

**Urban Clean Water Technology
Innovation Partnership Zone
BUSINESS PLAN 2015 - 2019**

- I. **Mission.** The continuing mission of the Urban Clean Water technology IPZ is to accelerate development of globally competitive, research-based, urban clean water initiatives that will positively impact the economic future for Tacoma and Pierce County, WA, through a collaboration of business, research, education and local government leaders.
- II. **Goals.**
- Retain and expand existing businesses and organizations in the urban clean water cluster.
 - Invest in our key public assets (UW Tacoma, WSU Puyallup, City of Tacoma Utilities, Puget Sound Partnership, etc.)
 - Expand Wellspring Conference
 - Expand the Wellspring brand by hosting a focused workshop series for clean water professionals; the first in that series will be in the winter of 2016
 - Arrange and host a minimum of three workshops or seminars for international delegations focused on clean water best-management practices, including introductions to local environmental firms, and establishing potential consultant services agreements
 - Continue to update and expand our database of regional clean water businesses
Create greater access to non-proprietary research and best water management practices relevant to urban clean water as a draw for businesses, non-profit organizations and start-ups
Encourage the start-up of clean water technology businesses
 - Establishment of at least one cooperative agreement between UW Tacoma and a local firm to leverage research and evaluate and distribute products, i.e. tech transfer will spur private sector growth
 - Continue to bring top talent to the table to encourage more, and better, innovation; the goal is to add at least two new private sector members to Water Partners of Tacoma
 - Expand educational opportunities supporting clean water technology
 - Collaborate with the UW Department of Civil and Environmental Engineering to support a graduate fellowship in Clean Water Engineering, while also growing our existing clean water technology programs at UWT and WSU Puyallup
 - Collaborate with the UW Tacoma Milgard School of Business to support a graduate fellowship in Clean Water Entrepreneurship
 - Undertake a commercialization study by 2017 to identify additional business applications for the clean water research being conducted in Tacoma and Pierce County for economic development
 - Develop plan and development strategy for Center for Urban Waters 2 construction
 - Continue media relations efforts to communicate sector accomplishments with placements in national and regional publications/outlets about the Tacoma-Pierce County water cluster.
 - Secure necessary funding to support IPZ activities, stabilize ongoing operational expenses and expand the many existing programs

III. Leadership/Governance.

Description of the management team and roles:

The City of Tacoma, Port of Tacoma, Economic Development Board for Tacoma-Pierce County, Washington Economic Development Commission, University of Washington Tacoma, Washington State University Puyallup, Puget Sound Partnership and others continue to engage in an innovative and collaborative effort to further emphasize the efforts of the Urban Clean Water Technology Cluster.

Leaders at the highest levels of these organizations are committed to building on the community's assets and achieving the mission stated above.

The Center for Urban Waters will be the administrator for the Urban Clean Water Technology Innovation Partnership Zone, with significant support from the other entities.

Leadership Team:

- T.C. Broadnax, City Manager, City of Tacoma – City will be zone administrator and fiscal agent, will assist in recruitment, seminar planning, and expansion of educational opportunities, promotion of best stormwater management practices, and Wellspring conference planning.
- Mark Pagano, Chancellor, University of Washington Tacoma – UWT will be lead research entity and higher education provider, will host workshops, will work with partners to establish new graduate programs, and assist in securing funding.
- Dr. Joel Baker, Professor, Environmental Science, UWT; Science Director, Center for Urban Waters – Dr. Baker is lead researcher and collaborator, will lead Wellspring efforts, will establish cooperative agreement between UWT and local firm, add private sectors members to Water Partners of Tacoma, will host workshops, will work with partners to establish new graduate programs, and assist in securing funding and database expansion.
- Connie Bacon, Commissioner, Port of Tacoma – Port owns vacant property in the Zone available for development and is committed to protecting waterways, and assisting with Wellspring, and helping to bring private sector members to Water partners of Tacoma and establish graduate programs.
- Bruce Kendall, President and CEO, Tacoma-Pierce County Economic Development Board – EDB will lead business recruitment and database expansion, and will assist with Wellspring, bringing private sector partners on board, and commercialization study.
- Sheila Ruhland, President, Tacoma Community College – TCC will lead workforce development and corporate training.
- Rita Schenck, Chair of the Board and Executive Director, Institute for Environmental Research and Education – IERE is resource for lifecycle assessments and other environmental evaluations for City, Port and private businesses.
- Jeff Peacock, President & CEO, Parametrix – Company is liaison to private sector, IPZ advisor
- John Stark, Director, WSU Puyallup Research and Extension Center -- will assist with Wellspring efforts, will work with partners to establish new graduate programs, and will help to secure funding.

