

# Executive Summary

## The Michigan Clean Water Initiative

The ESD Board of Directors selected the Clean Water Initiative as the subject for a stand-alone symposium because of the significant role water can and will play in our state's economic recovery and the need to ensure the long-term sustainability of this precious resource. Approximately 20% of the world's surface fresh water is present within the Great Lakes and management and utilization of this resource is a critical priority. While many parts of the world and the United States confront water shortages, Michigan faces the challenge of protecting its water quality and developing a cogent and unified strategy for water to improve the economy of the state.

The Clean Water Symposium examined how water can provide economic opportunities by utilizing the professional talent within the state at our universities, government, businesses, and non-governmental organizations. The symposium featured four breakout sessions and each one endorsed the water technology initiative recently launched by the Michigan Economic Development Corporation. The symposium expanded upon this initiative and embraced the blueprint of a "Blue Economy" to reflect the overall vision of using water to stimulate economic recovery.

Symposium participants focused on how diverse stakeholders could collaborate more constructively on water-related issues and promote water peace within the many differing governmental bodies that have jurisdictional responsibilities over our water. Long-term consensus building on the water issues is essential to protect our resource from extraction by other states. We expect in the long term that our water will become a conflict flashpoint in light of water scarcities that are growing in other regions of the U.S. and the world.

Water regulations were examined and participants brainstormed how innovations could increase permitting efficiency and at the same time simplify compliance-related issues to maintain and attract investment to Michigan. Finally, we focused on the opportunities that exist for new water technologies within the state and how funding technological development could increase the prospects for economic growth while balancing quality and environmental needs.

## Our Mega-Questions & Workgroups

To jump start thought and creativity among symposium participants, we gave each breakout workgroup a mega-question as follows:

**Michigan Blue Economy Workgroup Mega-Question:** If you were creating a blue economy for Michigan from scratch, what would it look like and how would you accomplish it?

**Water Peace Workgroup Mega-Question:** If you were creating water peace for Michigan from scratch, what would it look like and how would you accomplish it?

**Water Regulatory Innovation Workgroup Mega-Question:** If you were creating water regulatory transformation through innovation from scratch, what would it look like and how would you accomplish it?

**Water Technologies Workgroup Mega-Question:** If you were creating sustainable water technology from scratch, what would it look like and how would you accomplish it?

To encourage consideration of these mega-questions, we started the symposium with a diverse set of speakers and then conducted a brainstorming session with all of the participants to seed our collective consciousness for the mega-questions. Our goal was to break through conventional thinking to foster out-of-the-box ideas in the smaller breakout group setting.

Afterwards, participants self-selected into the four breakout groups and began wrestling with their respective mega-question. These same breakout groups carried on their hard work in subsequent sessions geared toward assessment and prioritization of specific solutions that resulted in the Action Plans identified in this report. More importantly, these Action Plans were then analyzed by each breakout group through a RASI evaluation to identify responsible parties, objectives, timelines, and resources for implementation. In our final plenary session, participants heard presentations of the Action Plans.

## **Water–Michigan’s Economic Enabler**

The consensus of the four workgroups was that Michigan should be a world leader in the pursuit of water-related research and development, water quality improvement, water-based technology manufacturing, and water-dependent enterprises. To achieve this leadership role, Michigan should develop a consensus for innovative collaboration between the public and private sectors using the unifying concept of a Blue Economy for this important purpose. The goal of this collaboration would be the creation of strategic policies and related regulatory framework to balance competing interests among the diverse stakeholders seeking economic growth, investment attraction, tax and revenue base stability, and social and environmental considerations.

**Michigan Blue Economy Workgroup Summary:** This breakout group focused on identifying the enablers required for building a Blue Economy in Michigan. The group agreed that an innovative collaborative model had to be created between the public and private sectors to balance the needs for economic growth, social responsibility, and environmental considerations. This collaboration is essential to the formation of a cohesive and unified strategy to foster consensus building among the many stakeholders and to attract new investment to Michigan.

