

Habitat Restoration in Southeast Michigan Areas of Concern: Detroit River, St. Clair River, River Raisin, Rouge River, & Clinton River

Melanie Foose & Jen Tewkesbury
Michigan Department of Environment, Great Lakes, & Energy (EGLE)

SCDRS Webinar
June 23, 2020

SCDRS Priority Objective:

Complete habitat improvement projects to remove Loss of Fish and Wildlife Habitat Beneficial Use Impairment (BUI).

Habitat Restoration in Southeast Michigan's Areas of Concern

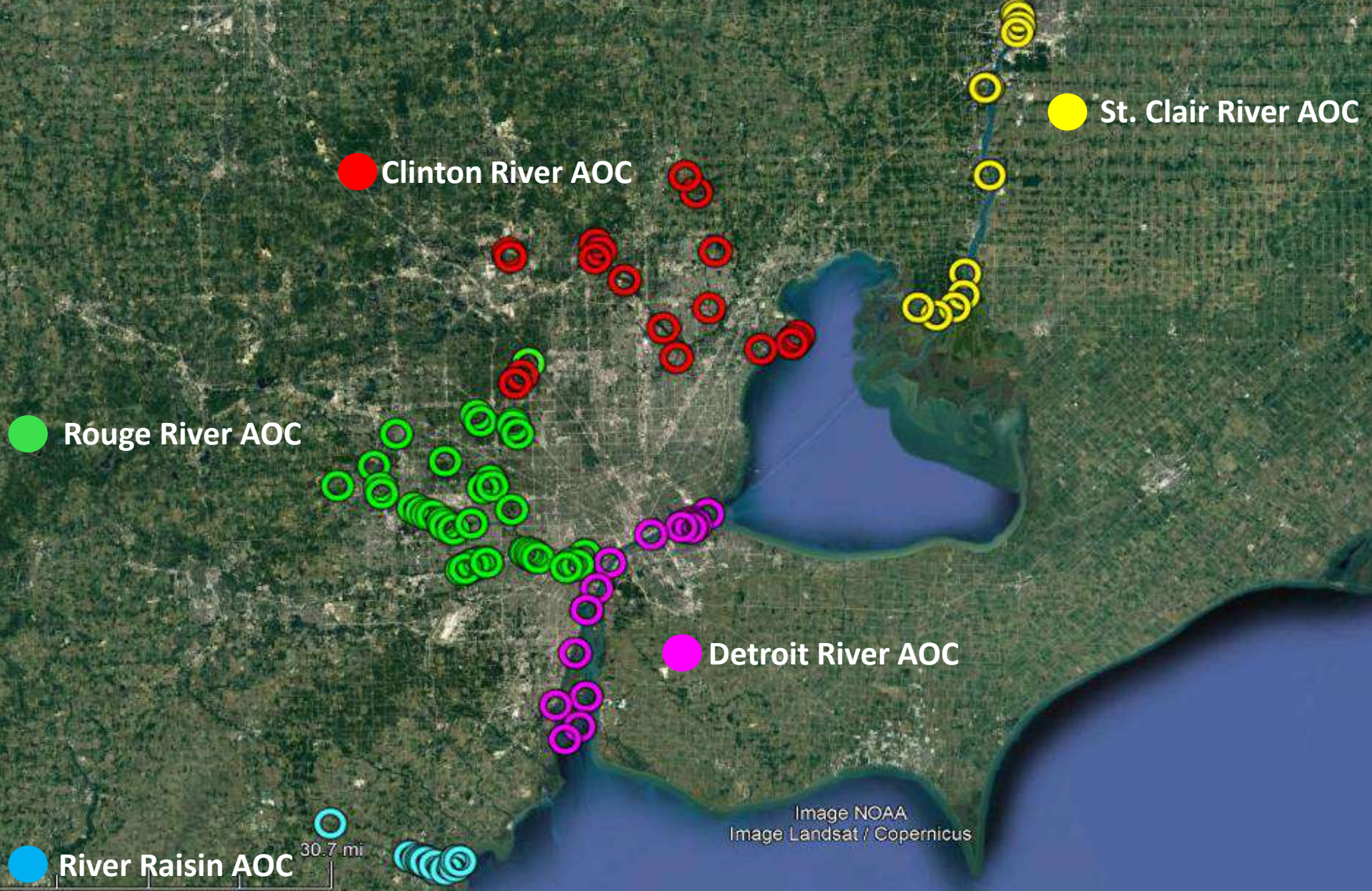


Image NOAA
Image Landsat / Copernicus

DETROIT RIVER AREA OF CONCERN





Detroit Upper Riverfront Parks

Blue Heron Lagoon

Belle Isle Reef

Lake Okonoka

Belle Isle Flatwoods

Milliken State Park

South Fishing Pier

Fort Wayne Reef

Belle Isle Hydrologic Analysis

US Steel Shoreline

Grassy Island Reef

Hennepin Marsh

Wayne County Refuge Gateway Shoreline

Stony Island

Celeron Island

Sugar Island

Completed Project

Current Project

Future Project





South Fishing Pier



Belle Isle Flatwoods

Blue Heron Lagoon

Lake Okonoka





Blue Heron Lagoon

An aerial photograph showing a large body of water, Blue Heron Lagoon, in the upper half of the frame. A concrete dam with a black metal railing spans across a smaller, narrower body of water, Lake Okonoka, in the lower half. To the left of the dam is a paved parking lot with several cars. The surrounding landscape includes green grass, trees with some autumn-colored foliage, and a road. The water in the lagoon is a light blue-grey, while the water in Lake Okonoka is a darker, greenish-blue. The sky is clear and blue.

