,800 cubic feet per second. Maximum water depths of up to 25 feet occur near the river mouth, and a navigation channel has been dredged upstream approximately two and one-half miles. Much of this lower segment is bordered by dense commercial, industrial, and residential development, accompanied by extensive bulkheading. Above this area, the Genesee River flows through a relatively undeveloped wooded gorge, and has a fringe of emergent wetland vegetation along much of its shoreline. This portion of the river is relatively shallow, with a rocky bottom. The only significant development within the gorge is an industrial wastewater treatment facility. However, the river has been subject to considerable water pollution problems, including discharges of sewage and chemical contaminants. Above Lower Falls, the Genesee River has been dammed for hydroelectric power development, resulting in some alteration of river flows downstream.

FISH AND WILDLIFE VALUES:

The Genesee River is one of 4 major New York tributaries of Lake Ontario. The large size of this river, and the fact that much of the river corridor is essentially undisturbed, makes this one of the most important potential fish and wildlife habitats in the Great Lakes Plain ecological region of New York State. However, water pollution, and extensive alteration of the lower river channel, have reduced the environmental quality of this area.

The Genesee River is a highly productive warmwater fisheries habitat, supporting concentrations of many resident and Lake Ontario based fish species. Among the more common resident species are smallmouth bass, brown bullhead, northern pike, channel catfish, walleye, carp, and white sucker. Lake-run species found in the Genesee River include white bass, yellow perch, white perch, smelt, bowfin, sheepshead, rock bass, and American eel. These fish populations are supplemented by seasonal influxes of large numbers of trout and salmon. In the spring (late February - April), steelhead (lake-run rainbow trout) run up the river, and lake trout occur at the mouth. In fall (September - November, primarily), concentrations of coho and chinook salmon, brown trout, and steelhead, are found throughout the river during their spawning runs. The salmonid concentrations in the Genesee River are among the largest occurring in tributaries of Lake Ontario, and are largely the result of an ongoing effort by the NYSDEC to establish a major salmonid fishery in the Great Lakes through stocking. In 1985, approximately 20,000 steelhead and 300,000 chinook salmon were released in the river. The Genesee River provides an important recreational fishery, attracting anglers from throughout New York State and beyond. Its location within the city results in very heavy fishing pressure from residents of the Rochester metropolitan area, concentrated primarily at the river mouth, and between Seth Green Island and Lower Falls. Although the seasonal salmonid runs attract the greatest number of fishermen to the area, the river also supports an active warmwater fishery.

Wildlife use of the Genesee River is not well documented, but appears to be limited to those species that can inhabit a relatively narrow riparian corridor, and are somewhat tolerant of human activities in adjacent areas. Possible or confirmed breeding bird species include mallard, wood duck, great horned owl, red-tailed hawk, spotted sandpiper, belted kingfisher, red-winged blackbird, swamp sparrow, and various woodpeckers and woodland passerine birds. Several beaver colonies inhabit the lower Genesee in the vicinity of Turning Point Park and Rattlesnake Point. Spotted salamander (SC) and spotted turtle (SC) have been observed in the Lower Genesee River Gorge but the extent of use by these species is not well documented. Other wildlife species occurring in the area probably include raccoon, muskrat, northern water snake, and painted turtle. The wildlife resources of the Genessee River and its adjacent woodlands are locally important for birdwatching, and informal nature study.

IMPACT ASSESSMENT:

A **habitat impairment test** must be met for any activity that is subject to consistency review under federal and State laws, or under applicable local laws contained in an approved local waterfront revitalization program. If the proposed action is subject to consistency review, then the habitat protection policy applies, whether the proposed action is to occur within or outside the designated area.

The specific **habitat impairment test** that must be met is as follows.

> In order to protect and preserve a significant habitat, land and water uses or development shall not be undertaken if such actions would:
>
> ! destroy the habitat; or,
>
> ! significantly impair the viability of a habitat.

Habitat destruction is defined as the loss of fish or wildlife use through direct physical alteration, disturbance, or pollution of a designated area or through the indirect effects of these actions on a designated area. Habitat destruction may be indicated by changes in vegetation, substrate, or hydrology, or increases in runoff, erosion, sedimentation, or pollutants.

Significant impairment is defined as reduction in vital resources (e.g., food, shelter, living space) or change in environmental conditions (e.g., temperature, substrate, salinity) beyond the tolerance range of an organism. Indicators of a significantly impaired habitat focus on ecological alterations and may include but are not limited to reduced carrying capacity, changes in community structure (food chain relationships, species diversity), reduced productivity and/or increased incidence of disease and mortality.

The *tolerance range* of an organism is not defined as the physiological range of conditions beyond which a species will not survive at all, but as the ecological range of conditions that supports the species population or has the potential to support a restored population, where practical. Either the loss of individuals through an increase in emigration or an increase in death

rate indicates that the tolerance range of an organism has been exceeded. An abrupt increase in death rate may occur as an environmental factor falls beyond a tolerance limit (a range has both upper and lower limits). Many environmental factors, however, do not have a sharply defined tolerance limit, but produce increasing emigration or death rates with increasing departure from conditions that are optimal for the species.

The range of parameters which should be considered in appplying the habitat impairment test include but are not limited to the following:

1. physical parameters such as living space, circulation, flushing rates, tidal amplitude, turbidity, water temperature, depth (including loss of littoral zone), morphology, substrate type, vegetation, structure, erosion and sedimentation rates;

2. biological parameters such as community structure, food chain relationships, species diversity, predator/prey relationships, population size, mortality rates, reproductive rates, meristic features, behavioral patterns and migratory patterns; and,

3. chemical parameters such as dissolved oxygen, carbon dioxide, acidity, dissolved solids, nutrients, organics, salinity, and pollutants (heavy metals, toxics and hazardous materials).

Although not comprehensive, examples of generic activities and impacts which could destroy or significantly impair the habitat are listed below to assist in applying the habitat impairment test to a proposed activity.

Any activity that substantially degrades water quality, increases temperature or turbidity, reduces flows, or increases water level fluctuations in the Genesee River, would affect the biological productivity of this area. Important species of fish and wildlife would be adversely affected by water pollution, such as chemical contamination (including food chain effects), oil spills, excessive turbidity, and waste disposal. Continued efforts should be made to improve water quality in the river, which is primarily dependent upon controlling discharges from combined sewer overflows, industrial point sources, ships, and agricultural lands in the watershed.

The existing navigation channel should be dredged between mid-May and mid-August or between mid-November and early April in order to avoid impacts on the habitat use by migrating salmonids. Activities that would affect the habitat abobe the navigation channel should not be conducted during the period from March through July in order to protect warmwater fish habitat values. New dredging (outside the existing navigation channel) would likely result in the direct removal of warmwater fish habitat values and should not be permitted. Contaminated dredge spoils should be deposited in upland containment areas.

Barriers to fish migration, whether physical or chemical, would have significant effects on fish populations within the river, and in adjacent Lake Ontario waters. Installation and operation of water intakes could have a significant impact on fish concentrations, through impingement of juveniles and adults, or entrainment of eggs and larval stages. Elimination of wetland habitats (including submergent aquatic beds), and further human encroachment into the river channel, would severely reduce its value to fish and wildlife. Existing areas of natural vegetation bordering the river should be maintained for their value as cover, perching sites, and buffer zones.

KNOWLEDGEABLE CONTACTS:

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NYS Department of State
162 Washington Avenue
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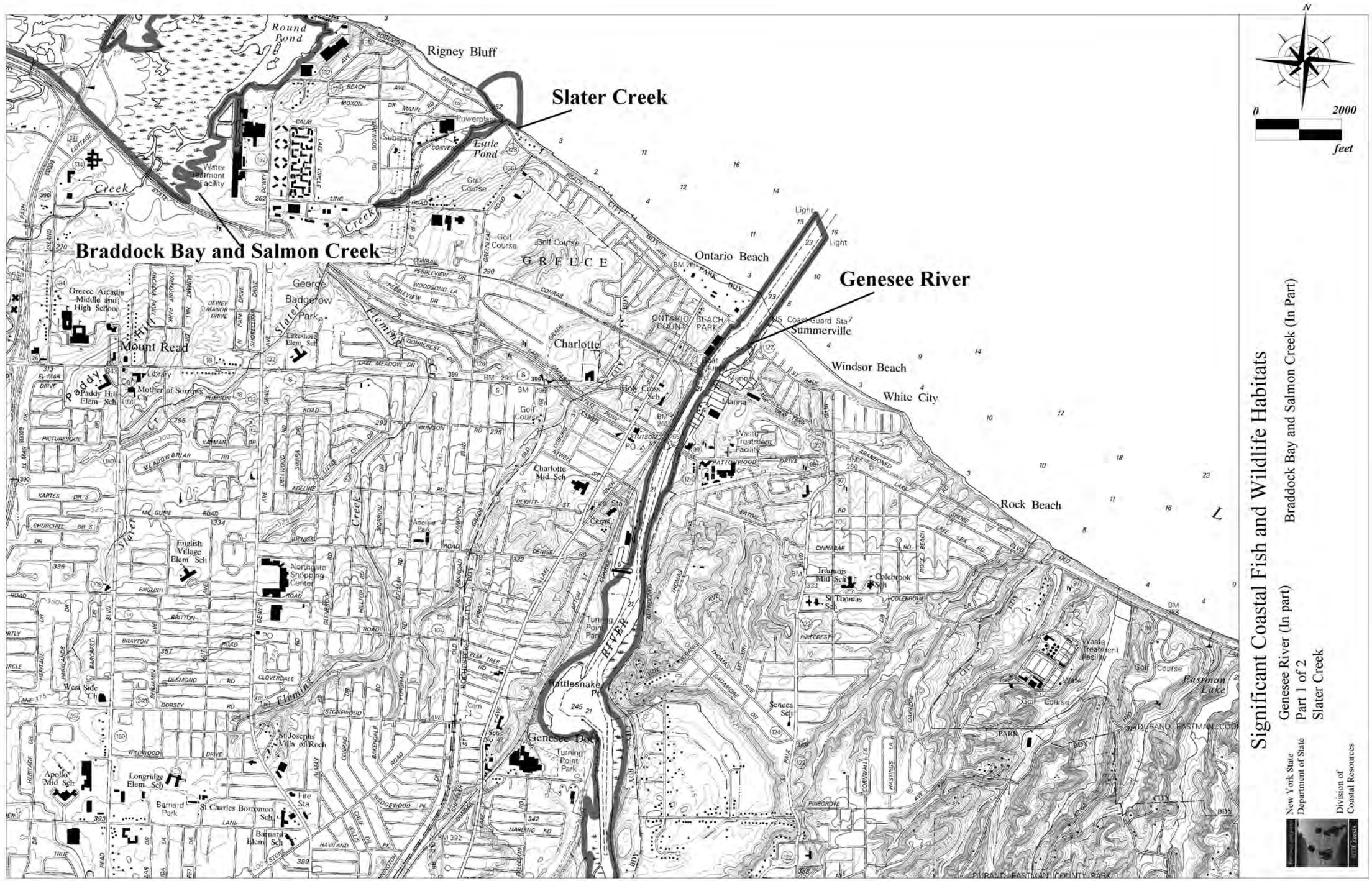
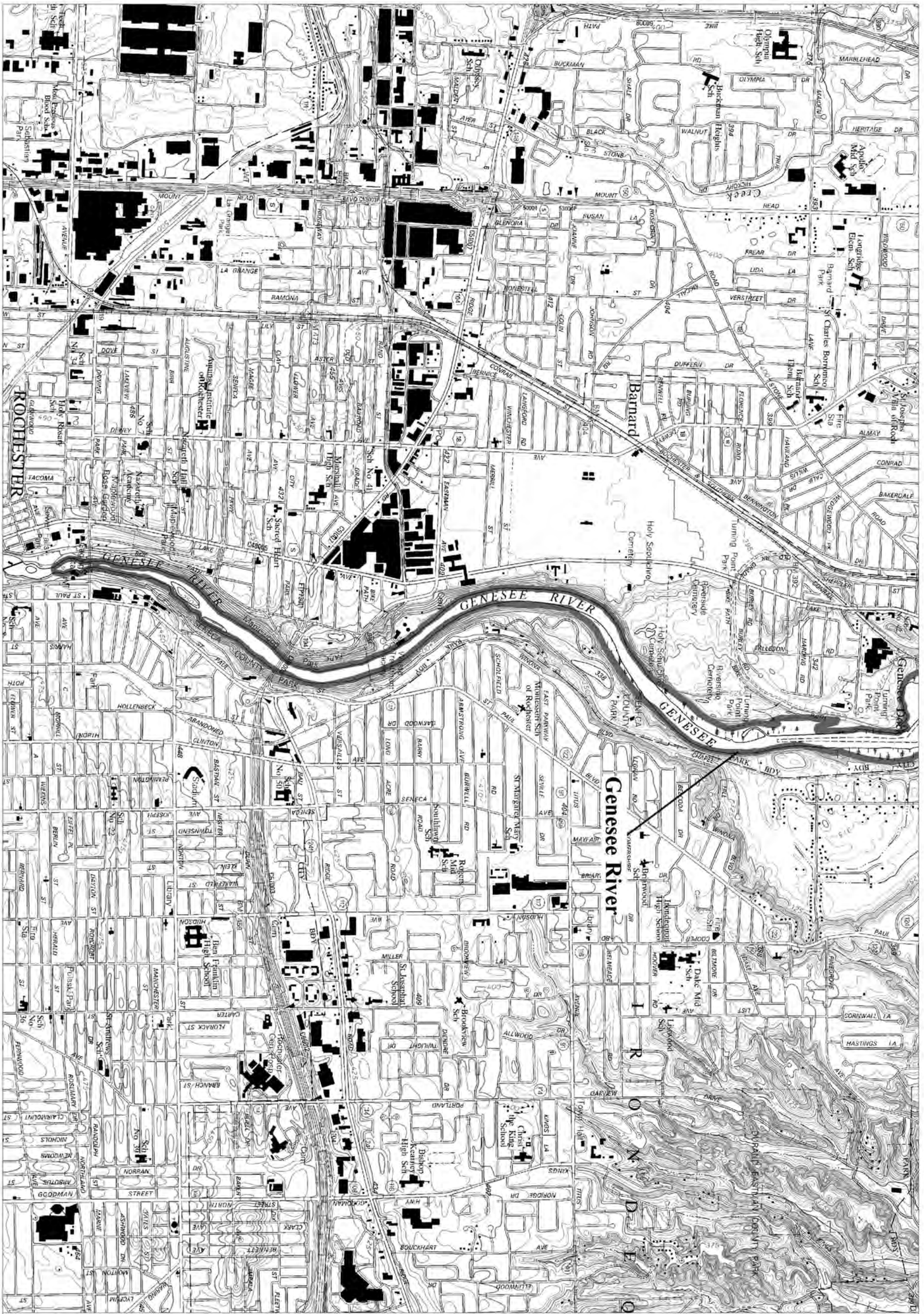
or Larry Myers, Wildlife Manager
or Matt Sanderson, Environmental Protection Biologist
NYSDEC - Region 8
6274 E. Avon-Lima Road
Avon, N.Y., 14414
Phone: (716) 226-2466

NYSDEC - Information Services
700 Troy-Schenectady Road
Latham, NY 12110
Phone: (518) 783-3932

Robert Stevenson, Chairman
Rochester Environmental Commission
City of Rochester
City Hall
30 Church Street
Rochester, NY 14614


Braddock Bay and Salmon Creek
Slater Creek
Genesee River
Rigney Bluff
Round Pond
Little Pond
Water Department Facility
Creek
Creek
Creek
Slater
Fleming
Mount Read
Paddy Hill
Ontario Beach
GREECE
Ontario Beach Park
Charlotte
Summerville
Windsor Beach
White City
Rock Beach
Marina
Golf Course
Golf Course
Golf Course
Golf Course
Golf Course
Badgerow Park
Lakeshore Elem Sch
Greece Arcadia Middle and High School
Mother of Sorrows
Paddy Hill Elem Sch
Library
Holy Cross Sch
Charlotte Mid Sch
Fire Sta
Coast Guard Sta
Waste Treatment Facility
Waste Treatment Facility
Powerplant
Substation
Light
Light
Light

To print on 8.5 x 11 set printer to "Fit to Print" or reduce to 64%



Significant Coastal Fish and Wildlife Habitats

Genesee River (In Part)
Part 2 of 2

New York State
Department of State

Division of
Coastal Resources

HMP Appendix L- DEC Rare and Endangered Species Assessment

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Division of Fish, Wildlife & Marine Resources
New York Natural Heritage Program
625 Broadway, 5th Floor, Albany, New York 12233-4757
Phone: (518) 402-8935 • **Fax:** (518) 402-8925
Website: www.dec.ny.gov

Joe Martens
Commissioner

December 3, 2014

Jason Babcock-Stiner
Bergmann Associates
28 East Main Street, 200 First Federal Plaza
Rochester, NY 14614

Dear Mr. Babcock-Stiner:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to the Port of Rochester-Genesee River Harbor Management Plan in the City of Rochester and Town of Irondequoit, Monroe County.

We have no recent records of rare or state-listed animals or plants, or of significant natural communities, at this site or in its immediate vicinity.

Our database does have a historical record of a rare plant in the area of the project site: in 1921, **handsome sedge** (*Carex formosa*, listed by NYS as Threatened) was collected from a "border of rich, sandy woods" on the east side of the Genesee River near Rochester. We do not know the precise location where this plant was collected, we have no recent information on this population, and there is uncertainty regarding its continued presence. We provide this information for your general reference. While its current status is not known, if suitable habitat for this plant is present at the project site, it is possible that it may still be found there. We recommend that any field surveys to the site include a search for this species, particularly in areas that are currently undeveloped and may still contain suitable habitat. If any rare plants or animals are documented during site visits, we request that information on the observations be provided to the New York Natural Heritage Program so that we may update our database.

Information about handsome sedge in New York, including habitat, biology, identification, conservation, and management, is available online in Natural Heritage's Conservation Guide at http://www.guides.nynhp.org/guide.php?id=9481.

For most sites, comprehensive field surveys have not been conducted; the above information only includes records from our databases. We cannot provide a definitive statement as to the presence or absence of all rare or state-listed species or significant natural communities.

Sincerely,

Nick Conrad

Nicholas Conrad
Information Resource Coordinator

1194

HMP Appendix M - 2014 Port Docking Fees and Rates

PORT OF ROCHESTER (NY)

Section 1: 2014 Docking Permit Application

Note: Permits required for stays 24 hours or more and for all commercial vessels

Vessel Information

Name of Vessel:_____ Length:_____ ft Draft: _____ft Beam:_____ft

Registration Number:_____ Nation of Registry: _____

Registered Owner:_____ Telephone:_____ _____

Address:_____ E-mail: _____

Captain Name: _____ Number at Port: _____

Number of Passengers:_____ Prior Port of Call:_____

Insurance Company: _____ Policy #: _____ _____

Address: _____ Telephone #_____

Amount General Liability Coverage $_____ Fax #: _____

Docking Dates

Date and Estimated Time of Arrival: Date: _____ Time: _____ am/pm

Date and Estimated Time of Departure: Date: _____ Time: _____ am/pm

If seasonal, indicate dates and hours vessel will be at dock: _____

Services Required: *(additional charges apply – see section II)*

Water hookup ___Yes ___No If yes, estimated quantity _____gal.

Trash removal ___Yes ___No If yes, estimated volume _____cu. yds.

Line Handlers ___Yes ___No

Other (please specify):_____ Fuel delivery _____ Pump out/waste removal _____ Crane service

Comments: _____

_____

PORT OF ROCHESTER (NY)

Section II: Docking Rates & Fees

FEET	2010 Fee *	Number of Days	Total Cost
30	$30.00/day	X _____	= $
31-100	$50.00/day	X _____	= $
101-199	$200.00/day	X _____	= $
200-299	$250.00/day	X _____	= $
300+	$300.00/day	X _____	= $
		Sub-Total	**= $**
Permit Application Fee			**= $ 20.00**
		Number of People	
Passenger Usage Fee	$ 10.00/person	X _____	**= $**
		Total	**$**

* Fee waived for government owned vessels and those visiting for special events and public tours

Please complete application and send along with payment to:
City of Rochester/Department of Recreation & Youth Services
400 Dewey Ave.
Rochester, NY 14613
Tel: 585.428.6755
Fax: 585.428.6021

Please make checks payable to: City of Rochester/City Treasurer

Additional Services:

(Contact City of Rochester Call Center @ 311 for assistance):

Water: $1.76/1000 gallons *(Advanced notice required. To be billed based on actual amount used)*
Electric: $25.00/24-hour period *(Advanced notice required. To be billed based on actual amount used)*

Special Events and Conference Room:

RENTS	Rate	Hr
Waterside Room up to 250 people	$600.00*	Flat
Waterside Room 250 – 500 people	$800.00*	Flat
Conference Room	$250.00**	8

For rentals and pricing information on Special Events/Conferences, please contact:
David Carpenter at the Rochester Riverside Convention Center (RRCC) @ 585.232.7200 x1405

- *Rates cut in half if food and beverage provided by RRCC
- **$25 for each additional hour includes table and chairs

PORT OF ROCHESTER (NY)

Section III: Supplies and Services

PORT REGULATIONS: City Regulations and Policy

PORT OPERATIONS CONTACT:
Paul Scuderi
City of Rochester
Asst. Director or Real Estate
Tel: 585.428.7527
Fax: 585.428.6137
Email: scuderip@cityofrochester.gov

U.S. COAST GUARD:
Chief Stephen L. Engle, Officer in Charge
USCG Station Rochester
5500 St. Paul Blvd.
Rochester, NY
Tel: 585.342.4149 Non-emergency
Tel: 585.342.4140 Emergency
Marine Channel VHF 16
Chart location: 167
Boat Call Signs: 47285 & 25693

CUSTOMS/IMMIGRATION:
Charles Guinta, Officer in Charge
US Customs and Border Protection
1200 Brooks Avenue (Rochester Airport)
Rochester NY 14624
Tel: 585.263.6293
Email: charles.a.giunta@cbp.dhs.gov

MOORING:

LOCATION:	Adjacent to and north of Port Terminal . West Side Genesee River @ Southern Terminus of Piers
LENGTH:	900 Linear Feet
DEPTH-CHANNEL:	Dredged to 6 - 21 ft. depth
DOCKSIDE:	12–14 ft. below average low water datum at 6 ft. off of dock wall
PIER FACE:	Smooth concrete wall
PIER HEIGHT:	7 – 9 ft. above average water level
MOORING FITTINGS:	Steel bollards
TIDAL RANGE:	Zero

PORT SERVICES:

ELECTRICITY:	Available on special request.
PORTABLE WATER:	Yes – standard ¾ hose connection. 1 ¾ inch outlet fitting available upon request. Note: backflow device required
SEWAGE:	No pump out on site. Pumps available at: Shumway Marine 585.342.3030 Marine VHF CH. 16 Chart Location: 164 Pelican Marine Chart location: 155 Available by tank truck at dock: Chamberlain Septic @ 585.265.0277 Monroe county septic @ 585.247.5508
TELEPHONE:	Public payphone inside Terminal Building. Special telephone hookup available through: Frontier Telephone @ 585.777.1234
TRASH REMOVAL:	Limited amount available on site. Arrangements can be made for dumpster service at: BFI Waste Systems @ 585.254.2060 Waste Management @ 585.254.3500
PIER LIGHTING:	Yes
BROW AVAILABLE:	No
LINE HANDLERS:	No
SECURITY:	Routine patrol by Rochester Police and Monroe county sheriff. On-site Security (located inside Terminal Building). 24-hour security can be arranged for additional fee.
BULK FUEL LOADING:	Available by tank truck/USCG licensed supplier only: Suburban Propane 3325 Chili Ave. Rochester, NY 14624 585.436.4000 Samson Fuel 2285 Ridgeway Ave. Rochester, NY 14626 585.254.6010

CRANE SERVICES:	Not available on site. Service available by special arrangement through: Gottry Corp. 585.235.7400
SHIP REPAIRS & SUPPLIES *(Primarily Recreation Vessels):*	Shumway Marine Chart Location 164 585.342.3030 Marine VHF CH. 16 West Marine Stutson Plaza 585.266.0200

ON-SHORE FACILITIES:

PHYSICIAN:	Rochester Medical Society (referrals) Monday-Saturday @ 585.743.7573
DENTIST:	Rochester General Hospital Dental Emergency @ 585.922.2000
HOSPITAL: (7 days)	Rochester General Hospital Medical Emergency @ 585.922.4000
AMBULANCE:	Rural/Metro Ambulance 911
ROCHESTER FIRE:	911 / MARINE VHF CH 19 USCG Station 585.342.4149
ROCHESTER POLICE:	Rochester Police Dept. @ 911
SHERIFFS' MARINE PATROL:	911 / MARINE VHF CH16 585.342.4149
BANK:	Chase 3917 Lake Ave Rochester, NY 800.935.9935
ATM:	Inside Terminal Building
POST OFFICE:	Charlotte Station 4455 Lake Ave 8:30 a.m. until 5 p.m. weekdays 9 a.m. until 12 p.m. Saturdays 585.663.5755
DRUG STORE:	Rite Aid Drugs - 1.2 miles from dock

	Stutson Plaza Chart location D 9:30 a.m. until 9:30 p.m. 585.544.5720
GROCERY STORE:	Herrema's Food Market 125 Pattonwood Drive 6:30 a.m. until 10 p.m. daily 585.342.4240 Delivery Available
CONVENIENCE STORE:	Wilson Farms - .5 miles from dock Lake Ave 7 a.m. until 12 midnight daily
COIN LAUNDRY:	Stutson Plaza - 1.2 miles from dock Chart Location D

Important:

- Please note that the Genesee Channel is subject to significant surge conditions which are most prevalent during sustained periods of North to North East winds. The surge may increase with little or no warning. Please be prepared for rapidly changing water levels.
- The City of Rochester is not responsible for any damage sustained to your vessel while docked at the Port of Rochester. Permittee assumes all liabilities and risks while docked at the Port.
- Permiteee is responsible for compliance with all applicable City of Rochester rules and regulations in place while docked at the Port. All rules and regulations are subject to change without advanced notice.

Thank You….and enjoy your visit!

HMP Appendix N - WRDA of 2007 Rochester Authorization of Appropriation

[110th Congress Public Law 114]
[From the U.S. Government Printing Office]

[DOCID: f:publ114.110]

[[Page 121 STAT. 1041]]

Public Law 110-114
110th Congress

An Act

To provide for the conservation and development of water and related resources, to authorize the Secretary of the Army to construct various projects for improvements to rivers and harbors of the United States, and for other purposes. <<NOTE: Nov. 8, 2007 - [H.R. 1495]>>

Be it enacted by the Senate and House of Representatives of the United States of America in Congress <<NOTE: Water Resources Development Act of 2007. Inter-governmental relations. 33 USC 2201 note.>> assembled,

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) Short Title.--This Act may be cited as the ``Water Resources Development Act of 2007''.

(b) Table of Contents.--The table of contents for this Act is as follows:

Sec. 1. Short title; table of contents.
Sec. 2. Definition of Secretary.

TITLE I--WATER RESOURCES PROJECTS

Sec. 1001. Project authorizations.
Sec. 1002. Small projects for flood damage reduction.
Sec. 1003. Small projects for emergency streambank protection.
Sec. 1004. Small projects for navigation.
Sec. 1005. Small projects for improvement of the quality of the environment.
Sec. 1006. Small projects for aquatic ecosystem restoration.
Sec. 1007. Small projects for shoreline protection.
Sec. 1008. Small projects for snagging and sediment removal.
Sec. 1009. Small projects to prevent or mitigate damage caused by navigation projects.
Sec. 1010. Small projects for aquatic plant control.

TITLE II--GENERAL PROVISIONS

Sec. 2001. Non-Federal contributions.
Sec. 2002. Funding to process permits.
Sec. 2003. Written agreement for water resources projects.
Sec. 2004. Compilation of laws.
Sec. 2005. Dredged material disposal.
Sec. 2006. Remote and subsistence harbors.
Sec. 2007. Use of other Federal funds.
Sec. 2008. Revision of project partnership agreement; cost sharing.
Sec. 2009. Expedited actions for emergency flood damage reduction.

TITLE V--MISCELLANEOUS

Sec. 5001. Maintenance of navigation channels.
Sec. 5002. Watershed management.
Sec. 5003. Dam safety.
Sec. 5004. Structural integrity evaluations.
Sec. 5005. Flood mitigation priority areas.
Sec. 5006. Additional assistance for authorized projects.
Sec. 5007. Expedited completion of reports and construction for certain projects.
Sec. 5008. Expedited completion of reports for certain projects.
Sec. 5009. Southeastern water resources assessment.
Sec. 5010. Missouri and Middle Mississippi Rivers enhancement project.
Sec. 5011. Great Lakes fishery and ecosystem restoration program.
Sec. 5012. Great Lakes remedial action plans and sediment remediation.
Sec. 5013. Great Lakes tributary models.
Sec. 5014. Great Lakes navigation and protection.
Sec. 5015. Saint Lawrence Seaway.
Sec. 5016. Upper Mississippi River dispersal barrier project.
Sec. 5017. Estuary restoration.
Sec. 5018. Missouri River and tributaries, mitigation, recovery, and restoration, Iowa, Kansas, Missouri, Montana, Nebraska, North Dakota, South Dakota, and Wyoming.
Sec. 5019. Susquehanna, Delaware, and Potomac River basins, Delaware, Maryland, Pennsylvania, and Virginia.
Sec. 5020. Chesapeake Bay environmental restoration and protection program.
Sec. 5021. Chesapeake Bay oyster restoration, Virginia and Maryland.
Sec. 5022. Hypoxia assessment.
Sec. 5023. Potomac River watershed assessment and tributary strategy evaluation and monitoring program.
Sec. 5024. Lock and dam security.
Sec. 5025. Research and development program for Columbia and Snake River salmon survival.
Sec. 5026. Wage surveys.

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Sec. 5027. Rehabilitation.
Sec. 5028. Auburn, Alabama.
Sec. 5029. Pinhook Creek, Huntsville, Alabama.
Sec. 5030. Alaska.
Sec. 5031. Barrow, Alaska.
Sec. 5032. Lowell Creek Tunnel, Seward, Alaska.
Sec. 5033. St. Herman and St. Paul Harbors, Kodiak, Alaska.
Sec. 5034. Tanana River, Alaska.
Sec. 5035. Wrangell Harbor, Alaska.
Sec. 5036. Augusta and Clarendon, Arkansas.
Sec. 5037. Des Arc levee protection, Arkansas.
Sec. 5038. Loomis Landing, Arkansas.
Sec. 5039. California.
Sec. 5040. Calaveras River and Littlejohn Creek and tributaries, Stockton, California.
Sec. 5041. Cambria, California.
Sec. 5042. Contra Costa Canal, Oakley and Knightsen, California; Mallard Slough, Pittsburg, California.
Sec. 5043. Dana Point Harbor, California.
Sec. 5044. East San Joaquin County, California.
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Sec. 5053. San Pablo Bay, California, watershed and Suisun Marsh ecosystem restoration.
Sec. 5054. St. Helena, California.
Sec. 5055. Upper Calaveras River, Stockton, California.
Sec. 5056. Rio Grande environmental management program, Colorado, New Mexico, and Texas.
Sec. 5057. Charles Hervey Townshend Breakwater, New Haven Harbor, Connecticut.
Sec. 5058. Stamford, Connecticut.
Sec. 5059. Delmarva conservation corridor, Delaware, Maryland, and Virginia.
Sec. 5060. Anacostia River, District of Columbia and Maryland.
Sec. 5061. East Central and Northeast Florida.
Sec. 5062. Florida Keys water quality improvements.
Sec. 5063. Lake Worth, Florida.
Sec. 5064. Big Creek, Georgia, watershed management and restoration program.
Sec. 5065. Metropolitan North Georgia Water Planning District.
Sec. 5066. Savannah, Georgia.
Sec. 5067. Idaho, Montana, rural Nevada, New Mexico, rural Utah, and Wyoming.
Sec. 5068. Riley Creek Recreation Area, Idaho.
Sec. 5069. Floodplain mapping, Little Calumet River, Chicago, Illinois.
Sec. 5070. Reconstruction of Illinois and Missouri flood protection projects.
Sec. 5071. Illinois River basin restoration.
Sec. 5072. Promontory Point third-party review, Chicago shoreline, Chicago, Illinois.
Sec. 5073. Kaskaskia River basin, Illinois, restoration.
Sec. 5074. Southwest Illinois.
Sec. 5075. Calumet region, Indiana.
Sec. 5076. Floodplain mapping, Missouri River, Iowa.
Sec. 5077. Paducah, Kentucky.
Sec. 5078. Southern and eastern Kentucky.
Sec. 5079. Winchester, Kentucky.
Sec. 5080. Baton Rouge, Louisiana.
Sec. 5081. Calcasieu Ship Channel, Louisiana.
Sec. 5082. East Atchafalaya basin and Amite River basin region, Louisiana.
Sec. 5083. Inner Harbor Navigation Canal Lock project, Louisiana.
Sec. 5084. Lake Pontchartrain, Louisiana.
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Sec. 5088. St. Mary's River, Maryland.
Sec. 5089. Massachusetts dredged material disposal sites.
Sec. 5090. Ontonagon Harbor, Michigan.
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Sec. 5092. Garrison and Kathio Township, Minnesota.

Sec. 5093. Itasca County, Minnesota.
Sec. 5094. Minneapolis, Minnesota.
Sec. 5095. Northeastern Minnesota.
Sec. 5096. Wild Rice River, Minnesota.
Sec. 5097. Mississippi.
Sec. 5098. Harrison, Hancock, and Jackson Counties, Mississippi.
Sec. 5099. Mississippi River, Missouri and Illinois.
Sec. 5100. St. Louis, Missouri.
Sec. 5101. St. Louis Regional Greenways, St. Louis, Missouri.
Sec. 5102. Missoula, Montana.
Sec. 5103. St. Mary project, Glacier County, Montana.
Sec. 5104. Lower Platte River watershed restoration, Nebraska.
Sec. 5105. Hackensack Meadowlands area, New Jersey.
Sec. 5106. Atlantic Coast of New York.
Sec. 5107. College Point, New York City, New York.
Sec. 5108. Flushing Bay and Creek, New York City, New York.
Sec. 5109. Hudson River, New York.
Sec. 5110. Mount Morris Dam, New York.
Sec. 5111. North Hempstead and Glen Cove North Shore watershed restoration, New York.
Sec. 5112. Rochester, New York.

SEC. 5112. ROCHESTER, NEW YORK.

(a) In General.--The Secretary may participate in the ecosystem restoration, navigation, flood damage reduction, and recreation components of the Port of Rochester waterfront revitalization project, Rochester, New York.

(b) Authorization of Appropriations.--There is authorized to be appropriated $10,000,000 to carry out this section.

SEC. 5113. NORTH CAROLINA.

(a) Establishment of Program.--The Secretary shall establish a program to provide environmental assistance to non-Federal interests in the State of North Carolina.

(b) Form of Assistance.--Assistance provided under this section may be in the form of design and construction assistance for environmental infrastructure and resource protection and development projects in North Carolina, including projects for--

(1) wastewater treatment and related facilities;

(2) combined sewer overflow, water supply, storage, treatment, and related facilities;

(3) drinking water infrastructure including treatment and related facilities;

(4) environmental restoration;

(5) stormwater infrastructure; and

(6) surface water resource protection and development.

(c) Ownership Requirement.--The Secretary may provide assistance for a project under this section only if the project is publicly owned.

(d) Partnership Agreements.--

(1) In general.--Before providing assistance under this section, the Secretary shall enter into a partnership agreement with a non-Federal interest to provide for design and construction of the project to be carried out with the assistance.

(2) Requirements.--Each partnership agreement for a project entered into under this subsection shall provide for the following:

(A) Plan.--Development by the Secretary, in consultation with appropriate Federal and State officials, of a facilities development plan or resource protection plan, including appropriate plans and specifications.

(B) Legal and institutional structures.--Establishment of such legal and institutional structures as are necessary to ensure the effective long-term operation of the project by the non-Federal interest.

(3) Cost sharing.--

(A) In general.--The Federal share of the cost of a project under this section--

(i) shall be 75 percent; and

[[Page 121 STAT. 1238]]

(ii) may be provided in the form of grants or reimbursements of project costs.

(B) Credit for work.--The Secretary shall credit, in accordance with section 221 of the Flood Control Act of 1970 (42 U.S.C. 1962d-5b), toward the non-Federal share of the cost of the project, in an amount not to exceed 6 percent of the total construction costs of the project,

Page:United States Statutes at Large Volume 121.djvu/1258

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[121 STAT. 1237] PUBLIC [121 STAT. 1237]
LAW 110-000—MMMM. DD, 2007

PUBLIC LAW 110–114—NOV. 8, 2007

121 STAT. 1237

SEC. 5111. NORTH HEMPSTEAD AND GLEN COVE NORTH SHORE WATERSHED RESTORATION, NEW YORK.

(a) IN GENERAL.—The Secretary may participate in the ecosystem restoration, navigation, flood damage reduction, and recreation components of the North Hempstead and Glen Cove North Shore watershed restoration, New York. (b) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated $10,000,000 to carry out this section. SEC. 5112. ROCHESTER, NEW YORK.

(a) IN GENERAL.—The Secretary may participate in the ecosystem restoration, navigation, flood damage reduction, and recreation components of the Port of Rochester waterfront revitalization project, Rochester, New York. (b) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated $10,000,000 to carry out this section. SEC. 5113. NORTH CAROLINA.

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(a) ESTABLISHMENT OF PROGRAM.—The Secretary shall establish a program to provide environmental assistance to non-Federal interests in the State of North Carolina. (b) FORM OF ASSISTANCE.—Assistance provided under this section may be in the form of design and construction assistance for environmental infrastructure and resource protection and

HMP Appendix P - USACE Planning Guidance Notebook ER1105-2-100

DEPARTMENT OF THE ARMY
U. S. Army Corps of Engineers
Washington, D.C. 20314-1000

ER 1105-2-100

CECW-P

Regulation
No. 1105-2-100

22 April 2000

Planning
PLANNING GUIDANCE NOTEBOOK

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This engineer regulation supersedes ER 1105-2-100 dated 28 December 1990

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CHAPTER 1

Introduction

1-1. Background. The U.S. Army Corps of Engineers is authorized to carry out Civil Works water resources projects for navigation, flood damage reduction and ecosystem restoration, as well as for storm damage prevention, hydroelectric power, recreation, and water supply. Planning for Federal water resources projects constructed by the Corps of Engineers, along with those of the Bureau of Reclamation, Natural Resource Conservation Service, and the Tennessee Valley Authority, is based on the Principles and Guidelines (P&G) adopted by the Water Resources Council. The P&G are comprised of two parts: The Economic and Environmental *Principles* for Water and Related Land Resources Implementation Studies and The Economic and Environmental *Guidelines* for Water and Related Land Resources Implementation Studies. The first part, commonly referred to as the principles, is reproduced in Figure 1-1. The second part, commonly referred to as the guidelines, expands on the concepts introduced in the principles and provides additional information and requirements to conduct water resources planning studies. Together both parts provide the framework for Corps of Engineers water resources planning studies. Within this framework, the Corps seeks to balance economic development and environmental needs as it addresses water resources problems. The planning process shall address the Nation's water resources needs in a systems context and explore a full range of alternatives in developing solutions. Innovative solutions and the application of the full range of the Corps programs and authorities are integral to the planning process.

1-2. Purpose. This regulation provides the overall direction by which Corps of Engineers Civil Works projects are formulated, evaluated and selected for implementation. It contains a description of the Corps of Engineers planning process, Corps of Engineers missions and programs, specific policies applicable to each mission and program, and analytical requirements. Its fundamental purpose is to describe the planning process in a straightforward, plain-language manner. While that is not always possible in a technical policy document, every effort will be made to make this process understandable not only to planners but to the entire project delivery team, project partners, and the general public. Just as the planning process must reflect reason and common sense; this regulation also shall reflect that same approach.

1-3. Applicability. This engineer regulation applies to all HQUSACE elements, and all USACE commands having Civil Works responsibilities.

1-4. Distribution Statement. Approved for public release, distribution is unlimited.

Economic and Environmental Principles for Water and Related Land Resources Implementation Studies

These Principles are established pursuant to the Water Resources Planning Act of 1965 (Pub. L. 89-80), as amended (42 U.S.C. 1962a-2 and d-1). These Principles supersede the Principles established in connection with promulgation of principles, standards, and procedures at 18 CFR, Parts 711, 713, 714, and 716.

1. Purpose and Scope

These principles are intended to ensure proper and consistent planning by Federal agencies in the formulation and evaluation of water and related land resources implementation studies.

Implementation studies of the following agency activities are covered by these principles:

(a) Corps of Engineers (Civil Works) water resources project plans;

(b) Bureau of Reclamation water resources project plans;

(c) Tennessee Valley Authority water resources project plans;

(d) Soil Conservation Service water resources project plans.

Implementation studies are pre- or postauthorization project formulation or evaluation studies under taken by Federal agencies.

2. Federal Objective

The Federal objective of water and related land resources project planning is to contribute to national economic development consistent with protecting the Nation's environment, pursuant to national environmental statutes, applicable executive orders, and other Federal planning requirements.

(a) Water and related land resources project plans shall be formulated to alleviate problems and take advantage of opportunities in ways that contribute to this objective.

(b) Contributions to national economic development (NED) are increases in the net value of the national output of goods and services, expressed in monetary units. Contributions to NED are the direct net benefits that accrue in the planning area and the rest of the Nation. Contributions to NED include increases in the net value of those goods and services that are marketed, and also of those that may not be marketed.

3. State and Local Concerns

Federal water resources planning is to be responsive to State and local concerns. Accordingly, State and local participation is to be encouraged in all aspects of water resources planning. Federal agencies are to contact Governors or designated State agencies for each affected State before initiating Studies, and to provide appropriate opportunities for State participation. It is recognized, however, that water projects which are local, regional, statewide, or even interstate in scope do not necessarily require a major role for the Federal Government; non-Federal, voluntary arrangements between affected jurisdictions may often be adequate. States and localities are free to initiate planning and implementation of water projects.

4. International Concerns

Federal water resources planning is to take into account international implications, including treaty obligations. Timely consultations with the relevant foreign government should be undertaken when a Federal water project is likely to have a significant impact on any land or water resources within its territorial boundaries.

5. Alternative Plans

Various alternative plans are to be formulated in a systematic manner to ensure that all reasonable alternatives are evaluated.

(a) A plan that reasonably maximizes net national economic development benefits, consistent with the Federal objective, is to be formulated. This plan is to be identified as the NED plan.

(b) Other plans which reduce net NED benefits in order to further address other Federal, State, local, and international concerns not fully addressed by the NED plan should also be formulated.

(c) Plans may be formulated which require changes in existing statutes, administrative regulations, and established common law; such required changes are to be identified.

(d) Each alternative plan is to be formulated in consideration of four criteria: completeness, effectiveness, efficiency, and acceptability. Appropriate mitigation of adverse effects is to be an integral part of each alternative plan.

Figure 1-1

(e) Existing water and related land resources plans, such as State water resources plans, are to be considered as alternative plans if within the scope of the planning effort.

6. Plan Selection

A plan recommending Federal action is to be the alternative plan with the greatest net economic benefit consistent with protecting the Nation's environment (the NED plan), unless the Secretary of the department or head of an independent agency grants an exception to this rule. Exceptions may be made when there are overriding reasons for recommending another plan, based on other Federal, State, local and international concerns.

7. Accounts

Four accounts are established to facilitate evaluation and display of effects of alternative plans. The national economic development account is required. Other information that is required by law or that will have a material bearing on the decision-making process should be included in the other accounts, or in some other appropriate format used to organize information on effects.

(a) The national economic development (NED) account displays changes in the economic value of the national output of goods and services.

(b) The environmental quality (EQ) account displays non-monetary effects on significant natural and cultural resources.

(c) The regional economic development (RED) account registers changes in the distribution of regional economic activity that result from each alternative plan. Evaluations of regional effects are to be carried out using nationally consistent projections of income, employment, output and population.

(d) The other social effects (OSE) account registers plan effects from perspectives that are relevant to the planning process, but are not reflected in the other three accounts.

8. Discount Rate

Discounting is to be used to convert future monetary values to present values.

9. Period of Analysis

The period of analysis to be the same for each alternative plan.

10. Risk and Uncertainty

Planners shall identify areas of risk and uncertainty in their analysis and describe them clearly, so that decisions can be made with knowledge of the degree of reliability of the estimated benefits and costs and of the effectiveness of alternative plans.

11. Cost Allocation

For allocating total project financial costs among the purposes served by a plan, separable costs will be assigned to their respective purposes, and all joint costs will be allocated to purposes for which the plan was formulated. (Cost sharing policies for water projects will be addressed separately.)

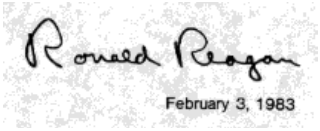
12. Planning Guidance

In order to ensure consistency of Federal agency planning necessary for purposes of budget and policy decisions and to aid States and the public in evaluation of project alternatives, the Water Resources Council (WRC), in cooperation with the Cabinet Council on Natural Resources and Environment, shall issue standards and procedures, in the form of guidelines, implementing these Principles. The head of each Federal agency subject to this order will be responsible for consistent application of the guidelines. An agency may propose agency guidelines which differ from the guidelines issued by WRC. Such agency guidelines and suggestions for improvements in the WRC guidelines are to be submitted to WRC for review and approval. The WRC will forward all agency proposed guidelines which represent changes in established policy in the Cabinet Council on Natural Resources and Environment for its consideration.

13. Effective Date

These Principles shall apply to implementation studies completed more than 120 days after issuance of the standards and procedures referenced in Section 12, and concomitant repeal of 18 CFR, Parts 711, 713, 714, and 716.

These economic and environmental Principles are hereby approved.



(Note: Text retyped for clarity. Signature scanned from original document.)

Figure 1-1 (continued)

1-5. References. Relevant published references indicated in the text of each chapter of this engineer regulation are listed in Appendix A.

1-6. Use of this Engineer Regulation. This engineer regulation provides the requirements for conducting planning studies within the U. S. Army Corps of Engineers Civil Works program. This engineer regulation will also be useful in orienting and familiarizing newly assigned personnel, military and civilian, study /project cost-sharing partners and other interested publics with essential requirements regarding the conduct of Corps of Engineers Civil Works activities.

1-7. Availability. This regulation is available at the following web site: http://www.usace.army.mil/inet/usace-docs/er/er1105-2-100/toc.htm. When this regulation is viewed on this site, active hyperlinks are provided to other sections and appendices within this document and to other related regulations and documents. If this document is printed, the hyperlinked references will have to be printed separately. The version of this regulation on the web site is the official and current version. Every effort will be made to notify users when this regulation is updated.

1-8. Organization. This regulation consists of a main regulation and eight appendices. Appendix B provides the requirements for public involvement, collaboration and coordination in Civil Works planning studies. Appendix C addresses the integration of environmental evaluation and compliance requirements into the planning of Civil Works projects. Appendix D covers economic and social considerations, other than procedures for estimating NED benefits, in water resources planning studies. Appendix E provides policy and planning guidance for each Civil Works mission of the Corps of Engineers. Appendix F provides general program principles, policies and planning guidance for the nine legislative authorities under the Continuing Authorities Program (CAP). Appendix G provides guidance and procedures for the management and conduct of planning studies, activities and programs. Appendix H provides review and approval procedures for decision documents.

CHAPTER 2

Planning Principles

2-1. Introduction. The Corps of Engineers planning process is grounded in the economic and environmental Principles and Guidelines (P&G) promulgated in 1983 and set forth in different parts of this document. It is also grounded in the laws which apply to the Civil Works Program and to the Corps of Engineers missions. The P&G were set forth to provide for the formulation of reasonable plans responsive to National, State and local concerns. Likewise, the plans recommended for implementation, in general, are to reasonably maximize net national benefits. The Corps of Engineers planning process shall place specific emphasis on sound judgment; planners and other team members shall be guided by common sense in applying the policies and procedures contained herein. It also shall reflect a systematic and comprehensive treatment of watershed resources, including urban watershed resources. With regard to site-specific project studies, every effort should be made to assure that both economic and environmental value is added to watershed resources.

2-2. The Federal Objective

a. The Federal Objective. Principles and Guidelines state that the Federal objective of water and related land resources planning is to contribute to national economic development (NED) consistent with protecting the Nation's environment, in accordance with national environmental statutes, applicable executive orders, and other Federal planning requirements. The P&G use of the term objective should be distinguished from study planning objectives, which are more specific in terms of expected or desired outputs. The P&G's objective (Federal objective) may be considered more of a National goal. Water and related land resources project plans shall be formulated to alleviate problems and take advantage of opportunities in ways that contribute to study planning objectives and, consequently, to the Federal objective. Contributions to national economic development (NED outputs) are increases in the net value of the national output of goods and services, expressed in monetary units, and are the direct net benefits that accrue in the planning area and the rest of the Nation. Contributions to NED include increases in the net value of those goods and services that are marketed and also of those that may not be marketed. Protection of the Nation's environment is achieved when damage to the environment is eliminated or avoided and important cultural and natural aspects of our nation's heritage are preserved. Various environmental statutes and executive orders assist in ensuring that water resources planning is consistent with protection. The objectives and requirements of applicable laws and executive orders are considered throughout the planning process in order to meet the Federal objective.

b. Ecosystem Restoration. Ecosystem restoration is one of the primary missions of the Corps of Engineers Civil Works program. The Corps objective in ecosystem restoration planning is to contribute to national ecosystem restoration (NER). Contributions to national ecosystem restoration (NER outputs) are increases in the net quantity and/or quality of desired ecosystem resources. Measurement of NER is based on changes in ecological resource quality

as a function of improvement in habitat quality and/or quantity and expressed quantitatively in physical units or indexes (but not monetary units). These net changes are measured in the planning area and in the rest of the Nation. Single purpose ecosystem restoration plans shall be formulated and evaluated in terms of their net contributions to increases in ecosystem value (NER outputs), expressed in non-monetary units. Multipurpose plans that include ecosystem restoration shall contribute to both NED outputs and NER outputs. In this latter case, a plan that trades off NED and NER benefits to maximize the sum of net contributions to NED and NER is usually recommended.

2-3. The Planning Process. The Corps planning process follows the six-step process defined in the P&G. This process is a structured approach to problem solving which provides a rational framework for sound decision making. The six-step process shall be used for all planning studies conducted by the Corps of Engineers. The process is also applicable for many other types of studies and its wide use is encouraged. The six steps are:

Step 1 - Identifying problems and opportunities
Step 2 - Inventorying and forecasting conditions
Step 3 - Formulating alternative plans
Step 4 - Evaluating alternative plans
Step 5 - Comparing alternative plans
Step 6 - Selecting a plan

A detailed description of each step is presented in subsequent paragraphs. Corps decision making is generally based on the accomplishment and documentation of all of these steps. It is important to stress the iterative nature of this process. As more information is acquired and developed, it may be necessary to reiterate some of the previous steps. The six steps, though presented and discussed in a sequential manner for ease of understanding, usually occur iteratively and sometimes concurrently. Iterations of steps are conducted as necessary to formulate efficient, effective, complete and acceptable plans.

a. Step 1 - Identifying Problems and Opportunities.

(1) Problems and opportunities statements will be framed in terms of the Federal objective and the specific study planning objectives. Problems and opportunities should be defined in a manner that does not preclude the consideration of all potential alternatives to solve the problems and achieve the opportunities. Problems and opportunities statements will encompass current as well as future conditions and are dynamic in nature. Thus, they can be, and usually are, re-evaluated and modified in subsequent steps and iterations of the planning process.

(2) Properly defined, statements of problems and opportunities will reflect the priorities and preferences of the Federal Government, the non-Federal sponsors and other groups participating in the study process; thus active participation of all stakeholders in this process is strongly recommended. Proper identification of problems and opportunities is the foundation for

scoping the planning process. This problem identification step, and/or “scoping”, should begin as soon as practicable after the decision to initiate a planning study.

(3) The National Environmental Policy Act regulations (40 CFR Parts 1500-1508) require all Federal agencies involved in water resources planning to conduct a process termed "scoping". (See ER 200-2-2 for implementation guidance.) The NEPA scoping process determines the scope of issues to be addressed and identifies the significant issues related to a proposed action. Although NEPA scoping has traditionally been associated solely with identifying the concerns associated with proposed actions, it is possible to combine the NEPA scoping process with step 1 of the planning process. The information on problems and opportunities gathered in step 1 will help to identify primary issues that need to be addressed in subsequent steps of the planning process. Opportunities for combining step 1 of the planning process and the scoping process will vary from study to study, but the opportunity should be explored to minimize duplication of efforts at various stages of the planning process.

(4) Once the problems and opportunities are properly defined, the next task is to define the study planning objectives and the constraints that will guide efforts to solve these problems and achieve these opportunities. Planning objectives are statements that describe the desired results of the planning process by solving the problems and taking advantage of the opportunities identified. The planning objectives must be directly related to the problems and opportunities identified for the study and will be used for the formulation and evaluation of plans. Objectives must be clearly defined and provide information on the effect desired (quantified, if possible), the subject of the objective (what will be changed by accomplishing the objective), the location where the expected result will occur, the timing of the effect (when would the effect occur) and the duration of the effect.

(5) Constraints are restrictions that limit the planning process. Constraints, like objectives, are unique to each planning study. Some general types of constraints that need to be considered are resource constraints and legal and policy constraints. Resource constraints are those associated with limits on knowledge, expertise, experience, ability, data, information, money and time. Legal and policy constraints are those defined by law, Corps policy and guidance. These constraints are discussed in subsequent chapters of this regulation and its appendices. Plans should be formulated to meet the study objectives and to avoid violating the constraints. Thus, a clear definition of objectives and constraints is essential to the success of the planning process.

b. Step 2 – Inventory and Forecast. The second step of the planning process is to develop an inventory and forecast of critical resources (physical, demographic, economic, social, etc.) relevant to the problems and opportunities under consideration in the planning area. This information is used to further define and characterize the problems and opportunities. A quantitative and qualitative description of these resources is made, for both current and future conditions, and is used to define existing and future without-project conditions. Existing conditions are those at the time the study is conducted. The forecast of the future without-project condition reflects the conditions expected during the period of analysis (See paragraph 2-4j for definition of period of analysis). The future without-project condition provides the basis from which alternative plans are formulated and impacts are assessed. Since impact assessment is the

basis for plan evaluation, comparison and selection, clear definition and full documentation of the without-project condition are essential. Gathering information about historic and existing conditions requires an inventory. Gathering information about potential future conditions requires forecasts, which should be made for selected years over the period of analysis to indicate how changes in economic and other conditions are likely to have an impact on problems and opportunities. Information gathering and forecasts will most likely continue throughout the planning process.

c. Step 3 - Formulation of Alternative Plans.

(1) Alternative plans shall be formulated to identify specific ways to achieve planning objectives within constraints, so as to solve the problems and realize the opportunities that were identified in step 1. An alternative plan consists of a system of structural and/or nonstructural measures, strategies, or programs formulated to meet, fully or partially, the identified study planning objectives subject to the planning constraints. A management measure is a feature or an activity that can be implemented at a specific geographic site to address one or more planning objectives. Management measures are the building blocks of alternative plans and are categorized as structural and nonstructural. Equal consideration must be given to these two categories of measures during the planning process. An alternative plan is a set of one or more management measures functioning together to address one or more objectives. A range of alternative plans shall be identified at the beginning of the planning process and screened and refined in subsequent iterations throughout the planning process. However, additional alternative plans may be identified at any time during the process. Plans should be in compliance with existing statutes, administrative regulations, and common law or include proposals for changes as appropriate. Alternative plans shall not be limited to those the Corps of Engineers could implement directly under current authorities. Plans that could be implemented under the authorities of other Federal agencies, State and local entities and non-government interest should also be considered.

(2) The first phase in the plan formulation process is the identification of management measures that could be implemented, giving equal consideration to structural and non-structural measures. The second phase is the formulation of alternative plans by combining the management measures as appropriate. Alternative plans should be significantly differentiated from each other. As a general rule projects must be formulated to reasonably maximize benefits to the national economy, to the environment or to the sum of both. Each alternative plan shall be formulated in consideration of four criteria described in the P&G: completeness, efficiency, effectiveness, and acceptability. Completeness is the extent to which the alternative plans provide and account for all necessary investments or other actions to ensure the realization of the planning objectives, including actions by other Federal and non-Federal entities. Effectiveness is the extent to which the alternative plans contribute to achieve the planning objectives. Efficiency is the extent to which an alternative plan is the most cost effective means of achieving the objectives. Acceptability is the extent to which the alternative plans are acceptable in terms of applicable laws, regulations and public policies. Appropriate mitigation of adverse effects shall be an integral component of each alternative plan.

(3) In formulating alternative plans, it is essential that planners understand and fully visualize the problems of the planning area and how their plans will address these problems. Planners must maintain focus on the larger, complete plan(s) even while carrying out specific, individual tasks. While these individual tasks are necessary, their value is subordinate to successfully creating plans that work and function as visualized by those participating in the planning process. In that regard, vision rather than accountancy shall provide the foundation for sound planning and plan formulation.

(4) Section 904 of the Water Resources Development Act of 1986 (WRDA of 1986) requires the Corps to address the following matters in the formulation and evaluation of alternative plans:

- Enhancing national economic development (including benefits to particular regions that are not transfers from other regions).

- Protecting and restoring the quality of the total environment.

- The well-being of the people of the United States.

- The prevention of loss of life.

- The preservation of cultural and historical values.

(5) Non-structural measures shall be considered as means for addressing problems and opportunities. Non-structural measures may be combined with structural measures to produce a plan or considered as an alternative to structural measures. Non-structural measures shall receive equal consideration in the planning process to structural measures. Management of demand should be considered as a non-structural alternative. Examples are inland waterway congestion fees and changes in water pricing or drought contingency plans. Such measures can delay optimal project on-line dates of structural measures and increase total project net benefits over plans not including the non-structural measures.

(6) Protection of the Nation's environment from adverse effects of each alternative plan, in missions other than ecosystem restoration, is to be provided by mitigation (as defined in 40 CFR 1508.20) of those effects. Each alternative plan shall include mitigation as determined appropriate. Mitigation to address effects on fish and wildlife and their habitat should be determined in consultation with the Federal and State fish and wildlife agencies in accordance with the Fish and Wildlife Coordination Act of 1958. Mitigation to address other adverse effects should be determined in accordance with applicable laws, regulations and Executive Orders. (See Appendix C). Mitigation measures determined to be appropriate should be planned for concurrent implementation with other major project features, where practical. Cost of mitigation measures are part of total project costs and are included in the benefit-cost analysis of alternative plans.

d. Step 4 – Evaluating Alternative Plans.

(1) The evaluation of effects is a comparison of the with-project and without-project conditions for each alternative. The evaluation will be conducted by assessing or measuring the differences between each with- and without-project condition and by appraising or weighting those differences.

(2) Evaluation consists of four general tasks. The first task is to forecast the most likely with-project condition expected under each alternative plan. Each with-project condition will describe the same critical variables included in the without-project condition developed in step 2. Criteria to evaluate the alternative plans include all significant resources, outputs and plan effects. They also include contributions to the Federal objective, the study planning objectives, compliance with environmental protection requirements, the P&G's four evaluation criteria (completeness, effectiveness, efficiency and acceptability) and other criteria deemed significant by participating stakeholders. The second task is to compare each with-project condition to the without-project condition and document the differences between the two. The third task is to characterize the beneficial and adverse effects by magnitude, location, timing and duration. The fourth task is to identify the plans that will be further considered in the planning process, based on a comparison of the adverse and beneficial effects and the evaluation criteria.

(3) Four accounts are established in the P&G to facilitate the evaluation and display of effects of alternative plans.

(a) The national economic development account displays changes in the economic value of the national output of goods and services.

(b) The environmental quality account displays non-monetary effects on ecological, cultural, and aesthetic resources including the positive and adverse effects of ecosystem restoration plans.

(c) The regional economic development account displays changes in the distribution of regional economic activity (e.g., income and employment).

(d) The other social effects account displays plan effects on social aspects such as community impacts, health and safety, displacement, energy conservation and others.

(4) Display of the national economic development and environmental quality accounts is required. Display of the regional economic development and other social effects accounts is discretionary. Evaluation of the beneficial and adverse effects of the alternatives will provide a basis to determine which plans should be considered further, dropped or reformulated. Procedures to evaluate national economic development benefits for each project purpose (i.e., navigation, flood damage reduction, recreation, etc.) are provided in Chapter 3. Additional procedures and requirements are provided in Appendix E.

(6) Steps in the procedures may be abbreviated by reducing the extent of the analysis and amount of data collected where greater accuracy or detail is clearly not justified by the cost of

the plan components being analyzed. The steps abbreviated and the reason for abbreviation shall be documented in the planning reports. Planners can pursue the use of alternative procedures when these would provide a more accurate estimate of benefits. The use of alternative procedures and the consideration of new benefit categories, including the procedures to be used to estimate them, require advance approval from HQUSACE (CECW-P).

e. Step 5 - Comparing Alternative Plans. In this step, plans (including the no action plan) are compared against each other, with emphasis on the outputs and effects that will have the most influence in the decision making process. A comparison of the outputs of the various plans must be made. Beneficial and adverse effects of each plan must be compared. These include monetary and non-monetary benefits and costs. Identification and documentation of tradeoffs will be required to support the final recommendation. The effects include those identified during the evaluation phase and any other significant effects identified in step 5. The comparison step can be defined as a reiteration of the evaluation step, with the exception that in this step each plan (including the no action plan) is compared against each other and not against the without-project condition. The output of the comparison step shall be a ranking of plans.

f. Step 6 - Selecting a Plan. A single alternative plan will be selected for recommendation from among all those that have been considered. The recommended plan must be shown to be preferable to taking no action (if no action is not recommended) or implementing any of the other alternatives considered during the planning process. The culmination of the planning process is the selection of the recommended plan or the decision to take no action. The criteria for selecting the recommended plan differ, depending on the type of plan and whether project outputs are NED, NER, or a combination of both.

(1) The National Economic Development (NED) Plan. For all project purposes except ecosystem restoration, the alternative plan that reasonably maximizes net economic benefits consistent with protecting the Nation's environment, the NED plan, shall be selected. The Assistant Secretary of the Army for Civil Works (ASA (CW)) may grant an exception when there are overriding reasons for selecting another plan based upon other Federal, State, local and international concerns. (See paragraph 2-3g(4))

(2) The National Ecosystem Restoration (NER) Plan. For ecosystem restoration projects, a plan that reasonably maximizes ecosystem restoration benefits compared to costs, consistent with the Federal objective, shall be selected. The selected plan must be shown to be cost-effective and justified to achieve the desired level of output. This plan shall be identified as the National Ecosystem Restoration (NER) Plan.

(3) The Combined NED/NER Plan. Projects which produce both National Economic Development (NED) benefits and National Ecosystem Restoration (NER) benefits will result in a “best” recommended plan so that no alternative plan or scale has a higher excess of NED benefits plus NER benefits over total project costs. This plan shall attempt to maximize the sum of net NED and NER benefits, and to offer the best balance between two Federal objectives. Recommendations for multipurpose projects will be based on a combination of NED benefit-cost analysis, and NER benefits analysis, including cost effectiveness and incremental cost analysis.

(4) The Locally Preferred Plan. Projects may deviate from the National Economic Development Plan and/or the National Ecosystem Restoration Plan if requested by the non-Federal sponsor and approved by ASA(CW). In some instances, a non-Federal sponsor may not be able to afford or otherwise support the NED, NER or Combined NED/NER Plan. Plans requested by the non-Federal sponsor that deviate from these plans shall be identified as the Locally Preferred Plan (LPP). When the LPP is clearly of less scope and cost and meets the Administration's policies for high-priority outputs, an exception for deviation is usually granted by ASA(CW). In making a decision to recommend a LPP smaller in scope and costs than the NED, NER or Combined NED/NER plans, the district should assist the sponsor in identifying and assessing the financial capability of other potential non-Federal interests who may be willing and able to participate in plan development and implementation. In all cases, the LPP must have greater net benefits than smaller scale plans, and enough alternatives must be analyzed during the formulation and evaluation process to insure that net benefits do not maximize at a smaller scale than the sponsor's preferred plan. Paragraphs 4-3b(2)(a) and (b) describe the documentation required to support recommendation of a LPP. Categorical exemptions specifically applicable to flood control and navigation are discussed in paragraphs 3-3b(11) and 3-2b(10). If the sponsor prefers a plan more costly than the NED plan, the NER Plan or the combined NED/NER Plan, and the increased scope of the plan is not sufficient to warrant full Federal participation, ASA(CW) may grant an exception as long as the sponsor pays the difference in cost between those plans and the locally preferred plan. The LPP, in this case, must have outputs similar in-kind, and equal to or greater than the outputs of the Federal plan. It may also have other outputs. The incremental benefits and costs of the locally preferred plan, beyond the Federal plan, must be analyzed and documented in feasibility reports (see paragraph 4-3b(2)(b)).

(5) Agency Decision Making. Decision making for the selection of a recommended plan begins at the district level and continues at the Headquarters level through subsequent reviews and approval. In the case of continuing authorities projects, the review and approval occurs at the Division level. For congressionally authorized projects, the final agency decision maker is the Secretary of the Army through the Assistant Secretary of the Army for Civil Works.

2-4. Principles of Analysis. The principles of analyses that follow are fundamental to the planning process and are to be followed in conducting planning studies.

a. System Analysis. All Corps study initiatives shall consider broad system aspects of problems and solutions. In some instances these system considerations will be addressed throughout the planning process, such as in watershed or navigation systems studies. In other instances, such as with more limited project-oriented studies, systems considerations should be included in a reasonable and cost-effective manner as part of the initial phase of the planning process.

b. With and Without-Project Analysis.

(1) The without-project condition is the most likely condition expected to exist in the future in the absence of a proposed water resources project. Proper definition and forecast of the future without-project condition are critical to the success of the planning process. The future without-project condition constitutes the benchmark against which plans are evaluated. Forecasts of future without-project conditions shall consider all other actions, plans and

programs that would be implemented in the future to address the problems and opportunities in the study area in the absence of a Corps project. Forecasts should extend from the base year (the year when the proposed project is expected to be operational) to the end of the period of analysis.

(2) The with-project condition is the most likely condition expected to exist in the future with the implementation of a particular water resources development project. Comparison of conditions with the project to conditions without the project will be performed to identify the beneficial and adverse effects of the proposed plans. These with and without-project comparisons provide the framework for the evaluation of alternative plans.

(3) Forecasts of with- and without-project conditions should be based on consideration of national and regional forecasts of socio-economic parameters (i.e., income, employment, populations, etc) and other aggregate projections such as exports, land use trends and demand for goods and services. National projections used in planning shall be based on a full employment economy. Other plans that have been adopted for the planning area and other current planning efforts with high potential for implementation or adoption shall be considered as part of the forecasted without-project condition.

(4) Expected environmental conditions, especially trends in ecosystem change, shall be considered in forecasting with- and without-project conditions. Forecasted environmental conditions can be based on a variety of different sources of information available from Federal, State and other natural resource management agencies and private conservation entities. National and State environmental and health standards and regulations shall be recognized and appropriately considered. Standards and regulations concerning water quality, air quality, public health, wetlands protection, and floodplain management should be given specific consideration in forecasting the with- and without-project conditions.

c. Benefit-Cost Analysis and Cost Effectiveness Analysis.

(1) Benefit-Cost analysis is a conceptual framework useful in evaluating government (and private) investments. In principle it is uncomplicated: all pertinent costs and effects (beneficial and detrimental) of an action are systematically tallied. The results can then be tested against investment criteria, such as benefits greater than costs and maximum net benefits which is the criterion used for identification of the NED Plan in accordance with the Federal objective.

(2) All of a project’s monetized benefits, which occur through time, are accumulated, and using a process called discounting are expressed as a single total benefit figure. Costs also occur through time, and the same accumulating and discounting process is conducted, so the costs are also expressed as a single figure. Benefit and cost time streams are directly comparable only as converted to single figures. If the benefits exceed the costs the project may be said to be worthwhile.

(3) Planners may consider plans with different sizes, locations, outputs and costs of implementation in the same study. In effect, different plans are different projects, but the benefits and costs of each may be summarized; and all projects may be compared in a relatively straightforward way by consistent application of benefit-cost principles.

(4) There are similarities between benefit-cost analysis and financial appraisals, but the two are not the same. Caution is required against too easily transferring financial appraisal practices to benefit-cost analysis. For example, all benefits and costs must be accounted: thus (1) donated land (with no financial cost) has a cost in benefit to cost analysis, (2) benefits are counted wherever they accrue (even outside the study area; third party gains would not count in a financial appraisal).

(5) When there is no monetary measure of benefits but project outcomes can be described and quantified in some dimension, cost effectiveness analysis can be used to assist on the decision making process. Cost effectiveness analysis seeks to answer the question: given an adequately described objective, what is the least-costly way of attaining the objective? The ability to identify the least costly among several alternatives having the same outcome is very useful. However, cost effectiveness analysis cannot establish that any project is worthwhile. Cost effectiveness can also aid choice among projects that differ in their outcomes, but in the absence of monetized benefit estimates cannot remove all ambiguity.

d. Net Benefits (optimization). The best project may be defined as the plan that returns the greatest excess of benefits over costs, i.e., it is not possible to improve upon a plan producing maximum net benefits (total benefits less total costs). Benefits can be monetary or nonmonetary, as in the case of ecosystem restoration projects. The process of optimizing net benefits should be reasonable and practical in seeking to maximize net benefits.

e. Incremental Analysis. Incremental analysis is a process used in plan formulation to help identify plans that deserve further consideration in an efficient manner. The analysis consists of examining increments of plans or project features to determine their incremental costs and incremental benefits. Increments of plans continue to be added and evaluated as long as the incremental benefits exceed the incremental costs. When the incremental costs exceed the incremental benefits no further increments are added. For example, fifteen levees, each of a different height, could be designed to find the one with greatest net benefits. This is trial and error. An alternate approach is to start with a levee of low height, then add height in steps or increments (say one foot). For each increment of height the added (incremental) costs and added (incremental) benefits are estimated. As long as the incremental benefits exceed the incremental costs it makes sense to add the foot of height, because the extra foot adds more to benefits than to costs. When incremental costs exceed incremental benefits, no further increments of height are added. This process is more efficient than trial and error, and is thus used in formulating and evaluating most Corps projects.

f. Trade-off Analysis. In planning for multipurpose or multiobjective projects, the Corps needs to strike a balance between financial resources and the commodities that can be produced (“purchased”) by the project. Trade-off analysis is the procedure used by the Corps to identify the potential gains and losses associated with producing a larger or lesser amount of a given output or outputs. The results of trade-off analysis are used in the formulation, evaluation, comparison and selection of the recommended plan. For example, consider a trade-off common in Corps planning: river flows are set by nature and cannot be augmented. In a reservoir, therefore, each cubic foot of water sent through generators for hydropower means less retained

behind a dam for recreation. Having more recreation water and more electricity generation is not possible (for a fixed amount of water). It is possible to express the relationship between electricity gains and recreation losses over a range (maybe a wide range) of gains and losses. Assessing these types of trade-offs is common in Corps project planning. Appendix E provides additional information on trade-off analysis.

g. Risk and Uncertainty. The P&G state that planners shall characterize, to the extent possible, the different degrees of risk and uncertainty inherent in water resources planning and to describe them clearly so decisions can be based on the best available information. Risk-based analysis is defined as an approach to evaluation and decision making that explicitly, and to the extent practical, analytically incorporates considerations of risk and uncertainty. Risk-based analysis shall be used to compare plans in terms of the likelihood and variability of their physical performance, economic success and residual risks. A risk-based approach to water resources planning captures and quantifies the extent of risk and uncertainty in the various planning and design components of an investment project. The total effect of risk and uncertainty on the project's design and viability can be examined and conscious decisions made reflecting an explicit trade-off between risk and costs. Specific applications of the risk-based approach are discussed in Chapter 3 for each Civil Works mission.

h. Planning Area. The planning area is a geographic space with an identified boundary that includes the area identified in the study authorizing document and the locations of alternative plans which are often called project areas. The locations of resources that would be directly, indirectly, or cumulatively affected by alternative plans are often called the affected area.

i. Prices. The general level of prices for inputs and outputs prevailing during or immediately preceding the period of planning shall be used for the entire period of analysis. Project benefits and costs must be compared at a common point in time and both must be updated periodically. Discounting shall be used to convert future monetary values to present values. Present values, at the base year of analysis, shall be calculated using the discount rate established annually for the formulation and economic evaluation of plans for water and related land resources (published by HQUSACE as an Economic Guidance Memorandum).

j. Period of Analysis. The period of analysis shall be the same for each alternative plan. The period of analysis shall be the time required for implementation plus the lesser of: (1) the period of time over which any alternative plan would have significant beneficial or adverse effects, (2) a period not to exceed 50-years except for major multiple purpose reservoir projects, or, (3) a period not to exceed 100 years for major multiple purpose reservoir projects. Appropriate consideration should be given to environmental factors that may extend beyond the period of analysis.

k. NED costs.