Anticipated Partner Involvement & Investment

Each partner is committed to providing the human resources necessary for the Urban Clean Water Technology Innovation Partnership Zone to be successful.

- **City of Tacoma**

- Act as the Zone Administrator.
- Compile annual performance data as required by the Department of Commerce (DOC) from all Parties and submit all required reports.
- Act as the fiscal agent for the Zone, manage capital grants that may be provided by DOC under the Act, submit budget updates and invoices for reimbursement, and ensure compliance with all grant requirements.
- Market the Zone for location of commercial businesses and research laboratories that would benefit from co-location within the Zone.
- Continue development of the city's stormwater management program, which is recognized as one of the best stormwater systems in the country. This program is based at in the Center for Urban Waters, a facility representing a \$37.8 million investment by the City.
- Pursue development of Center for Urban Waters II on city-owned property across the street from the CUW to provide space for additional government agencies engaged in environmental work, incubator space for private businesses, and offices for established businesses and nonprofits engaged in the cluster.

- **University of Washington Tacoma**

- Provide access to non-proprietary research relevant and appropriate to urban clean water, as determined by UWT, to advance the objectives of the Zone. Dr. Joel Baker, an internationally known leader in urban water science, is the research chair for the Center for Urban Waters and the UW Tacoma professor taking a leading role in IPZ/UW Tacoma integration.
- Develop a plan for collaborating with the other Parties for investigating commercially valuable research opportunities applicable to businesses in the Zone and for providing training capacity. Provide staffing to develop the plan.
- Provide staff and programs to support research and training:
 - The Environmental Program at UW Tacoma has 16 faculty and several staff who support bachelor's degree programs in Environmental Science and Environmental Studies and a certificate in Restoration Ecology that serve more than 150 students a year. The Environmental Program takes advantage of the Puget Sound being in its front yard. The curriculum, internship opportunities and research maintain local community ties while exploring global perspectives. These ample networking opportunities provided to UW Tacoma students have resulted in excellent career opportunities for graduates and provide a natural pipeline for skilled workers in clean water technology.
 - The Puget Sound Institute at UW Tacoma was funded with \$4 million from the EPA to enhance the integration of science into the restoration and preservation of the Puget Sound ecosystem. Under the direction of Dr. Baker and located at the Center for Urban Waters, the Institute will focus

university researchers on priorities of the Puget Sound Partnership, which may include issues relevant to the Urban Clean Water Technology IPZ.

