

# Urban Clean Water Technology Innovation Partnership Zone



**Economic Development Committee**  
**December 9, 2014**



# Overview

- Innovation Partnership Zone (IPZ) Background
- City of Tacoma Involvement
  - Community and Economic Development
  - Environmental Services
- Economic Development Board
- University of Washington Tacoma
- Washington State University Puyallup
- Summary

# Mission

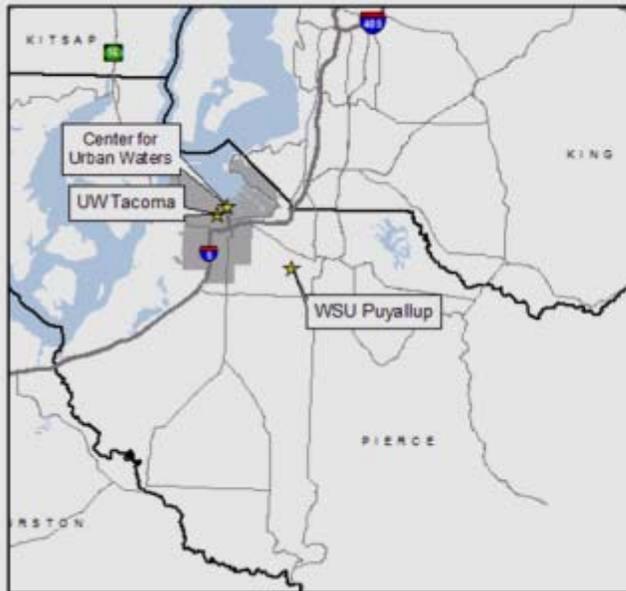
Accelerate development of a globally competitive research-based urban clean water cluster to drive capital investment and private job creation in Tacoma-Pierce County



# Zone Boundaries

## Urban Clean Water Technology Zone

-  IPZ Boundaries
-  University of Washington Tacoma
-  City-owned developable parcels
-  Port-owned developable parcels



# Key IPZ Partners

- City of Tacoma
- University of Washington Tacoma
- Washington State University Puyallup
- Port of Tacoma
- Economic Development Board for Tacoma-Pierce County

# Strengths

- World-class, cutting-edge science by universities; companies developing products and services with global reach
- Two nationally recognized leaders in clean water research and applications; public and private sectors include highly motivated researchers, technicians and entrepreneurs
- Center for Urban Waters anchors the zone
- Environmental Services recognized as national leader for clean water