(1) Project measures, whether structural or nonstructural, require the use of various resources. NED costs are used for the economic analysis of alternative projects and reflect the opportunity costs of direct or indirect resources consumed by project implementation. From an economic perspective, the real measure of cost is opportunity cost, i.e., the value of that which is foregone

when a choice of a particular plan or measure is made. In order to capture the opportunity costs of proposed plans, NED costs include three types of costs: implementation costs, other direct costs and associated costs.

(2) Implementation costs are explicit costs of implementing a project. They include the post authorization planning and design costs, construction costs, construction contingency costs, and operations, maintenance, repair, rehabilitation and replacement costs (OMRR&R). These also include costs for all fish and wildlife habitat mitigation, historic and archaeological mitigation and data recovery, lands, easements, relocations, rights-of-way, disposal/borrow areas and water and mineral rights, which are necessary to implement the project.

(3) Other direct costs are the costs of resources directly required for a project or a plan but for which no implementation outlays are made. Examples of these costs are interest during construction, value of donated land, uncompensated NED losses and other negative externalities.

(4) Associated costs are those costs necessary for production of project outputs for which no project expenditure is made. An example would be the cost of transmission lines provided by the private sector necessary for using energy provided by a hydropower improvement.

(5) Typically, opportunity costs are equal to the market prices of goods and services in competitive markets. However, market prices can be often distorted by monopoly power, price controls, taxes or subsidies. In cases where market prices do not reflect the opportunity cost of resource use, other means are used to develop NED costs. Surrogate values are often used which reflect the opportunity costs from a similar situation. For example, water rates in a community that provides subsidized pricing for disadvantaged may not represent the true value of the water. The true value may be better estimated using the price of water in a neighboring community where competitive markets exist.

l. Environmental and Social Impact Assessment. A number of Federal laws, such as the National Environmental Policy Act of 1969, the Clean Water Act of 1977, as amended and Section 122 of the 1970 River and Harbor and Flood Control Act require consideration of a wide range of effects in planning and decision making. In practice, this has been accomplished through a process commonly called impact assessment. While impact assessment covers the full range of effects, it has traditionally focused on non-monetary effects often called environmental and social impacts. These effects may be either adverse or beneficial, intended or unintended. The impact assessment process is synonymous with step 4 of the planning process (Evaluate Effects of Alternative Plans) previously described.

m. Significant Resources and Significant Effects.

(1) The consideration of significant resources and significant effects is central to plan formulation and evaluation for any type of water resources development project. In step 2 of the planning process, significant resources are identified as important to be considered during the study. In step 4, significant effects are identified for consideration in alternative comparison and selection. Significance of resources and effects will be derived from institutional, public or technical recognition. Institutional recognition of a resource or effect means its importance is recognized and acknowledged in the laws, plans and policies of government and private groups.

Technical recognition of a resource or an effect is based upon scientific or other technical criteria that establishes its significance. Public recognition means some segment of the general public considers the resource or effect to be important. Public recognition may be manifest in controversy, support or opposition expressed in any number of formal or informal ways.

(2) In ecosystem restoration planning, the concept of significance of outputs plays an especially important role because of the challenge of dealing with non-monetary outputs. The three sources of significance described in paragraph 2-4m(1) and documentation on the relative scarcity of the resources helps determine the significance of the resources to be restored. This information is used to help establish a Federal interest in the project. The significance of expected restoration outputs is used in conjunction with information from cost effectiveness and incremental cost analyses to help determine whether an alternative should be recommended. Information on effectiveness, acceptability, efficiency and completeness of ecosystem restoration plans also contributes to this determination.

n. Regulatory considerations. In the course of planning studies, consideration of Department of the Army regulatory programs (especially Section 10 of the River and Harbor Act of 1899, Section 404 of the Clean Water Act of 1972 and Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972) will be incorporated into the planning process. This is performed to facilitate the permitting of activities essential to a successful project. (See Appendix C for more details on regulatory considerations.)

o. Project Implementation Timing. Alternative plans can differ in their implementation timing, that is, not all plans or features have to be in place at the beginning of the period of analysis. As project on-line dates are varied, annual benefits and costs will often vary. In general, the more the benefits vary through time and the longer the time to implementation from the base year (first year of period of analysis), the stronger this effect will be. The best schedule for implementing project features shall be considered as an element in the formulation and evaluation of alternative plans.

p. Hazardous, Toxic and Radioactive Wastes (HTRW). Consistent with the guidance in ER 1165-2-132, the Corps will not participate in clean up of materials regulated by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or by the Resource Conservation and Recovery Act (RCRA). Assessments during the feasibility phase to determine the nature and extent of such materials within the project area shall be cost shared. The cost of clean up of materials not covered by CERCLA and RCRA will be considered when determining if the proposed project is justified. While measures to improve water quality parameters may be included in projects with an ecosystem restoration component, the ecosystem restoration portion of these projects should not principally result in treating or otherwise abating pollution or other compliance responsibility.

q. Brownfields. Brownfields are abandoned or under-utilized properties that are perceived to be or, at worst, are lightly contaminated. Brownfields may be included in the preliminary planning phase of projects where they are integral to solving water resources problems related to Corps mission areas and authorities. If the assessment determines that there are non-CERCLA types of materials or small, easily and cost effectively managed amounts of

CERCLA controlled materials, then these sites may be included in project formulation and any remediation costs would be shared as project costs. If the assessment determines a CERCLA level clean-up is required, then the site will be removed from plan formulation for processing under CERCLA procedures. It is important that no unnecessary Federal liability be incurred when working within a Brownfield site.

r. Congressional Adds. The planning principles described in this chapter apply to Congressionally added studies unless specific instructions otherwise are provided through the budget process.

2-5. Partnerships and Teamwork. The success of the planning process depends to a great extent on establishing a successful partnership with the project sponsors and other stakeholders. A project sponsor for a Corps study may be a State, a political subpart of a State or group of states, a Native American (Indian) Nation, quasi-public organizations chartered under State laws (e.g., a port authority, flood control district, water management district or conservation district), an interstate agency and, for a limited number of authorities, a non-profit organization. Except for non-profit organizations, non-Federal entities must meet the requirements of Section 221 of the Flood Control Act of 1970 as amended, in order to be a sponsor for a Corps study. Project sponsors must be afforded the opportunity to help define the water resource problems and opportunities. They should help define the scope of the study and specific study tasks, cost estimates and schedules. Partnerships facilitate making decisions about the type and mix of study objectives as well as formulation, evaluation and selection of alternative plans. They contribute to project design, including environmental and aesthetic features and ensure that, to the extent possible, other factors that affect sponsoring communities are addressed during the planning process.

a. Cooperation with Other Agencies.

(1) Corps efforts should complement and be complemented by the various authorities of other Federal and State agencies, Native American (Indian) Nations and private groups. The Corps may also be requested, or request other agencies, to participate as a cooperating agency during the NEPA process (see 40 CFR 1501.6). While the Corps is the lead agency for studies specifically assigned to it, the Corps may also be a cooperating agency in water resources studies led by other Federal agencies. As a cooperating agency, the Corps can provide its special expertise in navigation, flood damage reduction, ecosystem restoration and other mission areas as part of integrated interagency and multipurpose planning to the U.S. Environmental Protection Agency, the Bureau of Reclamation, the Natural Resources Conservation Service, and other Federal Agencies. Under approved circumstances, participation as a cooperating agency may be funded through existing Corps studies and projects in the study area, or pursued as a separate item in the General Investigations program.

(2) Corps planners and planning team members should develop partnerships with Federal and State agencies, Native American (Indian) Nations and non-government organizations in the accomplishment of Corps studies and financing. Cooperative efforts may include, for example, information and data base sharing, cooperative planning efforts, as well as collaborative and shared construction, operation and maintenance, and monitoring activities. Cooperative efforts,

which effectively combine Federal investments, can achieve greater economic, social, and environmental benefits than individual agencies acting alone.

b. Public Involvement, Collaboration and Coordination.

1) The goal of public involvement, collaboration and coordination is to open and maintain channels of communication with the public in order to give full consideration of public views and information in the planning process. The objective of public involvement is to ensure that Corps projects and programs are responsive to the needs and concerns of the public. Elements critical to a good public involvement and coordination process are disseminating information about proposed activities, understanding the public's desires, needs and concerns, providing for consultation with the public before decisions are reached, and taking into account the public's views. All this must occur, however, with the awareness that the Corps can not relinquish its legislated decision making responsibility.

(2) All Corps planning studies are required to incorporate public involvement, collaboration and coordination with their Federal and non-Federal partners and the public. This should be initiated during step 1 of the planning process, Identifying Problems and Opportunities, and continue throughout the planning process. Involvement at the initial stage of the planning process not only helps to identify the problems and opportunities, but also extends an invitation to the public for continued involvement and a voice in the planning and decision making process.

(3) The team will determine, in the early phases of the planning process, the extent of public involvement required and will establish an appropriate strategy for integrating public involvement into the planning process. It is important to develop a strategy that creates relevant, quality public involvement opportunities for those who have, or may have, an interest in the study. The components of a good public involvement strategy are discussed in Appendix B. The strategy shall reflect the scope and complexity of each particular study.

(4) Major public involvement activities conducted during the planning process are announcing the initiation of the study, identifying the public, and, the scoping process. These activities are described in detail in Appendix B.

c. International Consultations. When a Federal water project is likely to have a significant impact on any land or resources situated in a foreign country or to affect treaty obligations, the Corps, through the Department of State, must enter into consultations with the government of the affected country.

d. Interdisciplinary Planning.

(1) Because planning problems are complex, using an interdisciplinary team is generally the best approach to the wide range of technical issues encountered in most studies. Planning results are usually better when they have been developed from a variety of perspectives, including the knowledge, skills and insights of professionals from many of the natural, social, engineering and environmental sciences.

(2) The disciplines should be integrated so that each member of the team communicates their various viewpoints and works together to fashion plans that truly reflect a diversity of perspectives on the problems and opportunities that confront the planning area. An effective plan formulation process requires that the interdisciplinary team be involved in the planning process from the very beginning. While the mix of disciplines required for a planning team varies from study to study, Corps teams may include the following types of experts: archaeologists, attorneys, biologists, chemists, civil engineers, ecologists, economists, geographers, geologists, hydraulic engineers, hydrologists, landscape architects, planners, real estate specialists and sociologists. This list is not intended to exclude any discipline but rather express the diversity that might be included.

2-6. A Watershed Perspective. Civil works planning should incorporate a watershed perspective, whether that planning involves a project feasibility study or a more comprehensive watershed study. Such planning should be accomplished within the context of an understanding and appreciation of the impacts of considered actions on other natural and human resources in the watershed. In carrying out planning activities, we should encourage the active participation of all interested groups and use of the full spectrum of technical disciplines in activities and decision-making. We also should take into account: the interconnectedness of water and land resources (a systems approach); the dynamic nature of the economy and the environment; and the variability of social interests over time. Specifically, civil works planning should consider the sustainability of future watershed resources, specifically taking into account environmental quality, economic development and social well-being.

2-7. Environmental Compliance. Civil Works studies and projects should be in compliance with all applicable Federal environmental statutes and regulations and with applicable State laws and regulations where the Federal government has clearly waived sovereign immunity. The National Environmental Policy Act (NEPA) requires Federal agencies, including the Corps, to comply with a process that includes the inventory and assessment of the environmental resources within the study area. NEPA also requires the evaluation and comparison of alternatives to determine the impacts to those ecological, cultural, and aesthetic resources identified and investigated. Involvement by resource agencies and the general public during the study process is also required. Corps NEPA guidance can be found in ER 200-2-2. The NEPA process will be integrated with the Corps six step planning process. This should also include all measures required for compliance with other applicable environmental statutes, such as the Endangered Species Act, the Clean Air Act, the Clean Water Act, the Fish and Wildlife Coordination Act, and the Historic Preservation Act, among others. (See Appendix C for compliance requirements.) This integration is intended to reduce process overlap and duplication. The integrated process will help assure that well-defined study conditions and well-researched, thorough assessments of the environmental, social, and economic resources affected by the proposed activity are incorporated into planning decisions.

2-8. Cost Sharing.

a. General. The costs of water resources studies and projects developed by the Corps are shared between Federal and non-Federal entities as defined in laws and administrative provisions. The WRDA of 1986, established new cost sharing rules for all studies and projects

conducted by the Corps. The cost sharing provisions of the WRDA of 1986 place greater financial responsibilities on non-Federal sponsors of Corps projects. The amount of the non-Federal share varies depending upon the project purpose and the general and specific laws that apply to each project.

b. Local Sponsor Financing. The non-Federal share of a Corps study or project usually consists of some combination of the following components: in kind services, a cash contribution and real estate interests. Sponsors are also responsible for operation, maintenance, repair, replacement and rehabilitation costs as defined for each civil works mission. Sponsors may provide their cash share of project or study costs to the Corps by one of the following means: a check, a deposit in an escrow or similar account with interest accruing to the sponsor, an irrevocable letter of credit or an Electronic Funds Transfer. See ER 1165-2-131 for further information.

c. Study Cost Sharing. Corps of Engineers specifically authorized planning studies are conducted in two phases: Reconnaissance Phase and Feasibility Phase. (See Appendix F for process applicable to the Continuing Authorities Program (CAP).) Cost sharing policies for each of these phases are as follows:

(1) The entire reconnaissance phase, as described in paragraph 4-3a and Appendix G, is conducted at full Federal expense, exclusive of any costs incurred by non-Federal entities in volunteered work or services during this phase. Costs incurred by non-Federal entities during the reconnaissance phase are not creditable toward the non-Federal sponsor's share of the feasibility phase.

(2) The cost of the feasibility phase, as described in paragraph 4-3b and Appendix G, will be shared equally during the study between the Federal government and the non-Federal sponsors. At least 50 percent of a non-Federal sponsor's share (25 percent of the total feasibility phase cost) shall be in cash. The remainder of the non-Federal sponsor share, up to 25 percent of the total feasibility phase cost, may be in-kind products and services. If a cost shared feasibility study is terminated prior to completion, the non-Federal share may be less than 50 percent in cash if the value of the in-kind services is more than one-half of the non-Federal sponsors investment at the time of termination. No credit may be given to the non-Federal sponsor for work prior to the start of the feasibility phase or after its completion (Sec 105 of WRDA of 1986). Guidance on cost sharing for studies conducted under Section 729 of WRDA of 1986 will be provided separately.

(3) Cost sharing is not applicable to single purpose inland navigation studies on the nations inland waterways system. For studies where inland navigation is the primary purpose and there are other purposes being considered, request additional guidance from CECW-P for feasibility phase cost sharing procedures.

(4) Cost sharing exceptions. Exceptions to cost sharing rules include projects specified in Section 103(e)(2) of the WRDA of 1986, waivers for territories as stated in Section 1156 of the WRDA of 1986, and, ability to pay provisions stated in Section 103(m) of the WRDA of 1986, as amended. (See Appendix E for additional details on these exceptions.)

(5) Section 203 of the WRDA of 1996 allows a non-Federal sponsor to defer its cost contribution for excess study costs that are not attributable to changes in Federal law or changes in scope requested by the sponsor, until the execution of a Project Cooperation Agreement. If the project is not authorized, payment of excess costs is due within 5 years after the date of the Chief of Engineer's report. If the study is terminated, payment is due within 2 years of its termination.

d. Preconstruction, engineering and design (PED). Preparation of design documentation reports and plans and specifications during the preconstruction, engineering and design phase will be cost shared in accordance with the cost sharing required for project construction. Under Corps policy, the non-Federal sponsor should provide 25 percent of the cost of PED during this phase. Adjustments, if necessary, shall be made after initiation of the construction phase. (See ER 1110-2-1150).

e. Project Cost Sharing. Appendix E provides project cost sharing requirements by project purpose.

CHAPTER 3

Corps Civil Works Missions

3-1. Purpose and Authorities. Federal interest in water resources development is established by law. Within the larger Federal interest in water resource development, the Corps of Engineers is authorized to carry out projects in seven mission areas: navigation, flood damage reduction, ecosystem restoration, hurricane and storm damage reduction, water supply, hydroelectric power generation and recreation. Navigation projects include both inland and deepwater projects. Ecosystem restoration projects improve ecosystem structure and function. Wherever possible and subject to budgetary policy, projects shall combine these purposes to formulate multiple purpose projects. For example, flood damage reduction projects could include ecosystem restoration and recreation; navigation projects could include hydroelectric power generation and ecosystem restoration. In carrying out studies to address problems and take advantage of opportunities within these mission areas, every effort should be made to formulate alternative plans that reasonably maximize the economic and environmental value of watershed resources, including urban watershed resources. In addition, every effort shall be made to be responsive to National**,** State and local concerns by considering the full range of programs available to provide solutions in a timely and cost-effective manner. Such programs may include Congressionally authorized projects, continuing authorities projects, planning assistance to states, flood plain management services and emergency authorities. [For a brief history of Corps involvement in water resources planning refer to "The US Army Corps of Engineers, A Brief History", by Martin Reuss and Charles Hendricks to be published on the Corps web site.]

3-2. Navigation. The role of the U. S. Army Corps of Engineers with respect to navigation is to provide safe, reliable, and efficient waterborne transportation systems (channels, harbors, and waterways) for movement of commerce, national security needs, and recreation. The Corps accomplishes this mission through a combination of capital improvements and the operation and maintenance of existing projects. Capital improvement activities include the planning, design, and construction of new navigation projects. These activities are performed for the navigation of shallow draft (equal to or less than 14-foot draft) and deep draft (greater than 14-foot draft) vessels on both inland waterways and harbors, and coastal and lake ports, harbors and channels. With the exception of projects implemented pursuant to a continuing authority, Congress specifically authorizes harbor and waterway projects. Financial responsibility for project components is specified in the WRDA of 1986, as amended.

a. Types of Improvements. General navigation features of harbor or waterway projects are channels, jetties or breakwaters, locks and dams, basins or water areas for vessel maneuvering, turning, passing, mooring or anchoring incidental to transit of the channels and locks. Also included are dredged material disposal areas (except those for the inland navigation system, the Atlantic Intracoastal Waterway and the Gulf Intracoastal Waterway) and sediment basins. Special Navigation Programs include removal of wrecks and obstructions, snagging and clearing for navigation, drift and debris removal, bridge replacement or modification, and

mitigation of project-induced damage. These programs are described in more detail in paragraph 3-2a(2).

(1) Harbor and Waterway Projects. Harbors and waterways are treated differently for cost-sharing purposes. Harbors are places that offer vessels shelter from weather. A harbor is also a port if it provides facilities for the loading or unloading of cargo or passengers. Waterways are routes used by vessels. Their primary function is to facilitate the movement of vessels and they may simply connect bodies of deep or shallow water or they may be parts of riverine or coastal waterway systems. (See Table E-60, Appendix E for cost sharing requirements.)

(2) Special Navigation Programs. These navigation improvements are for specific purposes, and may be projects, elements of projects, or simply Corps activities. They are initiated and implemented on congressional authority (specific or continuing). They are usually subject to program or project expenditure limits, with cost sharing as specified in the original authority or as amended.

(a) Removal of Wrecks and Obstructions (Section 19, River and Harbor Act of 3 March 1899). The Corps may remove sunken vessels and similar objects if they are determined to be obstructions to navigation.

(b) Snagging and Clearing for Navigation (Section 3, River and Harbor Act of 1945). The Corps may remove trees, brush and other debris that may be determined to be obstructions to navigation or that may promote flooding.

(c) Drift and Debris Removal (Section 202, Water Resources Development Act Of 1976). The Corps has continuing authority to study and undertake projects to remove and dispose of derelict objects such as sunken vessels, waterfront debris and derelict structures, and other sources of drift that may damage vessels or threaten public health, recreation, or the environment at publicly maintained commercial boat harbors. The harbor need not be, but usually is a Corps project. Congressional authorization is required for projects with Federal costs of $400,000 or more.

(3) Aids to Navigation. These are buoys, lights, ranges, markers, and other devices and systems required for safe navigation or to achieve the project benefits. Aids to navigation are usually provided by the Coast Guard.

b. Specific Policies.

(1) Shoreline Changes. Pursuant to Section 5 of the River and Harbor Act of 1935, each investigation on navigation improvements potentially affecting adjacent shoreline will include analysis of the probable effects on shoreline configurations. A distance of not less than ten miles along the shore on either side of the improvement should be analyzed.

(2) Charter Fishing Craft, Head Boats, and Similar Recreation-Oriented Commercial Activities. Evaluation of benefits to charter fishing and other similar type craft is based on a

change in net income to the owners or operators of all vessels that would be using harbor facilities in the future without-project condition. Benefits to vessel operations that will be induced by the construction of a navigation project are also evaluated as the change in net income that would occur between the with- and without-project condition. Consideration should be given to those vessels that transfer from other areas, so that the proper change in National net income is estimated. Section 230 of the Water Resource Development Act of 1996 states that benefits to cruise ships will also be estimated as commercial benefits for the purpose of evaluating navigation projects.

(3) Subsistence Fishing. This is the activity of individuals who fish primarily for personal or family consumption and whose incomes are normally at or below the minimum subsistence level established by the Department of Commerce. For cost allocation purposes, subsistence fishing is considered commercial fishing.

(4) Coast Guard Coordination. The U.S. Coast Guard is responsible for Federal aids to navigation and enforcement of navigation regulations. Corps districts should confer directly with the Coast Guard concerning establishment or alteration of aids to navigation, and the regulation of lighterage areas (docking and loading areas used to off-load heavy cargo from larger ships to smaller vessels and vice versa), anchorage and channels.

(5) Permit Coordination. During the formulation of navigation projects, a determination must be made whether associated or ancillary sponsor activities (or project user activities) are required to achieve project benefits, and whether Department of the Army (DA) permits are necessary. Examples are provision of mooring and berthing areas and land based infrastructure. Once activities are identified, a preliminary determination of whether they require DA permits, and of what types (i.e., an individual permit, a letter of permission, an existing general permit or a nationwide permit), will be made by the district regulatory office.

(6) Placement of Dredged Materials on Beaches. Construction and maintenance dredging of Federal navigation projects shall be accomplished in the least costly manner possible. When placement of dredged material (beach quality sand) on a beach is the least costly acceptable means for disposal, then such placement is considered integral to the project and cost shared accordingly. When placement of dredged material on a beach costs more than the least costly alternative, the Corps may participate in the additional placement costs under the authority of Section 145 of the WRDA of 1976, as amended. The additional cost of placement may be shared on a 65 percent Federal and 35 percent non-Federal basis if: (1) requested by the State, (2) the Secretary of the Army considers it in the public interest, (3) the added cost of disposal is justified by hurricane and storm damage reduction benefits and (4) the shoreline on which the material is placed is open to public use.

(7) Use of Dredged Material for Ecosystem Restoration. When determining an acceptable method of disposal of dredged material, districts are encouraged to consider options that provide opportunities for aquatic ecosystem restoration. Where environmentally beneficial use of dredged material is the least cost, environmentally acceptable method of disposal, it is cost shared as a navigation cost. Section 204 of the WRDA of 1992, as amended, provides programmatic authority for selection of a disposal method for authorized projects, that provides

aquatic restoration or environmental shoreline erosion benefits when that is not the least costly method of disposal. The incremental cost of the disposal for ecosystem restoration purposes over the least cost method of disposal is cost shared, with a non-Federal sponsor responsible for 25 percent of the costs. Smaller projects typically will be pursued within the programmatic limits of Section 204, as amended. Section 207 of the WRDA of 1996 amended this authority. Section 207 will primarily be used with new navigation projects or in conjunction with maintenance dredging when the incremental cost is large. Projects pursued under Section 207 authority are separately budgeted and will not count towards the Section 204 programmatic limit. (See Appendix E for more information related to Section 207 and Appendix F for additional information regarding Section 204).

(8). Dredged Material Management Plans. Dredged material management planning for all Federal harbor projects is conducted by the Corps to ensure that maintenance dredging activities are performed in an environmentally acceptable manner, use sound engineering techniques, are economically warranted, and that sufficient confined disposal facilities are available for at least the next 20 years. These plans address dredging needs, disposal capabilities, capacities of disposal areas, environmental compliance requirements, potential for beneficial usage of dredged material and indicators of continued economic justification. The Dredged Material Management Plans shall be updated periodically to identify any potentially changed conditions.

(9) Local Service Facilities are the responsibility of non-Federal entities and shall be required as part of the cooperation agreements if they are necessary for project benefits to accrue.

(10) Categorical Exemption to NED Plan. For harbor and channel deepening studies where the non-Federal sponsor has identified constraints on channel depths it is not required to analyze project plans greater (deeper) than the plan desired by the sponsor. For example, if a sponsor only desires to deepen a channel to -40 feet and it is determined that the -40 foot channel is economically justified and has higher net benefits than a -39 foot or -38 foot channel, etc., then the -40 foot channel can be recommended without having to analyze deeper channel plans to identify the NED Plan. The recommended plan must have greater net benefits than smaller scale plans, and a sufficient number of alternatives must be analyzed to insure that net benefits do not maximize at a scale smaller than the recommended plan. If the plan proposed to be recommended contains uneconomical increments an exception from the ASA(CW) must be obtained. An essential element of the analysis of the recommended plan is the identification of trade-offs and opportunities foregone as a result of implementation of the smaller scope plan. The analysis of alternatives must be comprehensive enough to meet the requirements of NEPA.

(11) Other guidance related to navigation projects include ER 1165-2-27, ER 1165-2-123 and ER 1165-2-124.

c. Evaluation Framework. The measurement standard and conceptual basis for benefits is willingness to pay for each increment of output from a plan. In some planning situations it is infeasible to directly measure willingness to pay; therefore, alternative techniques are used to estimate the total value of a plan's output. The evaluation of navigation projects shall be conducted following the process described in paragraph 2-3e of this regulation. The procedures described in the following paragraphs apply to the estimation of benefits used in the economic

evaluation of navigation projects and are only a summary of requirements and procedures. Appendix E provides additional guidance on these procedures and requirements.

(1) National Economic Development Benefits. The base economic benefit of a navigation project is the reduction in the value of resources required to transport commodities. Navigation benefits can be categorized as follows:

(a) Cost reduction benefits for commodities for the same origin and destination and the same mode of transit thus increasing the efficiency of current users. This reduction represents a NED gain because resources will be released for productive use elsewhere in the economy. Examples for inland navigation are reductions in costs incurred from trip delays (e.g. reduction in lock congestions), reduction in costs associated with the use of larger or longer tows, and reduction in costs due to more efficient use of barges. Examples for deep draft navigation are reductions in costs associated with the use of larger vessels, with more efficient use of existing vessels, with more efficient use of larger vessels, with reductions in transit time, with lower cargo handling and tug assistance costs, and with reduced interest and storage costs.

(b) Shift of mode benefits for commodities for the same origin and destination providing efficiency in waterway or harbor traversed. In this case, benefits are the difference in costs of mode transport between the without-project condition (when rails, trucks or different waterways or ports are used) and the with-project condition (improved locks, waterways or channels). The economic benefit to the national economy is the savings in resources from not having to use a more costly mode or point of transport.

(c) Shift in origin and destinations that would provide benefits by either reducing the cost of transport, if a new origin is used or by increasing net revenue of the producer, if a change in destination is realized. This benefit cannot exceed the reduction in transportation costs achieved by the project.

(d) New movement benefits are claimed when there are additional movements in a commodity or there are new commodities transported due to decreased transportation costs. The new movement benefit is defined as the increase in producer and consumer surplus, thus the estimate is limited to increases in production and consumption due to lower transportation costs. Increases in shipments resulting from a shift in origin or destination are not included in the new movement benefits. This benefit cannot exceed the reduction in transportation costs achieved by the project.

(e) Induced movement benefits are the value of a delivered commodity less production and transportation costs when a commodity or additional quantities of a commodity are produced and consumed due to lower transportation costs. The benefit, in this case, is measured as the difference between the cost of transportation with the project and the maximum cost the shipper would be willing to pay.

(2) Without-Project Condition. The following specific assumptions are part of the projected without-project condition.

(a) All reasonably expected nonstructural practices within the discretion of the operating agency, port agencies, other public agencies and the transportation industry are implemented at the appropriate time.

(b) For deep draft navigation studies, alternative harbor and channel improvements available over the planning period (in place and under construction) and authorized projects are assumed to be in place. For inland navigation, only waterway investments currently in place or under construction are assumed to be in place over the period of analysis.

(c) Normal operation and maintenance practices are assumed to be performed over the period of analysis.

(d) In projecting commodity movements involving intermodal movements and in projecting traffic movements on other modes, sufficient capacity of the hinterland transportation and related facilities and the alternative modes is normally assumed.

(e) For inland navigation, user charges and/or taxes required by law are part of the without-project condition.

(f) Advances in technology affecting the transportation industry over the period of analysis should be considered, within reason.

(3) With-Project Condition. The with-project condition is the most likely condition expected to exist in the future if a project is undertaken. The same assumptions as for the without- project condition underlie the with-project condition.

(4) Evaluation Procedure for Inland Navigation. The following ten steps are used to estimate benefits associated with improvements of the inland navigation system. The level of effort on each step depends on the nature of the proposed improvement, the state of the art for accurately estimating the benefits and the sensitivity of project formulation and justification to further refinement. Appendix E provides additional guidance for each of these steps.

(a) Step 1 - Identify the Commodity Types. The types of commodities susceptible to movement on the waterway segment under consideration are identified for new waterways and existing waterways, as applicable. For new waterways, commodity types are identified by interviews of shippers and by resources studies. For existing waterways, commodity types are identified by analysis of data on existing use of the waterway segment.

(b) Step 2 - Identify the Study Area. The study area is the area within which significant project impacts occur. The origins and destinations of products likely to use the waterway are normally included in the study area.

(c) Step 3 - Determine Current Commodity Flow. This step identifies the total tonnage that could benefit from using the waterway. This information is primarily obtained by interviews of shippers. Potential commodities that might use the waterway in response to reduced transportation costs are also identified.

(d) Step 4 - Determine Current Cost of Waterway Use. Current cost of waterway use is determined for all commodities that could potentially benefit from the waterway improvement. This cost includes the full origin-to-destination costs, including handling, transfer, demurrage and prior and subsequent hauls for the tonnages identified in the prior step. Costs are estimated for the without-project and with-project conditions. The difference between the with and without-project costs represents the reduction in current delays and gains in efficiencies with the project in place.

(e) Step 5 - Determine Current Cost of Alternative Movement. The current cost of alternative movement is estimated for all commodities under consideration. This cost includes full origin-to-destination costs, including costs of handling, transfer, demurrage and prior and subsequent hauls. The product of this step, combined with the products from the two previous steps, generates a first approximation of the demand schedule for waterway transportation. In the case of rail movements, the prevailing rate actually charged for moving the traffic shall be used to estimate the alternative movement cost. A "competitive" rate may be used if there is no prevailing rate. Appendix E provides a definition and guidance on how to compute "competitive" rates.

(f) Step 6 - Forecast Potential Waterway Traffic by Commodity. Projections of potential traffic are developed for selected years from the time of the study until the end of the period of analysis, for time intervals not to exceed 10 years. Normally, independent studies are undertaken to develop these projections. Available secondary data supplemented by interviews of relevant shippers, carriers and port officials, opinions of commodity consultants and experts and historical flow patterns are used to develop these projections.

(g) Step 7 – Determine Future Cost of Alternative Mode. The future cost of alternative mode per unit of each commodity will normally be the same as the current cost.

(h) Step 8 – Determine Future Cost of Waterway Use. The potential changes in cost of the waterway mode for future years for individual origin-destination commodity combinations are estimated in this step. Also, an analysis of the relationship between waterway traffic volume and system delays is conducted. This analysis generates data on the relationships between total traffic volume and the cost of transportation on the waterway.

(i) Step 9 – Determine Waterway Use, With and Without-Project. The data developed in previous steps is used to determine waterway use over time with and without the project. This determination is made based upon a comparison of costs for movements by the waterway and by the alternative mode and of any changes in the cost functions and demand schedules. The "phasing in" and "phasing out" of shifts from one mode to another are also considered in this analysis.

(j) Step 10 – Compute NED Benefits. The information produced in previous steps is used to compute total NED benefits for each category described in Paragraph 3-2c(1), as applicable. Total NED benefits are annualized and discounted using the applicable discount rate (published annually by HQUSACE).

(5) Evaluation Procedures for Deep Draft Navigation. The following nine steps are used to estimate deep draft navigation benefits. As in the case of inland navigation benefits, the effort expended on each step will depend on the scope and nature of the proposed improvement, the state of the art to accurately develop the estimates and the sensitivity of project formulation and evaluation to further refinement. Appendix E provides additional guidance for each step.

(a) Step 1 – Determine the Economic Study Area. In this step, the economic study area is delineated. This step includes an assessment of the transportation network that is functionally related to the harbor considered for improvement. Foreign origins and destinations are also included in this assessment. The economic study area is likely to vary for different commodities. In the final delineation of the economic study area, the trade area relative to adjacent ports and any commonality that might exist with the area under study must be considered.

(b) Step 2 – Identify Types and Volumes of Commodity Flow. An analysis of commerce that flows into and out of the economic study area is performed to estimate the types and volumes of commodities that now move on the existing project or that may be attracted as a result of the proposed improvement. This analysis provides an estimate of gross potential cargo tonnage which is used to estimate the prospective commerce that may use the harbor during the period of analysis. Current volumes of prospective commerce are developed using available statistics on waterborne commerce. After determining the types and volumes of commodities currently moving or expected to move in the economic study area, data on origins, destinations and vessel itineraries are used to identify the commodity types and volumes that could benefit from the project. Commodities that are now moving without the project but would shift origins or destinations with the project, as well as induced movements, are segregated for additional analysis.

(c) Step 3 – Project Waterborne Commerce. Projections of the potential use of the harbor or waterway under study are developed for selected years from the time of the study until the end of the period of analysis. The commodities included in the projections should be identified, if possible, according to waterborne modes (e.g., containerized, liquid bulk, dry bulk, etc.) and by imports, exports, domestic shipments, domestic receipts and internal trade. Usually, independent studies are undertaken to develop these projections considering secondary data, data from interviews to shippers, carriers and port officials, opinions of consultants and experts and historical flow patterns. A sensitivity analysis of the projections is performed to account for uncertainties in the estimates.

(d) Step 4 – Determine Vessel Fleet Composition and Cost. The vessel fleet composition is determined by analyzing past trends in vessel size and fleet composition and trends in the domestic and world fleet. The vessel fleet composition is determined for both with- and without-project conditions. Changes in fleet composition may vary by trade route, type of commodity and volume of traffic. Canal restrictions, foreign port depths and lengths of haul also affect the vessel fleet composition. Vessel operating costs, by category of waterborne mode and size, are provided annually by HQUSACE. These costs may be modified to meet the needs of specific studies.

(e) Step 5 – Determine Current Cost of Commodity Movements. Transportation costs prevailing at the time of the study are determined in this step for all tonnage identified in step 2 that could benefit from the project. These costs include full origin-to-destination costs plus handling, transfer, and storage costs, and other accessory charges. Transportation costs are developed for both the with- and without-project conditions. For with-project conditions, these costs reflect efficiencies that can be reasonably expected, such as use of larger vessels, increased loads and reduction in transit time and delays (tides).

(f) Step 6 – Determine Current Cost of Alternative Movement. Alternative movement is the movement of commodities through other competitive harbors, and through other operational means such as lightering, lightening and topping-off operations, off-shore port facilities, transshipment terminals, traffic management, pilotage regulations and other modes of transportation. Transportation costs for these alternative modes of movement, as applicable, are estimated for the with- and without-project condition. These costs are used in the analysis of potential diversion of traffic. Factors to be considered in this analysis, in addition to transportation costs, are handling and transfer charges, available service and schedules, carrier connections, institutional arrangements, and other related factors.

(g) Step 7 – Determine Future Cost of Commodity Movements. Relevant shipping costs are estimated for with- and without-project conditions considering changes in the fleet composition, port delays and port capacity. Future transportation costs are based on the vessel operating costs prevailing at the time of the study.

(h) Step 8 – Determine Use of Harbor and Channel With- and Without-Project. To estimate the proposed harbor use over time, for with- and without-project conditions, the costs for movements via each proposed plan and via each alternative mode are compared. Changes in the cost functions and demand schedules in the current and future without-project condition and the current and future with-project condition are analyzed. The impact of uncertainty in the use of the harbor, the level of service provided and existing and future inventories of vessels are also considered.

(i) Step 9 – Compute NED Benefits. The tonnage moving with and without a project and the cost of movement via the harbor and via each alternative are used to compute total NED benefits for each category of benefits described in paragraph 3-2c(1).

d. Cost Sharing Requirements. Paragraph 2-8 discusses general cost sharing considerations applicable to all project purposes including navigation. Specific cost sharing requirements for this purpose are discussed in Appendix E of this regulation.

(1) Special Cases. Special cases that require a determination of Federal responsibility or cost sharing include, but are not limited to access channels not directly adjacent to primary channels, barge fleeting areas, and an initial single user with potential for future multiple users.

(2) Land Creation or Enhancement at Inland Harbors. Federal participation in inland waterway harbor improvements under the Civil Works program is not warranted when: (1) resale or lease of lands used for disposal of excavated material can recover the cost of the

improvements, or (2) the acquisition of land outside the navigation servitude is necessary for construction of the improvements and would permit local entities to control access to the project. The latter case is assumed to exist where the proposed improvement consists of a new channel cut into land.

(3) Land Creation at Harbors (other than inland harbors). The NED Plan for harbor projects that include land creation benefits shall be formulated using navigation benefits exclusively; thus, land creation benefits shall not be considered in the identification of the NED Plan. Special cost sharing will be required for land creation benefits associated with the NED Plan in proportion to the magnitude of these benefits to the total benefits. The procedure to estimate the cost sharing in this case is described in Appendix E. Non-Federal requests for exceptions to the NED Plan, to include land creation benefits, may be allowed provided all additional implementation costs are non-Federal and the incremental navigation benefits equal or exceed the incremental operation and maintenance costs for the general navigation features. No additional cost sharing will be required for the land creation benefits associated with the project modifications beyond the NED Plan which are requested and paid for by the non-Federal sponsor.

e. Other Authorities. Other authorities that may be applicable to this project purpose are discussed in paragraph 3-10.

3-3. Flood Damage Reduction. Section 1 of the Flood Control Act of 1936 declared flood control to be a proper Federal activity since improvements for flood control purposes are in the interest of the general welfare of the public. The Act also stipulated that for Federal involvement to be justified, " . . . the benefits to whomsoever they may accrue (must be) in excess of the estimated costs, and . . . the lives and social security of people (must be) otherwise adversely affected."

a. Types of Improvements.

(1) Structural Measures: Structural measures are physical modifications designed to reduce the frequency of damaging levels of flood inundation. Structural measures include: dams with reservoirs, dry dams, channelization measures, levees, walls, diversion channels, pumps, ice-control structures, and bridge modifications.

(2) Nonstructural Measures. Section 73 of the Water Resources Development Act of 1974 requires consideration of nonstructural alternatives in flood damage reduction studies. They can be considered independently or in combination with structural measures. Nonstructural measures reduce flood damages without significantly altering the nature or extent of flooding. Damage reduction from nonstructural measures is accomplished by changing the use made of the floodplains, or by accommodating existing uses to the flood hazard. Examples are flood proofing, relocation of structures, flood warning and preparedness systems (including associated emergency measures), and regulation of floodplain uses.

(3) Major Drainage. Drainage projects are usually undertaken in rural areas to increase agricultural outputs. Some portions of drainage improvements may be considered flood damage reduction measures in accordance with Section 2 of the Flood Control Act of 1944. The typical

drainage system consists of drainage ditches, dikes, and related work. An outlet structure is provided at the downstream end where the system empties into a larger channel. The Federal interest in these projects is normally limited to the outlet works. Drainage in urban areas can also qualify under the 1944 Act if the major outlet works do not substitute for works that are a local responsibility, such as municipal storm sewer improvements.

(4) Groundwater. Section 403 of the WRDA of 1986 expands the definition of flood control to include flood prevention improvements for protection from groundwater induced damages.

b. Specific Policies.

(1) Flood Plain Management, Executive Order 11988. Executive Order 11988 (E.O. 11988) was issued in 1977 with the intent to avoid floodplain development, reduce hazards and risk associated with floods, and restore and preserve natural floodplain values (See ER 1165-2-26 for Corps policy on this directive). In the event there is no alternative to construction in the floodplain, the Corps is required to minimize the adverse impacts induced by construction of the project. In considering adverse impacts, planners should address induced new development in the floodplain or induced improvements to existing development in the floodplain that would increase potential flood damages; and, the detrimental effect of induced activities on natural floodplain values.

(2) Project Performance and Risk Framework.

(a) Flood damage reduction studies are conducted using a risk-based analytical framework. The risk framework captures and quantifies the extent of the risk and uncertainty and enables quantified tradeoffs between risk and cost. Decision making considers explicitly what is gained and what is lost. (See ER 1105-2-101 and EM 1110-2-1619 for details.)

(b) Projects are analyzed and described in terms of their expected performance, not in terms of levels of protection. Contingencies are acknowledged and residual risk is not routinely reduced by overbuilding or by inclusions of freeboard. The regulation identifies key variables that must be explicitly incorporated into the risk-based analysis. At a minimum, the stage-damage function for economic studies (with special emphasis on first floor elevation, and content and structure values for urban studies), discharge associated with exceedence frequency for hydrologic studies, and conveyance roughness and cross-section geometry for hydraulic studies must be incorporated in the risk-based analysis. ER 1105-2-101 further requires a probabilistic display of benefits and eliminates freeboard to account for hydraulic uncertainty.

(c) There is no minimum level of performance or protection or size required for Corps projects. The smaller in size or the lower the level of performance however, the higher the residual risk. Residual risk must therefore be carefully analyzed, documented and communicated. Departures from the NED plan may be considered options to manage this risk. In addition, explicit risk management alternatives may be formulated.

(3) Existing Levees/Dams. Proposals to modify existing levees must be evaluated using a risk based approach as described in ER 1105-2-101. Downstream consequences of dams on flood risk are also analyzed in a risk-based framework. Evaluation of dam reliability and safety is based on engineering design criteria found in ER 1110-2-1155.

(4) Residual Damages. The analysis of any proposed flood damage reduction project shall include an estimate of the residual expected annual damages that would occur with the project in place.

(5) Induced Flooding. When a project results in induced damages, mitigation should be investigated and recommended if appropriate. Mitigation is appropriate when economically justified or there are overriding reasons of safety, economic or social concerns, or a determination of a real estate taking (flowage easement, etc.) has been made. Remaining induced damages are to be accounted for in the economic analysis and the impacts should be displayed and discussed in the report.

(6) Minimum Flows, Minimum Drainage Area and Urban Drainage. In urban and urbanizing areas provision of a basic drainage system to collect and convey local runoff is a non-Federal responsibility. Water damage problems may be addressed, under flood damage reduction authorities, downstream from the point where the flood discharge is greater than 800 cubic feet per second for the 10 percent flood (one chance in ten of being equaled or exceeded in any given year) under conditions expected to prevail during the period of analysis. Drainage areas which lie entirely within the urban area and which are less than 1.5 square miles in area, are assumed to lack sufficient discharge to meet the above hydrologic criterion. Urban streams and waterways that receive runoff from land outside the urban area shall not be evaluated using this 1.5 square mile drainage area criterion. Exceptions may be granted in areas of hydrologic disparity, that is areas producing limited discharge for the ten percent event but in excess of 1800 cubic feet per second for the one percent event (See ER 1165-2-21).

(7) Single Properties. The Corps will not participate in structural flood damage reduction for a single private property. Nor will it participate in nonstructural flood damage reduction measures, unless single property protection is part of a larger plan for structural or nonstructural measures benefiting multiple owners collectively. The Corps may consider participation in structural and nonstructural flood damage reduction measures protecting a single, non-Federal, public property. Work to provide protection to a single Federal property is accomplished only on a reimbursable basis, upon request from the Federal agency. In the event such properties are within the study area, Civil Works funds may be used for their protection.

(8) Recreation at Non-Lake Flood Damage Reduction Projects. The Corps participates in recreation facilities at non-lake flood damage reduction projects if the recreation activities have a strong, direct relationship to the proposed flood damage reduction measures, such as trails along the channel or levee right-of-way. Corps participation in these projects is limited by policy as discussed in Appendix E.

(9) Agricultural Flood Protection. The Corps flood damage reduction programs apply to agricultural as well as urban flood damages. Usually the NED plan for agricultural areas provides only a low degree of flood prevention.

(10) Land Development and Floodplain Management. The following general policy principles apply to land development benefits at structural flood damage reduction projects.

(a) Communities participating in a flood damage reduction project with the Corps of Engineers are required to participate in FEMA's National Flood Insurance Program (NFIP) and to comply with the land use requirements of that program.

(b) Communities participating in a flood damage reduction project with the Corps must also prepare a flood plain management plan designed to reduce the impact of future flood events in the project area. This plan must be adopted within one year after signing a project cooperation agreement and the plan must be implemented not more than one year after the construction of a project. Although costs for the preparation of the flood plain management plan are sponsor costs, data collected during the planning process may be used in development of the plan.

(c) Projects or separable increments producing primarily land development opportunities do not reduce actual flood damages and therefore have low budget priority. Federal participation in these projects will not be recommended.

(d) Flood damage reduction projects can greatly impact what is required of a local community for participation in the NFIP. In addressing these impacts, the following should be considered:

- In coordination with the non-Federal sponsor and FEMA, consideration should be given to developing flood maps and flood profiles depicting post-project conditions. The information should be in a form useful to FEMA in revising flood insurance rate maps.

- The appropriate FEMA Regional office will be notified of proposed flood protection works or of changes to established flood protection works.

(11) Categorical Exemption to NED Plan. For flood damage reduction studies, where the non-Federal sponsor has identified a desired maximum level of protection, where the with-project residual risk is not unreasonably high, and where the plan desired by the sponsor has greater net benefits than smaller scale plans, it is not required to analyze project plans providing higher levels of protection than the plan desired by the sponsor. For example, if a sponsor desires a levee of sufficient height to meet FEMA's flood insurance requirements and it is determined that the levee to accomplish this has higher net benefits than smaller levees, then the levee desired by the sponsor can be recommended without having to analyze larger levees to identify the NED Plan. The recommended plan must have greater net benefits than smaller scale plans, and a sufficient number of alternatives must be analyzed to insure that net benefits do not maximize at a scale smaller than the recommended plan. If the plan proposed to be recommended contains uneconomical increments an exception from the ASA(CW) must be

obtained. An essential element of the analysis of the recommended plan is the identification of residual risk for the sponsor and the flood plain occupants, including residual damages and potential for loss of life, due to exceedence of design capacity. The analysis of alternatives must be comprehensive enough to meet the requirements of NEPA.

(12) Exception to NED Plan for Urban Areas. When the NED Plan has less than 90 percent reliability of protecting against the 1 percent chance annual flood event, an exception to the NED Plan may be recommended. The conditions and requirements stated in Appendix E must be met in order to grant this exception.

(13) Use Of Lands Cleared Under The FEMA Hazard Mitigation Grant Program. (Guidance is under development)

c. Evaluation Framework. The measurement standard and conceptual basis for benefits associated with flood damage reduction projects is willingness to pay for each increment of output from a plan. In some planning situations it is infeasible to directly measure willingness to pay; therefore, alternative techniques are used to estimate the total value of a plan's output. The evaluation of flood damage reduction projects shall be conducted following the process described in paragraph 2-3e of this regulation. The procedures described in the following paragraphs apply to the estimation of benefits used in the economic evaluation of flood damage reduction projects, and summarize requirements and procedures. Appendix E provides additional guidance on these requirements and procedures.

(1) National Economic Development Benefits. Benefits from plans for reducing flood hazards accrue primarily through the reduction in actual or potential damages to affected land uses. There are three primary benefit categories, reflecting three different responses to a flood hazard reduction plan. Inundation reduction benefits are the increases in net income generated by the affected land uses when the same land use pattern and intensity of use is assumed for with- and without-project conditions. Intensification benefits are increases in net income generated by intensified floodplain activities when the floodplain use is the same with and without the project but an activity (or activities) is more intense with the project. The third category of benefits is location benefits. If an activity is added to the floodplain because of a plan, the location benefit is the difference between aggregate net incomes (including economic rent) in the economically affected area with and without the project. The magnitude of location benefits that can be claimed is limited by policy. In general, the NED Plan will be formulated to protect existing development and vacant property that is interspersed with existing development. Location benefits can be claimed for vacant property that is not interspersed with existing development only if it is demonstrated that the vacant property would be developed without the project and the benefits are based on savings in future flood proofing costs.

(2) Types of Flood Damage. Flood damages are classified as physical damages and nonphysical damages. Each activity affected by a flood can experience loss in one or both of these classes.

(a) Physical damages. Physical damages occur to residential, commercial, industrial, institutional, and public property. Damages occur to buildings, contents, automobiles, and outside property and landscaping. Physical damages include the costs to repair roads, bridges,

sewers, power lines, and other infrastructure components. Physical damages also include the direct costs and the value of uncompensated hours for cleanup after the flood.

(b) Nonphysical flood losses. Nonphysical flood losses include income losses and emergency costs. Income losses are the loss of wages or net profits to business over and above physical flood damages that usually result from a disruption of normal activities. Estimates of these losses must be derived from specific independent economic data for the interests and properties affected. Prevention of income losses result in a contribution to national economic development only to the extent that the losses cannot be compensated for by postponement of an activity or transfer of the activity to other establishments. Emergency costs include those expenses resulting from a flood that would not otherwise be incurred. For example, the costs of evacuation and reoccupation, flood fighting, and administrative costs of disaster relief; increased costs of normal operations during the flood; and increased costs of police, fire, or military patrol. Emergency costs should be determined by specific survey or research and should not be estimated by applying arbitrary percentages to the physical damage estimates.

(3) Without-Project Condition. The without-project condition is the land use and related conditions expected to occur during the period of analysis in the absence of the proposed project. The following assumptions are part of the projected without-project condition:

(a) Existing flood hazard reduction plans are considered to be in place, considering the actual remaining economic life of existing structures. If there is a high likelihood of construction of a flood hazard reduction plan authorized for implementation but not yet constructed, the authorized plan is assumed to be in place.

(b) The adoption and enforcement of land use regulations pursuant to the Flood Disaster Protection Act of 1973 is assumed.

(c) For planning purposes, the Corps shall assume that communities in the floodplain belong to the National Flood Insurance Program (NFIP) administered by the Federal Emergency Management Agency (FEMA).

(d) Compliance with E.O. 11988 (described in paragraph 3-3b(1)), Floodplain Management and E.O. 11990, Protection of Wetlands, is assumed.

(4) With-project Condition. The same assumptions that underlie the without-project condition apply to the with-project condition.

(5) Evaluation Procedure. The steps required to evaluate benefits for flood damage reduction projects are described in the following paragraphs. These steps are designed to determine land uses and relate these uses to the flood hazard from an NED perspective. The level of effort expended on each step will depend on the scope and nature of the proposed improvement, the state of the art to accurately develop the estimates and the sensitivity of project formulation and evaluation to further refinement. Appendix E provides additional guidance for each step. The first five steps result in a determination of future land use with emphasis on

evaluating the overall reasonableness of local land use plans with respect to State, County or other projections of a larger area encompassing the study area.

(a) Step 1- Delineate the Affected Area. The area affected by a proposed plan consists of the floodplain plus all other nearby areas likely to serve as alternative sites for any major type of activity that might use the floodplain if it were protected. All areas impacted by the proposed plan shall be included in the affected area.

(b) Step 2 – Determine Floodplain Characteristics. An inventory of the floodplain is undertaken to determine those characteristics that make it attractive or unattractive for particular uses as identified in the land use demand analysis. The floodplain is characterized in terms of flooding, including the designation of high hazard areas, natural storage capabilities and constraints, natural and beneficial values and potential for water-oriented transportation. Other attributes, such as physical characteristics, available services and existing activities are also included in the floodplain characterization.

(c) Step 3 – Project Activities in Affected Area. Economic and demographic projections are developed, as needed, on the basis of current unbiased economic growth indices. Whenever possible, the growth indices should be independent estimates.

(d) Step 4 – Estimate Potential Land Use. Demographic projections are converted to land use needs using conversion factors from published secondary sources, from other studies or from empirical data.

(e) Step 5 – Project land Use – Land use demand is allocated to floodplain and non-floodplain lands for the without-project condition and for each alternative floodplain management plan.

(f) Step 6 – Determine Existing Flood Damages. Existing flood damages are the potential average annual dollar damages to activities affected by flooding at the time of the study. Existing damages are those expressed for a given magnitude of flooding or computed in the damage frequency process. The basis for the determination of existing damages is losses actually sustained in historical floods supplemented by appraisals, application of depth-damage curves and an inventory of capital investment within the floodplain. (Further guidance on the use of generic depth-damage curves is provided in Appendix E.) Average annual damages are computed using standard damage-frequency integration techniques and computer programs that relate hydrologic and hydraulic flood variables such as discharge and stage to damages and to the probability of occurrence of such variables. These estimates are developed using a risk-based analytical framework as described in paragraph 3-3b(2) of this regulation.

(g) Step 7 – Project Future Flood Damages. Future flood damages are those damages to activities identified in Step 3 that might use the floodplain in the future with- and without-project conditions. Hydrologic and economic changes are considered in developing these estimates. Procedures described in step 6 are used to estimate future flood damages. Participation in the NFIP requires communities to preclude new development in the regulatory floodway, as defined by the community. It also requires that new development in the NFIP

regulatory floodplain outside of the floodway be constructed at or above the median probability 100-year discharge regardless of whether or not that discharge is expected to increase in the future during the period of analysis. Estimates of future flood damages are constrained by these requirements.

(h) Step 8 – Determine Other Costs of Using the Floodplain. The impact of flooding on existing and potential future occupants of the floodplain, in addition to flood losses, include increased flood proofing costs, increased costs of administration of the NFIP and less efficient use of existing structures. The increased cost of administration of the NFIP can be claimed as a benefit of flood damage reduction projects. HQUSACE annually publishes data on administration cost per policy to use in estimating this benefit. Increased flood proofing costs are used as a measurement of potential location benefits.

(i) Step 9 – Collect Land Market Value and Related Data. If land use is different with and without the project, the difference in income for the land is computed using flood proofing costs as a proxy of the market value of land. If land use is the same with and without the project but the use is more intense, the increased income is determined on the basis of direct computation of costs and revenues. Projects or separable increments of projects that achieve only land development benefits (protection of vacant lands) are not recommended for implementation.

(j) Step 10 – Compute NED Benefits. To the extent that step 5 indicates that the land use is the same with and without the project, inundation reduction benefits are computed as the difference in flood damages with and without the project. In the evaluation of relocation and evacuation projects considerable attention is paid to the with-project use of the land to be evacuated, as the benefit associated with such use may be crucial for project feasibility. NED benefits also include estimates of savings in administration costs of the NFIP, intensification benefits, location benefits and benefits associated with the use of unemployed or underemployed resources. Detailed procedures for computing NED benefits are provided in Appendix E.

(k) Section 219 of the WRDA of 1999 directs the Secretary of the Army to calculate benefits for nonstructural flood damage reduction projects using methods similar to those used in calculating the benefits of structural projects and further directs the Secretary to avoid double-counting of benefits in these projects. Guidance for the implementation of this Section will be included in Appendix E when finalized.

d. Cost Sharing Requirements. Paragraph 2-8 discusses general cost sharing considerations applicable to all project purposes including flood damage reduction. Specific cost sharing requirements for flood damage reduction are discussed in Appendix E.

e. Other Authorities. Other authorities that may be applicable to this project purpose are discussed in paragraph 3-10.

f. Other Related Programs. Flood Plain Management Services (FPMS)

(1) The FPMS Program was established to carry out Section 206 of the Flood Control Act of 1960 as amended. Its objective is to encourage prudent use of the Nation's flood plains for the benefit of the national economy and general welfare by supporting comprehensive flood plain management planning at all appropriate governmental levels. The Corps may provide flood plain information and planning assistance to State, county and city governments, Native American (Indian) Nations, as well as to other Federal agencies. Flood and flood plain information is also provided to private citizens, corporations, and groups.

(2) Assistance can be provided in the form of technical services, planning guidance and assistance on floods and flood plain issues. The Corps also provides support to the National Flood Insurance Program (NFIP) by conducting flood insurance studies and related technical work. Funding for the FPMS Program is obtained through appropriations for non-reimbursable FPMS items and through cost recovery for reimbursable services. Reimbursements for support to the NFIP are obtained from FEMA. Upon request, program services are provided to State, regional, and local governments, Native American (Indian) Nations, and other non-Federal public agencies without charge. Program services also are offered to other Federal agencies and to the private sector on a 100 percent cost recovery basis.

(3) Coordination. Program activities shall be coordinated with State and local agencies and field offices of Federal agencies concerned with flood problems to ensure that they are informed of the Corps FPMS Program, that the Corps is apprised of related activities of other agencies, and that there is no overlap of effort.

3-4. Hurricane and Storm Damage Reduction. Congress has authorized Federal participation in the cost of restoring and protecting the shores of the United States, its territories and possessions. Under current policy, shore protection projects are designed to reduce damages caused by wind-generated and tide-generated waves and currents along the Nation’s ocean coasts, Gulf of Mexico, Great Lakes, and estuary shores. Hurricane protection was added to the erosion control mission in 1956 when Congress authorized cost-shared Federal participation in shore protection and restoration of publicly owned shore areas. Protection of private property is permitted only if such protection is incidental to the protection of public areas, or if the protection of private property would result in public benefits. Federal assistance for periodic nourishment was also authorized on the same basis as new construction, for a period to be specified for each project, when it is determined that it is the most suitable and economical remedial measure.

a. Types of Improvements. The improvements are usually structural measures including such features as beachfill, groins, seawalls, revetment, breakwaters, and bulkheads. Nonstructural measures, such as property acquisition, shall also be considered.

b. Specific Policies.

(1) Geographic Applicability. The shore protection authority is applicable to the shores of the Atlantic and Pacific Oceans, the Gulf of Mexico, the Great Lakes, estuaries, and bays

directly connected therewith of each of the states, the Commonwealth of Puerto Rico, the US Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands. The authority extends only that distance up streams where the dominant causes of damage are coastal storms or ocean tidal action (or Great Lakes water motion) and wind-generated waves. The program does not address damages caused by stream flows or vessels.

(2) Erosion Control Measures. In the past, particularly prior to passage of the WRDA of 1986, beach fill or beach restoration was frequently considered an erosion control measure, and erosion control was treated as a project output or project purpose. As a result of enactment of the law, however, erosion control has no separate status as a project purpose or as a project output. Thus, erosion control measures (e.g., beach fill) shall be treated as means to the ends of hurricane and storm damage reduction, ecosystem restoration, or recreation; similar to breakwaters or revetments.

(3) Historic Shoreline. Existing authority provides for restoration and protection of beaches. It provides for extending a beach beyond its historic shoreline only when the extension is desirable for engineering reasons, is environmentally acceptable, and is an economically justified means to prevent or reduce storm damage behind the historic shoreline. In the case of multi-purpose projects that include ecosystem restoration as a project purpose, extending a beach beyond its historic shoreline is acceptable if it is environmentally justified.

(4) Formulation and Establishing Corps Participation. Single purpose shore protection projects are formulated to provide hurricane and storm damage reduction. Highest priority is for reducing damages to existing development. Reducing flooding on, or erosion to, undeveloped lands is not a high priority; and Federal participation in protection of privately owned, undeveloped shores, will not be pursued. Recreation is an incidental output.

(a) The Corps participates in single purpose projects formulated exclusively for hurricane and storm damage reduction, with economic benefits equal to or exceeding the costs, based solely on damage reduction benefits, or a combination of damage reduction benefits and recreation benefits. Under current policy, recreation must be incidental in the formulation process and may not be more than fifty percent of the total benefits required for justification. If the criterion for participation is met, then all recreation benefits are included in the benefit to cost analysis. Costs incurred for other than the damage reduction purpose, i.e. to satisfy recreation demand, are a 100 percent non-Federal responsibility.

(b) The Corps also participates in multiple purpose projects formulated for hurricane and storm damage reduction. For multi-purpose projects that include ecosystem restoration as a project purpose, the combined NED/NER Plan will be formulated in accordance with the guidance in paragraph 2-3g(3) and Appendix E of this regulation.

(5) Public Use and its Relation to Federal Participation. Federal involvement in shore protection has developed historically in relation to beaches, generally with efforts to stabilize, create or restore beaches. It is intended that beaches receiving public aid should not provide exclusively private benefits; and therefore, whenever a hurricane and storm damage reduction

project involves beach improvements, public ownership and use of the beach is required. Items related to public use are discussed below.

(a) User Fees. Reasonable beach recreation use fees are allowable when used to offset the non-Federal sponsor share of project costs.

(b) Parking. Lack of parking may constitute a restriction on public access and use. Therefore, eligibility for Federal participation is precluded in areas where there is a lack of sufficient parking facilities provided for the general public (including nonresident users) reasonably near and accessible to the project beaches. In some instances non-Federal plans may encourage or direct substitution of public transportation access for private automobile access.

(c) Access. Corps participation is conditioned on provision of reasonable public access rights-of-way, consistent with attendance used in benefit evaluation and in accordance with local recreational use objectives.

(d) Beach Use by Private Organizations. Federal aid to private shores owned by beach clubs and hotels which limit beach use to members or guests, is contrary to the intent of Public Law 826 of 1956.

(e) Public Shores with Limitations. Publicly owned beaches which limit use to residents of the community or a group of communities are not considered to be open to the general public and are treated as private beaches.

(6) Shore Lines Owned by Federal Agencies.

(a) Work to provide shore protection to lands under the jurisdiction of another Federal agency shall be accomplished on a reimbursable basis, upon request from the agency. In the event protection has not been requested and such lands are within the study area, Civil Works funds may be used if including them in a project is more cost effective than excluding them.

(b) Protection of (non-Civil Works) Department of the Army lands shall be accomplished with military funds, not civil works funds. If the lands are a minor part within the study area, Civil Works funds may be used if including them in a project is more cost effective than excluding them.

(7) Periodic Nourishment. In accordance with Public Law 826 of 1956 (Beach Nourishment), when the Chief of Engineers determines that the most suitable and economical remedial measures would be provided by a periodic nourishment project, the Chief may consider the periodic nourishment as continuing construction for the length of time that the Chief specifies. Classifying the periodic nourishment as continuing construction establishes the Federal interest in cost sharing renourishments, usually for the economic life of the project. If the NED plan for a shore protection project includes a combination of structures and periodic nourishment, the renourishments may be considered continuing construction while future costs needed to operate, maintain, repair, rehabilitate or replace the structural components are considered operation and maintenance which is a non-Federal responsibility.

(a) New Projects. Federal participation in periodic nourishment may be recommended to continue for the lesser of: (1) project economic life, (2) physical life of structural features required for the project, (3) fifty years.

(b) Existing Projects. Per authority in Section 934 of the WRDA of 1986, when the authorized period of Federal participation in periodic nourishment at existing projects expires, it may be extended without further Congressional action for a period not to exceed 50 years after the date of initial construction. Reevaluation using current evaluation guidelines and policies is necessary. Prior to the expiration of the existing periodic nourishment period the sponsor must request the extension and express a willingness to cost share in accordance with the provisions of WRDA of 1986. This Section 934 authority does not apply to projects using sand bypassing plants.

(8) Outer Continental Shelf Mineral Resources. If mineral resources from the outer continental shelf are proposed for use in Civil Works projects, the Corps and Minerals Management Service (MMS) (U.S. Department of Interior) must enter into a memorandum of agreement. The sponsor must also negotiate a noncompetitive lease with the MMS. Section 215(b) of the WRDA of 1999 amended Section 8(k)(2)(B) of the Outer Continental Shelf Lands Act to exempt state and local government agencies, in addition to Federal agencies, from the assessment of fees for the use of Outer Continental Shelf sand, gravel, and shell resources in a shore protection, beach restoration, or coastal wetlands project or program, or in any other construction project funded or authorized by the Federal Government.

(9) Specific policies for hurricane and storm damage reduction are presented in more detail in ER 1165-2-130.

c. Evaluation Framework. The measurement standard and conceptual basis for benefits is willingness to pay for each increment of output from a plan. In some planning situations it is infeasible to directly measure willingness to pay; therefore, alternative techniques are used to estimate the total value of a plan's output. The evaluation of hurricane and storm damage reduction projects shall be conducted following the process described in paragraph 2-3e of this regulation. The procedures described in the following paragraphs apply to the estimation of benefits used in the economic evaluation of hurricane and storm damage reduction projects and summarize requirements and procedures. Appendix E provides additional guidance on these requirements and procedures.

(1) National Economic Development Benefits. For hurricane and storm damage reduction projects estimated benefits are principally reductions in actual or potential damages to affected land uses. Damages are most frequently due directly to storms or to the resultant shoreline erosion. Storm damage reduction benefits are categorized as wave damage reduction benefits, inundation reduction benefits and other benefits. Erosion protection benefits include loss of land, structural damage prevention, reduced emergency costs, reduced maintenance of existing structures and incidental benefits. The primary benefit to be claimed in hurricane and storm damage reduction projects is reduction of damages to existing structures. Recreation

benefits are incidental and are measured in accordance with the guidance provided in paragraph 3-7 of this regulation and in Appendix E.

(2) With- and Without-Project Conditions. The assumptions described in paragraph 3-3c(3) are also applicable to hurricane and storm damage reduction studies. In addition, whenever a hurricane and storm damage reduction project involves beach improvements, public ownership and use of the beach is required, as described in paragraph 3-4b(5) of this regulation.

(3) Evaluation Procedure. The steps to evaluate benefits for hurricane and storm damage prevention projects are described in the following paragraphs. The level of effort expended on each step will depend on the scope and nature of the proposed improvement, the state of the art to accurately develop the estimates and the sensitivity of project formulation and evaluation to further refinement.

(a) Step 1 – Delineate the Study Area. The study area is that area affected by storms and erosion problems and by proposed alternatives. It includes areas indirectly affected by the problems and projects such as downdrift areas and navigation and other projects outside the immediate project site.

(b) Step 2 – Define the Problem. In this step, existing storm damage and erosion problems are identified and described. The description of existing conditions should include a history of the economic and social effects of storm damage and erosion problems in the area, a history of storms and erosion trends and historical floods and wave attack problems. A determination of the degree of protection afforded by existing structures is also made as part of this step. This includes an assessment of the level of protection actually provided by the structure, its structural integrity, the remaining useful life and operation and maintenance requirements.

(c) Step 3 – Select Planning Shoreline Reaches. Reaches are the primary economic sub-unit of analysis. Geomorphic conditions, land uses and type or level of existing protection are criteria used in the designation of reaches.

(d) Step 4 – Establish Frequency Relationships. Two types of frequency relationship are developed for the analysis. These are elevation-frequency relationship and erosion-frequency relationship. The first one shows the relationship between wave and water level and frequency of occurrence and is used to derive expected annual inundation damages. The second one shows the relationship between periodic erosion (or accretion) and frequency of occurrence and is used to estimate erosion-induced damages.

(e) Step 5 – Inventory Existing Conditions. An inventory of affected properties, including land, is performed to estimate potential damages. The inventory is done by land use activities (i.e., residential, commercial, industrial, etc.) and includes variables such as value, use, ground elevation, distance from the water, construction materials, area, and number of stories. Areas likely to be developed in the future or where land use changes could occur are also identified.

(f) Step 6 – Develop Damage Relationships. Damage relationships describe the expected value of structural or contents damages caused by various factors, such as depth of flooding, duration of flooding, sediment load, wave heights, amount of shoreline recession and warning time. Generalized or site-specific damage relationships can be used depending on the scope of the study and the availability of applicable generalized relationships. Generalized damage relationships are those developed for other geographic areas with similar characteristics to the study area. Site-specific damage relationships are usually required to estimate wave attack and erosion damages. These damage relationships are developed using actual damage data from past storm events. Estimates of losses for buildings, roads, protective works, and other features are developed at current price levels for existing development. Damage relationships are developed for each land use category. Anticipated damages from land loss due to erosion are computed as the market value of the average annual area expected to be lost. Nearshore land values are used to estimate the value of land lost. A risk-based analytical framework should be used to develop the damage relationships.

(g) Step 7 – Develop Damage-Frequency Relationships. The damage-frequency relationships represent how the damage associated with a given event (i.e., storm, wave, erosion) is related to the frequency of that event (probability of occurrence). The damage relationships developed in step 7 are combined with the frequency curves (developed by the hydraulic and hydrologic engineers) to estimate the damage-frequency relationships. Damage-frequency relationships (curves) are developed for each of the applicable damage mechanisms, i.e., long-term erosion, recession, inundation and wave attack and for each land use category. These relationships should be developed using a risk-based analytical framework.

(h) Step 8 – Calculate Expected Annual Damages and Benefits. The expected annual damage is the expected value of erosion losses and storm damages in any given year. Expected annual damages are calculated by computing the area under the damage-frequency curve using a life-cycle approach. Expected annual damages are calculated for the with- and without-project conditions. The difference between the with- and without-project expected annual damages represents the benefit associated with the project.

d. Cost Sharing Requirements. Paragraph 2-8 discusses general cost sharing considerations applicable to all project purposes including hurricane and storm damage prevention. Specific cost sharing requirements for this purpose are discussed in Appendix E.

e. Other Authorities. Other authorities that may be applicable to this project purpose are discussed in paragraph 3-10.

3-5. Ecosystem Restoration. The Corps of Engineers incorporated ecosystem restoration as a project purpose within the Civil Works program in response to the increasing National emphasis on environmental restoration and preservation. Historically, Corps involvement in environmental issues focused on compliance with NEPA requirements related to flood protection, navigation, and other project purposes. The ecosystem restoration purpose shall be carried out in addition to activities related to NEPA compliance as discussed in Appendix C. Ecosystem restoration features shall be considered as single purpose projects or as a part of multiple purpose projects along with navigation, flood protection and other purposes, wherever those restoration features

improve the value and function of the ecosystem. Ecosystem restoration projects should be formulated in a systems context to improve the potential for long-term survival of aquatic, wetland, and terrestrial complexes as self-regulating, functioning systems. Similar to other project purposes, the value of ecosystem restoration outputs shall equal or exceed their cost.

a. Types of Improvements. A wide range of improvements to ecosystem functions is possible including, but not limited to, use of dredged material to restore wetlands, restoring floodplain function by reconnection of oxbows to the main channel, providing for more natural channel conditions including restoration of riparian vegetation, pools and riffles and adding structure, modification of obstructions to fish passage including dam removal, modifications to dams to improve dissolved oxygen levels or temperature downstream, removal of drainage structures and or levees to restore wetland hydrology, and restoring conditions conducive to native aquatic and riparian vegetation.

b. Specific Policies.

(1) The objective of ecosystem restoration is to restore degraded ecosystem structure, function, and dynamic processes to a less degraded, more natural condition. Restored ecosystems should mimic, as closely as possible, conditions which would occur in the area in the absence of human changes to the landscape and hydrology. Indicators of success would include the presence of a large variety of native plants and animals, the ability of the area to sustain larger numbers of certain indicator species or more biologically desirable species, and the ability of the restored area to continue to function and produce the desired outputs with a minimum of continuing human intervention. Those restoration opportunities that are associated with wetlands, riparian and other floodplain and aquatic systems are most appropriate for Corps involvement. A more detailed discussion of Corps ecosystem restoration policy is found in ER 1165-2-501 and Appendix E of this regulation.

(2) Purposes. Projects implemented under this guidance should address the restoration of ecosystems and not restoration of cultural or historic resources, aesthetic resources, or clean up of hazardous and toxic wastes.

(3) Mitigation. Ecosystem restoration projects should be designed to avoid the need for fish and wildlife mitigation. Projects implemented using restoration authorities may not be used as wetland banks or mitigation credit for the non-Federal sponsor.

