

City of Racine Coastal Restoration Projects

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City of Racine Public Health Department**

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With Respect to Water Resources, Our Goal is to...

PROTECT PUBLIC HEALTH



PRESERVE ENVIRONMENT



MAXIMIZE UTILITY

North Beach, 2000 - present



Number of Days When EPA Standards for Recreational Water Were Exceeded

<u>Year</u>	<u>North Beach</u>	<u>Zoo Beach</u>	<u>Total Days</u>
2000	62	39	94
2001	17	21	84
2002	27	20	87
2003	34	29	88
2004	22	16	94
2005	5	5	93
2006	3	7	94
2007	3	7	94
2008	1	3	87
2009	2	7	94
2010	1	3	94
2011	3	5	94
2012	5	6	96
2013	7	7	93



English Street Constructed Wetland - 2000

- Racine award-winning Public Works project
- Cost share between tax levy and grant dollars
- Utilized volunteers for native plant installation



Altered Beach Grooming Strategies – 2001, 2002



Encouraged Dunes – 2007, 2008

- Captured sheet flow from large parking area
- Constructed by municipal staff and volunteers
- “Observational” engineering
- Creates habitat
- Low cost (~\$1500)



Dunes in Action



Public Amenities

Kid's Cove Playground



Nature Trail



Welcome to North Beach!

For Your Safety:

1. Remain on the nature trail
2. Only swim in the life-guarded area
3. Obey park and beach rules

Legend

- You Are Here
- Nature Trail
- Beach Access



Visitor Information

North Beach – 100 Kewaunee Street – is Wisconsin's first Blue Wave Beach certified by the National Clean Beaches Council since 2004. The 50 acre park provides access to over 2,500 feet of Lake Michigan coastline and has been serving Racine residents for over a 100 years. Among the top 10 beaches in the Great Lake region, North Beach is known for its natural character and pristine water. The beach features a protected swim area with on-duty lifeguards and water rescue equipment. In addition, the beach has picnic areas, beachside concessions, restrooms, showers, Wisconsin's first wheelchair accessible path to the shoreline, and Kid's Cove – a 20,000 square foot play area built by local volunteers.

