

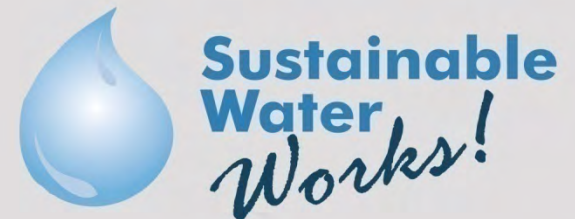
ESD Institute Michigan's Blue Economy Initiative A Clean Water Enterprise Framework



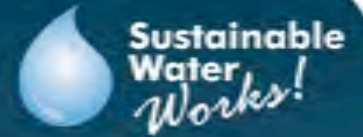
Jay Richardson
Sustainable Water Works

Charlie Fleetham
Project Innovations

December 2, 2009



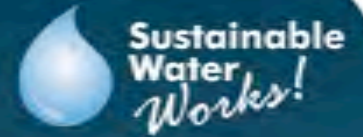
What is Michigan's Blue Economy?



- MICHIGAN'S BLUE ECONOMY
- MICHIGAN CASE FOR CHANGE
- MICHIGAN'S ADVANTAGE
- BLUE ECONOMY FRAMEWORK
- BLUE ECONOMY GOALS

- The Blue Economy is sustainable economic development of Michigan's most important natural resource – **Water!**
- Michigan's Blue Economy will support world class R&D, create technical innovation and fund Michigan business development to deliver clean, abundant and affordable water globally
- The Blue Economy is committed to use water in an environmentally sustainable manner for agriculture, manufacturing and material products
- Michigan's Blue Economy will leverage its fresh water resources to attract business and residents from areas of the country and world that are running out of water
- The Blue Economy will produce technology for water efficiency, watershed restoration and purification

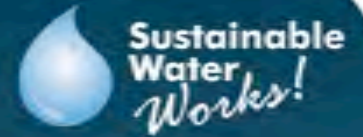
Key Enablers to Build the Blue Economy



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- Establish the Michigan Water Business Districts as Green Enterprise Zones that change the rules on Labor, Taxation and Regulatory Red Tape to eliminate Michigan's legacy reputation as being a business unfriendly state
- Establish a state-owned bank to provide capital for the Blue Economy based on North Dakota Bank established in 1919 to support bank lending and business start-up
- Public Private Partnerships between Michigan Academic, Entrepreneurs, Global Businesses, Venture Capital and Foundations to support Blue Economic Development
- Establish a Michigan Department of Water with three missions: consolidate and lead in water policy, expand water education (specifically Great Lakes) and promote water based economic development

Example of Blue Economy Development Opportunity Expand Agro-Food Businesses in Michigan Cities



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Current

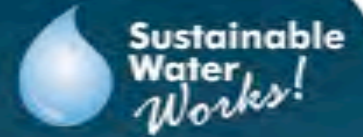
- Contributes \$63.7 billion annually to Michigan's economy
- Employs one million people, 25% of State's workers
- Grew 5.9% between 2004 and 2006 and still expanding
- Produces over 200 commodities
- Michigan has 45 Food Processing Companies
- Second most agriculturally diverse state in the U.S.
- Ten million acres of farmland

Future

- Urban Farming, Inc - 450 Urban Farms in Detroit
- In March, 2009, Hantz Farms commits to create world's largest (70 acre) urban farm in Detroit
- Agricultural waste from Michigan Farms is a great biogas/biofuel/biomass energy and recycling opportunity

Case for Change

Michigan Needs a New Economy – A Blue Economy



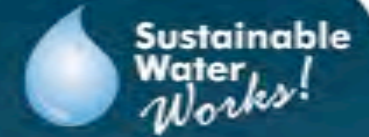
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- Michigan 2009 Tax Revenue will drop by about **16 %**
- Michigan will lose **937,000** jobs in this Recession
- Michigan is one of ten **poorest** states in 2009
- Unemployment at **15.1%**, Blue, White and Professional
- 75% of Auto Jobs that existed in 2000 are **GONE**
- Recovery to peak economic levels may take **30 Years**
- Michigan can parley U.S. leadership in water policy, global technology and targeted business development into a Green Enterprise Powerhouse
- Milwaukee, Minneapolis, Toronto and Fresno have water business development plans being implemented!