(4) Public interest. For projects where the land on which the majority of the physical ecosystem restoration will occur is in the ownership of a single firm, individual, club, or association with restrictive membership requirements, it must be demonstrated clearly that the restoration benefits are in the overall public interest and that the benefits do not accrue primarily to the property owner.

(5) Land acquisition. Land acquisition in ecosystem restoration plans must be kept to a minimum. Project proposals that consist primarily of land acquisition are not appropriate. As a target, land value should not exceed 25 percent of total project costs. Projects with land costs exceeding this target level are not likely to be given a high priority for budgetary purposes.

(6) Recreational features. Limited recreational features compatible with the ecosystem outputs for which the project is designed are permissible. Recreational features must be justified and appropriately cost-shared, and should not increase the Federal cost of the ecosystem restoration project by more than 10 percent without prior approval of the ASA(CW). (See Appendix E for additional information.)

(7) Water Quality. Water quality is an important component of ecosystem structure and water quality improvement can be considered as an output of an ecosystem restoration project. However, projects or features that would result in treating or otherwise abating pollution problems caused by other parties where those parties have, or are likely to have a legal responsibility for remediation or other compliance responsibility shall not be recommended for implementation.

(8) Monitoring and adaptive management. Monitoring may be necessary to determine if the predicted outputs are being achieved and to provide feed back for future projects. Cost shared post-implementation monitoring will rarely be required. If cost shared post-implementation monitoring is being considered, it must be clearly defined, justified and the period of cost shared monitoring shall not exceed five years following completion of construction. The cost of monitoring included in the total project cost and cost shared with the non-Federal sponsor shall not exceed one percent of the total first cost of ecosystem restoration features. For complex specifically authorized projects that have high levels of risk and uncertainty of obtaining the proposed outputs, adaptive management may be recommended. The cost of the adaptive management action, if needed, will be limited to 3 percent of the total project cost excluding monitoring costs. Appendix F contains guidance for the CAP.

(9) Real Estate. Requirements specified in paragraph 4-3c(4) apply to ecosystem restoration studies. Generally, fee title is required for ecosystem restoration projects.

c. Evaluation Framework. While the planning process for single purpose ecosystem restoration projects is the same as for any other purpose, the evaluation process is different in that it focuses on quantitative and qualitative restoration outputs and monetary benefits are usually incidental. (See Appendix E for more information on the evaluation process.)

(1) Ecosystem restoration outputs must be clearly identified and quantified in appropriate units. Although it is possible to evaluate various physical, chemical, and/or biological parameters that can be modified by management measures which would result in an increase in ecosystem quantity and quality in the project area, the use of units that measure an increase in "ecosystem" value and productivity are preferred. Some examples of possible metrics which may be used include habitat units, acres of increased spawning habitat for anadromous fish, stream miles restored to provide fish habitat, increases in number of breeding birds, increases in target species and diversity indices. Alternate measures of ecosystem value and productivity may be used upon approval by CECW-P. Monetary gains (e.g., incidental recreation or flood damage reduction) and losses (e.g., flood damage reduction or hydropower) associated with the project shall also be identified.

(2) Cost Effectiveness-Incremental Cost Analyses – As used in this regulation, a plan is considered cost effective if it provides a given level of output for the least cost. Cost effectiveness analysis shall be used to identify the least cost solution for each level of environmental output being considered. Incremental cost analysis compares the additional costs to the additional outputs of an alternative. It is a tool that can assist in the plan formulation and evaluation process, rather than a dictum that drives that process. Incremental analysis helps to identify and display variations in costs among different increments of restoration measures and alternative plans. Thus, it helps decision makers determine the most desirable level of output relative to costs and other decision criteria. These analyses must be performed at an appropriate level of detail for each study to identify the most cost effective plan within the identified constraints.

(3) The significance of the outputs is a critical factor in determining if the monetary and /or non-monetary benefits of the proposed project justify monetary and/or non-monetary costs. The scarcity of the outputs is also a factor in this determination. The concepts of significance and scarcity are discussed in more detail in Appendix E. The risks and uncertainties associated with achieving the projected outputs must also be considered. (See Appendix E for additional information.) Contingent value procedures (survey techniques) for estimating existence, "option", bequest, or other such non-use values will not be approved, and shall not be used, due to several factors including the conjectural nature of estimated values and the high difficulty in controlling bias.

d. Cost Sharing Requirements. Paragraph 2-8 discusses general cost sharing considerations applicable to all project purposes including ecosystem restoration. Specific cost sharing requirements for this purpose are discussed in Appendix E. Appendix F provides details on cost sharing rules applicable to CAP authorities.

e. Other Authorities. Other authorities that may be applicable to this project purpose are discussed in paragraph 3-10.

3-6. Hydroelectric Power Generation. Congress, through various statutes, has directed the Corps to consider the development of hydroelectric power in conjunction with other water resources development plans. Current policy calls for the Corps to formulate comprehensive plans including the development of hydropower by a non-Federal sponsor. The Corps will pursue Federal development only where such non-Federal activity would be impractical. Even in those cases, all costs associated with development of hydroelectric power at the site of a Corps project are borne by non-Federal sponsors.

a. Types of Improvements.

(1) New Federal Projects. Hydroelectric power development may be considered during planning for multipurpose projects involving dams and lakes and may be recommended if non-Federal development would be impractical. The Corps does not construct single purpose hydroelectric power projects.

(2) Addition of Hydropower to Existing Projects. Corps projects without hydroelectric power facilities may add facilities through Federal Energy Regulatory Commission (FERC)

licensed non-Federal development. In rare cases, Congress may authorize Federal development. Cost of development must be borne by non-Federal sponsors.

(3) Pumped Storage. Pumped storage may be considered in the formulation of water resource projects. Non-Federal sponsors are encouraged to develop pumped storage facilities determined to be feasible.

b. Specific Policies.

(1) Practicability. A hydropower project is impractical for non-Federal development if there are compelling physical, operational, legal, competing use, institutional, environmental or economic reasons preventing development or operation, or if non-Federal development would be significantly less productive than Federal development (i.e., produce significantly fewer net NED benefits considering all project outputs).

(2) Economic Justification Requirements. Corps development of single purpose hydropower is precluded. In addition, before hydropower can be included in a multiple purpose project, the project must be economically justified based on other outputs (e.g., flood damage reduction or navigation).

(3) Marketing of Federal Hydropower. Although the Corps constructs and operates power facilities, the power itself is either sold by a Federal power-marketing agency or conveyed to a sponsor. Thus, plan formulation, financing and other implementation requirements should be coordinated with the power-marketing agency and sponsors.

(4) Studies. New studies may be conducted in cases where non-Federal development is impractical. This must be substantiated in order to justify a funding request. No single purpose hydropower studies may be initiated for new sites unless specifically directed and funded by the Congress. Non-Federal sponsors must agree to share the costs of the feasibility study with the explicit understanding that any resultant Federal project will be financed by non-Federal funds.

(5) Technical Services. Upon request, districts may provide reimbursable technical services to states or State subdivisions on hydropower development at sites where hydropower is not an authorized purpose (Intergovernmental Cooperation Act of 1968). Assistance is limited to technical services. Separate authority to construct or operate and maintain hydropower facilities is required. The Corps Center of Expertise for hydropower projects is the Hydroelectric Design Center (HDC) located in Northwestern Division (NWD). Some technical services must be done by the HDC. Any technical service agreements must be coordinated with HDC.

(6) Minimum Facilities for Future Power Installations. To support future hydropower development, penstocks and some other features (“minimum facilities”) may be included in initial project construction, while installation of full facilities is postponed.

(7) Transmission Facilities. The placement of transmission lines and substations must be considered with other project effects.

(8) Hydroelectric Development at Non-Corps Sites. The Corps has no general authority to participate in hydroelectric development at non-Corps sites.

c. Evaluation Framework. The measurement standard and conceptual basis for hydropower benefits is willingness to pay for each increment of output from a plan. In some planning situations it is infeasible to directly measure willingness to pay; therefore, alternative techniques are used to estimate the total value of a plan's output. In the absence of direct measures of marginal willingness to pay, the benefit can be estimated using the resource cost of the most likely alternative to be implemented in the absence of the alternatives under consideration. Since the Corps current participation on the development of hydropower generation projects is very limited, the evaluation procedures are not summarized in this regulation. (See Appendix E for a detailed description, if needed). Current Corps involvement in hydropower generation projects involves the evaluation of major rehabilitation of existing projects. The procedures to evaluate major rehabilitation projects are also described in Appendix E.

d. Cost Sharing Requirements. Paragraph 2-8 discusses general cost sharing considerations applicable to all project purposes including hydropower. Specific cost sharing requirements for this purpose are discussed in Appendix E.

3-7. Recreation. The U.S. Army Corps of Engineers is one of the Nation's largest providers of outdoor recreation opportunities. Although known primarily for the opportunities managed at its lake projects, the Corps also participates in the planning, design and construction of recreation facilities at a wide variety of other types of water resource projects. Such facilities might include hiking and biking trails associated with a stream channel or levee primarily designed for flood damage reduction. There is no general authority for Corps participation in a single purpose recreation project.

a. Types of Improvements. A list of recreational facilities which may be provided in recreation development at Corps projects is provided in Appendix E. As a general rule, the Corps does not participate in the development of improvements that provide outputs or services generally considered vendible. If there is no non-Federal recreation sponsor, facilities or project modifications may not be recommended unless justified by other project purposes, in which case recreation benefits are considered incidental. Minimum facilities needed to maintain public health or safety are permissible. These are limited to road end turnarounds, guardrails, barricades, warning signs, public safety fencing and vault toilets unless upgrades are required by Federal or State regulations. Boat ramps and trailer parking justified by project operations requirements may be provided.

b. Specific Policies.

(1) Lakes (man-made).

(a) Lakes, or reservoirs, are impoundments created behind dams, or behind navigation locks and dams if lands not subject to navigation servitude are needed for water storage. Recreation policies applicable to lakes are not applicable to dry dams, that is, those dams not providing permanently impounded water. The Federal government may participate in basic

recreation facilities on project lands or separable recreation lands if a non-Federal sponsor will participate and cost share. Economically justified recreation facilities are cost shared 50 percent Federal and 50 percent non-Federal. The same conditions apply to separable lands acquired for future recreation development. Cost of recreation development at lakes may not exceed one-half of total project costs. If recreation is a project purpose, several scales of development must be formulated and evaluated.

(b) Reallocation of Storage. Storage reallocation for recreation which significantly affects other authorized purposes, or involves major structural or operational changes, requires Congressional approval. Costs reallocated to recreation and subject to cost sharing will be set to the highest of benefits foregone, revenues foregone, replacement costs, or updated cost of storage. Appendix E provides detailed information on how to compute these benefits, revenues and costs. Cost sharing of facilities is 50 percent Federal and 50 percent non-Federal.

(2) Non-lake Flood Damage Reduction and Navigation Projects. General policies described in the previous paragraphs also apply to non-lake projects, with the following exceptions:

(a) Basic recreation facilities that take advantage of project created opportunities may be provided, but only on lands acquired for non-recreation purposes.

(b) Separable lands acquired for access, parking and facilities, which are required for health and safety are eligible for recreation cost sharing.

(c) Generally, if there is no non-Federally sponsored recreation development, there is no Federal participation in minimum facilities.

(d) The Federal cost of a project including recreation may not exceed the Federal cost of the project excluding recreation by more than ten percent without prior approval by the Secretary of the Army.

(3) Shore Protection Projects. Policy precludes the addition of sand to a beach solely to increase its potential for recreation. Other associated recreation developments are entirely non-Federal responsibility except on Federally-owned shores.

(4) Nonstructural Flood Damage Reduction Projects. Nonstructural flood damage reduction projects are justified mainly by creating new uses for floodplains, and one of the most important new uses is recreation. The limitation of increased Federal cost for recreation development, described in paragraph 3-7b(2), does not apply to projects formulated for nonstructural flood damage reduction that include recreation development. Cost of recreation development may not exceed one-half of the total project costs.

(5) Recreation at ecosystem restoration projects. Recreation at ecosystem restoration projects should be compatible with these types of projects and enhance the visitation experience by taking advantage of natural values. The social, cultural, scientific, and educational values should be considered within the framework of the ecosystem restoration project purpose.

Recreation development at an ecosystem restoration project shall be totally ancillary to the primary purpose, appropriate in scope and scale, and shall not diminish the ecosystem restoration outputs used to justify the project. Recreation facilities may be added to take advantage of the education and recreation potential of the ecosystem restoration project but the project shall not be formulated for recreation. The recreation potential may be satisfied only to the extent that recreation does not adversely impact the ecosystem restoration purpose, and the recreation facilities are justified. The recreational experience shall build upon the ecosystem restoration objective and take advantage of the restored resources rather than detract from them. Ecosystem restoration projects should not encourage public use if there is no non-Federal sponsor to cost share recreation. (Refer to Appendix E for a more detailed discussion on this matter.) Federal participation in recreation development at ecosystem restoration projects will be limited to the facilities shown on the list in Appendix E. Specific policies stated in paragraph 3-7b(2) of this regulation also apply to recreation development at single purpose ecosystem restoration projects. For multi-purpose projects that include non-structural flood damage reduction, ecosystem restoration and recreation, the cost of recreation associated with the non-structural flood damage reduction features may not exceed one-half of the total cost for flood damage reduction plus recreation; and, for recreation associated with ecosystem restoration, the Federal cost of ecosystem restoration plus the Federal cost of recreation may not exceed by more than 10 percent the Federal cost of the ecosystem restoration project without prior approval of the ASA(CW). (See Appendix E for additional information on the implementation of this policy.)

(6) Continuing Authorities. Flood damage reduction, navigation and shore protection continuing authorities are subject to the same recreation policies and conditions of participation as specifically authorized projects. Additionally, all costs in excess of the statutory limitation of Federal expenditures for these projects are entirely a local responsibility.

(7) Limitations on Corps of Engineers Participation in Recreation Projects. Budget Policy generally precludes using Civil Works resources to implement recreation oriented projects in the Civil Works program. An exception is where a project is formulated for other primary purposes and average annual recreation benefits are less than 50 percent of the average annual benefits required for justification (i.e., the recreation benefits that are required for justification are less than an amount equal to 50 percent of project costs).

c. Evaluation Framework. The measurement standard and conceptual basis for recreation benefits is willingness to pay for each increment of output from a plan. In some planning situations it is infeasible to directly measure willingness to pay; therefore, alternative techniques are used to estimate the total value of a plan's output. The evaluation of recreation projects shall be conducted following the process described in paragraph 2-3e of this regulation. The procedures described in the following paragraphs apply to the estimation of benefits used in the economic evaluation of recreation projects and summarize requirements and procedures. Appendix E provides additional guidance on these requirements and procedures.

(1) National Economic Development Benefits. NED benefits from recreation opportunities created by a project are measured in terms of willingness to pay. Benefits for projects that increase the supply of recreational facilities are measured as the willingness to pay for the increment of supply. Benefits for projects that alter willingness to pay for recreational facilities are measured as the with- and without-project willingness to pay.

(2) Evaluation Procedure. It is frequently not possible to estimate demand directly from observed price-consumption data for publicly provided recreation. Thus, three alternate methods can be used to estimate use and willingness to pay. They are the travel cost method (TCM), contingent valuation method (CVM) and the unit day value method (UDV). Criteria to select the method to use include availability of regional demand model, type of recreation activities affected (general or specialized), estimated annual visits and cost of proposed facilities. Appendix E provides details on how to apply these criteria and on how to estimate benefits using each one these evaluation methods.

(a) Travel cost method. The basic premise of the travel cost method is that per capita use of a recreation site will decrease as out-of-pocket and time costs of traveling to the site increases, other variables being constant. TCM consists of deriving a demand curve by using the variable cost of travel and the value of time as proxies for price. This method may be applied to a site-specific study or a regional model.

(b) Contingent Valuation Method. The contingent valuation method estimates NED benefits by directly asking individual households their willingness to pay for changes in recreation opportunities at a given site. Individual values collected may be aggregated by summing willingness to pay for all users in the study area. This method may be applied to a site-specific study or a regional model. Contingent value techniques shall not be used to estimate existence, "option", bequest or other such non-use values, due to several factors including the conjectural nature of estimated values and the high difficulty in controlling bias.

(c) Unit Day Value. The unit day value method relies on expert or informed opinion and judgment to estimate the average willingness to pay of recreational users. By applying a carefully thought-out and adjusted unit day value to estimated use, an approximation is obtained that may be used as an estimate of project recreation benefits. This method may be applied to site-specific studies only.

d. Cost Sharing Requirements. Paragraph 2-8 discusses general cost sharing considerations applicable to all project purposes including recreation. Specific cost sharing requirements for this purpose are discussed in Appendix E.

e. Other Authorities. Other authorities that may be applicable to this project purpose are discussed in paragraph 3-10.

3-8. Water Supply. National policy regarding water supply states that the primary responsibility for water supply rests with states and local entities. The Corps may participate and cooperate in developing water supplies in connection with construction, operation and modification of Federal navigation, flood damage reduction, or multipurpose projects. Certain conditions of non-Federal participation are required.

a. Types of Improvements. The Corps is authorized to provide storage in multipurpose reservoirs for municipal and industrial water supply and for agricultural irrigation. Some facilities for releasing or withdrawing the stored water can be included in the project structure.

The cost of storage and associated facilities must be repaid by the non-Federal sponsor. The Secretary of the Army is authorized to make agreements with states, municipalities and non-Federal entities for right to storage in Corps reservoirs. Storage for agricultural irrigation may be provided at the request of the Secretary of the Interior in 17 Western states as defined in Appendix E. Storage for this purpose can be provided in non-Western states provided cost sharing requirements described in Appendix E are met. Existing Corps projects may be modified to add storage for municipal and industrial water supply. Storage may also be reallocated from other purposes to municipal and industrial uses. Specific policies and procedures applicable to reallocations of storage are discussed in Paragraph 3-8b(5). Permanent reallocations for irrigation water supply may also be considered in existing projects through the submittal of a Section 216 report (Review of Completed Projects) to Congress. Paragraph 3-10b and Appendix G provide more information on Section 216 reports. The Secretary of the Army can also enter into agreements with states, municipalities, private entities or individuals for the use of surplus water as defined in, and under the conditions described in, Paragraph 3-8b(4). Surplus water can also be used to respond to droughts and other emergencies affecting municipal and industrial water supplies.

b. Specific Policies.

(1) Water Rights. Potential encroachment on the water rights of lawful downstream water users by the operation of water supply storage must be carefully considered and coordinated with responsible State and local interests. The Corps will not acquire water rights necessary for use of stored water. This is a responsibility of the water users. Nor should the Corps become involved in resolving conflicts among water users concerning rights to use stored water, but will look to responsible State agencies to resolve such conflicts.

(2) Permanent Rights to Storage. Under the authority of Public Law 88-140 of 1963 (Extension of Right to Water Supply Storage), the non-Federal sponsor acquires a permanent right to the use of storage as long as the space is physically available.

(3) New Projects. Corps provided water supply service normally means reservoir space for storing water and, where necessary, facilities in the project structure for releasing or withdrawing the stored water for water supply purposes. The non-Federal sponsor must pay all costs allocated to M&I water supply storage space. Conduits for release or withdrawal of stored M&I water may be designed as an integral part of the dam structure. Costs are identified as specific M&I water supply costs with 100 percent payment of investment and annual costs by users.

(a) Multi-purpose Project. Limits are placed on the percent of municipal and industrial (M&I) water that may be included in a multi-purpose project. To be considered multi-purpose, a project must fall in one of the following categories:

- The project has justified, separable storage for flood damage reduction or navigation or agricultural water supply. In this case the sum of benefits for these purposes must be at least ten percent of total NED benefits. If M&I water supply exceeds 90 percent of total benefits the project is considered single purpose M&I water supply and thus not eligible for Federal participation.

- The project has no separable storage for flood damage reduction, navigation or agricultural water supply. In this case the sum of benefits for these purposes must be at least twenty percent of total NED benefits. If M&I water supply exceeds 80 percent of total benefits the project is considered single purpose M&I water supply and thus not eligible for Federal participation.

(b) Single-Purpose Water Supply. The Corps does not conduct single purpose water supply studies, except for analysis of existing data under Section 22 of the WRDA of 1974 as amended. This constraint does not apply to single purpose water supply modifications to previously constructed projects having flood damage reduction or navigation purposes. Also, the Corps may conduct reimbursable single purpose water supply studies for non-Federal interests under provisions of the Intergovernmental Cooperation Act of 1968.

(c) Limits on Future Use Storage. The Water Supply Act of 1958, as amended, states that not more than 30 percent of total construction costs can be allotted to water supply for future use. In addition, Corps policy is to obtain full payment of allocated capital costs from non-Federal entities desiring water supply storage prior to or during construction. Failing this, non-Federal sponsors shall negotiate a repayment agreement, with payments to begin immediately after construction completion under the provisions of Section 932 of the WRDA of 1986.

(4) Surplus Water. Under Section 6 of the Flood Control Act of 1944, the Secretary of the Army is authorized to make agreements with states, municipalities, private concerns, or individuals for surplus water that may be available at any reservoir under the control of the Department. These agreements may be for domestic, municipal, and industrial uses, but not for crop irrigation. When the user desires long-term use, a permanent storage reallocation should be performed under the authority of the Water Supply Act of 1958, as amended. Surplus water is either water stored in a Department of the Army reservoir that is not required because the authorized use for the water never developed or the need was reduced by changes that occurred since authorization or construction, or water that would be more beneficially used as municipal and industrial water than for the authorized purposes over some specific time period. Use of the Section 6 authority is allowed only where non-Federal sponsors do not want to purchase storage because: use of the water is needed for a short term only or use would be temporary pending development of the authorized use and reallocation of storage is not appropriate. Terms of the agreements are normally for five (5) years, with an option for a five (5) year extension, subject to the space being needed for the authorized purposes, or the authorized purpose is deauthorized.

(5) Reallocation of storage. Reallocation or addition of storage that would seriously affect other authorized purposes or that would involve major structural or operational changes requires Congressional approval. Provided these criteria are not violated, 15 percent of the total storage capacity allocated to all authorized project purposes or 50,000 acre feet, whichever is less, may be allocated from storage authorized for other purposes. Or, this amount may be added to the project to serve as storage for municipal and industrial water supply at the discretion of the Commander, USACE. When reallocating storage from the flood control pool to municipal and industrial water supply, the need to compensate existing water supply contract holders shall be evaluated. Dependable yield mitigation storage (DYMS) shall be analyzed and implemented to

compensate these users. Compensation to existing hydropower users through minor operational changes, where appropriate, may also be considered. Procedures and requirements to analyze and implement DYMS and operational changes are described in Appendix E.

(a) Costs of Reallocated Storage. The cost allocated to the non-Federal entity (i.e., the price to be charged for the capital investment for the reallocated storage) will normally be established as the highest of the benefits or revenues foregone, the replacement cost, or the updated cost of storage in the Federal project. The methodologies to be used to compute these benefits, revenues and costs are discussed in Appendix E. The non-Federal entity shall also be responsible for an appropriate share of the annual costs that include specific and joint-use operation, maintenance, repair, replacement and rehabilitation (OMRR&R) costs. In those cases where the cost of water supply is based on hydropower replacement costs, the OMRR&R increment of such cost is to be deleted from the total charge and then billed separately based on a pro rata share of the actual experienced project costs.

(b) Financial Feasibility. A test of financial feasibility must be performed to demonstrate that reallocation of storage is the most efficient water supply alternative. Appendix E provides additional information on how to conduct this analysis.

(c) Addition of Storage. When water supply storage is added to an existing project and storage is not reallocated, a willingness to pay concept is used to assign costs to the new water supply purpose. Under this concept, the non-Federal sponsor is responsible for 100 percent of the new construction costs allocated to M&I water supply. This is to be paid during the construction period. In addition, payments equal to 50 percent of the sponsor's savings are required.

(6) Seasonal Operations for Water Supply. Congress has not provided general authority for including storage space in Corps projects for seasonal M&I use, either as withdrawals or to improve groundwater supplies. However, project specific authorizations are not precluded. In addition, project operations may be modified to enhance ground water replenishment, to increase downstream flows, or to otherwise enhance usage of projects for M&I purposes. Modifications must be consistent with authorized project purposes and law. Cost sharing requirements for seasonal operations for water supply are provided in Appendix E.

(7) Water Withdrawals Contracts. The Corps will not use Section 501 of the Independent Offices Appropriations Act of 1952 to obtain reimbursement for water supply withdrawals. Existing contracts under this authority should be allowed to expire under the terms of the contract. These contracts are not to be extended.

c. Evaluation Framework. The measurement standard and conceptual basis for benefits is willingness to pay for each increment of output from a plan. In some planning situations it is infeasible to directly measure willingness to pay; therefore, alternative techniques are used to estimate the total value of a plan’s output. The evaluation of water supply projects shall be conducted following the process described in paragraph 2-3e of this regulation. The procedures described in the following paragraphs apply to the estimation of benefits used in the economic

evaluation of water supply projects and summarize requirements and procedures. Appendix E provides additional guidance on these requirements and procedures.

(1) National Economic Development Benefits. Where the price of water reflects its marginal cost, that price is used to calculate willingness to pay for additional water supply. If such direct measures of marginal willingness to pay are not available, the benefits are measured by the resource cost of the alternative most likely to be implemented in the absence of the proposed plan. The benefits from nonstructural measures are also computed using the cost of the most likely alternative.

(2) With- and Without-Project Condition. Specific elements included in the definition of the without-project condition are existing water supplies, existing and expected future water systems, water management contracts and operating criteria, water supplies that are under construction or authorized and likely to be constructed during the period of analysis, the probability of delivery for each source of water supply, water quality, and conservation measures. These six elements are also considered under the with-project condition.

(3) Evaluation Procedure. The steps required to evaluate benefits for water supply projects are described in the following paragraphs. The level of effort expended on each step will depend on the scope and nature of the proposed improvement, the state of the art to accurately develop the estimates and the sensitivity of project formulation and evaluation to further refinement. Appendix E provides additional guidance for each step.

(a) Step 1 - Identify the study area. The study area is the area within which significant project impacts will accrue from the use of M&I water supplies, including areas that will receive direct benefits and/or incur costs from the provision of M&I water supply.

(b) Step 2 - Estimate future M&I water supplies. All sources of supply expected to be available to the M&I user are analyzed. The analysis is performed by time period and includes existing water supplies, institutional arrangements, additional water supplies, probability of water supply and water quality.

(c) Step 3 - Project future M&I water supply. Future water use is projected by sector considering seasonal variations in use. The projections are based on an analysis of the factors that may determine variations in levels of water use.

(d) Step 4 – Identify the deficit between future water supplies and use. Projected water use is compared to future water supplies to determine whether any deficits exist in the study area. An analysis of the intensity, frequency and duration of the expected deficits is performed.

(e) Step 5 – Identify alternatives without the Federal plan. Alternative plans that are likely to be implemented by communities and/or industries in the absence of a Federal plan are identified in this step. These plans should be identified through analysis of the total water resources of the region, allowing for present and expected competing uses.

(f) Step 6 – Rank and display the alternative plans based on least cost analysis. All the alternatives are ranked in order from the highest cost alternative to the lowest. Annualized costs for each alternative are calculated on the basis of the service (depreciable) life of the facility or the period of analysis, whichever is less.

(g) Step 7 – Identify the most likely alternative. The least cost alternative is identified as the most likely alternative.

(h) Step 8 – Compute M&I water supply annualized benefits. The annualized benefits of the Federal supply plan are equal to the annualized cost of the most likely alternative.

(i) Risk-analysis techniques, required for all water resources studies, have not been specifically developed for municipal and industrial water supply projects. Where water supply constitutes a substantial portion of total benefits, districts are required to perform, at a minimum, sensitivity analysis of key variables such as cost of least cost alternative, future demand for water and future availability of water supplies.

d. Cost Sharing Requirements. Paragraph 2-8 discusses general cost sharing considerations applicable to all project purposes including water supply. Specific cost sharing requirements for this purpose are discussed in Appendix E.

e. Other Authorities. Other authorities that may be applicable to this project purpose are discussed in paragraph 3-10.

3-9. Multiple Purpose Studies.

a. Definition. Multiple purpose studies can examine more than one type of water resources problem or opportunity and recommend projects with more than one purpose. Corps mission areas can be combined to address multiple objectives within the localized study area. For example, many existing flood control dams also supply water for M&I or agricultural uses, or provide hydropower. Additionally, there may be opportunities to address some combination of purposes which also could include ecosystem restoration and/or recreation. Oftentimes there will be competing water resources uses; therefore environmental, social, and economic considerations need to be evaluated. The evaluation process for these projects will demonstrate the trade-offs for providing various combinations and levels of economic, social, and environmental outputs. Multiple purpose studies will typically result in the recommendation of a single project or set of projects that satisfy the range of water resources purposes identified.

b. Comprehensive studies. A comprehensive study characterizes, measures, and evaluates a particular water resources problem or opportunity across a broad area or region. Typically, the focus of comprehensive studies is water resources problems related to the Corps main mission areas (flood damage reduction, ecosystem restoration or navigation). Non-Federal entities with interests common to the Corps mission area(s) identified should be encouraged to participate in the study investigations; the general public should not only be informed about the study but also be canvassed for information related to needs, opportunities and constraints. Based

on evaluation that considers existing and without-project conditions, the study will determine the need for further Corps studies and projects.

c. Watershed Studies. Watershed studies are planning initiatives that have a multi-purpose and multi-objective scope and that accommodate flexibility and collaboration in the formulation and evaluation process. Possible areas of investigation for a watershed study include water supply, natural resource preservation, ecosystem restoration, environmental infrastructure, recreation, navigation, flood management activities, and regional economic development. This multi-purpose approach is recommended since numerous entities within the boundaries of any watershed must agree with and support watershed improvement and management initiatives in order to successfully implement effective system-wide solutions. The outcome of a watershed study will generally be a watershed resources management plan which identifies the combination of recommended actions to be undertaken by various partners and stakeholders in order to achieve the needs and opportunities identified in the study. The watershed resources management plan may or may not identify further Corps studies or implementation projects.

d. Cost Sharing Requirements. Multiple-purpose studies and projects are cost shared in accordance with the cost sharing policies applicable to each project purpose required. Before determining the required cost sharing for projects, an allocation of total project costs to each purpose must be accomplished. The following paragraphs summarize the requirements and procedures used by the Corps for allocating costs of multiple purpose projects. Detailed cost allocation procedures are discussed in Appendix E.

(1) Cost Allocation. The need for cost allocation stems from pricing and cost-sharing policies that vary among purposes. Cost allocation is the process of apportioning total project financial costs among purposes served by a project. Financial costs are implementation outlays, transfer payments such as replacement housing assistance, and the market value of in-kind contributions. Financial costs are to be allocated to those purposes for which the project is formulated.

(2) Cost Allocation Standard. Cost sharing policies may differ for construction costs and other costs such as operation, maintenance, repair, replacement and rehabilitation costs. Allocations for each one of these types of costs shall be made, as applicable, to the particular project. The Separable Costs/Remaining Benefits (SCRB) method shall be used for the allocation of costs among project purposes. Costs allocated to each purpose are the sum of the separable cost for the purpose and a share of joint cost. Joint costs may be allocated among purposes in proportion to remaining benefits. They may also be allocated in proportion to the use of facilities, provided that the sum of allocated joint cost and separable cost for any purpose does not exceed the lesser of the benefit or the alternative cost for that purpose. The SCRB method is also applicable for multi-purpose projects that include ecosystem restoration as a project purpose. Guidance on this application is under development. If the need for a cost allocation analysis for this type of project is foreseen, contact CECW-PD for additional guidance, preferably during the early phases of the study.

3-10. Other Authorities.

a. Continuing Authorities Program (CAP). The planning principles, guidelines and process described in previous chapters also apply to studies conducted under the Continuing Authorities Program. Specific guidance and planning requirements for studies conducted under each section included in the Program is provided in Appendix F. The following sections are included under the Continuing Authorities Program:

- Section 14, Flood Control Act of 1946, as amended, for emergency streambank and shoreline protection for public facilities and services
- Section 103, River and Harbor Act of 1962, as amended, for protecting the shores of publicly owned property from hurricane and storm damage
- Section 107, River and Harbor Act of 1960, as amended, for navigation
- Section 111, River and Harbor Act of 1968, as amended, for mitigation of shoreline damage caused by Federal navigation projects
- Section 204 of Water Resources Development Act of 1992, as amended, for beneficial uses of dredged material
- Section 205, Flood Control Act of 1948, as amended, for flood damage reduction
- Section 206 of Water Resources Development Act of 1996, as amended, for aquatic ecosystem restoration
- Section 208, Flood Control Act of 1954, as amended, for snagging and clearing for flood damage reduction
- Section 1135 of Water Resources Development Act of 1986, as amended, for project modifications for improvement of the environment

b. Review of Completed Projects. Section 216 of the River and Harbor and Flood Control Act of 1970 authorizes investigations for modification of completed projects or their operation when found advisable due to significantly changed physical or economic conditions and for improving the quality of the environment in the overall public interest. Initial appraisal reports are prepared under Section 216 using operations and maintenance (O&M) funds. The cost of preparing the initial appraisal report is limited to $20,000. Results from this report can be used to support initiation of a reconnaissance study through normal budgetary process. Following the initial appraisal, the 216 study process is of the same as a normal General Investigations study. A feasibility study under Section 216 authority would be appropriate for large scale ecosystem restoration projects linked to existing Civil Works projects, but whose costs would be too large for Section 1135, Section 206, or Section 204 authorities. Additional guidance can be found in ER 1165-2-119.

c. Planning Assistance to States (PAS). The PAS Program is carried out in accordance with the provisions of Section 22 of the WRDA of 1974 as amended. This law authorizes the Chief of Engineers to cooperate with states, the District of Columbia, the Commonwealth of Puerto Rico, the US Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, and Federally recognized Native American (Indian) Nations in preparing plans for the development, utilization, and conservation of water and related land resources of drainage basins, watersheds or ecosystems located within the boundaries of the State or Indian lands. Assistance is provided on the basis of specific requests rather than through Congressional study authorization. (See Appendix G for details on the implementation of this program).

d. Flood Mitigation and Riverine Restoration. Section 212 of the WRDA of 1999 provides programmatic authority for the Secretary of the Army to implement projects that reduce flood hazards and restore the natural function and values of rivers within certain specified limits. The program emphasizes the use of nonstructural approaches to flood damage reduction and coordination with FEMA and other Federal, State, and local agencies, and Native American Nations. Projects must significantly reduce potential flood damages, improve the quality of the environment and be justified considering all costs and beneficial outputs. Funds are authorized to be appropriated in fiscal years 2001 through 2005. Additional guidance for this program is under development.

CHAPTER 4

Types of Studies, Reports and Procedures

4-1. Types of Studies and Reports. The process by which projects are formulated and evaluated is one step in the larger project delivery process. In addition to formulation and evaluation, the project delivery process includes the preparation of the decision document, and the technical and policy reviews of that document and its supporting material. It is intended that the production and reviews of planning decision documents also reflect the same common sense approach as described in the Introduction to Chapter 2. Planning decision documents should be prepared in a timely and cost-effective manner, consistent with the size and complexity of the project. Likewise, the time and effort spent in technical and policy review and in responses to review comments should reflect the size and complexity of the project. Wherever possible, technical and policy review should be incorporated positively and proactively into early phases of the planning and documentation processes and throughout these processes, rather than at the end. Planning studies and reports planning are:

a. Pre-authorization Studies and Reports. Studies for project authorization are undertaken in response to either a study-specific authority or a general authority. Study-specific authorization may be a resolution from the House Committee on Public Works and Transportation, a resolution from the Senate Committee on the Environment and Public Works, or included in a public law. General authorities are contained in Section 216 of the Flood Control Act of 1970 and Section 2 of the Fish and Wildlife Coordination Act of 1958. Section 216 authorizes investigations for modification of completed projects or their operation. Section 2 allows investigation of modifications to projects that were not substantially completed prior to August 1958 in the interest of conservation of fish and wildlife. These studies and reports are funded with General Investigations (GI) funds. Studies under these authorities are conducted in two phases in accordance with the WRDA of 1986.

(1) Reconnaissance Phase. The objectives of the Reconnaissance Phase are to: (1) determine if the water resource(s) problems warrant Federal participation in feasibility studies, (2) define the Federal interest, (3) complete a 905(b) Analysis (refers to Section 905(b) of the WRDA of 1986) or a Reconnaissance Report, (4) prepare a Project Management Plan (PMP), (5) assess the level of interest and support from non-Federal entities, and (6) negotiate and execute a Feasibility Cost Sharing Agreement (FSCA). This determines whether or not planning to develop a project should proceed to the more detailed feasibility stage. The reconnaissance phase is Federally funded and the target for completion is 6-12 months from initial obligation of reconnaissance funds to a signed Feasibility Cost Sharing Agreement.

(2) Feasibility Phase. The objective of feasibility studies is to investigate and recommend solutions to water resources problems. Cost of feasibility studies, except single purpose inland navigation studies, are 50 percent Federal and 50 percent non-Federal as defined in Section 105 of the WRDA of 1986. Typical studies should be completed in 18-36 months. The results of these studies are documented in a feasibility report that includes documentation of environmental compliance. (See Appendix G for additional information on the content of the feasibility report.)

b. Post Authorization Studies and Reports. These planning studies and reports are generally funded as a part of engineering and design studies under the General Investigation appropriation. These studies are undertaken pursuant to project specific construction authorities. Construction authorities imply the authority to undertake reevaluation studies. Studies may be necessary if a significant period of time has elapsed or conditions have changed significantly since the feasibility study was completed. The reports described below shall be used to support post authorization changes provided they include the specific information outlined in Appendix G, paragraph G-16.

(1) General Reevaluation. This is reanalysis of a previously completed study, using current planning criteria and policies, which is required due to changed conditions and/or assumptions. The results may affirm the previous plan; reformulate and modify it, as appropriate; or find that no plan is currently justified. The results of the study are documented in a General Reevaluation Report (GRR).

(2) Limited Reevaluation. This study provides an evaluation of a specific portion of a plan under current policies, criteria and guidelines, and may be limited to economics, environmental effects or, in rare cases, project formulation. A Limited Reevaluation Report (LRR) documents the results of the analysis undertaken.

(3) Design Documentation Reports (DDR) and Engineering Documentation Reports (EDR). During the Preconstruction, Engineering and Design (PED) phase, districts will prepare a Design Documentation Report (DDR) which is a record of final design after the feasibility phase. The DDR provides the technical basis for the plans and specifications and serves as a summary of the final design. An Engineering Documentation Report (EDR) may also be prepared to support the PCA when there are minor changes in design and costs from the authorizing reports. The EDR may also be used in lieu of a GRR to document other information not included in a decision document when project reformulation is not required and the changes are only technical changes. Requirements for preparation and processing of these reports are stated in ER 1110-2-1150. If reformulation of plans is required during PED, then districts shall prepare a GRR or LRR, as described in paragraphs 4-1b(1) and 4-1b(2). Per guidance contained in ER 1110-2-1150, GDM's and DM's will no longer be prepared.

(4) National Environmental Policy Act (NEPA) Documentation. The scope and nature of the changes in the environmental effects of the project identified as a result of acquisition of new information, of changed conditions, or changes in the project will determine the appropriate type of NEPA documentation. Options include an Environmental Assessment which may result in a Finding of No Significant Impact or a Supplemental Environmental Impact Statement. Guidance regarding NEPA documentation is contained in ER 200-2-2

c. Other Types of Studies and Reports.

(1) Studies of Water Resources Needs of River Basins and Regions. Section 729 of WRDA of 1986 authorizes the Corps of Engineers to study the water needs of river basins and regions of the United States, in consultation with State, interstate and local governmental entities. Section 729 studies may result in recommendations for more detailed feasibility studies, but this

is not required. Section 729 studies should not result in recommendation of projects for Congressional authorization.

(2) Flood Insurance Studies. See guidance in paragraph 3-3f of this regulation and in Appendix G.

(3) Planning Assistance to States Studies. Guidance on Planning Assistance to States (Section 22) studies is in paragraph 3-10c of this regulation and in Appendix G.

(4) Continuing Authorities Program (CAP) Studies. The planning Principles and Guidelines described in previous chapters apply to studies conducted under the Continuing Authorities Program. However, due to specific legislative requirements, the guidance for each authority must be referenced. This guidance is contained in Appendix F of this regulation.

(5) Section 216 - Review of Completed Projects. See guidance in paragraph 3-10b of this regulation and in ER 1165-2-119.

(6) Congressional Adds. The requirements and processes described in this chapter apply to Congressionally added studies unless specific instructions otherwise are provided through the budget process.

d. Deauthorization. The review of studies and projects to determine eligibility for de-authorization is covered in Paragraph 4-7.

4-2. Corps of Engineers Final Approval Authorities. The table below summarizes the approval responsibilities for the different planning products.

Table 4-1, Corps of Engineers Final Approval Authorities

PLANNING PROGRAM Study Phase/Product	APPROVAL RESPONSIBILITIES		
	District	Division	Headquarters (HQUSACE)
GENERAL INVESTIGATIONS:			
Section 905(b) Analysis			X
Reconnaissance Report			X
Project Management Plan	X		
Feasibility Cost Sharing Agreement[2]	X		
Feasibility Report			X[1]
Section 729 Report			X
CONTINUING AUTHORITIES (Sections 14, 103, 107, 111, 204, 205, 206, 208, 1135)			
Preliminary Restoration Plans		X	
Feasibility Cost Sharing Agreement[2]		X	
Planning Design Analysis Documentation		X	
Detailed Project Report		X	
PLANNING ASSISTANCE TO STATES	X		
FLOODPLAIN MANAGEMENT SERVICES	X		
POST-AUTHORIZATION REPORTS:			
General Reevaluation Report[1]			X
Limited Reevaluation Report		X	
Major Rehabilitation Reports			X
REPORTS FOR PROJECTS AUTHORIZED SUBJECT TO A SECRETARIAL FINDING[3]			

[1] Coordinated with ASA(CW).
[2] If deviation from model agreement, HQUSACE approval required.

[3] ASA(CW) approval required.

4-3. Procedures for Studies and Reports.
This section provides guidance for studies for projects requiring specific authorization. Additional guidance is found in Appendix G.

a. Reconnaissance Phase. The reconnaissance phase commences with the obligation of appropriated reconnaissance funds, and terminates with the execution of a Feasibility Cost Sharing Agreement (FCSA) or the division commanders' public notice for a report recommending no Federal action. The products are a 905(b) Analysis report, a Project Management Plan, a letter of intent from the non-Federal sponsor, and a feasibility cost sharing agreement (FCSA).

(1) Reconnaissance Study Period. The reconnaissance study and the Section 905(b) Analysis, part of the reconnaissance phase, begins with the obligation of appropriated reconnaissance funds. The target for completing the reconnaissance phase or the signing of the FCSA for the 905(b) Analysis is 6-12 months. The cost of reconnaissance studies generally is limited to $100,000.

(2) 905(b) Analysis Report. This report documents the results of the analyses conducted during the reconnaissance phase. The report shall include a preliminary analysis of Federal interest, costs, benefits, environmental impacts, and an estimate of the costs of preparing a feasibility report. The analyses conducted shall be based on existing, readily available data and professional and technical judgement. The 905(b) Analysis Report is prepared by the district and approved by HQUSACE. Additional details on the content and procedures for the 905(b) Analysis Report are provided in Appendix G.

(3) Project Management Plan (PMP). The Project Management Plan (PMP), prepared and negotiated during the reconnaissance phase, documents the Federal and non-Federal efforts required to conduct the feasibility phase. The PMP will ensure that the work required for the feasibility phase has been carefully developed and considered. The PMP forms the basis for estimating the total study cost and non-Federal sponsor share. It also is the basis for assigning tasks between the Corps and the sponsor and for establishing the value of in-kind services. While developing the PMP, the District Commander must discuss with the prospective non-Federal sponsor(s) the objectives of the feasibility study, necessary level of detail, cost of studies, and scheduling of activities for the feasibility study. During negotiations the prospective non-Federal sponsor must be informed that the level of accuracy of alternative plan evaluation and cost estimates to be developed in the feasibility study will depend on the extent of uncertainties and the depth of investigations made during the feasibility study. The Division will ensure that the PMP receives appropriate review.

(4) Feasibility Cost Sharing Agreement (FCSA). The Feasibility Cost Sharing Agreement documents the commitments of the Department of the Army and a non-Federal sponsor to share the cost of the feasibility phase. The FCSA is intended to promote a partnership for the conduct of the feasibility study. The Department of Army remains responsible for representing the Federal interest by following Federal policies and budgetary priorities. Both parties will conduct planning within the framework established by the P&G with guidance

provided in this regulation. The FCSA will be accompanied by a signed Certification Regarding Lobbying and, if applicable a completed Disclosure of Lobbying Activities.

b. Feasibility Phase. The feasibility phase starts with the issuance of initial Federal feasibility funds, following execution of the FCSA, and terminates on the date the feasibility report is submitted to the Office of Management and Budget by the Assistant Secretary of the Army for Civil Works (ASA (CW)) for review of consistency with the policies and programs of the President. The feasibility phase may also be terminated if it is determined that there is no clear Federal interest in a project or if no project would meet the current policies or budget priorities. (See paragraph 4-3c(6)) The products of the phase are a Feasibility Report, including NEPA documentation, and a Chief of Engineers Report.

(1) Feasibility Phase Cost. The total cost of the feasibility phase will be established through negotiation of the PMP. The cost estimate in appropriate Code of Accounts format will identify major costs by task and by type, and be fully supported and documented.

(2) Feasibility Report. A suggested outline for the feasibility report is provided in Appendix G. The feasibility report should document the planning process and all assumptions and rationale for decision making. The report will present the recommended plan and, if applicable, the degree of, and rationale for, departure from the NED plan, the NER Plan or the Combined NED/NER Plan. The non-Federal sponsor cost sharing requirements, including their responsibilities for implementation and operation of the project must be clearly documented. Two project cost estimates shall be displayed in the feasibility report; one based on constant dollars and one based on projected inflation rates. If there is no acceptable plan, the study should be terminated and guidance obtained from CECW-P. For deviations from the NED, NER or Combined NED/NER, the following additional documentation is required.

(a) If the recommended plan is smaller in scope and costs than the NED, NER or Combined NED/NER, the feasibility report will document the rationale for lack of sponsor support for these plans, as applicable, available facts regarding how and why the LPP is less costly and still provides high-priority outputs, information to show that alternative non-Federal funding sources are not available and the analysis performed. (This information shall be provided to HQUSACE thru the MSC for approval prior to submittal of the feasibility report. It will be included in the feasibility report to document and support the decision recommend the LPP.) In all cases, the recommended LPP must have greater net benefits than smaller scale plans. The feasibility report shall include documentation to demonstrate that sufficient alternatives were formulated and evaluated to insure that net benefits do not maximize at a scale lower than the LPP and to meet the requirements of NEPA. A detailed analysis and description of the NED, NER or Combined NED/NER plans, including a detailed final cost estimate for these plans, are not required and do not need to be documented in the feasibility report. The consequences of lost opportunities associated with implementing a LPP including residual risks and potential solutions to other water resource needs and opportunities that may be foregone will also be documented in the feasibility report. Additional documentation requirements for categorical exemptions applicable to flood damage reduction and navigation projects are discussed in paragraphs 3-3b(11) and 3-2b(10).

(b) If the LPP is larger in scale and costs than the NED, NER or Combined NED/NER plans, then a detailed analysis and description must be developed and presented for both the selected plan and the NED plan. The incremental benefits and costs of the LPP, beyond the NED, NER or Combined NED/NER plans, must be analyzed and documented in the feasibility report. The rationale for selection of the LPP must be clearly documented in the feasibility report.

(3) Environmental Compliance Documentation. Documentation of compliance with applicable environmental laws and regulations must be prepared. This may include items such as biological assessments required by the Endangered Species Act and the Fish and Wildlife Coordination Act Reports, in addition to NEPA documents. In accordance with ER 200-2-2, the NEPA document, either an EA or EIS, may either be a self-supporting document combined with and bound within the feasibility report or integrated into the text of the feasibility report. The EA/EIS should generally be integrated into the text of the report unless complex environmental impacts preclude this alternative. Additional information on environmental compliance documentation is in Appendix C.

c. General Requirements for Reconnaissance and Feasibility Phases.

(1) Study Expansion. Expansion of a study's geographic extent or purposes beyond those specified in the congressional authorization is not allowed without additional congressional authority. Where existing congressional authority is not a constraint, guidance on expansion of cost or scheduling should be requested from the Division.

(2) Interagency Coordination. In the interest of improving interagency coordination on planning studies, and of avoiding issues arising late in the planning process, the following procedures apply:

(a) Appropriate Federal and non-Federal agencies shall be invited to participate in the Reconnaissance Review Conference (RRC), Issue Resolution Conferences (IRC), Feasibility Scoping Meeting (FSM), and the Alternative Formulation Briefing (AFB), as deemed appropriate. These conferences are discussed in Appendix G.

(b) Appropriate Federal and non-Federal agencies shall have opportunity for participation in developing the PMP.

(c) Federal agencies shall be invited to be cooperating agencies as defined by NEPA. Cooperating agencies are agencies with jurisdiction by law or with special expertise that qualify them to participate in a study (see 40 CFR 1508.5, Regulations Implementing the Procedural Provisions of the National Environmental Policy Act of 1969, as amended).

(d) All issues involving other agencies (concerns or non-agreement) should be raised and discussed in a separate section of the Memorandum for the Record (MFR) of the meetings held during the planning process. Issues that can not be resolved at the local or regional level will be sent forward for resolution at the Washington level.

(3) Engineering Level of Detail in Reconnaissance and Feasibility Reports. The scope and complexity of engineering analyses shall be commensurate with the size and complexity of the project being evaluated. The level of detail of the engineering efforts during the feasibility phase and the required content of the Engineering Appendix are discussed in ER 1110-2-1150.

(4) Real Estate. The Real Estate Division shall be included as part of the team early in the planning process. The analysis of the nature and extent of real estate requirements must be conducted in accordance with Chapter 12 of ER 405-1-12, including consideration and identification of the specific interests, estates, and acreage required for the project.

(5) Cost Estimating. All cost estimates required to support Civil Works projects will be prepared in accordance with ER 1110-2-1302, Engineering and Design, Civil Works Cost Engineering.

(6) No Implementable Plan.

(a) The District Commander shall ensure that the sponsor is fully aware that the feasibility study may be terminated if there is no clear Federal interest in a project or if no project would meet the current policies or budget priorities. If the non-Federal sponsor wishes to continue the feasibility study under the terms of the FCSA, continuation will be considered on a case-by-case basis. In reaching this decision, consideration should be given to the value of the feasibility study in identifying project alternatives that reflect the sound planning principles set forth in the Principles and Guidelines . The sponsor shall also be made aware that, the feasibility study may be terminated by either party under the provisions of Article X “Termination of Suspension” of the FCSA.

(b) For those reconnaissance or feasibility studies where there is no potential for a Federally implementable plan, the District Commander will stop all work and notify the Division Commander to facilitate revocation of existing funds, adjustments in budget requests and possible study reclassification except as set forth below. Criteria for making the necessary determination are: (1) the plan is not in the Federal interest, based on current Army policies; (2) the plan does not meet technical requirements for selection as set forth in the P&G and elsewhere in this ER, or; (3) non-Federal interests either do not support the plan or do not intend to provide the necessary local cooperation. If based on these criteria, no Federal action is recommended, a final report to the Congress (usually a letter report) will be prepared, regardless of whether the study is terminated in the reconnaissance or feasibility phase.

(c) Watershed studies may or may not result in identifying further Corps studies or implementation projects. Thus, the procedures specified in paragraphs 4-3c(6)(a) and (b) are not applicable to watershed studies.

(7) Responsibility for Reports. District commanders are responsible for reports, including their content; and for the presentation of reports and findings to higher authority.

d. Washington Level Processing. Procedures for processing reports and decision documents are discussed in Appendix H.

4-4. Quality Control/Quality Assurance and Policy Review of Feasibility Reports.

a. General Requirements. Feasibility reports will be reviewed for technical quality and policy compliance. Independent technical and legal reviews are the responsibility of the districts, and District Commanders are responsible for the quality and accuracy of the study processes. HQUSACE is responsible for policy review and approval for decision documents requiring Congressional authorization or ASA(CW) approval. This review will focus on the underlying assumptions, conclusions, recommendations and analyses in the context of established policy and guidance. For all other decision documents covered in this regulation, districts will be responsible for policy quality control and MSCs will be responsible for policy quality assurance. The QC/QA process will be fully documented. Documentation and certification of technical/legal review will accompany the reports that are submitted for HQUSACE policy compliance review.

b. Quality Control. Districts shall prepare a quality control (QC) plan for each product/project which will describe the procedures that will be used to ensure compliance with all technical and policy requirements. The QC plan is a component of the PMP. The District Commander shall approve QC plans. Technical review is the process that confirms the proper selection and application of established criteria, regulations, laws, codes, principles, and professional procedures to ensure a quality product. Technical review also confirms the constructability and effectiveness of the product and the utilization of clearly justified and valid assumptions and methodologies.

c. Quality Assurance. MSCs are responsible for evaluating and recommending changes to the district's QC process. The MSCs' QA process will assure that the QC plan for the project is appropriate. The overall goal of the QA process is to assure that the districts are able to plan, design, and deliver quality projects on schedule, within budget and acceptable to the customer and the Federal Government. Division Commanders shall approve QA plans.

d. Policy Compliance Review. The process for accomplishing policy compliance shall begin with study initiation, and proceed in partnership among the district, MSC and Headquarters until project authorization. Districts are responsible for policy compliance. MSCs are responsible for assuring policy compliance. This process is intended to assure that policy issues are raised and resolved as early as possible in the study, and that final policy compliance reviews of decision documents reflect the success of that process. If policy problems or conflicts are not raised and resolved until the final policy compliance review rather than during the study, the policy partnership between the district, MSC and Headquarters shall be considered a failure.

(1) Compliance Support. Policy compliance support will be available to districts and MSCs on all studies leading to decision documents from initiation to completion. For feasibility studies leading to pre-authorization decision documents, support shall include a preliminary policy compliance review as part of a formal Alternative Formulation Briefing (AFB). The AFB will be scheduled prior to the selection of the recommended plan during the study. It will result in an AFB Project Guidance Memorandum (PGM) describing all policy issues and their

resolution. Subsequent discussions and resolutions of these issues and any additional issues shall be handled through a modification to this AFB PGM.

(2) Compliance Review, Approval and Certification. Headquarters shall be responsible for the policy review, approval and certification of all decision documents requiring Congressional authorization or ASA(CW) approval. Policy review involves the analysis of decision factors and assumptions used to determine the extent and nature of Federal interest, project cost sharing and cooperation requirements, and related issues. Policy compliance review shall ensure that established policy and procedures are applied uniformly nationwide and identifies policy issues that must be resolved in the absence of established criteria, guidance, regulations, laws, codes, principles and procedures or where judgment plays a substantial role in decision making. Policy compliance review also shall ensure that the proposed action is consistent with the overall goals and objectives of the Civil Works program. The final approval and certification of decision documents for policy compliance shall incorporate the AFB PGM and its approved modifications, with sufficient review to assure that documents remain consistent with policy; this shall not constitute a new or independent policy review. Appendix H discusses in detail the policy compliance review process.

4-5. Post-authorization Changes. This section provides guidance for making changes to uncompleted authorized projects. An authorized project is defined as a one specifically authorized by Congress for construction, generally through language in an authorization or appropriation act, or a project authorized pursuant to Section 201 of the Flood Control Act of 1965. Depending on the nature and scope of the changes, a General Reevaluation Report or Limited Reevaluation Report will be required as discussed in paragraphs 4-1b(1) and 4-1b(2) and Appendix G.

a. Addition of Project Purposes. General authorities allow for the addition of project purposes, under certain circumstances, without specific congressional authorization. These purposes include water supply, recreation, fish and wildlife enhancement (except for land acquisition), and low flow augmentation for purposes other than water quality. Additionally, there is authority for adding minimum provisions for future hydroelectric power, and conservation of threatened and endangered species. (See Appendix G for additional information.)

b. Authorized Maximum Cost of Projects. Section 902 of the WRDA of 1986, as amended, legislates a maximum total project cost. Projects to which this limitation applies and for which increases in costs exceed the limitations established by Section 902, as amended, will require further authorization by Congress raising the maximum cost established for the project. No funds may be obligated or expended nor any credit afforded that would result in the maximum cost being exceeded, unless the House and Senate committees on Appropriations have been notified that Section 106 of the Energy and Water Development Appropriations Act of 1997 will be utilized. The maximum project cost allowed by Section 902 includes the authorized cost (adjusted for inflation), the current cost of any studies, modifications, and actions authorized by the WRDA of 1986 or any later law, and 20 percent of the authorized cost (without adjustment for inflation). See Appendix G for detailed procedures to calculate these costs.

4-6. Planning Assistance to States (PAS). Within personnel and funding capabilities, commanders shall cooperate with entities requesting assistance under the PAS program by

providing planning assistance in an effective and timely manner and in accordance with the guidelines in this regulation (see Appendix G). The Corps may provide technical assistance to support State preparation of comprehensive water and related land resources development plans, including watershed and ecosystem planning and help in conducting individual studies supporting the State water plan. A process of review and evaluation of State work requests and the State water plan determines eligibility for participation in the program. Because of the limited funds available under the PAS Program and because the cost sharing requirements are incompatible between the PAS Program and the General Investigations Program, it is not appropriate to use the PAS Program to prepare reports to Congress.

4-7. Study and Project Deauthorization.

a. Study Deauthorization. Section 710 of the WRDA of 1986 requires an annual submission to Congress of a list of authorized but incomplete water resources studies which have not had funds appropriated during the preceding five full fiscal years. The list is a list of studies meeting the elegibility requirement. Congress has 90 days, after the submission, to appropriate funds for the studies on the list. Studies that are not funded during the 90-day period are no longer authorized. Appendix G contains information on annual report requirements.

b. Project Deauthorization. Section 1001 of the WRDA of 1986 as amended, provides for the deauthorization of water resources projects on which Federal funds for planning, design or construction have not been obligated for 7 fiscal years. Every two years, the Secretary of the Army is required to submit to Congress a list of projects that meet this eligibility criteria. Affected congressional delegations must be notified of the projects in their districts or states. The projects remain on the list for 30 months, after which they are automatically deauthorized if Federal funds are not obligated during the 30-month period. Section 1001(c) requires publication of the lists of deauthorized projects in the Federal Register. The project deauthorization process is managed at HQUSACE by CECW-B and that office should be contacted for further information.

FOR THE COMMANDER:



RUSSELL L. FUHRMAN
Major General, USA
Chief of Staff

8 Appendices
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HMP Appendix O - USACOE Great Lakes Programs

Great Lakes Fishery & Ecosystem Restoration (GLFER)

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Action: Great Lakes Fishery and Ecosystem Restoration, or GLFER, is a program of the U.S. Army Corps of Engineers (USACE) for implementing on-the-ground projects for restoration of aquatic habitat in the Great Lakes watershed. Ongoing and planned projects are restoring rivers and lakes that provide places for Americans to experience the great outdoors. GLFER is also helping states and local communities eliminate beneficial use impairments in order to delist Areas of Concern (AOCs).

Authority: Authorized under Section 506 of the Water Resources Development Act of 2000, as amended, GLFER is a full-service program to plan, design, and construct projects that restore ecosystems across the large landscape of the Great Lakes watershed. A wide range of projects are executed under this program, including restoration of wetlands and aquatic habitat on public lands, parks, and preserves, dam removal to re-establish free flowing rivers, fish passages over exiting structures, improving spawning and nursery habitat, and restoration of coastal habitat along the Great Lakes shorelines. A partial listing of active GLFER projects is provided on the attached table and other projects are being proposed by non-federal partners on an ongoing basis.

Partnerships: The GLFER program is implemented in partnership with the Great Lakes Fishery Commission, who coordinates the review of project proposals by state, tribal, and federal partners. Individual projects require a non-Federal partner(s) to provide 35% of project costs (including all lands, easements, rights-of-way, relocations) and to operate and maintain the completed projects. State, tribal, and local agencies, as well as non-profits and private interests are eligible to sponsor GLFER projects.

Funding: The USACE' base funding for GLFER is through the annual Energy & Water Appropriations. Recent funding from this source includes $2.5 million in FY10, $0 in FY11, and $2.0 million in FY12. Over $14 million of funding has been provided for GLFER projects through the Great Lakes Restoration Initiative. Optimal funding for GLFER projects would be $10 million in FY 2013 and $25 million in FY 2014.

Status: Eight GLFER restoration projects are under construction or completed. Another three restoration projects are scheduled for construction in FY 2013.

Points of Contact: Contact the following USACE POCs for GLFER projects in these states:

New York, PA and Ohio
Mike Greer
Buffalo District
716-879-4229
michael.j.greer@usace.army.mil

Michigan, MN and WI
Carl Platz
Detroit District
616-402-8110 x25521
carl.a.platz@usace.army.mil

Illinois and Indiana
Gene Fleming
Chicago District
312-846-5585
eugene.j.fleming@usace.army.mil

For more information: www.glfc.int/glfer/about.htm

Great Lakes Fishery & Ecosystem Restoration (GLFER)
Selected[1] Restoration Projects Under Planning, Design and Construction

Project Location	State	Construction Status	Project Benefits
63rd Street Dune and Beach, Chicago	IL	Completed	Restore 21 acres of coastal, dune, beach, and fish habitat in urban park along Lake Michigan shoreline
Red Mill Pond, LaPorte County	IN	Completed	Protect and restore 160 acres of wetlands and stream habitat in association with dam removal
Chautauqua Creek, Chautauqua County	NY	Completed	Remove two dams to restore fishery passage on Lake Erie tributary
Burnham Prairie, Burnham	IL	Under construction	Restore 93 acres of marsh, sedge meadow, savanna, and wet prairie habitat in an urban area
Orland Perimeter, Cook County	IL	Under construction	Restore 275 acres of aquatic habitat and oak savannah habitat in urban forest preserve
Calumet/Ivanhoe, Lake County	IN	Under construction	Restore over 194 acres of rare wet sand prairie savanna and wetlands in an Area of Concern
Little Calumet Riparian, Porter County	IN	Under construction	Restore 43 acres of floodplain forest in an urban corridor in northwest Indiana
Northerly Island, Chicago	IL	Under construction	Restore 40 acres of savanna, wet prairie, marsh and lake habitat along the Lake Michigan shoreline
Rosewood Park, Highland Park	IL	2013	Restore beach, dune, and ravine habitat along Lake Michigan shoreline
Frankenmuth Dam, Cass River	MI	2013	Restore fishery access to 73 miles of river and spawning habitat in Saginaw Bay tributary
Lake County Ravine 8, Lake County	IL	2013	Restore and protect rare ravine and near-shore habitat along Lake Michigan shoreline
Menominee River and Park Dams	WI-MI	2014	Restore passage around two dams for endangered species (sturgeon) in Area of Concern
Lye Creek, Hancock County	OH	2014	Restore natural stream function and habitat and reduce loadings of nutrients and sediments to Maumee River
Underwood Creek, Milwaukee	WI	2014	Restore river habitat and function in one mile of concrete-lined channel adjacent to Area of Concern
Elkhart River and Christiana Creek	IN	2014	Restore fishery access to 30 miles of river habitat by removal of two dams
Muskegon River Sea Lamprey Trap	MI	2014	Construct trap to control sea lamprey populations on this River which is tributary to Area of Concern
Powderhorn Lake & Prairie, Chicago	IL	2014	Restore 192 acres of rare ridge and swale habitat in an urban area
Ft. Sheridan Coastal, Lake County	IL	2014	Restore 100 acres of coastal, beach and bluff habitat along Lake Michigan shoreline
Harpersfield Dam Sea Lamprey Barrier	OH	2014	Create barrier to prevent migration and spawning of sea lamprey in state designated wild & scenic river
Boardman River Dams, Traverse City	MI	2015	Restore fishery access to 160 miles of River habitat through removal/modification of 3 dams

[1] Twenty-five additional restoration projects (not listed) are in planning.

Great Lakes Remedial Action Plans

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Issue: There are thirty Areas of Concern (AOCs) in the U.S. portion of the Great Lakes where a legacy of pollution has impaired the beneficial use of water resources. Cleaning up these AOCs is one of the highest priorities in the Administration's Great Lakes Restoration Initiative (GLRI). State and local governments are leading efforts to develop and implement Remedial Action Plans (RAPs) which identify actions required to address the remaining sources of pollution, contaminated sediments, and degraded fish and wildlife habitat.

Authority: Under the authority of Section 401(a) of the Water Resources Development Act of 1990, as amended, the U.S. Army Corps of Engineers (USACE) is providing technical support to states and local organizations in the development and implementation of RAPs at Great Lakes AOCs. This cost-shared support (35% non-federal match as cash or in-kind services) has been used to plan and design projects for sediment cleanup, source control, and habitat restoration. Many of the restoration plans and designs developed under this program have been implemented under other federal or non-federal funding programs, including the Great Lakes Legacy Act. To date, GLRAP technical support has been provided to 23 AOCs. A partial list of GLRAP support provided and additional support that has been requested is provided on the attached table.

Funding: The USACE' base funding for the GLRAP program is through the annual Energy & Water Appropriations. Recent funding from this source included $3.4 million in FY 2010, $0.4 million in FY 2011, and none in FY 2012. In addition, about $1 million of funding has been provided for GLRAP projects through the Great Lakes Restoration Initiative. The optimal funding level to continue this critical support to AOC restoration and delisting is $3.0 million in FY 2013 and $3.5 million in FY 2014.

Status: USACE Districts are currently providing support to the RAPs at the following AOCs: St. Louis River, MN/WI; Niagara River, NY; Clinton River, MI; Muskegon Lake, MI; Saginaw River/Bay, MI; Maumee River, OH, and Milwaukee Estuary, WI.

Points of Contact: Contact the following USACE POCs for RAP support at Areas of Concern in these states:

New York, PA and Ohio
Bryan Hinterberger
Buffalo District
716-879-4409
bryan.a.hinterberger@usace.army.mil

Michigan, MN and WI
Martin Kuhn
Detroit District
313-226-2283
martin.t.kuhn@usace.army.mil

Illinois and Indiana
Kirston Buczak
Chicago District
312-846-5552
kirston.a.buczak@usace.army.mil

More Information on this program is available at: www.glc.org/corpsrap/

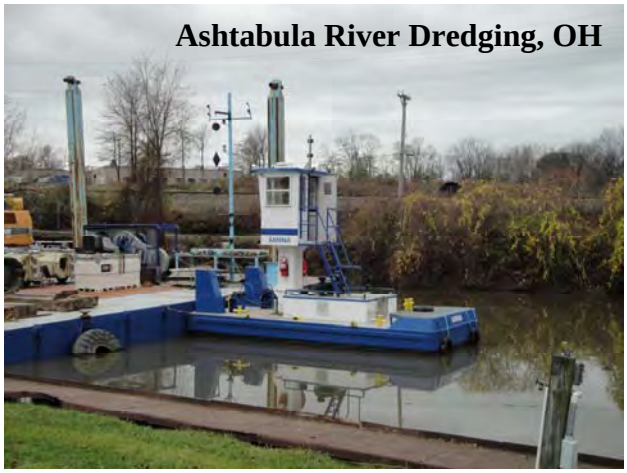
Partial Summary of Great Lakes RAP Support Provided and Additional Support Requested

Area of Concern	Previous RAP Support Provided	Additional RAP Support Requested
Waukegan Harbor, IL	Sediment cleanup planning and design	Monitoring recovery of BUIs
Grand Calumet River, IN	Sediment cleanup planning and design, TMDL modeling	Habitat restoration planning and design
Clinton River, MI	Mapping and planning for stream restoration (ongoing)	Stream restoration design
Deer Lake /Carp River, MI		
Detroit River, MI	Design of sediment cleanup (implemented by Legacy Act)	Habitat restoration planning and design
Kalamazoo River, MI		
Manistique River, MI	Sediment monitoring	
Muskegon Lake, MI	Groundwater remediation pilot study (ongoing)	Design of bioremediation plant
River Raisin, MI	Stream restoration planning	Sediment remediation planning and design
Rouge River, MI	Habitat restoration planning and design	
Saginaw River/Bay, MI	Public outreach related to BUI delisting	
St. Clair River, MI	Water and sediment quality evaluations	Sediment evaluation/habitat restoration plan and design
St. Mary's River, MI		Habitat restoration planning and design
Torch Lake, MI		
White Lake, MI	Sediment cleanup design (implemented by Legacy Act)	Habitat restoration planning and design
St. Louis River, MN/WI	Sediment cleanup planning and design (ongoing)	Zephyr site remediation pilot study
Buffalo River, NY	Sediment cleanup and habitat restoration planning	Habitat restoration planning and design
Eighteen Mile Creek, NY	Trophic trace food web model	
Niagara River, NY	Habitat restoration planning and design (ongoing)	Habitat restoration design
Rochester Embayment, NY	Algae removal demonstration project (ongoing)	
St. Lawrence River, NY		Algae mitigation
Ashtabula River, OH	Sediment cleanup planning (implemented by Legacy Act)	
Black River, OH	Nonpoint source pollution evaluation	Investigate nonpoint source pollution and mitigation
Cuyahoga River, OH	Habitat restoration planning	Gorge dam removal planning and design
Maumee River, OH	Habitat restoration planning and design (ongoing)	Habitat restoration design
Presque Isle Bay, PA		
Fox River/Green Bay, WI		Habitat restoration planning
Menominee River, MI/WI		Habitat restoration planning/sediment quality evaluation
Milwaukee Estuary, WI	Sediment cleanup design (implemented by Legacy Act)	Habitat restoration planning and design
Sheboygan River, WI	Sediment cleanup design (implemented by GLRI)	

Great Lakes Restoration Initiative (GLRI)

U.S. ARMY CORPS OF ENGINEERS **BUILDING STRONG®**

Overview: The U.S. Army Corps of Engineers (USACE) is one of 16 Federal agencies that are supporting the Great Lakes Restoration Initiative (GLRI). Ten restoration projects have been completed or are under construction with funding from this Administration's initiative for the restoration of the Great Lakes ecosystem. This fact sheet will briefly describe the restoration projects that the USACE is building in collaboration with states and local partners and those planned for construction with future GLRI funding. Projects are presented under the Focus Areas identified in the GLRI Action Plan.


Ashtabula River Dredging, OH

Toxic Substance and Areas of Concern:
The USACE has worked closely with the EPA to remove contaminated sediments from Areas of Concern (AOCs) through a combination of navigation dredging and EPA's Legacy Act authority. The USACE has already removed over 800,000 cubic yards of contaminated sediments from the River Raisin, Buffalo River, and Ashtabula River (shown above) AOCs with navigation and GLRI funding. The USACE is also preparing to remove an additional 100,000 cubic yards of contaminated sediments at the Waukegan Harbor AOC.

The USACE is also helping state and local agencies plan and design restoration projects at Great Lakes Areas under the Corps' Remedial Action Plan support program with a combination of GLRI and base funding. Technical assistance is currently being provided to eight AOCs.

Habitat and Wildlife Protection and Restoration
The USACE has completed or started construction of six projects with GLRI funds that are restoring over 560 acres of habitat and 8,000 feet of shoreline. These projects are constructed under the Corps' Great Lakes Fishery & Ecosystem Restoration (GLFER) authority. Several of these projects are restoring aquatic habitat in or near urban areas, like the project on the Lake Michigan shoreline at 63rd Street in Chicago (shown on right).



63rd Street Beach, Chicago

The USACE is scheduled to start construction on three additional habitat restoration projects in 2013 with GLRI funding, including a fishery passage around a dam on the Grand River in Michigan. A dozen more habitat restoration projects will be ready for construction in 2014, if funding is available.

Invasive Species: The first project constructed with GLRI funding was a 13-mile long physical barrier (right) in between the Chicago Sanitary and Ship Canal and the DesPlaines River in Illinois to prevent Asian carp and other invasive species from bypassing the electric barriers during flooding conditions.



In 2013, the USACE will start construction of the first of several projects in the battle against another aquatic invader, the sea lamprey. A barrier to prevent the sea lamprey from migrating upstream and spawning will be constructed on the Manistique River in Michigan. Ten other sea lamprey control projects are being planned and designed.

In 2012, the USACE started construction of a project in Buffalo, NY to demonstrate and compare different approaches for eradicating a highly invasive aquatic plant, called Phragmites.



Nearshore Health and Nonpoint Source Pollution: The largest GLRI-funded project the USACE is constructing is at the Fox River/Green Bay AOC in Wisconsin. The Cat Island project (left) will re-create a series of barrier islands that restore and protect over 1,200 acres of coastal wetlands and provide a facility for disposal of 2 million cubic yards of contaminated sediments. Additional projects for restoring nearshore and coastal ecosystems are being readied for construction in 2014-15.

