

An aerial photograph of the Milwaukee River Estuary area, showing a dense urban landscape with a grid of streets and buildings. The river flows through the city, and the estuary is visible on the right side, where the river meets the water. The text "MILWAUKEE RIVER ESTUARY: AREA OF CONCERN" is overlaid in white, bold, sans-serif font across the center of the image.

**MILWAUKEE RIVER ESTUARY:  
AREA OF CONCERN**

# GREAT LAKES: Quick Facts

**40,000,000**

people rely on this resource for drinking water

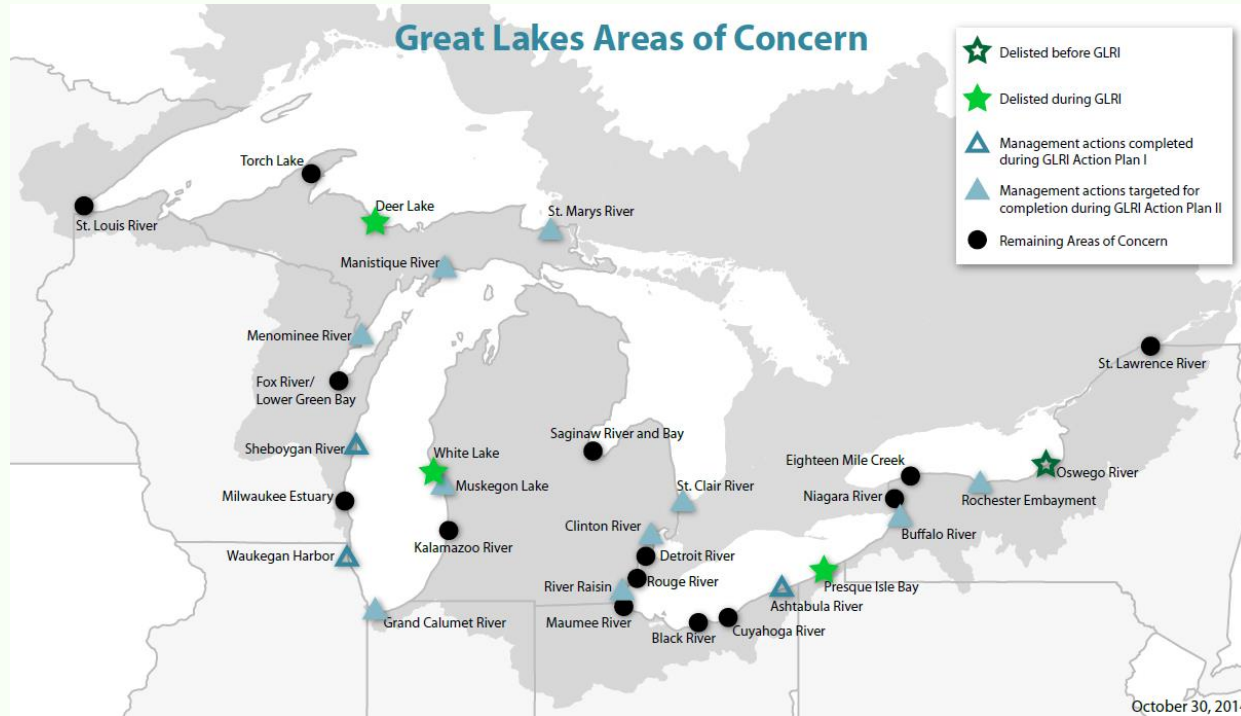
**95%**

of the surface freshwater in United States

**99 YEARS**

amount of time to replace the water in Lake Michigan

# Great Lakes Areas of Concern (AOC)





## **WHAT IS AN AREA OF CONCERN?**

The Great Lakes Water Quality Agreement defined AOCs as "geographic areas designated by the Parties where significant impairment of beneficial uses has occurred as a result of human activities at the local level."



## **MILWAUKEE DESIGNATED AS AN AREA OF CONCERN**

The Milwaukee Estuary was designated as an Area of Concern (AOC) in the 1980's because historical contamination has impaired public benefits such as fish consumption, healthy fisheries, water quality, and wildlife habitat.

