

Port of Bellingham Waterfront Innovation Zone

Business Plan 2011-14

Mission

The Waterfront Innovation Zone (WIZ) includes over 200 acres of redevelopable property in the Bellingham Waterfront District that will transition from underutilized heavy industrial land to a vibrant mixed-use neighborhood to support a range of economic activity from traditional marine industry to new global enterprises of the future.

The Waterfront Innovation Zone: Technology Development Center (TDC) is a unique facility in Northwest Washington that will foster technology innovation and development through university-industry collaboration and benefit faculty professional development and student education, industry R&D and product prototyping, workforce training and the economic vitality of the region. Industry applications include industrial design, advanced materials and fuel technologies in areas such as clean transportation and renewable energy.

Goals

- Attract the development of leading edge and diversified marine, transportation, renewable energy and advanced manufacturing industries to the waterfront.
- Enhance the ability of Western Washington University (WWU) to carry out research and development projects in partnership with regional technology-driven industries.
- Develop on-site training through Bellingham Technical College (BTC) to craft a workforce for the future.
- Attract federal research grants and contracts to enhance WWU's applied research capacity.
- Target small- to medium-sized businesses utilizing state-of-the-art technologies to improve their processes and products.
- Encourage WWU and BTC to collaborate on mutual projects of interest

Progress in the Zone: 2007-2011

- Advancing planning and site preparation in the Zone:
 - The Port and City of Bellingham created a comprehensive draft sub-area plan and development regulations for the waterfront area. Preliminary plans for the Waterfront District have been certified under the US Green Building Council's Leadership in Energy and Environmental Design (LEED) for Neighborhood Development pilot program.
 - The Port and Georgia Pacific have demolished and cleared industrial structures and buildings on the site. The City of Bellingham approved a construction contract for infrastructure improvements at the downtown entrance to the site.
 - Environmental Cleanup: the Port and City have conducted extensive site investigations on all sites within the Waterfront District to characterize the nature and extent of contamination and develop a range of cleanup alternatives.

- The first capital project within the WIZ was completed in fall 2009; the 10,000 sq. ft. Technology Development Center leased by WWU and BTC. The TDC offers collaborative research and workforce training space for higher education and industry. The \$1.7 million facility was funded by a \$1 million IPZ capital grant, with the balance from the Port and federal funding. WWU invested in equipment. The TDC features:
 - 3,800 square foot applied R&D work area with direct air flow system for dust and fume control, distributed compressed air, vacuum mold, and dust collection systems. Equipped with ShopBot CNC router, fume hood, annealing oven and machining equipment
 - 750 square foot clean room/office space
 - 3,000 square foot workforce development education and training lab
 - 985 square foot shared training room/meeting spaces.
 - Additional mezzanine area for storage and project work
 - Two semi-truck sized delivery doors, restrooms, break area
- A faculty-student team from WWU completed the original IPZ project with private sector partner All-American Marine, Inc. The project involved fabricating testing scale models of a lightweight hydrofoil from composite materials for a high-speed, low-wake passenger ferry. A second part of the project included development of a sensor array and associated electronics for measuring the performance of the full-scale hydrofoil during sea trials of the passenger ferry. The hydrofoil concept is moving through further development with a private sector design/builder before it can be deployed.
- The first major university-sponsored R&D project moved into the TDC. WWU's Vehicle Research Institute (VRI) is working with regional transit agencies and private sector partners to design and build a light-weight hybrid para-transit bus prototype with the goal of doubling the fuel efficiency of existing buses in this class. The project includes a number of private sector partners. The project was awarded a Federal Transit Administration grant for \$730,000 to complete a prototype by 2014 that can be commercially produced and purchased by regional transit agencies.
- New Market Design Lab, a private company started by a recent WWU Industrial Design graduate, relocated its R&D activities to the TDC. New Market Design Lab is working with student interns from WWU to develop medical device prototypes for partner Envision Telepharmacy. Over the last year, New Market Design Lab has quadrupled earnings and hired one full-time employee. They expect to double in size each year over the next four years.
- WWU Advanced Materials Science and Engineering Center (AMSEC) secured a \$970,000 National Science Foundation Grant through the SOLAR program in 2010 to develop prototypes for a new concept for ultra-high efficiency collection and concentration of sunlight. This technology has the potential to create a breakthrough in the cost reduction for solar energy as well as create efficiencies in low-light conditions such as the Pacific Northwest. This project is the basis for a new private-public partnership in the WIZ for 2011-14 with private company Alpha Energy.
- The Technology Alliance Group (TAG) moved its office to the TDC. TAG is a trade organization for technology companies in NW Washington and acts as an important industry liaison for the TDC. TAG has contracted with both WWU and the Port to provide market research materials and guiding documents such as a business plan, operating policy and industry outreach activities to elevate opportunities in the TDC. TAG assisted with these projects in part with support from a \$25,000 IPZ-grant in 2011.