GLRI is supplementing the USACE base funding for the Great Lakes Tributary Model program which is developing watershed models and other tools to help state and local agencies compare the effectiveness of options for soil conservation and nonpoint source pollution prevention in Great Lakes tributaries. These tools are also being used to measure the progress being made by GLRI funding.

Accountability, Education, Monitoring, Evaluation, Communication and Partnerships: The USACE is working in collaboration with the International St. Lawrence River Board and Lake Ontario LaMP to develop monitoring systems and models to support real-time water management decisions that can restore and enhance wetlands in Lake Ontario.

Summary: The USACE is constructing 18 projects for restoring the Great Lakes with the first three years of GLRI funding. These funds were also used to plan and design dozens of other restoration projects that will be ready for construction in 2014-2015. More than 70 percent of GLRI funds received by the USACE are going to contracts with private companies that create jobs.

Point of Contact: Jan Miller, USACE Great Lakes & Ohio River Division, 312-353-6354, jan.a.miller@usace.army.mil

Great Lakes Tributary Model

U.S. ARMY CORPS OF ENGINEERS **BUILDING STRONG®**

Issue: Soil erosion and nonpoint pollution are among the priority issues facing the Great Lakes and a focus area of the Administration's Great Lakes Restoration Initiative. Loadings of eroded soils and diffuse pollution have adverse environmental and economic impacts. As a major source of nutrients, it is increasing algae blooms and dead zones in the Lakes. As the major source of sediments, it is reducing water depths in harbors and shipping channels, causing groundings and unsafe conditions, and increasing the need for dredging and the costs to navigation users.

Authority: The Great Lakes Tributary Model (GLTM) program was established through Section 516(e) of the Water Resources Development Act of 1996. This authority enables the U.S. Army Corps of Engineers (USACE) to develop sediment transport models to assist state and local agencies with the planning and implementation of measures for soil conservation and nonpoint source pollution prevention. Models can be developed at all tributaries to the Great Lakes that discharge to federal navigation channels or Areas of Concern (AOCs). The ultimate goal of this program is to reduce the loading of sediments and pollutants to tributaries in order to enhance Great Lakes water quality, delist Great Lakes AOCs, and reduce the need for navigation dredging.

Funding: The USACE' base funding for the GLTM program is through the annual Energy & Water Appropriations. Recent funding from this source included $1.08 million in FY 2012. The President's Budget request for FY 2013 includes $1.08 million for this program. The optimal funding for this program would be $1.5 million in FY 2013 and FY 2014.

Coordination: This program is being implemented in close coordination with the Great Lakes states through cooperation with the Great Lakes Commission. Tributary models are developed in partnership with representatives of agencies and organizations from the watershed, including Soil and Water Conservation Districts, Remedial Action Plans committees, municipal and regional planning agencies, navigation interests, state and federal resource agencies. These partnerships guide the scope and focus for the model to meet individual watershed needs.

Accomplishments: Models have already been completed at more than 30 tributaries and are being used by local, state and federal agencies for watershed and ecosystem planning, forestry management, navigation maintenance planning, and water quality compliance evaluations. State and county agencies are also using models to identify the most effective locations for buffer strips or wetland restoration projects and assess impacts of urban sprawl on sedimentation. A partial list of ongoing models with a few examples of completed models is provided on the attached table.

Points of Contact: Contact the following USACE POCs for models at tributaries in these states:

New York, PA and Ohio
Brent Laspada
Buffalo District
716-879-4409
brent.r.laspada@usace.army.mil

Michigan, MN and WI
Martin Kuhn
Detroit District
313-226-2283
martin.t.kuhn@usace.army.mil

Illinois and Indiana
David Bucaro
Chicago District
312-846-5552
david.f.bucaro@usace.army.mil

For More Information: Information on tributary models and reports are available online at:
www.glc.org/tributary/

February 2013

Partial List of Projects under the Great Lakes Tributary Model Program

State	Tributary	Status	Uses of Model
Illinois	Waukegan River	Completed	Reduce bank erosion and plan options for restoration of urban river
	Calumet River	Under development	Evaluate options for reducing urban nonpoint loadings
Indiana	Burns Ditch/Trail Creek	Completed	Land-use planning and conservation to reduce nonpoint pollution
Michigan	Clinton River	Completed	Urban stormwater management and bank erosion options in AOC
	Ontonagon River	Completed	Sediment budget to evaluate impacts of forestry BMPs
	River Raisin	Under development	Intensive training for local stakeholders on use of web-based tools
	Jordan River	Under development	Sediment budget to evaluate impacts of agricultural BMPs/water withdrawals
Minnesota	Knife River	Completed	Guide reforestation efforts to reduce hydrologic response
	Nemadji River	Completed	Compare impacts of forestry practices on bank erosion
	Knowlton Creek	Under development	Evaluate sources of sediments to AOC
New York	Buffalo River	Completed	Planning pollution prevention and sediment cleanup options in AOC
	Cattaraugus Creek	Completed	Reduce impacts of urban development on erosion/nonpoint pollution
	Canaseraga Creek	Completed	Evaluate sources of sediments and effectiveness of BMPs
	Grasse River	Under development	Evaluate impacts of agricultural BMPs
Ohio	Auglaize River	Completed	Prioritizing sites for buffer strips and other conservation measures
	Blanchard River	Completed	Prioritize agricultural BMPs and wetlands restoration options
	Tiffin River	Under development	Evaluate agricultural BMPs
	Maumee River	Under development	Estimate sedimentation rates in navigation channel under various scenarios
Pennsylvania	Mill and Cascade Creeks	Completed	Reducing nonpoint loadings to AOC
Wisconsin	Fox River	Under development	Evaluate effectiveness of agricultural BMPs in AOC
	Manitowoc River	Completed	Compare and prioritize agricultural BMPs
	Upper East River	Under development	Intensive training for local stakeholders on use of web-based tools

HMP Appendix Q - Draft Great Lakes Cruise Ship Study

US Army Corps of Engineers

Great Lakes Cruise Ship Study

City of Rochester, NY Planning Assistance to States

DRAFT

USACE BUFFALO DISTRICT
1776 NIAGARA STREET
BUFFALO, NY 14207

OCTOBER 2016
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1 Study Overview

This study was prepared under Section 22 of the Water Resources Development Act (WRDA) of 1974, as amended, which enables the United States Army Corps of Engineers (USACE) authority to provide Planning Assistance to States and Indian Nations. (This authority authorizes USACE to cooperate with States and Indian Nations in preparing plans for the development, utilization, and conservation of water and related land resources of drainage basins, watersheds, or ecosystems located within the boundaries of the States or Tribal Lands.). The Corps may provide technical assistance to support State preparation of comprehensive water and related resources development plans, including watershed and ecosystem planning and help in conducting individual studies supporting the State water plan. Costs of the study were cost shared on a 50% federal, 50% non-federal basis, with a portion of the non-federal contribution being provided as in-kind services.

In 2015, the city of Rochester requested USACE's assistance in providing an economic analysis on the Great Lakes Cruise industry. This analysis would provide information to enable the city of Rochester to make a determination to commit the resources and capital required to make the port feasible to attract Great Lakes Cruise Ships as a portage stop and potentially as an embarkation and disembarkation port. In addition to the economic evaluation, a coastal evaluation was conducted to provide information to the city on the physical components of the mooring facility at the port.

1.1 Background

Rochester Harbor is located in the City of Rochester, Monroe County, New York. The harbor is situated on the southern (US) shore of Lake Ontario between Port Weller, Ontario to the west and Oswego, New York to the east (Figure 1). It is located 90 miles east of Port Weller, Ontario Canada and 59 miles west of Oswego Harbor, New York. Rochester Harbor is entirely located on the lowermost portion of the Genesee River. Vessels enter the harbor via the lake approach Channel (300 feet in width) which leads to the entrance channel and then federal channels in the Genesee River. The federal channels extend approximately 11,800 feet upstream from the mouth of the river.

The harbor has a long history. The original project was adopted by the River and Harbor Act of 1829 with subsequent authorizations in 1882, 1910, 1935, 1945 and 1960.

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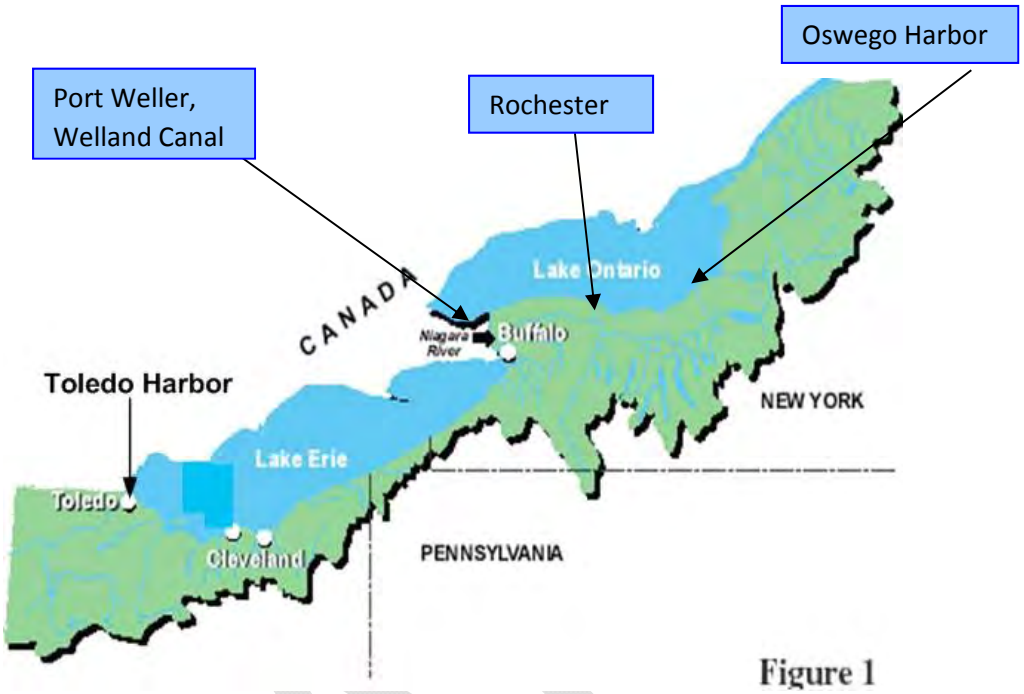

Figure 1: General Location of Rochester Harbor

Rochester Harbor comprises the lower 3.1 miles of the Genesee River, has a channel at least 150 feet wide, two turning basins and two piers. There are three federal channels in Rochester Harbor: the Lake Approach Channel, the Entrance Channel and the Genesee River channel. The Lake Approach Channel extends from deep water in Lake Ontario to a point opposite the outer end of the west pier. Its total length is approximately 1,900 feet and its width is 300 feet. The Entrance Channel extends from the outer end of the west pier to the downstream side of the former Conrail Railroad Bridge, a length of approximately 4,500 feet. The width of the Entrance Channel is 200 feet downstream of the lower turning basin and 270 feet upstream of the lower turning basin. The Genesee River Channel extends upstream of the Conrail Railroad Bridge to the upper limit of the Federal project, a distance of about 11,800 feet. Its width varies from 150 to 270 feet, except for the (point or area) adjacent to the upper turning basin which is 300 feet wide.

There are two turning basins in the harbor. A lower turning basin straddles an area from the upstream end of the Entrance Channel to the downstream portion of the Genesee River Channel. It has a maximum width of 650 feet. The upstream turning basin sits near the upstream limit of the Federal project. The Genesee River Channel forms the east part of the upstream turning basin; its maximum width, including the 300-foot width of the river channel at that point, is 950 feet. There are two parallel piers approximately 450 feet apart, at the mouth of the Genesee River. The west pier is 3,036 feet long and the east pier is 2,699 feet long. The existing project was completed in 1963 and is 100% complete (Figure 2).



Figure 2: Aerial image of the Rochester Harbor

The Buffalo District map for Rochester Harbor is provided in Figure 3. This paragraph should probably be placed down under the “Authorized depth” paragraph(A channel’s maintenance depth need not be the authorized channel depth. Frequently, it is not the authorized depth. Conditions change and the channel depth required at a particular point in time may differ from the authorized channel depth. Note that in all cases, channel depths are measured from Low Water Datum (LWD),(IGLD 1985.)

Federal Harbors have two designated channel depths - "authorized" and "maintained" depths. These depths are measured in feet below Low Water Datum (LWD). "Authorized depth" is the channel depth specified in a project's initial (congressional) authorization legislation.

"Maintenance depth" is the channel depth currently provided by periodic dredging.

"Authorized depth" is the channel depth specified in a project's initial (congressional) authorization legislation. As is usually the case in a Great Lakes harbor, authorized channel depths tend to decrease as one moves from the open waters of Lake Ontario into the protected outer harbor and thence into the channelized portions of the access channels. The Lake Approach channel has an authorized depth of 24 feet. The Entrance channel has an authorized depth of 23 feet and the Genesee River channel has an authorized depth of 21 feet.

The two turning basins have different authorized depths. The authorized depth of the lower turning basin is 23 feet while the authorized depth of the upper turning basin is 21 feet. The lower turning basin is not maintained.

"Maintenance depth" is the channel depth provided by means of dredging contracted by the US Army Corps of Engineers. Like authorized depth, it is measured from LWD. Conditions change and the channel depth required at a particular point in time may differ from (may be less but not greater than) the authorized channel depth.

The Approach Channel, Entrance Chanel and Genesee River Channels are all currently maintained to a depth of 22 feet below LWD. This includes one foot of over-depth dredging allowed by Corps regulation, which is almost always implemented. A triangular shaped portion of the upper basin adjacent to the Genesee River channel is maintained to 22 feet. This portion of the upper turning basin is maintained in order to allow the boat delivering cement to the ESSROC cement dock to back into the turning basin and swing its bow around until it is pointed downstream so the vessel may proceed down the Federal channels and exit the harbor. The lower turning Basin is not maintained. Thus the depth of channels maintained at Rochester Harbor is 22 feet, LWD.

Maintenance depths are not guaranteed throughout the navigation season. The actual depth available in any Federal channel at any moment in time is affected by a number of factors, including the frequency and depth of dredging. The most important factor is the shoaling rate, which can be very difficult to predict with any accuracy. Maintenance depth is best perceived as being a target depth that the Corps attempts to achieve, but is not always able to provide.

In 2004, the City of Rochester built a $16 million port terminal in preparation for a proposed fast ferry that would shuttle people and vehicles between Rochester, NY and Toronto, ONT on a daily basis. The 55,000 sq/ft building was designed to handle the customs requirements of individuals traveling on the fast ferry. The facility also had areas for the necessary requirements of the ferry such as electrical, water, fuel and waste hook-ups. In addition, there was an area for the loading and unloading of vehicles and a raised-enclosed gangway for easy passenger unloading right into a weather sheltered walkway. (http://www.constructionequipmentguide.com/oft-troubled-rochester-port-returning-now-to-prominence/5633)

In 2013, the City of Rochester began an extensive $16.5 million project that would expand and revitalize the harbor. The parking area that was provided for the former fast ferry was dug out for an 85-slip deep-draft personal craft marina. The project included ~~remodeling and~~ repurposing portions of the harbor terminal. The main terminal building~~now~~ includes a large banquet/reception area, multiple restaurants, and office space. ~~With the new renovations, the terminal has been extended to approximately 70,000 sq/ft.~~ The building attached to the south end of the terminal building that was used for luggage handling and transporting passengers to the entrance of the former fast ferry was remodeled into a small retail area and boaters services facility, including a boaters lounge, restrooms, kitchen, and administrative offices.

http://www.democratandchronicle.com/story/news/local/2013/11/14/165m-port-of-rochester-project-begins/3529431/

http://www.cityofrochester.gov/article.aspx?id=8589937679

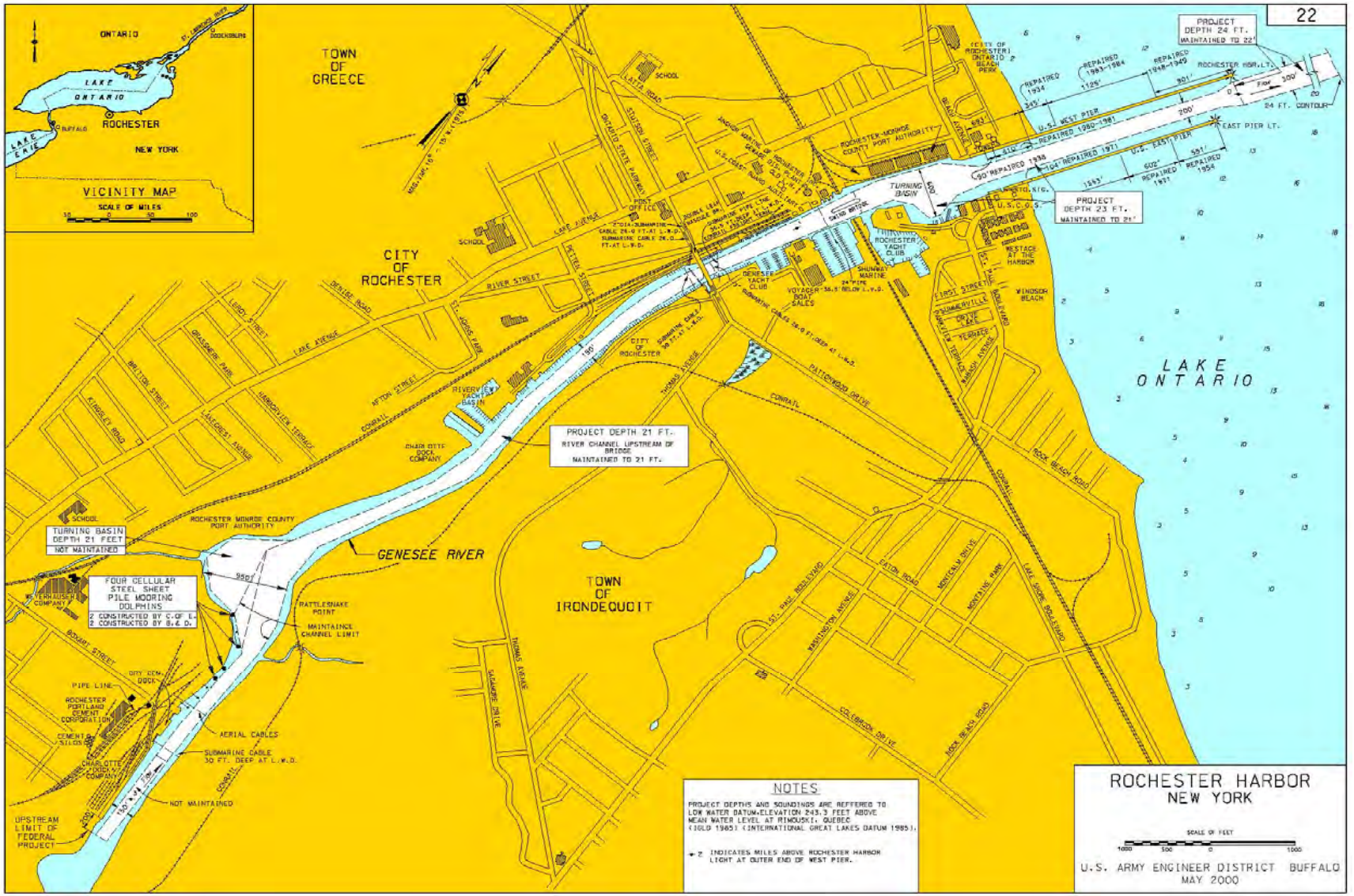

Figure 3: Rochester Harbor Project Map

2 Vessel Study

This section will examine the existing Great Lake cruise ship fleet.

2.1 Overview

The Great Lakes Cruising industry is expanding. Historically, there had been a limited presence in the Great Lakes since the 1970s. This was the result of major cruise lines focusing on foreign cruises and existing Great Lakes cruise lines disbanding due to increased regulation.

In the early 2000s, cruise ships began to make calls on Great Lakes ports. The cruise ship Le Levant, Grande Mariner and Niagara Prince all made limited cruises throughout the early resurgence of Great Lakes cruising. The Columbus (now the Hamburg) made trips from Germany, traveling all the way to Duluth, MN.

Today, there are currently four active cruise ships on the Great Lakes with more than one scheduled trip. They are the Blount Cruise Lines' Grande Mariner and Grande Caribe, Pearl Sea's Pearl Mist and Victory 1.

2.2 Vessel Restrictions

The Great Lakes and St. Lawrence Seaway (GLSLS) is an approximately 2,200 mile long system (Duluth, MN to the Gulf of St. Lawrence). Over the seaway there are three separate lock systems. They are St. Lawrence Seaway (SLS), the Welland Canal and the Soo Locks. The SLS creates access to and from the Great Lakes at the eastern end of Lake Ontario. The seaway is made up of seven locks, five of which are operated by the Canadian Government and two by the U.S Government. The max vessel that can transit the SLS is 740ft long by 78ft wide, has a max draft of 26ft and a max vertical clearance of 117ft.

The Welland Canal transits from Lake Erie to Lake Ontario as it bypasses the unnavigable Niagara River. This canal system is 23.5 nautical miles long and is made up of eight locks, all of which are operated by the Canadian government. As with the SLS, the max vessel that can transit the SLS is 740ft long by 78ft wide, has a max draft of 26ft and a max vertical clearance of 117ft.

The final transit point is the Soo Locks which run between Lake Superior and St. Mary's River and provide access to the lower Great Lakes. Only one lock is needed for the transition though there are currently two operational locks that can service commercial vessels. The maximum vessel can be 1,200ft long by 110ft wide with a maximum draft of 32ft. There is 124ft of vertical clearance.

As a result of the Port of Rochester being located between the SLS and Welland Canal, the maximum cruise ship that could hypothetically call on the port is restricted to 740ft long by 78ft wide, has a maximum draft of 26ft and a maximum vertical clearance of 117ft.

Ports that great lakes cruise ships call upon have typical harbor side depths. An analysis of Great Lake ports on worldportsource.com and Seafinder.com indicates that most ports have harbor depths between 4.9 - 6.1 meters (16 – 20 feet).

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2.3 Current Great Lake Cruise Ships

Today, there are currently four active cruise ships on the Great Lakes with more than one scheduled trip. They are the Blount Cruise Lines Grande Mariner and Grande Caribe, Pearl Sea's Pearl Mist and Victory 1.

Grande Mariner and Grande Caribe are sister ships operated by the Blount Small Ship Cruise Lines. They operate in the Great Lakes during the summer months before moving down the east coast to operate in the Caribbean during the off season. Spanning a length of 184ft with a beam of 40ft and a draft of 6 ½ft, the Mariner and Caribe are incredibly flexible in reaching any location. These cruise ships are unique because they have retractable wheelhouses which allow the vessels to travel through the Erie Canal. In the Caribbean, these ships utilize a runway that retracts from the bow of the ship to allow passengers to walk straight onto the beach.



Figure 4: Grande Caribe



Figure 5: Grand Mariner

Each ship has 44 passenger cabins for an approximate maximum passenger capacity of 88.

SHORESIDE reqs:

In 2016, two cruise ships had scheduled trips to the Port of Rochester. The Grande Caribe and Grande Mariner of the Blount Cruise Lines. These vessels will make a total of six visits, two by Caribe and four by Mariner, to the Port of Rochester as they move on the Great American Waterways tour.

Grande Caribe

- July 8-23, 2017 (Warren to Chicago)
- July 25-August 9, 2017 (Chicago to Warren)

Grande Mariner

- May 31-June 15, 2017 (Warren to Chicago)

- June 17-July 2, 2017 (Chicago to Warren)
- July 21-August 5, 2017 (Warren to Chicago)
- September 3-18, 2017 (Warren to Chicago)



Figure 6: Great American Waterways Tour

The Pearl Mist is a 108 cabin cruise ship that currently operates on the Great Lakes between May and September. At 335ft long and 56ft wide, the Pearl is the largest cruise ship currently active on the Great Lakes. The vessel has a draft of 12ft and a total of six decks which allows it to carry 210 passengers.

Owned and operated by Pearl Seas Cruise Company, the Pearl Mist has two itineraries for the Great Lakes. These are the Great Lakes & Georgian Bay tour and the Great Lakes tour. On the cruises the vessel typically will start at a Canadian port, such as Toronto. From there it spends the first half of the trip traveling to Canadian ports before clearing customs at Sault Ste. Marie and traveling to U.S. ports. Both itineraries either end, or begin, in Chicago, IL.

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Figure 7: Pearl Mist at dock in Port Colborne, ON

The Victory 1 is a 105 cabin cruise ship that currently is active in the Great Lakes and Caribbean. The vessel spans 286ft, has a 40ft beam and drafts approximately 13.5ft. The vessel has a maximum capacity of 210 passengers and a crew of 90.

Victory 1 was formally the St. Laurent prior to an accident on the St. Lawrence Seaway where it struck a rock coming out of a lock. The accident tore a hole in the bow of the vessel requiring extensive repairs and ended up bankrupting its parent company, Haimark Cruises. The cruise ship was then purchased by a private hedge fund and has recently restarted operations after repairs were finalized. The vessel is now operated by Victory Cruise Lines.



Figure 8: Victory 1 (then St. Laurent)



Figure 9: St. Laurent in front of the MS Maasdam a 719'x101' cruise ship

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Currently the Victory 1 is operating 10 day/ 9 night cruises leaving from Chicago, Toronto and Montreal. It will then move to the Caribbean in October where it will begin operating cruises to Cuba. The vessel has no active plans to stop at the Port of Rochester in the foreseeable future.

2.4 Potential Great Lakes Cruise Ships

Based on the size restrictions presented by the SLS and Welland Canal, there is a limited number of active cruise ships that can enter the Great Lakes. An inventory of potential vessels was developed with the assistance of the City of Rochester, the Great Lakes Cruising Coalition and the USACE.

A total of 103 active and planned cruise ships worldwide were identified to have access to the Great Lakes. Because of restrictions in the St. Lawrence Seaway and Welland Canal, the size of cruise ships are limited. SLS restricted vessels can be no larger than 740ft in length, 78ft in width, 26ft in draft and have a height of 116ft. This limits mid-to-large cruise ships from calling on the Great Lakes. Currently, the trend in global cruising has been an increase in the size of cruise ships to ensure there is an activity for any and all guests aboard. Because of the limited size of Great Lake cruise ships, on board activities are fairly limited.



Figure 10: Columbus transiting the Welland Canal

In figure 10, the Columbus is the largest cruise ship to ply the Great Lakes in recent times. It can barely fit through the lock. The Columbus (now Hamburg) is 473ft in length with a width of 70.6ft. Even with its increased size, the Columbus only carries 420 passengers. That means that even if larger cruise ships become active on the Great Lakes, they will be restricted in overall size and passenger capacity. As a result, the expected benefits from a call on a port will be constrained by the limited number of passengers that lock restricted cruise ships can carry.

Beyond restrictions at the SLS, each harbor has its own restrictions. For example, the Rochester channel is federally dredged to a depth of 21ft. The turning basins in the port could not handle a vessel greater

than 500ft in length and the lower, larger, turning basin has not been maintained. Discussions with the First Officer of the Pearl Mist indicated that a channel should have a minimum of 20% additional length to the front and rear of the vessel. This means that the channel should be 40% larger than any vessel calling on it for safe maneuvering. While a vessel may be able to adequately maneuver in a smaller channel, it would take considerable time, would block the entire channel to all other vessel traffic during the maneuver, and raises the likelihood of an incident such as bottoming, hitting the port wall or colliding with other vessels.

Rochester is one of the larger ports on the Great Lakes. If a cruise ship were forced to go from one major port to another major port the duration of travel between ports is extended. Given the lack of amenities on board for passengers, it is the cruise companies' intention to get passengers off the vessel for shore excursions as frequently as possible.

RESTRICTIONS	Length (ft)	Beam (ft)	Draft (ft)	Height (ft)
Welland Canal/St Lawrence Seaway	740'	78'	26'3"	116'6"
Rochester Channel	500'	60'	21'	-
Rochester Port Wall	340'	50'	15'	-

Table 1: Port of Rochester Restrictions

Of the 103 vessels, two were restricted due to the draft restrictions in the Port of Rochester's federal navigation channel. An additional 38 vessels were restricted due to draft at the port wall. It is assumed that a draft in excess of 15ft would be unlikely for a cruise vessel to call on the port for two reasons.

First, the length of cruise ships typically correlates to the draft of the vessel. Larger vessels will have difficulty at the port wall, which surveys currently show a depth of less than 7ft in some areas after shoaling. Historically, the wall had been dredged to a depth of 12.3ft. This was last done in 2009. For this study, it is assumed that the port would dredge to 15 feet (18 feet when including the over depth and maintenance area) at the port wall.

Second, as larger vessels would call on the port, they would have a harder time navigating the channel. Vessels over 300ft in length would have difficulty maneuvering in the upper turning basin and would likely need to travel an additional 1.6 miles downstream to the larger lower turning basin. This lower turning basin would still restrict vessels at or over 500ft in length. Records indicate that the lower turning basin has not been maintained to the planned project depth of 21ft. In its current state, the lower turning basin cannot be utilized. This would restrict vessels that are greater than 340ft, approximately the size of the Pearl Mist. If maintenance dredging were performed at the lower turning basin then the maximum possible vessel length would be increased to 500ft.

As a result, of the original 103 vessels identified, only 49 are feasible to call on the port based on the restrictions listed above. If the port wall was dredged to 15'? 18'?, 101 vessels are able to call on the Port of Rochester.? If the port wall was dredged to the depth of 12.3ft, as had been historically done in 2009, then the number of vessels able to call on the port declines to 27. At the current level of depth only three vessels can call on the port. These are the Grande Mariner, Grande Caribe and the Canadian Empress. The Canadian Empress is a small cruise ship that is currently active in the St. Lawrence Seaway exclusively.

Accessible to	Total Number of Vessels
Great Lakes	103
Port of Rochester	101
Rochester Port Wall at 15' depth	62
Rochester Port Wall at 12.3' depth	38
Rochester Port Wall at current depth	5

Table 2: Vessels able to call on the Port of Rochester

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Ship	Length (ft)	Beam (ft)	Draft (ft)	Tons	Passenger Capacity	Notes
Grande Caribe	184	40	6.5		88	Operating in Great Lakes. Calling on Rochester 2x in 2016
Grande Mariner	184	40	6.5		88	Operating in Great Lakes. Calling on Rochester 4x in 2016
Wilderness Adventurer	160	39	6.5		60	Built by Blount Boats (Same design as Grandes). Operates in Pacific NW.
Wilderness Discoverer	160	39	6.5		76	Built by Blount Boats (Same design as Grandes). Operates in Pacific NW.
Canadian Empress	108	32	7	407	66	Operating in SLS.
MS Yorktown (Americana)	257	43	8		138	Currently in FL. Not operating as it was seized by creditors
Rembrandt van Rijn	184	23	8	140	34	Netherlands based. 3 mast schooner. No plans to call on Great Lakes.
American Glory	143.5	42	8.5	1267	49	Small vessel river boat operating in U.S. Inland Waterways.
American Star	187.5	45	8.5	1973	100	Small vessel river boat operating in U.S. Inland Waterways.
Independence	194.7	50	8.5	1955	104	Small vessel river boat operating in U.S. Inland Waterways.
American Spirit	199.4	45	8.5	1955	100	Small vessel river boat operating in U.S. Inland Waterways.
American Pride	295	53	9	2700	135	River paddleboat. Operating in U.S. Inland Waterways.
Queen of the Mississippi	295	53	9	2700	135	River paddleboat. Operating in U.S. Inland Waterways.
Queen of the West	295	53	9	2700	100	River paddleboat. Operating in U.S. Inland Waterways.
The America	295	53	9	2700	180	River paddleboat. Operating in U.S. Inland Waterways.
American Constellation	335	40	9.5	5000	170	New cruise ship operating in U.S. Could possibly call on Great Lakes.
Pegasus	148	36	10	1000	210	Yacht operating out of Greece.
Harmony V	180	27	10	693	50	Luxury small cruise ship/Mega-yacht. Operating in Mediterranean.
Hebridean Princess	180	27	10	693	50	Small cruise ship. Operates out of United Kingdom.
Island Sky	180	27	10	693	114	Operating out of Italy in the Mediterranean.
Oceanic Discoverer	207	43	10	2000	76	Mega-yacht. Operating out of Australia.
Arethusa	193	35	10		50	Small cruise ship. Not operating in Great Lakes.
Artemis	193	35	10		50	Small cruise ship. Not operating in Great Lakes.
Noorderlicht	152	21	10	140	20	Small schooner. Operates specialty cruises in the Artic.
Sarfak Ittuk	163	36	11	1127	62	Coastal Ferry. Operating around Greenland.
Crystal Esprit	270	46	11	2928	62	Mega-yacht. Operating out of Mediterranean.
Quest	163	36	11	1211	52	Now Sea Endurance. Small expedition cruise ship operating in Artic.
Variety Voyager	223	38	11	1561	72	Mega-yacht. Operating out of Greece.
Celebrity Xpedition	290	49	11	2842	92	Mega-yacht. Operating around the Galapagos Islands.
Tere Moana	329	46	11	3504	90	Previously Le Levant, Small cruise/yacht.
Uncruises	232	37	11	2600	90	Safari Endeavour. Operates out of Alaska and Mexico's Sea of Cortes.
Legacy	330	46	11.5	4000	88	Replica coastal steamer. Operates out of Columbia & Snake Rivers.
Pearl Mist	335	40	12	5000	210	Operating in Great Lakes. Departs from Chicago and Toronto.
Pearl Sea (Concept)	335	56	12	19089	210	New vessel to be coming on line in 2017.
Ocean Nova	239	36	12	2118	82	Expedition cruise ship. Operates around Greenland and Artic.
National Geographic Orion	337	47	12	4050	106	Mega-yacht. Operating out of Scandinavia.
Corinthian	289	50	12	4077	100	Cruise ship. Not operating in Great Lakes.
Silver Galapagos	289	50	12	4077	100	Mega-yacht. Operating out of Galapagos.
Caledonian Sky	297	50	13	4280	114	Mega-yacht. Operating in SW Pacific.
Sea Explorer	297	50	13	4280	111	Hebridean Sky. Expedition cruise ship. Operating in Antarctic.
Sea Spirit	297	50	13	4280	114	Expedition cruise ship. Operating in Antarctic.
Le Ponant	289	40	13.1	1489	67	Luxury yacht. Operating out of France.
SeaDream II	344	48	13	4333	112	Mega-yacht. Operates globally.
Wind Spirit	440	52	14	5736	148	Luxury sailing yacht.
Wind Star	440	52	13	5350	148	Luxury sailing yacht.
St. Laurent (victory 1)	286.32	40	13.52	4954	210	Steamer styled cruise ship operating in the Great Lakes.
Silver Discoverer	338	51	14	5218	120	Cruise ship operating in the Pacific and Indian Oceans.
Silver Explorer	355	51	14	6072	132	Polar excursion cruise ship.
Expedition	345	62	14	6172	116	Part of National Geographic Artic and Antarctic cruises.
Polar Pioneer	233	42	15	1753	53	Expedition ship. Operating in the Artarctic.
Spirit of Enderby	235	42	15	1764	50	Expedition ship. Operating in the Artarctic.
Akademik Shokalskiy	236	41	15	1764	37	Expedition ship. Operating in the Artarctic.
Adriana	340	46	15	4490	250	Classic styled cruise ship that operates in the West Indies.
Orient Queen II	397	55	15	7498	300	Modern small cruise ship that operates around Greece.
Ocean Diamond	409	52	15	8282	189	Super-yacht. Operates around antarctic.
Antarctic Dream	272	39	15	2180	76	Expedition cruise ship. Operating in Antarctic.
National Geographic Explorer	356	54	15	6471	148	Part of National Geographic Artic and Antarctic cruises.
Sea Adventurer	331	53	15	5750	122	Expedition ship. Operating in the Artarctic.
Hanseatic	403	59	15	8378	184	Cruise ship operates worldwide.
L'Austral	466	59	15	10700	264	Small Cruise/Mega-yacht. Operates around Alaska and Eastern Russia.
Le Soleal	466	59	15	10700	264	Small Cruise/Mega-yacht. Operates in Mediterranean.
Le Lyrial	466	59	15	10944	264	Small Cruise/Mega-yacht. Operates around Alaska and Hawaii.

Table 3: List of Cruise Ships Accessible to the Port of Rochester with a Draft Less than or Equal to 15ft

Passenger capacity is limited by the size of the cruise ships. Current vessels that can call on the port have passenger capacities that range from 60 – 88 individuals. The average passenger size of the vessels is 75 individuals while the median is 76 individuals. The difference between average and median passenger capacity for each draft depth is shown in table 4. In most cases the median passenger capacity is below the average. This reflects the fact that there are several larger vessels that drive average vessel capacity higher when the majority of ships actually have a lower passenger capacity.

As the depth of the harbor increases to the dredged level of 12.3 feet, the passenger capacity increases to a maximum of 210 individuals. This is the capacity on the Pearl Mist which is currently active in the Great Lakes. The average vessel capacity is 99 passengers at this range while the median level is 92 passengers.

If the harbor were dredged to a depth of 15 feet, then passenger capacity reaches 300. The Orient Queen II can accommodate 300 passengers This vessel operates around the Mediterranean Sea, primarily the Adriatic Sea. Victory 1 operates in the Great Lakes in this draft range. The average vessel capacity in this range is 149 while the median is 127.

Accessible to	Avg. Passenger Capacity	Med. Passenger Capacity
Great Lakes	-	-
Port of Rochester	313	270
Rochester Port Wall at 15' depth	149	127
Rochester Port Wall at 12.3' depth	99	92
Rochester Port Wall at current depth	75	76

Table 4: Passenger Capacities

2.5 Vessel Specific Features

Most of the vessels in the current Great Lakes cruising fleet are highly maneuverable. The Grande Caribe and Mariner were specifically designed to get into less accessible waterways and locations. Both vessels were designed with front unloading ability which can allow passengers to disembark directly onto beaches. This functionality is not currently utilized in the Great Lakes. Additionally, the Grande Caribe and Mariner have retractable pilot houses so they can navigate under low bridges.

Other vessels in the Great Lakes cruise ship fleet have bow thrusters to improve maneuverability in restricted ports and waterways. The fleet averages around 8-13 knots during typical cruising operations.

2.6 Most Likely Future Vessels

Based on the characteristics of the current Great Lakes cruise ship fleet, it is likely that any additional vessels would be of similar size and class. Pearl Seas and Victory cruise lines have both indicated their desire to bring on sister ships in the near future. These ships would be near identical to the Pearl Mist and Victory 1, respectively.

Ships not currently plying the Great Lakes, but that are in a similar design, are the most likely to be added from the American Cruise Lines fleet. American Cruise Lines is associated with Pearl Seas. They operate on the inland U.S. waterways, along the East Coast and the Pacific Northwest.

The company has four riverboats; The Queen of the Mississippi, Queen of the West, America and American Pride. These paddle boats are unlikely to call upon the Great Lakes due to their relatively flat bottoms and high clearance which would make them have less than optimal stability on the Great Lakes.

In addition to the riverboats, American Cruise Lines has five coastal cruise ships; The American Constellation, American Glory, American Star, American Spirit and Independence. Excluding the Constellation, which is very similar to the Pearl Mist, the other four vessels are all sister ships. They have relatively low drafts at less than 9 feet which make them optimal at accessing small harbors on the Great Lakes.

The Constellation is the newest vessel in the fleet, having been launched in 2016. It carries up to 170 passengers and has a draft of 9.5 feet, making it one of the larger small size cruise ships that is currently operating in U.S. waterways. While having the same beam and length as the Pearl Mist, the Constellation drafts 2.5 feet less. The vessel has bow thrusters and stabilizers, which enhance its maneuverability. This enhanced maneuverability and ability to access shallower ports makes it an optimal vessel for the future expansion of the Great Lake cruising industry. Current itineraries have the Constellation operating in the Hudson River, New England region and Southeast Atlantic coastline.



Figure 11: American Constellation (Artist Rendering)

In addition to the coastal cruisers, there is the possibility that larger single charter cruise ships may come into the Great Lakes for a specialty cruise. These charters would likely be for extended stays and would visit upwards of 12-14 ports during the call Charters would likely originate from Europe before moving into the New England area and finally the SLS. A possible charter of this type could extend for 20 to 30 days. This occurred with the Columbus back in 2009.

Vessels that are assumed to be utilized for this type of one time charter are small full size cruise ships. Examples would be the Adriana and Orient Queen II.

Adriana is an older style cruise ship that was built in the early 1970s. It has a carrying capacity of 250 passengers and 100 crew. Unlike other Great Lakes cruise ships, the Adriana has a pool and expanded onboard amenities. While being considerably larger at 340ft in length, the Adriana only drafts 15ft making her accessible to many Great Lakes ports.



Figure 12: The Adriana

The Orient Queen II was built in 1988. It has a maximum capacity of 300 guests. Like the Adriana, the Orient has a greater length than all active Great Lakes cruise ships at nearly 400ft but it only drafts 15ft. This makes the Orient accessible to many Great Lake ports. It should be noted that this ship maybe slightly too large for the channel width of the port of Rochester in terms of safe maneuvering.



Figure 13: The Orient Queen II

2.7 Benefits of Small Ship Cruising

Small ship cruising has numerous advantages and disadvantages. As a result, the cruises may only hold appeal for a specific subset of cruise ship passengers.

Advantages and Disadvantages of Small Ship Cruises		
Category	**Pros**	**Cons**
Cabins	Usually nicer luxury cabins.	Most expensive cruise fares
	Most cabins are suites on luxury small ships	Non-luxury small ships have limited or no balconies
Dining Options	Alcohol provided with dinner	Quality of dining is reflected in higher prices
	High quality cusine in dining rooms	Added Fees for alternative dining
	Non-existent lines	
	Dining is open-seating and flexible	
Service	Personalized, available and attentive	Limited in terms of ability due to lack of amentities and services on the ship
Fellow Passengers	Typically no kids	Not suited for families
	Quieter and more personal	May have minimum age requirement
		Limited public areas to interact with other travelers
Entertainment	Based around enrichment programs and feature experts	Low key and potentially informal
	Smaller scale making them more interactive	Fewer public rooms means less socializing
		Unlikely to have any gym, swimming pool or casino
Tours Embarking Itineraries	Exotic itineraries. Call at unusual/smaller ports. Exclusive events	
	Little to no wait exiting or reboarding the vessel	

Table 5: Pros and Cons of Small Size Cruise Ships *http://www.cruisecritic.com/articles.cfm?ID=360*

Passengers tend to be older and more adept cruisers who are looking for new unique experiences. They also will tend to appreciate the quieter less hustle-and-bustle atmosphere. Typical small vessel cruise passengers will be more affluent and enjoy active intelligent discussion.

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3 Factors Impacting Great Lakes Cruising

This section will discuss the potential growth of Great Lakes Cruising. Key factors addressing the growth and expansion of the industry, particularly in how they relate to Great Lakes cruise ship activity in the port of Rochester, will be identified. These factors include demographics, distance between ports, vessel size, regulations, customs requirements and length of season.

This section will end with the development of three scenarios which will be used for modeling in the economic analysis. Scenarios will be based on low, medium and high growth.

3.1 Demographics

Per discussions with Great Lakes cruise ship operators, the typical passenger on these vessels is between 65-80 years of age. These passengers are seasoned travelers who have been on multiple cruises before. Most are affluent and eager to go shopping, take in sites and other off ship activities. While in the upper age demographic, most of the travelers are active, willing to walk to multiple amusement locations, parks or through shopping districts.

The cruise operators also noted that the typical guest is usually interested in learning about the areas that they are traveling to. It is not uncommon for the cruises to be based around onboard lectures, such as Rhodes scholars, specific subject matter experts, or with regional experts giving presentations about the area.

Cruise operators also noted that most of their ships are fully booked to a level of 80-90% of max capacity. This results from singles travelers who have booked a room that could sleep two.

Cruise line operators base their cruises around these assumptions in demographics. Most excursions are based around historical sites, museums and natural wonders. Cruise operators also stated that they like to allow the passenger time to shop and try to build that time into their itineraries.

Given that the fastest growing demographic in the U.S. is adults between the ages of 65-80, there is an expectation of increased demand in the short-to-midterm. This age bracket of individuals are looking for cruises that do not require strenuous travel overseas. Most small ship cruise passengers are experienced cruisers and have traveled extensively. They are now looking for low key excursions that are rich in history and knowledge.

The Great Lakes region is inherently well positioned for this demographic. Travel to ports of embarkation is primarily domestic for U.S. travelers. There is little to no cultural differences between U.S. and Canadian ports of call. There is limited concern with safety on shore excursions. Given the size of ports and the vessel restrictions, smaller vessels are required. Smaller vessels are more popular with older travelers who prefer more laid back activities, such as historical tours and lectures. Additionally, these vessels are easier to board and get around. As a result, Blount cruises specifically advertises to senior travelers.

3.2 Itineraries

Based on the four cruise ships currently plying their trade in the Great Lakes, there will be a total of 33 cruises in 2017. Of those only six will call on the port of Rochester.

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The Victory I has two different itineraries that it runs over six cruises.

"Great Lakes Grand Discovery" is a 10 day cruise that departs from Toronto, ON and ends in Chicago, IL. During the cruise, the ship stops in six ports. The majority of the cruise is spent traveling to and from destinations and cruising in the Georgian Bay of Lake Huron. The cruise features an onboard historian and is predominately focused around historical and scenic stops.



Figure 14: Great Lakes Grand Discovery Itinerary

"St. Lawrence River and the Great Lakes" is a 10 day cruise that disembarks from Montreal, QC en-route to Chicago, IL. It has a similar layout itinerary as the "Great Lakes Grand Discovery" tour but with the stop in Midland, ON being replaced by the trip down the St. Lawrence Seaway.



Figure 15: St. Lawrence River and the Great Lakes Itinerary

The Pearl Mist operates two separate itineraries over a total of 10 cruises.

"Great Lakes & Georgian Bay" is an 11 night cruise that disembarks from Toronto, ON and ends in Chicago, IL. It is very similar to the itineraries run by Victory Cruise Lines. Most of the time is spent on the cruise moving from location to location with 8 ports of call scheduled. Most of the stops are located in the Georgian Bay and Mackinac region of Lake Huron.



Figure 16: Great Lakes and Georgian Bay Itinerary

"Great Lakes" tour is a 7 night trip that follows the same path as the "Great Lakes & Georgian Bay" itinerary with the exception that the ship disembarks from Midland, ON en-route to Chicago, IL. As a result, all the locations in Lake Erie and Ontario are not included.



Figure 17: Great Lakes Itinerary

Blount Cruise Lines has four itineraries that it embarks on over a total of 15 cruises annually involving some aspect of the Great Lakes.

"Locks, Legends & Canals of the Northeast" is a specialty cruise that takes advantage of Blount Cruise Lines custom cruise ships that have a retractable hull and are small enough to navigate the Erie Canal. This itinerary is a 14 day cruise that begins in Montreal, QC and ends in New York City, NY (NYC). It travels up to Quebec City, QC before turning back down the St. Lawrence Seaway. Once in Lake Ontario, the cruise ships travel to Oswego, NY where it enters an offshoot to the Erie Canal. At Troy, NY, the cruise ships link into the Hudson River with which they travel down to NYC.

"Saguenay" is essentially the same cruise as the "Locks, Legends & Canal" itinerary except that the vessel takes passengers further up the St. Lawrence to the Saguenay River for a scenic cruise. In the Locks cruise, the cruise takes the additional day to stop at Three Rivers, QC which is in between Montreal, QC and Quebec City, QC.



Figure 18: The Saguenay Itinerary

"Great American Waterways" itinerary is an all-encompassing cruise of four Great Lakes and the Erie Canal. The 16 day cruise begins in either Warren, RI or Chicago, IL, finishing in the other corresponding port. This is the only itinerary that currently stops in the Port of Rochester.

This trip is planned for six times in 2017 making it the most popular itinerary offered by Blount.



Figure 19: The Great American Waterways Itinerary

"Magical Lake Michigan" is an 8 day cruise that embarks and disembarks from Chicago, IL. The trip initially runs up the western bank of Michigan. Upon reaching Mackinac Island, the cruise turns around and calls upon ports in Wisconsin. This itinerary has three trips planned for 2017.



Figure 20: Magical Lake Michigan Itinerary

What is noticeable about these cruises is the forced itineraries based on distance and customs regulations. Itineraries will typically keep to American or Canadian ports exclusively. Itineraries that visit both U.S. and Canadian ports will travel to all of one countries ports until they switch to one of the opposite country's ports. After making the customs switch, the vessels will only call upon that country's ports until reaching its final destination. This restriction limits cruise vessel calls, especially of those

calling on Toronto and Niagara Falls. This helps Lake Michigan tours since they are all U.S. ports and the distance is limited between each.

Because of the distance between major cities and ports of call, Lake Superior is underrepresented by cruise ship activity. Current itineraries only call on Lake Superior to the extent that they go through the 'historic Soo Locks' before returning to either Lake Huron or Lake Michigan. This problem also seems to exist slightly in Lake Erie and Lake Ontario. Cruise ship itineraries tend to bypass many of the ports of call on these lakes as they move through to further destinations like Georgian Bay or Mackinac Island. This is predominately noticeable for the larger cruise ships Pearl Mist and Victory I. This limits the potential for calls on these lakes and also limits the number of passengers that are making call when ships do stop.

3.3 Pilot Regulation

Most people know what an airline pilot is, but very few know about ships pilots. Ships pilots date back to the early days of sailing in the Mediterranean Sea – to the Phoenicians. Pilots were expert navigators and ship handlers that have intimate knowledge of the waters that they pilot. They still perform this duty today, but the ships are larger and the responsibilities greater.

The pilot is charged with protecting the public interest. When on the bridge he directs the navigation of the vessel in conjunction with the Master of the vessel. It is the pilot's responsibility to safely maneuver a ship to the berth without incident. In coastwise ports, the pilot boards the vessel when it arrives at the sea buoy just outside the port. In the Great Lakes, a pilot is aboard every ocean vessel during its entire transit on the Lakes. In addition to navigation and ship handling duties, the modern day pilot also makes sure that pollutants are not dumped into our waters as well as monitoring the vessel for potential homeland security issues. The pilot is usually the only U.S. or Canadian citizen crew member (?) aboard the vessel.

Pilots go through extensive training. Besides the U.S. Coast Guard requirements for federal pilot registration, a potential candidate must go through a three year training program before he is fully qualified to pilot vessels throughout the entirety of the Great Lakes.

Pilotage of international trade vessels in the United States is regulated by the individual states, each of which maintains a pilotage system that is suited to the particular needs and circumstances of its own waters. In 1789, the first Congress of the United States enacted a law giving the states the right to regulate pilotage in their waters. That created the state pilotage system, which remains in effect today. Every foreign-flag vessel and every United States-flag vessel engaged in international trade moving in the waters of a state is required by the state to take a pilot licensed by the state.

Although each state has its own pilotage statute and regulatory system, there are substantial similarities in their systems. In all but one state, pilots are licensed and otherwise regulated by a pilot commission, which is a state-recognized governmental entity that is part of a state agency or of a local municipality or port authority. Most pilot commissions have a mixed membership composed of representatives of ship operators, port interests, environmental groups, pilots, government agencies, and the public. The commission selects individuals for admission to a training program, oversees the training process, issues licenses, investigates accidents involving pilots or complaints filed against pilots, and oversees various aspects of the pilotage operation

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Each U.S.-flag coastwise vessel is required by federal law to use a pilot with a federal license issued by the United States Coast Guard. Unlike the comprehensive state systems, federal regulation is limited to licensing and disciplinary enforcement. The federal license has much lower qualification requirements (for example, no prior training specifically as a pilot is necessary) than a state license, and is similar to a pilotage exemption certificate issued under systems in other parts of the world. However each state pilot also holds a federal license. In this respect, the federal license serves as a national minimum standard.

There are three separate regions of Great Lake Pilots.

- Western Great Lake Pilots, which handles the piloting in Lake Michigan, Huron and Superior.
- Lake Pilots Association, which handles the piloting in Lake Erie, Lake St. Claire, St. Mary's River and the area around Detroit
- St. Lawrence Seaway Pilots, which handles the piloting in Lake Ontario and the SLS.

This requirement is highly expensive and is a major headwind to the Great Lake cruising industry. Since the pilot needs to be with the vessel during the entirety of the trip, the pilot becomes an additional cost to the cruise company. He must be compensated, fed and have a room provided for him which would otherwise be filled by a revenue generating customer. In its 2016 rate-setting, the Coast Guard decided to expand the number of pilots, increase average pilot compensation to $326,000 per year from $235,000 and ensure that pilots have 10 days off each month during the nine-month shipping season. The rates work out to approximately $400 an hour to pay for a pilot. http://www.joc.com/regulation-policy/transportation-regulations/us-transportation-regulations/great-lakes-interests-sue-us-coast-guard-over-pilots%E2%80%99-fees_20160601.html

3.4 Customs Regulations

3.5 Distance between Ports

Distance between ports is a major factor in determining itineraries for Great Lake cruise ships.

Distance (Miles) and Time (Hours) from Port of Rochester	N. End of Welland Canal	W. End of SLS	Oswego	Port of Toronto	Buffalo	Erie	Cleveland
Lake Ontario Distance	92	89	60	102	92	92	92
Welland Canal	-	-	-	-	26	26	26
S. End Welland to Destination	-	-	-	-	22	66	164
Distance to: From Rochester in Miles	**92**	**89**	**60**	**102**	**140**	**184**	**282**
Lake Ontario Travel Time	7.63	7.38	4.98	8.46	7.63	7.63	7.63
Welland Canal Transit Time (Avg. Hours)	-	-	-	-	11	11	11
S. End Welland to Dest. Travel Time	-	-	-	-	1.83	5.48	13.61
Time to: From Rochester in Hours*	**7.63**	**7.38**	**4.98**	**8.46**	**20.46**	**24.11**	**32.24**

*Hours are represented in terms of percentage of time. Ex. 7.63 hours is equivalent to 7 hours and 38 minutes

Table 6: Distance and time between neighboring ports

Because of the limited amenities on Great Lake cruise ships, cruise lines attempt to be set up itineraries in a way that a vessel is arriving in a port of call each day. A good example is the Great American Waterways cruise. This 16 day tour has only two dedicated cruising days. One between Mackinac Island and Wyandotte, MI and a day traveling through the Welland Canal. Ports of call and embarkation need to be located in such a way that they are advantageous in terms of reaching other ports of call. Daily travel time of no greater than 12 hours is important.

On the opposite side, if ports are too close to each other they can be bypassed. In the case of the Great American Waterways tour, the vessel that calls on the port of Rochester will arrive in the morning before disembarking in the evening to reach Oswego. This can limit the time in port as the vessel will try and maximize possible ports of call. The shorter the time in port, the less revenue that can be generated by passengers sightseeing, eating or buying goods.

Rochester's location has both positive and negative aspects. Positively, there are limited ports nearby in terms of competition for call. Beyond Toronto and Oswego, there are no other major ports that are likely to be seen as optimal destinations for Great Lake Cruise ships on Lake Ontario. Rochester is also well situated in its location to Niagara Falls, a scenic world wonder. Cruise ships looking to visit Niagara Falls are only an 8 hour sail from the port of Rochester. Finally, Rochester is one of the first major ports that can be called upon when exiting the SLS. The port is located approximately 5 hours from the end of the SLS which makes it an optimal destination for vessels that have just entered the Great Lakes.

Negatively, the port of Rochester is somewhat isolated on Lake Ontario. Beyond vessels moving in and out of the Great Lakes St. Lawrence Seaway and those visiting Niagara Falls, there is limited incentive to push over to Rochester. Given that it takes 11 hours to transit the Welland Canal on average, operators may feel that the Welland Canal is too time consuming for regional calls, like the port of Rochester.

In terms of being a port of embarkation, the most important factor is the location of competing ports. The port of Rochester has significant competition in that area, predominately from the city of Toronto.

Toronto, ON is the fifth largest city in North America. It has extensive infrastructure, hotels, airport, night life, cultural events, sporting events and other attractions. The Toronto Pearson International Airport has considerably more access to flights, both domestic and international, than Rochester which is a major advantage in getting passengers to and from potential cruises. As a result, Toronto is an excellent location for embarkation as guests can take in a major city before beginning their cruise. The city also has an extensive port and harbor network which is more accessible to Great Lake cruise ships as it is located right off Lake Ontario. This compares to Rochester's port which is constricted in ship size due to the ability to turn and the depth of the channel as the port is located in the mouth of the Genesee River.

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Figure 21: Great Lakes St. Lawrence Seaway System Map

3.6 Length of Great Lakes Cruising Season

Because of the Great Lakes geographical location, the season for Great Lake cruise ships is limited. Commercial vessels moving cargo on the Great Lakes do not operate year round (between mid-January and when the ice melts each season). Generally enough ice melts to begin operations typically occurs between late-March and early-April. Some years operations can continue for extended periods, as has been seen in recent years due to the unseasonably warm temperatures corresponding with the current El Nino weather pattern. Other years ice has not sufficiently melted to begin operations until late-April, or vessels become stranded in early winter ice packs requiring Coast Guard ice breakers to rescue them.

Ice is unlikely to impact Great Lakes cruise ships as they will have exited the Great Lakes prior to any considerable formation. This is the result of the moderate temperatures seen in the fall and early spring. Most cruise ship operators ply the Great Lakes between May and October of a given year. This represents a season of only 20-24 weeks.

The limited season reduces the potential number of calls on any given port throughout the year. Given that most itineraries run between 7-14 days, this would restrict the number of potential calls to 10-24 for any given vessel. When you add in the time between cruises of 1-2 days to resupply, clean and any needed repairs, the number of potential calls for any one vessel falls to 8-20.

4 Great Lake Cruising Growth Scenarios

In its current state, the Great Lakes cruising industry is fairly limited with only four vessels operating beyond individual harbor constraints (note: this excludes the Canadian Empress which operates solely in the St. Lawrence Seaway). Discussion with Stephen Burnett of the Great Lakes Cruising Coalition indicated that the organization believes that the Great Lakes could handle upwards of 30 cruise ships in a given year based on the size of the relative population that surrounds the Great Lakes.

While this level may be possible, it seems to be optimistic that this level would be reached. This is primarily due to the fact that the Great Lakes cruising industry had been weak to non-existent for four decades prior to this minor resurgence. Discussions with Great Lakes cruise operators indicates that this is a niche location in the industry. While there is room for expansion in the Great Lakes, it is unlikely to hit a maximum level of 30 vessels, with each vessel making approximately eight trips a year. That would represent more than a 650% increase from current Great Lake operations.

Secondly, there are headwinds to the industry in the form of regulations, customs, distance between ports, the max size of vessels and operating season.

Additionally, even if a multitude of cruise ships began calling on the Great Lakes, there is no guarantee that these vessels would call on the port of Rochester. Currently, only 17% of all Great Lakes cruises call on the port (based on total itineraries). It is likely that this level of penetration into the cruise ship market would continue given Rochester's general location. Cruise ship operators have indicated that the highest level of interest has been for tours in the Mackinac region, Lake Michigan and Lake Superior. Given the distance to travel from Rochester to these regions, it is unfortunately likely that Rochester would get bypassed based on the logistics more than on a lack of facilities or excursions.

Based on those reasons, three scenarios were modeled;

1. **Low Activity**: This level is equivalent to the current operating environment of six total calls in a given year by either the Grande Caribe or Grande Mariner. Both vessels can operate at the current depth and are calling on the port at this level. Additionally, initial itineraries for next year's cruises indicate the same level of activity. This level provides a beginning point for the analysis.

2. **Medium Activity:** This level assumes a total of twelve calls in a given year. In this scenario, the Grande Caribe and Grande Mariner would each continue to call six times in that year. The Pearl Mist and Victory 1 would each call two times that year (four total). Vessels from the American Cruise line, which operates river boats out of Mississippi and the Pacific Northwest at a low draft, would move a vessel or two into the Great Lakes calling on the Port of Rochester a total of two times in a given year. These vessels are deemed to be the most likely vessels to be added next to the Great Lakes as they are located in the U.S. and have shallow drafts at 8.5ft. In this scenario, a dredged depth of 13.1 feet would be required for the Victory 1 to call on the port. For the purposes of the tourism model though, considerations of dredged depth will be excluded.

3. **High Activity:** This level of activity assumes a total of 26 calls in a given year. This scenario includes all the vessels from the Medium scenario. The Grande Caribe and Mariner are assumed to increase their calls from six to eight each year. The American Cruise line vessels would increase to eight each year. Victory and Pearl Mist would still call a total of four times, but they would be joined by sister ships which would also call four times (a total of eight). Finally, it is assumed two larger cruise ships on charters such as the Adriana and Orient Queen II would each make a single call every year. These larger vessels would require a depth of 15 ft. at the port wall and could manage to turn around in the upper turning basin, though the Orient Queen II would be at the maximum possible limit. For the purposes of the tourism model, considerations of dredged depth will be excluded.

The High Activity scenario assumes that cruise lines would call on Rochester at the beginning and end of cruising seasons as they create itineraries around the port as the vessels enter and exit the Great Lakes.

5 Dock and Shoreside Infrastructure Requirements

As a port of call or port of embarkation, cruise ships have several specific requirements when at a given port. These include:

- Harbor depth
- Shoreside mooring points
- Potable water hookup
- Electrical hookup
- Sewage pump
- Supplies
- Fuel
- Trash removal
- Line handlers
- Maintenance services
- Accessibility to dock (ramp for unloading)
- Security
- Custom clearance

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The port of Rochester currently has in place or has the ability to provide the majority of these services and more. This section will be broken up into two sections; Required Depth at Port Wall and Port Infrastructure and Service Requirements

5.1 Required Depth at Port Wall

Channel depth is accessible to a wide range of Great Lakes cruise ships at 21ft. Great Lakes cruise ships still need to dock though and that requires maintenance dredging at the port terminal wall. Currently, the port wall has a surveyed depth of just 8ft in certain areas.

Additional maintenance dredging will need to be done at the harbor wall to allow for larger vessels calling on the port. The coastal analysis provides a more in depth analysis of dredging requirements. Based on the current Great Lakes cruise ship fleet mix, a maximum allowable vessel draft of 15ft would be recommended for the port wall. This would allow the larger active Great Lake cruise ships, the Pearl Mist and Victory I, to call on the port in addition to any larger vessels that decide to call on the port. This draft depth would also provide additional security for ships in case shoaling rates and sediment deposits are above typical levels in a given year. Future growth scenarios would benefit from the increased depth at the port wall.

A 15ft draft vessel would require a dredged depth of approximately 18ft based on the minimum required bottom elevation.

FACTORS FOR DEPTH REQUIREMENTS	DEPTH (FEET)
Vessel Draft	Varies
Wave Height	0.5
Freshwater Effect	Negligible
Squat Allowance	0.5
Safety Clearance	2.0
Total	**Vessel draft + 3.0**

Table 7: Summary of required factors to determine minimum bottom elevation at the Port of Rochester

Approximately 0.5 feet (1,982 cubic yards - CY) per year of material deposits into the mooring area. A sediment analysis study model would need to be conducted to accurately determine a shoaling rate. Based on current surveys approximately 26,500cy of material would need to be dredged to allow a vessel with a draft of 15ft to safely navigate to the harbor wall.

DRAFT (FEET)	MINIMUM REQUIRED BOTTOM ELEVATION (FEET) LWD	VOLUME TO DREDGE WITHIN SURVEYED AREA (CY)	APPROXIMATE VOLUME TO DREDGE OF ENTIRE AREA (CY)
6.5	-9.5	795	2,738
7.0	-10.0	1,186	3,395
8.5	-11.5	3,005	7,100
12.0	-15.0	9,664	16,454
13.5	-16.5	13,227	20,955
15.0	-18.0	17,070	26,493

Table 8: Approximate volume of material to dredge for required bottom elevations

Year	Max Allowable Vessel Draft*	Cubic Yards Dredged	Annual Dredging Cost	Present Worth Factor	Dredging Present Value
2017	15	26,493	$ 136,042	0.96970	$ 131,919
2018	15	0	$ -	0.94031	$ -
2019	15	3,963	$ 20,350	0.91182	$ 18,555
2020	15	0	$ -	0.88419	$ -
2021	15	3,963	$ 20,350	0.85739	$ 17,448
2022	15	0	$ -	0.83141	$ -
2023	15	3,963	$ 20,350	0.80622	$ 16,407
2024	15	0	$ -	0.78179	$ -
2025	15	3,963	$ 20,350	0.75810	$ 15,427
2026	15	0	$ -	0.73512	$ -
2027	15	3,963	$ 20,350	0.71285	$ 14,506
2028	15	0	$ -	0.69125	$ -
2029	15	3,963	$ 20,350	0.67030	$ 13,641
2030	15	0	$ -	0.64999	$ -
2031	15	3,963	$ 20,350	0.63029	$ 12,826
2032	15	0	$ -	0.61119	$ -
2033	15	3,963	$ 20,350	0.59267	$ 12,061
2034	15	0	$ -	0.57471	$ -
2035	15	3,963	$ 20,350	0.55729	$ 11,341
2036	15	0	$ -	0.54041	$ -
					$ 264,132
				Partial Payment Factor	0.06799
				Average Annual Value	$ 17,960
				Rounded Average Annual Value	$ 18,000

*See coastal section for analysis on the dredged depth in relation to the maximum allowable vessel draft.

Table 9: Average annual cost of dredging maintenance at the port terminal wall

Table 8 shows the estimated average annual cost of maintenance dredging at the port wall to a depth of 15ft. The first year assumes that the wall is dredged from current levels down to the recommended depth of approximately 18ft. Then on an every other year basis approximately 1ft of material would be removed based on the current estimate of 0.5ft of annual sediment placement at the dock wall.

Costs are based on the current USACE rate of $3.95 per CY to remove dredged material in the Rochester harbor channel. It is assumed that any work would be added on to a U.S. Army Corps of Engineer dredging project in the Rochester Harbor channel. This would require the city of Rochester to subcontract with the company who is conducting the USACE dredging efforts, and the respective cost would not be cost shared by the Federal Government. While the city of Rochester would be responsible for the costs of dredging at the port wall, by piggybacking with a Corps dredging project the costs would be limited by removing those associated with mobilization and demobilization. The $3.95 estimate also

assumes that there are no contaminants in the dredged material and that they could be removed for open water disposal.

The annual dredge cost is the cubic yardage multiplied by $3.95. A 30% contingency factor is then added to the cost to cover for uncertainty.

Research partaken and discussions with local representatives at the port have not been conclusive in defining the maximum historical dredged depth at the port wall. Additional analysis may need to be completed to determine the integrity and depth of the port wall. This is because the true depth of the port wall is unknown, and to make sure that the port wall would maintain its structural integrity if the surrounding material were removed to a depth of 18ft.

An analysis of sediment would need to be completed to ensure that the dredged material at the port wall can be placed in an open water site. If the material were to contain contaminants, the cost of upland placement would be considerably more, increasing the per cubic yard cost.

The two studies for the analysis of the structural integrity of the port wall and the analysis of the dredged sediment and disposal method used could carry a notable expense.

5.2 Port Infrastructure and Service Requirements

In terms of a port of call, cruise ship operators indicated they will look for limited services. This includes waste removal, sewage pump and water hookup. Dependent on availability, cruise ships will sometimes bring on supplies, especially if there is a local food that they can provide to the guests.

5.2.1 Potable Water and Electrical Hookups

Per the port of Rochester marina manager, there are already (potable) water and electric hookups in place in the marina but not at the port wall. These were initially installed for the Fast Ferry operation, but have since been removed. It would be important to have these reinstalled. Great Lakes cruise ship operators have indicated that they typically do not use electrical hookups when in ports on call. It would improve the harbor as a point of call if electrical accessibility was available on the port wall. This would also translate over to transient callers who might use the harbor wall during times of high volume in the port.

This reasoning holds for the (potable) water hookup. If a water hookup were accessible at the port wall, Great Lakes cruise ship operators have indicated that they would take on water during times of call. Both of these functions would be a necessity for any vessel considering using the port as a point of embarkation.

5.2.2 Maintenance, Repair and Crane Service

Maintenance or repair services would have to be contracted out by vessel operators. In Rochester, Shumway Marine offers repair services. Shumway offers services on drivetrains and engines of all sizes. Unfortunately, the company does not have the capability to provide major repairs and any skeletal work to the vessel that might be necessary.

A crane service can be contracted for any major repairs or lifting required. Unfortunately, there is reduced access to the port of Rochester terminal dock with the new Marina extension.

Hamilton, ON based company Heddle Marine has floating dry dock capacity that could handle any cruise ship that has been outlined in the current and potential future vessel lists. This nearby facility does provide some flexibility in case something major were to occur to a Great Lake cruise ship calling on or making the port of Rochester its home port.

5.2.3 Customs

See the section on customs requirements (see other section).

5.2.4 Fuel

A fuel schedule is usually determined prior to embarkation, and it is rare for vessels to take on fuel ad hoc. Discussions with cruise operators indicated that they contract out independently for fuel services when calling on the port of Rochester. This usually requires the port dock to have access for a fuel truck to pull up nearby. Fuel trucks have fuel lines that can be run to the cruise ship. The major factor for cruise companies when determining where to add fuel is the cost. If the company can save even a couple cents a gallon; that equates to a big savings when adding as much as 100 tons of fuel.

5.2.5 Sewage Pump Out and Waste Removal

U.S. regulations do not allow cruise ships to discharge any water or waste while underway. This requires the vessels to have sewage removal when available during calls. Cruise companies prearrange contractors for this service when calling on ports. Sewage will not be removed at all ports of call. Discussion with a local septic vendor indicated that this service could be provided for Great Lakes cruise ships calling on the port of Rochester.

Great Lakes cruise ship companies also contract out waste management. Currently, the port of Rochester allows the vessels to use their dumpsters free of charge. Discussion with the port manager indicated that the city's docking permit would be reworked during the off-season between 2016 and 2017. Costs associated with waste removal and dumpster use could be updated in the new permit. It is unknown at this time if the permit will be revised.

5.2.6 Supplies

Operators have indicated that they like to bring on local foods to serve, especially if there is a specific specialty dish associated with the region. In addition, cruise ships like to bring on fresh produce if the opportunity arrives. The port is well established with a large walk in cooler inside the port terminal which would provide temporary storage for food stuffs.

5.2.7 Gangway and Access to the Port Wall

Most vessels have their own gangway that they bring with them. This allows the vessel to dock off at commercial docks, such as a gravel receiving dock as seen in Figure 22. What could be useful is ladders cut into the port wall spread up and down the walls length. This would be primarily for transient callers. It would also be a safety consideration.

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Figure 22: Gangway on Pearl Mist docked in Port Colborne, ON

The port of Rochester has access for gangways seen in figure 18. There is limited access to the port wall via vehicles. When the fast ferry was operational, there was access to vehicles that were loaded at the stern of the vessel. This feature of the dock still exists but is no longer accessible because of the new marina expansion. As a result, there is no way for a vehicle to pull right up to a vessel at dock.

This is not a major issue for fueling, water, or septic removal as trucks providing that service have extendable hoses that can reach from the parking lot to the harbor wall. This becomes an issue for other service vehicles or supply vendors which would have to maneuver goods through the port terminal to the dock. The port terminal building does have large roll up doors that access the port wall, but access to them is still limited by the movement through the terminal itself.

5.2.8 Pilotage, Line Handling and Additional Mooring Points

Given the high level of maneuverability of the existing Great Lakes cruise ship fleet, it is uncommon for the operators to require any additional pilotage or line handlers.

5.2.9 Additional Services

While not a direct service of the port, Great Lakes cruise ships and their operators like to hire local experts to give lectures, or local musicians to entertain guests while in ports of call. The city could compile a list of these individuals and groups to provide to Great Lakes cruise ship companies.

The new marina also offers showers, restrooms and a lounge that they might make accessible to Great Lakes cruise ship passengers who decide to pass on the local itinerary. Providing regional reading material in the lounge may spark a passengers interest in future trips to the region.

6 Port Revenue Model

Vessels have specific needs that may be required at any given port. This provides the port operator with an opportunity to generate revenue based on providing services to the vessels calling on their facilities.

An example of services that could be provided include:

- Pilot charges
- Docking fees
- Water fees
- Garbage disposal
- Fuel charges
- Ship restocking (food, beverages, supplies, decorations, etc)
- Customs fees
- Repair services
- Misc. Port fees and charges

Port revenue will be dependent on the number of expected excursions into the port each year, the number of tourists, the ship size and their need for supplies. Currently, the port terminal provides access to the majority of services required.