1 Michigan Chamber of Commerce November, 2009

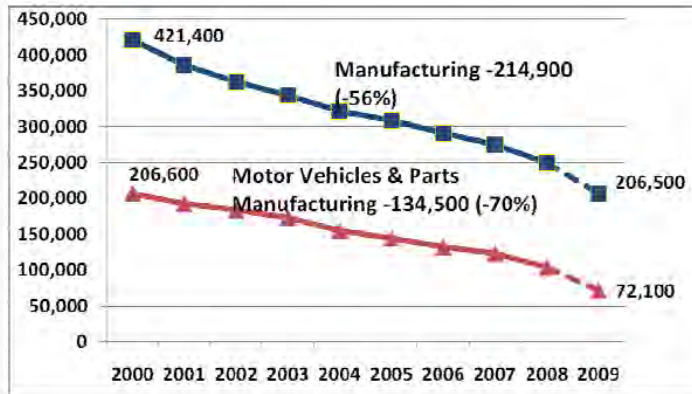
2 "Beyond California, States in Fiscal Peril" The Pew Center of the States Report, November 2009

Case for Change Michigan's Economic Future is Bleak



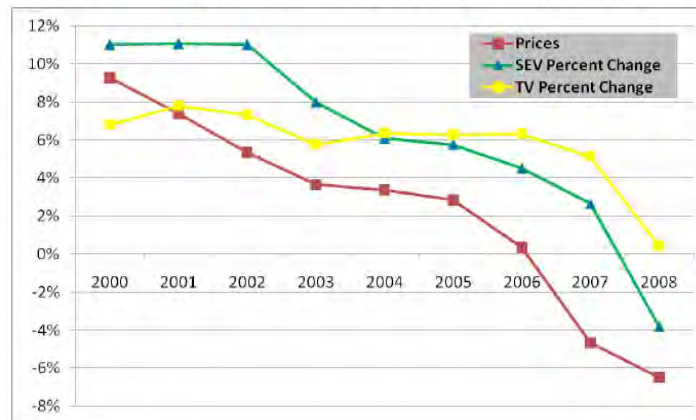
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Manufacturing Employment, Southeast Michigan, 2000-2009



Source: Michigan Labor Market Information. SEMCOG

Housing Prices, SEV, and Taxable Values, Year-on-Year Percent Change



Source: SEMCOG

Top 10 Growing Industries in Michigan, 2002 - 2007

	Change	% Change	U.S.	MI 2007 Average Wage
1 Temporary help services	14,231	18.0%	17.1%	\$25,283
2 Full-service restaurants	12,206	10.0%	13.9%	\$13,427
3 General medical and surgical hospitals	10,131	5.8%	8.1%	\$45,558
4 Offices of physicians, except mental health	9,725	17.1%	11.4%	\$70,223
5 Elementary and secondary schools	7,685	41.1%	17.8%	\$25,235
6 Home health care services	6,524	29.3%	35.4%	\$28,269
7 Limited-service restaurants	5,547	5.1%	12.2%	\$11,153
8 General freight trucking, long-distance TL	4,533	57.8%	7.0%	\$40,033
9 Professional employer organizations	3,770	7.0%	-13.0%	\$34,378
10 Other individual and family services	3,465	40.4%	21.3%	\$26,199

Source: BLS, Don Grimes

Table 2

Growing and Declining Industries, State of Michigan, 2002-2007

	Number of Industries	Employment				Average Wage	
		2002	2007	Change	% Change	U.S.	MI 2007
Growing	419	1,493,461	1,698,384	204,923	13.70%	12.20%	\$36,000
Declining	641	2,224,534	1,820,614	-403,920	-18.20%	0.60%	\$50,000

Source: BLS, Don Grimes

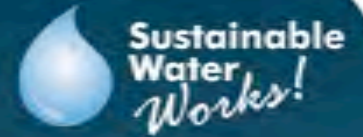
Revenue Sources for All Michigan Local Governments, 2005-2006

Source	Revenue	Percent	Percent from Local Sources
Local	20,826,788,000	48.0%	
Property Taxes	11,284,723,000	26.0%	54.2%
Charges and Other	9,542,065,000	22.0%	45.8%
Intergovernmental	18,417,779,000	42.5%	
Utilities and Insurance Trust	4,132,370,000	9.5%	
Total Revenue	43,376,937,000	100.0%	

Source: Census Bureau.

Case for Change

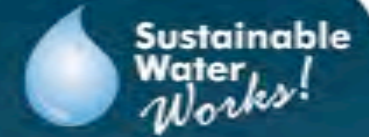
Southeast Michigan Must Transition from Auto Based Economy



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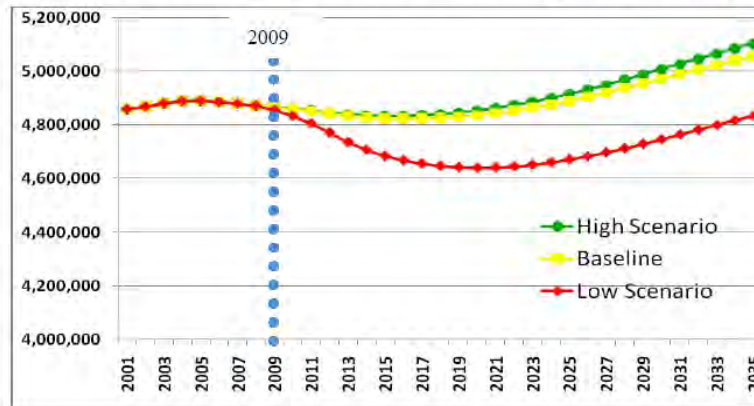
- 2000 – 2009, SE Michigan lost **70%** of its auto related jobs
- **250,000** more job losses expected by 2015
- **200,000** people will move out of SE Michigan by 2020
- New jobs pay **\$14K** less per year than declining industries
- Oakland County forecasts **50% decline in Real Estate** value by 2011 (Free Press 11/20/09)
- Troy projects 17.5% revenue decline for 2010