Blue Heron Lagoon

Lake Okonoka



Blue Heron Lagoon

We Mesic Flatwoods Forest

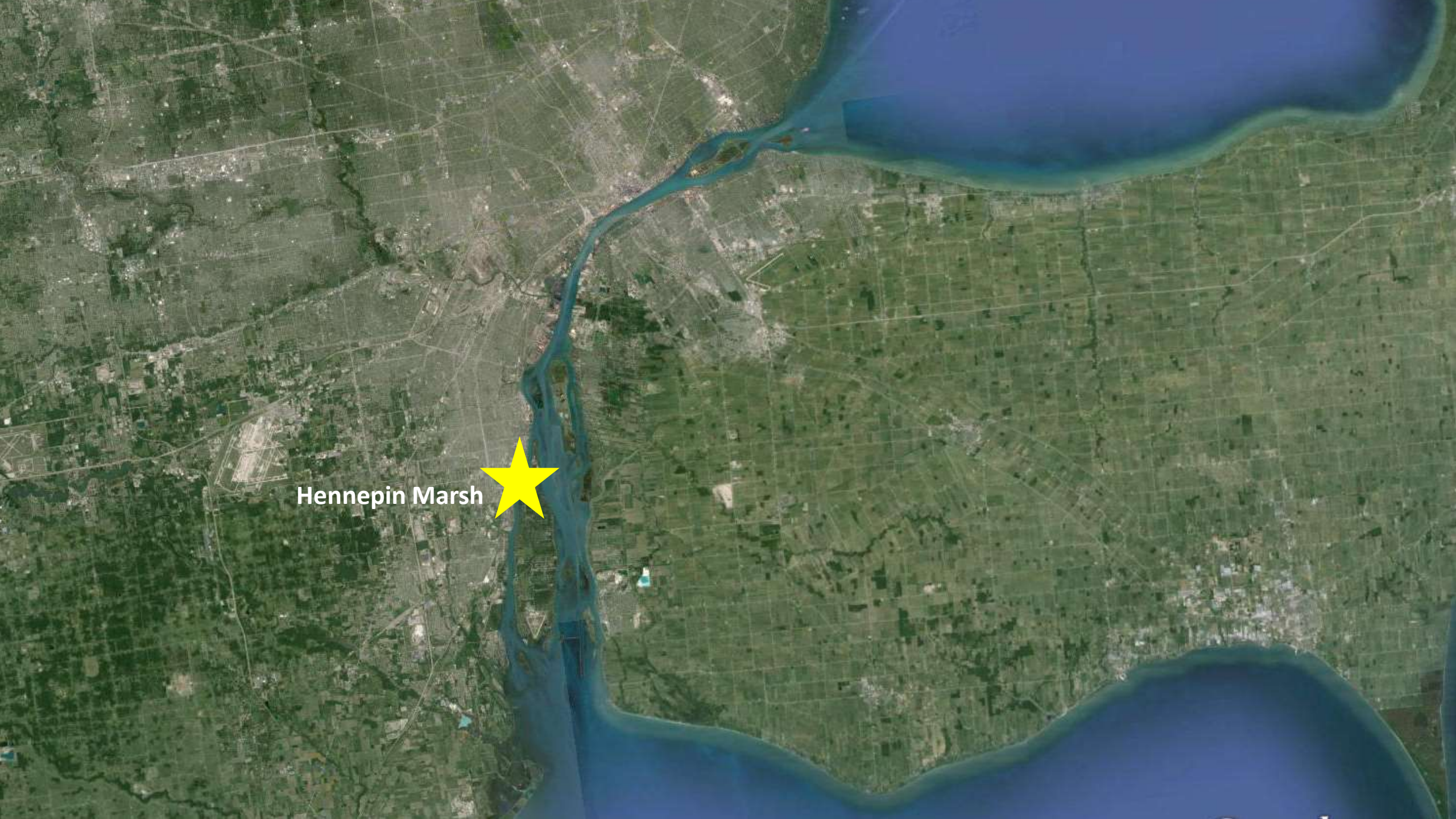
Lake Okonoka

South Fishing Pier

1443 ft

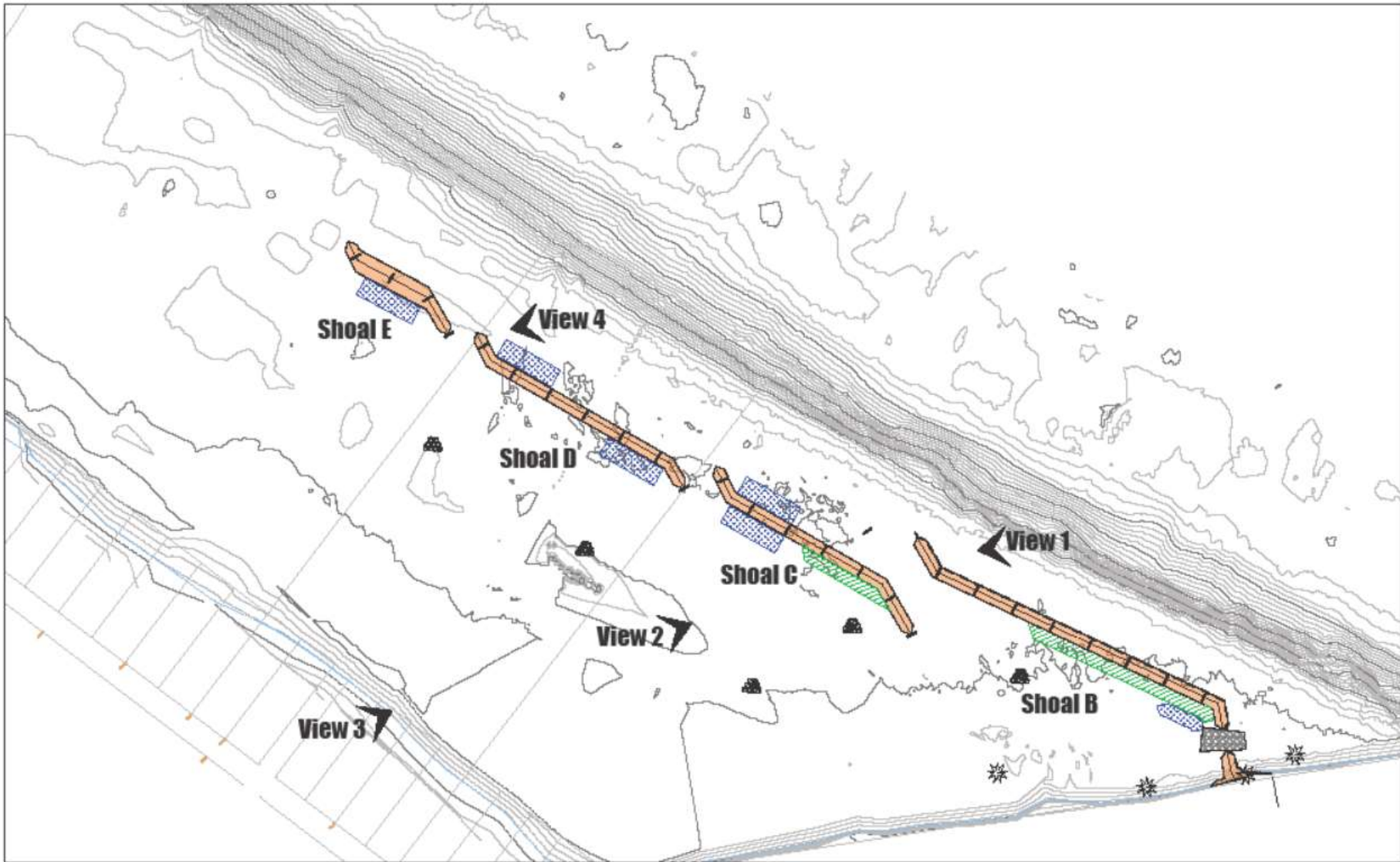
Google Earth





Hennepin Marsh





Note: All Views are Approximate and Not to Scale

Hennepin Marsh Habitat Restoration Project

Proposed Shoal View Index

June, 2020



North
Not to Scale

ECT Environmental
Consulting &
Technology, Inc.

Upper Riverfront Parks





- ① WETLAND AT AS FORD PARK
- ② WETLAND AT RIVERFRONT - LAKEWOOD EAST PARK
- ③ POCKET WETLAND ALONG CANALS
- ④ ENHANCEMENTS TO EXISTING WETLANDS
- ⑤ PARKING LOT REMOVAL & UPLAND PLANTING
- ⑥ UPLAND PLANTING / IMPROVEMENTS
- ⑦ POLLINATOR GARDEN
- ⑧ SHORELINE / RIPARIAN ENHANCEMENT IN CANALS
- ⑨ SHORELINE / RIPARIAN ENHANCEMENT AT FOX CREEK
- ⑩ FLOATING WETLANDS
- ⑪ SUBSTRATE ENHANCEMENT FOR FISH HABITAT IN DETROIT RIVER
- ⑫ SUBSTRATE ENHANCEMENT FOR AQUATIC HABITAT IN CANALS