Great Lakes cruise ships that call on the port of Rochester are required to sign a docking permit application prior to call. There is a one-time annual fee for the permit application of $20. The permit application names the contact information, the anticipated docking dates, services required in addition to the costs associated with those services, and the daily rate for docking a vessel of specific sizes. Additionally, there is a $10 per passenger usage fee that has historically been waived. Per the city and port operator, this policy may change after the docking permit is updated this winter.

Daily Docking Rate	
Vessel Size (ft)	**Fee/per day**
1-30	$30
31-100	$50
101-199	$200
200-299	$250
300+	$300

Table 10: Daily Docking Rate

Based on the daily docking rate and one time permit fee per ship, the port generated $1,240 in 2016 from Great Lakes cruise ships. This was confirmed by the port manager. The port revenue model incorporates these daily docking rates and the annual permit fee into the model

An assumption is made in the model for the overall capacity of passengers on each vessel. Per cruise ship operators, the vessels are typically fully booked to a capacity level of 80-90% due to single travelers. As a result, the model will assume 85% of maximum passenger capacity for each vessel that is modeled to call upon the port.

The model includes the passenger usage fee of $10 per person per trip. This is multiplied against the assumed passenger capacity of 85% of the maximum capacity.

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Water revenue is measured by an assumed per person level of 20 gallons a day. This value is derived from the average shower length of an American of 8.2 minutes (www.home-water-works.org/indoor-use/showers) at 2.1 gallons a minute. It is assumed that all guests and crew members will shower once per day, for a total of 17.2 gallons per day per person. The additional gallons used per day is for the toilet, personal hygiene and miscellaneous uses, which is assumed to be used by the crew in meal preparation or other activities. To derive the anticipated revenue from water service, the 20 gallon level is multiplied against the assumed level of passengers and crew, as well as the stated permit rate of $1.76 per 1000 gallons of water.

Electrical revenue is measured at $25 per day. Based on interviews with cruise ship operators, it is unlikely that vessels calling on the port will actually use this service because they will remain powered by their own generators. As a result, the value is assumed to be $0 for electrical services.

Repairs and crane services are anticipated to be highly unlikely. The crew would likely perform any necessary maintenance on their own. The possibility that parts could be purchased within the port or city is highly unlikely as their availability is doubtful. As a result, this service is not anticipated to generate any revenue for the city.

Cruise ship operators indicated that they like to try to provide local dishes to passengers. Additionally, when the service is available, as it is in Rochester, cruise ship operators like to bring on fresh food. As a result, it is anticipated that the operators would actively try and seek out some regional food products while in port. As a result, food products revenue is anticipated to be approximately $5 per passenger.

Fuel can be provided at the port by bulk delivery. A local vendor has confirmed that this service can and has been provided to Great Lake cruise ships via a fuel truck at the port of Rochester. Fuel cost is assumed to be the current average cost of fuel per gallon in Rochester of $2.25 (per gaspricewatch.com – 9.15.16) with a $0.25 premium per gallon for bulk delivery. This works out to a per ton basis of $79.38. Fuel requirements are based on a Great Lakes cruise ship crew member interview. The tonnage was interpolated over cruise ship size.

Trash removal service at the port is currently a non-revenue generating function. The port may decide to update its docking permit application to include some nominal fee for the use of its dumpsters. Based on the current permit, the model reflects no revenue from this service.

Sewage removal can be provided by local vendors. A local vendor has confirmed that this service can and has been provided at the port of Rochester. Septic pumping is estimated to be in excess of the average cost to pump out a septic tank in the U.S. of $376 (http://www.homeadvisor.com/cost/plumbing/clean-septic-tank/). This extra charge is because of the additional distance to mobilize to the harbor. The area surrounding the port is supported by a sewer system and because of this, the closest vendors have a considerable distance to travel. As a result, the cost is assumed to be $500 per call.

Line handlers and dockside assistance is not required by Great Lakes cruise ships given their maneuverability. This service is assumed to generate no revenue in the model.

Miscellaneous revenue is assumed to include the hiring of a local expert for lectures, or a band for evening entertainment. Miscellaneous revenue could be generated by the purchase of fresh flowers or other items. It is assumed to be $300 per call.

These inputs are all summed together in the model to generate a total direct revenue charge from port side services per individual vessel throughout a given scenario year.

Multipliers, which measure the interdependence or linkage between industry sectors within a region, provide an estimate of the "ripple effect" due to a local change in economic activity. They connect the initial effect of a change in demand—due to purchases made by households or government or due to foreign trade, but not part of an industrial production process—to the total effect of that change on the regional economy. In this case, the change is increased tourism as a result of Great Lakes cruise ships calling on the port.

The total effect is reported here in terms of output, sales, income or value added. Total effect has three main parts: direct, indirect, and induced effects. Direct effects are the immediate revenue impacts associated with a change in demand for a particular industry, in this case tourism and services. An additional $1 spent by Great Lakes cruise ship passengers in the greater Rochester area would be a direct impact. Indirect effects would be additional revenue generated by industries that supply goods and services to the expanding tourism and service sector. Induced effects occur as firms in all sectors of the local economy invest to service the additional revenue generated from the businesses receiving direct and indirect benefits. Multipliers based on direct, indirect and induced effects are called total or "Type II" multipliers, and are the ones most often cited in economic impact studies.

They are calculated as: (Direct+Indirect+Induced Effects)

After a discussion with the University of Michigan, a subject matter expert on regional economic benefits, about the appropriate multiplier level, it was determined that an expenditures multiplier of 1.52 was appropriate for the region. This value corresponds with an IMPLAN (**IM**pact analysis for **PLAN**ning) value models established by MIG, Inc. in cooperation with multiple Government agencies. Additionally, the University of Maine, *Economic Impact of Cruise Ship Passengers in Portland, Maine,* noted a multiplier of 1.518. As a result, the 1.52 value appears reasonably sound.

The multiplier is then multiplied against the direct revenue charge to determine total regional benefits when accounting for indirect and induced benefits of port side services.

6.1 Low: Current Operating Environment

Under the current Great Lakes cruise ship operating environment, the Grande Caribe and Grande Mariner are the only vessels calling on the port of Rochester. Combined, the two vessels make six calls a year. Given that the Grande Caribe and Grande Mariner carry 88 passengers each, the total number of visitors from Great Lakes cruise ships calling on the Port of Rochester in 2016 is no greater than 528. In addition to the passengers, approximately 150 crew members come through the port.

Based on the port revenue model and the Low Activity Scenario, the expected average revenue generated by port functions is $27,081 in additional direct revenue. When accounting for the multiplier

effect of indirect and induced benefits, then the level of additional revenue increases to $41,164.

Port Revenue Model: Low Activity Scenario			
Vessel	**Grande Caribe**	**Grande Mariner**	**Total**
Number of Calls	2	4	6
Permit Application	$ 20.00	$ 20.00	**$ 40.00**
Docking Fee	$ 400.00	$ 800.00	**$ 1,200.00**
Passenger Usage Fee*	$ 1,496.00	$ 2,992.00	**$ 4,488.00**
Est. Water Need	3,992	7,984	**11,976**
Water ($1.76/1000 gallons)	$ 7.03	$ 14.05	**$ 21.08**
Electric ($25 per day)	$ -	$ -	**$ -**
Repairs/Crane Service	$ -	$ -	**$ -**
Food Stuffs ($5 per person)	$ 748.00	$ 1,496.00	**$ 2,244.00**
Est. Fuel Need (Tons*calls)	60	120	**180**
Fuel ($79.38 per ton)	$ 4,762.80	$ 9,525.60	**$ 14,288.40**
Trash Removal	$ -	$ -	**$ -**
Sewage Pump ($500 per call)	$ 1,000.00	$ 2,000.00	**$ 3,000.00**
Line Handlers	$ -	$ -	**$ -**
MISC ($300 per call)	$ 600.00	$ 1,200.00	**$ 1,800.00**
Total	**$ 9,033.83**	**$ 18,047.65**	**$ 27,081.48**
Multiplier	1.52	1.52	1.52
Total with Multiplier	**$ 13,731.42**	**$ 27,432.43**	**$ 41,163.85**

*Has been historically waived

Table 11: Port Revenue Model - Low Activity Scenario

6.2 Medium: Modest Growth Environment

The medium growth scenario, anticipates a modest increase in Great Lake Cruise ship activity. Approximately four to six additional vessels would enter the Great Lakes each year expanding the number of cruises. This would create a flood over effect on the port of Rochester as expanded itineraries would push more cruises to less active ports.

In this scenario, there would be six additional calls on the port. The original six calls from the Grande Caribe and Mariner would continue. The Pearl Mist and Victory 1 would expand to calling on the port as they created itineraries around their movements into and out of the Great Lakes during the optimal cruising seasons. The additional vessels that are the most likely to be added to the Great Lakes cruise ship fleet would be those of, or similar to, the American Cruise Line river boats American Spirit, American Glory, American Star, Constellation and Independence. These are slightly-larger low-draft vessels that are similar to the Grande Caribe and Mariner. This scenario projects that the American Spirit and Independence, or similar vessels, would call on the port twice during the year.

The same value assumptions and model methodology are held from the low activity scenario. Based on these values and the expected average spending per passenger and crew member, the region is likely to

experience an influx of $68,614 in additional direct revenue from port services. When accounting for the multiplier effect of indirect and induced benefits, then the level of additional revenue increases to $104,293.

Port Revenue Model: Medium Activity Scenario							
Vessel	**Grande Caribe**	**Grande Mariner**	**Pearl Mist**	**Victory I**	**American Spirit**	**Independence**	**Total**
Number of Calls	2	4	2	2	1	1	12
Permit Application	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ 20.00	**$ 120.00**
Docking Fee	$ 400.00	$ 800.00	$ 600.00	$ 500.00	$ 200.00	$ 200.00	**$ 2,700.00**
Passenger Usage Fee*	$ 1,496.00	$ 2,992.00	$ 3,570.00	$ 3,570.00	$ 850.00	$ 884.00	**$ 13,362.00**
Est. Water Need	1,996.00	1,996.00	4,970.00	5,370.00	2,220.00	2,308.00	**18,860**
Water ($1.76/1000 gallons)	$ 3.51	$ 3.51	$ 8.75	$ 9.45	$ 3.91	$ 4.06	**$ 33.19**
Electric ($25 per day)	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
Repairs/Crane Service	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
Food Stuffs ($5 per person)	$ 748.00	$ 1,496.00	$ 1,785.00	$ 1,785.00	$ 425.00	$ 442.00	**$ 6,681.00**
Est. Fuel Need (Tons*calls)	60	120	100	100	35	40	**455**
Fuel ($79.38 per ton)	$ 4,762.80	$ 9,525.60	$ 7,938.00	$ 7,938.00	$ 2,778.30	$ 3,175.20	**$ 36,117.90**
Trash Removal	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
Sewage Pump ($500 per call)	$ 1,000.00	$ 2,000.00	$ 1,000.00	$ 1,000.00	$ 500.00	$ 500.00	**$ 6,000.00**
Line Handlers	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
MISC ($300 per call)	$ 600.00	$ 1,200.00	$ 600.00	$ 600.00	$ 300.00	$ 300.00	**$ 3,600.00**
Total	**$ 9,030.31**	**$ 18,037.11**	**$ 15,521.75**	**$ 15,422.45**	**$ 5,077.21**	**$ 5,525.26**	**$ 68,614.09**
Multiplier	1.52	1.52	1.52	1.52	1.52	1.52	1.52
Total with Multiplier	**$ 13,726.08**	**$ 27,416.41**	**$ 23,593.06**	**$ 23,442.13**	**$ 7,717.35**	**$ 8,398.40**	**$ 104,293.42**

*Has been historically waived

Table 12: Port Revenue Model - Medium Activity Scenario

6.3 High: Strong Growth Environment

The high growth scenario anticipates a significant increase in Great Lake Cruise ship activity. Approximately eight to twelve additional vessels would enter the Great Lakes expanding the number of cruise options and itineraries.

From the current activity, there would be an additional twenty calls on the port. Grande Caribe and Mariner would expand their operations to eight calls a year. The Pearl Mist and Victory 1 would maintain the same level of calls projected in the medium model, but would be joined by sister ships who would also call on the port twice each. A combination of coastal cruisers from the American Cruise Line river boats American Spirit, American Glory, American Star, Constellation and Independence would call on the port eight times. Additionally, two larger cruise ships would call on the port as part of their extended one-time charter trips. It is assumed that the vessels would be most similar to the Adriana and Orient Queen II.

The same value assumptions and model methodology are held from the low and medium growth scenarios. Based on these values and the expected average spending per passenger and crew member,

the region is likely to experience an influx of $156,900 in additional direct revenue. When accounting for the multiplier effect of indirect and induced benefits, then the level of additional revenue increases to $238,488.

Port Revenue Model: High Activity Scenario													
Vessel	**Grande Caribe**	**Grande Mariner**	**Pearl Mist**	**Victory I**	**American Spirit**	**Independence**	**American Glory**	**American Star**	**Pearl Sea (Concept)**	**Victory 2 (Concept)**	**Adriana**	**Orient Queen II**	**Total**
Number of Calls	4	4	2	2	2	2	2	2	2	2	1	1	16
Permit Application	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ 21.00	$ 22.00	$ 23.00	$ 24.00	$ 25.00	$ 26.00	**$ 261.00**
Docking Fee	$ 800.00	$ 800.00	$ 600.00	$ 500.00	$ 400.00	$ 400.00	$ 400.00	$ 400.00	$ 600.00	$ 500.00	$ 300.00	$ 300.00	**$ 6,000.00**
Passenger Usage Fee*	$ 2,992.00	$ 2,992.00	$ 3,570.00	$ 3,570.00	$ 1,700.00	$ 1,768.00	$ 833.00	$ 1,700.00	$ 3,570.00	$ 3,570.00	$ 2,125.00	$ 2,550.00	**$ 30,940.00**
Est. Water Need	1,996.00	1,996.00	4,970.00	5,370.00	2,220.00	2,308.00	1,273.00	2,220.00	4,970.00	5,370.00	5,750.00	6,900.00	**45,343**
Water ($1.76/1000 gallons)	$ 3.51	$ 3.51	$ 8.75	$ 9.45	$ 3.91	$ 4.06	$ 2.24	$ 3.91	$ 8.75	$ 9.45	$ 10.12	$ 12.14	**$ 79.80**
Electric ($25 per day)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
Repairs/Crane Service	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
Food Stuffs ($5 per person)	$ 1,496.00	$ 1,496.00	$ 1,785.00	$ 1,785.00	$ 850.00	$ 884.00	$ 416.50	$ 850.00	$ 1,785.00	$ 1,785.00	$ 1,062.50	$ 1,275.00	**$ 15,470.00**
Est. Fuel Need (Tons*calls)	120	120	100	100	70	80	70	70	100	100	60	60	**1,050**
Fuel ($79.38 per ton)	$ 9,525.60	$ 9,525.60	$ 7,938.00	$ 7,938.00	$ 5,556.60	$ 6,350.40	$ 5,556.60	$ 5,556.60	$ 7,938.00	$ 7,938.00	$ 4,762.80	$ 4,762.80	**$ 83,349.00**
Trash Removal	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
Sewage Pump ($500 per call)	$ 2,000.00	$ 2,000.00	$ 1,000.00	$ 1,000.00	$ 1,000.00	$ 1,000.00	$ 1,000.00	$ 1,000.00	$ 1,000.00	$ 1,000.00	$ 500.00	$ 500.00	**$ 13,000.00**
Line Handlers	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
MISC ($300 per call)	$ 1,200.00	$ 1,200.00	$ 600.00	$ 600.00	$ 600.00	$ 600.00	$ 600.00	$ 600.00	$ 600.00	$ 600.00	$ 300.00	$ 300.00	**$ 7,800.00**
Total	**$ 18,037.11**	**$ 18,037.11**	**$ 15,521.75**	**$ 15,422.45**	**$ 10,130.51**	**$ 11,026.46**	**$ 8,829.34**	**$ 10,132.51**	**$ 15,524.75**	**$ 15,426.45**	**$ 9,085.42**	**$ 9,725.94**	**$156,899.80**
Multiplier	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52
Total with Multiplier	**$ 27,416.41**	**$ 27,416.41**	**$ 23,593.06**	**$ 23,442.13**	**$ 15,398.37**	**$ 16,760.22**	**$ 13,420.60**	**$ 15,401.41**	**$ 23,597.62**	**$ 23,448.21**	**$ 13,809.84**	**$ 14,783.43**	**$238,487.70**

Table 13: Port Revenue Model - High Activity Scenario

7 Tourism Expenditure Model

7.1 Model

To measure the economic benefits from Great Lakes cruise ships calling on the port of Rochester, an expenditure model was developed. *(Note: Expenditure, Cost and Revenue may be used interchangeably in the following section. Expenditure and Cost would refer to spending by cruise ship passengers and crew while revenue would refer to the additional sales generated because of the increased tourism. They are for all intents and purposes, the same thing, with expenditures referring to the individual and revenue to the business, being impacted, respectively).*

There are several important factors that go into the model. First, an identification of the likely vessels calling on the port is necessary. With each vessel, there are also secondary factors to consider. They include:

- The time of arrival in port
- The duration in port
- The distance to attractions
- Demographics of passengers
- If the vessel arrives on a weekend
- The number of passengers
- The passengers willingness to pay
- The number of crew
- The number of calls made by that vessel in a year

The time of arrival at the port is important because if the vessel were to arrive early in the morning or late in the evening, certain attractions may not be open. This could limit the potential revenue generated. The time of arrival also combines with the duration of stay in port and the distance to attractions. If the vessel is only in port for a few hours before disembarking, then there would be limited time to reach destinations and enjoy shore attractions. This would also limit time for passengers to potentially shop or go off on their own excursions separate from those planned by the cruise line.

During longer stays in a given port, passengers would be more likely to purchase food. Per interviews with the current operators of Great Lakes cruise ships, the companies attempt to provide meals before disembarking or right upon arrival back from shore excursions because they are included in the overall cruise itinerary.

If the vessel were to arrive on the weekends, certain attractions may charge a higher rate. It is noted that tour bus lines charge a premium for weekend trips in comparison to weekday outings.

The number of passengers will drive the overall spending levels. An assumption is made in the model to the overall capacity of passengers on each vessel. Per cruise ship operators, the vessels are typically fully booked to a capacity level of 80-90% due to single travelers. As a result, the model will assume 85% of maximum passenger capacity for each vessel that is modeled to call upon the port. Individual passenger's willingness to pay is dependent on demographics. Per cruise ship operators, most Great

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Lakes cruise ship passengers are more affluent and have a higher willingness to pay. They enjoy shopping as a secondary part of their excursions.

Due to time and monetary constraints, surveys were not taken of Great Lakes cruise ship passengers to determine their spending habits. In lieu of primary surveys the model uses a blend of the University of Maine's study as well as primary data derived from the city of Rochester and Carpediemrochester.com that estimate the cost side of what would be average expected expenditures of passengers.

A 2009 study by the University of Maine, *Economic Impact of Cruise Ship Passengers in Portland, Maine,* indicated that cruise ship passengers typically spend approximately $109.68 in a given city. This study was performed by taking surveys of passengers promptly after they finished their cruise. This provides some level of expectation of the spending habits of Great Lake cruise passengers. When adjusted for inflation (Chained CPI – 11.5762%), the level of spending per passenger increases to $122.38 in 2016 value. This value is inclusive of tours, food/beverage, drug/beauty, apparel, household, fine art/jewelry, transportation, rental and other. The average spending per passenger was then multiplied against the anticipated level of passengers per cruise ship, 85% of max capacity, to develop one side of the Tourism Revenue model.

Spending Categories	**Cost**
Food/Bev	$ 28.10
Drug/Beauty	$ 2.00
Apparel	$ 21.18
Household	$ 4.97
Fine Art/Jewel	$ 6.15
Transportation	$ 4.72
Tours (non sponsored)	$ 6.02
Rental	$ 0.95
Other	$ 6.42
Tours (sponsored)	$ 29.17
Total (2008 Value)	**$ 109.68**
Inflation Factor	1.116
Total (Current Value)	$ 122.38

Table 14: Average Expenditure Levels

The second side of the Tourism Revenue model utilized specific expenses per a hypothetical shore excursion. Cathy at Carpediemrochester.com helpfully provided a comprehensive shore excursion expense itinerary specifically designed around Rochester. This included cost estimates for tour charters on both weekdays and weekends, as well as for differing lengths of five hour or eight hour tours. A cost for a tour guide was included as well as expectations of tips and profit margin. The city of Rochester provided entry costs for local amusements and museums which were averaged and added to the model on a per average passenger basis. Finally, a shopping/food/misc. expenditure factor was included into this model on a per passenger basis.

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Each of the two estimates were then blended together to mitigate for uncertainty. The combined figure was weighted equally and created the passenger component of the Tourism Revenue model.

The second portion of the Tourism Revenue model includes crew member expenditures. Cruise ship operators indicated that most of the crew were allowed to disembark at ports when they arrive. This allows them time to get some necessities that they may need or just grab a bite of food off the vessel. Based on the interviews, it is typical for a percentage of the crew to remain on board at given ports of call, especially for shorter duration stays. As a result, it is assumed that 50% of crew members would disembark at the port on calls. Additionally, in the model, crew members are reported on an aggregate basis of total calls. Meaning that if there was a ship calling on the port with 25 crew members four times in a given year, then the model would count that 100 crew members had called on the port.

Crew members spending is assumed to be $15 per visit. This is based on the expectation that they might grab some lunch, possible snack/drink or some minor shopping. One major expense would likely offset that of another crew member or two who only bought a coffee or some minor healthcare product.

Finally, the number of calls in a given year determines the total amount of expenditures anticipated for each independent vessel. The model then aggregates all the vessels together to determine the annual revenue anticipated as a result of Great Lakes cruise ships calling on the port.

Multipliers, which measure the interdependence or linkage between industry sectors within a region, provide an estimate of the “ripple effect” due to a local change in economic activity. They connect the initial effect of a change in demand—due to purchases made by households or government or due to foreign trade, but not part of an industrial production process—to the total effect of that change on the regional economy. In this case, the change is increased tourism as a result of Great Lakes cruise ships calling on the port.

The total effect is reported here in terms of output, sales, income or value added. Total effect has three main parts: direct, indirect, and induced effects. Direct effects are the immediate revenue impacts associated with a change in demand for a particular industry, in this case tourism and services. An additional $1 spent by Great Lakes cruise ship passengers in the greater Rochester area would be a direct impact. Indirect effects would be additional revenue generate by industries that supply goods and services to the expanding tourism and service sector. Induced effects occur as firms in all sectors of the local economy invest to service the additional revenue generated from the businesses receiving direct and indirect benefits. Multipliers based on direct, indirect and induced effects are called total or “Type II” multipliers, and are the ones most often cited in economic impact studies.

They are calculated as: (Direct+Indirect+Induced Effects)

After discussion with the University of Michigan, a subject matter expert on regional economic benefits, about the appropriate multiplier level, it was determined that an expenditures multiplier of 1.52 was appropriate for the region. This value corresponds with an IMPLAN (**IM**pact analysis for **PLAN**ning) value models. Additionally, the University of Maine, *Economic Impact of Cruise Ship Passengers in Portland, Maine,* noted a multiplier of 1.518. As a result, the 1.52 value appears fair.

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7.2 Itineraries

The city of Rochester developed a list of attractions, restaurants, hotels, tour services, transportation, entertainment and festivals. Included in these lists were the name, location, contact information, price of entry, website, distance from the port and the approximate time it would take to arrive at each destination from the port.

Cruise line operators have indicated that they have preplanned itineraries and shore excursions for all ports of call on each cruise. The companies also noted that passengers are not required to go on the excursions though they are typically prepaid as part of the cruise package. As a result, most of the guests will go on the shore excursions.

Blount Cruises, who is currently operating and calling on the port, notes in their cruise catalog that "The hidden gems of Rochester, NY are yours to discover on an optional tour, beginning with stunning views of towering High Falls on the Genesee River, and the Browns Race Historic District, celebrating Rochester's industrial roots in the flour industry. From there, the tour continues to the International Museum of Photography and Film, located in the former home of George Eastman, the founder of Kodak."

List of possible excursions in the Rochester area include:

- The Strong National Museum of Play
- The Susan B. Anthony House and Museum
- George Eastman Museum
- The Memorial Art Gallery
- Rochester Museum of Science
- Genesee Brew House
- Black Button Distillery

Dependent on the duration of the call, guests may be shuttled to the Finger Lakes Wine Region. Rochester also has a multitude of impressive golf courses.

There are numerous activities right around the port for individuals and couples who prefer to not take part in a scheduled itinerary. These include walking around the harbor and perhaps visiting Charlotte Beach.

Additionally, there is accessibility to the city via taxi which can be either pre-ordered or called from the marina. The marina has also stated an interest in acquiring a shuttle which could transport cruise ship guests to and from the city in addition to transient vessel callers. Taxis, and a potential shuttle, allow guests to travel off on their own separate adventure or excursion if they so choose.

7.3 Low: Current Operating Environment

Under the current Great Lakes cruise ship operating environment, the Grande Caribe and Grande Mariner are the only vessels calling on the port of Rochester. Given that the Grande Caribe and Grande Mariner carry 88 passengers each, the total number of visitors from Great Lakes cruise ships calling on

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the Port of Rochester in 2016 is no greater than 528. In addition to the passengers, approximately 150 crew members come through the Port.

Based on these values and the expected average spending per passenger and crew member, the region is likely to experience an influx of $46,205 in additional direct revenue. When accounting for the multiplier effect of indirect and induced benefits, then the level of additional revenue increases to $70,231.

Tourism Revenue Model: Low Activity Scenario

Portland Study Model

Vessel	Number of passengers	Avg. Psg Spending	Number of Crew	Avg. Crew Spending	# of Calls	Total Pass.	Passenger	Total Crew	Crew Rev.	**Total**
Grande Caribe	75	$ 122.38	25	$ 15.00	2	150	$ 18,356.52	25	$ 375.00	$ 18,731.52
Grande Mariner	75	$ 122.38	25	$ 15.00	4	300	$ 36,713.03	50	$ 750.00	$ 37,463.03
Total					**6**	**450**	**$ 55,069.55**	**75**	**$ 1,125.00**	**$ 56,194.55**
Multiplier							1.52		1.52	1.52
Total with Multiplier							**$ 83,705.71**		**$ 1,710.00**	**$ 85,415.71**

Rochester Expenditure Model

Vessel	Number of passengers	Avg. Psg Spending	Number of Crew	Avg. Crew Spending	# of Calls	Total Pass.	Passenger	Total Crew	Crew Rev.	**Total**
Grande Caribe	75	$ 77.98	25	$ 15.00	2	150	$ 11,696.50	25	$ 375.00	$ 12,071.50
Grande Mariner	75	$ 77.98	25	$ 15.00	4	300	$ 23,393.00	50	$ 750.00	$ 24,143.00
Total					**6**	**450**	**$ 35,089.50**	**75**	**$ 1,125.00**	**$ 36,214.50**
Multiplier							1.52		1.52	1.52
Total with Multiplier							**$ 53,336.04**		**$ 1,710.00**	**$ 55,046.04**

	Direct Spending	Multiplier	Final
Portland Model	$ 56,194.55	1.52	$ 85,415.71
Rochester Model	$ 36,214.50	1.52	$ 55,046.04
Blended Model	**$ 46,204.52**	**1.52**	**$ 70,230.88**

Table 15: Tourism Revenue Model - Low Activity Scenario

7.4 Medium: Modest Growth Environment

The medium growth scenario, anticipates a modest increase in Great Lake Cruise ship activity. Approximately four to six additional vessels would enter the Great Lakes expanding the number of cruises. This would create a flood over effect on the port of Rochester as expanded itineraries would push more cruises to less active ports

In this scenario, there would be an additional six calls on the port. The original six calls from the Grande Caribe and Mariner would continue. The Pearl Mist and Victory 1 would expand to calling on the port as they created itineraries around their movements into and out of the Great Lakes during the optimal cruising seasons. The additional vessels that are the most likely to be added to the Great Lakes cruise ship fleet would be those of, or similar to, the American Cruise Line river boats American Spirit, American Glory, American Star, Constellation and Independence. These are slightly-larger low-draft vessels that are similar to the Grande Caribe and Mariner. This scenario projects that the American Spirit and Independence, or similar vessels, would call on the port twice during the year.

The same value assumptions and model methodology are held from the low activity scenario.

Based on these values and the expected average spending per passenger and crew member, the region is likely to experience an influx of $133,519 in additional direct revenue. When accounting for the multiplier effect of indirect and induced benefits, the level of additional revenue increases to $202,949.

Tourism Revenue Model: Medium Activity Scenario

Portland Study Model

Vessel	Number of passengers	Avg. Psg Spending	Number of Crew	Avg. Crew Spending	# of Calls	Total Pass.	Passenger	Total Crew	Crew Rev.	Total
Grande Caribe	75	$ 122.38	25	$ 15.00	2	150	$ 18,356.52	25	$ 375.00	$ 18,731.52
Grande Mariner	75	$ 122.38	25	$ 15.00	4	300	$ 36,713.03	50	$ 750.00	$ 37,463.03
Pearl Mist*	179	$ 122.38	70	$ 15.00	2	358	$ 43,810.89	70	$ 1,050.00	$ 44,860.89
St. Laurent (victory 1)*$	179	$ 122.38	90	$ 15.00	2	358	$ 43,810.89	90	$ 1,350.00	$ 45,160.89
American Spirit	85	$ 122.38	26	$ 15.00	1	85	$ 10,402.03	13	$ 195.00	$ 10,597.03
Independence	88	$ 122.38	27	$ 15.00	1	88	$ 10,769.16	14	$ 210.00	$ 10,979.16
Total					**12**	**1339**	**$ 163,862.50**	**262**	**$ 3,930.00**	**$167,792.50**
Multiplier							1.52		1.52	1.52
Total with Multiplier							**$ 249,071.00**		**$ 5,973.60**	**$255,044.60**

Rochester Expenditure Model

Vessel	Number of passengers	Avg. Psg Spending	Number of Crew	Avg. Crew Spending	# of Calls	Total Pass.	Passenger	Total Crew	Crew Rev.	Total
Grande Caribe	75	$ 77.98	25	$ 15.00	2	150	$ 11,696.50	25	$ 375.00	$ 12,071.50
Grande Mariner	75	$ 77.98	25	$ 15.00	4	300	$ 23,393.00	50	$ 750.00	$ 24,143.00
Pearl Mist*	179	$ 65.94	70	$ 15.00	2	358	$ 23,606.58	70	$ 1,050.00	$ 24,656.58
St. Laurent (victory 1)*$	179	$ 65.94	90	$ 15.00	2	358	$ 23,606.58	90	$ 1,350.00	$ 24,956.58
American Spirit	85	$ 75.54	26	$ 15.00	1	85	$ 6,420.85	13	$ 195.00	$ 6,615.85
Independence	88	$ 74.92	27	$ 15.00	1	88	$ 6,592.63	14	$ 210.00	$ 6,802.63
Total					**12**	**1339**	**$ 95,316.14**	**262**	**$ 3,930.00**	**$ 99,246.14**
Multiplier							1.52		1.52	1.52
Total with Multiplier							**$ 144,880.53**		**$ 5,973.60**	**$150,854.13**

	Direct Spending	Multiplier	Final
Portland Model	$ 167,792.50	1.52	$ 255,044.60
Rochester Model	$ 99,246.14	1.52	$ 150,854.13
Blended Model	**$ 133,519.32**	**1.52**	**$ 202,949.37**

Table 16: Tourism Revenue Model - Medium Activity Scenario

7.5 High: Strong Growth Environment

The high growth scenario, anticipates a significant increase in Great Lake Cruise ship activity. Approximately eight to twelve additional vessels would enter the Great Lakes expanding the number of cruise options and itineraries.

From the current activity, there would be an additional twenty calls on the port. Grande Caribe and Mariner would expand their operations to eight calls a year. The Pearl Mist and Victory 1 would maintain the same level of calls as in the medium model but would be joined by sister ships who would also call on the port twice each. A combination of coastal cruisers from the American Cruise Line river boats American Spirit, American Glory, American Star, Constellation and Independence would call on the port eight times. Additionally, two larger cruise ships would call on the port as part of extended one-time charter trips. It is assumed that the vessels would be most similar to the Adriana and Orient Queen II.

The same value assumptions and model methodology are held from the low and medium growth scenarios.

Based on these values and the expected average spending per passenger and crew member, the region is likely to experience an influx of $307,692 in additional direct revenue. When accounting for the multiplier effect of indirect and induced benefits, then the level of additional revenue increases to $467,692.

Tourism Revenue Model: High Activity Scenario

Portland Study Model

Vessel	Number of passengers	Avg. Psg Spending	Number of Crew	Avg. Crew Spending	# of Calls	Total Pass.	Passenger Expenditures	Total Crew	Crew Expenditures	Total
Grande Caribe	75	$ 122.38	25	$ 15.00	4	300	$ 36,713.03	50	$ 750.00	$ 37,463.03
Grande Mariner	75	$ 122.38	25	$ 15.00	4	300	$ 36,713.03	50	$ 750.00	$ 37,463.03
Pearl Mist*	179	$ 122.38	70	$ 15.00	2	358	$ 43,810.89	70	$ 1,050.00	$ 44,860.89
St. Laurent (victory 1)*$	179	$ 122.38	90	$ 15.00	2	358	$ 43,810.89	90	$ 1,350.00	$ 45,160.89
American Spirit	85	$ 122.38	26	$ 15.00	2	170	$ 20,804.05	26	$ 390.00	$ 21,194.05
American Glory	42	$ 122.38	22	$ 15.00	2	84	$ 10,279.65	22	$ 330.00	$ 10,609.65
Independence	88	$ 122.38	27	$ 15.00	2	176	$ 21,538.31	27	$ 405.00	$ 21,943.31
American Star	85	$ 122.38	26	$ 15.00	2	170	$ 20,804.05	26	$ 390.00	$ 21,194.05
Adriana	213	$ 122.38	75	$ 15.00	1	213	$ 26,066.25	37.5	$ 562.50	$ 26,628.75
Orient Queen II	255	$ 122.38	90	$ 15.00	1	255	$ 31,206.08	45	$ 675.00	$ 31,881.08
Pearl Sea (Concept)	179	$ 122.38	70	$ 15.00	2	358	$ 43,810.89	70	$ 1,050.00	$ 44,860.89
Victory 2 (Concept)	179	$ 122.38	90	$ 15.00	2	358	$ 43,810.89	90	$ 1,350.00	$ 45,160.89
Total					**26**	**3100**	**$ 379,368.01**	**335**	**$ 9,052.50**	**$ 388,420.51**
Multiplier							1.52		1.52	1.52
Total with Multiplier							**$ 576,639.37**		**$ 13,759.80**	**$ 590,399.17**

Rochester Expenditure Model

Vessel	Number of passengers	Avg. Psg Spending	Number of Crew	Avg. Crew Spending	# of Calls	Total Pass.	Passenger Expenditures	Total Crew	Crew Expenditures	Total
Grande Caribe	75	$ 77.98	25	$ 15.00	4	300	$ 23,393.00	50	$ 750.00	$ 24,143.00
Grande Mariner	75	$ 77.98	25	$ 15.00	4	300	$ 23,393.00	50	$ 750.00	$ 24,143.00
Pearl Mist*	179	$ 65.94	70	$ 15.00	2	358	$ 23,606.58	70	$ 1,050.00	$ 24,656.58
St. Laurent (victory 1)*$	179	$ 65.94	90	$ 15.00	2	358	$ 23,606.58	90	$ 1,350.00	$ 24,956.58
American Spirit	85	$ 75.54	26	$ 15.00	2	170	$ 12,841.70	26	$ 390.00	$ 13,231.70
American Glory	42	$ 94.25	22	$ 15.00	2	84	$ 7,917.34	22	$ 330.00	$ 8,247.34
Independence	88	$ 74.92	27	$ 15.00	2	176	$ 13,185.26	27	$ 405.00	$ 13,590.26
American Star	85	$ 75.54	26	$ 15.00	2	170	$ 12,841.70	26	$ 390.00	$ 13,231.70
Adriana	213	$ 64.55	75	$ 15.00	1	213	$ 13,750.13	38	$ 570.00	$ 14,320.13
Orient Queen II	255	$ 63.35	90	$ 15.00	1	255	$ 16,155.05	45	$ 675.00	$ 16,830.05
Pearl Sea (Concept)	179	$ 65.94	70	$ 15.00	2	358	$ 23,606.58	70	$ 1,050.00	$ 24,656.58
Victory 2 (Concept)	179	$ 65.94	90	$ 15.00	2	358	$ 23,606.58	90	$ 1,350.00	$ 24,956.58
Total					**26**	**3100**	**$ 217,903.50**	**335**	**$ 9,060.00**	**$ 226,963.50**
Multiplier							1.52		1.52	1.52
Total with Multiplier							**$ 331,213.32**		**$ 13,771.20**	**$ 344,984.52**

	Direct Spending	Multiplier	Final
Portland Model	$ 388,420.51	1.52	$590,399.17
Rochester Model	$ 226,963.50	1.52	$344,984.52
Blended Model	**$ 307,692.00**	**1.52**	**$467,691.84**

Table 17: Tourism Revenue Model - High Activity Scenario

8 Combined Analysis

Under the current operating environment, represented by the Low Activity Scenario, annual regional economic benefits from Great Lake Cruise ships totals $111,000. This represents approximately 450 additional tourists visiting the city.

Low Activity Scenario	Direct Spending	Multiplier	Combined
Tourism Revenue*	$ 46,204.52	1.52	$ 70,230.87
Port Function Revenue	$ 27,081.48	1.52	$ 41,163.85
Total	**$ 73,286.00**	**1.52**	**$111,394.72**

*Blended Model

Table 18: Combined Economic Benefits - Low Activity Scenario

Under the current operating environment, the harbor can remain as is. The Grande Caribe and Grande Mariner can both navigate to the harbor wall. All required services are available. There are no associated costs.

To better serve transient guests and Great Lake cruise ships, additional moorings, electrical hookups, potable water hookups and ladders cut into the harbor wall could be added. Costs should be relatively minimal and would be a one-time expense. They would drive additional revenue from transient callers.

Under the Medium Activity Scenario, where there is a healthy increase in Great Lake cruise ships, annual regional economic benefits would be $307,000. This would represent an increase in calls of 6 vessels a year which would bring a total of 1,339 additional tourists to the region.

Med. Activity Scenario	Direct Spending	Multiplier	Combined
Tourism Revenue*	$ 133,519.32	1.52	$202,949.37
Port Function Revenue	$ 68,614.09	1.52	$104,293.42
Total	**$ 202,133.41**	**1.52**	**$307,242.78**

*Blended Model

Table 19: Combined Economic Benefits - Medium Activity Scenario

Under the Medium Activity Scenario, the port wall would require maintenance dredging to enable access to the assumed vessel mix. This would be to a level of approximately 13.5ft navigable depth (16.5ft actual when accounting for safety margin and other factors). This has been the historical dredging depth, which should limit the cost of pre-dredging studies such as sediment analysis and wall stability analysis. Approximately 20,995CY of material would need to be dredged at an approximate cost of $108,000. Bi-annual maintenance dredging would then need to be performed at a cost of approximately $20,000 every other year.

As with the Low Activity Scenario, electrical hookups, potable water hookups and ladders cut into the harbor wall could be added.

Under the High Activity Scenario, where there is a major increase in active cruise ships on the lake as well as itineraries, annual regional benefits are anticipated to total $706,000. This would represent an

increase of 20 calls spread over 10 different vessels. A total of 3,094 additional tourists would visit the region because of Great Lake cruise ships.

High Activity Scenario	Direct Spending	Multiplier	Combined
Tourism Revenue*	$ 307,692.00	1.52	$467,691.84
Port Function Revenue	$ 156,899.80	1.52	$238,487.70
Total	**$ 464,591.80**	**1.52**	**$706,179.54**

*Blended Model

Table 20: Combined Economic Benefits - High Activity Scenario

This scenario would require that the port wall be dredged down to a depth of a navigable depth of 15ft (18ft actual when accounting for safety margin and other factors). This depth may require sediment and stability analysis which could be costly. Initial dredging would require removing approximately 26,493CY of material at a cost of around $136,000. This value assumes that all dredged material can go to open water placement. Any requirements to place upland in a containment disposal facility would increase the cost considerably. Bi-annual maintenance dredging would then be needed. This would cost approximately $20,000 every other year.

As with the other scenarios, electrical hookups, potable water hookups and ladders cut into the harbor wall could be added.

9 Conclusion

The port of Rochester is well suited for Great Lakes cruise ships having access to all the typical services required by ships when they call. The depth at the port wall is the only major infrastructure requirement that needs to be addressed to allow any notable increase in Great Lakes cruise ship activity. Dredging in coordination with the U.S. Army Corps of Engineers would be a low cost way to maintain the access to the terminal for Great Lakes cruise ships.

Having a functional port though does not guarantee that Great Lakes cruise ships will call on the port. Great Lakes cruising appears to be a niche industry. There are only three companies operating four vessels on the Great Lakes. Discussion with the operating companies indicated that there is the possibility for future expansion though it is fairly uncertain.

What is positive is the current demographics of the industry. Great Lake cruises are dominated by an older clientele. With the retirement of baby boomers and the current economic expansion, there is room for growth in this industry subset.

Currently, Great Lakes cruise ships generate limited economic benefit for the city of Rochester and the region at large. It should be noted that six calls from either the Grande Caribe or Grande Mariner on the port in a given year equates to approximately 15% of what a large ocean going cruise ship can carry in one trip, in terms of passengers. Even in the high growth scenario, where an anticipated 3,094 Great Lakes cruise ship passengers would call on the port, that would still represent less than what one of the larger ocean going cruise ships could carry (note: estimation based on the 2006 built Freedom of the

Seas cruise ship which has a max capacity of 3,634 passengers. The largest cruise ships can carry in excess of 5,000 passengers).

Benefits, though minor, would have synergistic benefits with any build out of the marina and help start-up enterprises in Charlotte. Creating accessibility to transient boaters would also enhance the port wall and drive additional economic benefits to the region.

As for the port becoming a port of embarkation, the analysis would appear to indicate that this is unlikely. With the location of Montreal and Toronto, competition is stiff. Both cities offer excellent flight service for guests before and after tours. Rochester would have a hard time competing with this in terms of cost.

The best chance for Rochester becoming a port of embarkation would be if the Blount Cruise Lines decided to create a shortened itinerary that navigated the Erie Canal, running from Rochester to New York, NY or Warren, RI, and vice versa. This would be a niche tour that Blount's vessel could exclusively provide. It would also avoid any customs requirements. This would be a weekly tour, which would also be less expensive for guests and might drive additional demand. It should be noted that this idea was not mentioned by Blount representatives and is merely an idea based on current itineraries.

If Rochester were to become a port of embarkation the region could see additional benefits from the possibility of overnight accommodations, meals, flight revenue, last minute supplies and increased tourism.

10 Recommendations

Based on the analysis of the industry, port and other externalities, the following recommendations are being presented.

- Regularly maintain the depth at the port wall to a minimum navigable depth of 13.5ft (16.5ft including safety margin). This depth would allow all cruise ships actively operating on the Great Lakes to call on the port of Rochester. A depth of 15ft (18ft including safety margin) would provide the most flexibility to cruise ships.
- Add electrical and potable water hookups on the port wall. This would make services more accessible for Great Lake cruise ships as well as transient vessels.
- Work with Visit Rochester to create a comprehensive list of suppliers, servicers, contractors, musicians, and lecturers who could provide services for Great Lakes cruise ships when they call on the port.
- Work with Visit Rochester to create a brochure that can be sent to Great Lakes cruise ship companies that would highlight the positives of the harbor, region and potential shore excursions.
- Work with customs to set up phone clearance.

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HMP Appendix R - Joint Application Form

JOINT APPLICATION FORM

For Permits/Determinations to undertake activities affecting streams, waterways, waterbodies, wetlands, coastal areas and sources of water withdrawal.

New York State

You must separately apply for and obtain separate Permits/Determinations from each involved agency prior to proceeding with work. Please read all instructions.

US Army Corps of Engineers (USACE)

APPLICATIONS TO

1. NYS Department of Environmental Conservation

Check all permits that apply:

- ☐ Stream Disturbance
- ☐ Excavation and Fill in Navigable Waters
- ☐ Docks, Moorings or Platforms
- ☐ Dams and Impoundment Structures
- ☐ 401 Water Quality Certification
- ☐ Freshwater Wetlands
- ☐ Tidal Wetlands
- ☐ Coastal Erosion Management
- ☐ Wild, Scenic and Recreational Rivers
- ☐ Water Withdrawal
- ☐ Long Island Well
- ☐ Aquatic Vegetation Control
- ☐ Aquatic Insect Control
- ☐ Fish Control
- ☐ Incidental Take of Endangered/Threatened Species

☐ I am sending this application to this agency.

2. US Army Corps of Engineers

Check all permits that apply:

- ☐ Section 404 Clean Water Act
- ☐ Section 10 Rivers and Harbors Act
- ☐ Nationwide Permit(s) - Identify Number(s):

_____

_____

Preconstruction Notification - ☐ Y / ☐ N

☐ I am sending this application to this agency.

3. NYS Office of General Services

Check all permits that apply:

- ☐ State Owned Lands Under Water
  - ☐ Utility Easement (pipelines, conduits, cables, etc.)
  - ☐ Docks, Moorings or Platforms

☐ I am sending this application to this agency.

4. NYS Department of State

Check if this applies:

- ☐ Coastal Consistency Concurrence

☐ I am sending this application to this agency.

5. Name of Applicant (use full name)

Applicant must be:
☐ Owner
☐ Operator
☐ Lessee
(check all that apply)

Mailing Address

Post Office City

State Zip Code

Taxpayer ID (If applicant is NOT an individual):

Telephone (daytime)

Email

6. Name of Facility or Property Owner (if different than Applicant)

Mailing Address

Post Office City

State Zip Code

Telephone (daytime)

Email

7. Contact/Agent Name

Company Name

Mailing Address

Post Office City

State Zip Code

Telephone (daytime)

Email

8. Project / Facility Name

Property Tax Map Section / Block / Lot Number

Project Location - Provide directions and distances to roads, bridges and bodies of waters:

Street Address, if applicable

Post Office City State NY Zip Code

Town / Village / City

County

Name of USGS Quadrangle Map

Stream/Water Body Name

Location Coordinates: Enter NYTMs in kilometers, **OR** Latitude/Longitude

NYTM-E	NYTM-N	Latitude	Longitude

For Agency Use Only DEC Application Number: USACE Number:

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9. **Project Description and Purpose:** Provide a complete narrative description of the proposed work and its purpose. Attach additional page(s) if necessary. Include: description of current site conditions and how the site will be modified by the proposed project; structures and fill materials to be installed; type and quantity of materials to be used (i.e., square ft of coverage and cubic yds of fill material and/or structures below ordinary/mean high water) area of excavation or dredging, volumes of material to be removed and location of dredged material disposal or use; work methods and type of equipment to be used; pollution control methods and mitigation activities proposed to compensate for resource impacts; and where applicable, the phasing of activities. **ATTACH PLANS ON SEPARATE PAGES.**

Proposed Use: ☐ Private ☐ Public ☐ Commercial	Proposed Start Date:	Estimated Completion Date:
Has Work Begun on Project? ☐ Yes ☐ No If Yes, explain.		
Will Project Occupy Federal, State or Municipal Land? ☐ Yes ☐ No If Yes, please specify.		

10. List Previous Permit / Application Numbers (if any) and Dates:

11. Will this project require additional Federal, State, or Local Permits including zoning changes? ☐ Yes ☐ No If yes, please list:

12. **Signatures.** If applicant is not the owner, both must sign the application.

I hereby affirm that information provided on this form and all attachments submitted herewith is true to the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law. Further, the applicant accepts full responsibility for all damage, direct or indirect, of whatever nature, and by whomever suffered, arising out of the project described herein and agrees to indemnify and save harmless the State from suits, actions, damages and costs of every name and description resulting from said project. In addition, Federal Law, 18 U.S.C., Section 1001 provides for a fine of not more than $10,000 or imprisonment for not more than 5 years, or both where an applicant knowingly and willingly falsifies, conceals, or covers up a material fact; or knowingly makes or uses a false, fictitious or fraudulent statement.

	Printed Name	Title	Date
Signature of Applicant			
Signature of Owner			
Signature of Agent			

For Agency Use Only **DETERMINATION OF NO PERMIT REQUIRED**

_____ (Agency Name) has determined that No Permit is required from this Agency for the project described in this application.

Agency Project Number _____

Agency Representative: Name (printed) _____ Title _____

Signature _____ Date _____

RESET

JOINT APPLICATION FORM - INSTRUCTIONS

Use this application to apply for Permits and Determinations from all of the listed state and federal agencies. This form is for all projects that affect streams, waterways, waterbodies, wetlands, coastal areas and sources of water withdrawal.

New York State
Department of Environmental Conservation (DEC)
Office of General Services (OGS)
Department of State (DOS)

US Army Corps of Engineers (USACE)
New York District
Buffalo District

Type or print clearly in ink. This Form has 2 pages. Incomplete, illegible or inaccurate information may delay processing and a final decision on your application. Individual Agencies may request that you submit additional information to complete your application. If you have any questions, contact the Agencies or check the Agency websites listed on Page 2 for further information.

PERMITS REQUESTED: You are responsible for obtaining all federal, state or local permits or other approvals. Check all Permits/Determinations you are applying for from the listed Agencies.

You must obtain separate authorizations or determinations of no permit required from each Agency in accordance with their jurisdiction prior to initiation of work.

APPLICANT / OWNER / CONTACT INFORMATION AND SIGNATURES: Signatures of the Applicant, Owner and Agent, where applicable, are required.

Applications by a Corporation must be signed by a member of the board of directors or a "high managerial agent" of the corporation as that term is defined in the § 20.20 of the Penal Law; a Partnership by a general partner; a Sole Proprietorship by the proprietor; a Limited Liability Company by member or manager in accordance with the LLC's articles of organization as filed with the Secretary of State.

Applications by a State Agency must be signed by a person duly designated by the commissioner or other agency head. Applications by Municipalities (counties, cities, towns and villages) and Public Corporations must be signed by the chief executive officer, the head of a subordinate agency or department, or a person duly designated by the chief executive officer.

Construction or work contractors may serve as a contact/agent on behalf of the applicant, but cannot be identified as the applicant or prospective permittee should a permit be issued.

PROJECT / FACILITY LOCATION INFORMATION: If you are able to supply accurate project location coordinates, please do so. Location Coordinates are expressed in New York Transverse Mercator (NYTM) units (i.e., UTM Zone 18 expanded to encompass the entire state) based on the North American Datum 1983, or Latitude and Longitude. Coordinates may be obtained from DEC's online Environmental Resource Mapper (www.dec.ny.gov/animals/38801.html), using the Identify [i] tool.

PROJECT DESCRIPTION AND PURPOSE: Provide a complete narrative description of the proposed work and its purpose. Attach additional page(s) if necessary.

REQUIRED APPLICATION ATTACHMENTS

Attach and submit the following to each involved Agency:

1) **LOCATION MAP -** A US Geological Survey (USGS) Quadrangle Map, or equivalent identifying the project location. The map should include wetlands, seasonally wet streams and ditches. An acceptable location map may be obtained from DEC's online Environmental Resource Mapper (http://www.dec.ny.gov/animals/38801.html), using the Printer tool.

2) **PROJECT PLANS -** A sketch plan view and cross-section drawn to scale with dimensions given, or engineering drawings showing location and extent of work. Note from which direction the photographs required in (3) are taken.

3) **PHOTOGRAPHS -** At least 3 color photographs, taken from multiple directions, which clearly depict the site of the proposed activity without snow cover. Include any existing structures on the site and the area surrounding the site. Indicate the time and date when taken.

OTHER REQUIREMENTS

If applying to State Agencies: State Environmental Quality Review Act regulation (SEQR), 6 NYCRR Part 617) is applicable (see www.dec.ny.gov/regs/4490.html) -

a) If the project is an Unlisted Action, submit a completed Part 1 of a Short Environmental Assessment Form. *
b) If the project is a Type I Action, submit a completed Part 1 of a Full Environmental Assessment Form. *

If applying to NYS DEC - Complete the **Permission to Inspect Property Supplement** * to provide consent for DEC inspection. Failure to grant consent can be grounds for, and may result in, permit denial.

If applying to USACE/NYS DOS - If the project requires a federal permit and lies within or affects the Coastal Zone (see the DOS Coastal Area Maps at http://www.nyswaterfronts.com/maps_regions.asp) submit a completed Federal Consistency Assessment Form (available at www.nyswaterfronts.com/consistency_federal.asp) to NYS DOS with a copy to USACE.

For USACE Section 404 Clean Water Act permits and specific Nationwide permits - a 401 Water Quality Certification must be obtained from NYS DEC.

For projects within the Adirondack Park – To determine permitting applicability, contact -
NYS Adirondack Park Agency, 1133 NYS Rte 86, PO Box 99, Ray Brook, NY 12977 (518) 891-4050 www.apa.state.ny.us

SPECIAL SUPPLEMENTS AND REQUIREMENTS FOR SPECIFIC PERMIT APPLICATIONS

Applications for . . .	must be accompanied by . . .
• **Dams and Impoundment Structures**	Supplement D-1 *
• **Docks and Moorings**	Supplement D-2 *
• **Water Withdrawal**	Supplement WW-1 *
• **Long Island Well**	Regional specific supplement *
• **Wild, Scenic and Recreational River Systems**	Supplement WSR-1 *
• **Incidental Take**	Supplement IT-1 *
• **Aquatic Vegetation, Aquatic Insect, and Fish Control**	Category specific form available at NYS DEC offices and www.dec.ny.gov/chemical/8530.html . Submit applications to the NYS DEC regional office, Attn: Bureau of Pesticides.

• **USACE Section 404 Clean Water Act and DEC Freshwater Wetlands and DEC Tidal Wetlands** ... Applications to disturb a wetland or waterway by placing fill or performing mechanized land clearing, ditching, channelization, dredging, or excavation activities should provide a discussion of practicable alternatives considered to avoid, minimize and/or mitigate the proposed project impacts. Particular justification should be given as to why the alternatives are not suitable.

• **DEC Freshwater and Tidal Wetlands** ... Applications fees are required. Refer to: www.dec.ny.gov/permits/65153.html

* Forms are available at NYS DEC offices and at www.dec.ny.gov/permits/6222.html

SUBMISSION OF APPLICATION FORMS AND ATTACHMENTS

Separately mail the completed application to each involved Agency based on project location and permit(s) requested.

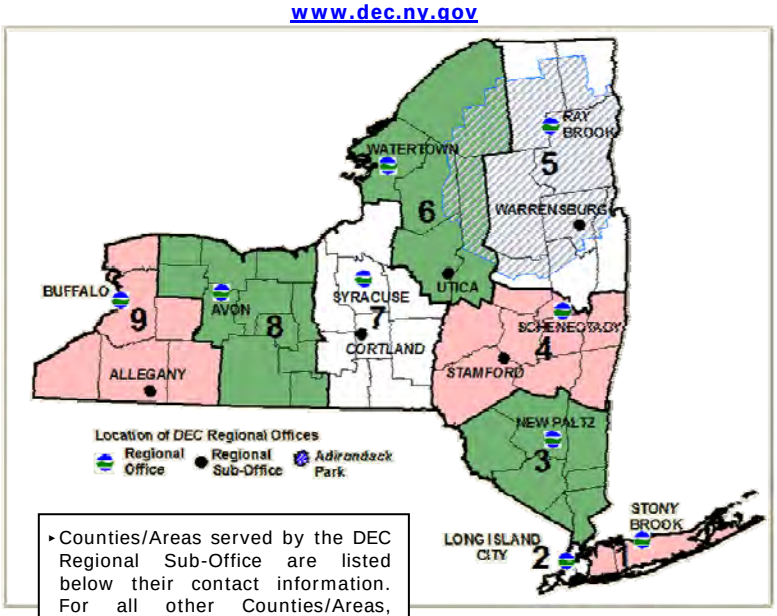
For DEC - Mail **3 copies** of: this Application, any supplemental forms, and all required attachments.

For Other Agencies - Mail **1 copy** of: this Application, any supplemental forms, and all required attachments.

Refer to each Agency's website for specifications on submitting documents on electronic media or via email.

AGENCY CONTACT INFORMATION

NYS Department of Environmental Conservation
www.dec.ny.gov



- Counties/Areas served by the DEC Regional Sub-Office are listed below their contact information. For all other Counties/Areas, contact the DEC Regional Office.

NYS DEC REGION 1
Regional Permit Administrator
SUNY @ Stony Brook
50 Circle Road
Stony Brook, NY 11790-3409
631-444-0365 fax: 631-444-0360
email: r1dep@gw.dec.state.ny.us

NYS DEC REGION 2
Regional Permit Administrator
1 Hunter's Point Plaza
47-40 21st Street
Long Island City, NY 11101-5407
718-482-4997 fax: 718-482-4975
email: r2dep@gw.dec.state.ny.us

NYS DEC REGION 3
Regional Permit Administrator
21 South Putt Corners Road
New Paltz, NY 12561-1620
845-256-3054 fax: 845-255-4659
email: r3dep@gw.dec.state.ny.us

NYS DEC REGION 4
Regional Permit Administrator
1130 North Westcott Road
Schenectady, NY 12306-2014
518-357-2069 fax: 518-357-2460
email: r4dep@gw.dec.state.ny.us

NYS DEC REGION 4 Sub-Office
Regional Permit Administrator
65561 State Highway 10
Stamford, NY 12167-9503
607-652-7741 fax: 607-652-2342
email: r4dep@gw.dec.state.ny.us
- For Delaware and Otsego Counties, and Greene County towns within the NYC watershed

NYS DEC REGION 5
Regional Permit Administrator
PO Box 296
1115 NYS Route 86
Ray Brook, NY 12977-0296
518-897-1234 fax: 518-897-1394
email: r5dep@gw.dec.state.ny.us

NYS DEC REGION 5 Sub-Office
Regional Permit Administrator
232 Golf Course Rd
Warrensburg, NY 12885-1172
518-623-1281 fax: 518-623-3603
email: r5dep@gw.dec.state.ny.us
- For Fulton, Saratoga, Warren, and Washington, Counties

NYS DEC REGION 6
Regional Permit Administrator
Dulles State Office Building
317 Washington Street
Watertown, NY 13601-3787
315-785-2245 fax: 315-785-2242
email: r6dep@gw.dec.state.ny.us

NYS DEC REGION 6 Sub-Office
Regional Permit Administrator
Utica State Office Building
207 Genesee Street, Room 1404
Utica, NY 13501-2885
315-793-2555 fax: 315-793-2748
email: r6dep@gw.dec.state.ny.us
- For Herkimer, and Oneida Counties

NYS DEC REGION 7
Regional Permit Administrator
615 Erie Blvd West, Room 206
Syracuse, NY 13204-2400
315-426-7438 fax: 315-426-7425
email: r7dep@gw.dec.state.ny.us

NYS DEC REGION 7 Sub-Office
Regional Permit Administrator
1285 Fisher Avenue
Cortland, NY 13045-1090
607-753-3095 ext. 233
fax: 607-753-8532
email: r7dep@gw.dec.state.ny.us
- For Broome, Chenango, Cortland, Madison, Tioga and Tompkins Counties

NYS DEC REGION 8
Regional Permit Administrator
6274 East Avon - Lima Road
Avon, NY 14414-9519
585-226-5400 fax: 585-226-2830
email: r8dep@gw.dec.state.ny.us

NYS DEC REGION 9
Regional Permit Administrator
270 Michigan Avenue
Buffalo, NY 14203-2915
716-851-7165 fax: 716-851-7168
email: r9dep@gw.dec.state.ny.us

NYS DEC REGION 9 Sub-Office
Regional Permit Administrator
182 East Union, Suite 3
Allegany, NY 14706-1328
716-372-0645 fax: 716-372-2113
email: r9dep@gw.dec.state.ny.us
- For Allegany, Cattaraugus, and Chautauqua Counties

US Army Corps of Engineers www.usace.army.mil

For DEC Regions 1, 2 and 3
US Army Corps of Engineers NY District
ATTN: Regulatory Branch
26 Federal Plaza, Room 1937
New York, NY 10278-0090
email: CENAN.PublicNotice@usace.army.mil
For DEC Regions 1, 2, Westchester County and Rockland County - (917) 790-8511
For the other counties of DEC Region 3 - (917) 790-8411

For DEC Regions 4, 5
Department of the Army
ATTN: CENAN-OP-R
NY District, Corps of Engineers
1 Buffington Street
Building 10, 3rd Floor
Watervliet, NY 12189-4000
(518) 266-6350 - Permits team
(518) 266-6360 - Compliance Team
email: cenan.rfo@usace.army.mil

For DEC Regions 6, 7, 8, 9
US Army Corps of Engineers
Buffalo District
ATTN: Regulatory Branch
1776 Niagara Street
Buffalo, NY 14207-3199
(716) 879-4330
email: LRB.Regulatory@usace.army.mil

Statewide
NYS Department of State
Division of Coastal Resources
Consistency Review Unit
One Commerce Plaza
99 Washington Ave, Suite 1010
Albany, NY 12231-00001
(518) 474-6000
www.nyswaterfronts.com

Statewide
NYS Office of General Services
Real Estate Development - Land Management
Corning Tower, 26th Floor
Empire State Plaza
Albany, NY 12242-0001
(518) 474-2195
www.ogs.state.ny.us

Harbor Management Plan - Management & Organization

Purpose

The Port of Rochester-Genesee River Harbor Management Plan (HMP) will facilitate management of the harbor and nearshore areas in conjunction with and outlined in New York State's Coastal Management Program. Current and potential harbor management issues addressed through the HMP are many, including the need for a management and organizational structure that can identify, facilitate, and execute solutions to issues within the Rochester Harbor Management Area (HMA) for positive community, environmental, and economic impact.

The purpose of this document is to explore management and organizational structure options that will best fit the unique requirements presented by the HMP. The Rochester Harbor Management Area is relatively unique due to the significant number of discrete stakeholders. A sampling of stakeholders includes the City of Rochester, Monroe County, the Towns of Irondequoit and Greece, recreational marinas, as well as various state and federal agencies, institutions, neighborhood associations, and other community organizations.

Management & Organizational Structure Comparative Analysis

Establishing management objectives was essential to the identification of organizational structures that could effectively manage and implement initiatives contained in the HMP. Objectives and initiatives critical to the successful management and implementation of the HMP include:

- Consensus building with regards to competing uses of waterfront harbor space and adjacent areas for recreation, economic development, and existing or future commercial endeavors.
- Leadership in dredging and water quality improvement initiatives to accommodate competing uses.
- Federal agency engagement necessary to facilitate compliance with various regulatory and governmental requirements.
- Resolution of law enforcement and public safety agencies jurisdictional concerns for effective resource use and stakeholder benefit.
- Facilitation of recreational boater education and safe navigation.

The potential effectiveness of an organizational structure was assessed through a comparative analysis, or benchmarking process. The comparative analysis began with a search for similar port/harbor or other HMP-relevant organizations. It quickly became clear that no examples exist that encompassed *all* of the unique qualities of the HMA. These unique qualities include: comparable level of activity for commercial entities, similar public interests, metropolitan

population, and economic development opportunities. However, this was not an unexpected finding given the wide variation of waterfront community history in the Great Lakes. The comparative analysis also sought to identify organizational structures with evidence of management success related to meeting the broad goals of the HMP.

As a result, the goal of the comparative analysis was modified from seeking to identify singular, successful organizational and management examples with *all* of the qualities previously identified to selection of an organizational structure with demonstrated success with key relevant complexities. The refined approach resulted in the identification of three organizational classifications that featured success with the broad goals of the HMP: 1) consensus building on wide-ranging challenges and interests, 2) a commercial history in freight and related services, and 3) positive economic development. Based on their ability to provide the best blend of characteristics considering the objectives of the HMP, the three management and organizational classifications evaluated were:

- Formally Structured Port Authorities
- City/County Port Organizations
- Harbor Economic Development Districts

In total, ten regional organizations were identified and evaluated based on fifteen HMP characteristics of interest. The regional organizations identified consisted of those shown in the table below.

Organizational Type	Regional Organizations Evaluated
Formally Structured Port Authority	Cleveland-Cuyahoga County Port Authroity
	Erie-Western Pennsylvania Port Authority
	Port of Monroe/Monroe County, MI
City/County Port Organization	City of Sandusky, OH
	Lorain Port Authority/City of Lorain, OH
	Port of Green Bay/Brown County, WI
Harbor Economic Development Districts	Baltimore Inner Harbor Development (BDC)
	City of Syracuse, NY; Inner Harbor Disctrict
	ECHDC; "Inner & Outer Harbor;" Buffalo, NY
	Harbor Point, City of Utica, NY

The fifteen characteristics of interest when evaluating the organizational structures include (in no particular order):

- Structure created for a specific community economic improvement
- Organization created for improved water transportation opportunity
- The organization maintains financial sustainability
- Entity has a strong commercial freight tonnage interest
- Agency formed by inter-governmental & stakeholder interest

- Commercial economic development &/or redevelopment focus
- Skilled at Public-Private-Partnership (3P) initiatives
- Environmental restoration &/or sustainability interest
- Skilled at grant development & public funding support
- Harbor dredging & periodic harbor maintenance required
- Recreation, marina, tourism, & green space interest
- Ferry or water taxi experience
- Operates with a defined area of jurisdiction
- Organization board is made up of less than 10 members
- Staffed is compensated and full time

In summary, the characteristics centered around organizations having a strong freight/commercial history, consensus building on similar key factors identified during the Rochester HMP development, economic development experience, 3P skills, and grant success. Based on the characteristics identified above, the following management and organizational structure goals were determined to be most appropriate in identifying an organization tasked with the HMP implementation:

- Experienced government leadership is effective in dredging and law enforcement issues;
- A successful organization needs to have staff with related primary responsibilities;
- Certain goals were effectively achieved by all three organization classifications:
    - Broad stakeholder involvement;
    - Grant development supporting economic development and public interests;
    - Recognition of value of recreational, marina, green space, & tourism balance;
    - Importance of environmental/water quality improvement and sustainability;
- Direct agency board of less than ten members.

Among the three types of organizations, the pros and cons of each form were reviewed in the context of its potential effectiveness in implementing the HMP. The following summarizes the evaluation of each organization type, and a summary narrative of the important qualities associated with each organizational type is provided. The summary also provides guidance for the identification and selection of alternative organization structures considered appropriate for the implementation and sustainability of an effective HMP.

Formally Structured Port Authorities

Pros	Cons
• Strong central control • Deep draft freight focused • Strong commercial interests • Permanent paid staff • Navigation centric • Broad legislated powers	• Less inclusive decision making • Reduced public benefit sensitive • Poor multi-mission effectiveness • Economic development challenged

Summary Observations: For the diverse necessities of implementation of the HMP, highly structured autonomous agencies such as formally structured port authorities are the least preferable based on the evaluation of benchmarked entities. Many governing boards are appointed, and in some cases, not representative of local community interests and priorities. The port authorities evaluated were able to overcome some of these deficiencies, but it took time to cultivate a culture of change, trust, and inclusion of other stakeholder input. The change generally resulted in higher costs to the port authority to secure buy-in for the larger, multi-mission needs typical of the HMP.

City/County Port Organizations

Pros	Cons
• Community-mix board representation • Moderate decision making speed • Permanent direction/shared staff • Budget sensitive & oversight • Balanced private/public interest	• Diluted decision making • Conflicting objectives or solutions • Jurisdictional & mission conflicts • Funding priority challenged

Summary Observations: City/county port organizations present a middle ground relative to effectiveness of responding to and facilitating the needs of the HMP. The evaluated city/county port organizations were relatively effective in establishing, and subsequently prioritizing varied mission objectives. The recognition of the value of inclusiveness, broad stakeholder input, and solution options was obvious by the variation of approach to make progress. This likely derives from the experience of commission/board and staff interfacing with the community and through the local election processes. Because of the sensitivity to community involvement, they can create win-win solutions that frequently have a net positive benefit on a broader stakeholder group. Benefiting the HMP, the nature of a governmental organization affiliation allows expedition of decisions when necessary. The sustainability and continuity of a city/county port organization form appears to be most effective in delivering results that are built on consensus, because it's a local organization.

Harbor Economic Development Districts

Pros	Cons
• Economic development skilled & specialization • Agency formed by intergovernmental/ stakeholder interest • 3P astute • Public funding & grant supported • Common environmental interests for economic development • Narrow mission effective	• Commercial navigation user weakness • Higher operating costs • Minimum financial flexibility except for core mission • Private sector developer interests • Weak, broad stakeholder input • Creation/potential for specialized taxing to support core mission

Summary Observations: A harbor economic development district is valuable when a specific core mission is identified. They are frequently built on an opportunity, need, or barrier that has negative implications to a greater community's well-being if unaddressed. Organizational sustainability is usually very important, as the core mission usually requires long-term plans and stable funding streams. Although captured frequently as an economic development initiative, its initial base, or interest may be economic revitalization, tourism development, environmental remediation, and possibly other legacy issues of employment and social interest. These organizations frequently have special legislative recognition and powers to fund, plan, sustain, and obtain grants, all for the intended public benefit. The commission/board is generally governing as an independent agency of government, represented by regional private-sector interests and community representatives. Staffing is usually professionally skilled, well compensated, and focused on the long-term core mission. Evaluated examples were effective, but results were limited to narrow community issues with limited public opinion and involvement in solutions.

HMP Organization Alternatives & Supplemental Entities

Within the context of the needs and key findings identified in the HMP, output from the comparative analysis process outlined above provided examples of organization and management structures that showed success. However, these successes were accomplished in very different ways and with different methods and mission focus. A review of the pros and cons of the three organizational types considered facilitated the identification of characteristics unique to current conditions, stakeholder initiatives, and future necessities within the HMA.

Certain goals exist in the HMP that must be recognized while identifying an appropriate organization and management structure. The comparative analysis pointed to initial steps for the core starting point, built on what was indicated to be most applicable to the Rochester Harbor Management Area. The organizational structure selected for the Rochester HMP implementation must address the following qualities:

1. Stability and continuity is essential;

2. Financial capability and resources are important;
3. Relative jurisdiction and overall governmental influence;
4. Relative economic impact of decision making;
5. Prompt decision making when necessities dictate;
6. Multiple mission and multiple priorities associated with the HMP implementation.

Based on these qualities, two of the three management and organizational structures evaluated above were determined to be the most appropriate alternatives for further consideration: the Harbor Economic Development District and the City/County Port Organization. These structures and why they are likely the most appropriate for the Rochester HMP are discussed further below.

Stakeholder Advisory Council

Regardless of which management and organizational alternative is selected for the Rochester HMP, the creation of a Stakeholder Advisory Council (Council) is recommended since it is important to seek involvement from the large number of stakeholders in the HMA. The Council will undertake identifying possible solutions to many of the tough issues surrounding the HMP that require consensus building, diverse input, focus committees of "at large" stakeholder experts, and the requirement for developing unique solutions.

The HMP has a number of imperative key issues, as well as issues of broad common interest that, although important, will require time to arrive at a solution and may not be as critical or time sensitive as others. The Council will analyze and prioritize these issues in order to make meaningful, orderly progress. The Council can form committees, which can be well focused by stakeholders with appropriate experience. Or on another extreme, committees can have diverse experience with varied perspectives with a goal of broad inclusion to develop unique solutions.

An inclusive Stakeholder Advisory Council, with rotating leadership, will be an essential contributor to identification and prioritization of HMA issues. By utilizing the HMP as a guide, the Council can form working groups, special interest committees, skill set affiliations, and provide expertise toward technical and non-technical solutions. The Council's development of position statements, alternatives, recommendations, and implementation plans will be critical for the success of the broader functioning organization. The operational success of the Council has significant implications to greater regional economic vitality and public benefits to all using the Port of Rochester-Genesee River Harbor Management Area.