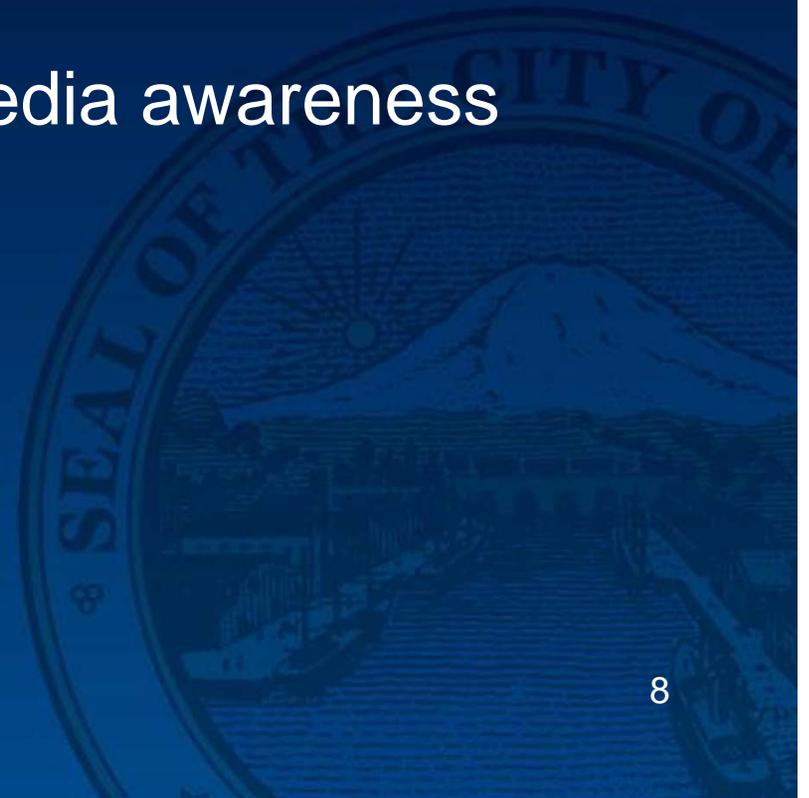


# Performance Goals

- Provide greater access to non-proprietary research and best water management practices relevant to urban clean water
- Target the water technology market for business recruitment/retention/expansion
- Communicate accomplishments to garner national interest for Tacoma's clean water cluster
- Establish conferences and symposia related to urban clean water to increase the cluster's global profile

# Metrics

- Investment
- Job creation
- Funding for research
- National recognition and media awareness



# Conferences/Symposia

- 2012, 2013, and 2014 Wellspring conferences
- 2013 UW Water Symposium
- Puget Sound Institute workshops
- Participate and present at EPA-hosted water cluster meetings
- Environment and Clean Technology Summit (part of China Trade and Investment Summit)
- Working Waterfronts and Waterway Symposia

# National/International Recognition and Articles

Articles placed in over 15 publications, including:

- The New York Times, *With Data and Resolve. Tacoma Fights Pollution*, June 12, 2014
- Water World Magazine, *Managing Stormwater One Parking Lot at a Time*, September 2012
- Bloomberg BNA's Environmental Compliance Bulletin, *Sustainability – Tacoma Center Tackles Coastal Community Water Quality*, April 2013
- Pollution Engineering, *Collaborating for Sustainable Results: Communities Work Together to Remediate Water Entering Commencement Bay*, January 2013

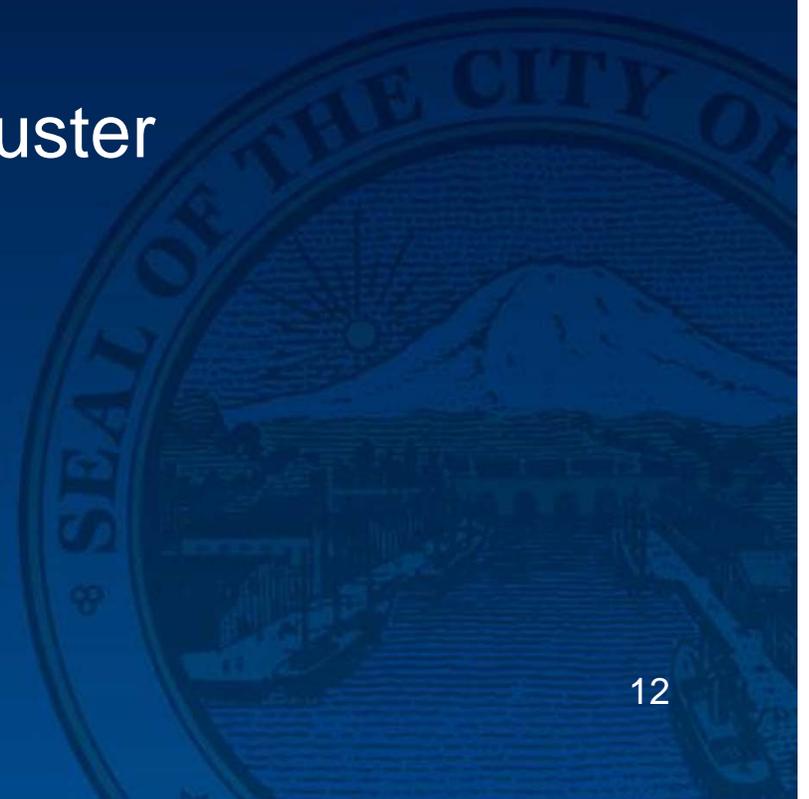
# City of Tacoma Involvement

- Community and Economic Development Department
- Environmental Services Department