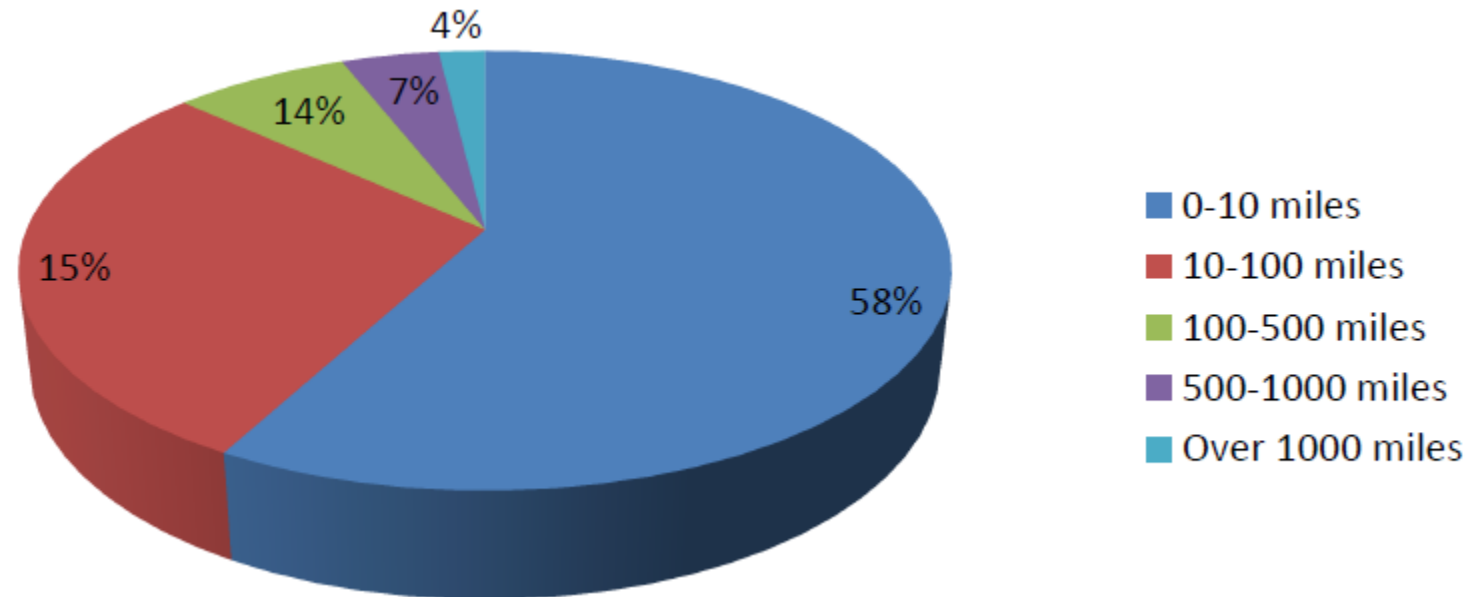


Questions, Concerns, or More Information.
Parks, Recreation, & Cultural Services
800 Center Street
Room 127
Racine, WI 53403
Phone: (262) 636-9131
Public Health Department
730 Washington Avenue
Room 109
Racine, WI 53403
Phone: (262) 636-9201

Grant funding for this project provided by: Fund for Lake Michigan

2014 North Beach User Survey

- 25% of North Beach visitors traveled >100 miles
- Visitors came from 32 US states
 - WI (76.8%), IL (10.3%)
 - Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, Ohio = 5.0%
- Visitors came 4 foreign countries
 - England (1), Belgium(1), Ukraine(1), Sweden(1)



Total Economic Benefit


\$5 million direct economic impact to Racine based on attendance, hosted events, and hotel stays