Case for Change Southeast Michigan Will Drive the Decline



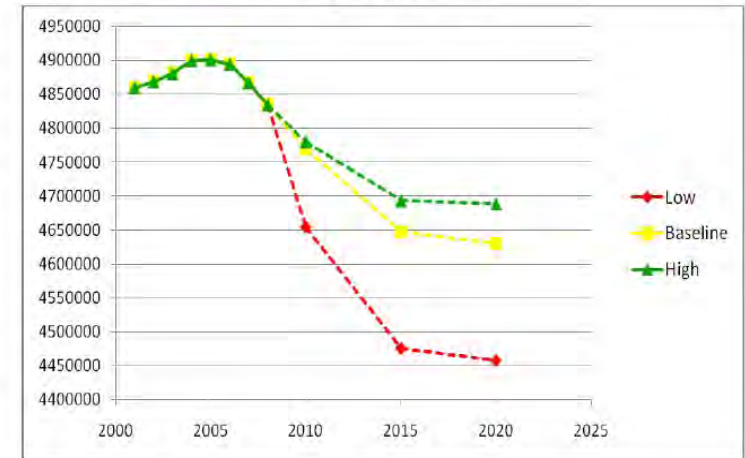
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Population Forecast Scenarios, Southeast Michigan, 2001-2035



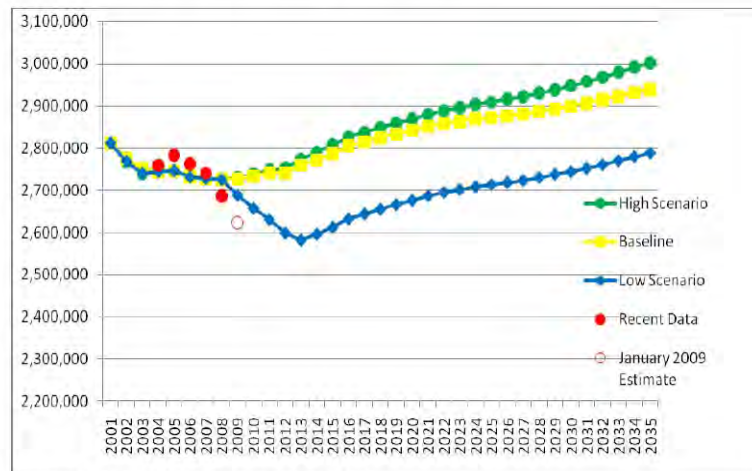
Source: SEMCOG 2035 Forecast, adopted 2007

Population, Southeast Michigan, 2001-2020



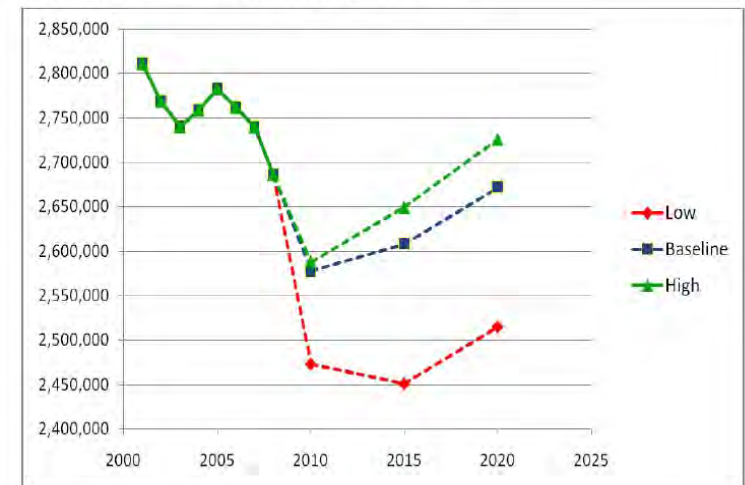
Source: SEMCOG, 2009

Total Employment, Southeast Michigan, 2001-2035



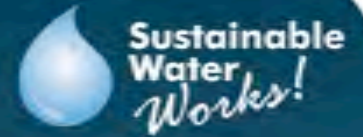
Source: SEMCOG 2035 Forecast, revised 2009

