

MISSION

Snohomish County economic development, education, government, industry, and workforce development partners have joined forces to continue enhancing support for this **Aerospace Convergence Zone** with strategically mobilized tools and resources to ensure the continued preeminence of Washington's aerospace industry to the benefit of our state, its businesses, and its residents.

GOALS

- Maintain a structure and process for the **Aerospace Convergence Zone**.
- Create synergy between industry, research, commercialization, and workforce development to ensure the continued global preeminence of Snohomish County's aerospace industry and the prosperity of its residents.
- Increase efforts to develop a skilled workforce for aerospace firms.
- Increase the number of aerospace industry businesses that locate, are retained, and expand operations in the **Aerospace Innovation Zone**.
- Increase promotion of the **Aerospace Innovation Zone**.

LEADERSHIP/GOVERNANCE

Under the guidance and within the parameters established by the Snohomish County Executive's Office, the **Aerospace Convergence Zone** will be governed by the Snohomish County Blueprint 2015 Partnership comprised of representatives from economic development, education, government, and workforce development. The partners joined forces in 2003 to create a blueprint for mobilizing the assets and resources of education, workforce, housing, and economic development around eight industry clusters targeted for attraction, retention, and expansion in Snohomish County. The manufacturing industry cluster with a focus on aerospace was identified as a key engine of economic activity driving Snohomish County's, and Washington's, economy. Workforce Development Council Snohomish County recently worked with the Workforce Training and Education Coordinating Board on a cluster project which affirmed that aerospace remains Snohomish County's key engine of economic activity, one that should receive significant attention for years to come.

The charge of the Partnership is to:

- Lay the groundwork for the development of plans and programs support the clusters through the efficient and cost-effective use of resources;
- Make the case that Snohomish County is a region for the development of the clusters; and
- Provide a framework for action steps and further discussions with other stakeholders and partners.

To accomplish its charge, the Partnership produces data-driven and industry-backed cluster reports. The research and data presented in the reports can be used to:

- Identify jobs that are available and/or needed to expand clusters;
- Identify knowledge and skills individuals must have to be successful in the jobs; and
- Identify educational and training programs required to develop a skilled workforce to fill the jobs.

In addition to producing reports, partners develop action plans for cluster-related work, mobilize to act on cluster-related work, respond to grants and opportunities, mobilize around community needs and projects, inform and engage in public policy, and provide oversight and advising on joint efforts when needed.

The Partnership is led by a Steering Committee that meets to coordinate specific tactics and action steps to realize its strategic vision. The Partnership has been extremely successful: it has aligned and attracted more than \$40 million in resources to meet the needs of targeted industry clusters. Information about the Partnership, its members, and its work as well as reports generated may be found at <http://www.snocoblueprint.org>.

The Snohomish County Blueprint 2015 Partnership Steering Committee is responsible for oversight of the **Aerospace Convergence Zone** as described in the Memorandum of Understanding which also specifies specific partner responsibilities for administration of the **Aerospace Convergence Zone** and for creating Innovation Partnership Zone deliverables.

Consistent with statutory requirements, Workforce Development Council Snohomish County, the local workforce development council for Snohomish County, will continue to serve as the Local Zone Administrator for the **Aerospace Convergence Zone**, assuming responsibility for ensuring all plan deliverables are accomplished and reports prepared. Workforce Development Council Snohomish County is experienced in the administration of Federal and state grants and has the capacity to produce qualitative and quantitative analyses of both processes and outcomes.

Workforce Development Council Snohomish County will ensure sustainability of the **Aerospace Convergence Zone** over the next four years by convening regular meetings with Blueprint 2015 partners and other key stakeholders as well as contributing \$50,000-\$70,000 in-kind per year to provide staff to support the effort.

STRENGTHS OF THE IPZ

Technology and Human Capital

Many of the **Aerospace Convergence Zone's** technology and human capital assets are fully integrated under the umbrella of the Washington Aerospace Training & Research Center (WATRC, formerly the Advanced Materials and Manufacturing Innovation Center or AMMIC), making the **Aerospace Convergence Zone** the global training center for composites, advanced materials, and manufacturing processes that form the foundation of this revolution underway in aircraft production. More information about WATRC may be found at <http://www.washingtonaerospace.com>.

Additionally, the Employment Resource Center (ERC), dedicated to training the 787 Dreamliner production workforce, is located within the **Aerospace Convergence Zone**.