Iron Man Triathlon



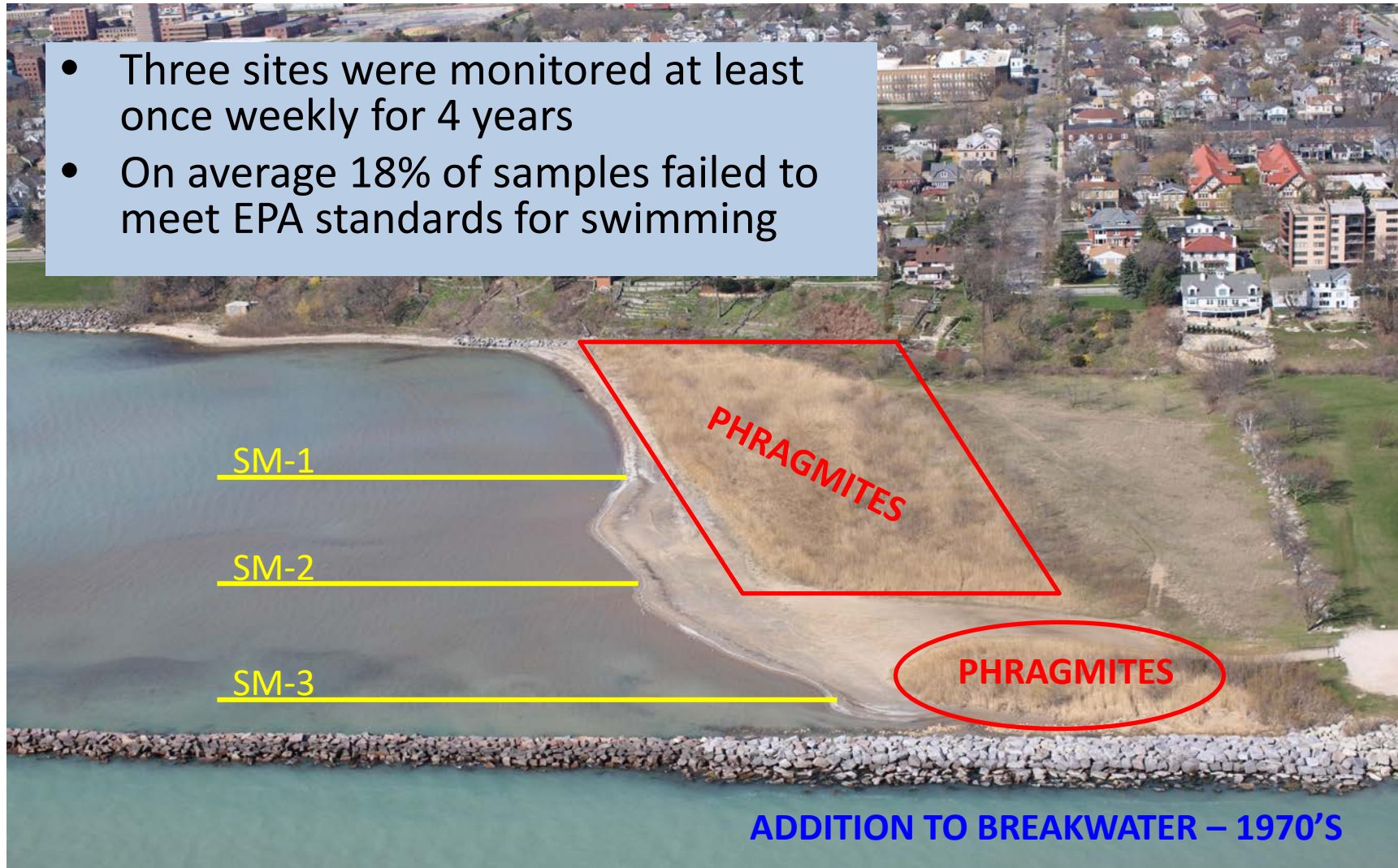
July 4th Fireworks

A photograph of Samuel Myers Park. In the foreground, a large tree with some autumn-colored leaves stands on the left. A red plastic safety fence runs across the middle ground. Behind the fence is a wide, sandy beach with visible tire tracks. In the background, the ocean meets a clear blue sky, with a rocky breakwater visible on the horizon.

Samuel Myers Park, 2013 - present

Surface Water Quality(2010-2013)

- Three sites were monitored at least once weekly for 4 years
- On average 18% of samples failed to meet EPA standards for swimming



11 PHASE Implementation Plan

- Engineering plans completed in 2013
- Project implementation was partitioned in order to secure funding
- Each PHASE was integral to the whole but stood alone as an “added value” feature
- Each PHASE:
 - Addressed pollution
 - Managed invasive species
 - Restored coastal habitat
 - Improved site aesthetics
 - Created recreational value



Conceptual Redesign Plan



Project Goals

- Improve/Create Habitat Using Native Vegetation (attract wildlife)
 - Upland (including butterfly gardens)
 - Dry Prairie
 - Wetland
 - Dunes
- Improve Public Access
 - Gazebo (including connections to Lake Michigan Pathway)
 - Scenic Overlook
 - Walking Trail
 - Carry-in Canoe/Kayak Launch
- Improve Water Quality
- Create coastal resilience

2014 (Project Kick Off)

- Established a preliminary offshore swim zone
- Removed invasive species
- Performed a wetland delineation
- Had a park rededication (30 yr. anniversary)
- Received permits
- Secured funding
- Began construction!