Employment, Southeast Michigan, 2001-2020

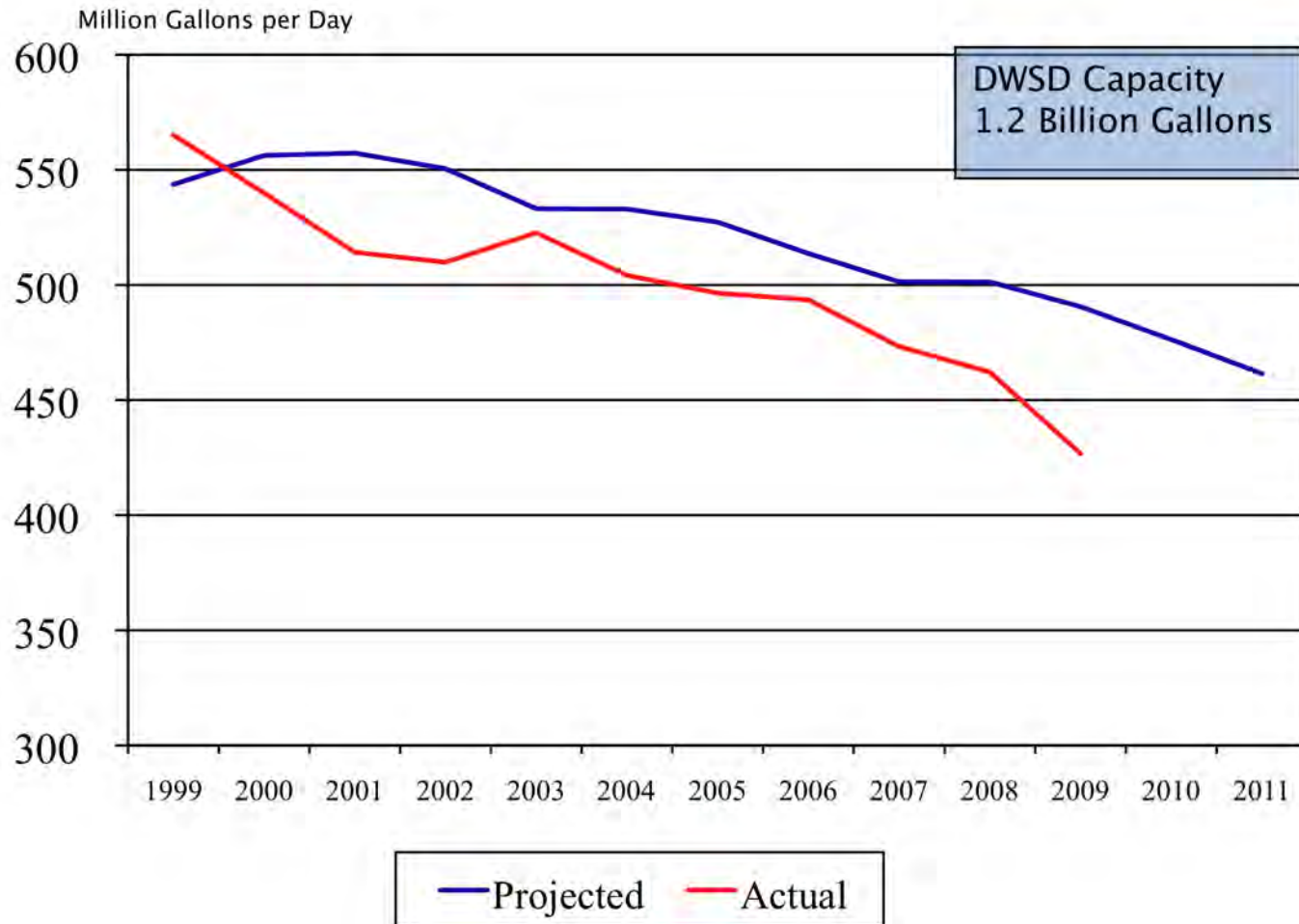


Source: SEMCOG, 2009.

Case for Change DWSD Water Volume Declines are Unprecedented

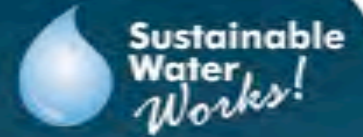


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Michigan's Advantage

Water, Capacity and Conviction

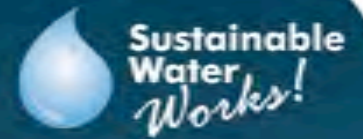


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- The Great Lakes has 22% of the world's and 85% of United States' fresh surface water
- Michigan and Canada are the majority stakeholders
- Michigan has the academic, business, technical and manufacturing capacity to create a Blue Economy²
- DWSD's immense water production and wastewater treatment capacity is a competitive advantage
- Water is already a Michigan economic engine and The Blue Economy can be it's future
- Michigan has the political conviction to build a new economic base and the ability to make a Blue Economy happen NOW!

²A Proposal for a Blue Economy – Charlie Fleetham, Project Innovations, Inc.