For consensus building, the Blue Economy serves as a common denominator to resolve differences such as the proposal of the Genesee County Drain Commission to build an alternative water system. For new investment, it enables the attraction of new industries like soft drink bottlers and computer chip manufacturers. Bottlers use approximately 2.5 gallons of water for each gallon of product, while computer chip manufacturing is one of the highest industrial water users. The objective of the development of a Michigan Blue Economy is not the outright sale of the water from the Great Lakes basin, but the development of economic opportunities dependent on the use of water.

To develop a Blue Economy, the creation of a sustainable funding mechanism is critical. The group identified the creation of a state bank, similar to the North Dakota model, as a benchmark that should be thoroughly evaluated. Other funding concepts discussed included municipal bonds, venture capital, private financing, or development of an environmental generic obligation debt issuance. Areas were also identified for leveraging residual manufacturing experience and facilities.

The group also concluded that the Blue Economy could be enabled by the formation of a Michigan Department of Water (MDOW). The MDOW could serve as a facilitator for all stakeholders and clearinghouse for water-related issues and information and be modeled after the Michigan Department of Agriculture. For example, critical to any innovation, is access to the current status of the resource. MDOW could provide data about water in the Great Lakes Basin including inventory, quality, and use information.

Although many of the participants objected to the concept of selling Great Lakes water, it was concluded that water would be a major point of contention in the future. They began discussing this challenging topic and brainstormed proactive strategies to mitigate the risk of unilateral action while maximizing the potential benefits of collaboration. In short, getting ahead of the curve was vital to directing the constructive use of our water.

**Water Peace Workgroup Summary:** This breakout group examined the opportunities that might occur through the establishment of a group of regional stakeholders dedicated to the Blue Economy. The breakout group used the term Regional Water Authority to define this stakeholder group.

This Regional Water Authority would formulate strategic recommendations to bolster uniformity and consistency in regulations, highlight regional research needs, promote research centralization, and bring greater stability and predictability to the management of our water needs. One item of long-term importance is the identification of the priorities for water use within the state. The water of Michigan has many competitive demands and the group believes that the best way to anticipate and avoid future conflicts is to create a priority system for its use.

In short, the workgroup suggested that Michigan go beyond the historical water models of the riparian and appropriation systems found in the U.S. and create a new priority and use methodology to meet the needs of today and tomorrow. Thus, the group concluded that water management should be on a watershed basis as opposed to political, geographical, or regulatory parcel or silo basis. Defining water issues on a watershed basis could act as an impetus for greater cooperation among political jurisdictions, as well. An outcome of this group is the need to benchmark other states, such as Florida, to assess performance.

**Water Regulatory Innovation Workgroup Summary:** This group concluded that the highest priority for water within the state is the continuous improvement of water quality and the resolution of lingering water quality issues. The group further concluded that improvements could be made to the existing regulatory process through simplification of the requirements necessary to obtain a permit. A critical enabler of the group for improving the regulatory process is the formation of a single knowledge base for all water information. This recommendation patterns

similar suggestions found in the other workgroups and should be included as a strategic goal within the Department of Water.

**Water Technologies Workgroup Summary:** This breakout group's brainstorming sessions identified many diverse opportunities for economic recovery and growth utilizing the water resources of Michigan. Michigan could become the technology hub for water-related technologies associated with both water scarcity and abundance, transforming the present engineering and scientific talent available in Michigan into water-related industries and water to energy technologies. A focus of this workgroup was the consideration of non-water consumptive industries and technologies. A recommendation that surfaced was the opportunity to benchmark NextEnergy or others to evaluate successes and failures of collaborating on public and private technology development. Additionally, this group highlighted the need to apply new technologies to address the aging infrastructure needs in water and wastewater systems.