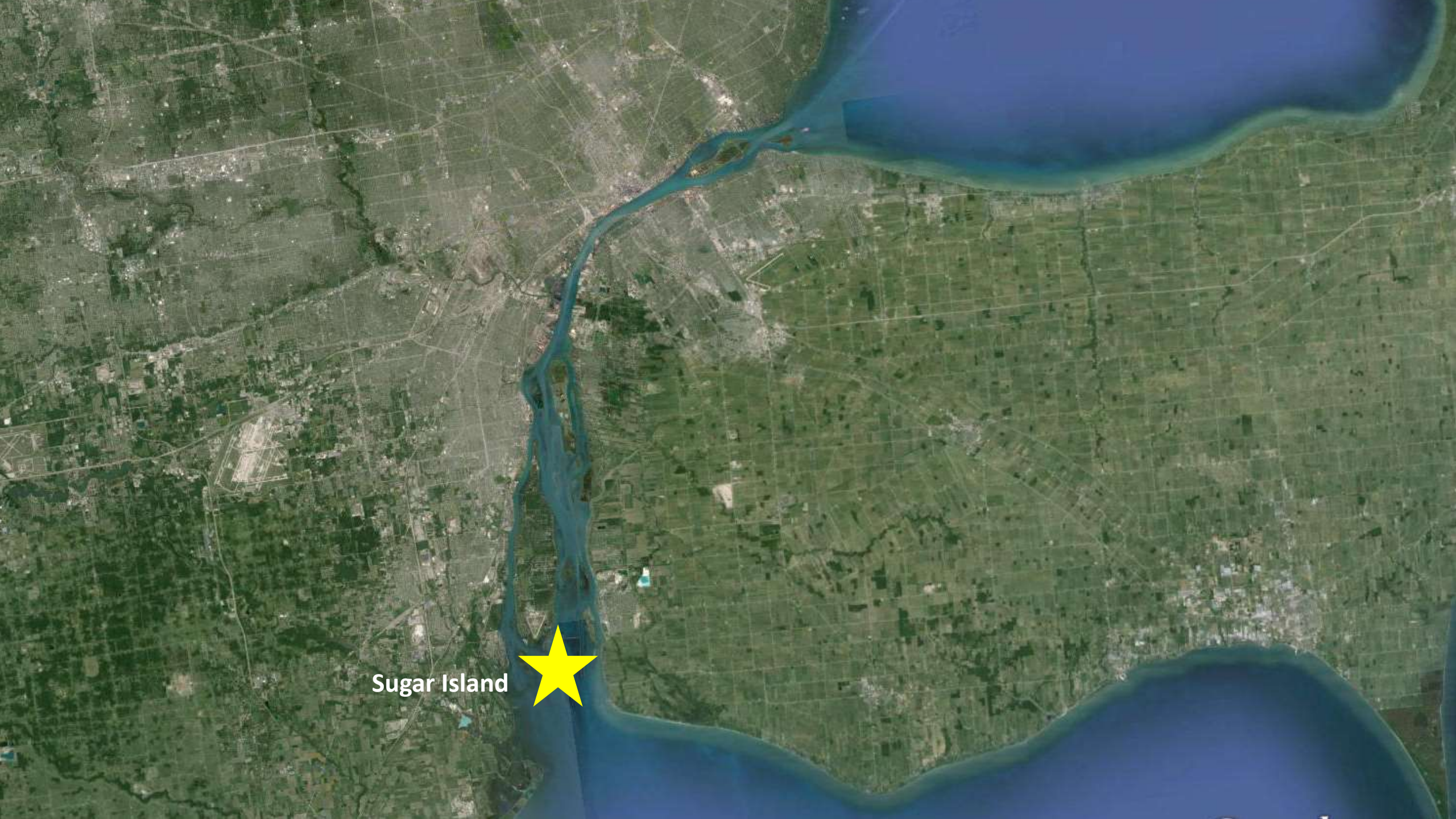


DETROIT UPPER RIVERFRONT PARKS HABITAT RESTORATION

December, 2017







Sugar Island



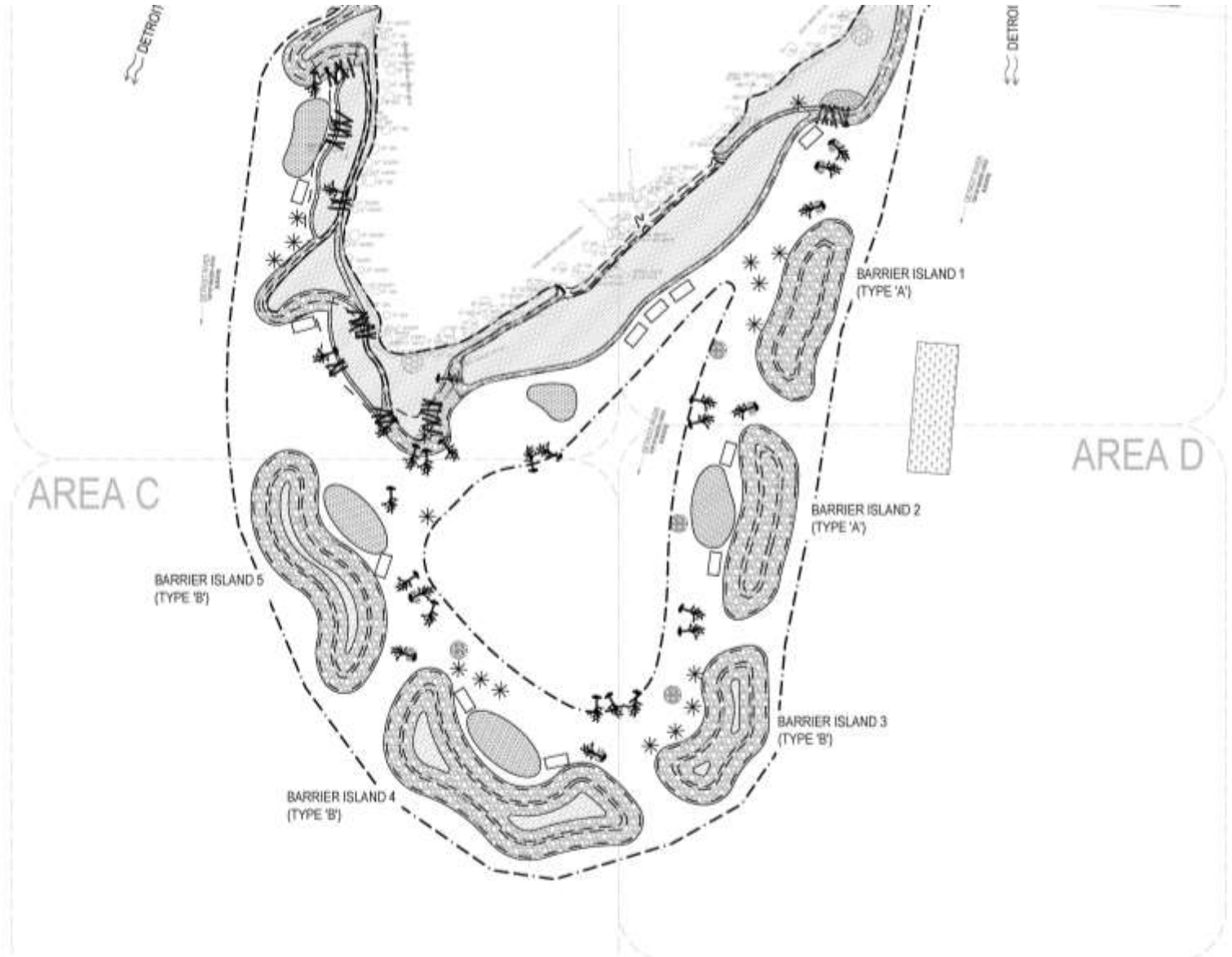


Sugar Island





DATE PLOTTED: 2004.04.20 1:25:57 PM



- PROPOSED 100-YEAR CONTOUR
- PROPOSED 500-YEAR CONTOUR
- PLANTING AREA
- WOOD
- COARSE WOODY CEILING - RAISED & BOLTED
- COARSE WOODY CEILING - ANCHORED
- ROCK CHIPPING FOOT
- ADJUSTABLE SPINNING BEE
- STONE SLOPE
- WOODY SPINNING STRUCTURE
- SUBMERGED ROCK SLAB STRUCTURE
- STONE MASONRY/CLUM
- ROCK BOUND