- **Port of Tacoma**
 - Market, to the extent practicable, vacant property located within the Zone to potential customers engaged in business related to the intent of the Zone; provided, that nothing herein shall prevent the Port from leasing or selling property to any entity the Port, in its sole discretion, deems appropriate.
 - Regularly convey to the Parties examples of the environmental challenges of its business and identify areas where scientific research and emerging technology are needed.
- **Economic Development Board for Tacoma-Pierce County**
 - Manage collection of data regarding performance of the IPZ, including private investment, job creation and other measures of innovation.
 - Work directly with private firms in the IPZ to assist in their expansion.
 - Recruit new firms into the IPZ.
- **Tacoma Community College**
 - Serve as the lead for workforce development and corporate training for business and industry in the Zone.
 - Develop training modules, courses, and certificates that transfer directly into the Environmental Science degree and UWT, and utilize research findings to develop corporate training and workforce development investments for the zone's business and industry through Invista Performance Solutions group – the collaborative, corporate training division of the four Pierce County Community and Technical Colleges.
 - Serve, through Invista Performance Solutions, as a training provider for potential companies for the Zone and act as a regional training partner for the region's economic development clusters.
- **Institute for Environmental Research and Education**
 - Serve as a resource to the City and the Port in evaluating environmental impacts of their business operations.
 - Continue to work with the City on carrying out the action items outlined in Resolution #38188 in the area of collecting life cycle inventory data, to include water utilities.
 - Assist local businesses in the Zone to conduct *Life Cycle Assessments* (including water footprinting) and obtain Environmental Product Declarations (Type III Eco-labels) for their products and services.
 - Provide advice and guidance to facilitate the successful development of the IPZ.
 - Collaborate with UWT and Urban Waters on research projects.
 - Evaluate and include new technologies into project designs.
- **WSU Puyallup**
 - Foster development and use of new stormwater technologies through the Emerging Technologies branch of the Washington Stormwater Center.
 - Provide resources for ongoing study for faculty and students to study more aquatic species through the Aquatic Toxicology program.
 - Work with potential partners from federal agencies, tribes, consulting companies and other universities to find common interests and discuss sources of future funding for research.
 - Implement new faculty line including fish biologist.

Sustainability Plan for the Next Four Years:

Our sustainability plan focuses on expanding the research and commercialization capacity within the IPZ by conducting the following activities:

Business recruitment and expansion work will continue.

Investing in our key public assets (UWT, WSU Puyallup, City of Tacoma utilities, etc.) will continue.

The Fourth Wellspring Conference will be in the winter of 2016 and we plan to again invite industry influencers from around the globe. We are also expanding the Wellspring brand and concept by hosting focused workshop for clean water professionals. The first in that series will be in the fall of 2015.

We will arrange and host a minimum of three workshops or seminars for international delegations focused on clean water best-management practices, including introductions to local environmental firms, and establishing potential consultant services agreements.

We will work to continue to update and expand our database of regional clean water businesses. We plan to create greater access to non-proprietary research and best water management practices relevant to urban clean water as a draw for businesses, non-profit organizations and start-ups. We continue to encourage the start-up of clean water technology businesses. This process will accelerate as we support tech transfer out of our research centers and into the private sector.

We are also working toward the establishment of at least one cooperative agreement between UW Tacoma and a local firm to leverage our research and evaluate and distribute products. Many of the technologies that have been developed and researched at the Center for Urban Waters and other organizations have the potential for commercialization. Again, tech transfer will spur private sector growth.

Finally, we plan to undertake a commercialization study by or around 2017 to identify additional business applications for the clean water research being conducted in Tacoma and Pierce County. The work we have been doing has great potential for economic development and we look forward to continuing to be leaders in clean water technology.

In order to achieve the above goals, we are working to secure the funding necessary to support IPZ activities, stabilize ongoing operational expenses and expand the many existing programs. We also plan to continue our media awareness efforts to communicate sector accomplishments with article placements in national and regional publications about the Tacoma-Pierce County water cluster.

IV. Strengths of the IPZ.

The creation of the Urban Clean Water Technology Innovation Partnership Zone in 2011 has had a catalytic impact on the economy and position of Tacoma-Pierce County in the global clean water technology industry. A collaboration of business, research, education and local government leaders, the IPZ is designed to accelerate development of globally competitive, research-based, and urban clean water initiatives that will positively impact the economic future for Tacoma and Pierce County, WA. The IPZ has also placed Tacoma at the center of the clean water industry, resulting in becoming a key influencer in the area of clean water research.