Wetland Delineation – May 2014

- Approximately 40% of the “sandy” area has been designated as wetlands
- ***Once restored Sam Myers will be the only such area in the Milwaukee-Chicago corridor***
- Wetland restoration will:
 - Enhance habitat...bird flyway
 - Protect threatened plant species
 - Provide educational opportunities for local children



Invasive Species Management - 2014

Controlled Burn



Herbicide Application & Cutting



Construction begins - November, 2014



Harvesting existing rip rap for jetty supplement

Phase III and IV Dry Prairie - November 2014



Native Prairie Plants

Brown Eyed Susan



Little Blue Stem, Goldenrod, Aster



Phase I and II – May, 2015



East Constructed Wetland

2013



2018



West Constructed Wetland

2013



2016



Existing Coastal Wetland

2011



2016



Dunes

2013



2017



Nature Trails

Cordwalk Paths



Educational Signage

SAMUEL MYERS PARK

GREAT LAKES SHIPWRECKS

There are four shipwrecks in the open waters of Lake Michigan adjacent to Samuel Myers Park according to the Wisconsin Historical Society.

Ship Name	Built	Casualty	Type	Length
Dolphin	1842	1876 (Stranded)	Schooner	91 ft.
F. W. Backus	1846	1866 (Burned)	Steam Screw	135 ft.
George Barber	1857	1895 (Abandoned)	Schooner	93 ft.
M. S. Scott	1856	1866 (Stranded)	Schooner	135 ft.

A fifth ship, the William Rudolph, was beached in the surf at the end of Twelfth Street on October 12, 1913 to provide shoreline protection. One month later it broke up in a storm and the remains have been buried by the accumulation of sand along the shore. None of the ships were disturbed by the restoration work at Samuel Myers Park.

The Lochnaier Inn, built in 1915 and overlooking Samuel Myers Park, is proud to display the anchor from the William Rudolph.

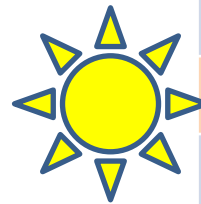
Photo credit: Lochnaier Inn of Racine

For more information, visit www.maritimetrails.org to access the Wisconsin's Maritime Trails Shipwreck Database.

Improved Water Quality – *E. coli*

E. coli has decreased!

Decades long swim ban removed - 2017



Site	Year	Sample Depth (ft.)	n	Median <i>E. coli</i> (MPN)	No. Advisories	%
SM-E2	2015	2	6	346.0	4	66.7
SM-E2	2016	2	12	79.5	4	33.3
SM-E2	2017	2	13	52	2	15.4
SM-E3	2015	3	14	178.5	6	42.9
SM-E3	2016	3	8	108.5	1	12.5
SM-E3	2017	3	13	41	1	7.7
SM-W2	2015	2	14	469.5	9	64.3
SM-W2	2016	2	12	166.5	5	41.7
SM-W2	2017	2	13	75	4	30.8
SM-W3	2016	3	8	163.5	1	12.5
SM-W3	2017	3	13	52	5	38.5

Unfortunately Things Don't Always Go as Anticipated...



Engineering plans need to be developed to accommodate:

- More frequent storms
- Intense rain events
- Changes in lake levels
- Need for public access

There will always be an element of uncertainty!