ISSUED FOR	REV	DATE

PRELIMINARY DESIGN
E. WYBICKI

DATE PLOTTED:
OVERALL LAYOUT &
MATERIALS PLAN

DETROIT RIVER
20000 EUREKA ROAD, SUITE 250
TAYLOR, MI 48180

SMITHGROUP


201 DEPOT STREET
SECOND FLOOR
ANN ARBOR, MI 48106
734.802.4887
www.smithgroup.com

NOT FOR CONSTRUCTION

SCALE: 1" = 100'

Celeron Island



A satellite image of Celeron Island, a long, narrow, and irregularly shaped landmass. The island is dark brown and textured, suggesting dense vegetation or forest. It is surrounded by deep blue water. A small white boat is visible in the water near the southern tip of the island. A dashed white line indicates a circular path or boundary around the southern part of the island. The text 'Celeron Island' is written in white next to a small white circle on the island's northern side.

Celeron Island

Image © 2020 TerraMetrics
© 2020 Google

1907 ft

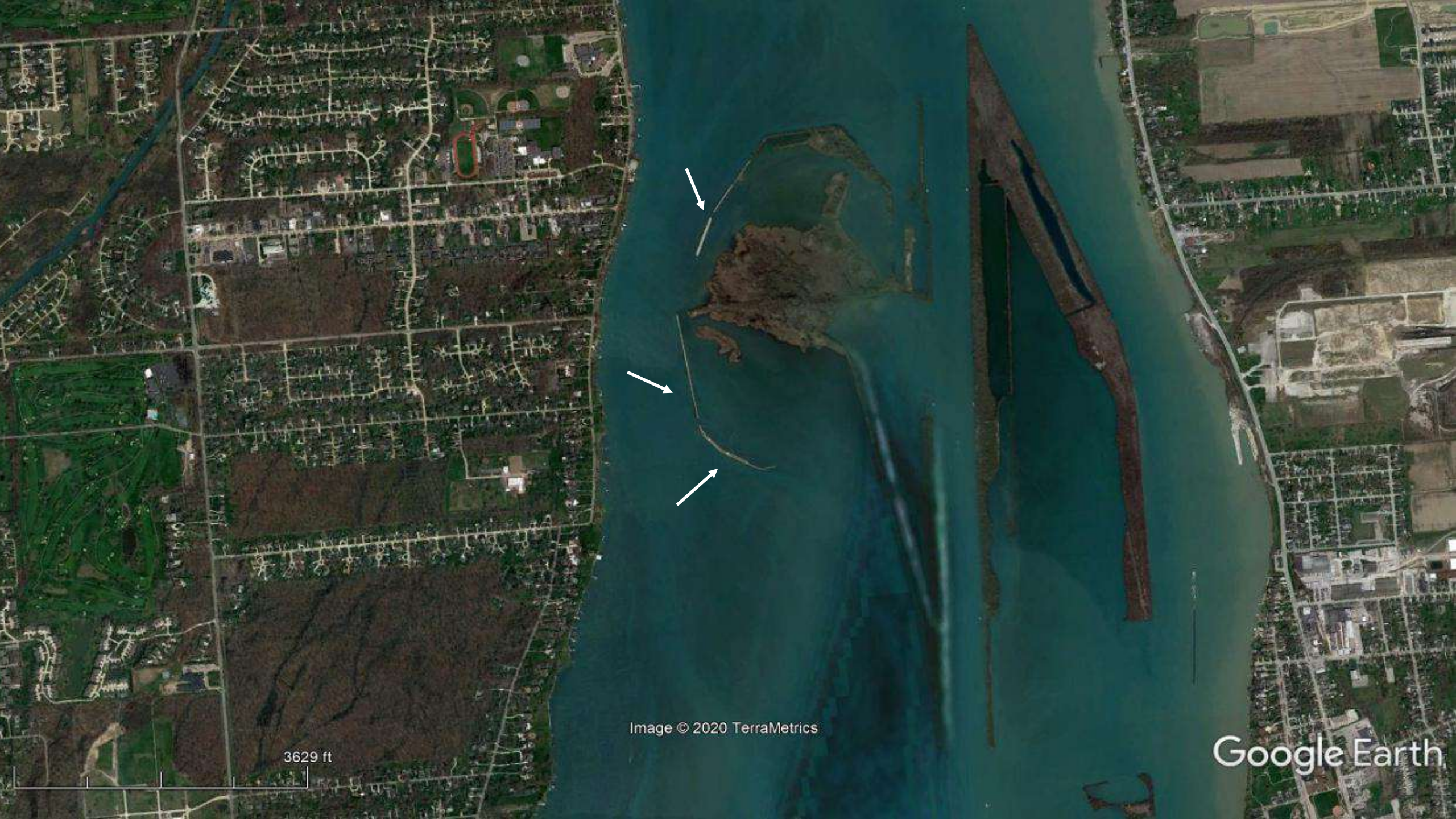
Google Earth



Celeron Island



Stony Island



3629 ft

Image © 2020 TerraMetrics

Google Earth



Stony Island

RIVER RAISIN AREA OF CONCERN





Grape Dam Millrace Improvements

Waterloo Dam Bypass Channel

Shallow Water Marsh Restoration

Dam No. 4

Lakeplain Prairie Restoration

Dam No. 5

Dam No. 2

Dam No. 3

Dam No. 5

Dam No. 1

Sterling Island

Union Camp Marsh

Hunt Club Marsh

Lake Erie

Loss of Fish and Wildlife Habitat and Degradation of Fish and Wildlife Populations BUIs Removed 2015