The goal of the IPZ to recruit, retain and expand businesses that leverage world class research and expertise already in place has, so far, been successful. Also, the establishment of conferences and symposia is valuable to the worlds' understanding of the importance of clean water to nations and economies, and brings knowledge leaders throughout the industry to Tacoma. The initiative has been a success, and has helped brand the city and county as a world leader in clean water. *The New York Times*, in a story last year about the city, stated, "Tacoma's approach, a combination of science and sheer doggedness, is being studied by officials from as far away as Brazil, Thailand, Italy and Russia." The IPZ is helping to lead the way for new technologies, marketable products, company formation, innovative protocols and job creation.

The IPZ designation has been instrumental in the recruitment of industry-leading talent to the county, particularly Dr. David Hirschberg from Columbia University and Dr. Edward Koldziej from University of Nevada Reno, both of whom have joined UWT and the Center for Urban Waters. The IPZ has been a driver for new and expanded clean water technology businesses including Revalasio, Test America, and MD Marine Electric. It has also supported the creation of more than ten conferences and symposia, including the annual Wellspring conference, which brings industry leaders from around the world to Tacoma. Such conferences, which have had increasing attendance year-over-year, reinforce the region's leadership in clean water efforts.

Located in the shadow of Mt Rainier, at the delta of major rivers carrying water from the slopes of the Cascade Mountains, and on the shores of the Puget Sound, Tacoma, a large, urban center of more than 203,000 people, is uniquely positioned to act as a real world laboratory for populated, coastal regions around the world.

The IPZ has developed funding mechanisms, undertaken major activities, built public and private partnerships and increased local and national awareness of the vital importance of clean water in urban settings. The result is economic, academic and innovative growth. Beyond that, Tacoma and Pierce County have acquired distinction among civic neighbors and peers across the country and around the world. We look forward to continuing to be a leading Washington State IPZ.

Specific Strengths of the Clean Water IPZ

Recruitment and retention

- The Economic Development Board for Tacoma-Pierce County (EDB) has the lead role on recruitment and retention/expansion of companies in the sector. Inland Technology, MD Marine Electric, Revalerio, Test America, Superlon Plastics, GeoEngineers, Parametrix, Landau Associates and BHC Consultants are local companies that have all seen business growth. See below for a discussion of the EDB's recruitment effort.
- Since the creation of the IPZ, Dr. Edward Kolodziej was recruited to join the UW Tacoma faculty. His presence has strengthened research efforts. He has also formed an active collaboration with Dr. Dan Burgard, a noted Professor of Chemistry from the University of Puget Sound.

Increasing awareness

- Tacoma and Pierce County have raised awareness of their industry leading clean water credentials and successes through an ongoing media campaign. Their PR efforts have resulted in placements in national and regional publications. The twenty media placements can be seen in appendix A.

Funding and expansion

- The IPZ has provided a platform to attract \$3.6 million in funding for research labs at UWT and WSU Puyallup. These and other investments have resulted in: a Clean Water Innovation laboratory; an Advanced Analytical Instrument to determine causes of fish toxicity; innovative treatment media to reduce the level of phosphorus in storm water; Department of Ecology's TAPE (Technology Assessment Protocol – Ecology) Program; the development of the Washington Stormwater Center, a partnership of UW Tacoma at the Center for Urban Waters and WSU Puyallup Research and Extension Center; and the Environmental Genomics and Bioinformatics Initiative. Additional information about these initiatives can be seen in appendix B.
- IPZ initiatives have also helped to support the growth of existing clean water programs. The Clean Water Innovation Laboratory, located on the UWT campus, fosters opportunities for faculty and students to engage with businesses and entrepreneurs in ways that lead to research-based ideas and inventions and their potential commercialization, while enhancing UW Tacoma's science programs. These high-end environmental facilities will allow engineers and scientists from the private sector to work side by side with university faculty, bringing new ideas and energy into collaborations that could lead to commercialized products and services.
- The Emerging Technologies branch of the Washington Stormwater Center helps foster the development and use of new stormwater technologies. Additionally, when the newly developed technology meets the criteria for the TAPE program to reduce or eliminate storm water pollutants, then the TAPE program can help a company or entrepreneur navigate resources so that the product or service can be effective at helping manage storm-water promoting future businesses.
- The renovation of the WSU Puyallup Aquatic Toxicology building is complete, allowing the faculty and students to study more aquatic species. WSU is working with potential partners from Federal agencies, tribes, consulting companies and other universities to find common interests and discuss sources of future funding for research projects. This benefits the growth of the IPZ in the area of water research and development. WSU has also hired a new faculty line, including a fish biologist.