# Milwaukee Estuary AOC Boundaries



## Milwaukee River

- Lower Milwaukee River downstream of North Ave. Dam
- Cedar Creek downstream from Bridge Road to confluence with Milwaukee River
- Milwaukee River and tributaries from confluence w/ Cedar Creek to former North Ave. Dam (including Lincoln Creek)

## Menomonee River

- Lower Menomonee River downstream of 35th Street
- Little Menomonee River from Brown Deer Road to confluence with Menomonee River
- Menomonee River downstream from confluence with Little Menomonee River to 35th Street

## Kinnickinnic River

- Lower Kinnickinnic River downstream of Chase Avenue

## Estuary

- Inner and outer harbors
- Nearshore waters of Lake Michigan

# Milwaukee Estuary AOC-- What are Beneficial Use Impairments?



Due to past pollution, degradation, and human activities, the public isn't able to fully "use" and enjoy their water resources in a safe way for drinking, fishing, swimming, etc.

# Milwaukee Estuary AOC

## Beneficial Use Impairments Present

1. Restrictions on Dredging Activities
2. Fish Tumors or Other Deformities
3. Bird or Animal Deformities or Reproduction Problems
4. Restrictions on Fish and Wildlife Consumption
5. Degradation of Benthos
6. Degradation of Phytoplankton and Zooplankton Populations
7. Loss of Fish and Wildlife Habitat
8. Degradation of Fish and Wildlife Populations
9. Beach Closings/Recreational Restoration
10. Eutrophication or Undesirable Algae
11. Degradation of Aesthetics

**11 of 14 Possible are Present in Milwaukee AOC**





## HOW DO WE FIX AN AOC?

To reach our goal and 'de-list' Milwaukee as an Area of Concern, we must clean up our rivers and Lake Michigan, to restore some of their natural function by: creating habitat, removing invasive species, planting vegetation, reducing pollutants, etc.

# Milwaukee Estuary AOC- How do we address BUIs?



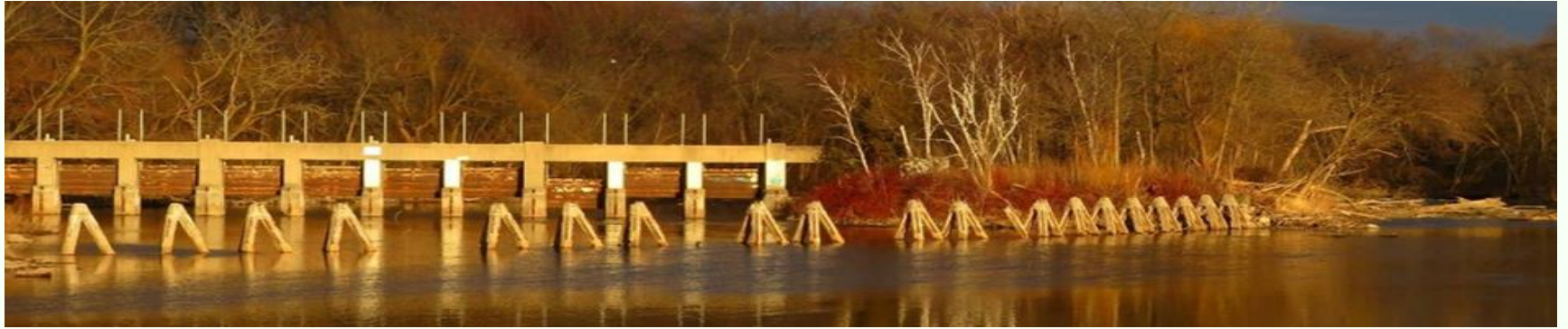
To restore these beneficial uses, we must clean up our rivers and Lake Michigan, and restore some of their natural function by creating habitat, removing invasive species, planting vegetation, reducing pollutants, etc.

# Milwaukee Estuary AOC-

## How do we address BUIs?

- DNR establishes targets in consensus based on processes with advisory groups that define when we have achieved successful restoration for each impairment
- DNR together with partners and advisory groups define projects needed to meet targets for each impairment
- Most projects are fully funded by US EPA; sediment projects are funded differently and generally require a 35% state/local match
- When projects are complete and targets are met, an impairment can be removed
- **When all (11/14) impairments are removed, we accomplish our goal and the Milwaukee Estuary is delisted as a Great Lakes Area of Concern**