- Bellingham Technical College housed its Electro-Mechanical Technology (EMTECH) program in its portion of the TDC. EMTECH trains people for industrial manufacturing and maintenance careers working with hydraulics, pneumatics, electrical, and machining. During 2007-11, 167 students were enrolled in the program at the TDC.
- BTC also provided customized training to Heath Tecna, a local aircraft interior manufacturer, for new and incumbent employees in workforce basics, production skills and lean practices this past year using funding from the Governor's Office and the State Job Skills Program. Over 100 trainees were hired by Heath Tecna.
- The creation of Innovate Washington (SIRTI and WTC merger) by the Legislature calls out future expanded services by creating a physical presence in Bellingham. The Bellingham IPZ partners will collaborate with Innovate Washington on this opportunity.

Zone Leadership and Governance Structure

Management Team and Roles

- The Port of Bellingham serves as the Zone Administrator. This entails relationships with higher education partners, contracts for services with non-profit service providers, outreach with the business community and reporting to the Dept. of Commerce. The Port is also the marketing agent, site developer and property manager. The Port owns and operates the TDC and manages leases with the tenants WWU and BTC, as well as manages common area for meetings and events. Organizationally, Zone Administration falls under the Port's Economic Development Specialist and lease/facility management, with the property development under the Port's Real Estate Director.
- Western Washington University provides research capacity for Zone projects and comprehensive education of students. The College of Sciences and Technology has appointed a WWU TDC Coordinator who interfaces with the private sector and WWU faculty on research project development and facilitation. The Coordinator reports to the Dean of the Colleges of Sciences and Technology. WWU completed a *Business Plan* (Nov 2010) and a *TDC Facility Operations Policy and Procedures Manual* (June 2011) detailing its involvement in the TDC.
- Bellingham Technical College is the primary training partner delivering education on trades and workforce training programs serving industry. The management contact is the Dean of Trades and Technology. The Dean is point of contact for scheduling training programs, coordinating with other workforce partners and with the College President and other deans that oversee coursework that may be provided in the BTC portion of the TDC.

TDC Advisory Committee: The WWU Provost and the Dean of the College of Sciences and Technology established an Advisory Committee in 2011 overseeing WWU's activities in the TDC. It is chaired by the CST Dean, and members include a cross-section of WWU leadership, TAG, the Port, private sector and BTC.

Objectives of the Advisory Board:

- Develop strategies for TDC advocacy within the Whatcom and Skagit communities;
- Recruit internal and external users to the TDC;
- Plan and arrange technology development and commercialization workshops;
- Advise on entrepreneurship curricula for TDC based courses;
- Periodically evaluate the TDC and what it is doing and;
- Develop resources and support for the TDC facility.

The Zone Program: 2011-14

Partner Involvement

The key infrastructure asset in the IPZ is the Technology Development Center. It will serve as a centerpiece of Zone activities, as the first phase of waterfront redevelopment creates buildable lands to site new enterprises. WWU, BTC and private industry will work together in and around the facility.