Michigan's Advantage Strong Organizations Dedicated to Water Stewardship



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Business

DWSD

DTE

Ford, GM and Chrysler

Dow

Whirlpool

GE

BASF

Michigan

City of Detroit

Technical Advisory Committee

MEDC

MDNR/MDEQ
MDA

New Economy Initiative

Business Leaders For Michigan

SEMCOG

Community

ESD Institute

MI Environmental Council

Alliance for the Great Lakes

Clean Water Action Council

Detroit Riverfront Conservancy

Wege Foundation

Academic

Wayne State

University of Michigan

Michigan Tech

Michigan State

Grand Valley State

Michigan's Blue Economy Framework



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**The Honorable
Judge John
Feikens**

**Water
Leadership
Center**

**Michigan's
Water Innovation
Factory**

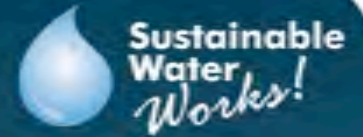
NextWater

**State of
Michigan**

**Water
Business
Districts**

Blue Economy Framework

Judge John Feikens Water Leadership Center

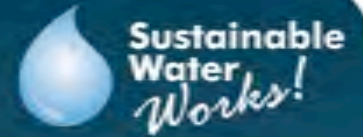


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The Honorable Judge John Feikens Water Leadership Center is a forum for water knowledge, policy and collaboration. The Leadership Center will build the groundwork of advocacy, consensus and governance for clean, abundant and affordable water in Michigan. The Feikens Center will create the foundation for innovation, business development and synergistic public policy to make Michigan the sustainable water leader in the world.

Blue Economy Framework

Judge John Feikens Water Leadership Center

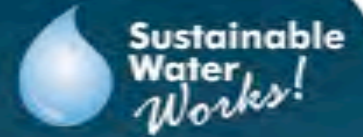


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- Develop The Blue Economy Vision, Mission, Principles and Master Plan
- Build a “Power House” Team (intellectual, political, technical and business capital) to design a blueprint for The Blue Economy in Michigan
- Create the foundation of Knowledge, Collaboration and Policy supporting the Blue Economy
- Build a “Critical Mass” of Business, Academic, Community and Government Leaders to empower a Blue Economy Strategy
- Drive creation of a NextWater and its Innovation Factory
- Establish Water Business Districts in Michigan to grow Research, Development, Manufacturing and Service Industries