## **ESD Institute Director Recommendations**

### **Director Recommendation #1: Form Clean Water Steering Committee:**

To promote the diversification of Michigan's economy and augment employment opportunities for our students and professionals in transition, the development of an organizational blueprint for a Blue Economy supported or not by the Michigan Green Enterprise Zone should be pursued by a dedicated ESD Institute workgroup, the Clean Water Steering Committee (CWSC), in collaboration with ESD's members, Affiliate Councils, and other stakeholders such as MEDC and the Technical Advisory Committee (TAC) of the Detroit Water and Sewerage Department (DWSD).

The concept of the Blue Economy represents both an enabler and a unifier of many diverse interests. As an enabler, the Blue Economy offers sources of new wealth creation and taxable revenues. As a unifier, the Blue Economy brings together constituents in government, business, academia, labor, nonprofits, and others currently pursuing separately their respective missions and goals. The merger of these disparate interests presents a unique opportunity for Michigan's recovery that should not be missed.

Building upon the regional success of collaborative public models such as the DWSD TAC, the CWSC, offers the opportunity to create a statewide collaborative model between the public and private sectors that could eventually lead to a Michigan Department of Water. This model can serve as the vehicle for restatement of Michigan's role as a leader in innovative environmental and economic public policy and could craft strategic policy incorporating an inclusive approach instead of one based upon an "I win-you lose" mindset. By consensual policymaking, Michigan could foster fair and effective regulatory processes as means of implementation and not policy creation. Focus on the Blue Economy provides an optimum window to examine and implement regulatory efficiencies through simplification and clarity of requirements throughout Michigan.

## **Director Recommendation #2: Establishment of State Funding Sources**

Michigan should consider the development of a source of funding for the water-related economic development. A state-owned bank similar to the North Dakota model deserves further consideration. Another approach could be the issuance of municipal or other sovereign entity bonds for water projects and enterprises. Michigan has faced significant competition, primarily southern states, for automotive-related manufacturing. The states have provided economic support in many forms to influence decision making by the companies. Michigan should consider a similar approach for water-related and -dependent industries under the direction of the Michigan Economic Development Corporation or otherwise.

## **Director Recommendation #3: State University Water Research Collaboration & Center of Excellence**

The State of Michigan has a wealth of outstanding universities engaged in significant water research and development. The state, through a Department of Water, could develop a process for coordinating this work and enable greater collaboration between the various organizations allowing transparent sharing of information and findings for the benefit of the private sector. One area that was identified as a potential pilot for collaboration was the examination of “water to energy” opportunities. A country to benchmark related to commercialization of university research and development is Finland. The National Academy of Science has recently completed a benchmark study of implementation of R&D and highlighted the work in Finland.

In addition, we should continue to examine the concept of a single source or center of excellence either physically or virtually in Michigan for water knowledge and science resources under the guidance of diverse stakeholders. Michigan has a wealth of knowledge in water and a collaborative effort to offering direction on research and development, policy, and economic direction could provide a strategic advantage for the state.

## **Director Recommendation #4: Growing and Supporting a Blue Economy within the DWSD Service Area**

We consider a healthy DWSD to be an essential element in the formation of a Blue Economy; however, DWSD faces many challenges as one of the largest water and sewer providers in the country. (It has over 4 millions water customers and serves 126 communities.) In the near term, for DWSD the loss of population and manufacturing in its service area has resulted in operational challenges related to balancing supply and demand, recalibrating infrastructure requirements, training and attracting skilled personnel, and dealing with the likely decline in future revenues. Yet DWSD has made significant progress in building collaborative relationships with its customers and in developing and implementing new processes, like its model contract, which are enhancing system security. We recommend that DWSD consider the following strategies as it reframes its vision to fit the new economic reality in our region.

First, use the TAC process, through collaboration with the Clean Water Steering Committee, to proactively identify potential businesses around the country that have a heavy dependency on water in either their product or process. MEDC and the implementation of the various findings arising out of this Water Symposium Report could assist in this effort.