Alternative 1 - Harbor Economic Development District

A harbor economic development district addresses the six qualities that are essential to the implementation and sustainability of the Rochester HMP. As stated in the evaluation above, the core mission usually requires long-term plans and stable funding streams in order to address the primary goals of economic revitalization, tourism development, environmental remediation, and possibly other legacy issues of employment and social interest. The addition of the

stakeholder advisory council should address at least some of the shortfalls typically observed of this alternative management and organizational structure. As previously identified, a harbor economic development district is generally an independent agency of government represented by a commission/board, which is frequently composed of private-sector interests and members of the community. This often makes the management and organizational structure effective but narrow in scope. Staffing is typically composed of professional management for this alternative. This alternative may also require a legislative initiative for formal creation. The following summarizes the comparison of the six qualities identified above and the corresponding advantage of the harbor economic development district structure:

1. Stability & Continuity → primarily focused on long-term goals
2. Financial Capability & Resources → public funding & grant supported; potential for specialized taxing
3. Relative Jurisdiction & Overall Governmental Influence → independent government agency with jurisdiction likely limited to HMA
4. Relative Economic Impact of Decision Making → economic development focus for positive, macro HMA change
5. Prompt Decision Making → bureaucracy limited to organization itself
6. Multiple Mission & Multiple Priorities → multi-facet approach supportive to the priority of economic development

Alternative 2 - City/County Port Organization

A city/county port organization could also form the core organizational structure for HMP implementation and management. Appropriate adjustments are recommended to any potential standardized form of city/county government to address the unique HMP needs. Alternative 2 can effectively respond to the goals and qualities noted in the HMP. By addressing many of these goals and qualities at the outset, the potential for success at an early stage is greater. Early success generates immediate interest and results that can carry a high level of sustainable stakeholder interest in the value of the HMP. The significant geographic footprint and economic development initiatives within the HMA suggests the City of Rochester as a likely Alternative 2 port organization core entity. The following summarizes the comparison of the six qualities previously identified and the corresponding advantage of the city/county port organization structure:

1. Stability & Continuity → organization is fixed & predefined
2. Financial Capability & Resources → can provide support through budget & shared resources
3. Relative Jurisdiction & Overall Governmental Influence → has a large geographic footprint within the HMA

4. Relative Economic Impact of Decision Making → has a number of related ongoing endeavors & is in a position to be a vehicle for positive, macro HMA change
5. Prompt Decision Making → can lead with direct assets & leadership when quick action is required
6. Multiple Mission & Multiple Priorities → can engage the HMA stakeholders to increase effectiveness in identifying, planning, prioritizing, & managing

HMP Advisory Board: The city/county port organization would receive guidance through a HMP Advisory Board. The HMP Advisory Board would act as a typical "Board of Directors," but without direct powers granted through formal or legislative action. The HMP Advisory Board (Board) would receive stakeholder input from the Stakeholder Advisory Council. The Board could establish an HMP agenda, establish priorities, and communicate with the city/county port organization core to facilitate needed action and cooperative directives to address harbor issues.

City and county governments can represent the majority of the Board. It is recommended to be structured in this way to acknowledge that stakeholder interest varies in weight by different public responsibility. The comparative analysis indicated the appropriate size for an effective Board should be ten members or less. The Board should also include several rotating "at large" stakeholder representatives from the larger Stakeholder Advisory Council.

In addition to providing guidance to the city/county port organization, Board members have a major implementation role that can result in direct HMA improvement. They have the local governmental control to move an agenda quickly and responsibly through acknowledgement and support for each other's respective positions and capabilities, particularly in areas such as emergency management.

Conclusions

Based on the comparative analysis, the selected HMP management and organization plan needs to be inclusive and responsive to a wide variety of identified HMP issues. The organization must allow for varied degrees of responsiveness and management agility to address issues, those that are already identified and those that are as yet unidentified. Organizational strength and sustainability, along with capability to take quick action when appropriate, will be a key asset of the selected organization structure. As part of the anticipated municipal operation of the City's new public marina, it is also recommended that the position of Harbormaster for that facility have a collateral responsibility for HMA traffic and surface waterfront coordination. The selected management and organizational structure, while cooperating with guidance and assistance from the Stakeholder Advisory Council and the Harbor Advisory Board (if applicable), will provide leadership and stability for implementation of the Port of Rochester-Genesee River Harbor Management Plan.

City of Rochester

Local Waterfront Revitalization Program

Appendix II

LWRP Health Impact Assessment (HIA) Executive Summary



Healthy Waterways:

A Health Impact Assessment of the City of Rochester, New York's Local Waterfront Revitalization Program

Report, June 2013









Prepared by: Katrina Smith Korfmacher, PhD, and Valerie Garrison
Department of Environmental Medicine, University of Rochester Medical Center

Funded by: Health Impact Project – a collaboration of the Robert Wood Johnson Foundation and The Pew Charitable Trusts

This report was prepared by Katrina Smith Korfmacher, PhD, and Valerie Garrison of the University of Rochester Medical Center Department of Environmental Medicine, with contributions by consultant Kerry Ivers, AICP (Clark Patterson Lee).

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(585) 256 - 2591 (fax)

This document will be available online at: http://www2.envmed.rochester.edu/envmed/EHSC/outreach/coec/projects/HIA/HealthyWaterways.html by July 1, 2013

Unless otherwise noted, photos included in this report were provided by the authors.
Front Cover Photo Credit: Upper right image provided by Sylvan Hemingway Jr.

Healthy Waterways Report Summary

The Healthy Waterways project assessed the potential health impacts of the City of Rochester, New York's Local Waterfront Revitalization Program (LWRP). The LWRP is a New York State program that supports local efforts to develop comprehensive plans for waterfront areas. The Healthy Waterways project was conducted in anticipation of the City of Rochester's 2013 LWRP planning process. The LWRP focuses on waterfront areas within the City of Rochester along the Erie Canal, the Genesee River, and Lake Ontario, with the exception of the Port of Rochester. The Port of Rochester is addressed in a separate planning process. This report presents the project's findings and assessments for consideration by the city and interested stakeholders as the LWRP is developed and implemented.

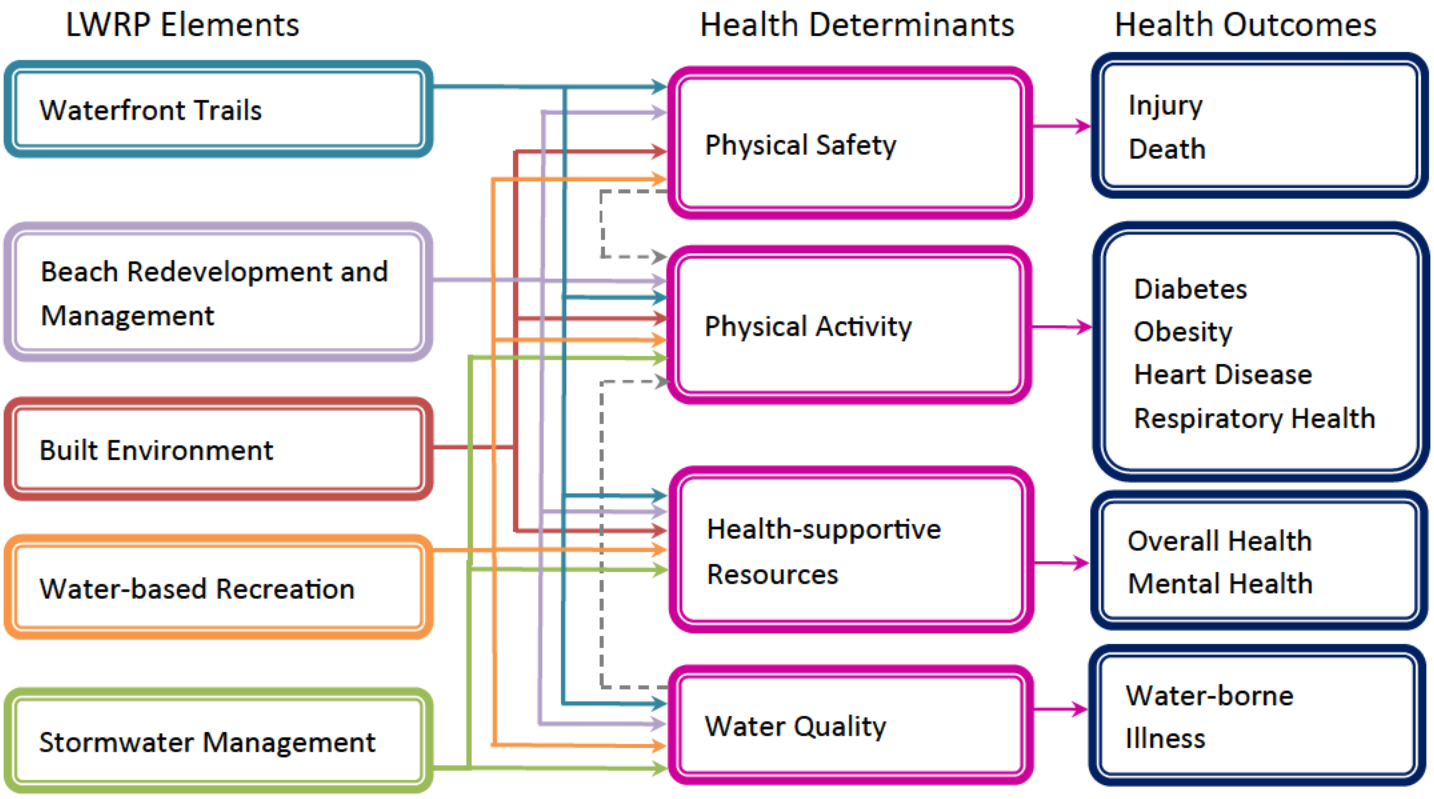
Health Impact Assessment (HIA) is a tool for providing information about how proposed plans and policies may impact community health. HIA is based on the fact that social and environmental conditions strongly affect people's health. HIAs offer recommendations to maximize the health benefits and minimize negative health impacts of non-health decisions. HIA also assesses the distribution of health impacts throughout the population, so that recommendations can promote equity and help reduce health disparities. Healthy Waterways was conducted to assess how changes to Rochester's waterfront might affect community health, and to ensure that health is considered throughout the LWRP.

Health Conditions of Rochester's Waterfront Population

Changes in the waterfront may affect the health of people who live nearby, those who use the waterfront, and the general population in different ways. The HIA assessed impacts on all three groups, with an emphasis on those whose health is most likely to be affected by changes in the waterfront environment. These populations of concern included children, older adults, low-income and minority residents of the waterfront areas.

Four health determinants were selected for assessment based on stakeholder input and direct connection to the health outcomes of concern: physical activity, water quality, health-supportive resources, and physical safety. It is important to note that many of these health determinants are interrelated. For example, improving the perceived safety of an area may increase outdoor physical activity. We assessed each health determinant's relationship to waterfront development, the current status of that health determinant, and evidence (literature, local data, experience of other communities, and survey data) of its impacts on specific health outcomes.

The HIA focused on five types of waterfront changes addressed in the LWRP: waterfront trails, beach redevelopment and management, built environment, water-based recreation, and stormwater management. Each of these elements is likely to affect several of the health determinants.



Waterfront Trails

The Genesee Riverway Trail (GRT) system is a pedestrian/biking trail that runs along the Genesee River from the Erie Canal north to where the river enters Lake Ontario. The city's existing plans to expand and improve the Genesee Riverway Trail (GRT) system are likely to improve health by promoting physical activity. Our recommendations support building new sections so that the trail is continuous, improving maintenance (trash collection, smoother surface, plowing), adding amenities (water fountains, restrooms, lights, signage, etc.), and including additional access points to facilitate use by waterfront community residents. Improving communications and programming could also increase trail use. To maximize these impacts, it is important that concerns about physical safety and crime be addressed in all trails-related decisions.

Beach Redevelopment and Management

Rochester's waterfront assets include two seasonally lifeguarded sand beaches: Ontario Beach, which is owned by the City of Rochester and operated by Monroe County; and Durand Beach, which is owned and operated by the City of Rochester. The two beaches vary greatly by geography, amenities, uses and number of visitors. Beaches can provide an opportunity for active and passive recreation. However, there are also risks, including exposure to poor water quality and safety issues (e.g. drowning). Additionally, changes such as increased fees or reduced public access could pose negative impacts to health by discouraging people from using the beach.

Beach redevelopment presents significant opportunities to positively impact physical activity and access to health supportive resources. Our recommendations include prioritizing projects that promote physical activity and increased use of the beach areas for passive recreation. Doing so will require improving actual and perceived water quality and public safety. Improved communication, coordination, and monitoring by government agencies, private entities, and community groups is essential to this effort. Our recommendations are aimed at ensuring that beach development increases healthy and safe use by a wide range of local, regional, and visitor populations.

Built Environment

Rochester's waterfront currently features a mix of land uses including housing, open spaces, recreational facilities, and commercial/industrial enterprises. Waterfront development changes the natural and built environments in ways that can affect human health. The challenges of balancing economic, equity and public interests are increased in waterfront areas by the high value of waterfront property.

Healthy Waterways focused on waterfront built environment changes in southwest Rochester, where brownfield redevelopment and other community planning efforts are currently underway. We found that future development within the LWRP may affect community members' physical activity and recreational opportunities, access to health-supporting goods and services, and neighborhood employment and economy. Many of the process (community input, etc.) and design standards (walkability, access, etc.) already included in the city's zoning codes and planning programs promote healthy neighborhoods. Based on our assessment, implementing these and other provisions to increase visual and physical access to the waterfront is particularly important to local communities.

Water-based Recreation

Waterfronts provide many opportunities for active and passive water-based recreation. The potential for water-based recreation varies with the diverse geography within Rochester's LWRP. The north end of the Genesee River runs through a gorge and the central portion (near downtown) is characterized by waterfalls and steep banks. Thus, most recreational access to the river is south of the city center, with the exception of fishing sites at the Charlotte Pier, Turning Point Park and Seth Green Drive (note that beachfront recreation is addressed separately, and that the Port of Rochester is not included in this assessment). Although these uses have expanded in recent years, the recreational potential of the waterfront is still underutilized. In particular, there are many opportunities to expand water-based recreation by low-income residents. Fishing and boating were widely described by community members as stress-reducing forms of passive recreation that are accessible to people of varied abilities. Although increasing water-based recreation would have positive impacts on health, there are potential risks related to physical safety and water quality that need to be considered. Our recommendations offer suggestions for prioritizing development of water-based recreation along Rochester's waterfront in ways that maximize health benefits for diverse populations.

Stormwater Management

Stormwater runoff refers to the amount and quality of water that runs off the land into surface waters. Because stormwater runoff carries pollution, it is a major contributor to poor water quality. Changes in stormwater management have the potential to impact human health, primarily through affecting exposure to polluted water. If water quality improves, the disease risk for people engaged in water-contact recreation will decline. Water quality improvements may have secondary impacts on physical activity and access to health supportive resources if swimming, boating, fishing, or other water-based uses increase.

Stormwater management is an important local tool for improving water quality. Many types of 'green infrastructure' implemented to improve water quality, such as grassy swales or wetlands, can have additional public health benefits as open space. Our recommendations emphasize stormwater management measures with health "co-benefits" such as providing areas for public access or physical activity.

Recommendations Summary

In addition to recommendations related to the various plan elements, Healthy Waterways resulted in several cross-cutting recommendations that were emphasized by stakeholders throughout the process:

- Maintain or improve access from adjacent neighborhoods to the waterfront
- Improve safety and security for people using the waterfront area
- Increase public awareness among area residents and visitors of how to access Rochester's diverse waterfront resources in ways that support health
- Improve coordination among agencies and between jurisdictions (city/county/neighboring towns) responsible for managing different areas of the waterfront
- Monitor, analyze, and report progress, challenges, and opportunities in implementing these goals and recommendations

We also identified a set of overarching recommendations for the LWRP and related decision making processes:

- Add community health to the 2013 LWRP Vision Statement
- Add community health to the 2013 LWRP Goals
- Include information on health and demographics in the LWRP background and inventory
- Incorporate community health into the Department of State's policy guidelines for all LWRPs
- Promote HIA in future city and county decision making processes

Overall, our findings show that implementation of the LWRP is likely to promote community health. Our assessment also identified opportunities to maximize health benefits, particularly for vulnerable populations living near the waterfront, and to avoid unintended risks to health.

City of Rochester

Local Waterfront Revitalization Program

Appendix III

City of Rochester Consistency Review Ordinance

Lake Ontario Genesee River Erie Canal

Part II, General Ordinances Chapter 112 Waterfront Consistency Review Ordinance

[HISTORY: Adopted by the Rochester City Council 9-11-1990 by Ord. No. 90-370. Amendments noted where applicable.]

GENERAL REFERENCES

Environmental review — Ch. **48**.
Zoning — See Ch. **120**.

§ 112-1 **Purpose.**

A. The purpose of this chapter is to protect the public health, safety and general welfare in the City of Rochester by providing a framework for governmental agencies to review actions proposed within the boundaries of the City's Local Waterfront Revitalization Program (LWRP). This framework will allow agencies to consider the policies and purposes contained in the City's LWRP when reviewing applications for actions or when directly approving, undertaking or funding agency actions located in the waterfront area. The framework will also ensure that such actions are consistent, to the maximum extent practicable, with said policies and purposes.
[Amended 10-17-2017 by Ord. No. 2017-330]

B. It is the intention of the City of Rochester that the preservation, enhancement and utilization of the natural and manmade resources of the City's unique coastal areas take place in a coordinated and comprehensive manner, in order to ensure a proper balance between natural resource protection and the need to accommodate population growth and economic development. Accordingly, this chapter is intended to achieve such a balance by permitting the beneficial use of coastal resources while preventing loss of living estuarine resources and wildlife; diminution of open space areas or public access to the waterfront; erosion of shoreline; impairment of scenic beauty; losses due to flooding, erosion and sedimentation; or permanent adverse changes to ecological systems.

§ 112-2 **Authority.**

This chapter is enacted under the authority of § 20 of the General City Law and the Waterfront Revitalization and Coastal Resources Act of the State of New York (Article 42 of the Executive Law).

§ 112-3 **Definitions.**

When used in this chapter, the following terms shall have the meanings ascribed to them:

ACTION

The same meaning as in § **48-4** of the Municipal Code (Environmental Review), but shall be limited to those activities that constitute an unlisted or Type I action, as defined in § **48-4**.

AGENCY

Any governmental agency, including but not limited to the City Council, departments, offices, commissions, boards, agencies, officers or other bodies of the City of Rochester.

COASTAL AREA

The New York State coastal waters and adjacent shorelands, as defined in Article 42 of the Executive Law. The specific boundaries of the City's coastal area are shown on the Coastal Area Map on file in the office of the New York State Secretary of State and as delineated in the City of Rochester's Local Waterfront Revitalization Program (Section 1).
[Amended 10-17-2017 by Ord. No. 2017-330]

COASTAL ASSESSMENT FORM (CAF)

The form, contained in Appendix A,[1] which shall be used by an agency to assist it in determining the consistency of an action with the City's LWRP.

CONSISTENT TO THE MAXIMUM EXTENT PRACTICABLE

That an action will not substantially hinder the achievement of any of the LWRP policy standards or conditions and, whenever practicable, will advance one or more of them.

DIRECT ACTIONS

An action planned and proposed for implementation by an agency itself, such as but not limited to a capital project or rulemaking, procedure-making or policy-making decisions or determinations.

LOCAL WATERFRONT AREA (LWA)

That portion of the New York State Coastal Area within the City of Rochester, as delineated in the City's LWRP (Section 1).
[Amended 10-17-2017 by Ord. No. 2017-330]

LOCAL WATERFRONT REVITALIZATION PROGRAM (LWRP)

The Local Waterfront Revitalization Program of the City of Rochester, as approved by the New York State Secretary of State, pursuant to the Waterfront Revitalization and Coastal Resources Act (Executive Law, Article 42), a copy of which is on file in the office of the Clerk of the City of Rochester.
[Amended 10-17-2017 by Ord. No. 2017-330]

[1] *Editor's Note: Appendix A is on file in the City Clerk's office.*

§ 112-4 **Review of actions.**

A. Whenever a proposed action is located in the LWA, an agency shall, prior to approving, funding or undertaking the action, make a determination that it is consistent, to the maximum extent practicable, with the applicable LWRP policy standards and conditions set forth in **§ 112-4G** herein.
[Amended 10-17-2017 by Ord. No. 2017-330]

B. Whenever an agency receives an application for approval or funding of an action or as early as possible in the agency's undertaking of a direct action to be located in the LWA, the applicant or, in the case of a direct action, the agency shall prepare a coastal assessment form (CAF) to assist with the consistency review.

C. Prior to making its determination, the agency shall solicit and consider the recommendation of the Commissioner of the City of Rochester Department of Neighborhood and Business Development or his or her designee regarding the consistency of the proposed action by referring a copy of the completed CAF to the Commissioner within 10 days of its submission to or completion by the agency.
[Amended 2-14-2006 by Ord. No. 2006-22; 6-16-2009 by Ord. No. 2009-179]

D. After referral from an agency, the Commissioner shall consider whether the proposed action is consistent, to the maximum extent practicable, with the LWRP policy standards and conditions set forth in **§ 112-4G** herein. The Commissioner may require the applicant to submit all completed applications, CAFs and any other information or documentation deemed to be necessary in order to make the consistency determination.
[Amended 10-17-2017 by Ord. No. 2017-330]

E. The Commissioner shall render his or her written recommendation to the agency within 10 working days following the submission by the applicant of the required information, unless extended by mutual agreement of the Commissioner and the applicant or, in the case of a direct action, the agency. The recommendation shall indicate whether, in the opinion of the Commissioner, the proposed action is consistent, to the maximum extent practicable, or inconsistent with one or more of the applicable LWRP policy standards or conditions. The recommendation shall state the manner and extent to which any inconsistency affects the LWRP policy standards and conditions.
[Amended 2-14-2006 by Ord. No. 2006-22]

(1) The Commissioner shall, along with his or her consistency determination, make any suggestions to the agency concerning modification of the proposed action in order to make it consistent, to the maximum extent practicable, with the LWRP policy standards and conditions or to greater advance them.
[Amended 2-14-2006 by Ord. No. 2006-22]

(2) In the event that the Commissioner's recommendation is not forthcoming within the specified time, the agency shall make its consistency decision without the benefit of the Commissioner's recommendation.
[Amended 10-17-2017 by Ord. No. 2017-330]

F. The agency shall make the determination of consistency based on the CAF, the recommendation of the Commissioner and such other information as is deemed to be necessary in its determination. The agency shall issue its determination within seven days of receipt of the Commissioner's recommendation.

G. Actions to be undertaken within the LWA shall be evaluated for consistency in accordance with the following LWRP policy standards and conditions, which are derived from and further explained and described in Section 3 of the City of Rochester's LWRP. The LWRP is on file in the City Clerk's office and is available for inspection during normal business

hours. Agencies which undertake direct actions shall also consult with Section 4, Uses and Projects, of the LWRP in making their consistency determination. The action shall be consistent with the policy to:
[Amended 10-17-2017 by Ord. No. 2017-330]

(1) Revitalize and redevelop deteriorating or underutilized institutional, commercial, recreational and residential areas and uses (Policy 1, and subpolicies);

(2) Encourage the development of water-dependent uses near coastal waters (Policy 2 and subpolicies);

(3) Strengthen the economic base of smaller harbor areas (Policy 4 and subpolicies);

(4) Ensure that development occurs where adequate public infrastructure is available to reduce health and pollution hazards (Policy 5 and subpolicies);

(5) Streamline development permit procedures (Policy 6 and subpolicies);

(6) Protect significant and locally important fish and wildlife habitats from human disruption and chemical contamination (Policies 7 and 8 and the respective subpolicies);

(7) Maintain and expand commercial fishing facilities to promote commercial and recreational fishing opportunities (Policy 9 and subpolicies);

(8) Minimize flooding and erosion hazards through nonstructural means, carefully selected, long-term structural measures and appropriate siting of structures (Policies 11, 12, 13, 14, 15 and 17 and the respective subpolicies);

(9) Safeguard economic, social and environmental interests in the coastal area when major actions are undertaken (Policy 18);

(10) Maintain and improve public access to the shoreline and to water-related recreational facilities while protecting the environment (Policies 19 and 20 and the respective subpolicies);

(11) Encourage and facilitate water-dependent and water-enhanced recreational resources and facilities near coastal waters (Policy 21 and subpolicies);

(12) Encourage the development of water-related recreational resources and facilities as multiple uses in appropriate locations within the shore zone (Policy 22 and subpolicies);

(13) Protect and restore historic and archaeological resources (Policy 23 and subpolicies);

(14) Protect and upgrade scenic resources (Policy 25 and subpolicies);

(15) Determine public need, compatibility of facilities with environment, and the facility's need for a shorefront location before constructing major energy facilities in the coastal area (Policy 27 and subpolicies);

(16) Protect surface and ground waters from direct and indirect discharge of pollutants and from overuse (Policies 30, 31, 33, 34, 36, 37, 38 and 40 and the respective subpolicies);

(17) Perform dredging and dredge spoil disposal in a manner protective of natural resources (Policy 35);

(18) Handle and dispose of hazardous wastes and effluents in a manner which will not adversely affect the environment nor expand existing landfills (Policy 39);

(19) Protect air quality in the coastal area (Policy 41); and

(20) Protect tidal and freshwater wetlands (Policy 44).

H. If the agency determines that the action would cause a substantial hindrance to the achievement of the LWRP policy standards and conditions, such action shall not be undertaken unless the agency determines with respect to the proposed

action that:

(1) No reasonable alternatives exist which would permit the action to be undertaken in a manner which would not substantially hinder the achievement of such LWRP policy standards and conditions or which would not hinder the overall implementation of the LWRP;

(2) The proposed action and any required mitigation measures would be undertaken in a manner which would minimize all adverse effects on natural and man-made resources within the LWRP and would minimize the extent to which the implementation of LWRP policy standards and conditions are hindered; and

(3) The action will result in a significant and overriding city, regional or statewide public benefit.

I. Such a finding by the agency shall constitute a determination that the action is consistent to the maximum extent practicable.

J. Each agency shall maintain a file for each action which was the subject of a consistency determination, including any recommendations received from the Commissioner. Such files shall be made available for public inspection upon request.

§ 112-5 **(Reserved)**

§ 112-6 **Coordinated review required.**

[Amended 6-16-2009 by Ord. No. 2009-179]

The agency and the Commissioner of Neighborhood and Business Development or a designee shall coordinate the consistency determination process required by this chapter with the environmental review process required by Chapter 48 of the Municipal Code.

§ 112-7 **Severability.**

The provisions of this chapter are severable. If any provision is found invalid, such finding shall not affect the validity of any part or provision hereof other than the provision so found to be invalid.

For Office Use Only:

Zoning Application number, if any:

BIS Address(es):

City of Rochester

Coastal Assessment Form

A. INSTRUCTIONS

1. The preparer of this Coastal Assessment Form (CAF) should review the policies and policy explanations contained in the City of Rochester Local Waterfront Revitalization Program (LWRP), a copy of which is on file in the offices of the City Planning Office or online at www.cityofrochester.gov/LWRP/. A proposed action should be evaluated as to its beneficial and adverse effects upon the coastal area and its consistency with the policy standards in the LWRP.

2. Applicants, or, in the case of direct actions, City of Rochester agencies shall complete this CAF for proposed actions which are categorized as Unlisted or Type 1 in accordance with the State Environmental Quality Review Act (6NYCRR Part 617) or Chapter 48 of the City Code. This assessment is intended to supplement other information in making a determination of consistency with the policy standards set forth in the LWRP Consistency Review Law (Chapter 112 of the City Code).

3. If any question in Section C on this form is answered "yes", the proposed action may affect the achievement of the LWRP policy standards contained in the Consistency Review Law. Thus, the action should be analyzed in more detail and, if necessary, modified prior to making a determination that it is consistent with the LWRP policy standards.

4. Submit the completed form when applying for a Certificate of Zoning Compliance or Building Permit for the proposed action.

B. **DESCRIPTION OF SITE AND PROPOSED ACTION**

1. Please provide the following information:

   a. Name of applicant:

   b. Mailing address:

   c. Telephone number:

2. Preparer's Name:

   a. Affiliation:

   b. Telephone Number:

   c. Date:

3. Describe nature and extent of action:

4. Type of action:

   a. Directly undertaken (e.g. construction, planning activity, agency regulation, land transaction)

   b. Financial assistance (e.g. grant, loan, subsidy)

   c. Permit, approval, license, certification

   d. Agency undertaking action:

5. Check below if the action will be undertaken, require funding, or approved by a state or federal agency.

   If checked, which agency?

6. Location of action (Street or Site Description and nearest intersection):

7. Size of site (acres):

8. Amount (acres) of site to be disturbed:

9. Present land use:

12. Check if the property is serviced by public water:

13. Check if the property serviced by public sewer:

C. WATERFRONT ASSESSMENT Check "yes" if the proposed action will result in the following conditions. and check "no" if it will not. If any statement is checked "yes", please explain in Section D any measures which will be undertaken to mitigate any adverse effects.

		yes	no
1.	Will the proposed action result in one or more of the following:		
(a)	Physical alteration of two (2) acres or more of land located elsewhere in the waterfront area	☐	☐
(b)	Expansion of existing public services or infrastructure in undeveloped or low density areas of the waterfront area	☐	☐
(c)	Siting or construction of an energy generation facility not subject to Article VII or VIII of the Public Service Law	☐	☐
(d)	Excavation, filling or dredging in surface waters	☐	☐
(e)	Reduction of existing or potential public access to, or along, the shoreline	☐	☐
(f)	Sale or change in use of publicly-owned lands located on the shoreline or underwater	☐	☐
(g)	Development within an erosion hazard area	☐	☐
(h)	Development on a beach, dune, bluff or other natural feature that provides protection against flooding or erosion	☐	☐
(i)	Construction or reconstruction of erosion protective structures	☐	☐
(j)	Diminished or degraded surface or groundwater quantity and/or quality	☐	☐
(k)	Removal of ground cover from the site	☐	☐
2.	Indicate whether the following statements apply to the proposal:		
(a)	If located adjacent to shore:		
(1)	The project requires a waterfront location	☐	☐
(2)	Water-related recreation will be provided	☐	☐
(3)	Public access to the water will be provided	☐	☐
(4)	The project will not eliminate or replace a water-dependent use	☐	☐
(5)	The project will not eliminate or replace a recreational or maritime use or resource	☐	☐

		yes	no
(b)	The project site is presently used by the community as an open space or recreation area		
(c)	The Project will protect, maintain and/or increase the level and types or public access to water-related recreation resources or facilities		
(d)	The project site is presently used for commercial or recreational fishing or fish processing		
(e)	The surface area of any wetland areas will not be decreased by the proposal		
(f)	The project does not involve shipment or storage of petroleum products		
(g)	The project will not involve or change existing ice management practices		
(h)	The project will not alter drainage flow, patterns or surface water runoff on or from the site		

D. **REMARKS OR ADDITIONAL INFORMATION TO SUPPORT OR DESCRIBE ANY ITEM(S) CHECKED "YES".**

City of Rochester

Local Waterfront Revitalization Program

Appendix IV

Significant Coastal Fish and Wildlife Habitats incorporated in the NYS Coastal Management Program



COASTAL FISH & WILDLIFE HABITAT RATING FORM

Name of Area:	**Genesee River**
Designated:	**October 15, 1987**
County:	**Monroe**
Town(s):	**Rochester**
7½' Quadrangle(s):	**Rochester East, NY; Rochester West, NY**

Score	Criterion
20	Ecosystem Rarity (ER) One of 4 major New York tributaries of Lake Ontario; unusual in the Great Lakes Plain ecological region, but rarity is reduced by human disturbances. Geometric mean: $(16 \times 25)^{½}$
0	Species Vulnerability (SV) Spotted salamander (SC) and spotted turtle (SC) have been observed but the extent of use not well documented.
16	Human Use (HU) A major recreational fishing area on Lake Ontario, attracting anglers from throughout New York State and beyond. Locally important for birdwatching and informal nature study.
9	Population Level (PL) Concentrations of spawning slamonids are among the largest occuring in New York's Great Lakes tributaries; unusual in the ecological region.
1.2	Replaceability (R) Irreplaceable

SIGNIFICANCE VALUE = [(ER + SV + HU + PL) X R] = **54**

SIGNIFICANT COASTAL FISH AND WILDLIFE HABITATS PROGRAM
A PART OF THE NEW YORK COASTAL MANAGEMENT PROGRAM

BACKGROUND

New York State's Coastal Management Program (CMP) includes a total of 44 policies which are applicable to development and use proposals within or affecting the State's coastal area. Any activity that is subject to review under Federal or State laws, or under applicable local laws contained in an approved local waterfront revitalization program will be judged for its consistency with these policies.

Once a determination is made that the proposed action is subject to consistency review, a specific policy aimed at the protection of fish and wildlife resources of statewide significance applies. The specific policy statement is as follows: "Significant coastal fish and wildlife habitats will be protected, preserved, and, where practical, restored so as to maintain their viability as habitats." The New York State Department of Environmental Conservation (DEC) evaluates the significance of coastal fish and wildlife habitats, and following a recommenda-tion from the DEC, the Department of State designates and maps specific areas. Although designated habitat areas are delineated on the coastal area map, the applicability of this policy does not depend on the specific location of the habitat, but on the determination that the proposed action is subject to consistency review.

Significant coastal fish and wildlife habitats are evaluated, designated and mapped under the authority of the Coastal Management Program's enabling legislation, the Waterfront Revitalization and Coastal Resources Act (Executive Law of New York, Article 42). These designations are subsequently incorporated in the Coastal Management Program under authority provided by the Federal Coastal Zone Management Act.

This narrative, along with its accompanying map, constitutes a record of the basis for this significant coastal fish and wildlife habitat's designation and provides specific information regarding the fish and wildlife resources that depend on this area. General information is also provided to assist in evaluating impacts of proposed activities on parameters which are essential to the habitat's values. This information is to be used in conjunction with the habitat impairment test found in the impact assessment section to determine whether the proposed activities are consistent with the significant coastal habitats policy.

DESIGNATED HABITAT: GENESSEE RIVER

LOCATION AND DESCRIPTION OF HABITAT:

The Genesee River is a major tributary of Lake Ontario, located in the City of Rochester, Monroe County (7.5' Quadrangles: Rochester West, N.Y.; and Rochester East, N.Y.). The fish and wildlife habitat is an approximate six and one-half mile segment of the river, extending from Lake Ontario to "Lower Falls" (located just above Driving Park Avenue), which is a natural impassable barrier to fish. The Genesee River is a large, warmwater river, with a drainage area of nearly 2,500 square miles, and an average annual discharge of approximately 2,800 cubic feet per second. Maximum water depths of up to 25 feet occur near the river mouth, and a navigation channel has been dredged upstream approximately two and one-half miles. Much of this lower segment is bordered by dense commercial, industrial, and residential development, accompanied by extensive bulkheading. Above this area, the Genesee River flows through a relatively undeveloped wooded gorge, and has a fringe of emergent wetland vegetation along much of its shoreline. This portion of the river is relatively shallow, with a rocky bottom. The only significant development within the gorge is an industrial wastewater treatment facility. However, the river has been subject to considerable water pollution problems, including discharges of sewage and chemical contaminants. Above Lower Falls, the Genesee River has been dammed for hydroelectric power development, resulting in some alteration of river flows downstream.

FISH AND WILDLIFE VALUES:

The Genesee River is one of 4 major New York tributaries of Lake Ontario. The large size of this river, and the fact that much of the river corridor is essentially undisturbed, makes this one of the most important potential fish and wildlife habitats in the Great Lakes Plain ecological region of New York State. However, water pollution, and extensive alteration of the lower river channel, have reduced the environmental quality of this area.

The Genesee River is a highly productive warmwater fisheries habitat, supporting concentrations of many resident and Lake Ontario based fish species. Among the more common resident species are smallmouth bass, brown bullhead, northern pike, channel catfish, walleye, carp, and white sucker. Lake-run species found in the Genesee River include white bass, yellow perch, white perch, smelt, bowfin, sheepshead, rock bass, and American eel. These fish populations are supplemented by seasonal influxes of large numbers of trout and salmon. In the spring (late February - April), steelhead (lake-run rainbow trout) run up the river, and lake trout occur at the mouth. In fall (September - November, primarily), concentrations of coho and chinook salmon, brown trout, and steelhead, are found throughout the river during their spawning runs. The salmonid concentrations in the Genesee River are among the largest occurring in tributaries of Lake Ontario, and are largely the result of an ongoing effort by the NYSDEC to establish a major salmonid fishery in the Great Lakes through stocking. In 1985, approximately 20,000 steelhead and 300,000 chinook salmon were released in the river. The Genesee River provides an important recreational fishery, attracting anglers from throughout New York State and beyond. Its location within the city results in very heavy fishing pressure from residents of the Rochester metropolitan area, concentrated primarily at the river mouth, and between Seth Green Island and Lower Falls. Although the seasonal salmonid runs attract the greatest number of fishermen to the area, the river also supports an active warmwater fishery.

Wildlife use of the Genesee River is not well documented, but appears to be limited to those species that can inhabit a relatively narrow riparian corridor, and are somewhat tolerant of human activities in adjacent areas. Possible or confirmed breeding bird species include mallard, wood duck, great horned owl, red-tailed hawk, spotted sandpiper, belted kingfisher, red-winged blackbird, swamp sparrow, and various woodpeckers and woodland passerine birds. Several beaver colonies inhabit the lower Genesee in the vicinity of Turning Point Park and Rattlesnake Point. Spotted salamander (SC) and spotted turtle (SC) have been observed in the Lower Genesee River Gorge but the extent of use by these species is not well documented. Other wildlife species occurring in the area probably include raccoon, muskrat, northern water snake, and painted turtle. The wildlife resources of the Genessee River and its adjacent woodlands are locally important for birdwatching, and informal nature study.

IMPACT ASSESSMENT:

A **habitat impairment test** must be met for any activity that is subject to consistency review under federal and State laws, or under applicable local laws contained in an approved local waterfront revitalization program. If the proposed action is subject to consistency review, then the habitat protection policy applies, whether the proposed action is to occur within or outside the designated area.

The specific **habitat impairment test** that must be met is as follows.

> In order to protect and preserve a significant habitat, land and water uses or development shall not be undertaken if such actions would:
>
> ! destroy the habitat; or,
>
> ! significantly impair the viability of a habitat.

Habitat destruction is defined as the loss of fish or wildlife use through direct physical alteration, disturbance, or pollution of a designated area or through the indirect effects of these actions on a designated area. Habitat destruction may be indicated by changes in vegetation, substrate, or hydrology, or increases in runoff, erosion, sedimentation, or pollutants.

Significant impairment is defined as reduction in vital resources (e.g., food, shelter, living space) or change in environmental conditions (e.g., temperature, substrate, salinity) beyond the tolerance range of an organism. Indicators of a significantly impaired habitat focus on ecological alterations and may include but are not limited to reduced carrying capacity, changes in community structure (food chain relationships, species diversity), reduced productivity and/or increased incidence of disease and mortality.

The *tolerance range* of an organism is not defined as the physiological range of conditions beyond which a species will not survive at all, but as the ecological range of conditions that supports the species population or has the potential to support a restored population, where practical. Either the loss of individuals through an increase in emigration or an increase in death

rate indicates that the tolerance range of an organism has been exceeded. An abrupt increase in death rate may occur as an environmental factor falls beyond a tolerance limit (a range has both upper and lower limits). Many environmental factors, however, do not have a sharply defined tolerance limit, but produce increasing emigration or death rates with increasing departure from conditions that are optimal for the species.

The range of parameters which should be considered in appplying the habitat impairment test include but are not limited to the following:

1. physical parameters such as living space, circulation, flushing rates, tidal amplitude, turbidity, water temperature, depth (including loss of littoral zone), morphology, substrate type, vegetation, structure, erosion and sedimentation rates;

2. biological parameters such as community structure, food chain relationships, species diversity, predator/prey relationships, population size, mortality rates, reproductive rates, meristic features, behavioral patterns and migratory patterns; and,

3. chemical parameters such as dissolved oxygen, carbon dioxide, acidity, dissolved solids, nutrients, organics, salinity, and pollutants (heavy metals, toxics and hazardous materials).

Although not comprehensive, examples of generic activities and impacts which could destroy or significantly impair the habitat are listed below to assist in applying the habitat impairment test to a proposed activity.

Any activity that substantially degrades water quality, increases temperature or turbidity, reduces flows, or increases water level fluctuations in the Genesee River, would affect the biological productivity of this area. Important species of fish and wildlife would be adversely affected by water pollution, such as chemical contamination (including food chain effects), oil spills, excessive turbidity, and waste disposal. Continued efforts should be made to improve water quality in the river, which is primarily dependent upon controlling discharges from combined sewer overflows, industrial point sources, ships, and agricultural lands in the watershed.

The existing navigation channel should be dredged between mid-May and mid-August or between mid-November and early April in order to avoid impacts on the habitat use by migrating salmonids. Activities that would affect the habitat abobe the navigation channel should not be conducted during the period from March through July in order to protect warmwater fish habitat values. New dredging (outside the existing navigation channel) would likely result in the direct removal of warmwater fish habitat values and should not be permitted. Contaminated dredge spoils should be deposited in upland containment areas.

Barriers to fish migration, whether physical or chemical, would have significant effects on fish populations within the river, and in adjacent Lake Ontario waters. Installation and operation of water intakes could have a significant impact on fish concentrations, through impingement of juveniles and adults, or entrainment of eggs and larval stages. Elimination of wetland habitats (including submergent aquatic beds), and further human encroachment into the river channel, would severely reduce its value to fish and wildlife. Existing areas of natural vegetation bordering the river should be maintained for their value as cover, perching sites, and buffer zones.

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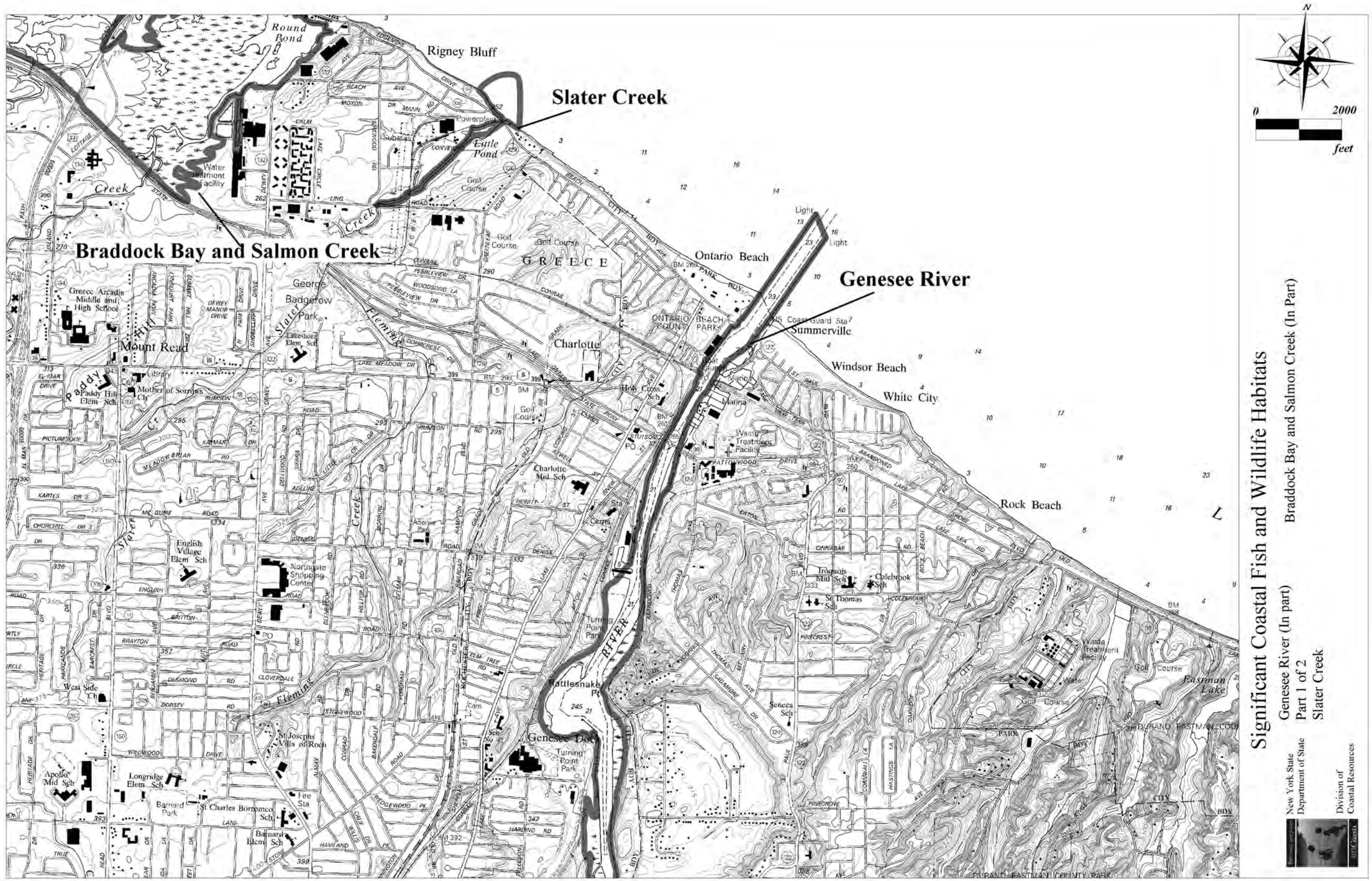
Braddock Bay and Salmon Creek
Slater Creek
Genesee River
Rigney Bluff
Round Pond
Little Pond
Water Department Facility
Creek
Creek
Creek
Slater
Fleming
Mount Read
Paddy Hill
Ontario Beach
GREECE
Ontario Beach Park
Charlotte
Summerville
Windsor Beach
White City
Rock Beach
Marina
Golf Course
Golf Course
Golf Course
Golf Course
Golf Course
Badgerow Park
Lakeshore Elem Sch
Greece Arcadia Middle and High School
Mother of Sorrows
Paddy Hill Elem Sch
Library
Holy Cross Sch
Charlotte Mid Sch
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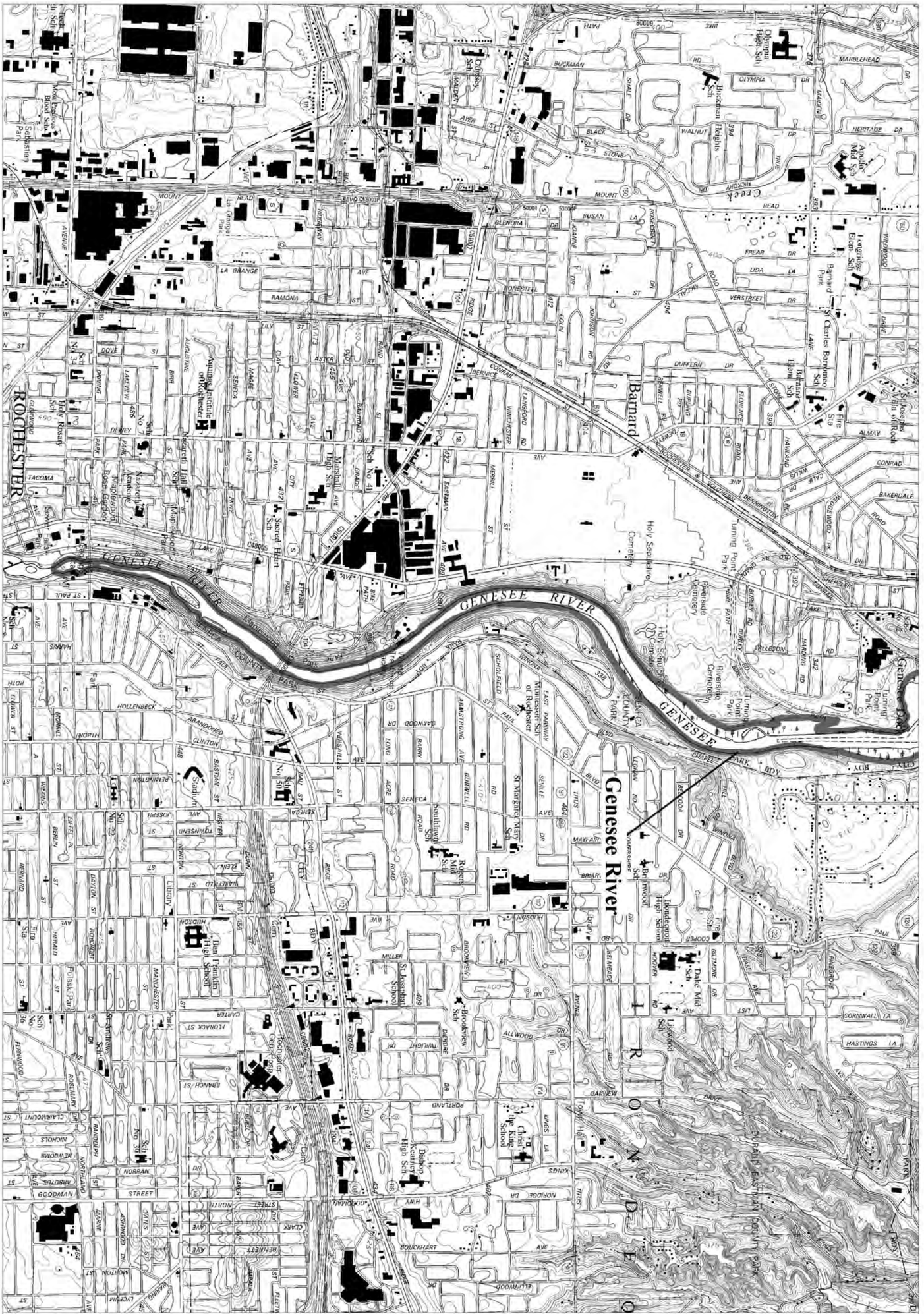

Significant Coastal Fish and Wildlife Habitats

Genesee River (In Part)
Part 2 of 2

New York State
Department of State

Division of
Coastal Resources

COASTAL FISH & WILDLIFE HABITAT RATING FORM

Name of Area:	**Irondequoit Bay and Creek**
Designated:	**October 15, 1987**
County:	**Monroe**
Town(s):	**Irondequoit, Webster, Penfield, Perinton, Rochester**
7½' Quadrangle(s):	**Rochester East, NY; Webster, NY; Fairport, NY**

Score	**Criterion**
25	Ecosystem Rarity (ER) One of the major coastal bay and tributary systems on the Great Lakes coastal region.
24	Species Vulnerability (SV) Least bittern (SC) and sedge wren (SC) nesting. Additive division: 16 + 16/2
9	Human Use (HU) A major recreational fishing area on Lake Ontario, attracting anglers from throughout western and central New York.
9	Population Level (PL) Concentrations of many warmwater fish species and salmonids are unusual in the Great Lakes Plain ecological region.
1.2	Replaceability (R) Irreplaceable

SIGNIFICANCE VALUE = [(ER + SV + HU + PL) X R] = **80**

SIGNIFICANT COASTAL FISH AND WILDLIFE HABITATS PROGRAM
A PART OF THE NEW YORK COASTAL MANAGEMENT PROGRAM

BACKGROUND

New York State's Coastal Management Program (CMP) includes a total of 44 policies which are applicable to development and use proposals within or affecting the State's coastal area. Any activity that is subject to review under Federal or State laws, or under applicable local laws contained in an approved local waterfront revitalization program will be judged for its consistency with these policies.

Once a determination is made that the proposed action is subject to consistency review, a specific policy aimed at the protection of fish and wildlife resources of statewide significance applies. The specific policy statement is as follows: "Significant coastal fish and wildlife habitats will be protected, preserved, and, where practical, restored so as to maintain their viability as habitats." The New York State Department of Environmental Conservation (DEC) evaluates the significance of coastal fish and wildlife habitats, and following a recommenda-tion from the DEC, the Department of State designates and maps specific areas. Although designated habitat areas are delineated on the coastal area map, the applicability of this policy does not depend on the specific location of the habitat, but on the determination that the proposed action is subject to consistency review.

Significant coastal fish and wildlife habitats are evaluated, designated and mapped under the authority of the Coastal Management Program's enabling legislation, the Waterfront Revitalization and Coastal Resources Act (Executive Law of New York, Article 42). These designations are subsequently incorporated in the Coastal Management Program under authority provided by the Federal Coastal Zone Management Act.

This narrative, along with its accompanying map, constitutes a record of the basis for this significant coastal fish and wildlife habitat's designation and provides specific information regarding the fish and wildlife resources that depend on this area. General information is also provided to assist in evaluating impacts of proposed activities on parameters which are essential to the habitat's values. This information is to be used in conjunction with the habitat impairment test found in the impact assessment section to determine whether the proposed activities are consistent with the significant coastal habitats policy.

DESIGNATED HABITAT: IRONDEQUOIT BAY AND CREEK

LOCATION AND DESCRIPTION OF HABITAT:

Irondequoit Bay and Creek are located approximately four miles east of downtown Rochester, N.Y. The bay and creek encompass approximately 2,000 acres located in the City of Rochester and the Towns of Irondequoit, Webster, Perinton, and Penfield, Monroe County (7.5' Quadrangles: Rochester East, N.Y.; Webster, N.Y.; and Fairport, N.Y.). The fish and wildlife habitat includes the entire bay area, a large emergent wetland area at the south end of the bay, and Irondequoit Creek, upstream approximately seven miles from the bay to the confluence with Thomas Creek, just south of the Penn Central Railroad tracks. Irondequoit Bay is separated from Lake Ontario by a sandy barrier beach formation, and is bordered by relatively steep wooded slopes and bluffs. However, much of the western shoreline has been developed for residential and commercial uses. Irondequoit Creek is a very large, medium gradient, coolwater stream, which drains approxi-mately 170 square miles of predominantly suburban and rural residential lands.

FISH AND WILDLIFE VALUES:

Irondequoit Bay and Creek comprise one of the few major coastal bay and tributary systems in the Great Lakes Plain ecological region of New York. The wetland area at the south end of the bay is one of the largest coastal marshes on western Lake Ontario. Irondequoit Bay supports a diverse and productive warmwater fishery, including such species as smallmouth bass, largemouth bass, northern pike, brown bullhead, white perch, white bass, longnose gar, and lake herring. Extensive beds of submergent and emergent wetland vegetation, found in most coves and tributary mouths, are important spawning and nursery areas for many of these species. Irondequoit Bay and Creek also have significant concentrations of steelhead (lake-run rainbow trout), coho salmon, and brown trout. These salmonids migrate through the bay and enter the creek to spawn (unsuccessfully in most instances) between late August and December. Steelhead also migrate into Irondequoit Creek between late February and April. Seasonal runs of salmonids occur as far inland as the confluence with Trout Creek, near the hamlet of Mendon, but actual population levels in the upper reaches (i.e., above Thomas Creek) are not well documented. Salmonid concentrations in Irondequoit Bay and Creek are the result of an ongoing effort by the NYSDEC to restore the Great Lakes salmonid fishery through stocking. In 1984, approximately 24,000 steelhead were released in Irondequoit Creek (as far inland as Trout Creek), and approxi-mately 25,000 brown trout were released in the bay. Irondequoit Creek is also one of only three Lake Ontario tributaries where the NYSDEC is conducting an experimental landlocked (Atlantic) salmon stocking program to restore this fishery in the Great Lakes. Approximately 18,000 yearling Atlantic salmon were released in the creek in 1984. In the spring, salmonids are generally found out along the Lake Ontario shoreline and provide troll fishing opportunities for many anglers. During the winter months, Irondequoit Bay is a popular ice fishing area. As a result of the abundant fisheries resources in the area, anglers from throughout western and central New York are attracted to Irondequoit Bay.

The entire Irondequoit Bay complex is used as a resting and feeding area by waterfowl during spring and fall migrations. Species that regularly occur here during these periods include

common goldeneye, mergansers, mallard, blue-winged teal, wood duck, canvasback, redhead, scaup, black duck, and Canada goose. This resource provides waterfowl hunting opportunities in the fall to sportsmen in the local area. Most of this hunting activity occurs along the eastern shore of the bay, in the Town of Webster. Depending on the extent of ice cover each year, some waterfowl may remain in the bay in winter; mid-winter aerial surveys of waterfowl abundance for the ten year period l976-l985 indicate average concentrations of over l00 birds in the area each year (370 in peak year), dominated by mergansers, scaup, common goldeneye, and mallard. Wetland areas located around the shoreline, and especially at the south end of the Irondequoit Bay, are also productive habitats for a variety of marsh nesting birds. Probable or confirmed breeding bird species in these areas include green-backed heron, least bittern (SC), mallard, blue-winged teal, wood duck, Virginia rail, sora, common moorhen, belted kingfisher, marsh wren, sedge wren (SC), red-winged blackird, and swamp sparrow.

IMPACT ASSESSMENT:

A **habitat impairment test** must be met for any activity that is subject to consistency review under federal and State laws, or under applicable local laws contained in an approved local waterfront revitalization program. If the proposed action is subject to consistency review, then the habitat protection policy applies, whether the proposed action is to occur within or outside the designated area.

The specific **habitat impairment test** that must be met is as follows.

> In order to protect and preserve a significant habitat, land and water uses or development shall not be undertaken if such actions would:
>
> ! destroy the habitat; or,
>
> ! significantly impair the viability of a habitat.

Habitat destruction is defined as the loss of fish or wildlife use through direct physical alteration, disturbance, or pollution of a designated area or through the indirect effects of these actions on a designated area. Habitat destruction may be indicated by changes in vegetation, substrate, or hydrology, or increases in runoff, erosion, sedimentation, or pollutants.

Significant impairment is defined as reduction in vital resources (e.g., food, shelter, living space) or change in environmental conditions (e.g., temperature, substrate, salinity) beyond the tolerance range of an organism. Indicators of a significantly impaired habitat focus on ecological alterations and may include but are not limited to reduced carrying capacity, changes in community structure (food chain relationships, species diversity), reduced productivity and/or increased incidence of disease and mortality.

The *tolerance range* of an organism is not defined as the physiological range of conditions beyond which a species will not survive at all, but as the ecological range of conditions that supports the species population or has the potential to support a restored population, where

practical. Either the loss of individuals through an increase in emigration or an increase in death rate indicates that the tolerance range of an organism has been exceeded. An abrupt increase in death rate may occur as an environmental factor falls beyond a tolerance limit (a range has both upper and lower limits). Many environmental factors, however, do not have a sharply defined tolerance limit, but produce increasing emigration or death rates with increasing departure from conditions that are optimal for the species.

The range of parameters which should be considered in appplying the habitat impairment test include but are not limited to the following:

1. physical parameters such as living space, circulation, flushing rates, tidal amplitude, turbidity, water temperature, depth (including loss of littoral zone), morphology, substrate type, vegetation, structure, erosion and sedimentation rates;

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3. chemical parameters such as dissolved oxygen, carbon dioxide, acidity, dissolved solids, nutrients, organics, salinity, and pollutants (heavy metals, toxics and hazardous materials).

Although not comprehensive, examples of generic activities and impacts which could destroy or significantly impair the habitat are listed below to assist in applying the habitat impairment test to a proposed activity.

Any activity that degrades water quality, increases temperature or turbidity, alters water depths, or reduces flows in Irondequoit Bay or Creek would adversely affect the fish and wildlife resources of this area. Discharges of sewage or stormwater runoff containing sediments, nutrients, or chemical pollutants could adversely impact on fish and wildlife resources. Warmwater species would be most sensitive during March through July, when spawning and incubation take place. Salmonids would be most sensitive during their respective spawning periods, and in the spring after hatchery-raised fish are released in the creek. Barriers to fish migration, whether physical or chemical, would have a significant effect on salmonid populations in Irondequoit Bay and Creek. Activities affecting Irondequoit Creek as far inland as Trout Creek should be evaluated for potential impacts. The fisheries resources in Irondequoit Bay could support increased recreational fishing pressure, resulting in a fishery of statewide or greater significance. Expansion of the channel connecting Irondequoit Bay with Lake Ontario may significantly increase access for human uses of fish and wildlife in this area. However, improved motorboat access may also stimulate further development of marinas and housing around the bay. Such development could have significant impacts on fish and wildlife, through disturbance or elimination of productive wetland areas and littoral zones, and through pollution of the bay from upland activities. Existing areas of natural vegetation bordering Irondequoit Bay and Creek should be maintained to provide bank cover, perching sites, soil stabilization, and buffer zones.

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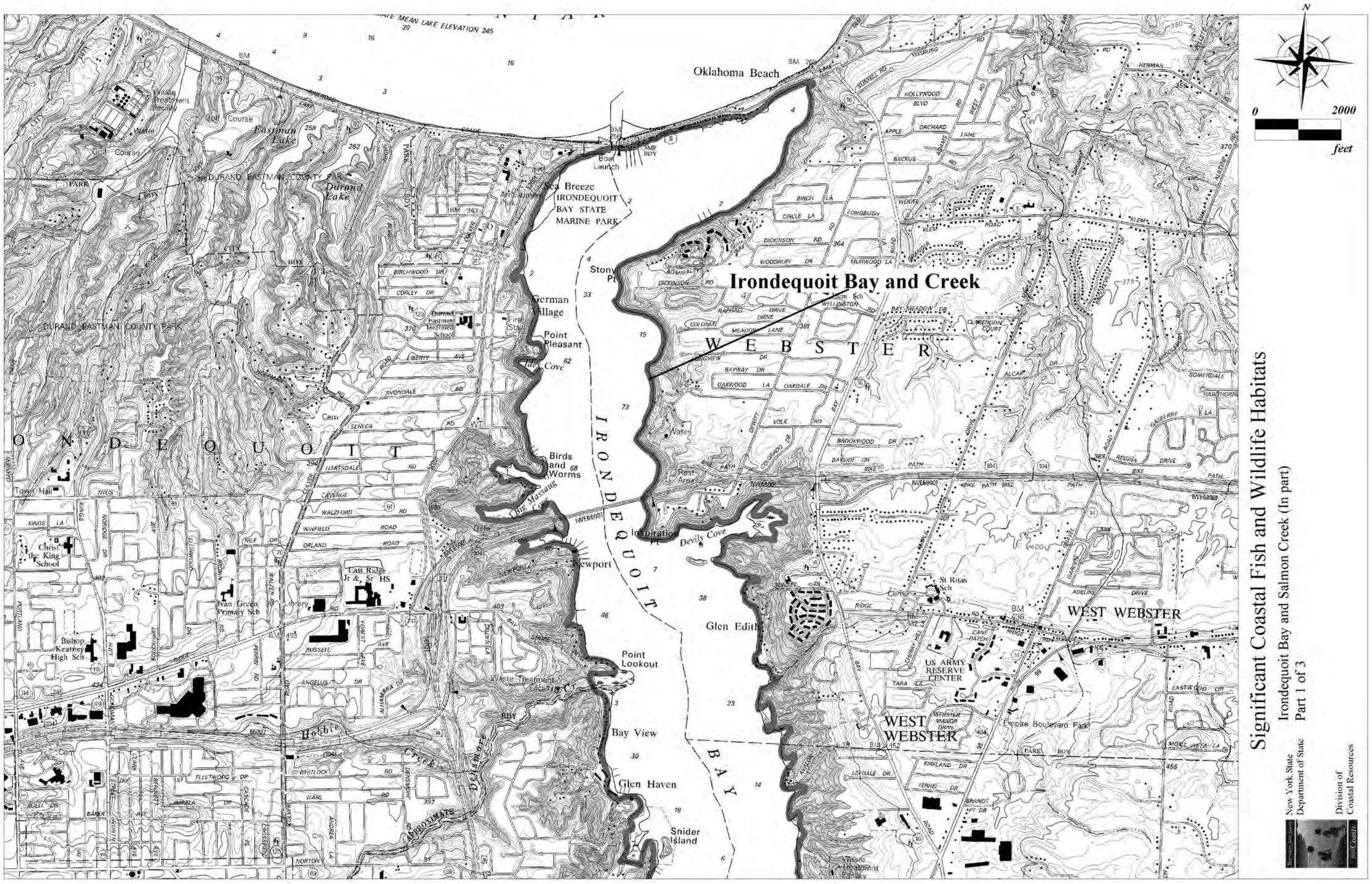

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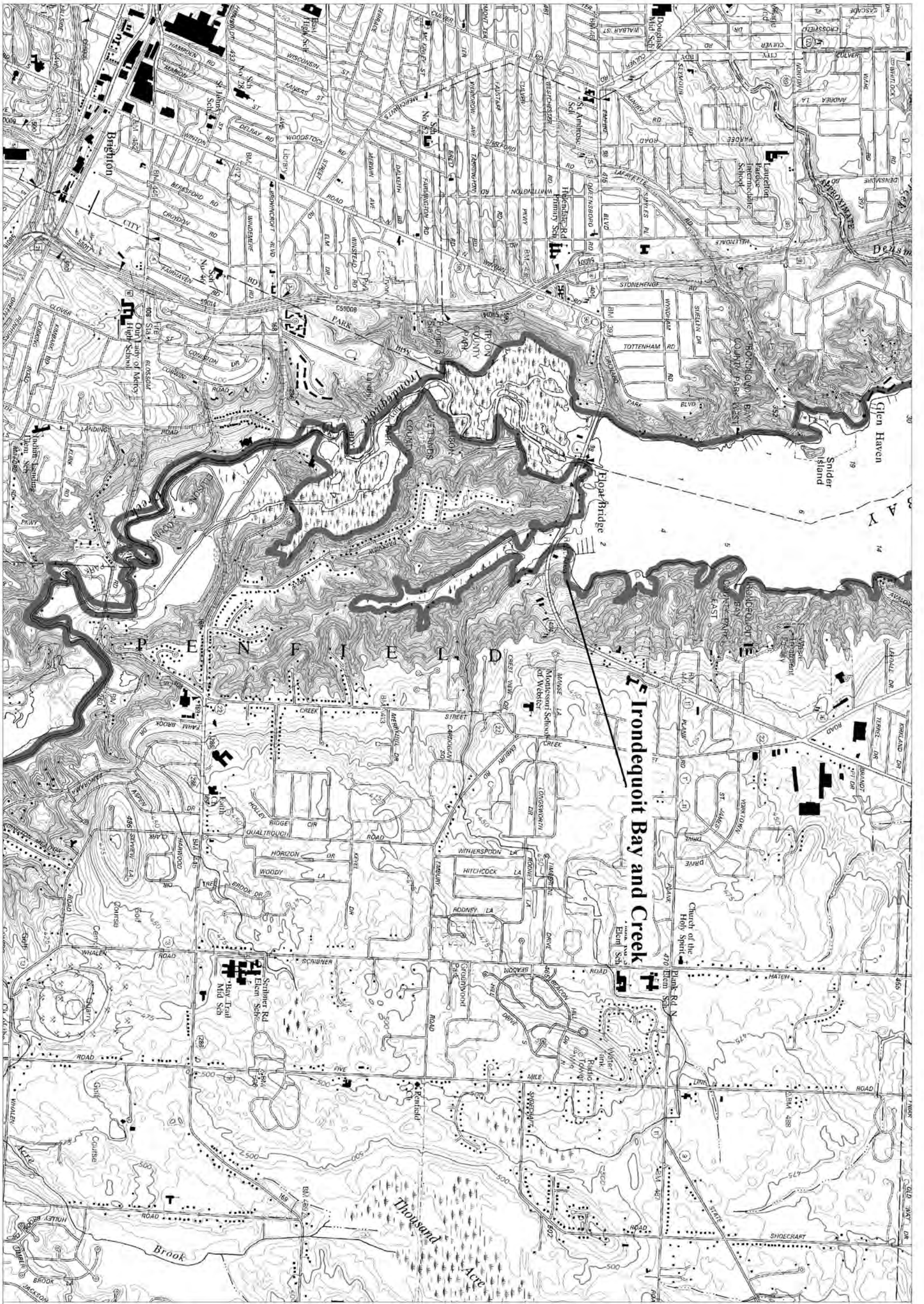

Significant Coastal Fish and Wildlife Habitats

Irondequoit Bay and Salmon Creek (In part)
Part 2 of 3

New York State Department of State
Division of Coastal Resources

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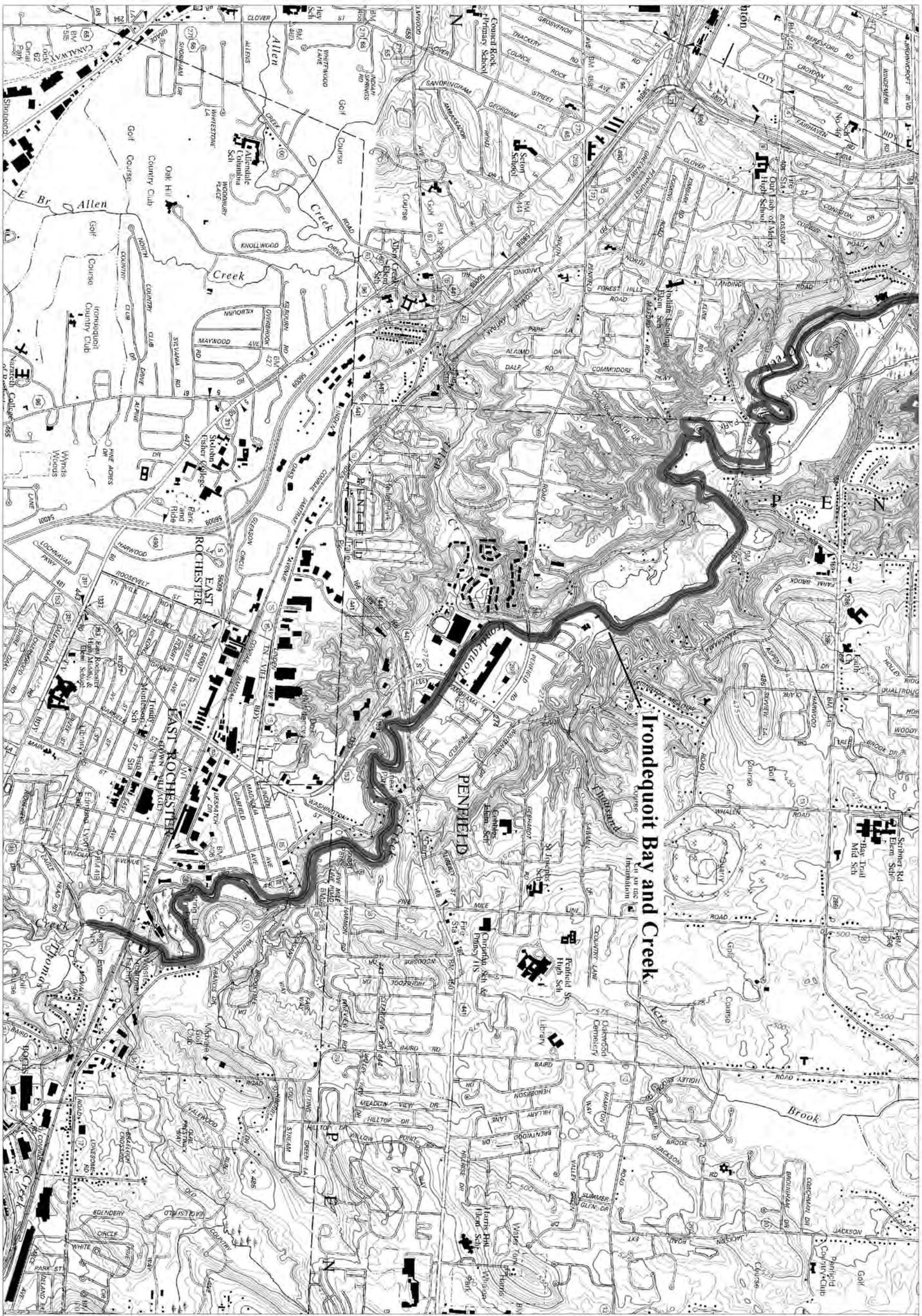

Significant Coastal Fish and Wildlife Habitats

Irondequoit Bay and Salmon Creek (In part)
Part 3 of 3

New York State Department of State
Division of Coastal Resources

0 2000 feet

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City of Rochester

Local Waterfront Revitalization Program

Appendix V

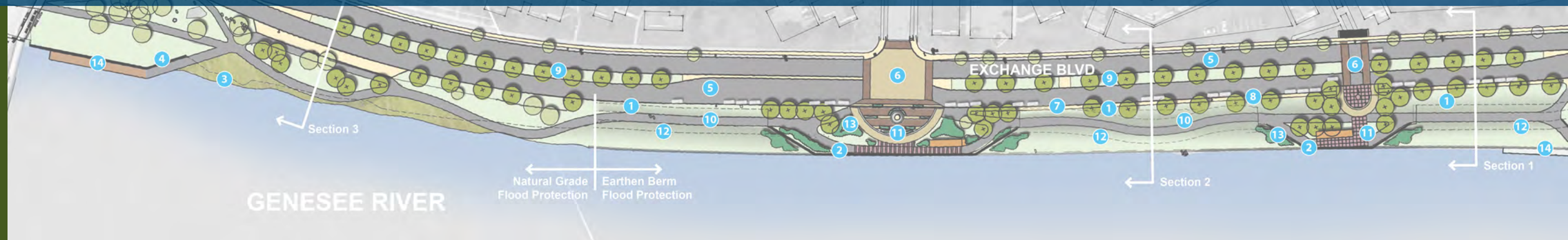
West River Wall Master Plan

Lake Ontario Genesee River Erie Canal

WEST RIVER WALL MASTER PLAN

planning and preliminary design

ROCHESTER, NEW YORK | JANUARY 2015



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architects // engineers // planners

acknowledgments

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City of Rochester Mayor

The Honorable Lovely A. Warren

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John Curran	PLEX-Southwest Rochester Riverfront
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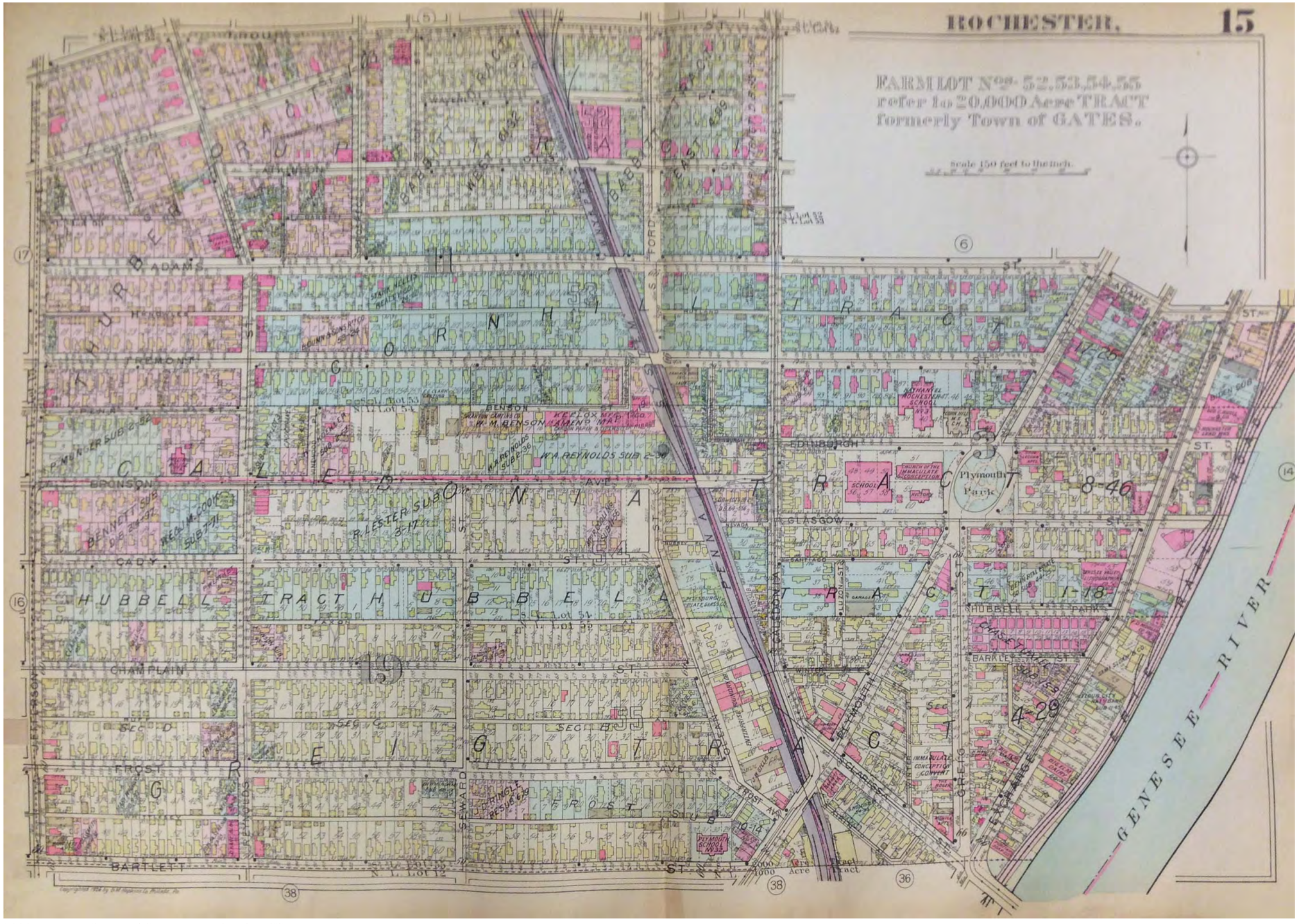


1926 PLAT MAP OF THE CORN HILL NEIGHBORHOOD

introduction

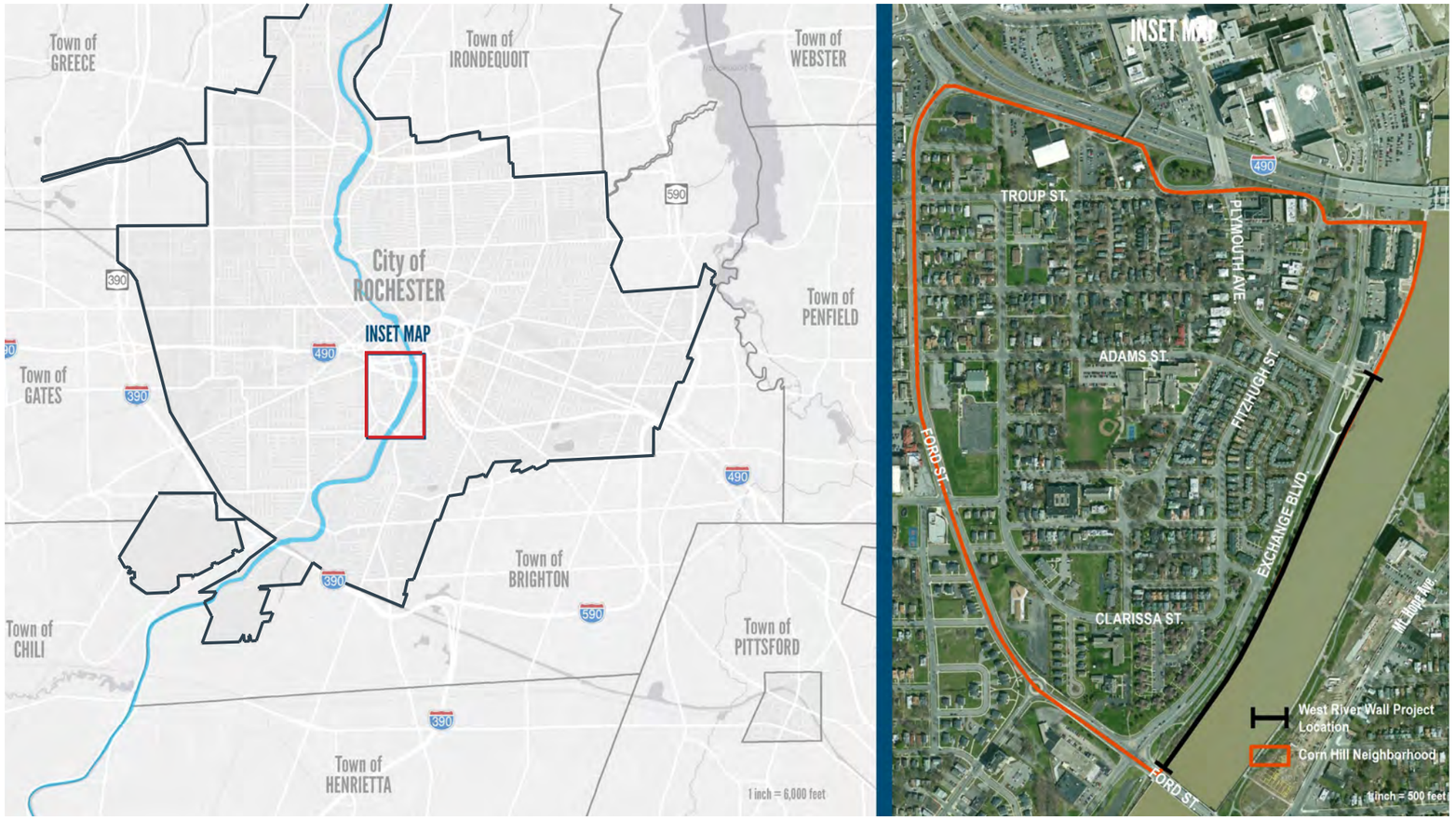
Project History

The City of Rochester is actively planning for and investing in the redevelopment and modernization of its waterfront. Plans and investments, such as the Genesee South Corridor Development Plan, Corn Hill Vision Plan, Local Waterfront Revitalization Plan, Vacuum Oil Brownfield Opportunity Area, redevelopment at Brooks Landing, Corn Hill Landing, University of Rochester student housing, Erie Harbor Park, and reconstruction of the East River Wall and the Ford Street Bridge are some of the primary private and public projects redefining and reshaping the city's relationship with the Genesee River.