V. Long-term market growth for the technology. Many experts agree that clean water is one of the greatest challenges facing humanity in the 21st century. The market opportunities for technologies being developed in the IPZ are widespread both domestically and internationally.

Market analyses projects that the global demand for clean water technology will grow 7% per year through the next four years. As climate research evolves, it is clear that issues surrounding clean water, water in urban settings, water reclamation and water policy will continue to expand nationally and internationally. Tacoma and Pierce County are poised to make meaningful, continuing, and sustained contributions to meeting clean water technology demands. These vital contributions will also create more business opportunities in Tacoma.

Much of the work being done at the Center for Urban Waters, UW Tacoma and WSU Puyallup has resulted in technologies and products which commercial value. We plan to undertake a commercialization study by or around 2017 to identify additional business applications for the clean water research being conducted in Tacoma and Pierce County. The work we have been doing has great potential for economic development and we look forward to continuing to be leaders in clean water technology.

We are working toward the establishment of at least one cooperative agreement between UW Tacoma and a local firm to leverage our research and evaluate and distribute products. Many of the technologies that have been developed and researched at the Center for Urban Waters and other organizations have the potential for commercialization. Again, tech transfer will spur private sector growth.

We will work to continue to update and expand our database of regional clean water businesses. We plan to create greater access to non-proprietary research and best water management practices relevant to urban clean water as a draw for businesses, non-profit organizations and start-ups. We continue to encourage the start-up of clean water technology businesses. This process will accelerate as we support tech transfer out of our research centers and into the private sector.

We have also secured international business opportunities. The World Trade Center Tacoma, City of Tacoma and Center for Urban Waters are working with Chinese officials and scientists to exchange information and learn about clean water technology and remediation experiences. A 2014 Environment and Clean Technology Summit brought together scientists working in China with Tacoma environmental consulting firms, resulting in numerous business opportunities. Among these opportunities was the invitation of a Tacoma engineering firm to go to China for a week as an expert to discuss Low Impact Development (LID), leading to discussions about future collaborations with Guangzhou University or other universities with concentration in environmental programs.

VI. Entrepreneurial climate in the IPZ. Entrepreneurs and researchers operating in or near the IPZ are working on products related to clean drinking water, salmon habitat, stormwater cleanup/pollution prevention, and others. Tacoma has unique assets in clean water research, services and businesses that are already collaborating around shared objectives. The Tacoma-Pierce County area has necessary elements to build a comprehensive innovation ecosystem. Already in place:

- The Center for Urban Waters is the focal point of the zone. It is a partnership of the City of Tacoma, the University of Washington Tacoma and the Puget Sound Partnership, linking researchers and policymakers with the city.
- The Center for Urban Waters and WSU Puyallup are already networked through the Washington Stormwater Center, which serves NPDES permittees and stormwater managers as they navigate the complexities and challenges of stormwater management. (NPDES is the EPA's National Pollutant Discharge Elimination System, designed to reduce pollution by regulating sources of pollution that discharge into the nation's waterways.)
- The City of Tacoma's Stormwater Management Program, based at the Center for Urban Waters, is nationally recognized for measurably improving the quality of stormwater discharged into receiving waters. The city's proven approaches can provide the basis for research and a competitive edge and credibility for businesses focused on developing innovative solutions to the fast-growing market emerging around stormwater management.
- The Puget Sound Institute, also located at the Center, is a cooperative agreement between the University of Washington, the U.S. Environmental Protection Agency and the Puget Sound Partnership that seeks to catalyze rigorous, transparent analysis, synthesis, discussion and dissemination of science in support of the restoration and protection of the Puget Sound ecosystem.
- The TacomaAngel Network (TAN), which focuses on supporting local and regional entrepreneurs, has fostered a partnership with the University of Washington Tacoma and will be available to review proposals developed within the zone. TAN is a nonprofit alliance of investors who provide investment capital, strategic advice and mentoring to early-stage companies or companies embarking on major expansions.
- Education and workforce training are readily available with the Environmental Science Program at UW Tacoma and the transfer and vocational programs of Tacoma Community College. The zone is also supported by Invista Performance Solutions, a single point of contact that allows businesses to access education and training through Bates Technical College, Clover Park Technical College, and Tacoma Community College in Pierce County. These educational assets are poised to address workforce solutions required to support new business applications that may evolve from activities within the zone.

VII. Measures:

2016:

- Develop Strategic Plan for developing Center for Urban Waters Phase II
- Attract additional private investment from one new or existing firm.
- Create 5-7 new jobs
- Accomplish regional branding via targeted communications
- Hold the Fourth Wellspring Conference in the winter of 2016.
- Expand the Wellspring brand and concept by hosting focused workshop targeting clean water professionals.

- Arrange and host a workshop or seminar for international delegations focused on clean water best-management practices, including introductions to local environmental firms, and establishing potential consultant services agreements.
- Explore collaboration with a Chinese or other international university to offer student and faculty exchange programs in clean water technology.
- Continue to increase international awareness of the Center for Urban Waters by hosting international visitors.

2017:

- Continue planning and development of Center for Urban Waters II, including grant writing, cost estimating and implementation plan.
- Attract additional private investment for new or existing firm.
- Attain one matching grant to support IPZ development.
- Create 5-10 new jobs
- Add two new private sector members to advisory board.
- Hold the Fifth Wellspring Conference.
- Develop a commercialization study to identify new business applications for research being conducted.
- Arrange and host a workshop or seminar for international delegations focused on clean water best-management practices, including introductions to local environmental firms, and establishing potential consultant services agreements.
- Implement a collaborative program with a Chinese or other international university for faculty and student exchange programs targeting upper level or graduate students.
- Establish program to support graduate fellowship in Clean Water Engineering and graduate fellowship in Clean Water Entrepreneurship.

2018:

- Attract additional private investments to new or expanding firms for a total of three.
- Create 10-15 new jobs.
- Hold the Sixth Wellspring Conference.
- Receive funding approvals for Center for Urban Waters II.
- Demonstrate strong presence at Urban Clean Waters Conference to expand branding internationally.
- Host at least one student workshop in the IPZ to provide education/training on urban clean waters programs.
- Arrange and host a workshop or seminar for international delegations focused on clean water best-management practices, including introductions to local environmental firms, and establishing potential consultant services agreements.

2019:

- Successfully begin site development of Center for Urban Waters II.
- Continue the successful implementation of the matching grant.
- Create 15-20 new jobs.
- Host at least one student workshop in the IPZ to provide education/training on urban clean waters programs.