The IPZ management team interacts on different levels related to project sponsorship and collaborative partners in the TDC based on the type of arrangement:

Western Washington University---- R&D projects at the TDC can be either industry- or university-initiated, and both types are currently housed at the TDC. (e.g. New Market Design Lab and the Bus Project). All projects must involve collaboration between the private sector and WWU students and/or faculty. University-initiated projects are typically faculty-driven and start with a grant proposal to an external funding agency or discussions with a potential industry sponsor. WWU's TDC coordinator participates in discussions with the project director to identify suitable space and equipment at the TDC that would be used for the project. Once project funding is secured a TDC Usage Application is completed by the project director and submitted for review by the TDC coordinator and selected members of the TDC Advisory Board. WWU-sponsored business support services including the Center for Economic Vitality (CEV) and Small Business Development Center (SBDC) can interface with business through the process with business counseling, industry research and commercialization resources.

Bellingham Technical College ---- Industry-specific training programs (eg Heath Tecna) and college training curricula (e.g. EMTECH) fall under BTC leadership. BTC coursework is underwritten by the state, student tuition and industry contributions. BTC will normally conduct its course work within its lease space and have access to the common class area for industry-specific training. The Northwest Workforce Council and Employment Security Dept. are also collaborators to bring specific workforce training opportunities to the TDC conference facility.

The common area also provides an opportunity for BTC and WWU to collaborate on programs. They may also engage in each other's workspace should mutual project opportunities arise. The Port manages the area and will rent it for business activities and functions.

Port of Bellingham --- In addition to administrative and lease management responsibilities, Port Real Estate and Economic Development will work together to attract new industry to the waterfront early action item areas.

Alpha Energy --- Alpha Energy is a division of Alpha Technologies Inc. (Alpha) based in Bellingham. It is the private-sector partner engaging in applied R&D with WWU during the course of the business plan. Alpha pioneered the concept of “Total Powering Solutions” from its founding in Burnaby, B.C. over 30 years ago to become a global alliance of industries (the Alpha Group). It is an established leader in the design, manufacture, service and installation of reliable, uninterruptible powering solutions for the Telecom, CATV (Canada), Traffic, Security, Medical, Industrial, and Renewable Energy industries.

Alpha Energy is a full-service engineering and project development company for the distributed generation power industry. One of the nation's leading developers of turnkey photovoltaic (PV) systems for commercial, residential, institutional and remote (off-grid) applications, Alpha Energy is recognized as a market innovator in packaging renewable energy technologies. The Alpha Group is a significant local employer with 250 jobs. Many new WWU graduates have been hired by Alpha Technologies. The collaborative project with IPZ partners is described below.

Non-profit economic development service organizations interface with the management team and with business partners collaborating in the Zone:

- The primary nonprofit collaborator in the Zone has been the Technology Alliance Group through its trade association affiliation with the private sectors, and contractual work with WWU, the Port and other local funding organizations (City of Bellingham, Whatcom County). TAG is housed in the TDC.
- Other key collaborators: The Northwest Innovation Resource Center is a new nonprofit that provides technical assistance to start-up companies in Whatcom County. The Northwest Economic Council and Northwest Workforce Council are the lead regional economic and workforce development support organizations. The Bellingham Innovation Group (BIG) Idea Lab is a private sector “incubator” for web-based technology companies that complements the objectives of the TDC and serves a niche the TDC does not. The BIG Idea Lab is located close to the TDC.

Technical Service Capacity for the Zone

The Waterfront Innovation Zone seeks to attract technology and manufacturing companies to locate in the Zone, and to participate in collaborative R&D partnerships using research capacity from WWU offered by programs in the Colleges of Sciences and Technology, Business and Economics and Huxley College of the Environment. WWU, the third largest university in the state with 15,000 students, possesses the faculty capacity and student talent to strive to implement applied research more flexibly than the larger institutions in the state.