As part of this ongoing effort, the City of Rochester, with a matching grant from the New York State Department of State, has undertaken a study to evaluate a 2,200 foot stretch of the West River Wall (and approximately 3.7 acres of adjacent green space) located on the west side of the Genesee River, between Plymouth Avenue and Ford Street, and directly south of Corn Hill Landing.

The West River Wall was constructed in 1918 to facilitate shipping and commercial activities along the Genesee River, while also serving to protect the adjacent neighborhoods from river flooding. Corn Hill, established along the west side of the river in the early 19th Century, is the oldest neighborhood in Rochester. The neighborhood's early growth and development were directly influenced by its proximity to the Genesee River and the opening of the Erie Canal in 1825.

The West River Wall was considered an accredited flood protection structure until 2008 when the Federal Emergency Management Agency (FEMA) developed revised flood maps for Monroe County, including the Corn Hill area. As part of that process, FEMA de-accredited the West River Wall (in part due to its condition), thus triggering new flood insurance requirements for some property owners. Since its importance as a flood control structure no longer meets FEMA guidelines, the wall has become less important as a flood protection measure and is now a physical and visual barrier, separating the community from the Genesee River waterfront.



PROJECT LOCATION MAP



VIEW OVER TOP OF RIVER WALL LOOKING EAST



2012 CORN HILL COMMUNITY VISION PLAN

Project Goals and Outcomes

The primary goals of this project are to recommend a flood protection solution within the study area that supports the community's objectives to preserve natural and historic features, improve visual access to the river, and improve physical access to the river. The project also seeks to interpret the history of the area while establishing an accessible water and land-based recreational resource for the community.

The specific outcomes of this report are the following:

1. A master plan for improving public spaces and enhancing physical / visual access to the Genesee River;
2. Determination of the base flood elevation of the Genesee River within the project study area;
3. Evaluation of the condition of the West River Wall; and
4. Recommendation for a cost-effective solution that provides flood protection and supports the master plan.

In addition to the above outcomes, the City has begun a parallel effort to prepare a Letter of Map Revision (LOMR) for the purpose of revising the base flood elevation. The LOMR will be submitted to FEMA and if accepted, some properties in Corn Hill may have reduced flood insurance premiums. The LOMR process is described in more detail in the Implementation section of this report.

The balance of this report and supporting documents describe the analysis, evaluation of alternatives, and master plan recommendation completed for this project. In addition, Appendix E includes 50% Design Drawings for the recommended flood protection structure.

Project Partners

This project was funded in part by the New York State Department of State, which awarded a matching grant to the City of Rochester to evaluate potential public space improvements to the waterfront as well as reasonable reconstruction alternatives for the West River Wall. Project partners included:

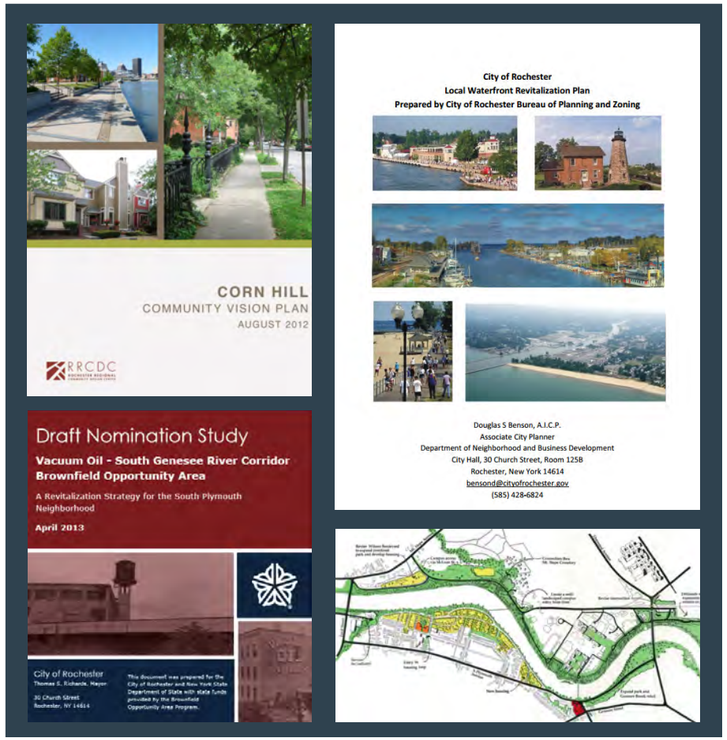
- The New York State Canal Corporation (NYSCC), which owns and maintains the River Wall. The section of the Genesee River from its intersection with the Erie Canal in Genesee Valley Park north to the Court Street Dam is part of the NYS Canal System and the NYSCC maintains a navigable channel in this section of the river;
- The New York State Department of Environmental Conservation (NYSDEC), which regulates the environmental quality of water bodies in New York State, including the Genesee River;
- The Federal Emergency Management Agency (FEMA), which oversees the National Flood Insurance Program and identifies flood hazard areas through its Risk Mapping, Assessment and Planning program;
- The City of Rochester, which owns and maintains the vacant lands between the River Wall and Exchange Boulevard;
- The PLEX Neighborhood, which is located immediately south of the project location;
- South Wedge Planning Committee, located on the East side of the Genesee River; which is focused on making the South Wedge a great place to live, work, and play;
- The Corn Hill Neighborhood Association, which is actively involved in the planning and revitalization of the waterfront; and
- Mark IV Enterprises, developer of Corn Hill Landing.

Related Planning Efforts

Over the last few decades, both public and neighborhood entities have developed several plans and design concepts for the Corn Hill area and the south Genesee River corridor. These include:

- Genesee River South Corridor Land Use and Development Plan (1986)
- Local Waterfront Revitalization Plan (1990)
- New York State Canal Recreationway Plan (1995)
- Erie Canalway National Heritage Corridor Preservation and Management Plan (2006)
- Corn Hill Community Vision Plan (2012)
- Vacuum Oil Brownfield Opportunity Area Plan (2013)
- Local Waterfront Revitalization Plan Update (Expected completion June 2015)

Though the LWRP update is not scheduled for completion until June 2015, it is noted that the existing LWRP Project C.5 – Regional Trailways (Genesee Riverway Trail) includes development of a continuous linear river trail system connecting the Seaway Trail, Erie Canal Heritage Trail and the Genesee Greenway Trails. The



project calls for providing high quality trail amenities including parking at trail heads, information & safety signs, solid trail surfaces, etc. The West River Wall Master Plan project begins the planning and waterfront conceptual design process for an enhanced trail link in this area.

Many of the recommendations presented in these plans were incorporated into the 2012 Corn Hill Community Vision Plan (Vision Plan), completed by the Corn Hill Neighborhood Association and the Rochester Regional Community Design Center. Key principles from the Vision Plan that are most relevant to this project include recommendations for improved connections to the Genesee River, including:

- Protect, improve, and utilize the River
- Integrate the River into the daily lives of Corn Hill residents
- Highlight the River as a destination for recreation, entertainment and activities
- Create safe pedestrian crossings
- Improve gateways and construct amenities such as seating, pedestrian lighting and signage.

These recommendations serve as guiding principles for this project and were incorporated into planning and preliminary design recommendations presented in later sections of this report.

Civic Engagement

Throughout the course of this project, the City of Rochester has engaged a variety of stakeholders and provided numerous opportunities for public participation. The City convened a Technical Advisory Committee (TAC) and a Citizens Advisory Committee (CAC) for the purpose of providing guidance and feedback on the project at regular intervals.

Technical Advisory Committee (TAC) included representatives from the City of Rochester, the NYS Canal Corporation, the NYS Department of State, the NYS Department of Environmental Conservation, and Bergmann Associates.

Citizen Advisory Committee (CAC) included representatives from the Corn Hill Neighborhood Association, the Rochester Regional Community Design Center, Plymouth-Exchange Neighborhood Association (PLEX), Landmark Society, Rochester Bicycling Alliance, Genesee Waterways Center, Southwest Common Council, residents and interested members of the community.

Each committee met three times. These technical experts, citizen advisors and community members have provided valuable input that has been incorporated into the recommended Master Plan and wall reconstruction design. In addition, the City hosted two public meetings:

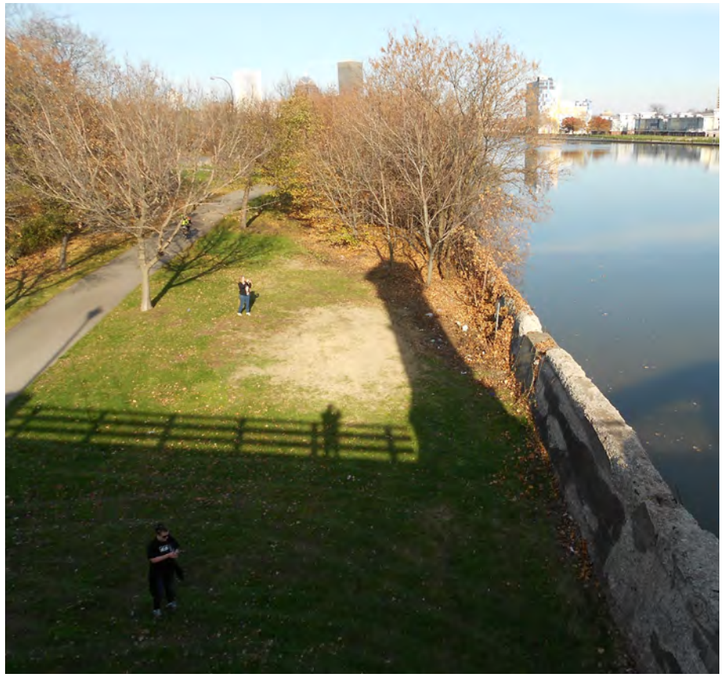
Public Meeting #1, held in September 2014, introduced the project to the community, including the various issues that needed to be addressed. Participants provided feedback on the proposed alternatives, noting support for the recommended flood protection alternative and master plan.

Public Meeting #2, held in late November 2014, included a presentation of the recommended Master Plan, timeline and implementation strategy.

Detailed summaries of each meeting are included in Appendix A.



AN OBSTRUCTED VIEW OF THE RIVER FROM THE RIVERWAY TRAIL, LOOKING SOUTH



THE RIVERWAY TRAIL AND THE WEST RIVER WALL, LOOKING NORTH TOWARDS DOWNTOWN FROM THE FORD STREET BRIDGE



VIEW LOOKING SOUTH SHOWING RELATIONSHIP OF EXISTING TRAIL AND EXCHANGE BOULEVARD

existing conditions

A comprehensive evaluation and inventory of existing conditions was completed to help inform the selection of alternatives and recommendations. A complete review of this process can be found in Appendix B, Interim Report. This section summarizes several of the key conditions and factors with potential to influence the various alternatives considered.[1]

The Corn Hill Neighborhood

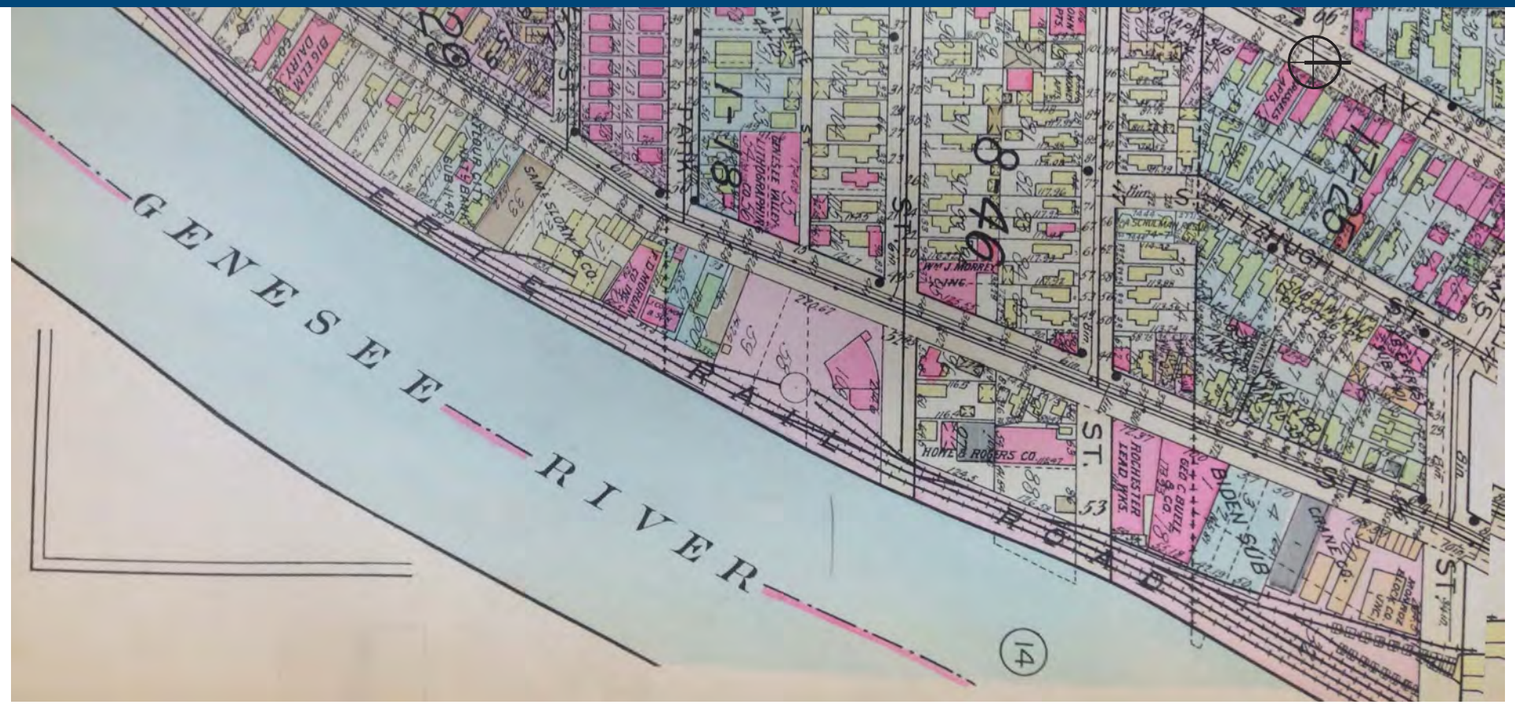
The historic relationship between the Corn Hill neighborhood, the Genesee River and the West River Wall is a key factor that influenced recommendations for flood protection and design of future public spaces within the vicinity. The following section provides information about the history and existing conditions of the neighborhood, including its relationship to the River.



HISTORIC CORN HILL MANSIONS

Historic and Cultural Context

The Corn Hill neighborhood was established along the west side of the Genesee River in the early 19th Century and is the oldest neighborhood in Rochester. The neighborhood was originally known as “Rochesterville” and later as the Third Ward. The neighborhood’s current day boundaries are defined by the I-490 to the north, the Genesee River to the east and Ford Street to the south and west. Corn Hill’s early growth and development were directly influenced by its proximity to the Genesee River and the opening of the Erie Canal in 1825.



1926 PLAT MAP OF STUDY AREA

By 1854, the Erie Railway Company, later known as the Erie Lackawana Railroad and Conrail, was established along the western edge of the Genesee River in the Corn Hill neighborhood. In Corn Hill, the area immediately south of Plymouth Avenue was eventually developed into railroad yards, which stored trains, coal, and oil. The location of the rail lines along the edge of the River led to the development of pockets of industry adjacent to the Corn Hill neighborhood which included A. Bronson and Sons Lumber Yard, Big Elm Dairy Company, and Rochester Lead Works to name a few. The railroad’s decline and eventual closure in the 1980’s left numerous vacant and underutilized sites along the river.

In 1918, the New York State Canal Corporation constructed the west river wall for the purpose of protecting the Corn Hill area from frequent flooding of the Genesee River. At that time, the area was referred to as the “stuffed shirt” neighborhood, named for the merchants, craftsmen, and professionals who built homes in the years after the Erie Canal was completed.

When steam barges replaced the mule-towed boats, the towpath was no longer needed and the flat land along the canal eventually became railroad yards with coal and oil storage areas.

Many of the city’s prominent residents built homes in the neighborhood, including Nathaniel Rochester (founder of the City of Rochester), Hervey Ely (owner of a flour mill) and William Kimball (a tobacco manufacturer). Though many of the homes were later demolished as part of urban renewal efforts, some remain today, including the Hervey Ely home, which was purchased in 1920 by the Daughters of the American Revolution. Today the

[1] Sources of historical information include the Corn Hill Neighborhood Association, the Landmark Society of Western New York, the *Corn Hill Neighborhood Vision Plan*, the Monroe County Library website, and the City of Rochester website description of the Corn Hill neighborhood.

neighborhood contains numerous other examples of mid-19th century architecture, such as Greek Revival, Italianate mansions, worker's cottages and carriage houses.

By the 1960s, many of the neighborhood's homes had fallen into disrepair and were scheduled for demolition as part of the City's urban renewal efforts. In response, a group of neighbors called "New Rochester" organized to protect and rehabilitate many of the homes and other structures in the neighborhood.

In the mid-1970s, portions of the neighborhood were placed into two distinct historic districts (one national and one local). Properties in the locally designated Preservation District are subject to the City's Preservation Ordinance, which defines the process to manage physical changes to these properties.

Corn Hill and the West River Wall Today

The Corn Hill neighborhood is now home to a mix of commercial, residential, community service, and office uses. More recent development includes construction of the Mark IV townhomes and apartments in the early 1980s and the Corn Hill Landing mixed-use development in 2008. The neighborhood is currently experiencing a resurgence, partially due to its location in close proximity to the center city, its walkable attributes, and strong desire among residents to live in one of the city's premier historic districts.



MIXED-USE COMMERCIAL / RESIDENTIAL USES AT CORN HILL LANDING, LOOKING SOUTH ALONG EXCHANGE BOULEVARD

There are numerous commercial uses located in the northern part of the neighborhood (north of Plymouth Avenue), which includes offices for small businesses, non-profit organizations and restaurant/retail establishments. In addition, the Corn Hill neighborhood hosts multiple annual events and festivals. These include the Clarissa Street Reunion, the Holiday Tour of Homes, and the Corn Hill Arts Festival. The Arts Festival began in 1968 and is considered to be one of Rochester's premiere summer festivals, attracting between 175,000 and 200,000 visitors per year.

The Corn Hill neighborhood and Genesee River have undergone significant changes in the nearly 100 years since the original construction of the west river wall. The downstream Court Street Dam was improved in 1926 and the Mount Morris Dam, located south of Rochester in Livingston County, was constructed in 1952. Together these facilities have provided considerable flood control and protection for the area. While the west river wall continues to play a role in flood protection, it is less important as a flood control measure. At the same time, the condition of the wall has deteriorated, further reducing its importance in flood protection for the neighborhood

In the Fall of 2014, the Erie Canalway National Heritage Corridor was nominated for inclusion on the National Register of Historic Places. While the river wall is not specifically listed, it was constructed in 1918, approximately the same time as the Canal, requiring coordination with the New York State Historic Preservation Office and careful consideration during final design of river wall and waterfront improvements.



THE RIVERWAY TRAIL AT CORN HILL LANDING, LOOKING NORTH TOWARDS DOWNTOWN ROCHESTER



AN OBSTRUCTED VIEW OF THE RIVER FROM THE RIVERWAY TRAIL. NOTE THIS HISTORIC CLEAT ATOP THE WALL.

In its current condition, the west river wall exists as a physical and visual barrier between the Corn Hill community and the Genesee River. Exchange Boulevard further separates the neighborhood from the river and the existing Riverway Trail, as there are limited safe locations for pedestrians to cross the street. The Corn Hill community expressed a desire to improve access to the River and enhance the public space between the River and Exchange Boulevard.

The relationship between the Corn Hill neighborhood and the river wall as it exists today was a key consideration for this project. Understanding this relationship was central to ensuring that recommended design improvements are sensitive to the neighborhood context and incorporate the needs and desires of the Corn Hill neighborhood.

Socio-Economic Characteristics

A review of socio-economic factors suggests Corn Hill is an economically and racially diverse neighborhood, with relatively higher proportions of retirees as well as residents under 30, when compared to the rest of the city. While the rate of home ownership is lower than the city as a whole, the neighborhood contains a variety of housing types and experiences relatively low rates of vacancy. These findings, described in more detail in the following

					Projected 2013 - 2018		
Area	2000	2013	% Change	AAGR	2018	%Change	AAGR
Corn Hill	1,948	2,120	8.8%	0.7%	2,026	-4.4%	-0.9%
Rochester	219,921	208,952	-5.0%	-0.4%	208,004	-0.5%	-0.1%
Monroe County	735,343	746,719	1.5%	0.1%	751,974	0.7%	0.1%

FIGURE 1 - TOTAL POPULATION 2000-2018
SOURCE: ESRI
NOTE: AAGR= AVERAGE ANNUAL GROWN RATE

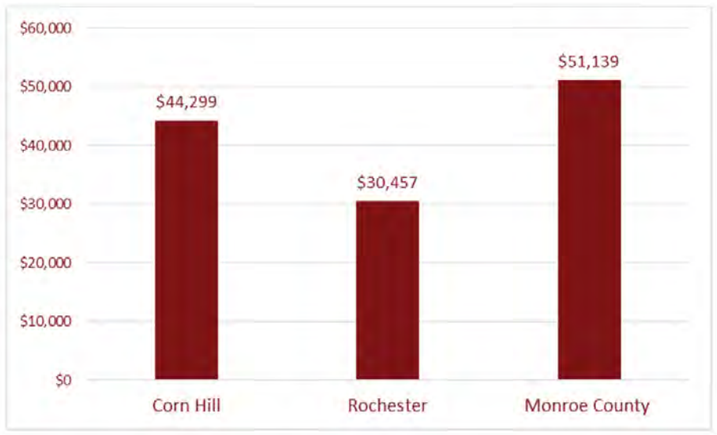


FIGURE 2 - MEDIAN HOUSEHOLD INCOME, 2013
SOURCE: ESRI

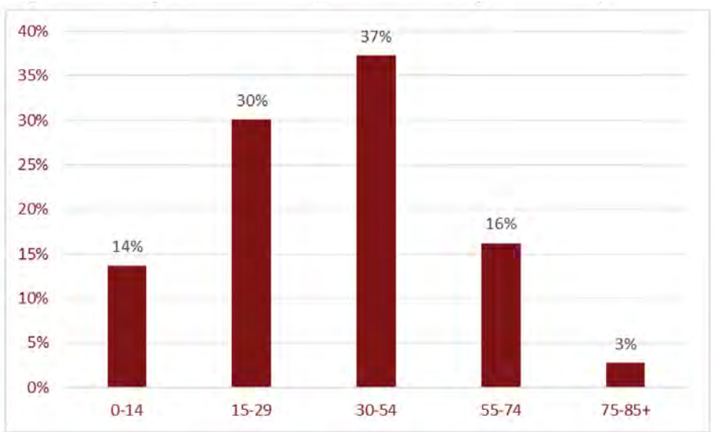


FIGURE 3 - AGE DISTRIBUTION, CORN HILL NEIGHBORHOOD, 2010
SOURCE: ESRI

paragraphs, underscore the importance of providing safe and convenient recreational opportunities in a neighborhood that is home to a diverse range of city residents.

The population of the Corn Hill neighborhood in 2013 was 2,120, approximately one percent of the city's total population (Figure 1). The neighborhood experienced an 8.8 percent increase in population between 2000 and 2013, accounting for 170 new residents during that time period. By contrast city's population declined by 5 percent over the same time period. Corn Hill and the City of Rochester are projected to experience population declines over the next five years, while Monroe County is projected to continue growing (albeit at a relatively slow rate).

The median income in Corn Hill in 2013 was $44,299, which was higher than the city as a whole, at $30,457, but lower than in the county, which was $51,139 (Figure 2).

The age distribution of the Corn Hill neighborhood indicates that 37 percent of the neighborhood's population is between the ages of 30-54 and almost 20 percent of the neighborhood's population is over the age of 55 (Figure 3). Children under 15 account for 14 percent of the neighborhood. This indicates that the neighborhood is made up of residents of all ages. Further, the presence of children and seniors shall be a consideration for any proposed pedestrian access improvements to the River.

The Corn Hill neighborhood's racial composition is similar to the city as a whole, with the exception of the Hispanic population, which constitutes 5 percent of the population in Corn Hill, but 17 percent city-wide. Similar to the city, the Corn Hill neighborhood includes almost equal percentages of white and black populations. Corn Hill has a higher proportion of Asian residents than the city as a whole, but a lower percentage of those indicating "two or more races" or "other race." The populations of both Corn Hill and the City of Rochester are more diverse than Monroe County (Figure 4).

The percentage of owner-occupied homes in Corn Hill is 22 percent, which is lower than the 33 percent city-wide, and the 60 percent in Monroe County (Figure 5). Though a lower percentage of homes are owner-occupied, the neighborhood contains a wide variety of housing units—both in age and type. These include recently constructed apartments, townhomes, condominiums, and single-family homes, as well as historic homes, apartment buildings and mansions that have been converted to apartments. The 12 percent vacancy rate of Corn Hill neighborhood is slightly higher than the City's 10 percent and the County's 6 percent rates.

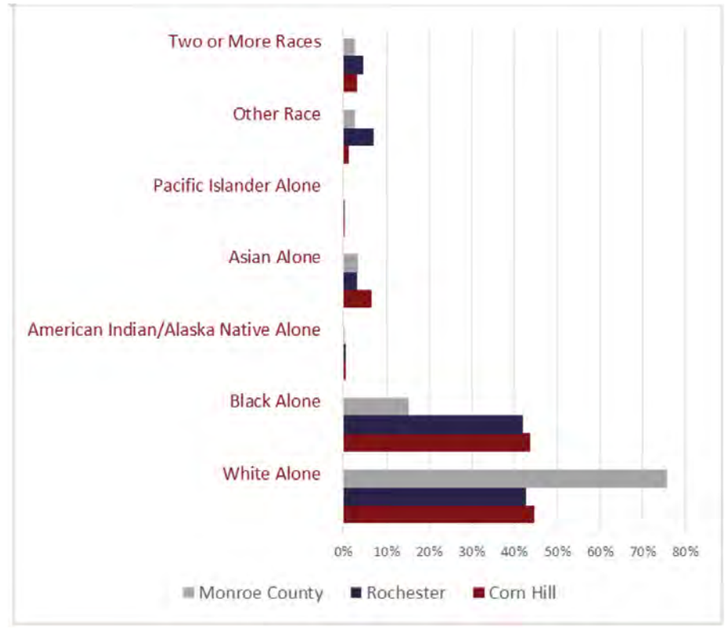


FIGURE 4 - RACIAL COMPOSITION, CORN HILL, ROCHESTER MONROE COUNTY
SOURCE: ESRI

	Corn Hill		Rochester		Monroe County	
2013 Total Housing Units	**1,284**	**100%**	**96,279**	**100%**	**322,406**	**100%**
Owner Occupied	287	22%	31,777	33%	192,363	60%
Renter Occupied	837	65%	54,808	57%	109,922	34%
Vacant	160	12%	9,693	10%	20,121	6%

FIGURE 5- HOUSING TENURE, 2013
SOURCE: ESRI

Land Use and Zoning

Though the Corn Hill neighborhood is primarily residential in character, the neighborhood's compact arrangement of uses includes a mix of residential, commercial, and community services (Figure 6). The interior of the neighborhood is primarily residential, while commercial uses, such as restaurants, bars, offices, and small shops are located north of Plymouth Avenue and at Corn Hill Landing.

(Note: the City of Rochester classifies apartments as commercial uses. The commercially designated area located between the Ford Street Bridge and Clarissa Street is primarily made up of apartments and townhomes).

The majority of the neighborhood is zoned High Density Residential (R-3). A small portion of the commercial area north of Plymouth Avenue is zoned CCD-R Center City Commercial District-R. The southern portion of the landside area between the river wall and Exchange Boulevard is zoned Open Space while the northern section of the landside area is zoned CCD-R (in and around Corn Hill Landing).

Parks and Open Space / Access to the River

The west river wall and adjacent public spaces are part of the overall park and open space system in the Corn Hill neighborhood, which also includes Lunsford Circle Park (formerly Plymouth Circle Park) and the Ralph Avery Mall. Both neighborhood parks contain landscaping and seating. In addition to these parks, a major recreational feature in the neighborhood is the national

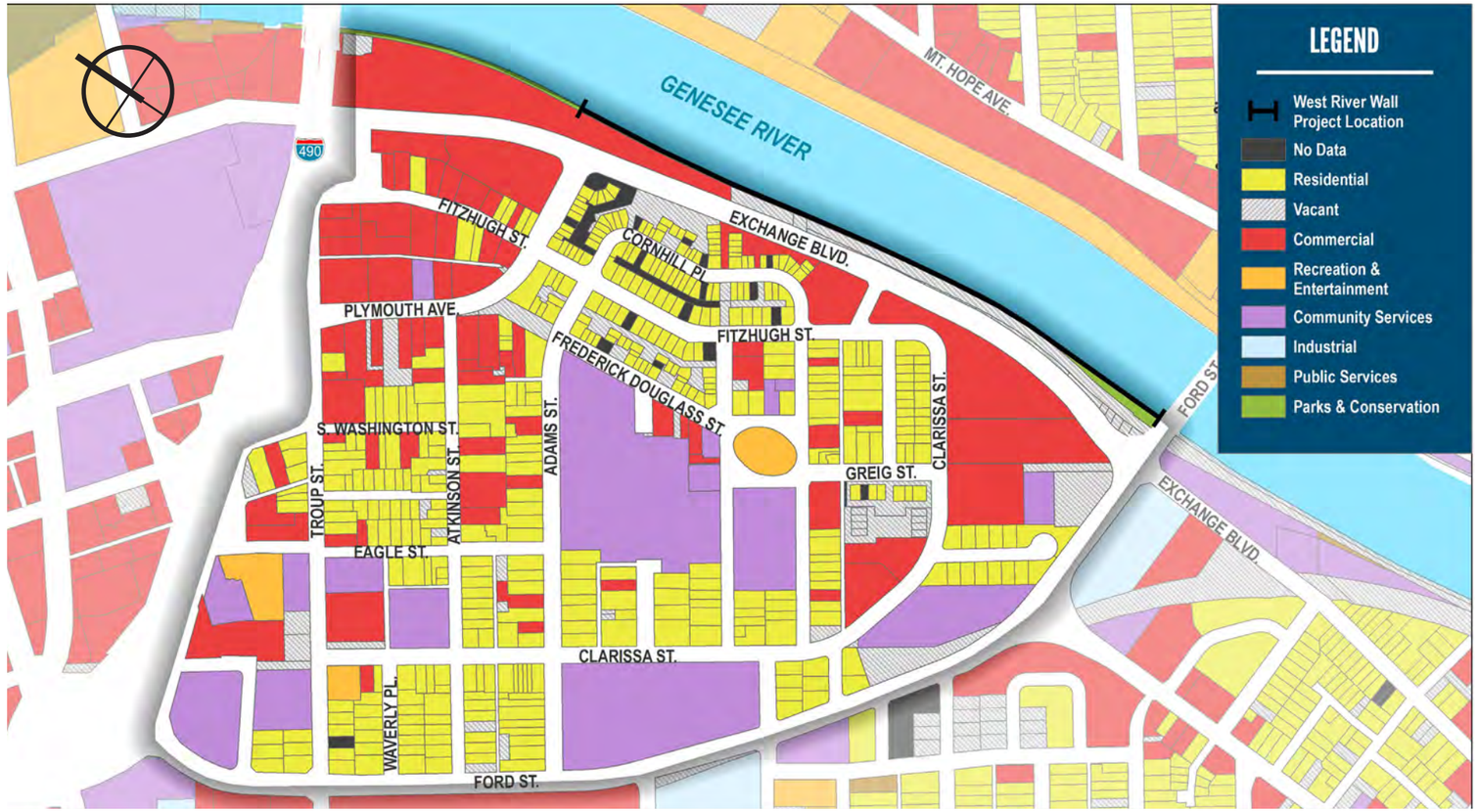


FIGURE 6 - EXISTING LAND USE
SOURCE: CITY OF ROCHESTER PARCEL DATA, 2014



LUNSFORD CIRCLE PARK



GRIFFIN SCULPTURE



THE RIVERWAY TRAIL LOOKING NORTH TOWARDS CORN HILL LANDING, SHOWING EXISTING FLOOD GATES AND THE TRANSITION FROM OLD TO NEW SECTIONS OF THE RIVER WALL

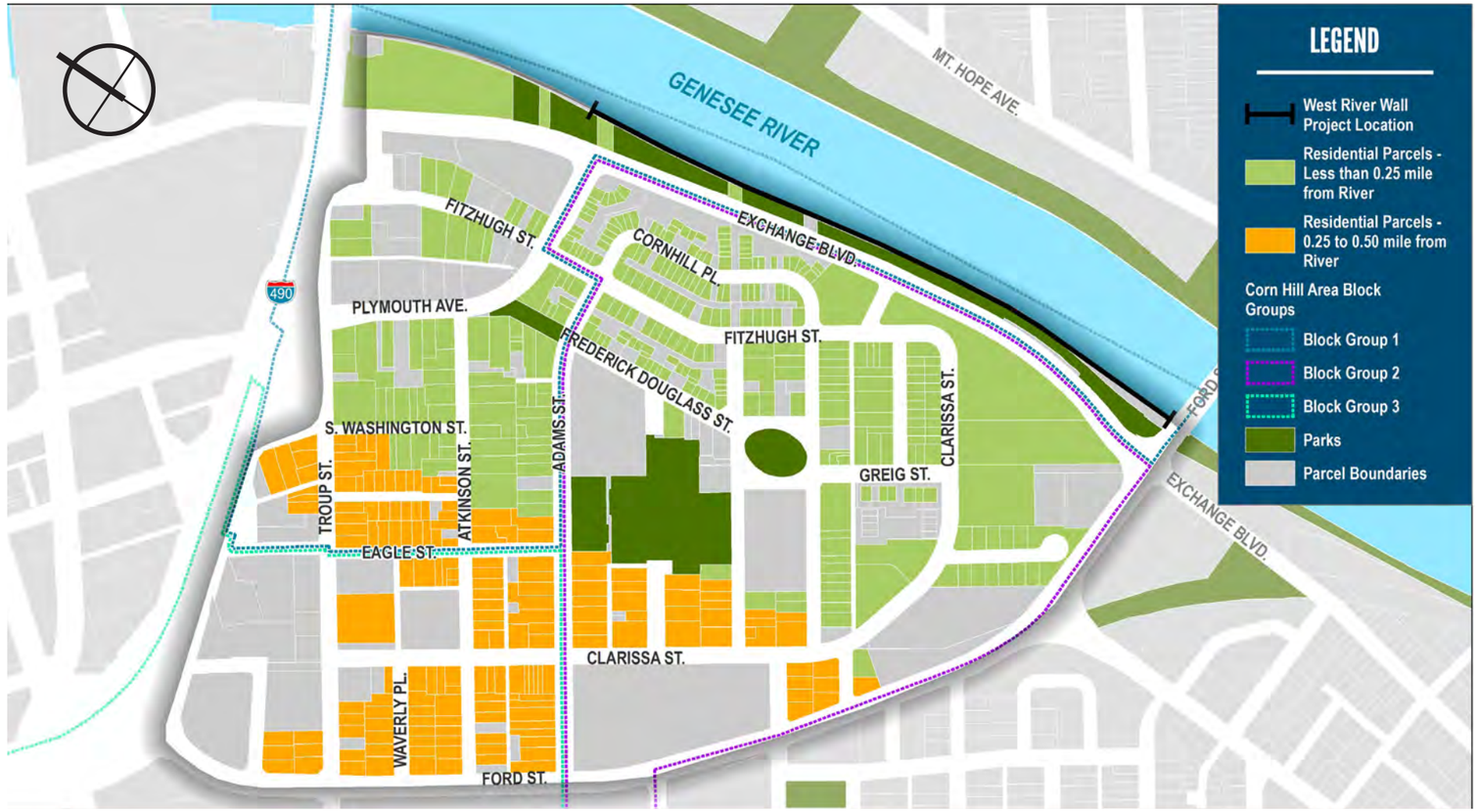


FIGURE 7 - ACCESSIBILITY ANALYSIS
SOURCE: CITY OF ROCHESTER PARCEL DATA, 2014

award winning Genesee Riverway Traill, located on the east side of Exchange Boulevard. There are currently no formalized connections between the neighborhood parks and the riverfront area / Riverway Trail.

The existing character of access points to the Genesee River is a key consideration for this project, as the overall limitation to River access has been an ongoing concern for Corn Hill residents. An accessibility analysis conducted for all residential parcels in the neighborhood shows parcels within a quarter-mile and half-mile of the Riverway Trail (Figure 7). While much of the Corn Hill neighborhood is within convenient walking distance of the Riverway Trail, safe access from the neighborhood to the Riverway Trail is limited. Exchange Boulevard acts as a barrier between the neighborhood and the Genesee River, as formal crosswalks are limited to one location at the intersection of Exchange Boulevard and Plymouth Avenue. There are no other crosswalks along Exchange Boulevard in the study area.



GENESEE RIVERWAY TRAIL LOOKING SOUTH TOWARDS FORD STREET BRIDGE



EXCHANGE BOULEVARD TODAY

An analysis of the residents within different Census Block Groups in the neighborhood shows that the part of the neighborhood furthest from the Riverway Trail, Block Group 3, also contains the largest proportion of residents under the age of 20. The area closest to the Riverfront, Block Group 1, contains the largest percentage of those over 55 years old. This suggests that proposed improvements to the riverfront area will need to consider safety enhancements for children and, for crossing Exchange Boulevard and accessing the riverfront from all parts of the neighborhood.

Transportation and Parking

Figure 8 shows annual traffic volumes on major streets in the neighborhood (Average Annual Daily Traffic). According to the latest published Monroe County Traffic Volume Maps, there are 12,996 trips per day along Exchange Boulevard and 12,663 trips along Plymouth Avenue within the study area.

A key factor in the planning and preliminary design for the river wall and adjacent public spaces was the location and configuration of Exchange Boulevard: it is a two-lane boulevard with bike lanes and on-street parking on both sides, divided by a median. The street in its current configuration does not offer convenient pedestrian access or well-defined crossings to the river side. There is a sidewalk along the west side of the street and there is a trail on the east side (set back from the curb). There is only one formal pedestrian crossing on Exchange Boulevard at the north end of the study area, located at Plymouth Avenue. The remaining length of Exchange Boulevard to Ford Street does not have any crossings, leading pedestrians to cross at unsafe locations.



FIGURE 8 - AVERAGE ANNUAL DAILY TRAFFIC
SOURCE: CITY OF ROCHESTER PARCEL DATA, 2014

Utilities

Records indicate that an 18-inch diameter vitrified sewer pipe is present along the back side of the river wall, along with a 6-inch diameter vitrified drainage line. Manholes are also shown on the record drawings that extend down to these pipes. It is unknown if the system remains active. It is suspected that the 6-inch vitrified pipe was installed to provide drainage and limit hydrostatic pressures along the back side of the wall. It is not known if the drainage system is open (cleared) and works effectively to drain soils behind the wall. Field inspection did not reveal the presence of these manholes on site. No other utilities are known to be located between the river wall and the eastern curb line of Exchange Boulevard.

Hazardous Waste and Contaminated Materials

NYSDEC's Environmental Site Database does not indicate the presence of environmental contamination within the study area, though there was one spill recorded at Corn Hill Landing in 1999. The City maintains documentation of remediation actions taken regarding this event. Due to the study area's historic industrial and rail use, further environmental study in the form of a Phase 1 and 2 should be completed as part of the final design process.

The Genesee River

This section describes key considerations for flood protection and management in and around the river wall, including an updated hydrologic and hydraulic analysis of the Genesee River and a sedimentation analysis.

Flood Protection and Water Management

Protection from Genesee River flooding in the Corn Hill area has historically been provided by the river wall, constructed around 1918 by the New York State Canal Corporation (NYSCC). The construction of the Mount Morris Dam, completed in 1952 by the U.S. Army Corps of Engineers, Buffalo District, provides considerable flood control by storing the volume of the floodwaters behind the dam. In 1972, Hurricane Agnes caused severe flooding throughout western New York State. The Mount Morris dam retained the excess floodwaters from this storm event, to the point of its capacity. In addition, the sector gates at Court Street Dam were lowered to the minimum level, dropping the river levels. In the Rochester area the combination of these operations resulted in minimal flooding downstream of Mount Morris. It is estimated that these actions saved over $200 million in flood damages in Rochester. These projects have made the river wall less important as a flood control measure.

In addition to these structural flood control measures, the City of Rochester practices floodplain management through its participation in the National Flood Insurance Program (NFIP). This program, run by the Federal Emergency Management Agency (FEMA), provides for otherwise unavailable flood insurance, in return for the City adopting and enforcing a Flood Damage Prevention Ordinance. This ordinance requires all new and substantially improved structures in the mapped floodplain to be elevated to at or above the 100-year flood elevation (frequently referred to as the Base Flood Elevation, or BFE). In New York State, through the state's requirement of adoption of higher standards, new and substantially improved construction in the mapped floodplain must be 2.0 feet above BFE. An additional provision of the NFIP is a requirement to purchase flood insurance for properties purchased with federally-insured mortgages.

In the City of Rochester, there are 88 flood insurance policies in force with an average yearly premium of $1,360 (as of 4/30/2014). FEMA's privacy policies do not allow the locations of individual policy holders to be released, but it is reasonable to assume that many of these policy holders are in the Corn Hill area. The historic FEMA floodplain maps, issued in 1977, showed the river wall providing flood protection and the Corn Hill area as being located outside of the floodplain.

When FEMA produced a seamless county-wide map for Monroe County in 2008, the agency used hydraulic analyses from the historic maps and mapped the new floodplain, showing the river wall as no longer providing flood protection. As a result there are

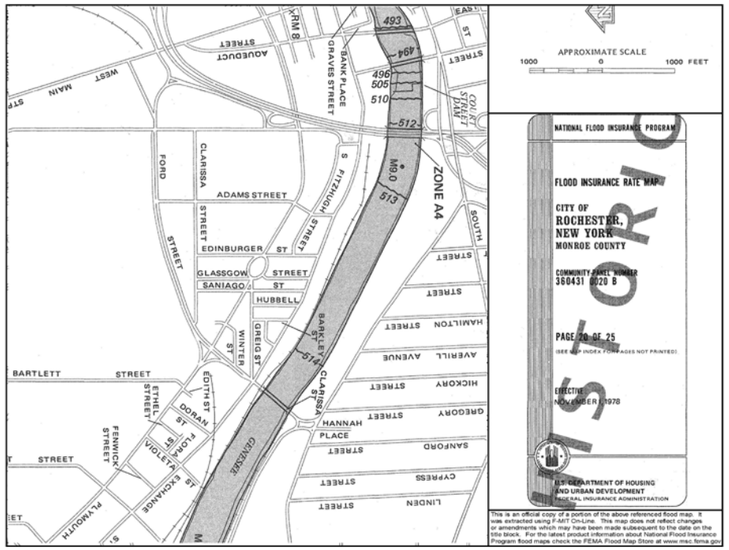


FIGURE 9 - FLOOD INSURANCE RATE MAP, 1978

SOURCE: FEMA (ELEVATIONS ARE ACCORDING TO NATIONAL GEODETIC VERTICAL DATUM OF 1929)

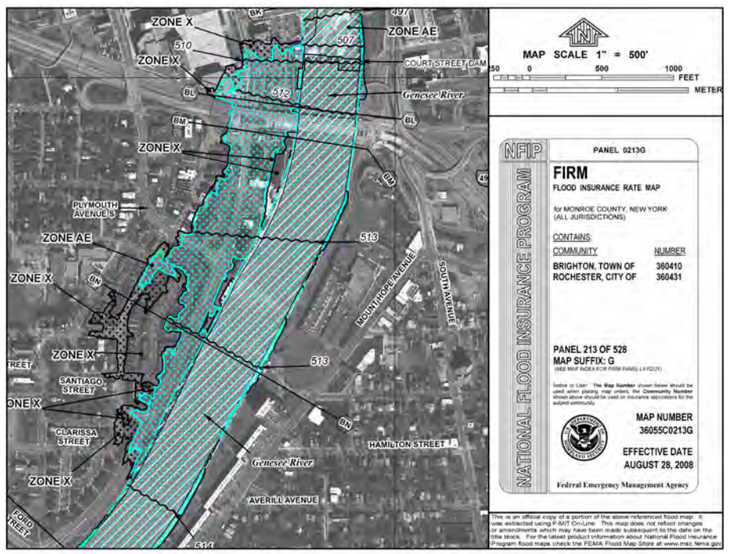


FIGURE 10 - FLOOD INSURANCE RATE MAP, 2008

SOURCE: FEMA (ELEVATIONS ARE ACCORDING TO THE NAVD88 DATUM. THE CONVERSION FROM NAVD88 TO CITY OF ROCHESTER IS +1.56' FOR THE PROJECT SITE)

areas in Corn Hill that are in the newly mapped floodplain.
It is believed that many of the flood insurance policy holders in the City of Rochester are property owners in the Corn Hill area who are financing their home purchase with a mortgage and are therefore required to obtain insurance. Reconstruction of the river wall to meet FEMA criteria for levees and floodwalls would relieve this financial burden on the homeowners.

Flood Elevation Analysis

An updated hydrologic and hydraulic analysis of the Genesee River was conducted to establish an appropriate flood elevation for design purposes. One of FEMA's criteria for indicating on its maps that a floodwall provides protection is that it has three feet of freeboard. Therefore, the project team developed an updated representation of the 100-year flood conditions of the Genesee River for presenting to FEMA for a map update.
The historic hydrologic analyses used a regression equation to estimate the 100-year discharge. A Log Pearson statistical analyses of the years 1956 to 2013 resulted in a 100-year flow of 24,493 cubic feet per second (cfs). When compared with the historic hydrologic 100-year flow of 32,500 cfs, the analyses showed significant flow reduction. The USGS gage recorded 22,500 cfs in 1972 (during Hurricane Agnes) which compares favorably with these results.

The hydraulic analyses were intended to reflect actual operations during flood conditions, specifically, (1) Mount Morris Dam gate closure and (2) lowering of sector gates at Court Street Dam. The findings of the hydraulic analysis indicate a required top of wall ranging from El. 516.6 (near Ford Street) to El. 515.9 (near Corn Hill Landing), according to City Datum. The original top of wall surface ranges from El. 519.8 (near Ford Street) to El. 518.7 (near Corn Hill Landing), per City Datum. Hence, this suggests that the top of the wall could be lowered on the order of 2.75 feet to 3.25 feet.

In addition, the team evaluated current sediment conditions in the vicinity of the West River Wall, showing a sedimentation rate of 0.073 (0.87 inches) feet per year. Assuming this sedimentation rate would continue for another 20 years, the resulting water surface elevations would increase by about 0.5 feet.



VIEW OF RIVER SIDE OF WALL LOOKING UPSTREAM FROM CORN HILL LANDING

Waterfront Recreation and Natural Resources

Current recreational opportunities within the landside waterfront area behind the West River Wall are limited to walking and biking along the Riverway Trail. The trail is both physically and visually separated from the river (by wall and overgrown vegetation), further limiting the recreational experience. At the northern end of the study area, there an aluminum floating dock system and gangway, anchored to the wall. Depending on water levels, the dock system can become hung up on accumulated river sediment. Use of the dock system is also somewhat impeded by the presence of high river sediment, which greatly limits allowable boat draft. The docks system also appears to be in disrepair. There are no other locations within the study area that provide access to the river.

Corn Hill Landing, by contrast, draws a variety of users and residents, offering shopping opportunities and restaurants, a pedestrian plaza with seating, a kayak launch, and interpretive signs and amenities. This suggests an opportunity to leverage activity occurring at Corn Hill Landing by developing improvements such as docking for larger recreational craft and utility hookups for boaters that invite those visitors to explore and use the waterfront area in the study area.

The West River Wall is located within the Lower Main Stem of the Genesee River, which is a Class B waterbody (segment # 0401-0001), according to the New York State Department of Environmental Conservation's Waterbody Inventory. The inventory notes that aquatic life, fish consumption, public bathing, and other recreational activities are significantly restricted by pollutants from various industrial and municipal sources in the urbanized area of metropolitan Rochester. This segment of the river is impacted by pollutants, including nutrients, PCBs, pesticides, sediment, and oil and grease. Recreational activities in the river are limited by poor aesthetics, high silt, and limited clarity, other pollutants from industrial and municipal discharges, and storm sewers. Because of its classification and because the Genesee River is navigable, any disturbance to the bed or banks of the river would require demonstration of adequate erosion and sediment controls. Other natural resource considerations include habitat and endangered or protected species. Due to a recent proposed listing of the Northern Long-eared bat on the list of threatened or endangered species list, NYSDEC may require review of any plans that propose removal of trees greater than three feet in diameter (which is considered suitable roosting habitat). These natural resource considerations and potential requirements are discussed further in the Implementation Section of this report, Permitting and Applications.



VIEW OF WALL LOOKING SOUTH TOWARDS FORD STREET BRIDGE

The West River Wall

The West River Wall consists of a concrete gravity wall with a battered stem and concrete footing. New York State Canal Corporation (NYSCC) record drawings (Contract No. 59.) suggest the wall was originally constructed in about 1918 and is founded on bedrock. The wall structure lines the Genesee River and is owned by the NYSCC. Although the wall continues further in either direction, the limits of wall being considered as part of this project extend from the Ford Street Bridge (southerly limit) to Corn Hill Landing (northerly limit). This translates to approximately 2,200 linear feet of wall.

The wall is made up of a series of concrete monoliths with joints spaced from approximately 25 to 40 feet in length. The top of the wall varies slightly and is sloped in the downstream direction (1' in 2000'), starting at an approximate elevation (El.) of 519.8 (City Datum) near the Ford Street Bridge and transitioning to El. 518.7 at Corn Hill Landing. Depth to bedrock also varies at this site ranging from approximately El. 494 to El. 499. There are two different wall sections at the site, which are similar in makeup. Where rock is deeper, the wall transitions from a Type 'B' wall to a slightly enlarged Type 'C' wall. For a description of Type 'B' and Type 'C' walls see section 2.2 Wall Structural Evaluation in Appendix B.

The wall is typically shown to be founded on bedrock, but the foundation is not shown to be keyed into the bedrock. The concrete structure is largely unreinforced, but does indicate some reinforcement running along the backside of the stem (into the heel), extending through a mid-height construction joint, and at the toe of the footing.

The soil on the backside of the river wall is nearly even with the top of the wall at the northerly limits of the study area, but the backside of the wall can be exposed by up to 8 feet at the southerly project limits near Ford Street. The exposed wall height transitions randomly along the length of the wall. River sediments on the river side of the wall also vary along the length of wall and range from approximately El. 510 at the northerly limits to about El. 502 at the southerly project limits near Ford Street. Normal Ordinary High Water (OHW) is generally 512.5 during navigation season.

According to record mapping the wall is furnished with periodic mooring cleats along the top of the wall and includes recessed ladders on the riverside spaced approximately 500 feet apart.



VIEW OF WALL SHOWING CONCRETE IN POOR CONDITION

Wall Condition - Structural Assessment

Assessment of the existing river wall was conducted by both inspection and coring of the concrete walls. Wall stability assessment is discussed in the next section. The visual, non-intrusive, inspection of the wall (above and below water) was conducted in the spring of 2014 as part of this project and detailed inspection findings are presented within Appendix B, Interim Report.



PHOTO OF CONCRETE CORE SAMPLE FROM THE WEST RIVER WALL



VIEW OF WALL SHOWING CONCRETE IN POOR CONDITION

There have been very few documented wall repair or renovation efforts since the wall's original construction. Results of the structural analysis show that the wall is generally in poor condition and displays signs of significant deterioration.

Many of the wall sections are deeply eroded at the waterline and the top of the wall is scaled and rounded off. Core samples show that the concrete is deteriorating in many places. In addition, the top of wall elevation is notably lower than the original wall profile due to the extent of deterioration in many areas, in some cases forming significant grooves in the wall.

Heavy vegetation, including poison ivy and trees, is present along the back side of the wall. The presence of vegetation limited observation of the wall in some areas. The vegetation may be causing damage to the wall concrete and should be considered for removal during alternatives analysis.

Despite the poor concrete condition, no major signs of a progressing stability failure were identified, such as displacement between monolith joints or a tilting/rotated wall section. However, the deep and progressing deterioration near the waterline greatly increases the risk of a potential wall failure mid-height of the wall.

Wall Condition - Stability Assessment

The existing wall primarily acts as a retaining structure, but is also considered a floodwall. Stability evaluations of the wall were performed along the length of the wall to capture results for varying wall geometries, varying bedrock depth, varying sedimentation elevation, and varying landside soil elevations. In general, the wall was evaluated approximately every 100 ft. Using U.S. Army Corps of Engineers (USACE) guidelines for Stability Analysis of Concrete Structures (EM 1110-2-2100) and Retaining and Flood Walls (EM 1110-2-2502), the stability analysis looked at different types of forces and stress that are likely to impact the stability of the wall. These include hydrostatic water pressure, uplift pressure, silt pressure, seismic forces, soil and hydrodynamic loads, and the weight of the wall structure itself. The analysis found that several areas along the length of the wall do not satisfy stability criteria.

For full documentation of structural stability calculations see Appendix B, Interim Report

Summary of Key Findings

Key findings from the Existing Conditions analysis and non-wall related studies and analyses are summarized below:

- **The wall is a physical and visual barrier to the Genesee River.** The West River Wall currently acts as a physical and visual barrier to the river and the surrounding landside, and the area generally lacks safe and convenient pedestrian connections to the river and Riverway Trail. Exchange Boulevard, which is directly adjacent to the study area, adds an additional barrier between the Corn Hill neighborhood and the river. There is just one formal connection (crosswalk) between the Corn Hill neighborhood and the river, located at the very north end of the project area at the intersection of Exchange Boulevard and Plymouth Avenue. There are no other crosswalks along Exchange Boulevard within the study area. These conditions restrict safe access to the river from the majority of the neighborhood which is not consistent with the objectives of the Corn Hill Vision Plan.

- **There are few pedestrian or recreational amenities within the waterfront area.** With the exception of the Riverway Trail, there are few pedestrian amenities within the study area. The lack of recreational amenities and landscaped area creates an unwelcoming atmosphere for pedestrians, bicyclists, and adjacent neighborhood residents.

- **The wall does not meet standards for flood protection.** In 2008, FEMA produced a county-wide floodplain map using hydraulic analyses from historic maps, showing the West River Wall as no longer providing flood protection (due to its condition), thus placing sections of the Corn Hill area into the floodplain. For this project, an updated hydrologic and hydraulic analysis of the 100-year flood conditions of the Genesee River was prepared in accordance with FEMA criteria for levees and floodwalls. The findings indicate the flood elevation could be lowered by approximately 1.6'. Therefore, this suggest that the existing top of the West River Wall, which exceeds the height it is required to be at the new flood elevation, could be lowered from El. 519.7 (near Ford Street) and El. 518.8 (near Corn Hill Landing) to El. 517.1 and El. 516.3 respectively.

- **The West River Wall is generally in poor structural condition.** Results of the structural analysis show that the wall is generally in poor condition and displays signs of significant deterioration. Many of the sections are deeply eroded at the waterline and the top of the wall is scaled and rounded off. Core samples show that the concrete is deteriorating in many places. In addition, the top of wall elevation is notably lower than the original wall profile due to the extent of deterioration in many areas, in some cases forming grooves in the wall. Finally, heavy vegetation including ivy and trees is present along the backside of the wall which may be causing damage to the wall concrete.

- **Portions of the wall do not meet stability criteria.** Using U.S. Army Corps of Engineers (USACE) guidelines for Stability Analysis of Concrete Structures (EM 1110-2-2100) and Retaining and Flood Walls (EM 1110-2-2502), the stability analysis looked at different types of forces and stress that are likely to impact the stability of the wall. These include hydrostatic water pressure, uplift pressure, silt pressure, seismic forces, soil and hydrodynamic loads, and the weight of the wall structure itself. The analysis found that several areas along the length of the wall do not satisfy stability criteria.

- **The current wall condition is unsightly.** As noted previously, much of the length of the exposed river wall is deteriorating with extensive spalling of the concrete surface and top of wall. This creates an unsightly, neglected appearance and contributes negatively to the character of the adjacent Corn Hill Neighborhood.



VIEW OF DOWNTOWN ROCHESTER FORM THE CORN HILL LANDING PLAZA

alternatives analysis

Evaluation Framework

The evaluation of alternative solutions for the West River Wall is intended to balance multiple stakeholder objectives. The following project goals were used to develop alternatives and inform our evaluation of them. More detail can be found in the Draft Alternatives Report (Appendix C).

Project Goals

As discussed in the report's introduction, the goals of this project include:

- Development of a flood protection structure that can be accredited by FEMA, which reduces or eliminates flood insurance requirements for property owners in the Corn Hill neighborhood; and

- Improvement of visual and physical access to the River, including an enhanced user experience.

The project also strives to balance flood protection with historic and natural resources protection and enhancement through sensitive design and interpretation.

Feasibility Factors

To inform the development of alternatives, the team evaluated a variety of potential limiting factors that could affect the overall feasibility of the project, regardless of which alternative is recommended. These factors can be described as potential "fatal flaws" that would prevent the project from achieving the goals described above. The project was evaluated to determine if the following factors would prevent any of the alternatives from achieving the project's goals:

- **Traffic Impacts.** Exchange Boulevard is currently configured with one travel lane in each direction, five-foot bicycle lanes, and eight-foot parking lanes on both sides. None of the alternatives considered propose land use changes that will cause significant increases in traffic volume within the study area. Based on existing traffic volumes, including peak hour volumes, it was determined that without significant growth or changes in intensity of land uses, current volumes can be adequately accommodated in the current configuration. Given this, it was determined that any alternative developed in accordance with the project's goals would not create traffic impacts and would therefore not be a limiting factor for the project.

- **Environmental Considerations.** This factor considers whether the project area may be impacted by environmental contamination that would impact the feasibility of the project. NYSDEC's Environmental Site Database does not indicate the presence of environmental contamination within the study area, though there was one spill recorded at Corn Hill Landing (north of the project site) in 1999. The City maintains documentation of remediation actions taken regarding this event. Due to the study area's historic industrial and rail use, further environmental study in the form of a Phase 1 and 2 should be completed as part of the final design process.

- **Natural Resources.** The Genesee River is classified by NYSDEC as a Class B waterbody. Because of this classification, and because the Genesee River is navigable, any disturbance to the bed or banks of the river would require special permitting and may require permission from the Army Corps of Engineers. Any proposed alternative would need to demonstrate adequate erosion and sediment controls. Other natural resource considerations include habitat and endangered or protected species. Due to a recent proposed listing of the Northern Long-eared bat on the list of threatened or endangered species list, NYSDEC may require review of any plans that propose removal of trees greater than three inches in diameter (which are considered suitable roosting habitat). It is noted that the alternatives developed for this project would consider water quality and habitat improvements. All necessary requirements and permits could be accommodated and thus impacts to natural resources and habitat are not considered to be a limiting factor in achieving the project's goals.

- **Neighborhood/Community Character.** This factor considers the impact the project may have on adjacent communities. Any alternative considered must include enhanced pedestrian access and improvements to the public realm along the waterfront, in accordance with the vision set forth in the Corn Hill Community Vision Plan (2012). Therefore, potential negative impacts to the surrounding community are not considered a limiting factor for this project. In fact, the project will serve to enhance community character.

- **Historic Resources.** In the Fall of 2014, the Erie Canalway National Heritage Corridor was nominated for inclusion on the National Register of Historic Places. While the River Wall is not specifically listed, it was constructed in 1918, approximately the same time as the Barge Canal. Final design will require coordination with the New York State Historic Preservation Office to ensure flood protection measures are met while allowing for historic interpretation and preservation goals to be met as well.

- **Utilities.** Records indicate that an 18-inch diameter vitrified sewer pipe is present along the land side of the river wall, including a six-inch diameter vitrified drainage line. It is unknown if the system remains active. No other utilities are known to be located within the study area. Location, type, and current use of all utilities will need to be addressed during final design.

The review above indicates no issues are present that eliminates the potential feasibility of implementing a new flood protection structure that meets the goals of the project.

Alternatives Evaluation Criteria

Four alternatives were developed for this project, described in more detail below. The criteria below were used to evaluate the degree to which each alternative supports the goals of the project.

- **Flood Protection.** This evaluation criterion addresses whether each alternative provides adequate flood protection, meets FEMA guidelines, and helps reduce or eliminate flood insurance premiums for homeowners in the neighborhood.

- **Neighborhood Objectives.** This evaluation category measures the extent to which each alternative meets neighborhood objectives outlined in the Corn Hill Community Vision Plan (2012).
  - Improved visual access to the River (Principle #8)
  - Improved physical access to the River (Principle #8)
  - Preservation and promotion of natural and historic features (Principle #9)

- **Cost of Implementation.** This criterion addresses the cost of implementing each of the alternatives relative to each other.

- **Long Term Maintenance.** This criterion addresses the cost of the long term maintenance for each of the alternatives relative to each other.

Evaluation of Alternatives

The following section includes a narrative description comparing each alternative against the evaluation criteria. Each alternative was scored from zero to five.

Alternative #1: Do Nothing

This alternative involves making no changes to the existing river wall, nor adding any public space improvements. It is noted that if the wall remains without any rehabilitation, the concrete will continue to degrade, presenting an increased risk for local failure or breach. Until the wall is renovated or an alternative means of flood protection is provided, a maintenance and emergency action plan to maintain the current level of protection would need to be employed to mitigate any risks.

Evaluation: This alternative does not meet any of the project goals. It does not satisfy the requirements for flood protection, nor does it satisfy the goals of the community (to improve access to the river). The cost of this alternative is not known, although it is likely that future repairs and maintenance will be necessary and will occur at unpredictable intervals, thus incurring costs on an ad hoc basis.

Alternative 1 - Do Nothing		Rank
Criterion 1	Flood Protection	3
Criterion 2	Improved Physical Access	0
Criterion 3	Improved Visual Access	0
Criterion 4	Preservation of Natural & Historic Features	5
Criterion 5	Cost of Implementation	5
Criterion 6	Cost of Future Maintenance	1
	Rank	**14**

Alternative #2: Repair/Reconstruct Entire Length of the Existing River Wall

This alternative considers reconstruction of the existing wall to comply with FEMA criteria. Under this alternative, the deteriorated concrete would be removed and reconstructed to restore the wall to its original condition and configuration. The River Wall would be lowered from El. 519.7 (near Ford Street) and El. 518.8 (near Corn Hill Landing) to El. 517.1 and El. 516.3 respectively. Some stability improvements would also be required, including installation of vertical post- tensioned rock anchors in some locations.

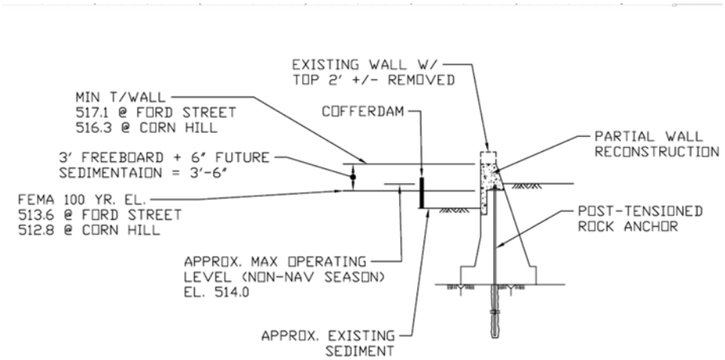


FIGURE 11 - ALTERNATIVE 2 CROSS-SECTION
SOURCE: BERGMANN ASSOCIATES, 2014

Evaluation: This alternative provides flood protection and would allow the wall to be reaccredited by FEMA, potentially reducing or eliminating flood insurance requirements for Corn Hill property owners. Further, this alternative would better facilitate grade changes behind the wall (i.e. filling) and could be designed to allow for removal of river sediment in front of the wall to better facilitate recreational boating.