# Community and Economic Development Department

- IPZ Administrator
  - Reporting responsibility
  - Fiscal agent
- Promotion of clean water cluster
- International connections



# Environmental Services Department

- 480 employees
- 3 utilities:
  - Solid waste management
  - Storm water management
  - Wastewater management



# Environmental Services Laboratory

Laboratory focuses on analytic support of a number of key environmental regulations including:

- Clean Water Act
- Resource Conservation and Recovery Act
- Model Toxics Control Act
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund)
- Hazardous Waste Designation Rules



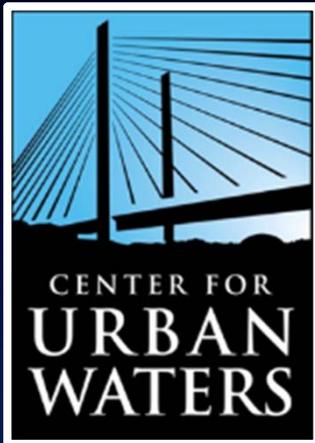
# Environmental Services Research and Testing

Testing media filtration stormwater treatment technologies at Washington State Department of Transportation facility.

Best Management Practice effectiveness testing on two bio-filtration facilities and two bio-filtration (rain garden) facilities.



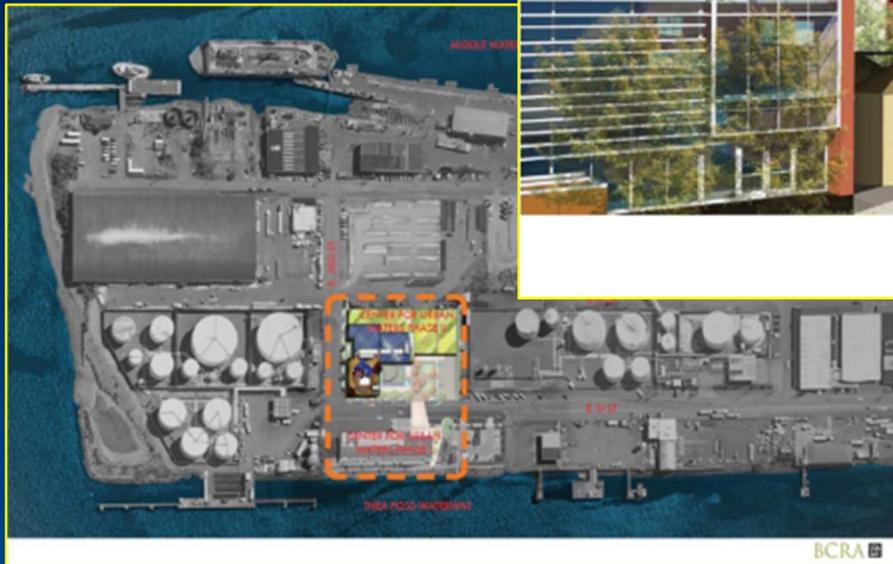
Testing pervious pavements to evaluate flow and water quality performance.