Appendix A

Media Placements

- **Water World Magazine**, *Managing Storm Water One Parking Lot at a Time*, by Dr. John Stark, Director of WSU Puyallup, September 2012. The article focuses on LID and other clean water technologies being researched in Tacoma and Pierce County. <http://www.waterworld.com/articles/print/volume-28/issue-8/urban-water-management/managing-stormwater-one-parking-lot-at-a-time.html>
- **Pollution Engineering**, *Collaborating for Sustainable Results: Communities Work Together to Remediate Water Entering Commencement Bay*, by Dr. Joel Baker, Science Director, Center for Urban Waters, January 2013. http://www.vitalcontentpr.com/wp-content/uploads/2013/02/PollutionEngineering_CoverStory_Tacoma_Jan2013.pdf
- **Bloomberg BNA's Environmental Compliance Bulletin**, *Sustainability - Tacoma Center Tackles Coastal Community Water Quality*, April 29, 2013. The article is about the CUW's focus on Best Management Practices. http://www.vitalcontentpr.com/wp-content/uploads/2013/02/BNAEnvironmentalComplianceBulletin_4-29-13.pdf
- **Journal AWWA** (American Water Works Association), *Cleaning Urban Waters Using Collaboration and Science*, by Michael P. Slevin III, P.E., Director of Environmental Services, City of Tacoma, June 2013. This article focuses on Tacoma's success in reducing legacy contaminants in waterways and low impact development initiatives. http://www.vitalcontentpr.com/wp-content/uploads/2013/02/JournalAWWA_June2013_Tacoma.pdf
- **Treatment Plant Operator**, *Conference Reveals Clean-Water Industry Issues*, October 21, 2013. Article was written about the success of the 2nd annual Wellspring Conference. http://www.tpomag.com/online_exclusives/2013/10/conference_reveals_clean_water_industry_issues
- **Water Systems Operator**, *Conference Reveals Clean-Water Industry Issues*, October 21, 2013. Article was written about the success of the 2nd annual Wellspring Conference. http://www.wsomag.com/online_exclusives/2013/10/conference_reveals_clean_water_industry_issues
- **Water Conditioning & Purification**, *Wellspring Conference 2013: Overcoming Obstacles in Clean Water Technology*, November 15, 2013. Article was written about the success of the 2nd annual Wellspring Conference. http://www.vitalcontentpr.com/wp-content/uploads/2013/02/WaterCondPurif_Wellspring2013_11-15-13.pdf
- **Treatment Plant Operator**, *Clean Water Conference Makes a Splash*, November 20, 2013. Article was written about the success of the 2nd annual Wellspring Conference. http://www.tpomag.com/online_exclusives/2013/11/clean_water_conference_makes_a_splash
- **Dig Different**, *Tacoma – Pulling It All Together*, March 17, 2014. This article highlights Tacoma Public Utilities and partner's efforts to be a leader in clean water technology and sustainability. http://www.digdifferent.com/online_exclusives/2014/03/tacoma_-_pulling_it_all_together
- **Municipal Sewer & Water**, *The Long View: Sound planning and management help Tacoma get the most out of its infrastructure*, April 2014. This article was a cover story about Tacoma Water's asset management and best practices. http://www.mswmag.com/editorial/2014/04/the_long_view

