

“Blue is the New Green” : Growing Michigan’s Blue Economy

**The St. Clair River Symposium
Bridging the Environment and Economy
September 18, 2014
Port Huron**

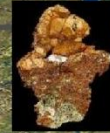
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Non Resident Senior Fellow, Brookings Institution
President, Michigan State Board of Education**

www.MiEconomicCenter.org

Blue Economy

*Build on Michigan's abundant
water, access to water, water
education and innovation assets
to grow our economy*



What is the Blue Economy? How does water matter to jobs and sustainable economic activity?

First it was a conduit for trade...



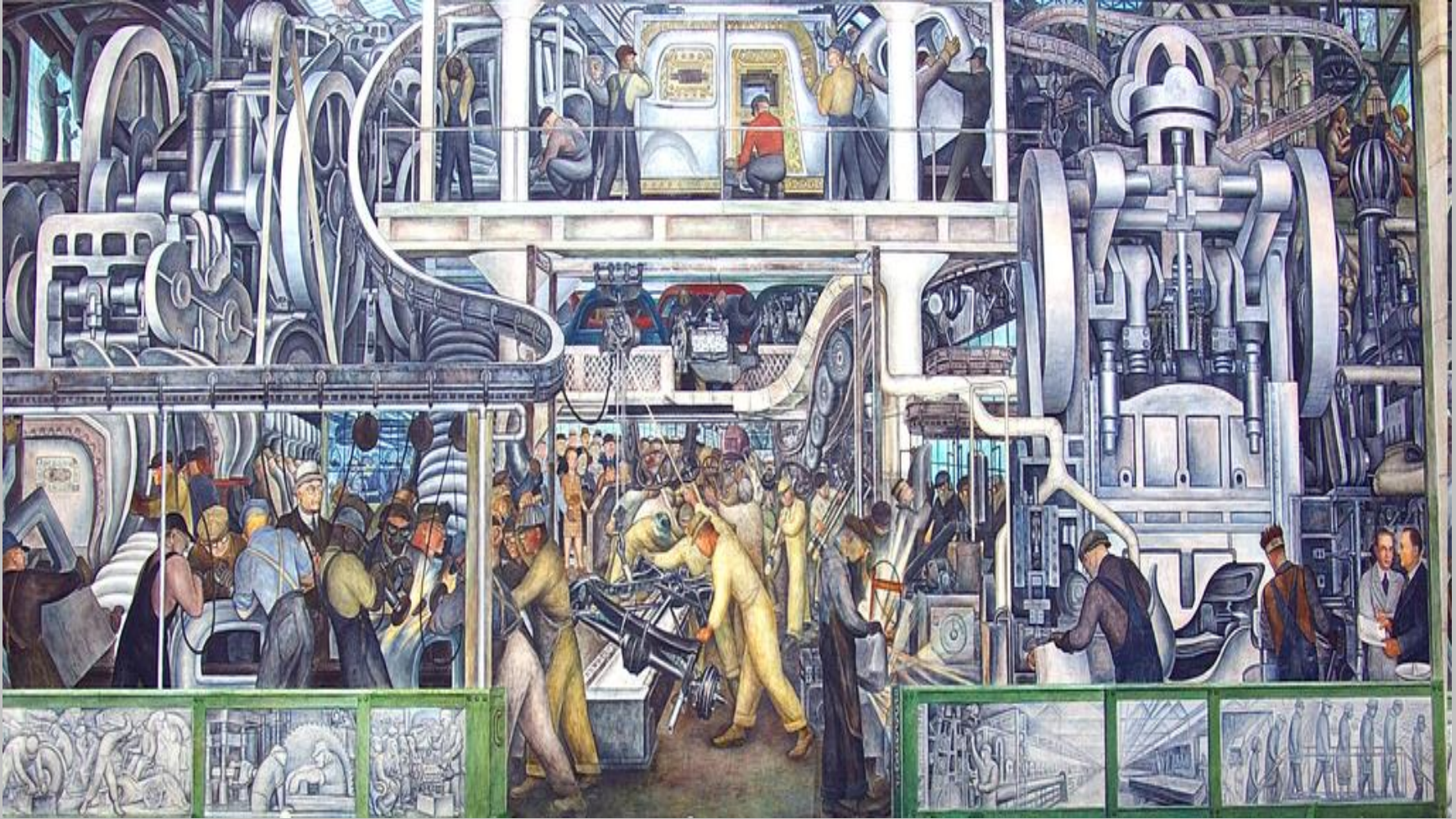
Like our Timber.....