In May 2011, the Governor signed legislation requiring University Center of North Puget Sound to emphasize teaching science, technology, engineering, and math (STEM) disciplines and expand availability of degrees and certificates in engineering disciplines such as civil, mechanical, aeronautical, and aerospace manufacturing. This center is also located in the **Aerospace Convergence Zone**.

There are additional key educational centers operated by institutions of higher education in the **Aerospace Convergence Zone**.

The first, the Center of Excellence for Aerospace and Advanced Materials Manufacturing, is operated by Everett Community College for the purpose of creating a highly skilled and readily available workforce critical to the success of the industries driving the state's economy and supporting Washington families. This Center of Excellence is working with a consortium of 26 aerospace and advanced manufacturing education and training organizations called Air Washington and has released a new directory of all of its programs which may be found at <http://www.the-mpdc.com/air-washington.asp>.

The second, the Federal Aviation Administration Center of Excellence for Advanced Materials in Transport Aircraft Structures, is a consortium of academic institutions including University of Washington and Edmonds Community College, aerospace companies, and government agencies.

The third, the National Science Foundation's National Resource Center for Materials Technology Education, is headquartered at Edmonds Community College and is creating a national network of industry and educational professionals to increase the number and diversity of highly skilled technicians ready for employment.

Workforce Development Council Snohomish County has been actively partnering with higher education to bring more education and training resources into our community, such as supporting Edmonds Community College's application for an online class in lean manufacturing, Spokane and Everett Community Colleges' application for U.S. Department of Labor funding for A&P Mechanics, and Washington State University's efforts to open a branch campus in Snohomish County.

While these postsecondary resources are helping the aerospace industry meet its immediate pressing needs, there is deep concern about the preparation of students in the K-12 system for industry careers requiring a state-of-the-art foundation in STEM. The Boeing Company and other Snohomish County manufacturers expect to lose 10,000 engineers in the next five to ten years to retirements. At the same time, the aerospace sector will expand. Research and anecdotal information has shown most youth going into STEM careers set their goals in junior high or early high school allowing them to focus their class work and out-of-school experience towards their career goals. Programs are underway to address this issue.

Within the **Aerospace Convergence Zone**, a world-class career and technical education program in Advanced Manufacturing/Machining Pathways has been operating at Snohomish High School and Glacier Peak High School, both in the Snohomish School District. The Snohomish School District also received a \$900,000 National Science Foundation grant with Everett Community College to create advanced manufacturing curriculum to be shared with all school district manufacturing programs. Edmonds School District has expanded pre-engineering/STEM programs at three high schools and four middle schools since the 2007 application and has plans to expand programs at another high school and middle school in 2012. Arlington School District operates successful FIRST Robotics and other STEM programs at Arlington High School. Further, the Washington Alliance for Better Schools implemented a Summer Externship Project funded by The Boeing Company with the help of IPZ partners, Workforce Development Council Snohomish County and University of Washington. The program provides professional development training coupled with externship placements with industry businesses for middle and high school teachers who can then apply this knowledge to infusing STEM principles from industry into classroom lessons. Several of the teachers' industry placements have been with aerospace firms.

Additional technology and human capital assets that support the aerospace industry include The Future of Flight Aviation Center & Boeing Tours which offers a wide array of hands-on educational experiences for youth and adults. Further, many industry partners offer ongoing education to their employees at these facilities. These assets are supplemented with entrepreneurial assets that support research, technology transfer, and commercialization that form a network of entrepreneurial programs and services.

Infrastructure

Snohomish County ranks among the top in the nation as a digital county for its innovations in on-line service delivery, infrastructure, architecture, and governance. In addition to those offered by Snohomish County, the digital resources of the **Aerospace Convergence Zone** include The Future of Flight Aviation Center & Boeing Tours facility at Paine Field which serves as a location where industry, government, research, education, economic development, and workforce development representatives regularly convene in both face-to-face and virtual formats. In addition to its numerous meeting rooms, it has extensive, state-of-the-art communications technology including the tools needed for global virtual conferencing and distance education.

This capacity enhanced by the technological capacity for virtual conferencing and distance learning offered by Edmond Community College, Everett Community College, and Washington State University on their campuses, including at University Center of North Puget Sound which serves Central Washington

University, Eastern Washington University, University of Washington, Washington State University, Western Washington University, Edmonds Community College, Everett Community College, and Skagit Valley College.

It is also enhanced by the technology and training rooms available at the offices of Workforce Development Council Snohomish County, Economic Alliance Snohomish County, the Small Business Development Center, and the Procurement Technical Assistance Center main office which are co-located in a single facility approximately one mile from Paine Field and by the technology and conference facilities located nearby on the Snohomish County government campus in downtown Everett.