- **Treatment Plant Operator, Tacoma – Pulling It All Together**, April 2014. This article highlights Tacoma Public Utilities and partner’s efforts to be a leader in clean water technology and sustainability. http://www.tpomag.com/editorial/2014/04/tacoma_pulling_it_all_together
- **The New York Times, With Data and Resolve, Tacoma Fights Pollution**, June 12, 2014. Section ‘A’ article about the City of Tacoma and the Center for Urban Water’s great work in clean water technology. http://www.nytimes.com/2014/06/13/us/with-data-and-resolve-tacoma-fights-pollution.html?_r=2. Article also ran online in *The Daily Mail* in the UK, *MSNBC.com*, *EIN*, *Yakima Herald Republic*, *Business Examiner*, *Exit133*, *Environmental Health News*, *Environment.com*, and more.
- **The Seattle Times, Tacoma takes aim at drains in big battle against pollution**, June 13, 2014. Reprint of the New York Times article about Tacoma’s great work in clean water technology. http://seattletimes.com/html/localnews/2023842805_tacomawaterxml.html. Article also ran on numerous news websites.
- **The Seattle Times, Tacoma Rebounds**, July 20, 2014. Article about how Tacoma has rebounded from the recession, including their successes in clean water technology. http://seattletimes.com/html/business/2024110950_biztaltoncol20xml.html
- **Civil and Structural Engineer, Upcoming Annual Wellspring Conference, September 2014.** <http://cenews.com/event/326/third-annual-wellspring-conference>
- **Civil and Structural Engineer, Upcoming Annual Wellspring Conference, September 2014.** <http://www.waterworld.com/events/2014/10/third-annual-wellspring-conference.html>
- **Water and Wastes Digest, A Model for Success**, by Lorna Mauren, Environmental Services Assistant Division Manager for Tacoma, September 10, 2014. The article is about Tacoma’s successful storm water management program. <http://www.wwdmag.com/storm-water-management-products/model-success>
- **Water Conditioning and Purification, Clean Water Conference Driving Change: Through Collaboration, Tacoma is Making a Difference**, by Kurt Marx, Assistant Director for Clean Water Innovations at UW Tacoma, December 2014. http://www.wcponline.com/pdf/December_2014_Marx.pdf
- **Civil and Structural Engineer, Wellspring Conference 2014 recap**, by Water Partners of Tacoma, January 2015. <http://cenews.com/article/9965/wellspring-conference-2014-recap>
- **Seattle Business Magazine, Water tech: The next emerging business cluster**, by Bill Virgin, July 2015. Article about Tacoma’s clean water technology cluster. <http://seattlebusinessmag.com/article/water-tech-next-emerging-business-cluster>

Appendix B

- **Assistant Director for Clean Water Innovation** – The University of Washington Tacoma has further invested in the IPZ by creating and filling a new full-time position: *Assistant Director for Clean Water Innovation at the Center for Urban Waters*, who spearheads efforts to evaluate and promote innovative technologies and practices around sustainable urban clean water, while building relationships.
- **Clean Water Innovation Laboratory** – The grand opening of the recently renovated Clean Water Innovation Laboratory at University of Washington Tacoma was in Fall 2014. This space houses collaborations between university scientists and private and public experts, conducting research and product development for urban clean water solutions.
*This new lab space was primarily funded out of the 2012 State capital funding allocation for Tacoma.
- **Advanced Analytical Instrument** – Installation and start-up of a high-tech laboratory instrument that allows scientists to detect a broad spectrum of compounds more efficiently and cost effectively. The instrument is used to detect tracer chemicals to help determine the source of bacterial contamination in surface waters and to determine exact causes of toxicity in fish – further protecting the State’s shellfish and fishing economic resources, as well as human health.
*The instrument was funded out of the 2012 State capital funding allocation for Tacoma.
- **Innovative treatment media** – IPZ members: City of Tacoma, UW Tacoma, and WSU Puyallup were awarded a grant from the Department of Ecology to research and develop media that will reduce the level of phosphorus in stormwater. The active ingredient in the media is a waste product from the drinking water treatment industry.
- **Department of Ecology’s TAPE (Technology Assessment Protocol – Ecology) Program facilitation** – The UW Tacoma, via the Washington Stormwater Center, works with numerous companies to foster them through the TAPE program, which assists in product development and new product testing and leads to business development. Under this program, we have assisted the following local and national companies: Royal Environmental Systems, Inc; HydroInternational; StormwaterRx; Contech; Modular Wetlands; BaySaver; Filterra; Washington State DOT; Lean Environment; Aquashield; and Environment 21.
- **The Washington Stormwater Center, a partnership of UW Tacoma at the Center for Urban Waters and WSU Puyallup Research and Extension Center**
The Center's research combines state-of-the-science analytical chemistry and sophisticated modeling and statistical tools to develop rigorous approaches to quantify sources of regulated and emerging chemical pollutants of surface waters. These tools are used by engineering consulting firms supporting local, regional, state and federal water-quality managers. Students trained in these techniques will support workforce demand.