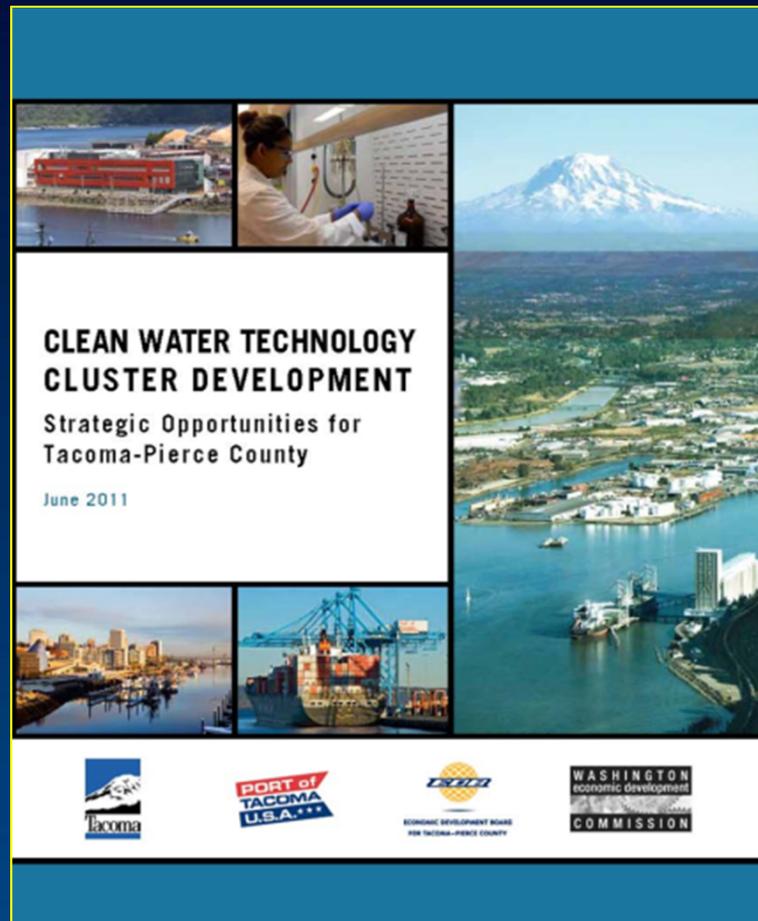
**PugetSoundPartnership**  
our sound, our community, our chance



# Concept for Center for Urban Waters Phase II



# Economic Development Board for Tacoma-Pierce County



# Recruitment and Retention

- Economic Development Board (EDB) lead on clean water recruitment/retention of companies in the sector
- Recruiter attended 9-12 technology conferences per year for direct contact with companies
- Database of water technology companies stands at 750, generating approximately 30 inquiries

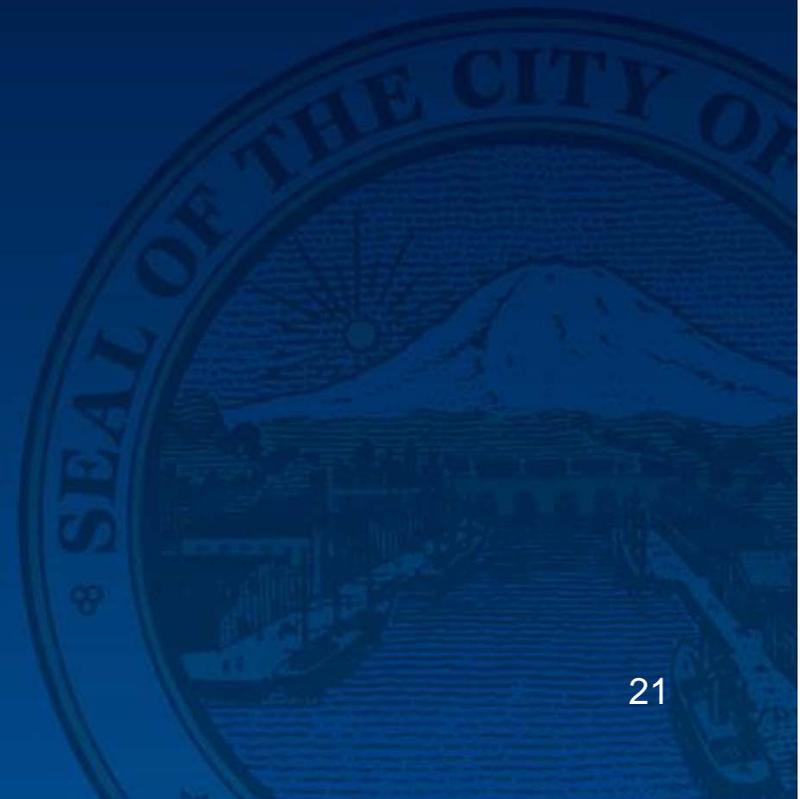
# Wellspring Conference Series

Nationally recognized speakers at Wellspring 2014:

- Sally Gutierrez, Director of Innovation Clusters, U.S. Environmental Protection Agency
- Jeff Lape, Deputy Director, Office of Science and Technology, Office of Water, U.S. Environmental Protection Agency
- Kristin Tolle, Director of Environmental Infrastructure, Microsoft Research

# IPZ University Partners

- University of Washington (UW) Tacoma
- Washington State University (WSU) Puyallup



# Major Accomplishments Since IPZ Designation

- Assistant Director for Clean Water Innovation hired
- UW Tacoma Clean Water Innovation Laboratory
- Advanced analytical instrumentation
- Innovative treatment media
- WSU Puyallup Aquatic Toxicology Laboratory
- Washington Department of Ecology's Technology Assessment Protocol-Ecology (TAPE) program facilitation

# \$3.6M Department of Commerce Capital Budget Grant

- Expands clean water IPZ resources
- Projects will allow private sector scientists and engineers to collaborate with university researchers and government experts
- Capital funds to UW Tacoma and WSU Puyallup

# IPZ Grant Breakdown

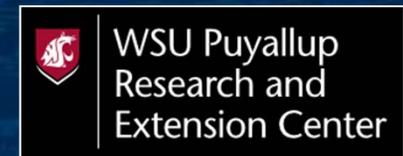
- \$2.0M Clean Water Innovation Laboratory  
UW Tacoma, Science Building



- \$0.8M Advanced analytical instrumentation  
Center for Urban Waters



- \$0.8M Aquatic Toxicology Laboratory  
WSU Puyallup



# Clean Water Innovation Laboratory



UW Tacoma, Science Building

# UW Tacoma SCI and Center for Urban Waters

Dedicated:

- Laboratories
- Office space
- Instruments
- Equipment



# Clean Water Innovation Laboratory Staff



Private sector scientists and engineers collaborating with university researchers

