Urban Clean Water Innovation Partnership Zone (IPZ)

A New Economic Development Playbook





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Promising Start for the IPZ

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OF TACOMA

Center for Urban Waters

City of Tacoma



Univ. of Washington



Prime Waterfront









ECONOMIC DEVELOPMENT BOARD FOR TACOMA-PIERCE COUNTY

WSU Puyallup Research & Extension Center



Port of Tacoma



Tacoma Convention Center



A New Economic Development Playbook

- A living laboratory for clean water innovation.
- A global leader in water research, learning, entrepreneurship and product development.
- Creating value for the water operators, government, education, business and public.
- Open innovation: collaborating regionally and the world.
- One Water approach for economic efficiency, sustainability and resilience.
- Pathway for economic development and jobs.
- IPZ that is professionally staffed and funded.



Demand for Clean Water

Size of U.S. Water Industry, billions

Business Segment	2013 Revenue			
Water Treatment Equip.	\$11.9	7.9%		
Delivery Equipment	\$12.6	8.3%		
Chemicals	\$4.9	3.2%		
Contract Operations	\$3.2	2.1%		
Consulting/Engineering	\$10.7	7.1%		
Instruments and Testing	\$2.3	1.5%		
Wastewater Utilities	\$53.2	35.1%		
Drinking Water Utilities	\$52.6	34.7%		
Total U.S.	\$151			
Global Water Market	\$550			

Source:

2014 Water Market Review, Summit Global Management; Modified from the Environmental Business Journal, 2014 6

RESULTS – WATER DEPENDENCE

	Water Dependent Industry Detail					
Basin	Employment	Output (\$Million)	Employment Share of total	Output Share of total		
Washington Coastal	25,444	\$3,984	36%	40%		
Lower Columbia	72,876	\$16,566	30%	39%		
Middle Columbia	21,458	\$4,079	42%	50%		
Upper Columbia	89,303	\$13,938	43%	47%		
Puget Sound	780,141	\$199,962	27%	34%		
Lower Snake	11,088	\$1,987	29%	28%		
Kootenai-P-O-S	78,662	\$11,740	29%	31%		
Yakima	96,645	\$13,099	40%	37%		
Total	1,175,617	\$ 265,355	29%	35%		



RESULTS – TOTAL NEED BY BASIN AND TYPE OF INVESTMENT

(\$ IN MILLIONS)

Investment Type	Yakima	Washington Coastal	Upper Columbia	Puget Sound	Middle Columbia	Lower Columbia	Lower Snake	K – P-O-S	Multi- Basin	Total State
Water Supply	\$1,733	\$3	\$35	\$2,315	\$766	\$179	-	-	\$299	\$5,370
Stormwater	\$8	\$19	\$8	\$18,266	-	\$7	\$13	\$11	\$361	\$18,694
Flooding	\$156	\$1,181	-	\$22	-	-	-	-	\$35	\$1,395
Fish Habitat	\$502	<mark>\$</mark> 598	\$844	\$1,278	-	\$1,252	\$201	-	-	\$4,675
Multiple	-	-	-	\$1,873	\$5	-	-	-	\$754	\$2,632
Total	\$2,399	\$1,802	\$886	\$23,754	\$771	\$1,439	\$214	\$11	\$1,449	\$32,765

Note: "needs" identified are planned projects and don't represent a forecast of total needs



Economic Development Opportunity

Water Cluster Survey



Water Cluster Nation

The Water Council

1.

- 2. Water Economy Network
- New England Water Innovation Network
- 4. Colorado Water Innovation Cluster
- 5. Confluence
- 6. The Maritime Alliance
- 7. WET Center/Blue Tech Valley
- 8. WaterTAP Ontario
- 9. Accelerate H2O Texas
- 10. Cleveland Water Alliance
- 11. Urban Clean Water IPZ
- 12. Louisiana Water Network
- 13. Oregon Water Tech Innovators
- 14. Michigan Water Technology Initiative
- 15. Nevada Center of Excellence
- 16. Pure Blue—Clean Water Innovation Initiative

Regional Strengths and Challenges

Stakeholder Perspectives

Strengths

- Strong R&D capabilities (UW, WSU)
- TAPE: nationally recognized model
- History of environmental restoration
- Congressional interest/support
- Excellent Wellspring conferences
- Density of high tech in region
- Growing economy, attractive lifestyle, affordability
- JBLM/DOD sustainability focus

Challenges

- IPZ governance/leadership/strategy
- Sporadic stakeholder engagement
- No dedicated funding for IPZ
- Lack consensus on opportunities
- Missed grant opportunities
- Research centers not leveraged
- Weak commercialization process
- Underutilized talent
- External collaboration limited
- Economic role needs focus

Eight Action Strategies

 Power up the Innovation
 Ecosystem. IPZ as the Connector.



2. Acceleratorfor WaterStart-ups andSeed Fund



3. National
Stormwater
Technology
Validation
System (TAPE)







4. Produce Talent for Water Industry Needs

Advanced Degrees/Programs

- Environmental Science & Engineering
- Civil and Construction Engineering
- Urban Design and Resilience
- Chemical and Biological Engineering
- Geology and Soil Science
- Synthetic Biology and Sensors
- Conflict Resolution
- Policy Analysis
- Infrastructure Financing
- Information Technology
- Software design
- Visualization
- Big Data Management

Technical Degrees/Certificates

- Water Treatment Operator
- Electrician or Electrician Technician
- Water Distribution Operator
- Electronic Maintenance Technician
- Wastewater Treatment Operator
- Mechanic or Machinist
- Wastewater Collections Operator
- Engineer
- Water Quality Analyst (Lab Tech, etc.)
- Water Conservation Specialist
- Welder
- GIS Technician
- Precision Irrigation

FIGURE 1. U.S. R&D, by performing sectors and source of funding: 1953–2015

Current dollars (billions)

5. Attract Industrial R&D Funding



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6. Organize Water Industry for Export Market



7. Cluster to Cluster Collaboration



Implementation

Align Vision, Leadership, Staffing and Funding



PureBlue Commitment

- Pure Blue Accelerator at 23rd and Jefferson
- Joint grant development (e.g. USDA, Commerce)
- Networking and roundtable events
- Data Portal Initiative
- •WEFTEC, conferences, water cluster network
- •\$120,000/yr. resources contingent on 2 to1 match

Discussion

Performance Measurement

Process Metrics

- # companies graduated
- # companies that received
- funding during or after Accelerator
- # working prototypes
- # pilots enabled
- # patent filings
- # collaborations created or supported

Impact Metrics

- # products commercialized
- # jobs created
- # problems solved
- # gallons of fluid treated
- \$ exports
- \$ revenue
- \$ non-Tacoma investment
- Worker skills and competency
- Avg. valuation multiplier for start-up companies, entry to exit