

# WATER, MICHIGAN

AND THE

G R O W I N G

# “BLUE ECONOMY”

Photo of Mason County State Park by Franco Terenzi

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## Overview

As the Great Lakes State, with abundant natural water assets, Michigan's very identity and our economic and cultural history has been shaped by water. Our waterways were first the conduit to explore and settle the region; and ship our natural bounty, pelts, timbers, ores and grains to growing markets. As we converted this bounty to grow and make things, water was the key ingredient in the great industries built in the region. Agriculture, autos, paper, chemicals, durable goods manufacturing, all used -- and often abused -- our water as an input to the agri-industrial economy that powered Michigan's might in the 20th century.

In the latter part of the 20th century Michigan led the way in cleaning up our water, repairing damage and excesses from the factory era. We newly appreciated that our water matters enormously to the health of our overall Michigan ecosystem and our economy; but also as a rare and precious part of human use and enjoyment. Michigan has over 3,000 miles of freshwater coast, 11,000 inland lakes, hundreds of beautiful rivers, and wetlands, which make it a magical place to live, work, and play. "Pure Michigan" speaks so powerfully to us, as it captures the joy our waters bring Michigan families (and our many visitors), when we spend time at the cottage, fish the river, walk the dune, watch the sunset, or pilot our boat.

### **Today our water still matters to our Michigan economy in traditional ways:**

- Conduit for commerce: commercial and freight shipping and warehousing, as well as travel by water, remain an important part of Michigan's economy.
- "Input" and resource to grow and make things: Water is an essential input to farming and agriculture, manufacturing, energy production, and most things we make and use.
- Magical place-definer and quality of life enhancer: People want to live near water, to see it, and enjoy it -- boat, swim, fish, and walk along it. Why do people like to live near and visit "coasts"? We will pay more for a room or house, cottage or office with a water view. Water is a quality of life and place-defining asset. And there is no place like Michigan and our Great Lakes for enjoying the water that is at the heart of the blue economy -- if it is clean and accessible.

But water is also central in new ways to a more vibrant economic future. Water is a tool and asset that, if leveraged, can stimulate new economic activity, job growth, and talent attraction and retention.

## The new and growing ways water matters to our economy include:

- **Water Technology Business:** Smart and sustainable water use and re-use, water efficiency, cleaning, and many other new water-technology products and services are an exploding multi-billion dollar business opportunity—and a huge opportunity for Michigan firms and entrepreneurs with competencies in innovating, deploying, and manufacturing new products. Michigan firms like Cascade Engineering, Dow Chemical, Limnotech, and many others are demonstrating there is money to be made and jobs to be created in new clean-tech, smart water technology and products.
- **Water Research and Learning:** Michigan’s schools and universities, as they solve water problems for Michigan, the Great Lakes, and the world, can be the places top talent, students and research dollars pour into—and new inventions and businesses spill out. Education and research institutions engaged in water research, water and ecosystem management and education, pioneering solutions to global water problems, educating and training water “talent” – are an economic engine in and of themselves. They work to attract outside investment, keep and draw top talent to Michigan, and create “spillovers” in the form of new technologies, firms and enterprises. Developing water centers of excellence is a huge economic opportunity just beginning to be exploited by our world-leading education and research institutions.
- **Sustainable Water Use as Values Cue:** By being the leader, the innovator in sustainable water use and water stewardship we also send an important values cue: Michigan and our communities are the place where we take good care of our beautiful water, and are solving the world’s water problems. This message is a magnet for today’s top talent, particularly young people—who want a sustainable lifestyle, who want to live and work in communities and for companies that are committed to sustainability, and who want to be engaged in solving big, important problems that make the world, and their corner of it—better.
- **Water as Long-Term Sustainable Growth Platform:** And in the long-run, Michigan, along with sister states surrounding the Great Lakes, is one of the few places on earth that can provide a sustainable platform for long-term population and economic growth. Sometime in the near future—particularly if the rest of the country and world begin to price water to reflect its costs, and Michigan demonstrates and grows its sustainable water use practices, there will be a new migration of people and companies to Michigan and the Great Lakes—simply because they need water that can be used and re-used sustainably. This movement may have already begun.