# Fish and Wildlife Habitat Projects-- Estabrook Dam Removal



# Fish and Wildlife Habitat Projects-- Burnham Canal Restoration

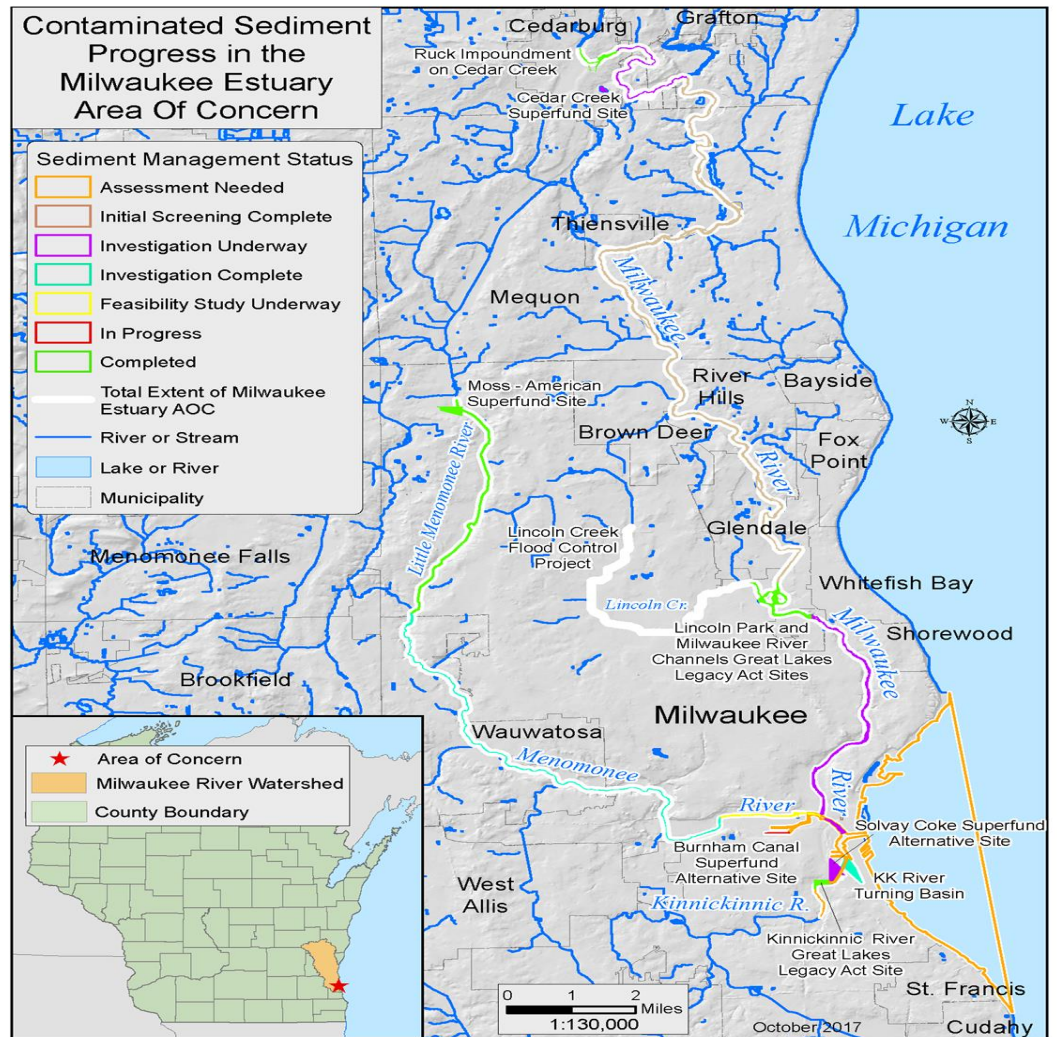


# Fish and Wildlife Habitat Projects-- Grand Trunk Wetland Restoration and Milwaukee River Shoals Project



# Removing Contaminated Sediment Addresses Multiple Impairments

- Restrictions on Dredging Activities
- Fish Tumors or Other Deformities
- Bird or Animal Deformities or Reproduction Problems
- Restrictions on Fish and Wildlife Consumption
- Degradation of Benthos