One metric for R&D activity is the presence of intellectual property (IP) such as patents. In 2010 TAG partnered with the Pacific Northwest National Laboratory (PNNL) to perform IP Asset Mapping study to map and analyze patent activity and identify areas of technology and research strength in Whatcom

County. Patent “clusters” include process and mechanical apparatus, aerosol systems and IT/networking related-technology. Interesting patents are related to shoes, bicycles, orthotics, wood ovens, tree climbing equipment and knife designs. These are further industry sectors to explore for opportunity. The goal accomplished by the IP Asset Mapping project and subsequent industry listening sessions was to identify industry IP clusters that correspond with areas of research expertise within WWU. Faculty and staff can use this information to generate university-sponsored projects and attract privately-sponsored projects.

Workforce Development Capacity for the Zone

BTC is the primary training partner delivering education on trades and workforce training programs serving industry. As one of five technical colleges in Washington State serving 3,500 students each quarter, BTC provides extensive educational opportunities and is active in providing incumbent worker and customized training for the region’s employers. The College has a strong history of working with business and industry to acquire training resources to respond to business and industry training needs. It can flexibly respond to training and education program needs within the WIZ.

WWU also delivers workforce development capacity through student participation in R&D projects. For example the Hybrid Bus team includes six student members. In addition, WWU’s College of Business and Economics supplies MBA interns who work through the WWU-CEV, SBDC and on assignment to businesses.

Infrastructure Capacity in the Zone

In addition to the TDC as an anchor resource, over the course of this business plan the following redevelopment activities are anticipated according to the *Waterfront District Draft Sub-Area Plan, 2010*

- Approval of Waterfront District Master Plan and development regulations (2012)
- Balance of building and structure site demolition completed (2012)
- Phase 1&2 streets and infrastructure work
 - Phase 1 (2012-2014)
 - Improvements to Central Avenue including structural repair of wharf, replacement of the water main attached to the wharf and installation of a new signal at the intersection of Roeder and Central. The bid for this project has been awarded and construction will begin early in 2012.
 - Rebuild Cornwall Avenue bridge and relocate railroad.
 - Construct Wharf Street roundabout.
 - Extend temporary Cornwall Avenue to Cornwall Beach Area
 - Phase 2 (2014)
 - Permanent Granary Avenue access from Roeder Avenue
 - Bloedel Avenue from Granary Ave to Commercial Street Green
 - Commercial Street Green from Bloedel Avenue to shoreline loop.
 - Public/Private utilities, including pump station in Commercial Street Green.

- Environmental Cleanup underway: The Port is scheduled to begin active cleanup on four cleanup sites in the Waterfront District in 2012 (Whatcom Waterway, Cornwall Avenue Landfill, GP West, Central Waterfront) with cleanup activities on all sites starting before 2014.

The 2010 dollar cost estimate for Phases 1 and 2 infrastructure is \$56 million. Multiple sources of funding area required to complete this work. The Downtown Waterfront Area development, Marine Trades Area development, WWU Campus expansion will occur beyond 2015. The waterfront area has about 35 acres that is immediately available for new industry around its shipping terminal, and the Port will seek renewable energy manufacturers as well as traditional Port industry.

Market Growth Opportunities for TDC Projects

Applied R&D and Business Services

Targeted industry sectors in Northwest Washington have been identified that correlate with areas where WWU has strong expertise. Special attention will be paid to marine, ground/air transportation and related industries, and other advanced manufacturing seeking services that fit within TDC capabilities, which include:

- Vehicle design, advanced materials and composites
- Industrial design, prototype development
- Energy resources (solar, biomass, biogas, wind, hydro)

WWU created a matrix in its business plan mapping university R&D capabilities in focus areas, primarily through the College of Sciences and Technology, with industrial applications and sample target companies, shown below:

Focus Areas	WWU Capabilities	TDC now	TDC future	Industry/ Application	Example Companies
Polymers & Advanced Composites	AMSEC, Etec	X		marine, transportation	All American Marine, Pacific Paddle Boards, Triton Marine, Janicki, Paccar, Heath Tecna, Boeing, Bullfrog Boats, Future Vehicle Tech, Softride, Allsop
	AMSEC, Etec	X		orthotics, medical & therapeutic devices	Cascade Dafo, Superfeet, NW Podiatric Lab, Corewerks, Shuttle System, New Design Market Lab
	AMSEC, Chemistry, Etec	X		aerosol systems, ropes, textile	Homax, Samson Rope, Diamond Nets, Mustang Survival
Industrial Design, Computer-aided Design	Industrial Design, VRI, Etec	X		consumer & industrial goods, storage devices	Allsop, Wanne Inc., Rainshine Design, Heath Tecna
Manufacturing Processes	Etec	X			Janicki, PACCAR, Nike, C&D Zodiac
Rapid Prototyping	Etec	X		fabrication, manufacturing	Boatbuilders, Alpha Prototypes, Lemac Manufacturing
Transportation	VRI	X		vehicle design, bicycle design	Kitsap transit, Kenworth, Terra, Softride, Outland Design Tech
Energy	AMSEC, VRI	X		photo-voltaic, alternative energy fuels, biowaste stabilization	Alpha Energy, Andgar, Alten Battery Chargers, HydroVolt, Prime Biodiesel
Environmental Sciences	Huxley, Engineering Geology, Geophysics		X		Coppervale, Alpha Energy
Nanotechnology	AMSEC		X		
Biomaterials	Biotechnology, Molecular Biology, AMSEC		X		AnorMed/ Genzyme, Bioplex Nutrition, Barleans Oils
Robotics	CS, Electronics		X		Woodstone
Software, Information Technology	CS, Electronics		X	software, internet content, networking tech	Logos, Qualnetics, Attachmate
Electronics	Etec, Electronics Engineering		X	electronic devices, power supply	Blue Sea Systems, Index Sensors Control, Sensor Link, Sequoia Tech, Integral Tech, Alpha Tech

Involvement of other colleges including Business and Economics (CBE) and Huxley will evolve over the next year and beyond. CBE is planning entrepreneurial development courses in the TDC in 2012. The programs will involve local private entrepreneurs and supporting organizations such as the BIG Idea lab.

WWU will be supported by TAG, the Port and other economic development service organizations in securing both university-sponsored R&D projects and business lead uses in the TDC. Marketing activities will include industry Open Houses and tours, use of WWU and Port website portals, outreach at regional trade shows and networking. WWU faculty will be encouraged and supported to pursue external funding sources to support their areas of interest.

The WWU/Alpha Energy Partnership Project

Noted above, the WWU-AMSEC program is working on developing prototypes for a new concept for ultra-high efficiency collection and concentration of sunlight. This initial project is expanding in collaboration with Alpha Energy, TAG, BTC, NW Innovation Resource Center, University of California and the Port into a larger scale proposal related to greenhouse gas emissions mitigation. The project is seeking funding through a new program established by the Northwest Clean Air Agency (NWCAA). The project has a number of phases:

- 1) Installation of meteorological and solar observatory instrumentation on the TDC roof. This is in partnership with the University of California-based Solar Power Forecasting Initiative, which has a network of solar monitoring systems throughout southern California and the southwest. It would monitor and uniquely forecast solar irradiance to support the development of solar applications in low light environments. It would involve hands-on training educational opportunities for students (Fall /Winter 2011)
- 2) Development of an R&D facility supporting university and industry projects aimed at developing new, transformative renewable energy and energy conservation technologies tailored to the unique climatic and market conditions of the Pacific Northwest. Initial projects include: the development and testing of combined PV / wind turbine systems, including installation of a 200 W off-grid test bed system (an Alpha product); research into new solar PV concentrator technologies optimized for cloudy, low solar resource conditions, including testing of prototype devices; and research into more fuel-efficient vehicles for private and public transportation; a nexus with the Vehicle Research Institute. (2011-)
- 3) A hands-on learning and work-force training component preparing skilled workers needed to grow and support the renewable-energy economy in our region. BTC proposes to develop a renewable energy laboratory for workforce training. WWU is currently developing renewable energy degree programs and will use project equipment for hands-on learning and R&D experiences. (2011-)
- 4) On-grid PV array (~100 kW) installed on the TDC rooftop. The array is expected to bring about emissions reductions equivalent to over 3M lbs CO₂ during its 25 year lifetime while providing multiyear performance and benchmarking data against which the R&D component, AMSEC's project, can be tested. (2013-14)

The funding proposal is due to NWCAA in fall 2012. Successful applications will be funded by NWCAA in June 2013.