Any water strategy for Michigan must focus on all these important ways our rich water and innovation assets can be best leveraged to drive a new round of job and wealth creation in Michigan. Michigan has a unique opportunity to become a leader in this emerging “Blue Economy”, using water in smart and sustainable ways, solving global water problems, and leveraging unique water assets for economic and community development.

## Understanding Michigan's Blue Economy

To understand the “Blue Economy” it is helpful to reflect on the analogous and intertwined “Green Economy” that we have come to appreciate and attempt to nurture in recent years. Just as we now understand that there are tangible “green” economy opportunities: renewable energy products, energy conservation in our homes, communities and businesses; making more attractive communities by providing green space and parks; choosing “green” practices and products as lifestyle choices...there is a similar “Blue Economy”: saving water, using it smarter in our communities, homes, businesses, appliances; purifying and using water more efficiently around the world; cleaning and providing public access to our lakes and rivers that make beautiful places to live, work, and recreate. People want to be near water as a lifestyle choice; choosing “sustainable” products and using water more sustainability is a values statement people want to make.

### How Water Matters to the Economy - Today

Michigan's water still matters significantly to our economy in its historic and traditional ways as a conduit for commerce, and a resource and “input” in growing and making things:

- Water and our Great Lakes are still conduits for shipping, trade and commerce. Estimates are that Great Lakes shipping, freight/commercial traffic and warehousing are responsible for over 65,000 jobs and \$3.3 billion in annual wages.<sup>1</sup>
- Michigan has over 660,000 jobs, and \$49 billion in annual wages directly linked to using our Great Lakes water for farming, in manufacturing, mining and energy production.<sup>2</sup>

These will remain important parts of Michigan's water-based economy, particularly if Michigan can lead in innovation in how water is used in agriculture and manufacturing more efficiently and sustainably, and to mitigate environmental damage. However, these are not today the most important ways water matters to the economy, nor are they the areas of most rapid job and economic growth, and future opportunity.

By understanding the growing ways water matters— and accelerating Michigan's work and leadership in each of these areas—Michigan can reap significant economic dividends. Table 1 categorizes the economy and job creation impacts around the emerging Blue Economy. While impossible to quantify all the economic impacts and opportunities in this growing arena, a conservative estimate is that water is already responsible for nearly a million jobs and \$60 billion in the Michigan economy.<sup>3</sup>

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1. Michigan's Great Lakes Jobs, Michigan Sea Grant, 2009 <http://www.miseagrant.umich.edu/downloads/coastal/economy/09-101-Jobs-Report.pdf>  
2. Michigan's Great Lakes Jobs, Michigan Sea Grant, Vaccaro, Read, Scavia 2010.  
3. MEC estimate from existing studies and original research.

## Table 1. The Emerging Blue Economy – Job Impacts

### New Clean-Tech, Smart Water Technology Jobs

**Water Technology Research, Learning, and Water-Technology Goods and Services Production:** Communities that are centers of basic and applied water research, and the development of new water technologies will see concentrations of highly educated talent, institutions and firms around water conservation and cleaning systems; treatment and wastewater recovery (from phosphates to methane); water efficiency techniques in manufacturing, mining and agriculture; water quality testing; water technology validation and permitting, water pricing and management technologies, ecosystem engineering, design and building services; water and sewer infrastructure engineering and redesign, water loss management detection and recovery; brown-fresh water separation; aquaculture, agriculture, and freshwater marine life research; and water ecosystem teaching and learning centers of excellence.

### Direct “Blue-Collar” – “Blue-Economy” Jobs From Deploying New Systems and Technologies

**Water Products, Sustainability System-Building and Applications:** New jobs will be created in constructing and deploying blue sustainability systems and practices in housing, buildings, and retrofitting of water systems; manufacture of water pumps, desalinization equipment, water infrastructure modernization and repair; installing new efficient smart-water, brown water, treatment systems; water cleaning “living machines” design/installation; design/construction of homes and buildings; and agriculture equipment component making; aquaculture, fishing, agriculture, habitat management, and construction will benefit with job growth.

### Water-Based Development

**Place Making Economic and Job Creation Impacts:** There are tremendous economic development benefits, and jobs flowing from new water related access, use and supporting infrastructure. Water is a valuable amenity—places on the water, near the water, where people can see and enjoy rivers, lakes and streams—are valuable pieces of real estate. Waterfront reclamation, water-based development (parks, marinas, residential and office units adjacent) lake, beach and riverfront access and preservation, access to water for healthy, outdoor lifestyles, and water sports (including new water trails, way-findings applications), water-based activity from fishing, boating, and birding, all provide direct economic benefits as well as shape place and provide amenity benefits, that create conditions for additional-market driven economic growth.