Blue Economy Framework

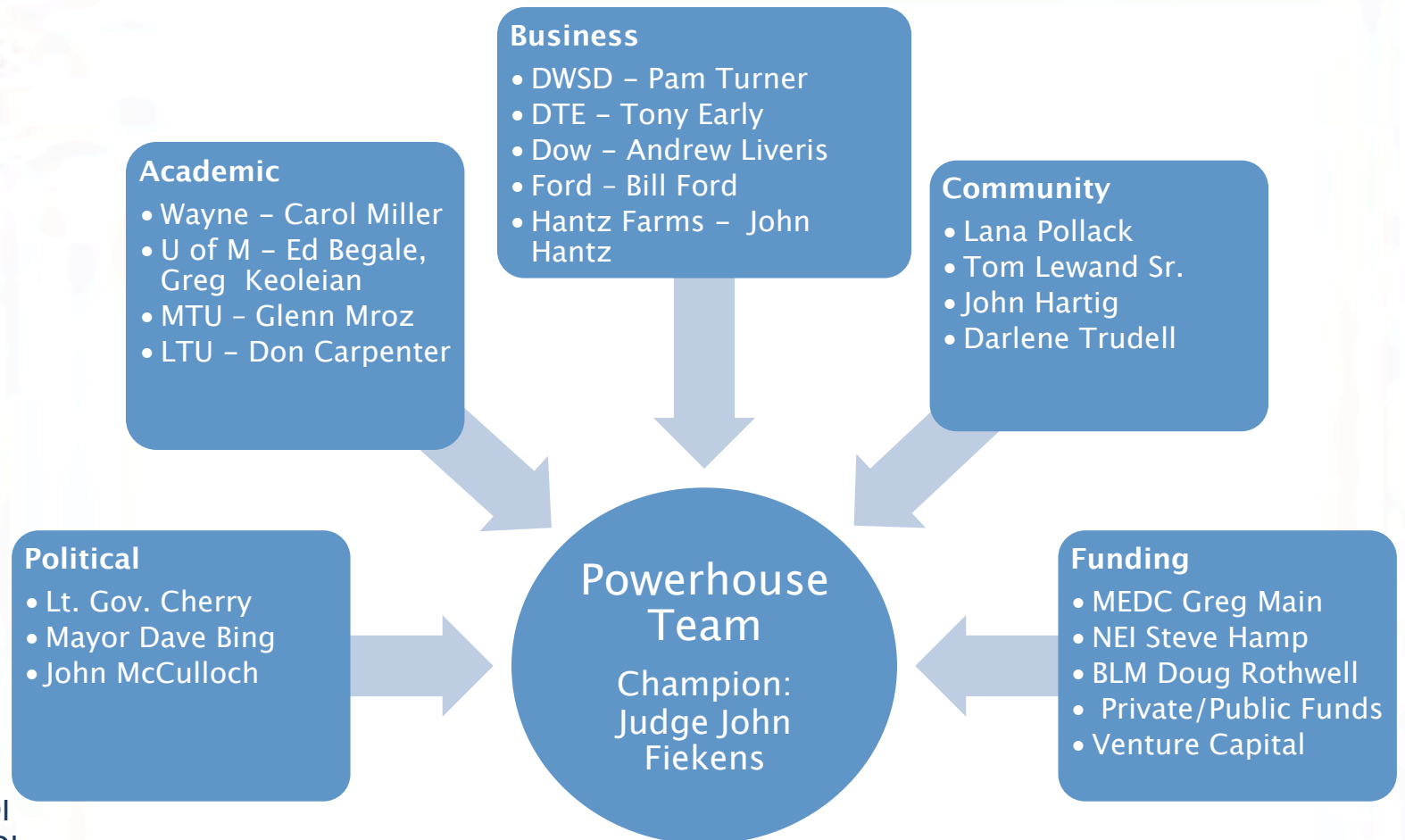
NextWater – Powerhouse Team Candidates



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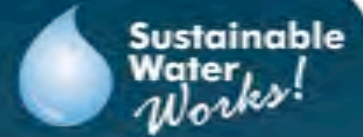
Facilitators

- Chris Webb, ESDI
- Dave Skiven, ESDI
- Charlie Fleetham, Project Innovations
- Jay Richardson, Sustainable Water Works
- Tim O'Brien, Sustainable Water Works



Blue Economy Framework

Judge John Feikens Water Leadership Center Work Plan

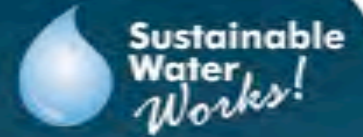


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- Agree on Mission, Scope and Critical Initiatives
- Solicit Judge Feikens and Powerhouse Team
- Write Business Plan for the Leadership Center
 - Develop conceptual design and layout
 - Develop a list of potential sites for the Center
 - Develop capital and operating budgets
- Find Funding Source
 - MEDC/NEI/Michigan Foundations
 - Great Lakes Restoration/Stimulus Package
 - Water Business Interests
- Build Bid Package, Master Schedule...etc.
- Commit!

Blue Economy Framework

NextWater – Michigan's Water Innovation Factory

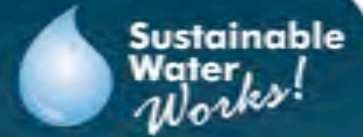


- NextWater is the hub of Michigan water collaboration, cooperation, and technology. It is the engine that drives The Blue Economy by promoting technical, business and policy development. This virtual and physical workspace allows water innovators to develop, test, validate and fund a new Michigan business sector. The Water Innovation Factory creates product, manufacturing and service industries to populate the Water Business Districts.

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Blue Economy Framework

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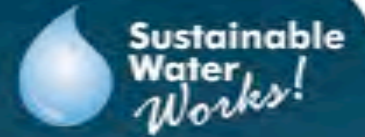


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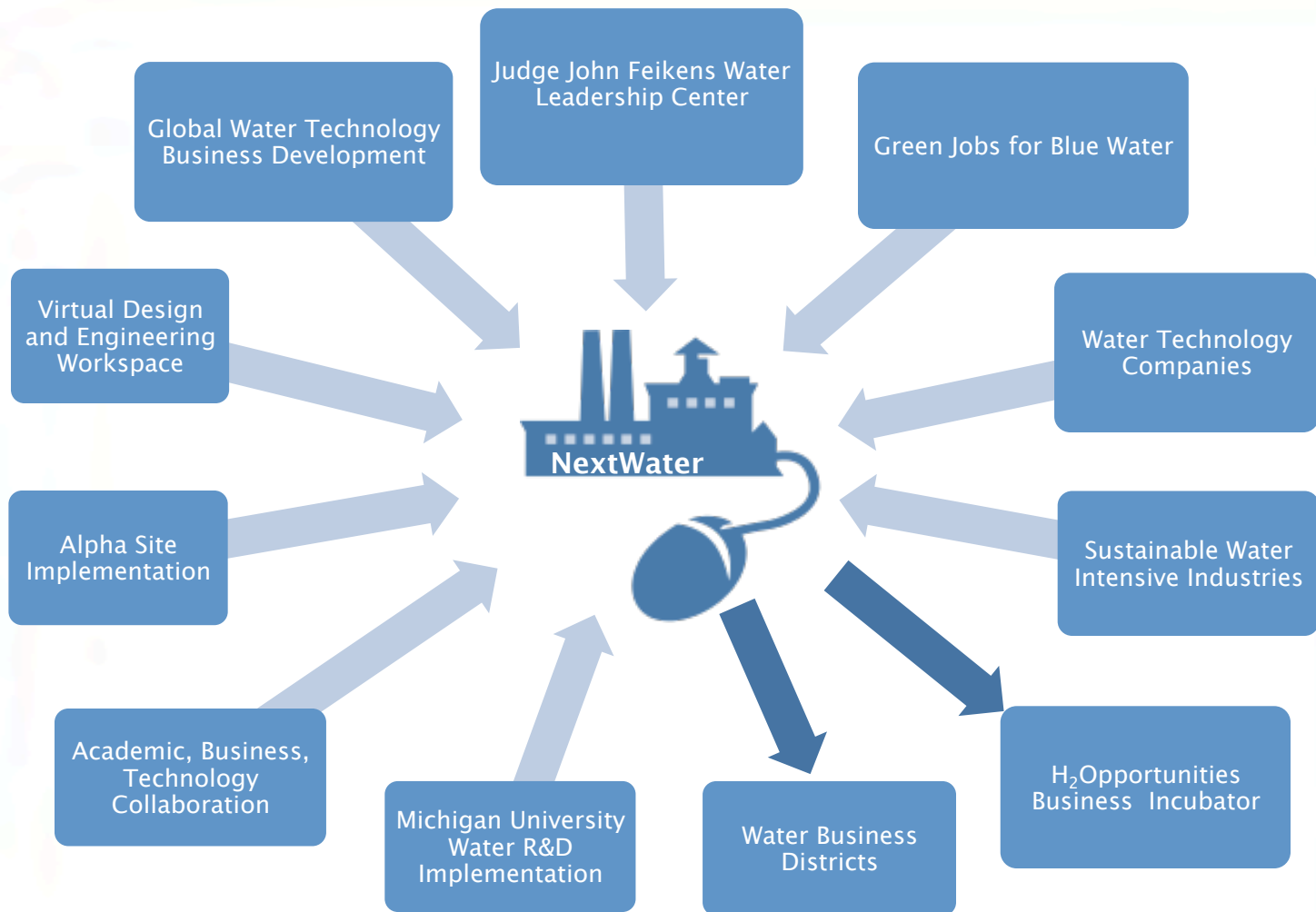
- Provide a Physical and Virtual Workspace for Sustainable Water Design and Collaboration
- Facilitate Michigan Academic, Business, NGO and Government cooperation and collaboration
- Find the best test beds to pilot innovative technology
- Support Alpha Site implementation of global water technology
- Champion Water Policy, Technology, Business and Marketing Development in Michigan
- Link Energy and Water Technology Innovation
- Establish Private, Public and Venture Capital Investment Funds for Michigan Water Business
- Be Michigan's Focal Point for The Blue Economy and Great Lakes Restoration