# **Sediment Projects**

**USEPA/WDNR - Investigations and Feasibility Studies for Milwaukee River & South Menomonee Canal**

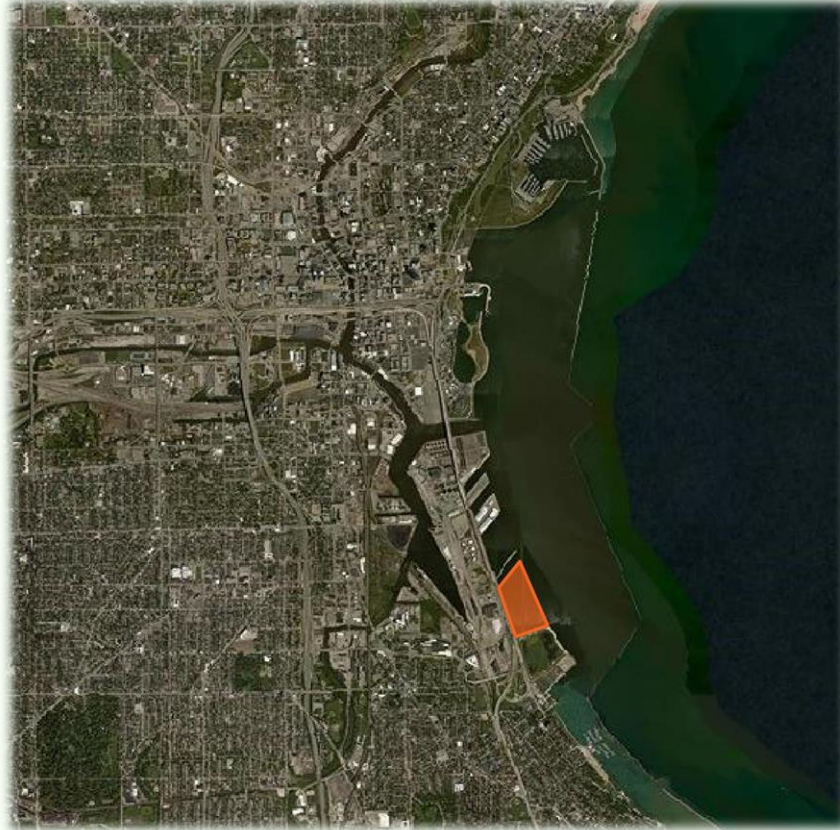
**WE Energies - Solvay Coke & Car Ferry Area, Third Ward MGP Site**

**MMSD – Basin H Project (MKE River from Capitol to Locust)**

**Proposed Dredged Materials Management Facility (DMMF)**



# Proposed Dredged Materials Management Facility (DMMF)



# DMMF Project Design and Schedule

**Proposed 44 acre/Capacity of  
1.9MM CY  
Design in 2020  
Construction planned as  
soon as funding is secured  
Funding with possible  
assistance from Federal and  
State Sources**



# Cofferdam Design



Construction of the Kentucky cellular cofferdam (C. J. Mahan Co., 2017).





## **MAKING MILWAUKEE A PRIORITY**

We are making the work to clean up this area a priority, and if successful will receive funding from the U.S. EPA to accelerate the restoration work needed to protect Lake Michigan, rebuild our fishing community; and improve economic opportunities and public access.

# GREAT LAKES LEGACY ACT PROJECT AGREEMENT



# **NON-FEDERAL SPONSORS FUNDING CONTRIBUTION AGREEMENT**

**Between We Energies, the City of Milwaukee , Milwaukee County, MMSD, and the WDNR**

## **City of Milwaukee Contributions:**

- Provide technical assistance in the pursuit of Harbor Assistance Program funding for the construction of the DMMF; and
- If the DMMF is constructed, accept long-term ownership, operation and maintenance of the DMMF; and
- If constructed, not charge fees for accepting sediment at the DMMF from remedial actions conducted as part of this Contribution Agreement and the Federal Agreement; and
- Incorporating public use of the DMMF into the redevelopment of the facility, once filled.

# Milwaukee Estuary AOC-- Community GAINS

- **We have a generational opportunity to become a 'priority' AOC.**
- **The community and government are working together to clean up legacy contamination and improve our rivers and Lake.**
- **This is happening QUICKLY.** Rather than 20+ years to do the construction work (e.g., dredging, stream rehabilitation, restoration, etc.), the goal is to implement all Milwaukee Estuary AOC management actions by 2024.
- **Our work to cleanup this area will bring increased Great Lakes funding,** so we can finish these projects and restore some natural ecological function to the rivers and estuary.

# Milwaukee Estuary AOC-- Return on Investment



- Remedial actions and restoration activities—result in areas that are more attractive for redevelopment and tourism, with estimates of a **\$2 to \$3 return for every \$1 spent.**
- Est. economic benefits of restoring the Great Lakes total over \$50 billion—**increasing tourism and recreation dollars, increasing property values, and reducing costs for municipalities and counties.**