### Long-term Sustainable Platform

Water availability at reasonable cost for use (and reuse) makes Michigan a long-term platform for population and economic growth. As water becomes priced more accurately (like energy) it will drive development to locales where water can be sustainably used.

### Values-Culture-Lifestyle- Economic Impacts

Leadership in building sustainable communities puts in place vital amenities, sends community values and lifestyle signals that attract and keep talented, educated entrepreneurs, citizens and consumers — who value stewardship of natural assets, choose healthy and sustainable products and lifestyles, and value the ethic of sustainability.

## The Race to Realize Blue Economy Leadership

It is also important to understand that Michigan—blessed with perhaps some of the world’s greatest freshwater, and water research and innovation assets—is not alone in working to seize ‘blue economy’ leadership, and win the benefits in job and talent growth.

Globally, Singapore, Australia, Israel and the Netherlands are turning water challenges to opportunities, and building aggressive water conservation, management and water technology business development strategies.<sup>4</sup> Across Lake Michigan, Milwaukee is developing as a global water center; with a three-legged stool of supporting innovation and growth in their cluster of 130 plus water technology businesses;<sup>5</sup> expanding their University of Wisconsin-Milwaukee and Marquette University water research and education programs; and enhancing their waterfront development and promotion efforts. Across Lake Erie, Cleveland has initiated the Alliance for Water Future to make Cleveland home to freshwater innovation and new business and is seeking to turn its Great lakes Science Center into a water education center. Our Great Lakes neighbor Ontario, and in fact all of Canada have a robust “Blue Economy” Initiative to build leadership in freshwater technology research and business development.<sup>6</sup>

If anything Michigan needs to catch-up and leapfrog states and communities vying for the prize of water technology, research and education leadership, and who are marketing their water-based natural assets and sustainability/lifestyle “brand”.

## Opportunities and Challenges in Leveraging Water for Economic Growth

In each of these major emerging domains that make up the “Blue Economy” there is a lot of activity and innovation going on in Michigan—and both tremendous opportunity and challenges to overcome.

### Water as Place Definer: Use and Enjoyment

There is only so much waterfront real estate, and Michigan’s 3,000-plus miles of Great Lakes freshwater coast; 11,000 inland lakes, hundreds of rivers, and wetlands make it a beautiful, magical place to live and work: if the water is clean, and lakes, beaches, are accessible. People like to live, work, and play near water; to sit at a restaurant, watch birds, fish, swim, boat, enjoy a sunrise, or sunset over water. This is all possible if there is public access, if water is clean, if we remove the slag piles, and rusting factories, and allow for beaches, parks and wetlands to be protected, improved and expanded; and walkways, marinas, and new commercial, and residential developments to be facilitated.

The starting point is water restoration. Studies by the Brookings Institution and Grand Valley State University showed a 3:1 and 6.6:1 return on investment, respectively, in the form of increased property

4. Creating an H2O Economy: More cities see water in their future; October 2012, [www.wef.org/magazine](http://www.wef.org/magazine)

5. <http://forwaterfuture.org/>

6. Canada as the Water Solutions Country, Defining the Opportunities, David Crane 2013

values and local economic development from restoring water quality and shoreline. Major dividends in the form of attracting new residents, tenants and visitors, come from healthy water ecosystems, coastlines and the many environmental and aesthetic benefits that these provide. There is substantial evidence in the economics literature documenting that people are willing to pay more to locate in areas with high environmental quality.<sup>7</sup> Home values differ within and across metropolitan areas, with residents paying more to live in areas with parks and open spaces, lakes, rivers, wetlands, good air quality, and other environmental amenities.<sup>8</sup> At the same time, residents of environmentally attractive areas actually enjoy higher real wages (current wages adjusted for inflation).<sup>9</sup> Our Brookings Institution report *Healthy Waters, Strong Economy* estimates the water clean-up and restoration activities in the greater Detroit Metro area alone (if and when fully implemented) can drive a \$3.7-\$7 billion increase in property values and long-run economic development.<sup>10</sup> Already Michigan has received \$163 million in federal Great Lakes Restoration funding to compliment state and local funds. A Brookings Institution study shows a conservative \$3 to \$1 economic multiplier yields a \$500 million economic impact for Great Lakes Restoration funding to date.