Then our food, livestock, timber, and rich raw materials were converted; water used and abused as input to great agro-industrial enterprises that grew here...

Like the sawmills and paper mills...





And the great factories making cars, chemicals, appliances, and furniture that gave us jobs, great wealth and a great life here in Michigan

Water and Our Michigan Economy Today

How Does Water Matter to Our Economy Today?

Michigan enjoys a special piece of real estate; there is only so much waterfront:

- ❖ 3,000 miles of Great Lakes Shoreline
- ❖ 11,000 inland lakes
- ❖ 30,000 miles of rivers
- ❖ Millions of acres of wetlands
- ❖ Never more than 6 miles from water
- ❖ Connected to ~20% of world's fresh surface water



Water defines us, and gives us “Pure Michigan”



‘Blue is the New Green’

Green Economy

Wind, solar, battery, bio-mass, next energy technology creation

Building retrofits, turbine machining, solar panel production, transit-building: “green collar jobs”

“Greenways”, parks, open-space: “green” places

Green roofs, recycling, local food: “green” culture

Blue Economy

Water cleaning, monitoring, conservation products and services

Building retrofits, water infrastructure repair, Filter making, “blue-collar” jobs

“Blueways”, wetland preservation, waterfront renewal, water trails

Rain-gardens, ‘grey-water’ systems, smart water lifestyles

How Does Water Matter to Our Economy Today?

Traditional ways:

❖ Shipping/freight/commercial fishing:
65,000 jobs, \$3.3 billion wages

Transportation



Water-dependent business: Agriculture



Food Production *and* Food Processing

Manufacturing



Another Water-Dependent Business



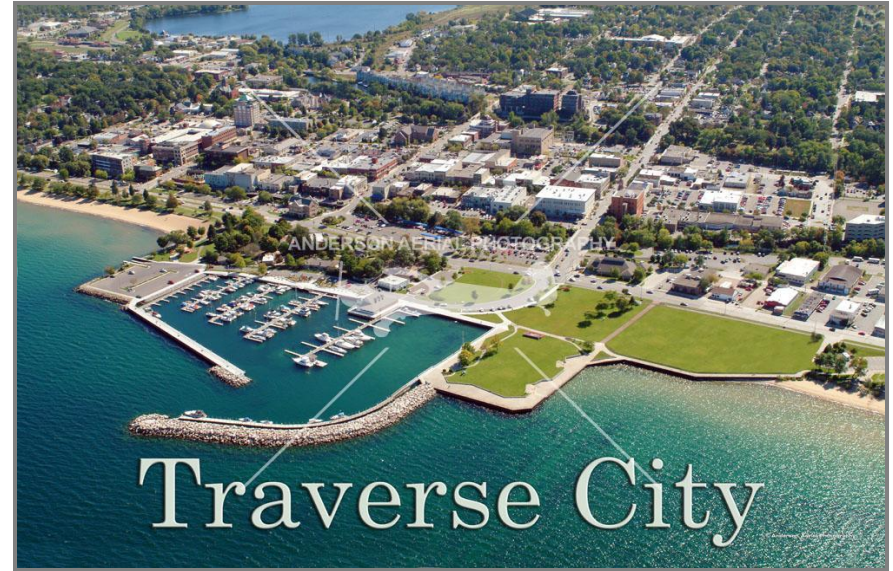
How Does Water Matter to Our Economy Today?