# Technology Transfer

Turning new knowledge and inventions into products and services



# Making Connections

Building  
companies  
and creating  
jobs in the  
South Sound  
region

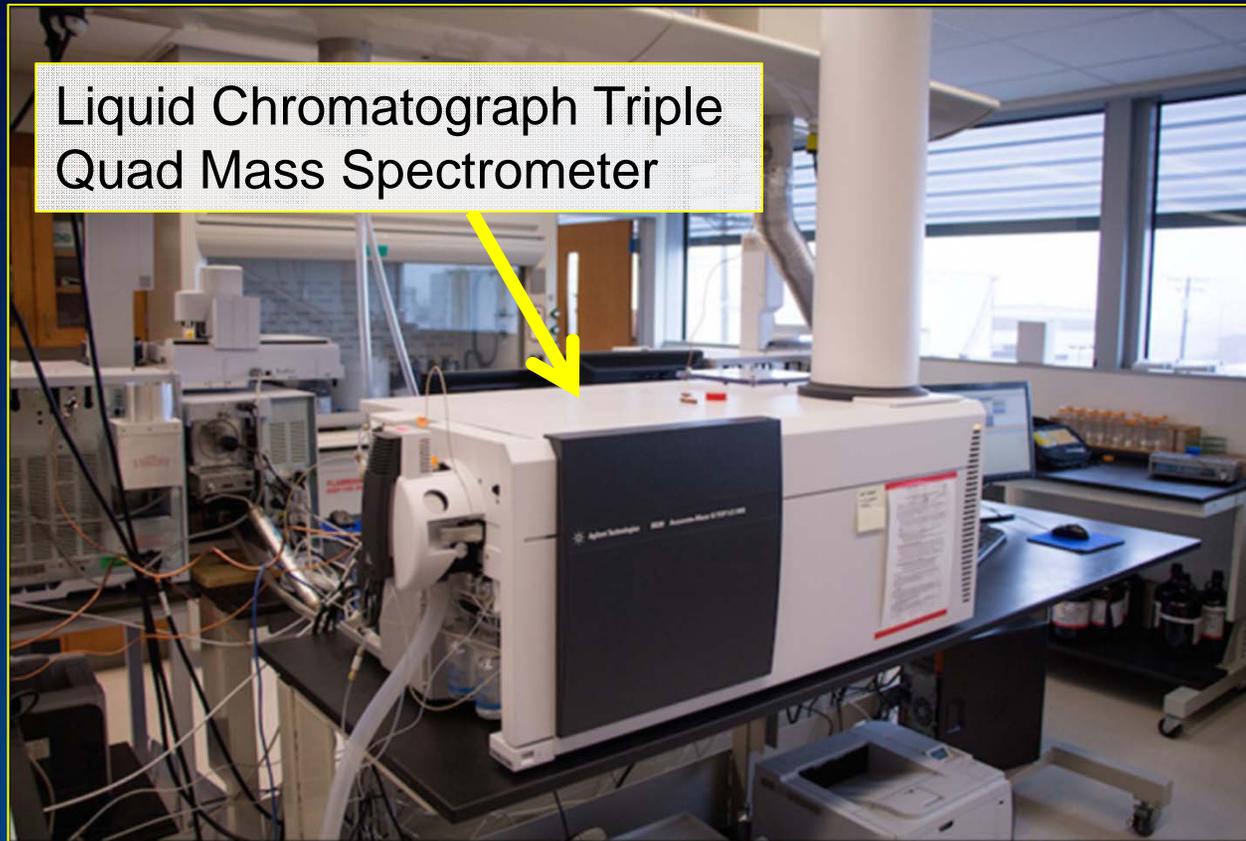


# Inaugural Partners...

- Government:  
City of Tacoma  
Environmental Services
- Private Business:  
SafeDrain Northwest



# Advanced Analytical Instrumentation



Liquid Chromatograph Triple  
Quad Mass Spectrometer

Center for Urban Waters

If you don't know what pollutant is in your water, how do you even begin to look for it?



# Contaminants of Emerging Concern

Examples:

- Sulfonamide antibiotics
- Agriculture related
- Ensulizole (UV filter – sunscreen)
- Carbamazepine (anti-seizure/anti-epileptic)
- Food additives (artificial sweeteners)
- Compounds used in industrial/commercial applications (flame retardants)

# WSU Puyallup



Aquatic Toxicology Laboratory

# Creating the Space

WSU Puyallup received \$800,000 to renovate and equip an Aquatic Toxicology Laboratory in a building that housed the WSU-NOAA Salmon Toxicology Laboratory



# Aquatic Toxicology Laboratory Staff

- A new faculty member specializing in fish ecotoxicology
- Graduate students
- Collaborators from government, industry, and other universities



# Space Expansion

WSU Puyallup Aquatic Toxicology Laboratory now totals 4,800 square feet with the 2,640 square feet of newly renovated space



# New Work Areas



Two large wet laboratories were built as well as three new offices and a meeting area

# On-going Efforts

- Continue work on salmon and expand to other aquatic species
- Evaluate other important Northwest aquatic species for potential future research projects



# Summary

- The IPZ has helped brand Tacoma as a world leader in clean water collaboration in urban settings
- The IPZ as a partnership of research, education, business and local government has helped accelerate development of competitive, research based urban clean water initiatives

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