Second, through the TAC, Clean Water Steering Committee, the ESD Institute, or otherwise, encourage dialogue and problem solving to ensure that the existing users of the system are not lost in order to optimize the efficiencies and investment already made in the DWSD system without adding needless regional debt that might occur through fragmentation of supply.

Third, for future expansion or investment, DWSD should explore whether or not private sector modeling methods such as the “Four Square” Analysis could benefit the region. This analysis provides an investment tool that evaluates system requirements based upon supply and demand under the three timeframes of “Now,” “New,” and “Next.” Under the Now scenario, existing supply and demand issues would be identified and system modifications estimated. For the New scenario, the system modifications required over a 3- to 5-year period would be identified, and under the Next scenario, the optimum system would be developed over a 10- to 20-year period.

Fourth, synergies may exist between DWSD and Michigan’s engineering and technical professionals in transition, allowing future employment opportunities in Michigan. This potential should be examined within the context of either the Educational Training Symposium currently being conducted by the ESD Institute or through a separate initiative. Seeking to know more about the staffing needs of DWSD and its customers is key to the development of transitional professional training and certification that will foster employment on a fast-track basis and the creation of academic accreditation to maintain a sustainable supply of top talent to serve water-related employment needs of DWSD and its customers.

## **Supporting Observations and Recommendations of the Institute Directors**

As part of our mission of fostering greater unity, focus and choice for the implementation of innovation, maintenance, and attraction of investment capital, and the betterment of society in previous symposium and Board workshops, we have indentified the following super-ordinate strategies required to support our portfolio of Clean Three Initiatives.

### **Application of the Michigan Green Enterprise Zone**

The Michigan Green Enterprise Zone was the subject of an earlier symposium held this year by the ESD Institute. After extensive peer review, the Zone Report was formally published and released to the media. The Zone Report may be located and reviewed through our website at [www.esdinstitute.net/symposia/index.htm](http://www.esdinstitute.net/symposia/index.htm).

The Zone Report anticipated that findings of subsequent symposia relating to the Institute’s Clean3™ Initiatives of the Water, Energy, and Transportation would likely benefit from the Zone and its innovative attributes. The advantages for enterprises operating within the Zone include competitive labor/management relations, legal innovations relating to dispute resolution, and proactive sovereign immunity attributes.

- 1. Labor/Management Relations:** In the area of labor/management relations, the Clean3™ Initiatives would directly benefit from innovative operating agreements that would consistently supply talented and productive labor on a union and non-union basis

enabling Michigan enterprises to lower their costs of doing business on a sustainable basis and to successfully compete against any Right to Work state and throughout the world.

2. **Legal Innovation:** Enterprises opting into the zone will have the distinct advantage of knowing that legal matters could be resolved as a first step through proven alternative dispute resolution methods such as mediation and arbitration. The Zone Legal Innovation Workgroup identified over 50 areas of legal risk that would benefit from a fundamental shift in legal processes that emphasizes “problem solving” instead of traditional “fault finding” often found at the core of litigation. No investment zone contains this element of innovation and attraction for doing business and investing in Michigan.
3. **Sovereign Attributes:** The advantages of collaborating either with Native Americans or a stand-alone sovereign zone enacted through federal or state legislation are considerable. A governing Zone Charter would be created with duration sufficient to provide long-term predictability for economic investment and growth for profit and nonprofits alike. Intergovernmental compacts would establish revenue and services sharing. Sovereign Immunity and regulatory and fiscal policies established by the Zone would balance competitive market needs with social and fiscal responsibilities in a proactive manner and would stand in stark contrast to the reactive sovereign power often found in a bankruptcy setting.

In sum, the Zone could reduce structural costs up to 30% without public assistance or fiscal incentives and could serve as the foundation for each of the Clean3™ Initiatives, thus providing economic growth, social and environmental responsibility, monetary liquidity, and fiscal relief. Zone Workgroup Action Plans and work product generated since the Zone Symposium have confirmed these observations and will be the subject to future reporting by the Institute.