In addition to long-term benefits of healthy waters, we know today these waters attract visitors and accelerate community population growth and generate economic activity. Recreational boaters direct and indirect spending is \$3.9 billion in Michigan, contributing to over 50,000 jobs.<sup>11</sup> Michigan anglers contribute \$2 billion annually to the state.<sup>12</sup> Coastal tourism from birding to beach visits is responsible for 57,000 jobs and \$955 million in earnings every year.<sup>13</sup> Recreation and tourism spending around inland lakes, rivers and wetlands has not been estimated but arguably would be a comparable or larger amount. We do know that the small, but growing Michigan canoe and kayaking industry already contributes \$140 million a year to the economy.<sup>14</sup> All these numbers improve as watersheds are restored, Michigan waters are cleaned up and protected--which leads to tangible economic payoffs in greater fish abundance, reduced beach closures and water treatment costs, improved water clarity, and better wildlife habitat.<sup>15</sup>

Acting on this opportunity, communities around Michigan are participating in significant water cleanup and ecosystem restoration activities; and are advancing new community development visions around their water assets, marketing and leveraging water access as an important quality of life attribute:

- Macomb County's Blue Economy initiative is working to brand and celebrate Macomb's access to water and recreation as a community selling point; restoring and increasing public access to key stretches of waterfront and wetland; developing water trails and promoting water recreation business.

7. Jennifer Roback "Wages, Rents and Quality of Life", *Journal of Political Economy* (90) 1982

8. Soren Anderson and Sarah West, "Open Space, Residential Property Values and Spatial Context," *Regional Science and Urban Economics* (36) (6) (2006)

9. For example, one recent study found that living 100 miles closer to a national park is equivalent to a wage increase of 4 percent, holding housing prices constant: Paul Courant and Lucille Schmidt, "Sometimes Close is Good Enough", *Journal of Regional Science* (46) (5) (2004)

10. Place-Specific Benefits of Great Lakes Restoration, Austin, Anderson, Courant, (2008)

11. Great Lakes Recreational Boatings' Economic Punch, Great Lakes Commission, 2012

12. State rankings compiled by Michigan DNR (2009), cited in Michigan's Great Lakes Jobs, Michigan Sea Grant, Vaccaro, Read, Scavia 2010.

13. Michigan's Great Lakes Jobs, Michigan Sea Grant, Vaccaro, Read, Scavia 2010.

14. Great Lakes Recreational Boatings' Economic Punch, Great Lakes Commission, 2012

15. Michigan's Economic Vitality: The Benefits of Restoring the Great Lakes; Vaccaro, Scavia et al 2010.

- Waterfront redevelopment and water restoration and cleanup in Muskegon and Marquette harbors and along the Detroit Riverfront is repositioning these communities and contributing to market-driven growth.
- The Huron “Riverup” initiative is transforming the 100 miles of Huron River from a neglected “backyard” and dumping ground to a destination and center of community life: with clean-up and restoration efforts, access improvements, water trail development, marketing, and even “art on the river” projects.
- Putting the rapids back into the Grand River, and enhanced public waterfront access and surrounding development in Grand Rapids is contributing to the impressive revitalization of the urban core.
- In Alpena, the nation’s only freshwater National Marine Sanctuary and its expansion from 448 square miles to 4,300 square miles, protecting precious Great Lakes shipwrecks and history, is a fulcrum attracting visitors, and year-round residents.
- Kayak and canoe water trails are being developed and promoted around the state to enhance recreation and tourism<sup>16</sup>; many accessed and promoted by new social media web and apps information – developed through new public-private collaboration.<sup>17</sup>

State water strategy can further identify and promote development of public-private water development policies and practices; sharing ideas, information and best practices among Michigan communities, and identifying the strategic initiatives and interventions most critical to accelerate water place-making strategy.