Additional assets include the availability of developable land inside the **Aerospace Convergence Zone** and the urban growth areas contained in the **Aerospace Convergence Zone**, the availability of commercial and industrial buildings, and the “open for business” approach utilized by Snohomish County and partner municipalities which offers technical assistance and timely permitting to industry employers.

Other

Aerospace epicenter: Innovation Partnership Zones are intended to have a dense proximity of globally competitive firms in a research-based industry as signified by standardization certification or other evidence of international success. There is arguably no industry in the nation that that is more dependent upon research or more global in scope than is Washington’s aerospace industry cluster which has its greatest density in the proposed **Aerospace Convergence Zone**. The cluster is composed of businesses involved in the design and manufacture of civil, commercial, and military aircraft; aircraft parts and auxiliary equipment; aircraft engines and engine parts; guided missiles; space vehicles; and navigation and guidance systems.

Aerospace is the leading manufacturing industry in Washington. The importance of the industry is reflected in the emphasis placed on supporting its 650 businesses in Washington and on attracting new companies while expanding those already here. Nearly 30% of the Washington State Aerospace Suppliers listed in the *Aerospace Industry Member Directory* developed by the Aerospace Futures Alliance of Washington are based in Snohomish County. **There is no comparable concentration of aerospace industry businesses in the world.**

These businesses are operating in an intensely competitive global environment. The Boeing Company’s 787 Dreamliner aircraft is being constructed in large components by partners from the U.S., Italy, and Japan and includes parts from Australia, Canada, China, England, France, South Korea, and Sweden. These components are then transported to the Everett plant for final assembly.

Aero-tourism: Production of a truly global aircraft has generated international media attention. The Boeing Company’s roll out of the 787 Dreamliner at Paine Field in July, 2007 was watched by more than 10 million viewers worldwide. This media attention on aerospace production is converging with aero-tourism at Paine Field which is home to a number of attractions that have dramatically increased global tourism to the **Aerospace Convergence Zone**.

The jewel in the crown is the Future of Flight, a unique multi-use facility which offers interactive displays and hands-on exhibits to help visitors learn about commercial aviation and its exciting future developments and serves as the starting point for the Boeing Tours. The Future of Flight also offers a sleek venue for business meetings and events in eight distinctive spaces for hosting small executive meetings to large scale gala events. **There is no comparable tourist attraction in the world.** The Future of Flight surpassed its visitor goal in 2010 by recording more than 200,000 visits, the most visits in one year since opening in late 2005, and celebrated its millionth visitor in August 2011. A new building addition is expected to make the facility more appealing to rent out for catered events.

Additional attractions include the Museum of Flight Restoration Center, the Historic Flight Foundation Restoration Center, and Flying Heritage Collection, a collection of rare World War II aircraft, housed in a

51,000 square foot hangar. These attractions are coupled with other events that promote aero-tourism throughout the **Aerospace Convergence Zone**.

LONG-TERM MARKET GROWTH FOR THE TECHNOLOGY

The county's largest employer, The Boeing Company, is actively seeking to hire more workers to support a dramatic increase in research and development and production. Aerospace jobs are up 6.8%; Boeing added 1,400 new workers in June 2011 alone (6,600 total over the past year) not including those hired to replace retirees. The \$35 billion contract to build 179 tankers for the U.S. Air Force is without a doubt a tremendous indicator for the long-term market growth for the technology of this region with 11,000 jobs expected to be created or retained all across Washington as a result of the award. The 787 Dreamliner continues to take orders which will ensure growth for years to come.

ENTREPRENEURIAL CLIMATE

Washington is among the nation's leaders in the rate of new business creation and Snohomish County offers resources entrepreneurs need to thrive. Economic Alliance Snohomish County is committed to growing and nurturing a vital regional economy that is globally competitive. They achieve this by expanding partnerships, developing key resources, and building the infrastructure systems that create local and regional employment centers. One of the Alliance's major priorities is to support small business and entrepreneurial programs such as the Procurement Technical Assistance Center, Small Business Transportation Resource Center, and Small Business Development Center. These programs have been successful in assisting new businesses, increasing the amount of venture capital invested, increasing the amount of payroll generated, and increasing revenue for businesses less than three years old. Specifically, so far in 2011, the Procurement Technical Assistance Center has helped with 321 contract awards valued at \$22.8 million and aided in the retention/creation of 450 jobs. The Small Business Development Center has worked with 115 clients resulting in five new business start-ups and more than \$360,000 in loans.