Blue Economy Framework

NextWater – Michigan's Water Innovation Factory

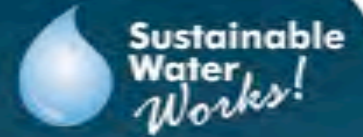


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Blue Economy Framework

NextWater – Water Innovation Factory Work Plan

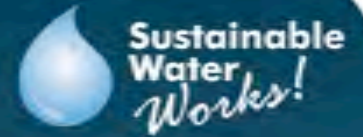


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- Conduct Design Charrette to build consensus and support from all stakeholders
- Develop a Michigan Vision, Mission and Scope
- Who “Owns” the Water Innovation Factory?
- Write Business Plan (501(c)(3), LC3, LLC...etc.?)
 - Conceptual Design of Innovation Workspace
 - Master Plan and Potential Sites
 - 5 Year Capital and Operating Budget
 - Find Anchor Innovators for Factory
- Funding, Bid Package and Master Schedule
- Build the Water Innovation Factory
- Really Commit!

Blue Economy Framework

Michigan Water Business Districts

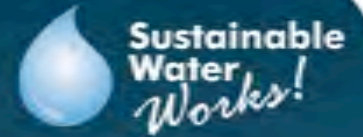


The Water Business Districts are the heart of the Blue Economy. The culmination of building consensus on water policy, business development and economic reformation in Michigan. The Water Business Districts are synergistic clusters of companies with a common water sector focus. These business districts are supported by the Green Enterprise Zone efficiencies and can be designed as sustainable hubs with common infrastructure, supply and distribution networks.

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Blue Economy Framework

Michigan Water Business Districts

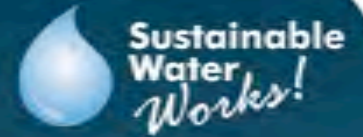


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- Establish several Water Business Districts in Michigan aligned to community and economic development
- Sustainable Water Business Districts
 - Synergistic Business, Products, Manufacturing and Infrastructure
 - District Master Planning for energy, water and waste
 - Integrate District with Community Master Planning to create green neighborhoods
- New Business Initiatives
 - H₂Opportunities Water Business Model
 - Water Intensive Business Development
 - Water Equipment Manufacturing
 - Water Process and Controls Technology
 - Create the Silicon Valley equivalent for Water
 - Build Venture Capital and Private Equity Funding

Blue Economy Framework

Michigan Water Business Districts Work Plan



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- Development concurrent with Innovation Factory
- Identify potential Water Business Districts
- Build the case for businesses to locate in District
- Build Political/Economic Development Support
- Conduct Design Charrette to engage Michigan Stakeholders and build consensus
- Develop District Master Plan and Business Plan
- Identify business hub infrastructure synergies
- Obtain Economic Development Funding
- Design, Engineer, Bid Packages, Construct, Start...
- All In!!!!