### **Water technology business**

MEDC reports over 350 emerging water technology firms in Michigan today.<sup>18</sup> In addition, Michigan has a tremendous water innovation infrastructure, as home to firms with strong competencies in discovering, deploying and manufacturing sophisticated products, and providing water engineering, clean-up and ecosystem services. From this base Michigan is well positioned to develop, build, and export new smart-water products and services and participate in the growing multi-billion dollar global business marketplace:

- Michigan firms are already identifying and exploiting new global markets for water products like Cascade Engineering in water cleaning and Dow Chemicals in water filtering.
- Companies like GM, Chrysler, Ford, Masco, PVS Chemical, BASF, Nichols paper utilities DTE and Consumers Energy are all advancing water conservation and treatment tools and technologies.
- Water and ecosystem service firms like Limnotech Engineering, ASTI Environmental, Environmental Consulting and Technology Inc. (ECT) are building on work and expertise gleaned from cleaning up Michigan and Great Lakes water, to new work redeveloping water ecosystems -- from Belle Isle in Detroit, and Lake St. Clair in Macomb County -- to other states, and international clients, including nearby Toronto, and far away China and India.

16. See Water Trail May Boost Tourism, [www.milive.com/outdoors/index](http://www.milive.com/outdoors/index)

17. As in [www.michiganwatertrails.org](http://www.michiganwatertrails.org) developed by the State DEQ, Michigan Sea Grant and Land Information Access Association (LIAA), and [www.huronri-verwatertrail.org](http://www.huronri-verwatertrail.org)

18. Gil Pezza, MEDC, conversation with author.

- The MEDC and other third sector investors are supporting new water technology firms like a Swedish BioGas venture that extracts energy from municipal wastewater in Flint, and a firm that converts wastewater into ethanols and chemicals for reuse in Alpena.
- Public-private-third sector partnerships like that between Sustainable Water Works, Limnotech, and the Nature Conservancy, are developing new technologies to reduce nutrient loads from farm lands into Lake Erie.
- Entrepreneurs are developing smart phone apps for way-finding and to promote recreation on Michigan's burgeoning watertrail network.<sup>19</sup>
- A number of efforts and initiatives to catalyze new commercial opportunities in water technology business are also at work: H2O Opportunities is developing new technologies and firms from existing water and wastewater management activities; Sustainable Water Works is developing a water technology innovation and commercialization accelerator at Techtown as part of Detroit's midtown economic development, and managing a business forum to connect and expand knowledge around emerging water technology business opportunities.
- Under the leadership of Governor Rick Snyder, the Great Lakes Governors and Canadian Premiers recently announced the Great Lakes – St. Lawrence River Water Partnership to promote Michigan and the whole region's water-related companies, to partner and promote internationally the region's water companies, products and services, expanding trade, and attracting investment.

State water strategy can further identify, with private sector direction and input, the most critical network-building, financing needs, marketing assistance, and related gaps and opportunities; and support public-private partnerships to grow the water technology cluster.

### **Water research, learning and global problem solving**

Michigan has leading education and research institutions with expertise in discovery and innovation around freshwater issues that serve as magnets for talent and emerging centers of excellence around water sustainability. Michigan has nine University Water Research Centers; and growing numbers of environment, ecosystem management, and sustainability programs and courses across its public and private universities and community colleges. These programs on the environment, water and ecosystem management, and sustainability are popular and growing in enrollments at Michigan learning institutions. Michigan's research institutions are also winning and deploying significant federal and philanthropic grants for water research:

- The University of Michigan recently launched a new \$9 million Water Center at the Graham Environmental Sustainability Institute, which included a \$4.5 million dollar grant from the Erb Foundation to improve the practice of Great Lakes Restoration. U of M's Erb Institute also brings its leading business school together with environmental disciplines to forge new clean-tech businesses and train their entrepreneurs.

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<sup>19</sup>. See the iShiawasee App at the Itunes store