Creating Resilience



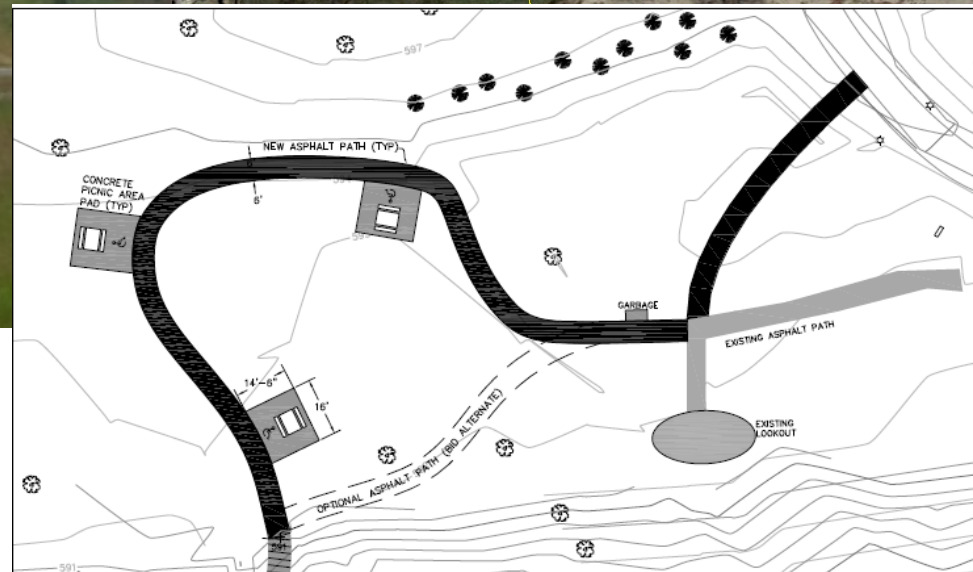
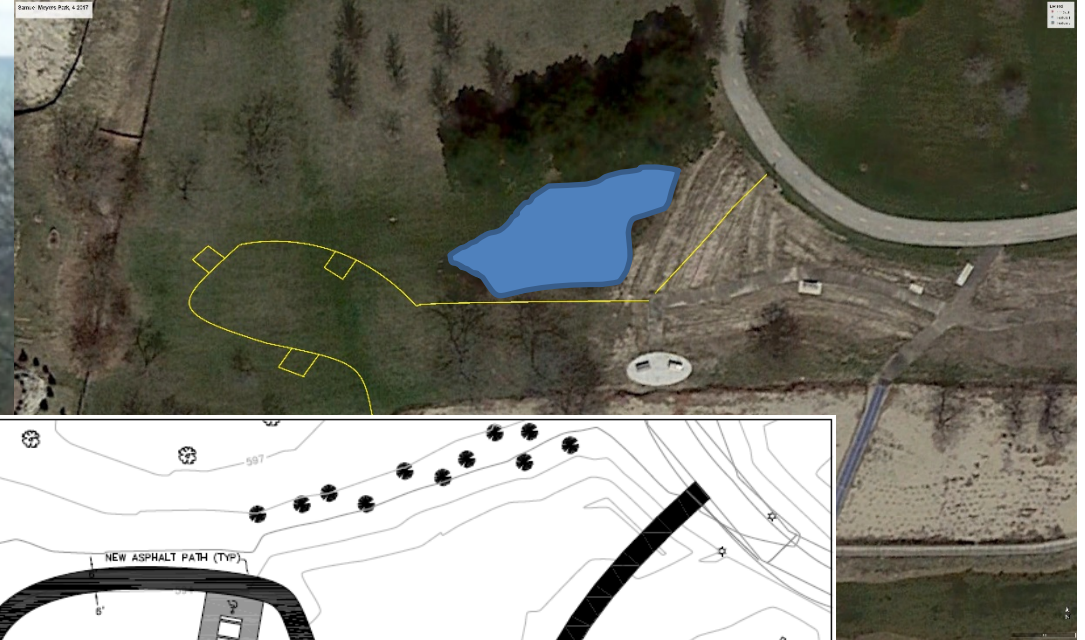
- Supplemented jetty to reduce overtopping
- Built return channel to accommodate large storm surges
- Created hydrologic connectivity between wetland features
- Constructed rain garden and bioswale to capture sheet flow
- Designed French drain system under main public access point
- Installed dissipaters to reduce velocity/intensity of runoff