Image NOAA

Image © 2015 TerraMetrics

Google earth

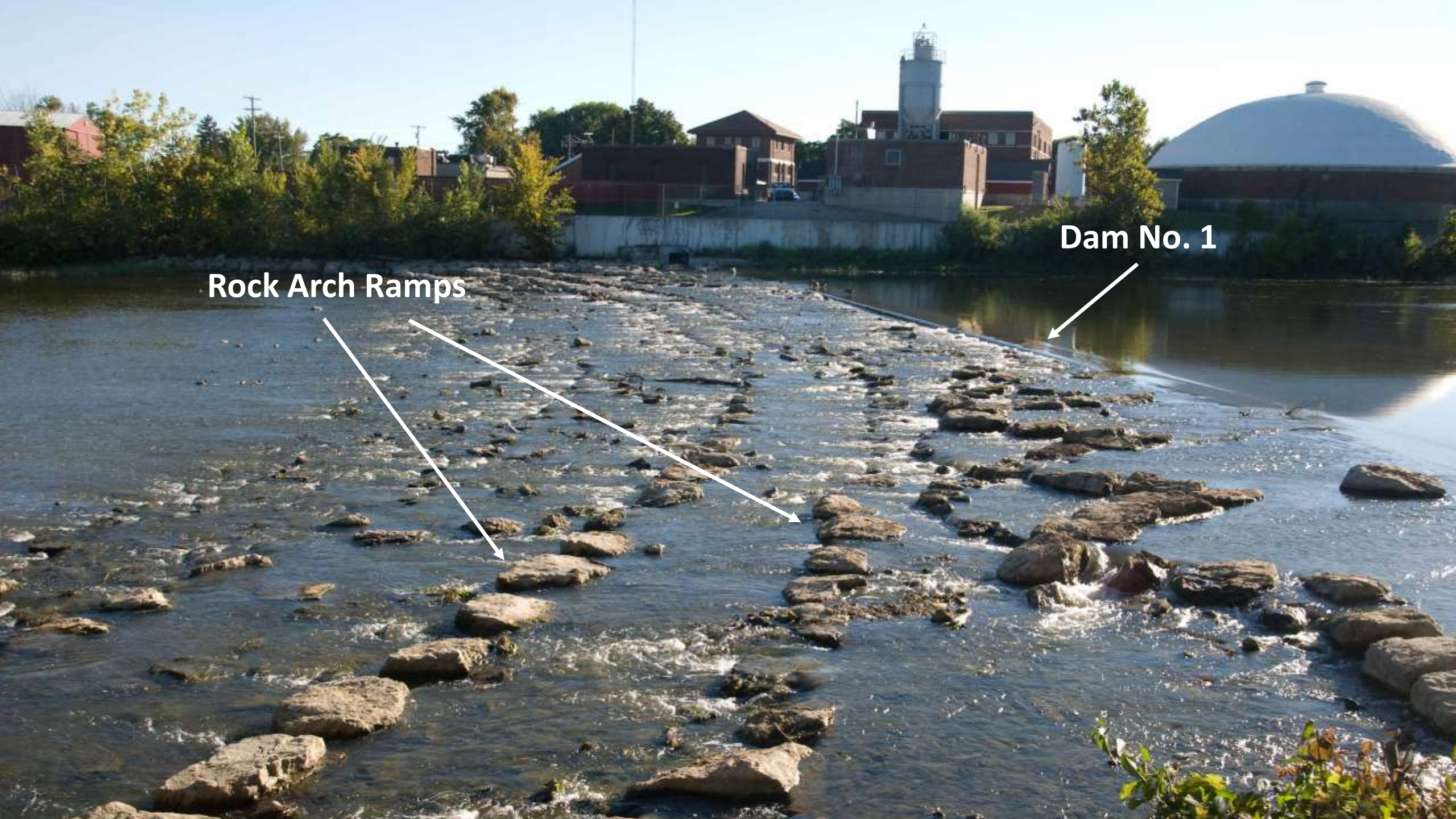


1933

Photo: Monroe News



Dam No. 3



Rock Arch Ramps



Dam No. 1

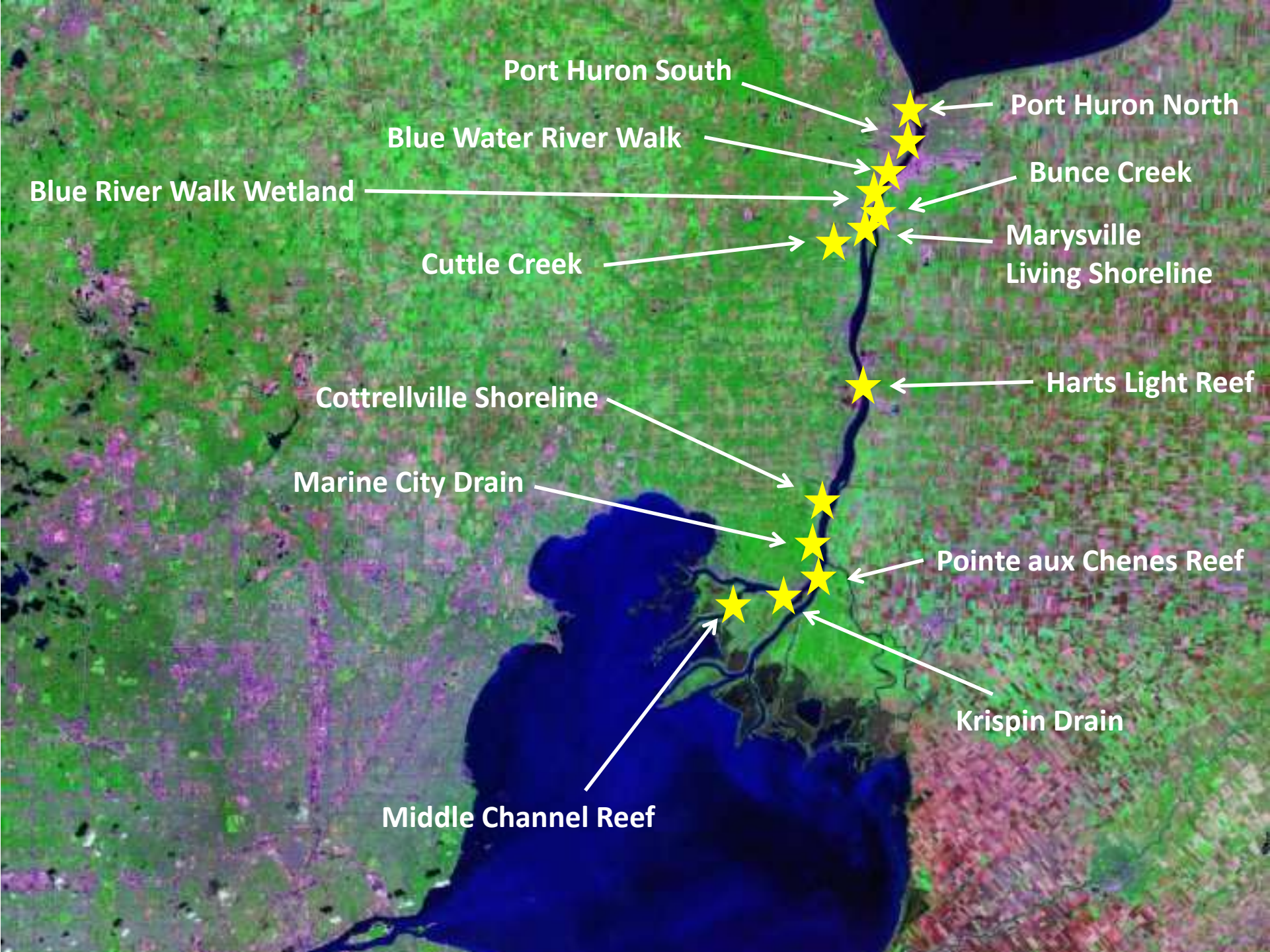




WATERLOO DAM

ST. CLAIR RIVER AREA OF CONCERN





Port Huron South

Port Huron North

Blue Water River Walk

Bunce Creek

Blue River Walk Wetland

Marysville
Living Shoreline

Cuttle Creek

Cottrellville Shoreline

Harts Light Reef

Marine City Drain

Pointe aux Chenes Reef

Krispin Drain

Middle Channel Reef

Blue Water River Walk Wetland



Blue Water River Walk



BEFORE





BEFORE: Blue Water River Walk



AFTER: Blue Water River Walk

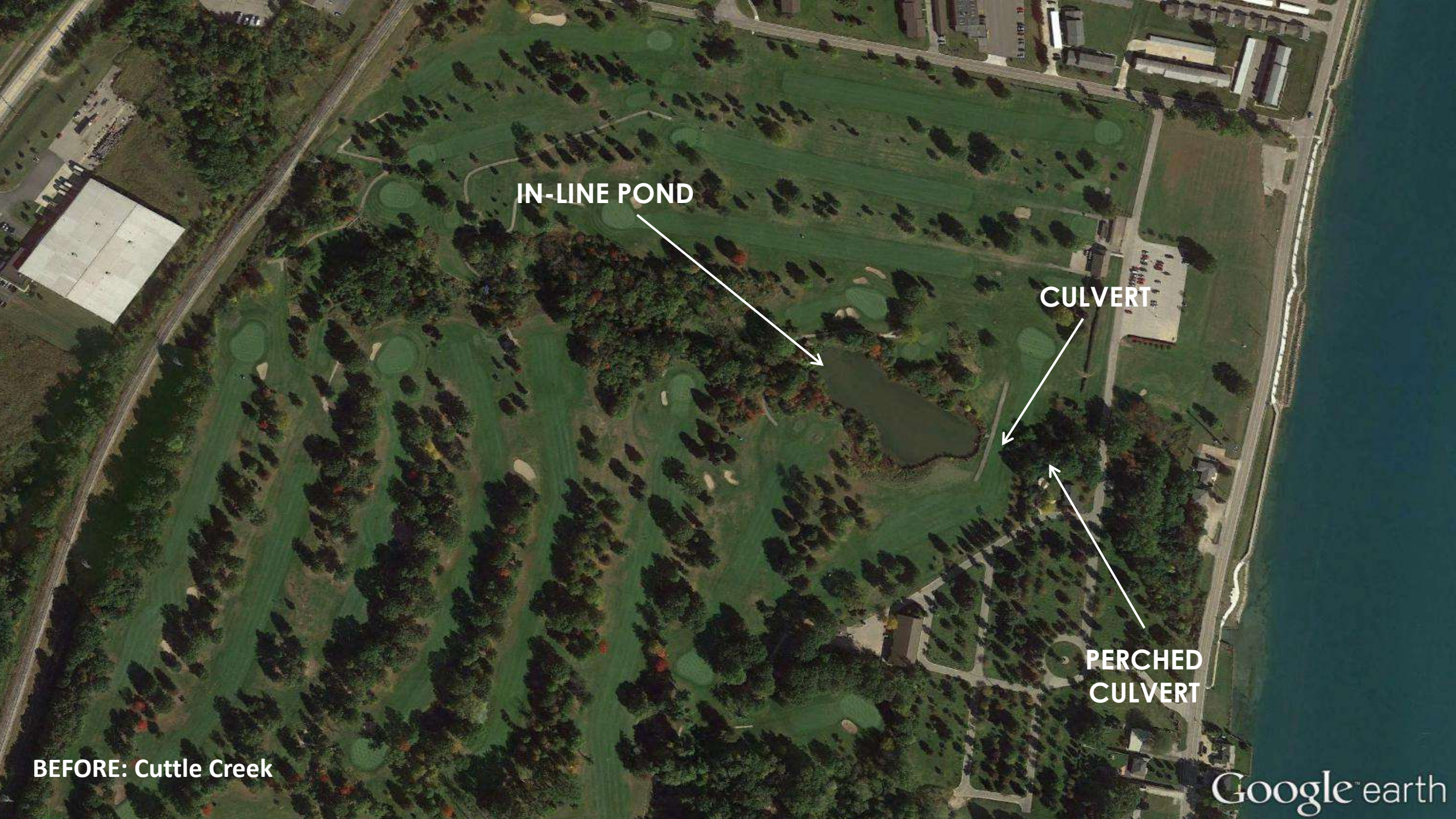


BEFORE: Marysville Living Shoreline

05/03/2011

AFTER: Marysville Living Shoreline





IN-LINE POND

CULVERT

**PERCHED
CULVERT**

BEFORE: Cuttle Creek