Workforce Development and Training

Starting in fall 2011 BTC's Fisheries & Aquaculture Sciences Program will use the lab space at the TDC. This is a unique program in Washington State, and consistent with the IPZ focus in marine. The Fisheries Program prepares students for employment in a variety of fisheries occupations. The program offers an Associate of Applied Science degree or a certificate in Fisheries Resources. With strong ties to WWU's Huxley College and Northwest Indian College this facility will serve as a workforce training and research facility focusing on marine industries supported by the fisheries and aquaculture (food processing, habitat restoration, water quality, land and water based aquaculture, marine recreation and boat building and maintenance.). The program is expanding in the fall of 2011 due to demand from students and the workforce (up to 24 students per quarter). Washington State estimates up to an 18% increase in jobs available for graduates of this program through 2017.

Longer term BTC is developing plans for a permanent facility for the Fisheries Program and related programs, which could also support private enterprise. Potentially this new facility will be constructed within the IPZ. The TDC provides a good transition point to relocate the program to the waterfront.

Finally, BTC and Whatcom Community College are developing an interagency agreement to expand customized/ contract business and industry training in Whatcom County through the new Northwest Center for Business & Industry Training. Using the collective expertise from both colleges - small business management, lean practices, industrial expertise -- this new training will be held in the classroom at the TDC and on the college campuses. A full-time coordinator of these efforts will be a shared position between both colleges.

Entrepreneurial Climate in the Zone

Much of the Waterfront Innovation Zone site is former heavy industrial use with water and ground environmental contamination. Cleanup, planning entitlements and infrastructure will be needed before private investment and job creation occurs. These are in the final stages of negotiation at this date; a Sub-Area (Master) Plan is anticipated to be submitted to the City for approval in 2012. The area closest to the Bellingham Central Business District - the "Downtown Waterfront" - will be the first developed as infrastructure and access improvements are constructed (estimated 2014).

Some Port-owned areas of the IPZ can be utilized immediately. Those sites may include the 800 Cornwall Building and land, the Bellingham Shipping Terminal and adjacent uplands and property in the Hilton/Roeder vicinity. For these "early action item" areas the Port and partners will actively pursue new industry, including renewable energy manufacturers.

Development services and incentives for new and potential companies can be provided directly by the Port through lease mechanisms, public finance programs such as LIFT, CERB and the County Economic Development Investment program and the limited number of state incentives that exist. The City of Bellingham Office of Business Relations and Economic Development provides businesses interested in locating in the Zone a "one stop shop" for all permitting, local tax and regulatory requirements of the City.

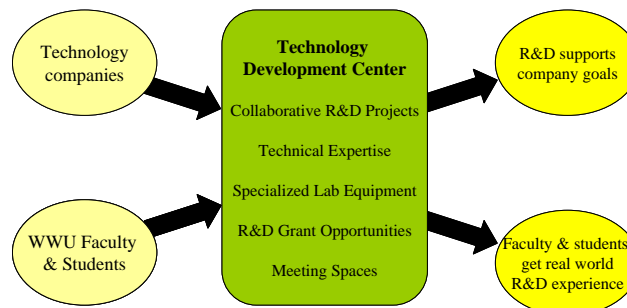
Industry Collaboration and Commercialization

The TDC is currently best equipped to target companies in need of commercialization assistance involving prototype development and proof-of-concept for new product development. The commercialization process has many phases. The phases that the TDC will seek to support include: product assessment, feasibility and prototype and pre-production prototype.

Wherever feasible the TDC will seek to refer industry clients to outside business support services such as WWU business counselors or the Innovation Resource Center should the client make the inquiry to move the project to the phase for R&D applications. These agencies should also supply customers to the WWU research faculty and the TDCs.