- ❖ Big water-using businesses: 581,000 jobs (8th in nation in share of employment)
- ❖ \$40 billion annual wages from water
 - using farming, manufacturing, mining, energy, beverages,

The Emerging Blue Economy

- ❖ Water as magical place-definer, quality of life asset and activity driver
- ❖ Water based education, research, and problem solving centers
- ❖ Water-based businesses, and emerging water, clean technology products and services

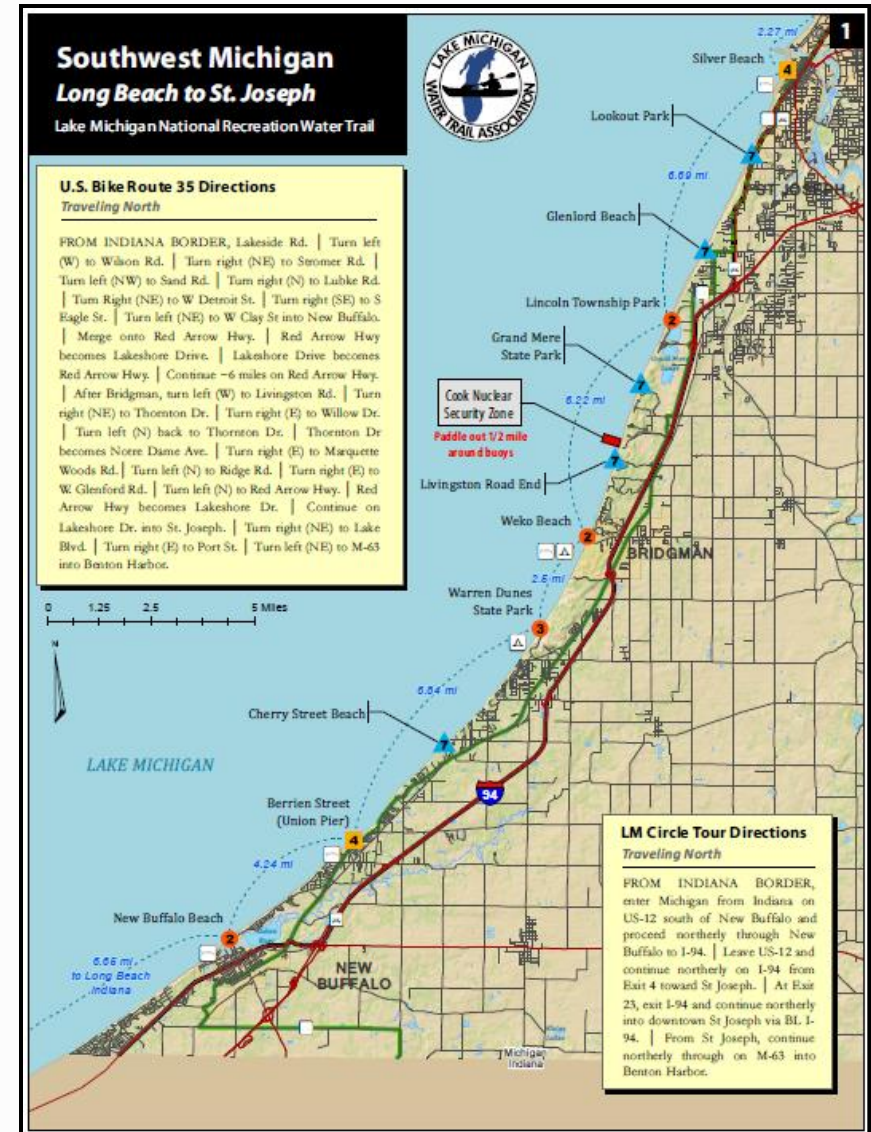
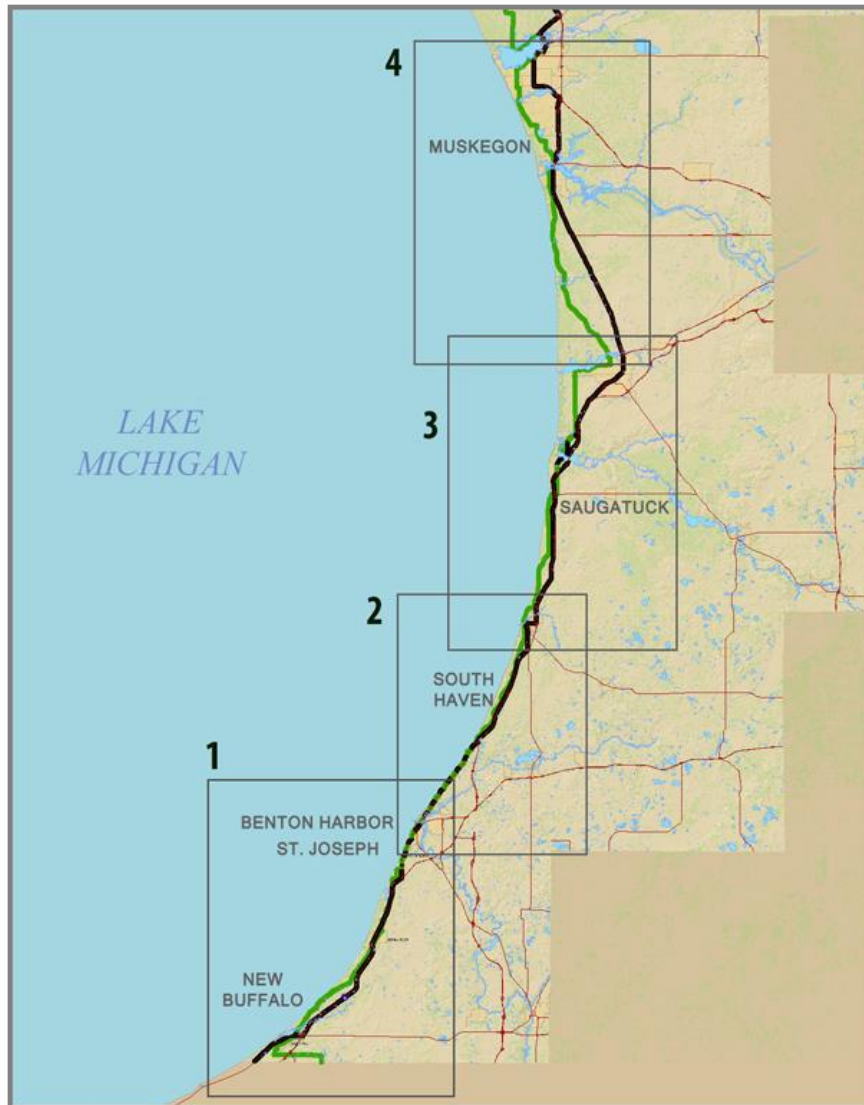
Place-based Development