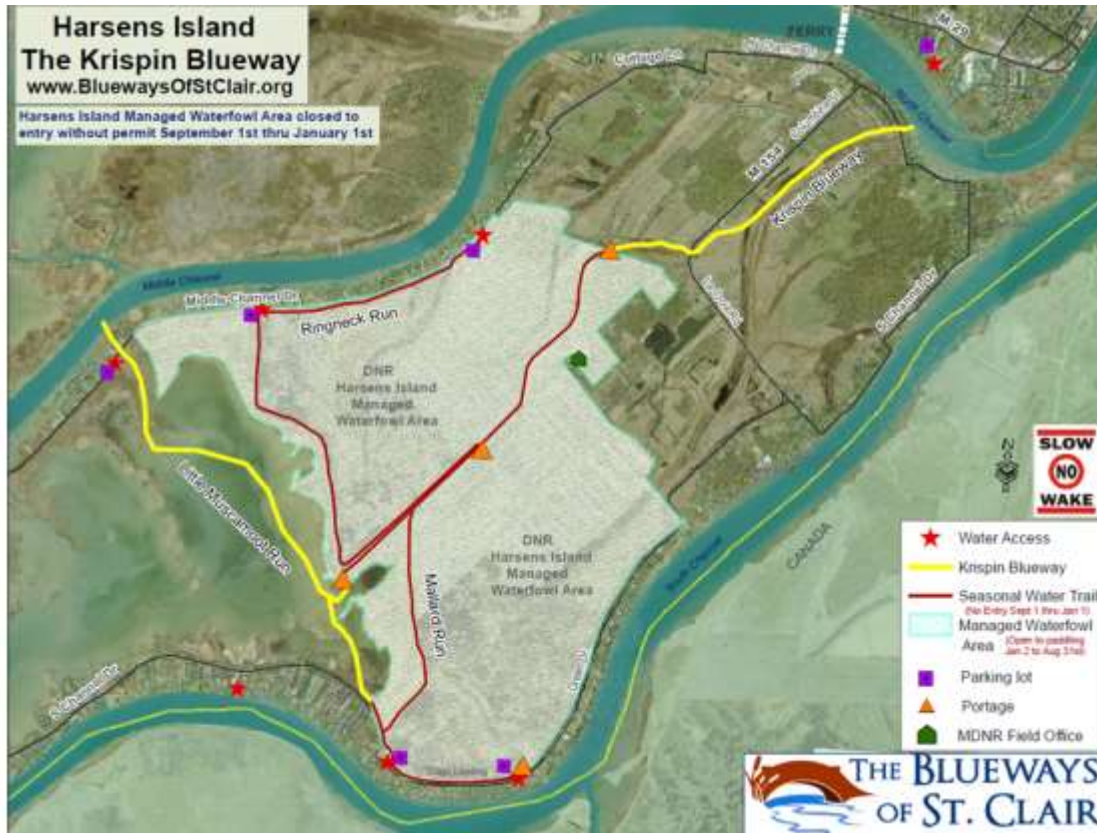


BEFORE: Cottrellville Township Shoreline

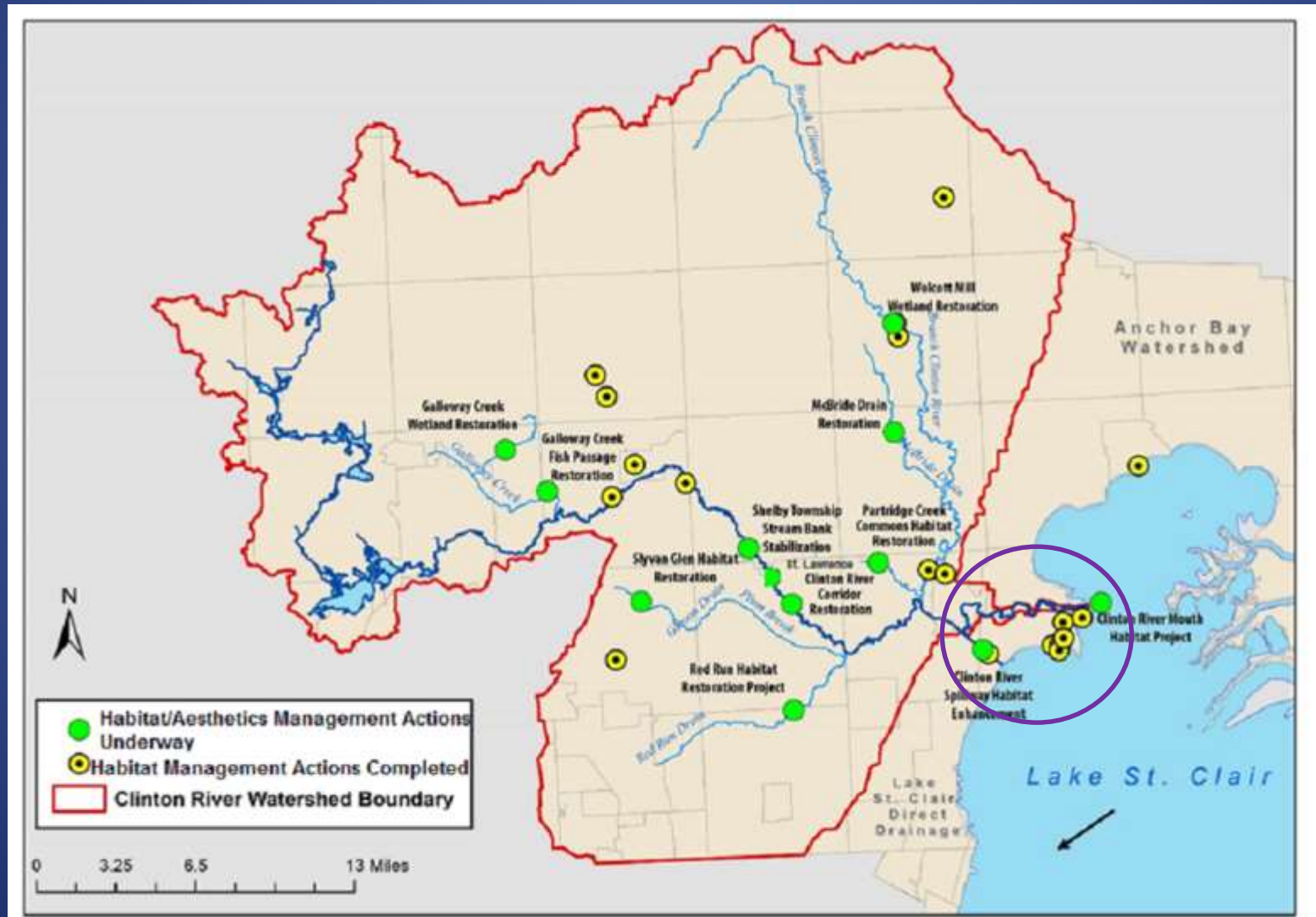


AFTER: Cottrellville Township Shoreline

Krispin Drain – Harsens Island



Clinton River AOC Habitat Projects



Clinton AOC Completed Habitat Restoration Projects

- Clinton River Spillway Habitat Enhancement
- Sylvan Glen Habitat Restoration
- Partridge Creek Commons Habitat Restoration
- Clinton River Corridor Restoration
- Wolcott Mills Metropark Wetland Restoration
- Harley Ensign Coastal Wetland Restoration
- McBride Drain Habitat Restoration
- Shelby Township Streambank Stabilization
- Galloway Creek Fish Passage and Habitat Restoration
- Sterling Relief Drain Daylighting and Green Infrastructure
- Avon Creek Habitat Restoration
- Paint Creek Dam Removal
- Pointe Rosa Marsh Restoration
- LSC Metropark Green Infrastructure and Parking Lot Retrofit
- Lane Drain Habitat Restoration
- Black Creek Marsh Restoration
- Galloway Wetland Restoration

Clinton River Spillway Habitat Restoration

Habitat restoration and invasive species control including the Lake St. Clair estuary, riverbanks, nearbank areas, riparian corridor, floodplain and off-channel habitats which provide diverse fish spawning, rearing, and refuge habitats for northern pike, yellow perch and a variety of warm and coolwater species.



Clinton River Spillway Habitat Restoration



Clinton River Mouth/Harley Ensign Coastal Wetland Restoration

Control of invasive species, establishment of 14 acres of fish habitat, and restoration of 4 acres of upland habitat as well as 6,000 feet of shoreline. Provides nursery habitat for fish and stopover habitat for migrating birds.