COMMERCIALIZATION PLAN

Action Initiative #1: Expand K-16+ Programs Focused on Aerospace Education and Training

Lead: Everett Community College Center of Excellence for Aerospace and Advanced Materials Manufacturing

Objective: Ensure K-16+ education in Snohomish County that results in a skilled aerospace research and development and production workforce. Develop a full K-16+ approach by expanding K-12 Career and Technical Education and STEM programs, expanding WATRC and other post-secondary research and training efforts, and creating higher education opportunities with Snohomish County's new 4-year university, Washington State University.

Plan for measuring and reporting: This objective will be measured by an increase in new programs, degrees, certificates, and aerospace job placements.

Action Initiative #2: Attraction, Retention, and Expansion of Zone Businesses

Lead: Economic Alliance Snohomish County

Objective: Expand current Blueprint 2015 Partnership to include a re-constituted Aerospace Subcommittee to develop and implement strategy for the attraction, retention, and expansion of aerospace businesses in the **Aerospace Convergence Zone**. Increase the number of aerospace industry businesses that locate, are retained, and expand operations in the **Aerospace Innovation Zone**.

Plan for measuring and reporting: This objective will be measured by an increase in business activity as demonstrated by: new company attraction/creation, number of jobs created, gross sales – domestic, gross sales – export, and tax revenue.

Action Initiative #3: Zone Marketing

Lead: Economic Alliance Snohomish County

Objective: Expand current Blueprint 2015 Partnership to include a re-constituted Marketing Subcommittee to develop and implement a marketing plan. Increase promotion of the **Aerospace Innovation Zone**.

Plan for measuring and reporting: This objective will be measured by an increase in promotional efforts such as signage, print materials, a website, and press.

ACCOMPLISHMENTS/PROGRESS TO DATE

Private Sector Investment (select examples since 2007 designation)

Esterline – Dollars Invested = \$53,300,000: Esterline, with its venerable KORRY® avionics products, has operated in the Puget Sound region for over 70 years and has supplied parts for every Boeing commercial jet program, most recently winning a contract to build cockpit panels and flight controls for the 787 Dreamliner. The company needed a new facility with increased square footage and lower cost per square foot to house its growing operations and had considered moving out of state to meet its needs. It was critical that Washington retain this leading aerospace business and its talented pool of workers and prove that the region is and will continue to be *the* place for the growth and prosperity of the aerospace industry.

Esterline conducted a search for a new location in 2007/2008. Snohomish County responded with an attractive land-use opportunity costing \$.047 per square foot compared to \$2.50 per square foot to remain near its current location. In addition to a favorable cost position, the site provided close proximity to the Boeing aircraft assembly facility and other aerospace companies, a fast permitting process, a skilled local workforce, and a large amount of enthusiasm for the project.

Esterline announced on March 27, 2008 its decision to move its operations and workers to Snohomish County. Construction of the new Esterline facility began on August 14, 2008 and its grand opening was September 1, 2009. Snohomish County leased a fourteen acre parcel on airport property to developer Capstone Partners which built a 216,000-square-foot building and leased that to the local Esterline subsidiary. Capstone Partners will pay Snohomish County \$289,000 each year for 55 years, demonstrating the significant investment of the property and permanence of the Esterline relocation.

Esterline's decision to move to Snohomish County was of significant value to the community: it kept an aerospace company that considered moving out of state here in Washington, a significant victory in Washington's quest to remain a dominant aerospace center.

Esterline was persuaded to relocate within the IPZ boundary due to a compelling package offered by Snohomish County. Among the group who worked to recruit Esterline were active IPZ partners. As Executive Aaron Reardon stated, "The [Esterline] deal highlights for other companies that we're ready to compete for their jobs." It also highlights the crucial role of the IPZ partners in attracting business, such as Esterline, to Snohomish County.

Further, the Department of Commerce provided a \$1,700,000 low interest loan and \$300,000 cash grant to fund road improvements and utilities serving the new Esterline facility and the parts for a new company at Paine Field. The team that partnered in successfully earning this funding consisted of active IPZ partners.

The relocation of Esterline's operations to the IPZ zone demonstrates the success that takes place when workforce development, economic development, government, and industry partners join forces to act on behalf of a vital and flourishing economy and a vibrant and sustainable community.