This alternative partially satisfies the community's desire for enhanced visual access to the river, as the height of the wall could be lowered and the land side raised. However, this alternative does not provide opportunities to create a natural river edge, nor does it provide opportunities for easy physical access to the river.

Reconstruction of the wall would alter the materials and appearance of the wall, and could therefore potentially impact the historic value of the wall (it is noted that the wall is not specifically listed on the National Register of Historic Places). However, historic characteristics and potential opportunities for preservation could be addressed during the design phase.

This alternative is more costly and would require greater long-term maintenance than alternatives #3 and #4.

Alternative 2 - Repair entire length of wall		Rank
Criterion 1	Flood Protection	5
Criterion 2	Improved Physical Access	2
Criterion 3	Improved Visual Access	3
Criterion 4	Preservation of Natural & Historic Features	3
Criterion 5	Cost of Implementation	1
Criterion 6	Cost of Future Maintenance	2
	Rank	**16**

Alternative #3: Construct a Protection Berm Behind the Existing West River Wall

This alternative considers a berm (levee) behind the existing floodwall. Under this alternative, the River Wall is assumed to be irrelevant as a flood protection structure. Rather, flood protection would be provided by the berm, which would become the primary flood protection element while the wall would remain only to retain the river's edge. The new berm would be designed to comply with FEMA criteria and would be engineered as a water-retaining feature.

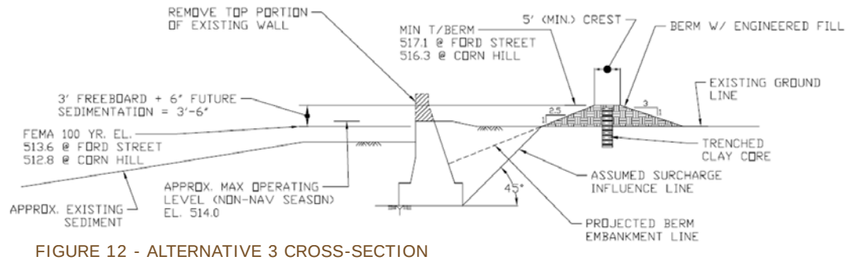


FIGURE 12 - ALTERNATIVE 3 CROSS-SECTION
SOURCE: BERGMANN ASSOCIATES, 2014

Evaluation: This alternative provides adequate flood protection, allows opportunities to create a natural river's edge, and could offer potential wave attenuation (which is beneficial to boaters). This alternative is cost effective, relative to complete reconstruction of the wall and would likely have lower long-term maintenance costs. Grade changes behind the wall (i.e. filling) and removal of river sedimentation may be limited due to the wall's lack of stability in certain locations. Because the wall in this alternative would not be restored, potential failure would necessitate repair or regrading to stabilize the embankment in the vicinity of the failed wall.

Because the wall would remain in its existing condition without restoration, this alternative could impact the historic character and value of the wall by virtue of neglect and further deterioration over the long-term.

This alternative partially satisfies the community's desire for enhanced visual access to the river, as pedestrians would be able to view the river from a trail along a raised berm (which would be set back from the wall approximately 20 feet). However, this alternative does not provide physical access to the river.

Alternative 3 - Protection berm behind existing wall		Rank
Criterion 1	Flood Protection	5
Criterion 2	Improved Physical Access	1
Criterion 3	Improved Visual Access	3
Criterion 4	Preservation of Natural & Historic Features	3
Criterion 5	Cost of Implementation	5
Criterion 6	Cost of Future Maintenance	2
	Rank	**19**

Alternative #4: Hybrid Wall / Berm

While alternatives #2 and #3 above are considered reasonable alternatives to establish flood protection within the study area, a combination of both alternatives would provide the most flexibility for waterfront site improvements, historic interpretation, and meeting community objectives. This alternative includes a protection berm along intermittent segments of the study area, approximately 20-25 feet behind the existing river wall. The berm would slope gently towards the river, allowing the river wall to be reduced in height in some locations and be flush with the landside grade. Sections of the wall could remain and be restored to allow pedestrian plazas/overlooks to be constructed against the back side of the wall. Where the berm is installed, the wall could be removed to allow for a new boat dock and naturalized shoreline.

Evaluation: This alternative provides adequate flood protection allowing the berm and reconstructed wall segments to be reaccredited by FEMA as a flood protection structure, thus offering potential reduction or elimination of flood insurance requirements. The historic character and value of the wall could be accommodated during the design phase. This alternative meets the community's goals by providing both visual and physical access to the river. In addition, this alternative is more cost-effective than full reconstruction of the wall and was widely accepted by members of the community, the Canal Corporation, and the City's partner agencies.

Alternative 4 - Hybrid option		Rank
Criterion 1	Flood Protection	5
Criterion 2	Improved Physical Access	5
Criterion 3	Improved Visual Access	5
Criterion 4	Preservation of Natural & Historic Features	4
Criterion 5	Cost of Implementation	3
Criterion 6	Cost of Future Maintenance	2
	Rank	**24**

Recommendation

After consideration of the four alternatives summarized above, the City and Technical Advisory Committee determined that Alternative #4 best meets the objectives of the project, as it provides flood protection while improving physical and visual access to the River, preserving elements of the wall's historical character, and allowing for optimal flexibility in the design of other landside and waterside waterfront improvements. The recommended alternative is the direct result of close collaboration between the City and the Corn Hill community. Development and selection of Alternative #4 was based in part on extensive feedback provided by the community over the course of the project at public meetings, CAC meetings, and through written communication. Participants at both public meetings provided overwhelming positive feedback and support for the recommended alternative.

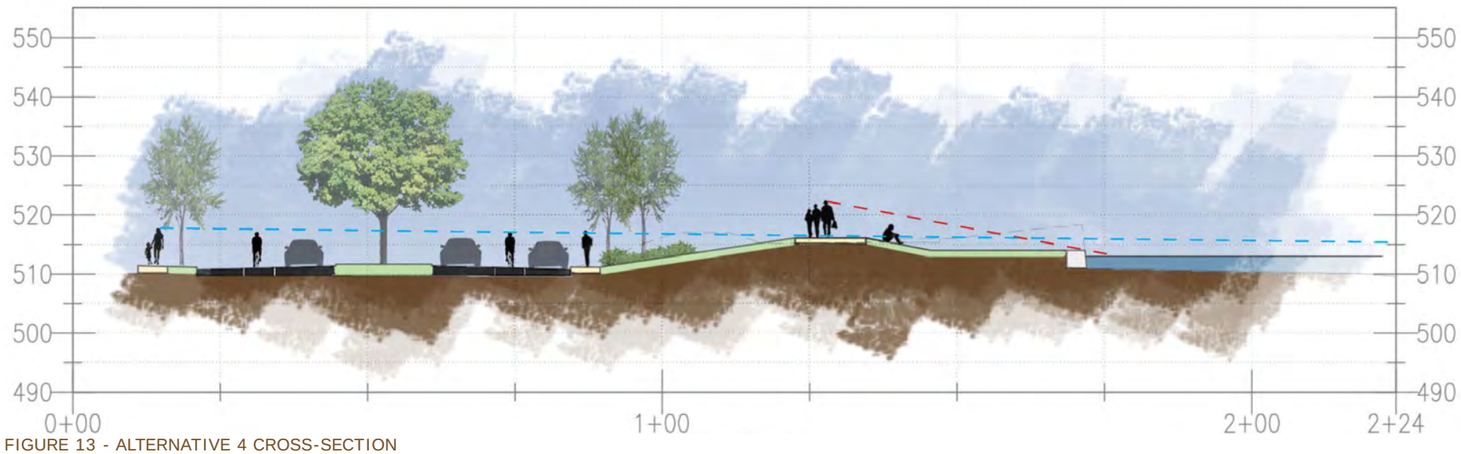


FIGURE 13 - ALTERNATIVE 4 CROSS-SECTION
SOURCE: BERGMANN ASSOCIATES, 2014





WEST RIVER WALL PUBLIC MEETING - NOVEMBER 2014



West River Wall - Master Plan

Legend (#)

1. Berm Locations
2. Wall Reconstruction
3. Naturalized Shoreline
4. Wall / Berm Transition at Ford Street Bridge
5. Resurface and Restripe Exchange Blvd
6. Enhanced Pedestrian Crossings
7. New Sidewalks
8. New Street Lighting
9. Median Plantings
10. Pedestrian / Bicycle Trail
11. Pedestrian Plazas / Overlooks
12. Informal Grass Amphitheater
13. Plantings
14. Boat Dock
15. Corridor Improvements
16. Existing Corn Hill Landing Plaza Improvements

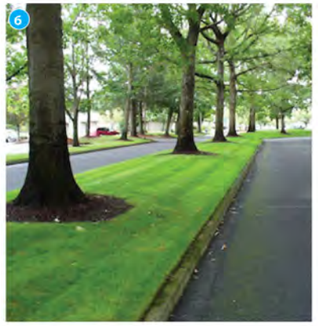






















FIGURE 14

master plan

Overview

The project team evaluated the neighborhood's vision as set forth in the 2012 Corn Hill Neighborhood Vision Plan, with specific focus on the Exchange Boulevard and West River Wall segment. The West River Wall Master Plan incorporates elements from the Vision Plan in conjunction with the hybrid wall / berm flood protection as described in the Alternatives Analysis section. Objectives incorporated in the West River Wall Master Plan from the 2012 Vision Plan include:

- Enhance pedestrian crossings from the Corn Hill Neighborhood to the river.
- Connect the Corn Hill Neighborhood to the river.
- Enhance gateways.
- Green the street.
- Provide river access, activity in green space, and recreation amenities.
- Increase visual and physical access to the river.
- Create gathering spaces on the river.
- Create amphitheater / viewing area on the river.

Plan Elements

The preferred Master Plan depicted in Figures 14 and 16 incorporates the hybrid wall / berm levee option to optimize the goals of the project (increased visual/physical access to the river and flood protection at a reasonable cost). This hybrid option can accommodate a range of features and pedestrian experiences that take full advantage of this section of the Genesee River. Below are descriptions of the improvements envisioned in the West River Wall Master Plan as they relate to the following categories:

- Hybrid Wall / Berm Components
- Exchange Boulevard Improvements
- Landside Improvements

Hybrid Wall / Berm Components

Input provided by the community stated that enhanced, safe pedestrian connections from the Corn Hill neighborhood to the river are a main desire. The proposed location of these crossings at Fitzhugh Place and the Corn Hill Pedestrian Connection influenced the location of the new pedestrian plazas and overlooks, which in turn determined which method of flood protection (wall or berm) is used along this segment of the river. The proposed improvements to flood protection as they relate to the West River Wall Master plan, summarized below, are illustrated in Figures 15 to 20. (bulleted numbers correspond to the Master Plan labels in Figure 14.)

1. Berm locations. Construct a protection berm along intermittent portions of the study area, approximately 20-25 feet from the back of the existing River Wall and approximately 4 to 5' in height. In these locations, the berm will slope gently towards the river. This will allow the river wall to be reduced in height approximately 4 to 5′ to Elevation 514′ and be flush with the landside grade (Figure 15).

2. Wall reconstruction. Lower two sections of the existing West River Wall (approximately 350 LF) to an Elevation of 517' and fully reconstruct to ensure stability for pedestrian plazas/ overlooks constructed on the back side of the wall. In these locations, the pedestrian plazas will be flush with the top of the River Wall.

3. Naturalized shoreline. Transition the protection berm to natural grade as it heads south due to the rising Exchange Boulevard which provides adequate flood protection. The existing West River Wall in this location will be lowered below the water surface to an elevation of 511' in order to allow for a naturalized shoreline (Cross Section 3, Figure 16 and 17). This natural region will be designed to resist erosion from the river. Given the relatively low velocity at the river bank (< 3ft/ sec), several options to provide erosion control are feasible. This naturalized area also provides the opportunity for program elements such as an environmental education station to be used by local schools and organizations.

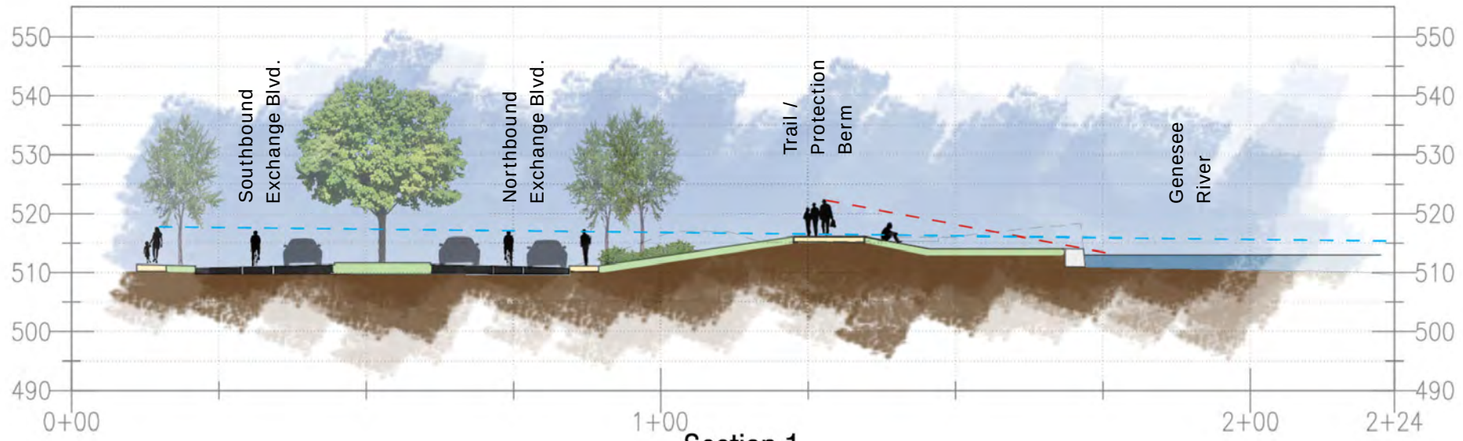


EXISTING VIEW LOOKING SOUTH TOWARDS FORD STREET BRIDGE

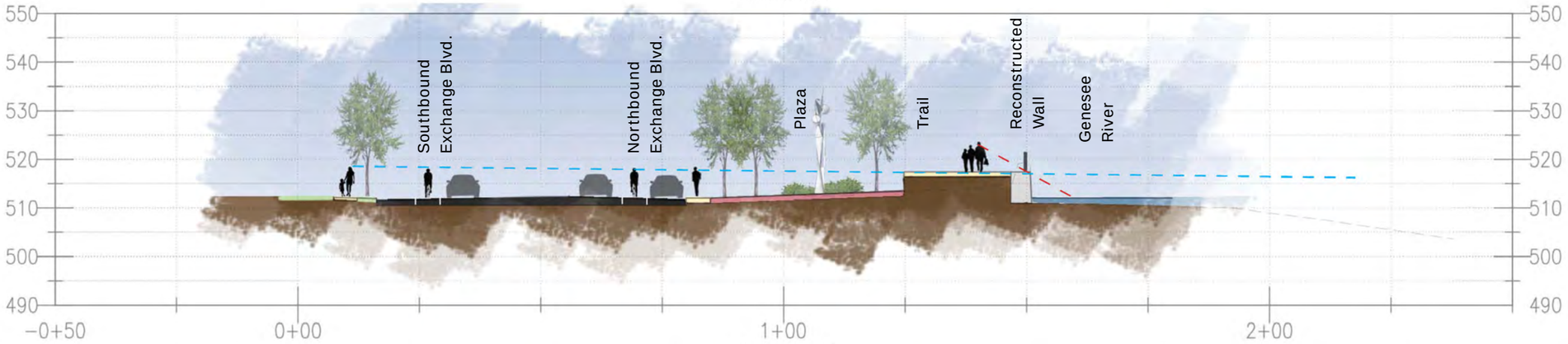


PROPOSED VIEW LOOKING SOUTH TOWARDS FORD STREET BRIDGE

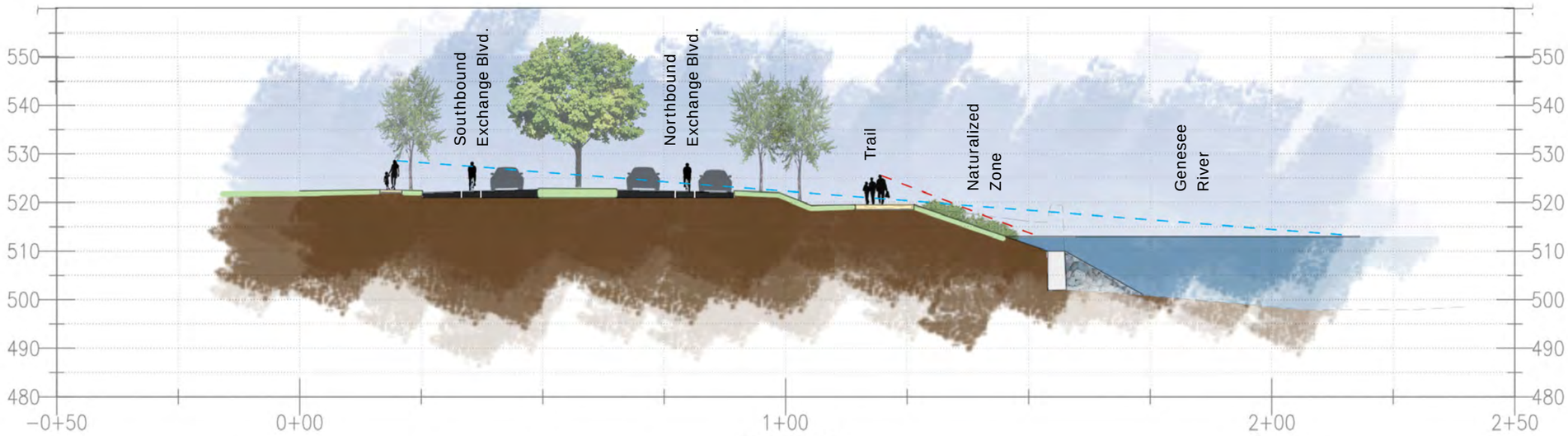
FIGURE 15



Section 1



Section 2



Section 3

CROSS SECTIONS

FIGURE 16



EXISTING VIEW LOOKING NORTH FROM FORD STREET BRIDGE



PROPOSED VIEW OF NATURALIZED SHORELINE LOOKING NORTH FROM FORD STREET BRIDGE

FIGURE 17

4. Wall / berm transition at Ford Street Bridge. Lower a section of the existing wall in the very southern portion of the study area to an elevation of 517' and restore to allow for a boat dock to be constructed in front of the wall. This area is ideal for a boat dock because it is an area of natural scour that will not require dredging. The protection berm will span perpendicularly from the natural embankment to the reconstructed floodwall near Ford Street in order to mitigate the impacts of potential floodwater moving from the project area to regions south of the site. The berm would be transitioned to blend with the pedestrian walkway that runs under Ford Street (Figure 17).

Exchange Boulevard Improvements

Currently, Exchange Boulevard acts as a barrier to pedestrians between the Corn Hill neighborhood and the river and lacks safe pedestrian crossings. The following improvements (illustrated in Figures 14 and 16) are intended to enhance the median, which is viewed by the community as an asset to the neighborhood, and create safer and inviting pedestrian connections between Corn Hill and the river.

5. Resurface and restripe Exchange Boulevard. Resurface and restripe Exchange Boulevard in its existing footprint to include one travel and one bike lane striped for optimal visibility and safety in each direction, and parking on both the western and eastern sides of the street.

6. Enhance pedestrian crossings. Provide two enhanced pedestrian crossings at the Corn Hill Pedestrian Mall of Exchange Boulevard and at Fitzhugh Place. Both pedestrian crossings are treated with enhanced landscaping and decorative pavement to differentiate and visually enhance the crossing for motorists, which will improve connectivity and aid in traffic-calming.

7. New sidewalks. Provide a new sidewalk along the eastern side of Exchange Boulevard. This will help to enhance pedestrian accessibility as well as provide car loading and unloading space (Figure 18).

8. New Street lighting. Replace street lighting with new ornamental light poles in existing locations.



EXISTING VIEW LOOKING EAST FROM EXCHANGE BOULEVARD TO THE OTHER SIDE OF RIVER



PROPOSED VIEW LOOKING EAST FROM EXCHANGE BOULEVARD TO THE OTHER SIDE OF RIVER

FIGURE 18



EXISTING VIEW OF EXCHANGE BOULEVARD AND FITZHUGH PLACE INTERSECTION



PROPOSED VIEW OF EXCHANGE BOULEVARD AND FITZHUGH PLACE INTERSECTION

FIGURE 19



ENHANCED MEDIAN

9. Median plantings. Enhance the median by planting large deciduous canopy trees. Replace the soil around the trees with an appropriate soil medium to optimize the growth and success of the trees in the median environment.

Landside Improvements

Based on analysis and feedback from the community, the following amenities are proposed to help attract people to the river and enhance physical and visual access to the water. The proposed improvements to the landside area behind the West River Wall, as summarized below, are illustrated in Figures 14 and 16.

10. Pedestrian / bicycle trail. Construct a 12' wide pedestrian/ bicycle trail along the length of the study area. In some locations, the trail is shown on the top of the protection berm. In other locations, the trail moves closer to the river, connecting to the overlook/plazas and the boat dock. This offers a richer traveling experience for the trail user by providing ever-changing views of the river and engagement with the shoreline.

11. Pedestrian plazas / overlooks. Construct two proposed pedestrian overlook/plaza areas: (1) at the enhanced intersection at the Corn Hill Pedestrian Mall crossing; and (2) at the Fitzhugh Place intersection. The new plaza overlook areas will better connect the waterfront with the Corn Hill neighborhood, provide unique plaza event space, overlook viewing access at the river's edge, and provide a setting for the placement of public art or focal features. The pedestrian plazas/ overlooks also provide the opportunity to have repurposed cargo containers or other minor structures to be used for small retail (bike or kayak rental) or as picnic shelters (Figure 19).

12. Informal grass amphitheater. Construct informal grass amphitheaters between the two proposed plaza / overlook areas. The protection berm slopes downward towards the river as it meets the top of the lowered West River Wall. This gently sloped lawn area can act as an informal amphitheater space, providing opportunities to view activities on the river such as regattas, floating barge performances, and the annual 4th of July fireworks display as well as support more passive uses such as sun bathing, picnicking, etc.

13. Plantings. Remove existing vegetation. There are currently clusters of dense volunteer vegetation, including poison ivy and trees, along the back side of the wall. The NYS Canal Corporation requires a minimum of 15 feet of unobstructed space behind its wall. Furthermore, any wall repairs, reconstruction, or removal will require the removal of adjacent vegetation. The Master Plan envisions new plantings of low-maintenance trees, shrubs, and grasses that will allow for unobstructed or filtered views of the river from the pedestrian trail. To ensure that plantings will not interfere with the integrity

of the protection berm, trees shall not be planted adjacent to the wall or berm. Rather, trees shall be located between the berm and Exchange Boulevard along the length of the study area and in other locations that will not affect the functioning maintenance of the berm (Figure 20).

14. Boat dock. The Master Plan includes a new boat dock located at the southern end of the study area, near the Ford Street Bridge. This area currently has sufficient navigation draft, is expected to be less affected by sedimentation, and is therefore considered preferable and sustainable for providing boat access. A small vehicle parking area is provided to allow for transporting car-top watercraft. Accessible kayak docks are intended to be placed at this location and at the existing dock at Corn Hill Landing to provide easy access to the water.

15. Trial Improvements. The Master Plan, although not graphically shown on the concept plan, also includes trail improvements such as pedestrian level lighting, ornamental benches, bike racks, fitness stations, distance markers, informational kiosks, and interpretive panels. These elements will help to activate the corridor from the Ford Street Bridge to Corn Hill Landing and give the corridor a distinct identity.

16. Existing Corn Hill Landing Plaza Improvements. Activating the existing Corn Hill Landing Plaza to the north of the project area is a priority of the Corn Hill Neighborhood Association. Through programming and low-cost improvements, such as providing Adirondack chairs, shade structures, and games/activities, this space can draw users from Corn Hill Landing further south into the study area. The plaza is also a potential location to relocate the Griffin sculpture from the median of Exchange Boulevard. Relocating the sculpture is a priority of the Corn Hill Neighborhood Association in order to prevent further deterioration of the sculpture from salt spray. A conceptual plan for the existing Corn Hill Landing Plaza can be found in Figure 21.

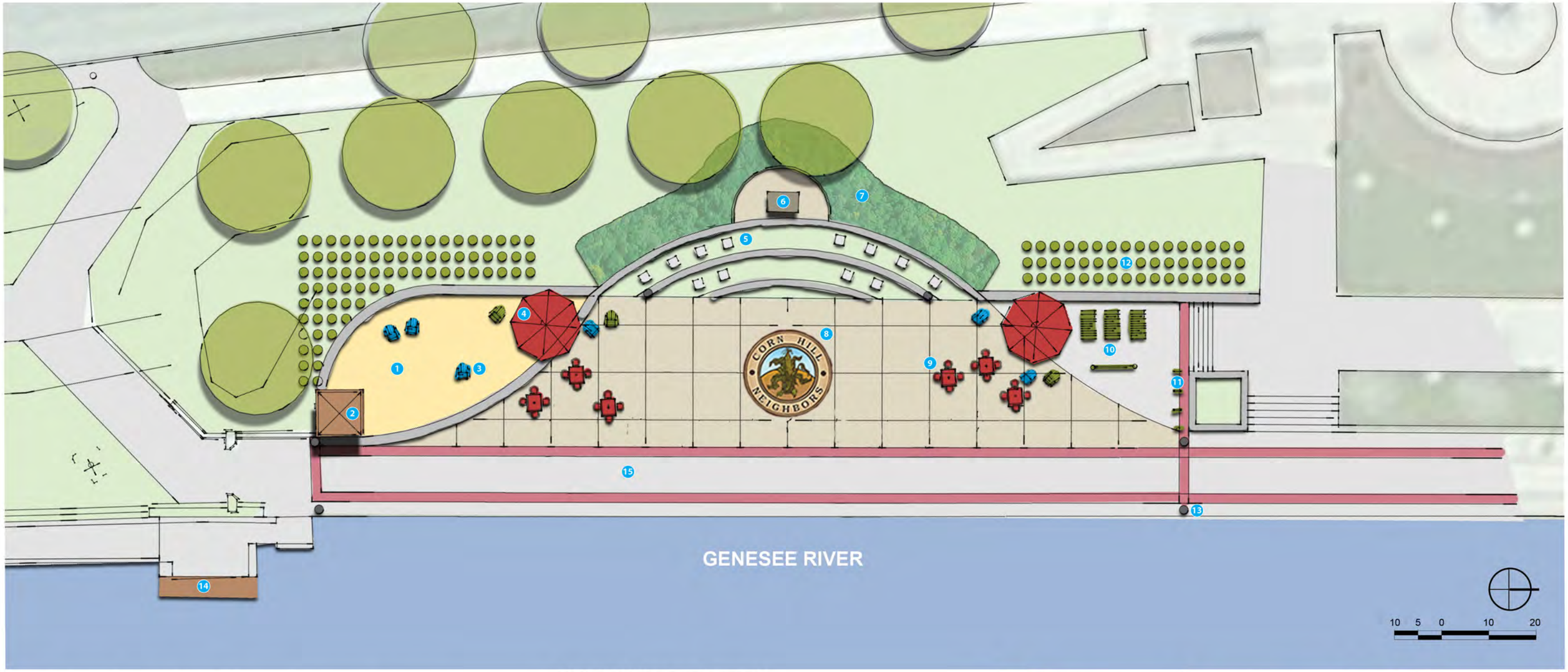


EXISTING VIEW LOOKING SOUTH TOWARDS FORD STREET



PROPOSED VIEW LOOKING SOUTH TOWARDS FORD STREET

FIGURE 20



Corn Hill Landing Plaza Improvements

Legend

1. Seasonal Urban Beach
2. “Lifeguard Platform” (Viewing Platform)
3. Adirondack Chairs
4. Umbrella Shade Sculptures with Lighting
5. Amphitheater in Hillside
6. Relocated Griffin Sculpture
7. Planting Beds
8. Corn Hill Logo in Pavement
9. Tables / Game Tables
10. Exercise Station
11. Bike Rack / Repair Station
12. “Corn Hill Planting” (Ornamental Grass)
13. Wind Harps on Poles
14. Accessible Kayak Dock
15. Riverway Trail

FIGURE 21

Potential Program Elements

- Love locks associated with viewing platform.
- Piece of water / earth from another memorable / significant place in ground or in a monument.
- Water flowing into river.
- Zip line across river.
- Energy-harvesting exercise or play equipment to power lights or kinetic art.
- Floating Chairs


Love Locks

















implementation

The purpose of the West River Wall Master Plan is to provide guidance to the City of Rochester, NYS Canal Corporation, Corn Hill Neighborhood residents and the general public on the implementation of the vision illustrated in the Master Plan. The implementation plan will provide the overall framework and actions required to achieve this vision.

Phasing

The Phasing Plan organizes the Master Plan into three distinct implementation phases, each phase building upon the previous.

- **Phase 1a** – Existing Corn Hill Landing Plaza Improvements
- **Phase 1b** – Hybrid Wall / Berm and Multi-Use Trail
- **Phase 2** - Exchange Boulevard Improvements
- **Phase 3** - Landside Amenities between Exchange Boulevard and the Wall / Berm

Phase 1a - Existing Corn Hill Landing Plaza Improvements

Phase 1a of the Master Plan focuses on improvements to the existing Corn Hill Landing Plaza. The improvements to the plaza will build upon existing efforts undertaken by the Corn Hill Neighborhood Association (CHNA) to activate the space. Short-term efforts include adding additional Adirondack chairs to those already in place, game tables, ornamental planting beds, and the relocation of the Griffin sculpture from Exchange Boulevard. Longer-term actions include the creation of a small amphitheater space in the existing hillside, a seasonal urban beach, ornamental shade structures, and other various improvements.
For the recommendations in Phase 1a to become a reality, the following assumptions were identified and must be factored into subsequent budgeting and construction planning.

- Coordination between CHNA, The City of Rochester and Mark IV Enterprises (the owner of the plaza) must take place in order for the CHNA to have the ability to make improvements to a privately-owned public space.
- Funding is identified and secured for the short-term improvements and the design and construction of the long-term improvements.
- Programming is established for the space along with sufficient resources for marketing, ongoing maintenance and general upkeep.

Improvements to the existing Corn Hill Landing Plaza will help to invigorate the neighborhood and give a signal to the general public that changes are happening and progress is being made on vision put forth in the 2012 Corn Hill Community Vision Plan, In reality, these improvements could be taken on at any time as funding from the Corn Hill Neighborhood Association or the City of Rochester becomes available.

Phase 1b - Hybrid Wall / Berm and Multi-Use Trail

Phase 1b of the Master Plan focuses on the construction of the hybrid wall / berm system and the multi-use trail. Construction of the hybrid system is critical for providing a FEMA-accredited flood protection structure and eliminating the need for Corn Hill Neighborhood residents to purchase flood insurance. In the short term, a Letter of Map Revision (LOMR) will be submitted to FEMA to re-establish and lower the base flood elevation based on recent data evaluation. By lowering the base flood elevation, some property owners will not be required to pay flood insurance while others may have their premiums reduced.

Where the walls and earthen berms are constructed is key in setting the stage for future phases, such as the pedestrian plazas and overlooks. The pedestrian / bicycle trail would be constructed with the hybrid system to continue to provide recreation along the river and to increase visual and physical access to the water.
For the recommendations in Phase 1b to become a reality, the following assumptions were made and must be factored into subsequent budgeting and construction planning.

- Ownership and maintenance of the hybrid wall / berm is determined and agreed upon between The City of Rochester and the Canal Corporation.
- Funding is identified and secured for final construction document preparation and construction.

The completion of Phase 1b will reaccredit the flood protection structure, increase visual and physical access to the water, and set the stage for future phases of the Master Plan.

Phase 2 - Exchange Boulevard Improvements

Phase 2 of the Master Plan focuses on improvements to Exchange Boulevard. This phase involves milling, repaving, and re striping Exchange Boulevard to include one lane of vehicular traffic in each direction, bike lanes (striped for optimal visibility and safety) in each direction and parking on both sides of Exchange Boulevard. Phase 2 would also include the addition of a sidewalk on the eastern side of Exchange Boulevard, new ornamental street lighting, and the enhancement of pedestrian crossings at Fitzhugh Place and the Corn Hill pedestrian link which will be key in providing a safe pedestrian connection to draw people from the Corn Hill Neighborhood to the river. For the recommendations in Phase 2 to become a reality, the following assumptions were identified and must be factored into subsequent budgeting and construction planning.

- Coordination with the New York State Department of Transportation (NYSDOT) and the Monroe County Department of Transportation (MCDOT).
- Funding is identified and secured for final construction documents and construction.

The completion of Phase 2 will enhance connectivity and pedestrian safety to the waterfront, improve the look of Exchange Boulevard creating a gateway for the Corn Hill Neighborhood, and further lay the framework for future phases of the Master Plan.

Phase 3 - Landside Amenities between Exchange Boulevard and the Wall / Berm

Phases 1 and 2 set the stage for the placement of the pedestrian plaza overlooks and other amenities that will activate the corridor and draw people from the Corn Hill Neighborhood and the surrounding city to the waterfront. Phase 3 of the Master Plan focuses on the construction of the landside amenities between the

hybrid wall / berm flood control structure and Exchange Boulevard. For the recommendations in Phase 3 to become a reality, the following assumptions were identified and must be factored into subsequent budgeting and construction planning.

- Funding is identified and secured for final design documents and construction.

The completion of Phase 3 will further activate the riverfront creating a destination point drawing people to and from the Corn Hill Neighborhood and other city residents.

Planning-Level Engineer's Opinion of Probable Costs

To guide the phasing of the West River Wall Master Plan and to assist in acquiring funds for the project, a planning-level engineer's opinion of probable costs was calculated for each phase of the project as illustrated in Figure 22. A more detailed estimate can be found in Appendix D.

Permitting and Applications

In reviewing the feasibility of an undertaking, it is generally valuable to identify the potential for environmental impact early in the planning process. Furthermore, in considering the implementation of any action, it can be helpful to identify agencies that would have jurisdiction over a project and to identify any permits or environmental reviews that they would require. It should be noted that the usefulness of such a process is limited to the level of detail developed for the project. The more clarity and detail developed for a project, the more detailed the agency response with regard to the potential for environmental impact and permitting. This section describes the environmental compliance and permitting that would be involved in Phase 1b - Hybrid Wall / Berm and Pedestrian / Bicycle Trail- of the West River Wall Master Plan.

US Army Corps of Engineers (USACE)

The Genesee River is listed as "navigable" from its mouth to Black Creek and is therefore subject to Section 10 of the Rivers and Harbors Act. Any work performed below the "Ordinary High Water (OHW)" of the river is under the jurisdiction of the USACE. The OHW elevation for the project area is approximately 512.5 feet (City Datum). Implementation of Phase 1b will involve construction below OHW for the wall reconstruction areas, for the naturalized shoreline section near the southern end of the study area, and for many of the berm locations.

	Project Phase	Name	Planning Level Cost	Potential Funding Resources	Time Frame
Phase 1a	Phase 1a	Existing Corn Hill Landing Plaza Improvements (see Appendix D for detailed cost breakdown)			
	Project 16	Adirondack Chairs	$2,700	CHNA	2015-2019
	Project 16	Tables and Chairs	$21,000	CHNA	2015-2019
	Project 16	Ornamental Plantings	$8,835	CHNA	2015-2019
	Project 16	Bike Racks and Bike Repair Station	$5,500	CHNA	2015-2019
	Project 16	Fitness Equipment	$14,000	CHNA	2015-2019
	Project 16	Shade Structures	$80,000	CHNA	2015-2019
	Project 16	Wind Harps On Poles	$14,000	CHNA	2015-2019
	Project 16	Urban Beach with Lifeguard Viewing Platform	$46,300	CHNA, City, LWRP	2015-2019
	Project 16	Relocate Griffen Sculpture	$50,000	CHNA, City	2015-2019
	Project 16	Corn Hill Logo Treatment	$6,000	CHNA, City	2015-2019
	Project 16	Amphitheatre	$201,000	CHNA, City, LWRP	2015-2019
	Sub-Total		$449,335		
	Basic Work Zone Traffic Control (5%)		$22,500		
	Survey Operations (2%)		$9,000		
	Erosion and Sediment Control (.5%)		$2,300		
	SWPP Inspections		$5,000		
	Total		$488,135		
	Design Contingency (15%)		$73,220		
	Mobilization (10%)		$48,814		
	Construction Contingency (10%)		$48,814		
	Design and Engineering Services (12%)		$58,576		
	Construction Inspection / RPR (10%)		$48,814		
	Phase 1b Planning Level Cost		$766,373		
Phase Ib	Phase 1b	Hybrid Wall / Berm and Multi-Use Trail (see Appendix D for detailed cost breakdown)			
	Project 1,2,4,12	Hybrid Wall / Berm	$2,459,732	City, NYSCC, EPF, LWRP	2019
	Project 10	Bicycle Trail	$225,500	City, NYSCC, RTP, EPF	2019
	Project 3	Naturalized Shoreline	$4,000	City, NYSCC, RTP, EPF, NYSEFC GIGP	2019
	Project 13	Shade Tree Plantings	$11,000	City, NYSCC, RTP, EPF, NYSEFC GIGP	2019
	Sub-Total		$2,700,232		
	Basic Work Zone Traffic Control (5%)		$135,100		
	Survey Operations (2%)		$54,100		
	Erosion and Sediment Control (.5%)		$13,600		
	SWPP Inspections		$5,000		
	Total		$2,908,032		
	Design Contingency (15%)		$436,205		
	Mobilization (10%)		$290,803		
	Construction Contingency (10%)		$290,803		
	Design and Engineering Services (12%)		$348,964		
	Construction Inspection / RPR (10%)		$290,803		
	Phase 1b Planning Level Cost		$4,565,610		

FIGURE 22 - IMPLEMENTATION CHART

	Project Phase	Name	Planning Level Cost	Potential Funding Resources	Time Frame
Phase 2	**Phase 2**	**Exchange Boulevard Improvements (see Appendix D for detailed cost breakdown)**			
	Project 5	**Exhange Blvd Resurfacing and Restriping**	**$391,500**	**City**	**2015-2019**
	Project 6	**Enahnced Pedestrian Crossings**	**$180,000**	**City**	**2015-2019**
	Project 7	**Concrete Sidewalk East Side of Exchange Blvd**	**$260,000**	**City**	**2015-2019**
	Project 8	**Ornamental Street Lighting**	**$153,140**	**City**	**2015-2019**
	Project 9	**Median Shade Trees and Landscape**	**$65,875**	**City**	**2015-2019**
	Sub-Total		**$1,050,515**		
	Basic Work Zone Traffic Control (5%)		$52,600		
	Survey Operations (2%)		$21,100		
	Erosion and Sediment Control (.5%)		$5,300		
	SWPP Inspections		$5,000		
	Total		**$1,134,515**		
	Design Contingency (15%)		$170,177		
	Mobilization (10%)		$113,452		
	Construction Contingency (10%)		$113,452		
	Design and Engineering Services (12%)		$136,142		
	Construction Inspection / RPR (10%)		$113,452		
	Phase 2 Planning Level Cost		**$1,781,190**		
Phase 3	**Phase 3**	**Landside Amenities Between Exchange Boulevard and Hybrid Wall / Berm (see Appendix D for detailed cost breakdown)**			
	Project 11	**Fitzhugh Place Plaza**	**$620,415**	**City, RTP, EPF**	**2025**
	Project 11	**Corn Hill Pedestrian Connection Plaza**	**$458,225**	**City, RTP, EPF**	**2025**
	Project 13,14,15	**General Cooridor Improvements - Pedestrian Lighting, kayak Dock, Bike Racks, Benches, Wayfinding Signage, etc.**	**$344,500**	**City, RTP, EPF**	**2025**
	Sub-Total		**$1,423,140**		
	Basic Work Zone Traffic Control (5%)		$71,200		
	Survey Operations (2%)		$28,500		
	Erosion and Sediment Control (.5%)		$7,200		
	SWPP Inspections		$5,000		
	Total		**$1,535,040**		
	Design Contingency (15%)		$230,265		
	Mobilization (10%)		$153,504		
	Construction Contingency (10%)		$153,504		
	Design and Engineering Services (12%)		$184,205		
	Construction Inspection / RPR (10%)		$153,504		
	Phase 3 Planning Level Cost		**$2,410,022**		

FIGURE 22 - IMPLEMENTATION CHART CONTINUED

The USACE will make the final determination over which forms of authorization would be used for the project. This will be a topic of discussion as more details of the work are developed. The portions of this work involving wall reconstruction could be authorized under Nationwide Permit 3 – Maintenance of Existing Flood Control Facilities, which authorizes, "The repair, rehabilitation, or replacement of any previously authorized, currently serviceable structure, or fill, or of any currently serviceable structure or fill authorized by 33 CFR 330.3, provided that the structure or fill is not to be put to uses differing from those uses specified or contemplated for it in the original permit or the most recently authorized modification."

The naturalized shoreline portion could be authorized under Nationwide Permit 13 – Bank Stabilization, which authorizes bank stabilization activities necessary for erosion prevention. Some of the required criteria include:

- (a) No material is placed in excess of the minimum needed for erosion protection;
- (b) The activity is no more than 500 feet in length along the bank;
- (c) The activity will not exceed an average of one cubic yard per running foot placed along the bank below the plane of the ordinary high water mark;
- (f) No material is placed in a manner that will be eroded by normal or expected high flows (properly anchored trees and treetops may be used in low energy areas);

The berm locations in Phase 1b may fall under Nationwide Permit 31 – Maintenance of Existing Flood Control Facilities, but this would involve agreement with the District Engineer that this work would fall within the "maintenance baseline" of the flood control facility.

If use of the Nationwide Permits does not appear to be a good "fit" after consultation with the USACE, the work could be authorized through a "Letter of Permission," which is more involved than a Nationwide Permit but less involved than an Individual Permit. Finally, the project could be authorized through an Individual permit. Individual permits require much more information and processing than the other forms of authorization discussed, including a required public notification and comment process and an individual Section 401 Water Quality Certification from the New York State Department of Environmental Conservation (NYSDEC).

New York State Department of Environmental Conservation
The Genesee River is classified by NYSDEC as Class "B." The best usages of Class B waters are primary and secondary contact recreation and fishing. These waters shall be suitable for fish, shellfish, and wildlife propagation and survival. Because of this classification, and because the Genesee River is navigable, any disturbance to the bed or banks of the river would require an Article 15 Protection of Waters Permit, pursuant to 6 NYCRR Part 608. One of the conditions of an Article 15 permit is that in-water construction would be prohibited during certain spring months. The actual dates for this restriction are determined by the NYSDEC Fisheries person for that area at the time of permitting. Based on other projects in the vicinity, it is anticipated that the date restrictions for in-water work would be from March 15 to June 30. It should be noted that if a temporary cofferdam was constructed outside of the date restriction time, work could then be performed in the dewatered area behind the cofferdam during the date restriction times.

As discussed above, the project may require a letter of permission or an individual Section 10 permit from the Army Corps of Engineers. Should this be the case, an individual Section 401 Water Quality Certification would be required from the NYSDEC. This requires a determination that the project will "comply with the applicable effluent limitations, water quality standards, and any other applicable conditions of the State Law." The NYSDEC has already granted a blanket Section 401 Water Quality Certification listed for the Nationwide Permits discussed provided the project meets all of the General Conditions of the Nationwide Permits.

One factor in determining the issuance of the above permits would be demonstration of adequate erosion and sediment controls. Should it apply, the project would also need to be in compliance with the NYSDEC SPDES General Permit for a Stormwater Discharge from Construction Activity (Permit No. GP-0-10-001) or with the local Municipal Separate Storm Sewer Systems (MS4) requirements. Coverage under this permit is required for projects that disturb more than one acre of land. It is likely that Phase 1b would require coverage under this permit. Obtaining this coverage would require preparation of a Stormwater Pollution Protection Plan (SWPPP) which will include an erosion and sediment control plan. Treatment for water quality is not anticipated since the work would not involve any new impervious area. Consideration for water quantity control would be waived for this project since the project would result in changes to hydrology that increase discharge rates.

Another requirement for NYSDEC permits is completion of SEQRA compliance (see below).

New York State Department of State (NYSDOS)
At this time, the project area is not within an approved Local Waterfront Revitalization Program (LWRP) area. Therefore, a Federal consistency determination would not be required for the USACE permitting or for any potential Federal funding.

Office of General Services (OGS)
Title to the bed of numerous bodies of water is held in trust for the people of the State of New York under the jurisdiction of the OGS. Structures, including fill, located in, on, or above state-owned lands under water are regulated under the Public Lands Law and may require authorization from the OGS. Coordination with OGS would be required for features such as docks identified in the master plan; however, for Phase 1b, it is anticipated that coordination with OGS, if any, would be handled by NYSDEC.

New York State Canal Corporation (NYSCC)
The State of New York under the jurisdiction of the NYSCC owns the existing West River Wall and a varying width of land behind the wall. In most places the NYSCC has jurisdiction over 15 feet of the land behind the wall. Near Ford Street, this amount is approximately 50 feet. Assuming that the City would own and maintain the reconstructed wall and berms of Phase 1b, the work would require an "Occupancy and Work Permit" from the NYSCC. An Occupancy Permit is a revocable instrument that authorizes the temporary, restricted use of a specific site of real property under the jurisdiction of the NYSCC. In the case of a permanent structure like this, the permit would be a perpetual permit. A Work Permit is a revocable instrument that authorizes construction, maintenance, inspection, survey or other type of work or short term activity on a specific site of real property under the jurisdiction of the NYSCC.

Application requires a small fee and insurance certifications, along with plans and specifications pertaining to the proposed work. All of the requirements of SEQR must be met (see below).

The NYSCC owns the Court Street Dam, which is downstream of the West River Wall. This dam controls the water surface elevation at the West River Wall. It is operated for Rochester Gas & Electric (RG&E) for power generation as well as for navigation and flood control. It would be desirable to coordinate with dam operators to adjust water surface elevations to expedite construction. This consideration should be discussed with the NYSCC, and may be included in the Occupancy and Work Permit application. Coordination with RG&E would also be necessary.

National Environmental Protection Act (NEPA)
Any Federal agency providing funding, or making a discretionary decision regarding a project (such as the decision to issue a permit) is required to comply with NEPA. This includes funding from a federal agency that is administered by a State agency. Each federal agency has issued its own regulations for the implementation of NEPA and the details of their procedures do vary. In general, the work identified for Phase 1b should be a Class II, Categorical Exclusion under NEPA. Documentation will be required by the funding/permitting agency to confirm this classification. In the case of the USACE, the Joint Application for Permit would provide this agency the documentation needed for their compliance with NEPA. Specific procedures and information required by a funding agency would be investigated at the time of project funding.

Besides NEPA itself, Federal agencies must comply with a number of other Federal laws, regulations and Executive Orders (EO). For example, Federal laws and EOs that would apply to Phase 1b include:

- National Historic Preservation Act
- Clean Water Act
- Endangered Species Act
- EO 11990 Protection of Wetland
- EO 11988 Floodplain Management
- EO 13112 Invasive Species

State Environmental Quality Review Act (SEQRA)
Phase 1b is an action subject to review under SEQRA. Depending on the ownership/roles agreed to between the City and the NYSCC, it is assumed that the City of Rochester would be the lead agency. Under SEQRA, a Type II project is a class of projects where no environmental impact would be expected. The SEQRA regulations describe these kinds of projects in 6 NYCRR Part 617.5. One of these that may be appropriate to the Phase 1b is "replacement, rehabilitation or reconstruction of a structure or facility, in kind, on the same site, including upgrading buildings to meet building or fire codes, unless such action meets or exceeds any of the thresholds in section 617.4 of this Part (6 NYCRR Part 617.5(c)(1)). It could be reasoned that the berms would be a replacement for the river wall. As the lead agency, the City could determine the work to be a Type II project, in which there would be no further SEQR compliance.

A more conservative approach would be for the City to classify Phase 1b as an "Unlisted Action" under SEQRA. This will involve

preparation of a short or long Environmental Assessment Form (EAF). The NYSDEC has recently developed new EAF's for use under 6 NYCRR Part 617. The City of Rochester had previously developed its own SEQRA Long EAF; however, in light of NYSDEC's new forms, has decided to utilize the NYSDEC forms. In its revision the NYSDEC has added more information to the Short EAF, and has recommended its use for most projects, leaving the Long EAF for more complicated projects. Use of the current NYSDEC Short EAF is recommended for Phase 1b.

Part 1 of the Short EAF will provide a description of the proposed work and the project site. This includes environmental resources that are or may be present that could be impacted, such as wetlands, threatened and endangered species, hazardous waste and contaminated materials, and historic resources. Part 1 also identifies all State permits and State agency approvals needed for the project. The completed Part 1 of the Short EAF should be sent by the City to all of the identified involved agencies and any interested state agencies. Involved agencies for the project include the NYSDEC and the New York State Canal Corporation. The letters to involved and interested agencies should state The City's intent to be the lead agency for the project. The letters should also solicit comments with regard to knowledge of environmental resources present and any concerns with regard to potential environmental impact. Agencies must be allowed 30 days to react to this letter. After taking into account any public and agency comments, Part 2 of the EAF should be completed. Part 2 is a documentation of project impacts and their magnitude. It is anticipated that the SEQR process will then culminate with a decision document that concludes that there will be no significant impacts as a result of the project. This document is a "Negative Declaration."

Threatened and Endangered Species

One of the requirements of permitting agencies and SEQRA is the potential to affect threatened and endangered species. This involves a review of State-listed species from the Natural Heritage Program of the NYSDEC and federally-listed species from the U. S. Fish and Wildlife Service (FWS). The lists of species and reports of known locations do change over time, so a check with these agencies should be done every 6-12 months during project development. Of particular note is that in November 2013, the USFWS announced the proposed listing of the Northern long-eared bat (Myotis septentrionalis), which will require the review of any tree removals greater than 3" diameter breast height (dbh) as suitable roosting habitat. Suitable habitat includes gaps underneath bark, in cavities, or in crevices of both live and dead trees. In order to reduce the potential to impact this species, it is recommended that any tree removals occur during the approved winter cutting window of October 1 to March 31 when the bats are located in hibernacula. A determination of effect under the Endangered Species Act will need to be made by the USACE in consultation with the USFWS before they can authorize a project involving the removal of trees greater than 3" dbh.

New York State Office of Parks, Recreation and Historic Preservation (NYSOPRHP)

Any Federal agency involved in the project will need to make a determination under Section 106 of the National Historic Preservation Act of 1966 in consultation with the State Historic Preservation Officer. The Commissioner of NYSOPRHP is the State Historic Preservation Officer for New York, and the State Historic Preservation Office (SHPO) handles project reviews and consultation for the State Historic Preservation Officer. Review is also required for SEQRA unlisted actions under Section 14.09 of the New York State Parks, Recreation and Historic Preservation Law of 1980.

Contact has been made with the SHPO regarding this project; however, the project concepts were not specific enough for a formal review. Screening of the project area using the SHPO GIS does indicate two things: There are no listings on the National or State Registers of Historic Preservation and the entire area is considered to be "archaeologically sensitive." Areas where excavation may be required may therefore need review by a professional archaeologist. The National Register of Historic Places Nomination Document for the Erie Canalway National Heritage Corridor, Genesee Arm Section, was reviewed and the West River Wall is not listed as a contributing or non-contributing factor. Besides structures or properties that are listed on the National Register of Historic Places, Section 106 affords protection to those structures and properties that are *eligible* for listing on the National Register. Further coordination with SHPO is recommended to determine the eligibility of the West River Wall for the National Register. If needed, a final determination of eligibility would be made by the National Park Service.

Follow On Tasks

As part of the project implementation process, the following tasks will need to be performed prior to the construction of Phases 1b to 3 of the West River Wall Master Plan vision

- Conduct Phase 1a Literature Search and Sensitivity Study and likely a Phase 1b Field Investigation for the proposed disturbed areas within the project area.
- Perform Hazardous Materials survey and prepare abatement plan if necessary.
- Coordinate with other agencies involved with the project in addition to The City of Rochester and Canal Corporation. These may include;
  - o Office of General Services (OGS)
  - o New York State Department of State (DOS)
  - o New York State Power Authority
  - o New York State Department of Transportation (NYSDOT)
  - o Monroe County Department of Transportation (MCDOT)
  - o Rochester Gas and Electric (RG&E)
- Complete the New York State Environmental Quality Review Act (SEQRA) Environmental Assessment Form (if unlisted action is selected).
- Prepare Final Design Documents for the wall / berm construction including updates to the Engineer's Opinion of Probable Costs.
- Prepare a signage and wayfinding plan.
- Prepare Construction Documents for public bidding, including Final Engineer's Opinion of Probable Costs.
- Submit permit applications to the New York State Department of Environmental Conservation (NYSDEC) and the U.S. Army Corps of Engineers (USACE).
- Complete NYSDEC SWPP Stormwater permitting process.

Roles and Funding

Possible funding and implementation options have been discussed by the City of Rochester and the NYS Canal Corporation, including a collaborative interagency partnership through which the City and NYS Canal Corporation would prepare and submit a joint CFA grant application. Both agencies would be required to contribute towards a match (through dollars or in-kind services).

Implementation will be driven, in part, by the Master Plan design and the available sources of funding. The following list includes additional possible funding sources based on awards for similar projects from previous years.

- **New York State Parks RTP:** The Recreational Trails Program provides funds to develop and maintain recreational trails for both motorized and non-motorized recreational trail use. Funding is available for the maintenance and restoration of existing recreational trails, development and rehabilitation of trailside and trailhead facilities, and trail linkages for recreational trails. Funding is also available for the purchase and lease of recreational trail construction and maintenance equipment, construction of new recreational trails, and acquisition of easements and fee simple title to property for recreational trails or recreational trail corridors.

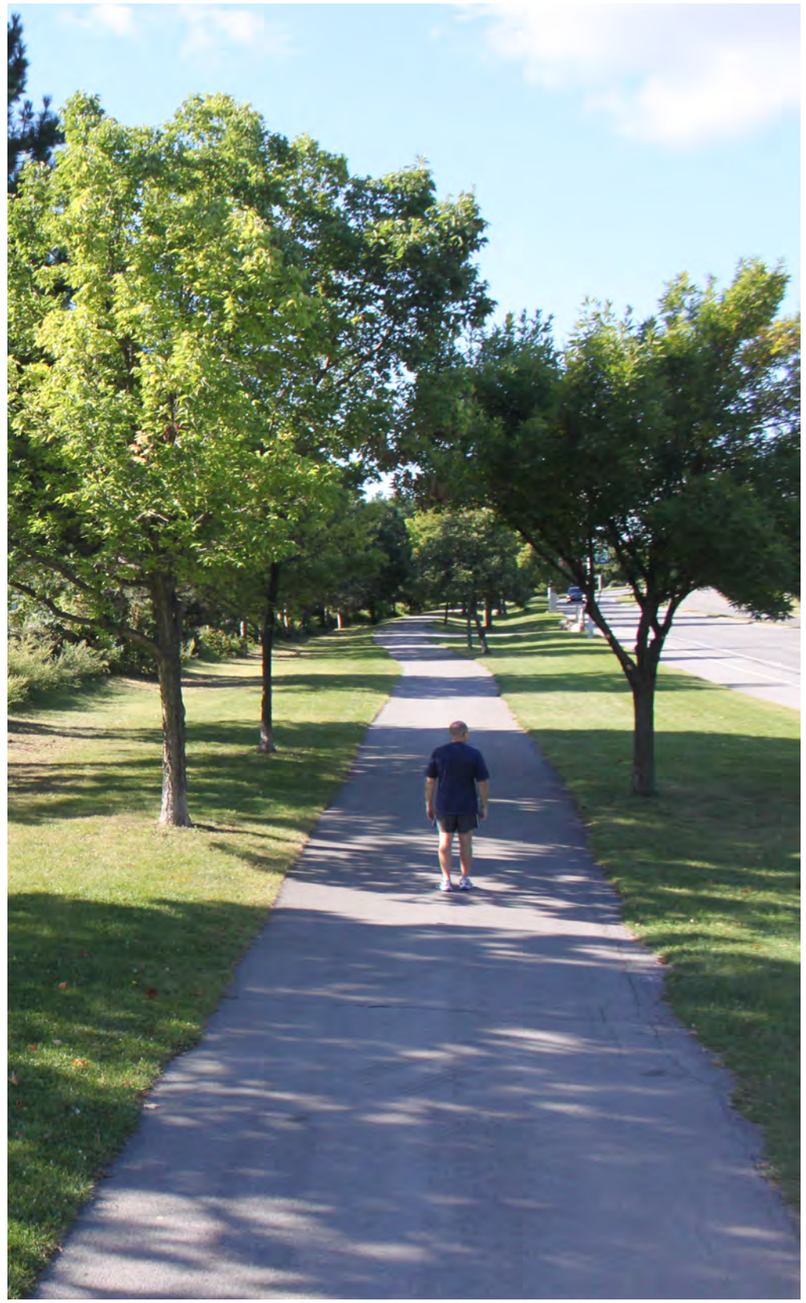
- **Office of Parks, Recreation and Historic Preservation (OPRHP) - EPF Municipal Grant Program** This program provides funding for the acquisition, development and planning of parks and recreational facilities to preserve, rehabilitate or restore lands, waters or structures for park, recreation or conservation purposes and for structural assessments and/or planning for such projects. Examples of eligible projects include: playgrounds, courts, rinks, community gardens, and facilities for swimming, boating, picnicking, hunting, fishing, camping or other recreational activities. OPRHP gives priority to projects that include green improvements, historic sites, enhancements to public access to environmental resources (including landscape and trail improvements), visual appeal, provide economic stimulus, health and vitality, and community support of the project.

- **NYSDOS LWRP:** The Local Waterfront Revitalization Program provides matching grants on a competitive basis to revitalize communities and waterfronts. An LWRP plan is prepared by a local community to address land and water use for the community's developed, natural, public, and working waterfronts. Completing a LWRP can increase a community's ability to attract development that is appropriate for a waterfront. Once approved by the New York State's Secretary of State, the LWRP can be used to coordinate implementation of the community's goals. An adopted LWRP can help communities leverage additional funding for implementation projects, such as grant funding for redevelopment, cleanup of brownfields, recreational uses, improvements to protect water quality, and rehabilitation of historic buildings. The City of Rochester is currently updating its LWRP with an expanded boundary that includes all of the city's waterfront areas along Lake Ontario, the Genesee River and the Erie Canal. The update will identify new waterfront policies and recommendations that will guide future development and help leverage future funding opportunities. It will be important for the West River Wall project to be incorporated into the LWRP to expand access to funding opportunities and ensure consistency with the city's plan.

- **NYSEFC GIGP:** Environmental Facilities Corporation's Green Innovation Grant Program (GIGP) provides grants on a competitive basis to projects that improve water quality and demonstrate green stormwater infrastructure in New York. GIGP is administered by NYS Environmental Facilities Corporation (EFC) through the Clean Water State Revolving Fund (CWSRF) and is funded with a grant from the US Environmental Protection Agency (EPA).



VIEW TO DOWNTOWN ROCHESTER FROM CORN HILL LANDING PLAZA



VIEW FROM GENESEE RIVERWAY TRAIL LOOKING SOUTHEAST TOWARDS THE FORD STREET BRIDGE

conclusion

The City of Rochester is actively working towards a fully accessible and connective waterfront experience for its residents and visitors. Several sections of the waterfront have been improved, providing greater visual and physical access to the waterfront in combination with a modernized trail system. The West River Wall Master Plan (Master Plan), made possible by a matching grant awarded to the City by the NYS Department of State, seeks to continue the focus on waterfront improvements, addressing one of the most complex remaining sections of the Genesee Riverfront. Embedded into the historic Corn Hill Neighborhood remains a 2,200 foot section of river wall erected in 1918 to protect residents and business owners from the frequent flooding along the Genesee River. This section of wall stretches from the Ford Street Bridge northward to Corn Hill Landing and was de-accredited in 2008 by FEMA as a flood protection structure due to multiple areas of erosion and structural concerns. This administrative action essentially placed several landowners into a floodplain requiring flood insurance.

The planning process included two parallel tracks: a comprehensive evaluation of the west river wall structure and a long term master plan to enhance visual and physical access to the Genesee River. The engineering study completed as part of the West River Wall Master Plan verified structural as well as stability concerns associated with the structure. The study indicated flood elevations set by FEMA may be incorrect, resulting in a higher base flood elevation within the study area than what really exists.

Using this information, the Master Plan evaluated potential alternatives that balanced the need for flood protection with the objective of increasing access to the riverfront in a manner consistent with the Corn Hill Neighborhood's waterfront vision. A combination of restored but shortened wall sections with a flood control berm between the retained wall sections was selected as the preferred alternative for the flood protection structure which serves as the spine for the entire Master Plan. This solution accomplishes the essential objectives of the project in the most cost effective manner while allowing for a logical progression of implementation that can begin immediately with small, community-based actions. Collaboration between the City and the NYS Canal Corporation will be required to move the wall/berm flood protection structure from plan to reality.

The recommended Master Plan is a direct result of close collaboration between the City and the Corn Hill community. The City drew from extensive feedback provided by members of the community at meetings of the Citizen Advisory Committee and at public open houses. Through this iterative process involving indispensable contributions from the community, the City developed technical solutions and a riverfront Master Plan designed to address the community's concerns and achieve its goals for a more vibrant, accessible riverfront.

The West River Wall Master Plan balances vision with reality, providing a clear and actionable strategy for creating a truly unique destination on the Genesee Riverfront. When complete, this section will allow a full range of users to watch water-based activities, explore naturalized shoreline habitats, learn about the history of the area, get inspired by public art, and just simply enjoy the view of our great city. Just as importantly, it will serve to improve the safety of the public in the event of a flood. Finally, it will provide Corn Hill with the waterfront it envisions, reconnecting it to the Genesee River in a modern and responsible manner.



City of Rochester

Local Waterfront Revitalization Program

Appendix VI

Guidelines for Notification and Review

Lake Ontario Genesee River Erie Canal

Appendix VI Guidelines for Notification and Review

Guidelines for Notification and Review of State Agency Actions Where Local Waterfront Revitalization Programs are in Effect

I. PURPOSES OF GUIDELINES

A. The Waterfront Revitalization of Coastal Areas and Inland Waterways Act (the Act) (Article 42 of the Executive Law) and the Department of State's regulations (19 NYCRR Part 600) require certain state agency actions identified by the Secretary of State to be consistent to the maximum extent practicable with the policies and purposes of approved Local Waterfront Revitalization Programs (LWRPs). These guidelines are intended to assist state agencies in meeting that statutory consistency obligation.

B. The Act also requires that state agencies provide timely notice to the affected local government whenever an identified action will occur within an area covered by an approved LWRP. These guidelines describe a process for complying with this notification requirement. They also provide procedures to assist local governments in carrying out their review responsibilities in a timely manner.

C. The Secretary of State is required by the Act to confer with state agencies and local governments when notified by a local government that a proposed state agency action may conflict with the policies and purposes of its approved LWRP. These guidelines establish a procedure for resolving such conflicts.

II. DEFINITIONS

A. **Action** means:

1. A "Type 1" or "Unlisted" action as defined by the State Environmental Quality Review Act (SEQRA);
2. Occurring within the boundaries of an approved LWRP; and
3. Being taken pursuant to a state agency program or activity which has been identified by the Secretary of State as likely to affect the policies and purposes of the LWRP.

B. **Consistent to the maximum extent practicable** means that an action will not substantially hinder the achievement of any of the policies and purposes of an approved LWRP and, whenever practicable, will advance one or more of such policies. If an action will substantially hinder any of the policies or purposes of an approved LWRP, then the action must be one:

1. For which no reasonable alternatives exist that would avoid or overcome any substantial hindrance;
2. That will minimize all adverse effects on the policies or purposes of the LWRP to the maximum extent practicable; and

3. That will result in an overriding regional or statewide public benefit.

C. **Local Waterfront Revitalization Program** or **LWRP** means the program prepared and adopted the City of Rochester and approved by the Secretary of State pursuant to Executive Law, Article 42; which program contains policies on the management of land, water and man-made resources, proposed land uses and specific projects that are essential to program implementation.

D. **Municipal chief executive officer** is the City of Rochester Mayor

E. **Local program coordinator,** the City of Rochester Manager of Planning, shall receive notification on behalf of the city from State and federal agencies considering an action within the City of Rochester LWRP boundary.

III. NOTIFICATION PROCEDURE

A. When a state agency is considering an action as described in II.DEFINITIONS, the state agency shall notify the City of Rochester.

B. Notification of a proposed action by a state agency:

1. Shall fully describe the nature and location of the action;

2. Shall be accomplished by use of existing state agency notification procedures, or through an alternative procedure agreed upon by the state agency and local government;

3. Should be provided to the local official identified in the LWRP of the City of Rochester as early in the planning stages of the action as possible, but in any event at least 30 days prior to the agency's decision on the action. The timely filing of a copy of a completed Coastal Assessment Form with the municipal chief executive officer should be considered adequate notification of a proposed action.

C. If the proposed action will require the preparation of a draft environmental impact statement, the filing of this draft document with the municipal chief executive officer can serve as the state agency's notification to the City of Rochester.

IV. LOCAL GOVERNMENT REVIEW PROCEDURE

A. Upon receipt of notification from a state agency, the City of Rochester will be responsible for evaluating a proposed action against the policies and purposes of its approved LWRP. Upon request of the Manager of Planning, the state agency should promptly provide the City of Rochester with whatever additional information is available which will assist the City of Rochester to evaluate the proposed action.

B. If the City of Rochester cannot identify any conflicts between the proposed action and the applicable policies and purposes of its approved LWRP, it should inform the state agency in writing of its finding. Upon receipt of the local government's finding, the state agency may proceed with its consideration of the proposed action in accordance with 19 NYCRR Part 600.

C. If the City of Rochester does not notify the state agency in writing of its finding within the established review period, the state agency may then presume that the proposed action does not conflict with the policies and purposes of the City of Rochester's approved LWRP.

D. If the City of Rochester notifies the state agency in writing that the proposed action does conflict with the policies and/or purposes of its approved LWRP, the state agency shall not proceed with its consideration of, or decision on, the proposed action as long as the Resolution of Conflicts procedure established in V. RESOLUTION OF CONFLICTS shall apply. The local government shall forward a copy of the identified conflicts to the Secretary of State at the time when the state agency is notified. In notifying the state agency, the local government shall identify the specific policies and purposes of the LWRP with which the proposed action conflicts.

V. RESOLUTION OF CONFLICTS

A. The following procedure applies whenever a local government has notified the Secretary of State and state agency that a proposed action conflicts with the policies and purposes of its approved LWRP:

1. Upon receipt of notification from a local government that a proposed action conflicts with its approved LWRP, the state agency should contact the Manager of Planning to discuss the content of the identified conflicts and the means for resolving them. A meeting of state agency and local government representatives may be necessary to discuss and resolve the identified conflicts. This discussion should take place within 30 days of the receipt of a conflict notification from the local government.

2. If the discussion between the local government and the state agency results in the resolution of the identified conflicts, then, within seven days of the discussion, the local government shall notify the state agency in writing, with a copy forwarded to the Secretary of State, that all of the identified conflicts have been resolved. The state agency can then proceed with its consideration of the proposed action in accordance with 19 NYCRR Part 600.

3. If the consultation between the local government and the state agency does not lead to the resolution of the identified conflicts, either party may request, in writing, the assistance of the Secretary of State to resolve any or all of the identified conflicts. This request must be received by the Secretary within 15 days following the discussion between the local government and the state agency. The party requesting the assistance of the Secretary of State shall forward a copy of their request to the other party.

4. Within 30 days following the receipt of a request for assistance, the Secretary, or a Department of State official or employee designated by the Secretary, will discuss the identified conflicts and circumstances preventing their resolution with appropriate representatives from the state agency and local government.

5. If agreement among all parties cannot be reached during this discussion, the Secretary shall, within 15 days, notify both parties of his/her findings and recommendations.

6. The state agency shall not proceed with its consideration of, or decision on, the proposed action as long as the foregoing Resolution of Conflicts procedures shall apply.

Procedural Guidelines for Coordinating NYS Department of State (DOS) and LWRP Consistency Review of Federal Agency Actions

I DIRECT FEDERAL AGENCY ACTIVITIES

A. After acknowledging the receipt of a consistency determination and supporting documentation from a federal agency, DOS will forward copies of the determination and other descriptive information on the proposed federal activities to the Manager of Planning and other interested parties.

B. This notification will indicate the date by which all comments and recommendations must be submitted to DOS and will identify the Department's principal reviewer for the proposed federal activity.

C. The review period will be about twenty-five (25) days. If comments and recommendations are not received by the date indicated in the notification, DOS will presume that the City of Rochester has "no opinion" on the consistency of the proposed federal activity with the LWRP policies.

D. If DOS does not fully concur with and/or has any questions on the comments and recommendations submitted by the City of Rochester, DOS will contact the City of Rochester to discuss any differences of opinion or questions prior to agreeing or disagreeing with the federal agency's consistency determination on the proposed federal activity.

E. A copy of DOS' "concurrence" or "objection" letter to the federal agency will be forwarded to the Manager of Planning.

II ACTIVITIES REQUIRING FEDERAL LICENSES, PERMITS AND OTHER REGULATORY APPROVALS

A. DOS will acknowledge the receipt of an applicant's consistency certification and application materials. At that time, DOS will forward a copy of the submitted documentation to the Manager of Planning and will identify the Department's principal reviewer for the proposed federal activity.

B. Within thirty (30) days of receiving such information, the Manager of Planning will contact the principal reviewer for DOS to discuss: (a) the need to request additional information for review purposes; and (b) any possible problems pertaining to the consistency of a proposed federal activity with the LWRP policies.

C. When DOS and the Manager of Planning agree that additional information is necessary, DOS will request the applicant to provide the information. A copy of this information will be provided to the Manager of Planning upon receipt.

D. Within thirty (30) days of receiving the requested information or discussing possible problems of a proposed federal activity with the principal reviewer for DOS, whichever is later, the Manager of Planning will notify DOS of the reasons why a proposed federal activity may be inconsistent or consistent with the LWRP policies.

E. After the notification, the Manager of Planning will submit the City of Rochester's written comments and recommendations on a proposed federal activity to DOS before or at the conclusion of the official public comment period. If such comments and recommendations are not forwarded to DOS by the end of the public comment period, DOS will presume that the City of Rochester has "no opinion" on the consistency of the proposed federal activity with the LWRP policies.

F. If DOS does not fully concur with and/or has any questions on the comments and recommendations submitted by the City of Rochester on a proposed federal activity, DOS will contact the Manager of Planning to discuss any differences of opinion prior to issuing a letter of "concurrence" or "objection" to the applicant.

G. A copy of DOS' "concurrence" or "objection" letter to the applicant will be forwarded to the Manager of Planning.

III FEDERAL FINANCIAL ASSISTANCE TO STATE AND LOCAL GOVERNMENTS

A. Upon receiving notification of a proposed federal financial assistance, DOS will request information on the federal financial assistance from the applicant for consistency review purposes. As appropriate, DOS will also request the applicant to provide a copy of the application documentation to the Manager of Planning. A copy of this letter will be forwarded to the Manager of Planning and will serve as notification that the proposed federal financial assistance may be subject to review.

B. DOS will acknowledge the receipt of the requested information and provide a copy of this acknowledgement to the Manager of Planning. DOS may, at this time, request the applicant to submit additional information for review purposes.

C. The review period will conclude thirty (30) days after the date on DOS' letter of acknowledgement or the receipt of requested additional information, whichever is later. The review period may be extended for major federal financial assistance.

D. The Manager of Planning must submit the City of Rochester's comments and recommendations on the proposed federal financial assistance to DOS within twenty days (or other time agreed to by DOS and the Manager of Planning) from the start of the review period. If comments and recommendations are not received within this period,

DOS will presume that the City of Rochester has "no opinion" on the consistency of the proposed federal financial assistance with the LWRP policies.

E. If DOS does not fully concur with and/or has any questions on the comments and recommendations submitted by the City of Rochester, DOS will contact the Manager of Planning to discuss any differences of opinion or questions prior to notifying the applicant of DOS' consistency decision.

F. A copy of DOS' consistency decision letter to the applicant will be forwarded to the Manager of Planning.