Blue Economy Initiative

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Feikens
Water
Leadership
Center

NextWater
Innovation
Factory

Water
Business
District

Innovation

Knowledge

Technology

Policy

Business

Industry

- Technology Incubator
- Alpha Site Implemented
- Michigan Business Case
- Michigan Development

Sectors

- Food Processing
- Urban Farming
- Water Manufacturing
- Water Control Systems

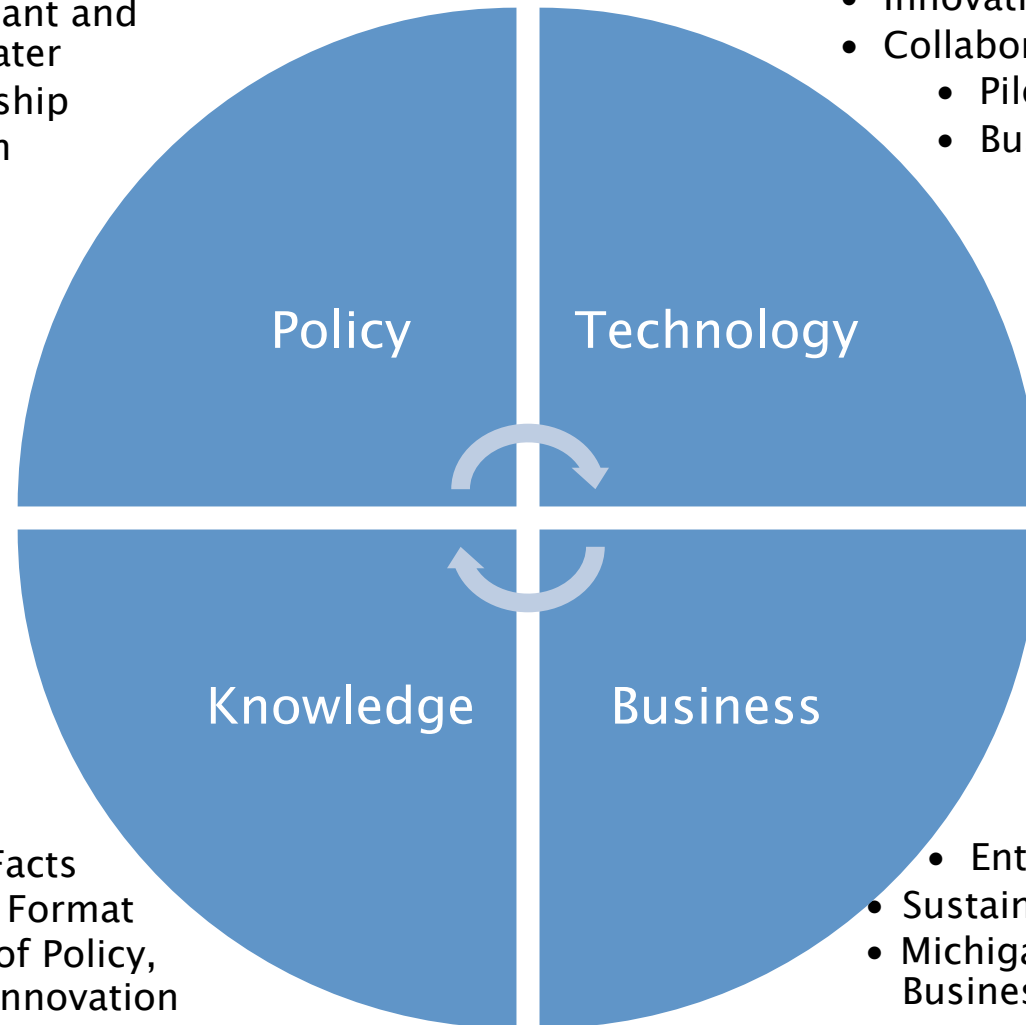
Blue Economy Goals

Work Together to Build Michigan's Blue Economy Future



- Clean, Abundant and Affordable Water
- Water Leadership
- Consensus on Governance

- Innovation
- Collaboration
 - Pilot Installation
 - Business Case

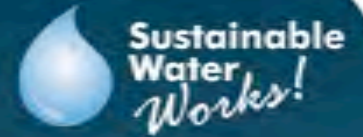


- Consensed Facts
- Open Source Format
- Foundation of Policy, Knowledge, Innovation

- Enterprise Zone
- Sustainability
- Michigan Water Business Districts

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Blue Economy Goals Next Steps



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- ESD Clean Water Steering Committee Approval
- Meet with key stakeholders – Mayor Bing, Judge Feikens, DWSD, MEDC, NEI, Dow...etc. Leadership to gain support
- Get Funding for Blue Economy Master Planning and Judge Feikens Water Leadership Center
- ESD Institute establishes Blue Economy Implementation Team including continued work on Green Enterprise Zone, Michigan State Bank and NextWater Innovation Factory
- Pursue Great Lakes Restoration, Federal Stimulus Bills and Foundation Funding