The Boeing Company – Dollars Invested = \$2,500,000: WATRC operates in a 15,000-square-foot building within the IPZ that celebrated its grand opening on June 3, 2010. The Boeing Company invested funds that allowed the facility to come to fruition. Snohomish County also dedicated space and resources for the center. Since then, the center has received a \$1,750,000 appropriation from Washington State, a \$600,000 federal appropriation, \$450,000 in Governor's Workforce Investment Act discretionary funds for its facility in Everett and \$150,000 for Spokane, and a \$250,000 Innovation Partnership Zone award from the Washington State Department of Commerce. Snohomish County Executive Aaron Reardon was instrumental to bringing WATRC to fruition. Supporters, including Governor Gregoire and U.S. Representative Jay Inslee, attended the opening of the center. This level of support shows the value of the center, which works with the state's 650 aerospace companies and 120,000 workers to provide customized training on demand. The support of the IPZ was crucial in the development of the center which is considered the culmination of ongoing work to advocate and secure funding for support of Washington's aerospace industry by the Aerospace Futures Alliance. The Aerospace Futures Alliance connects the center's activities to industry and advocates for additional resources as needed to aid in its success, key elected officials, and IPZ partners including Edmonds Community College which provides center oversight and coordinates the delivery of training to serve the aerospace industry in collaboration with the Spokane Community College District.

Job Creation and Retention (select examples since 2007 designation)

Esterline – Jobs retained = 560: The Esterline move kept 560 full-time jobs in Washington. As the home to KORRY® control products, one-half of the facility's workforce includes management, administration, and engineering personnel. More than 230 jobs are in manufacturing, specifically assembly operation. Over 40% of the total new jobs are above the average county wage.

Aviation Technical Services – Jobs retained = 500: The Boeing Company leased two hangers at Aviation Technical Services in order to make post-production modifications to the 787 Dreamliner. Without this space, The Boeing Company would have needed to make these modifications in another state. The support of the IPZ was helpful in keeping all of the jobs associated with this operation in Snohomish County.

Other: The success of the IPZ resulted in increased activity and employment for the Snohomish County aerospace cluster as a whole. Firms located outside of the IPZ that supply parts and products for firms within the IPZ saw employment increases. Further, firms located outside of Snohomish County moved to Snohomish County due to IPZ partner efforts. Other firms new to Snohomish County since the 2007 application include: Avtech, Diehl Aerosystems, and Primus International.

Enhanced Collaboration (select examples since 2007 designation)

The Future of Flight Foundation: The Future of Flight Foundation was able to launch a new education program and expand the student exchange program which trains apprentices in aerospace maintenance and restoration. Both projects address the need to foster careers and technical education programs in advanced manufacturing/machining for K-12 schools as well as help to develop the intellectual base in these fields.

Historic Flight Foundation: The Historic Flight Foundation was established in 2003 as John T. Sessions Historic Aircraft Foundation with the intention of collecting, restoring, and sharing significant aircraft from the period between the solo Atlantic crossing of Charles Lindbergh and the first test flight of the Boeing 707. Beginning in 2006, the primary focus became planning for a permanent facility for sharing the collection, maintaining the aircraft for flight, and restoring aircraft that might either be added to the collection or exchanged for aircraft better aligned with the mission and message. A facility within the IPZ

provided the perfect location, and the permanent facility for Historic Flight Foundation, including a Restoration Center and Education Center, opened in early 2010.

Flying Heritage Collection: After three years in a small warehouse, Microsoft co-founder Paul Allen moved his collection of fifteen World War II-era airplanes and other aviation artifacts to a 51,000-square-foot former hangar at Paine Field. The Flying Heritage Collection is now a premiere aviation attraction for visitors of all ages.

Other

Innovation: Several patents per year are secured as a result of IPZ activity. This activity will continue, especially as a result of the Governor's new law passed in 2011 expanding membership of the Washington Economic Development Commission and calling for a strategic approach to fostering an innovation economy. The Governor highlighted The Boeing Company in her statement and the **Aerospace Convergence Zone** will continue to align with her goals by diversifying and strengthening private sector involvement and innovation activity.

WATRC: The **Aerospace Convergence Zone** achieved the main goal for the 2007-2011 IPZ designation which was to bring WATRC to fruition. The center is up and running and graduating students are securing employment in the aerospace industry. Nearly 85% of the center's graduates who interviewed for aerospace jobs received offers. More aspiring aerospace workers will be able to receive training in February 2012 when an expansion and renovations at WATRC are completed, allowing the center to double the number of students it can train. The ongoing success of WATRC aligns with the Governor's interest in ensuring that Washington aerospace jobs are filled by Washington aerospace workers by providing the cutting-edge skills they need to design, build, and maintain the aircraft of tomorrow.