Water-Dependent Recreation, Tourism



Blue Water Trails



Lake Michigan Water Trail: SW Michigan

The Emerging Blue Economy

Quality of Life and Place:

3,000+ miles of Great Lakes coast,
11,000 inland lakes, hundreds of rivers,
and wetlands translates into →

recreation, tourism, attraction of talent,
increased property values and local
economic development

Quality of Life and Place:

- Boater's spend \$3.9 billion/yr; Anglers \$2 billion/yr
- Coastal tourism from birding to beach visits is responsible for 57,000 jobs and \$955 million in earnings every year
- Inland lakes attract residents and visitors, property values worth \$200 billion, \$3.5 billion in annual taxes
- Kayaks and Canoes \$140 million a year
- Water access, restoration and redevelopment attract-keep talent, drive enhanced economic activity → increased property values

Water Restoration Drives Place Quality



America's North Coast:

*A Benefit-Cost Analysis of a Program to
Protect and Restore the Great Lakes*

September 2007

www.healthylakes.org

ast_Report_07.pdf



HEALING OUR WATERS® -
GREAT LAKES COALITION



Improvement	GLRI Effect	Affected Value	Present Value Benefit (relative to baseline)
Increased fish	30-75% ↑	Improved catch rates for anglers	\$1.1-\$5.8 billion increase
Avoided dislocation of sport-fishery	20% ↓	Maintain sport-fishery wages	\$100-\$200 million increase
Reduced sedimentation	10-25% ↓	Lower water trtm't costs for cities	\$50-\$125 million
Reduced water pathogens	20% ↓	More swimming activity	\$2-\$3 billion
Improved water clarity	5 ↑	More swimming	\$2.5 billion
Improved habitat: birds	10-20% ↑	More birding	\$100-\$200 million
Improved habitat: waterfowl	10-20% ↑	More hunting	\$7-\$100 million
Clean up AOCs	Remove all toxic sediment	Benefit basin residents	\$12-\$19 billion

Water restoration increases Property Values

- 10% increase in property values for those living next to Great Lakes
- 1-2% increase for properties within major metropolitan areas that abut the Great Lakes
- 3:1 to 6:1 Economic Impact for Restoration – Michigan - \$163 million spent already means @ \$500 million+ economic impact.

University/Community College: Education and Research



Michigan Tech



CMU Beaver Island



GVSU - AWRI

The Emerging Blue Economy: Higher Education

- ❖ 9 water based education, research, and problem solving centers at MI Universities, awarded millions of research dollars - \$299 million in last 4 years at URC alone
- ❖ 18 MI Community Colleges with water-related curriculum and career programs
- ❖ GLRI: over \$1 billion invested in Great Lakes restoration; largest grant given to CMU

The Emerging Blue Economy

- ❖ Water-based businesses, and emerging water, clean technology products and services – over 350 emerging water technology companies in Michigan, 140,000 employees (10th in nation)
- ❖ Beginning to exploit a nearly \$1 trillion dollar growing global market
- ❖
- ❖ Fast-growing VC \$ to water tech: over \$370 million in US; \$50 billion water asset funds globally



MEC

MICHIGAN ECONOMIC CENTER

New firms and opportunities



Algal Bioreactors

Exploiting markets in the coming “green” and “blue” sustainable economies based on smart energy and water use...

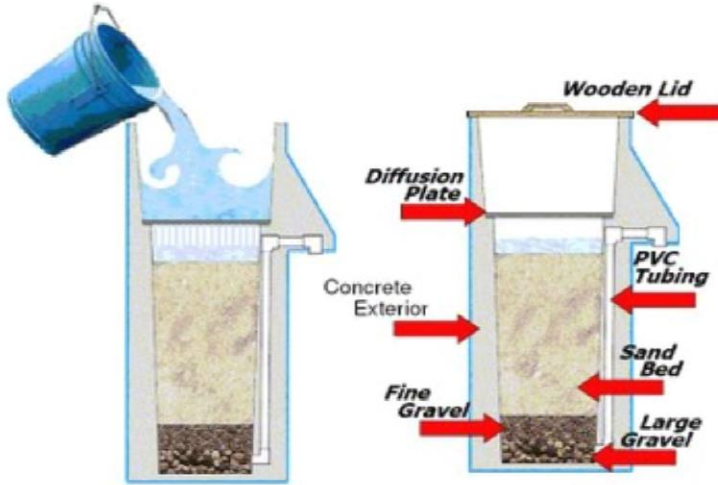


Figure 1.1 Biosand Filter



The Emerging Blue Economy

Total of water-based, water dependent jobs and income already in Michigan:

Blue Economy totals almost 1 million jobs, \$60 billion annually to Michigan's economy – 4th largest share of total employment water products-services, big water users

Blue Economy Initiative

- ❖ Funded by C.S. Mott Foundation
- ❖ Joint initiative of GVSU-AWRI and Michigan Economic Center
- ❖ Inventory blue economy activities in MI
 - place-based community initiatives
 - university and college education research
 - water technology
- ❖ Share inspiring vision and possibilities, Network stakeholders, Inform State Water Strategy, explore how multi-sector actors can support



Looking Ahead: Accelerating the Growth of Michigan's Blue Economy

Examples: Water Place-Making

An aerial photograph of the Great Lakes region, showing the five Great Lakes and surrounding land. Several orange callout boxes with white borders are overlaid on the map, each pointing to a specific location and containing text about water place-making initiatives. The boxes are connected to the map by orange lines that resemble lightning bolts or arrows.