Creating Resilience



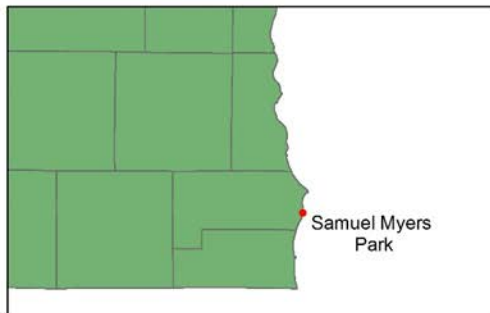
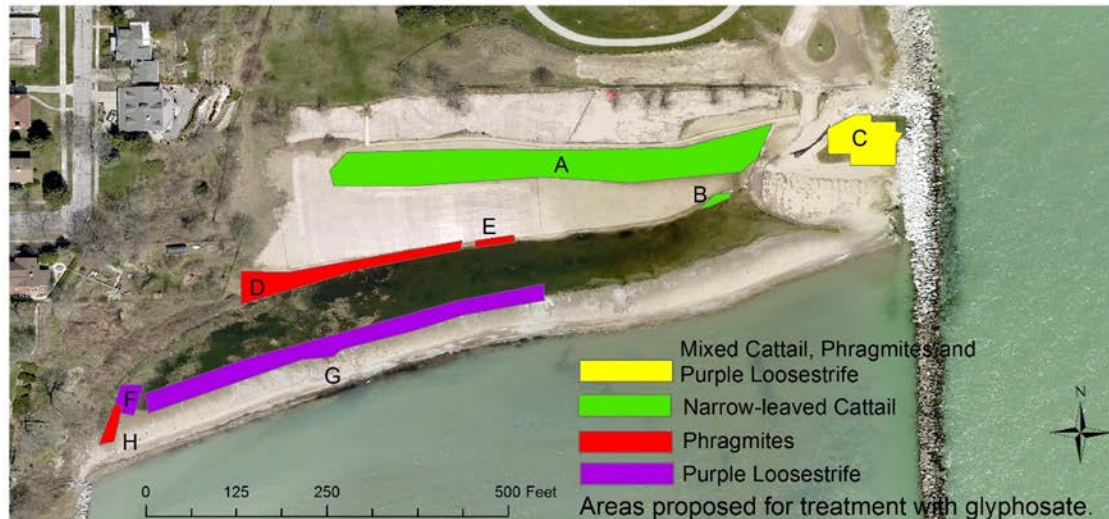
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Accumulation of Rain and Snow Melt Necessitated Movement of Some Amenities



Ongoing Need to Manage Invasive Species

2017 Invasive Species Treatment Areas, Samuel Myers Park, Racine, Wisconsin.



Section	Area	Average Depth (ft)	Species	Notes
A	0.613	1	Narrow-Leaved Cattail	1% Coverage
B	0.009	1	Narrow-Leaved Cattail	2% Coverage
C	0.127	1	Mixed	2% Coverage
D	0.140	0	Phragmites	5% Coverage
E	0.128	0	Phragmites	5% Coverage
F	0.028	0	Purple Loosestrife	50% Coverage
G	0.315	0	Purple Loosestrife	5% Coverage
H	0.018	0	Phragmites	50% Coverage
Total	1.378			



Purple Loosestrife

New invasive/non-native species appeared after Phragmites percent cover reduced.

Many Thanks to Everyone Who Helped Us Achieve Our Goal!

- US EPA - GLRI
- Fund for Lake Michigan
- WI Coastal Management Program
- US Forest Service
- Root-Pike Watershed Initiative Network
- Wege Foundation
- Lexi Kazian Foundation
- Ozaukee Washington Land Trust
- Racine Yacht Club
- Miller Engineers & Scientists
- Great Lakes CCC
- Friends/Family of Judge Jack Jude

\$1,027,437

- Kiwanis of Racine
- A.W. Oakes & Son
- Distinctive Woodwork, Inc.
- Vaash & Sons Excavating
- Ray Hintz, Inc.
- Friends of Myers Park
- Racine-Kenosha Bike Club
- John Dickert
- Walden III Middle & High School
- UW-Parkside
- Alliance for the Great Lakes
- Educator's Credit Union/Kid's First/YMCA