The *WWU TDC Facility Operation Policy and Procedure Manual* provides the general operational guidelines for faculty and students to engage in R&D projects with client users in WWU's space of the TDC. These procedures are a pre-cursor for any commercialization and technology transfer that may occur for intellectual property developed at WWU and the IPZ. To facilitate quicker deployment WWU developed an Agreement for Services of short-term and medium to longer term projects.

The diagram below illustrates the mechanism for industry collaboration and the resources available through WWU and the TDC.



Facilitating technology transfer and commercialization will be a key activity at the TDC. The TDC will work closely with the WWU Office for Research and Sponsored Programs to support the rapid processing of grants, IP agreements, and provisional patent applications. The TDC will also consider the opportunity to support programs such as industry roundtables, workshops, and student innovation showcases.

Commercialization Opportunities

New Market Design Lab and Envision Telepharmacy are currently testing its telepharmacy system at beta sites in the US and Canada. In the last year, the system is saving the beta site hospitals an estimated \$250,000 annually. New Market Design Lab estimates that telepharmacy has the potential to save the medical industry up to \$6 billion a year in the US and Canada. The company plans to build on the success of its current project to partner with other companies that are interested in developing products and .

The WWU Hybrid Bus project provides an opportunity to deploy the commercialization plan. As the prototype vehicle is being developed over the next four years, private sector opportunities will be explored for production.

The WWU-AMSEC solar project and collaboration with Alpha Energy provides as strong potential to deploy commercialization/tech transfer of a new technology. For example, constraints the industry faces for solar collectors is the space required for PV arrays. Enhanced solar concentrator technology that increases solar power per unit area would provide competitive advantages.

Sustainability Plan

Facility Operational Costs: Over this four-year business plan the Port, WWU and BTC will continue a lease arrangement with the TDC operation. Accordingly the parties will pro-rate the common maintenance and utility costs of the TDC by their shares of the facility. Lease revenue generated within the Waterfront District by other tenants underwrites the Port's costs. The Port manages and rents the conference room for outside users.

TDC Project Costs: WWU and BTC are responsible for raising funds to support project work in their respective facilities. WWU's internal Business Plan and Policies provides financial guidance and a revenue model on competitive pricing for use of the facility, while providing leverage as a training and economic development facility. BTC coursework is underwritten by the state, student tuition, industry contributions and grants.

Administration responsibilities for the IPZ are incorporated in Port staff time, which is supported by local property taxes. Any new lease activity created through Zone activities in business expansion/attraction will provide operating revenue for the Port and support further redevelopment of the Waterfront Innovation Zone.

Measurements and Reporting

WWU's plan to measure success in its area of the TDC include:

- Number of active and completed industry projects.
- Number of TDC facility users measured against target established in WWU plan.
- Number of inquiries and applicants to the TDC.
- Student/faculty involvement such as number of participants and quality of projects.
- Grant activity such as total grant proposals submitted and dollars attracted annually.
- The cumulative amount of private funding, i.e. usage fees associated with TDC projects.
- Patent activity measured by annual number of invention disclosures and patents applications.
- An estimated amount of cumulative jobs associated with clients served by the TDC.
- Participation in tours of the TDC facilities and other TDC programs such as workshops.

BTC's plan to measure success in its area of the TDC include:

- Number of students in college programs at TDC
- Number of students in industry training programs at TDC
- Number of students completing training or education programs
- Number of students employed in related field within six months of completion, type of industry

- Number of incumbent workers advancing in career as result of industry training
- Wages and benefits for job placement
- Amount of training dollars leveraged (public/private)
- Responses to graduate and employer satisfaction surveys
- Number of students working on collaborative projects with WWU

In addition to successes achieved through activities in the TDC, the Port is tracking:

- Progress in completing Phase 1 and 2 infrastructure construction to serve the waterfront (primarily City responsibility)
- Progress in completing the environmental cleanup responsibilities through agreements with the Dept. of Ecology
- Private investment attracted to the waterfront in business expansion and attraction
- Job creation in new business activity on the waterfront, particularly in marine, transportation and energy-related industries.
- Other metrics as specified in the IPZ Agreements with Dept. of Commerce.