- “Your Bay – Your Say” – Bay Shore Corridor
- Boardman River Prosperity Plan

Marquette Harborfront

- Bay County Roadmap
- Saginaw Watershed Initiative

Manistee : Explore the Shores” & Lakes to Land” initiative

St. Clair “Blue Meets Green”

Muskegon Harbor – Waterfront

Stitching Grand River into Grand Rapids

Huron “River-UP!”

- Macomb Blue Economy Initiative
- Detroit Riverfront- Refuge
- Clinton River “WaterTowns”

Water Education, Research, Problem-Solving

A satellite map of the Great Lakes region of North America, showing the five Great Lakes (Superior, Michigan, Huron, Erie, and Ontario) and the surrounding land. Overlaid on the map are seven orange callout boxes with white borders, each containing the name of a water research institution. The boxes are connected to specific locations on the map by orange lines that resemble stylized lightning bolts or arrows. The background is a high-resolution satellite image showing green land, blue water, and brownish areas that might be wetlands or agricultural fields.

Michigan Tech
Great Lakes
Research Center

Northwestern
Michigan
College –
Freshwater
Studies

SVSU Environmental
Science Programs

Lawrence Tech
Great Lakes
Stormwater
Management
Institute

Grand Valley State
Water Resources
Institute

WSU – Macomb
Community
College HEART
Alliance for
Water Research

Michigan State
University Center
for Water Science

U of M Water
Center

Water Technology Product and Service Firms

A satellite map of the Pacific Northwest region, including parts of Washington, Oregon, and Idaho. The map shows a network of rivers and lakes. Several orange callout boxes with white borders point to specific locations on the map, each containing the name of a water technology firm and a brief description of its products or services. The callouts are: Keewanaw Geothermal Research Group (pointing to a location in the northwest), Dow and Serv-a-Pure (pointing to a central location), Algal Scientific and Plymouth Technologies (pointing to a location in the northeast), Parjana Distribution (pointing to a location in the east), Mannik Smith Group (pointing to a location in the southeast), and Limnotech & ECT (pointing to a location in the south).

Keewanaw
Geothermal
Research Group

- Dow: membranes, filters
- Serv-a-Pure: super-pure water

- Algal Scientific – water recovery
- Plymouth Technologies – waste water treatment

Cascade
Engineeering – Bio
Sands Filter

Parjana
Distribution–
stormwater
Treatment

Mannik Smith
Group - green
infrastructure

Limnotech &
ECT - engineering,
water ecosystem
management

Healthy Waters, Strong Economy – Clean water will make you rich! 3:1 to 6:1 Economic Impact for clean-up. AOC's – Some Superfund sites getting done. So far under Great Lakes Restoration – Michigan -\$163 million spent

Sault St. Marie
St. Mary's River
Superfund Site

Kalamazoo River
Superfund Site

St Clair River Bi-
National AOC

Muskegon - White
Lake, Area of
Concern

Monroe Area of
Concern

What's Next for the Blue Economy Initiative?

Recommendations: inform State Water Strategy & multi-stakeholder actions to grow Blue Economy

- Strategic support for regional and community water place-making – make a focus of State Place-Making strategy; encourage local community “blue-economy building”
- Strategy for marketing Michigan as Water education and R&D Center- match business water technology problem solving needs & opportunities with research support
- Support for water technology business innovation, commercialization, financing and export support

Thank you...

**Find more “Blue” at
www.MiEconomicCenter.org**