- In the Detroit area--Wayne State University is home to leading programs in watershed cleanup and restoration; and the link between energy and water usage; Lawrence Tech is home to the Great Lakes Stormwater Management Institute.
- Michigan Technological University is a center of freshwater research and ecosystem management in the UP. Its newly-opened, multi-disciplinary Great Lakes Research Center (GLRC) is a 50,000 sq. ft., \$25M waterfront facility with state of the art laboratories, marine facilities, and a new super computer facility.
- Grand Valley State Universities' Annis Water Resources Institute in Muskegon has seen its enrollments double over recent years; its research programs are finding ways to use algae for bio-fuels; and develop herbicides that can strategically test and target only invasive species. It's local direct economic footprint is estimated at \$3 million dollars for the Muskegon area economy.
- Michigan State Universities' Center for Water Science is finding new ways to track and treat pathogens in water; MSU's specialists in microbiology recently won a \$9.1 million grant to identify and treat the water-link in malaria and other diseases that plague the developing world.
- Macomb Community College and Wayne State University are teaming with Macomb County and the Metroparks system in the Huron to Erie Alliance for Research and Training (HEART) Freshwater Center, designed to provide field-based resources, including mobile labs, for students interested in pursuing careers in water-related science and engineering fields; and transfer programs in freshwater-related Biology, Civil & Environmental Engineering, Environmental Science, and Geology that allow students to begin their studies at Macomb and complete at WSU.
- And Northwestern Michigan College created one of the first community college- level Water Institutes, and first associate degree program in Freshwater Studies in the U.S., which prepares a range of professionals for roles in environmental management, hydrology, planning, consulting, environmental and ecosystem services

Michigan can truly be an international center of education, research, development and production of technologies around smart use of freshwater, with applications in global health, food, energy, water conservation, and sustainable development. Just as our leading research universities once led the Green Revolution; pioneering agricultural practices and products that helped the developing world feed itself--today these same institutions can lead the Blue Revolution- including teaching the world how to feed itself more sustainably, using less water; and solving health, energy and other problems linked to water use.

### **Sustainable water as values signal**

As Michigan, its communities and institutions lead the "Blue revolution" they make a values statement: lots of people want to work on issues of global sustainability, they want to live in communities, buy products, and work in companies that are committed to sustainability and stewardship of the natural world—particularly our beautiful and precious water. Michigan can show this is the place that animates those values of innovation, stewardship and conservation.

Some examples of the importance of these signals:

- When Grand Rapids is awarded the designation America’s “greenest” mid-size city (largely for its smart water use) it adds to its reputation as a community at the forefront of innovation and positive change. Combined with its downtown re-development, and world famous ArtPrize, it sends a strong signal that Grand Rapids is a forward-leaning and progressive community—making it more attractive to talent, and particularly young talent who value these attributes.
- When Cascade Engineering’s VP Christine Keller notes that students and graduates of Grand Valley State University’s Annis Water Resources Institute are tripping over themselves to intern and work at their firm—where among other sustainable products they are making and exporting a water-cleaning device for the third world, that can contribute to ending the health scourge that sees 60% of hospital patients in developing countries there due to water borne pathogens—it demonstrates the power of being the innovators in sustainable water “work” to attract and keep our young talent in Michigan.
- Macomb County is also communicating a new message about itself. Their Blue Economy initiative is part of broader community messaging around “Make your Home in Macomb” – celebrating both the lifestyle benefits of access to water, and the conservation, stewardship, and rehabilitation of Macomb’s Clinton River watershed, and Lake St. Clair water front as core community values.
- Just as Traverse City, which cleaned up the cherry canneries on its waterfront years ago, and has remade itself as a water-afforded, quality-of-life-driven community that attracts year-round professionals, and tourists—other historic industrial and port cities like Muskegon and Marquette are “rebranding” themselves with the celebration of their water, their outdoor lifestyle, cleaned up waterfronts and the “Blue Economy” at their core –and sending new and exciting messages about their community.

Michigan’s water strategy can support more communities in building sustainable water use and enjoyment into the fabric of daily life; and “rebrand” themselves as the innovators and leaders in clean-tech products, water problem solving, and sustainable living.

### **Water as long-term sustainable development platform**

And in the long-run, Michigan is one of the few places that can provide a sustainable platform for long-term population and economic growth. Sometime in the near future—particularly if the rest of the country and world begin to price water to reflect its costs, and Michigan can demonstrate and grow sustainable water use practices, there can be a new migration to Michigan and the Great Lakes simply because people need water that can be used and re-used sustainably. This movement may have already begun -- with global water shortages, Michigan and the Great Lakes can also reap economic advantage as the “Saudia Arabia” of water. <sup>20</sup>

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20. <http://www.toledoblade.com/local/2013/07/14/Great-Lakes-ground-zero-for-water-needs.html>

## Priorities for State Water Strategy, Policy, Funding and Practice to accelerate Blue Economy Leadership

There is more research and policy development work to be done to identify specific recommendations around the most powerful state and local, public and private policies and practices central to support the growth of the Blue Economy in Michigan. However, given the opportunities and challenges identified to date, the following are broad recommendations of areas of focus, and potential next steps for Michigan's developing water strategy in order to accelerate the growth of Michigan's Blue Economy:

### **Support local waterfront redevelopment, clean-up, infrastructure and place-making.**

A prime area of focus can be to assist local communities working to leverage their natural water assets and amenities as part of local community development—and inspire more communities to begin this work. Michigan communities engaged in these efforts face many challenges from costly infrastructure investments to clean water, rebuild wetlands, clean and clear waterfront industrial properties for development; to the protection of scenic parcels, maintenance and expansion of waterfront parks, and enhancing public access through marinas, walkways etc. But many are advancing innovative public-private development and financing strategies, along with community strategic visions, marketing and communications activities, to meet these challenges.

To start, Michigan's Water Strategy can support and learn from work underway (by the Michigan Economic Center and others) to inventory current community water-based development activity, connect and network practitioners for mutual learning and problem solving, identify where state tools and resources can assist; and share successful community experiences with others to inspire similar work.

Ultimately, this process will lead to more specific recommendations for how local water-based community development efforts could be supported. One idea could be an expanded "Pure Michigan" program or Fund – given the power and appeal of this existing effort. An expanded Pure Michigan could be a vehicle for water asset marketing, branding and communication (selling the Blue Economy); provide resources perhaps on a matching basis for water cleanup; water-related infrastructure investments; community planning, development and communications activities promoting waterfront development. Research also shows the powerful brand of Pure Michigan is broadly supported by the public as a mechanism to raise additional resources for water cleanup, conservation and water-place-making.<sup>21</sup>

### **Water research and education center-of-excellence building.**

Given the research and education horsepower around water at Michigan colleges and universities; the growing array of freshwater research and innovation activity underway, and the payoff in terms of talent and dollar attraction, retention and commercial spillovers, the State of Michigan has much to gain by growing and marketing Michigan's water research/education centers of excellence. There are a variety

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21. Michigan Dream Restored: Interim Report on Citizen Research, Michigan Economic Center, 2012

of ways the State could provide leadership as well as direct support: Help recruit outside, institutional, philanthropic and private/corporate investors; Expand and support the existing MIEE public university innovation consortia to include water research; Create a state match for competitively won, rigorously vetted federal research (as Indiana does); Incorporate water research centers of excellence into state innovation and commercialization strategy and funding (in a model like Ohio's successful 3rd Frontier).

### **Water innovation network-building and commercialization strategy.**

In Michigan and in other states, in emerging sectors such as energy, life-sciences, and IT -- business affinity organizations, and catalytic organizations that support business acceleration, commercialization, and early stage capital/finance needs have often supported the growth of these new sectors. As seen in the success of initiatives such as the Massachusetts BioTechnology Council, BioEnterprise Cleveland, and Milwaukee's Water Council there may be a state role in encouraging, and providing seeding support for a business affinity organization, or an accelerator/financing support vehicle for the emerging water sector. The nucleus for these efforts may exist with the work of Sustainable Water Works; H2O Opportunities and others.

There are also many well-intentioned emerging industry support organizations that fail. As Frank Samuel, architect of Ohio's successful "3rd Frontier" Initiative, and Great Lakes venture capital strategy notes, the key to successful efforts are making sure a) the effort is led/directed by the private sector; and b) any catalytic financing or accelerator organization is staffed by private sector professionals and led with the mission to support firms and their investors to make money and grow their business.<sup>22</sup> A recommended first step is to convene and ask Michigan's water-based business sector what they need, and what would be helpful to support the growth of Michigan's water business segments.

## **Note on Further Developing Michigan's Blue Economy Growing Strategy**

The Michigan Economic Center, in partnership with the Grand Valley State University Annis Water Resources Center, has received a grant from the C.S. Mott Foundation to support the "Growing Michigan's Blue Economy" initiative, over the next year. The project will convene, network, share information and promising practices, as well as identify additional issues and obstacles to growing Michigan's Blue Economy, from the array of active community/governmental, business, higher education, and third sector practitioners in Michigan's Blue Economy.

This work can be a vehicle to inform and further develop the recommendations for the Administration's water strategy that support blue-economy growth. We are eager to collaborate in this important work.

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22. <http://www.brookings.edu/research/reports/2010/01/29-venture-capital-samuel>