Clinton River Mouth/Harley Ensign Coastal Wetland Restoration

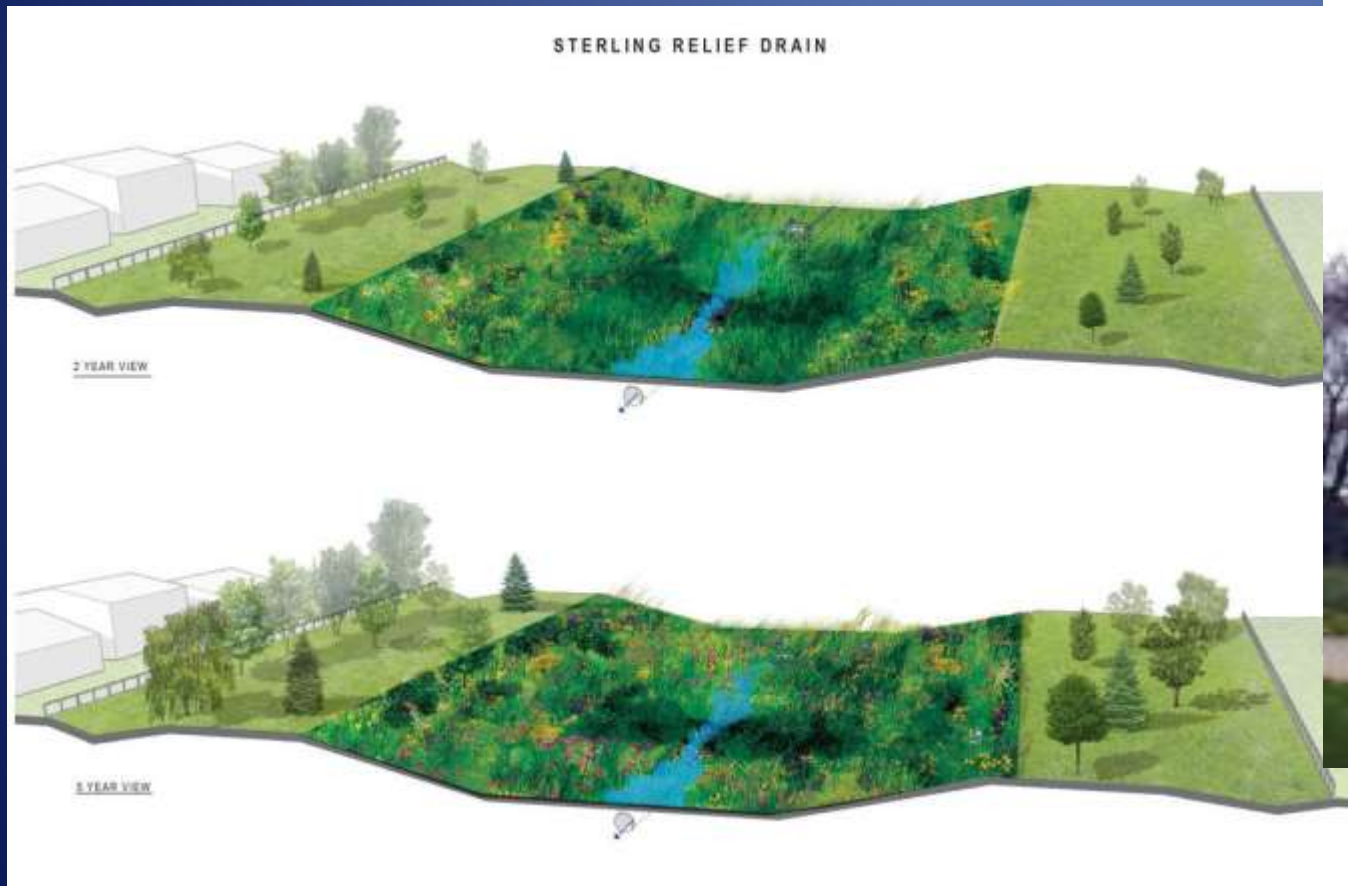


Sterling Relief Drain Daylighting and Green Infrastructure Phase I

Daylighting of the drain and implementation of green infrastructure. Creation of diverse natural habitat zones across the 250ft wide drain corridor to restore the natural processes that remove and breakdown contaminants and pollution from urban runoff, while creating an uninterrupted natural corridor.



Sterling Relief Drain Daylighting and Green Infrastructure Phase I



Rouge River AOC Habitat Projects

ROUGE RIVER AOC PROJECT LOCATION MAP



Rouge River AOC Habitat Projects

- **3 Habitat projects recently completed or near completion**
 - Rouge Oxbow Restoration Phase 3
 - Henry Ford Estate Dam Fish Passage
 - Nankin Lake Restoration
- **5 Currently funded for implementation**
 - Tamarack Creek Restoration
 - Johnson Creek Fish Hatchery Restoration
 - Colonial Park Wetland
 - Venoy/Dorsey Park Wetland
 - Seeley Creek Restoration
- **2 currently in process for grant funds**

Rouge River Oxbow Restoration

- The purpose of the project was the reconnection of the Rouge River Oxbow segment to the main Rouge River channel at Greenfield Village through the construction of inlet and outlet openings. During the mid-1970s, Corps flood control efforts channelized the river, cutting off the oxbow and eliminating flood plain wetlands and habitat.



Rouge River Oxbow Restoration



Rouge River Oxbow Restoration



Henry Ford Estate Fish Passage



Henry Ford Estate Dam Fish Passage

- The dam at the Henry Ford Estate is located on the middle branch of the Rouge River just upstream from its confluence with the lower branch of the Rouge River in the City of Dearborn.
- The dam, a National Historic Landmark, is the 1st dam upstream of the mouth of the Rouge River blocking fish movement from the Detroit River upstream into potential spawning and foraging habitat in the Rouge.
- Fish passage around the dam reconnects segments (18-36 miles) of the Rouge for the benefit of fish and other wildlife.

Henry Ford Estate Fish Passage



Rouge River Concrete Channel Habitat Enhancement

- Initial habitat assessment completed by USGS 2019
- U.S. Army Corps assessing habitat possibilities within and around the channel
- Main focus will be suitable conditions for fish to rest and spawn while also maintaining flood control



Thank You!

Jen Tewkesbury: tewkesburyj@michigan.gov

Melanie Foose: foosem@michigan.gov

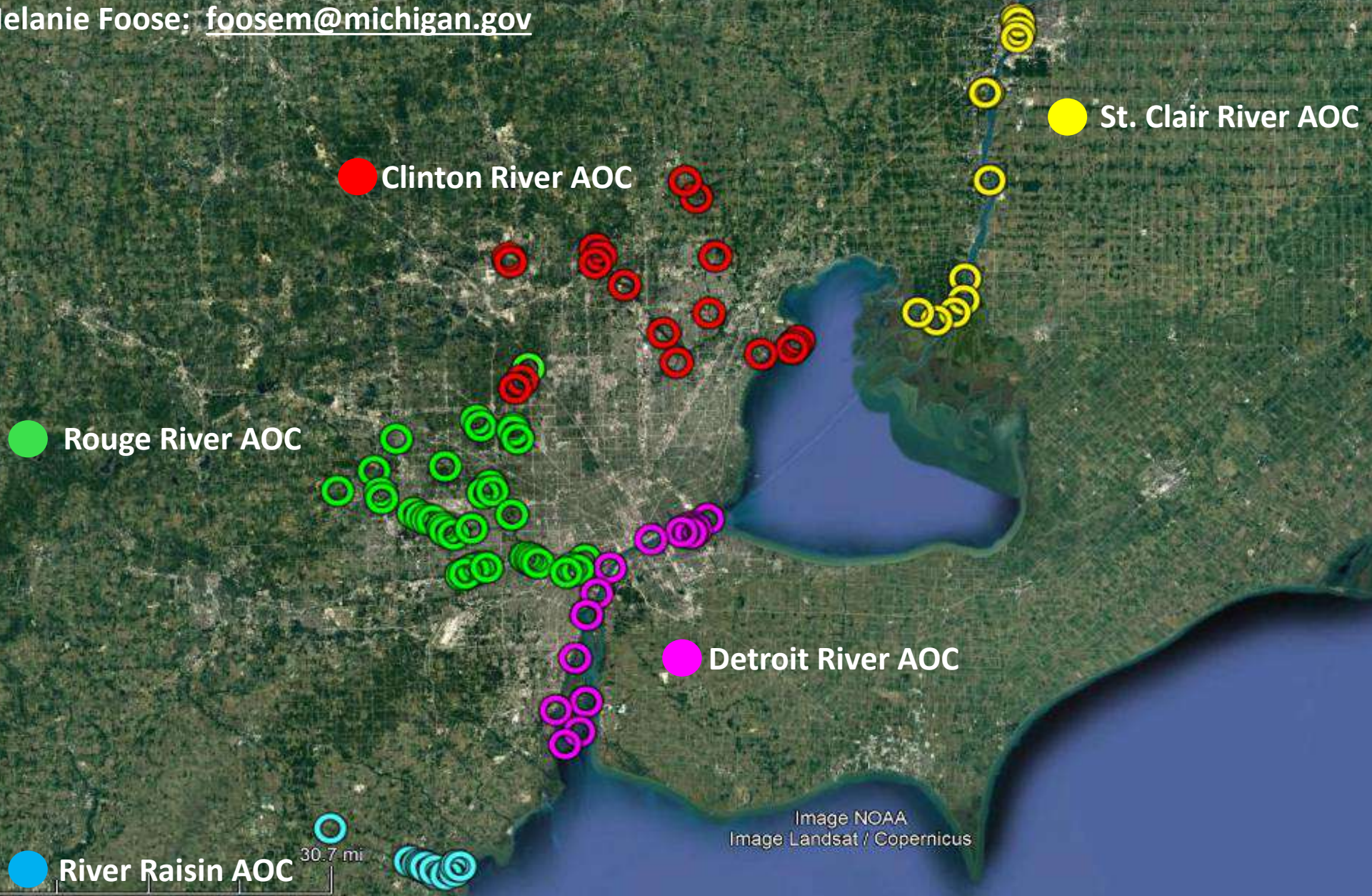


Image NOAA
Image Landsat / Copernicus

Google Earth