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Aerospace Pipeline Advisory Committee

Executive Order 12-05

Governor's Executive Order 12-05 issued September 12, 2012 disbanded the Washington Council on Aerospace

- The Governor's Office of Aerospace (Alex Pietsch, Director) was instructed to work with the following entities as follows:
 - The Washington Aerospace and Advanced Materials Manufacturing Workforce Pipeline Committee, to ensure that State's workforce training programs meet the needs of the aerospace industry
 - The Joint Center for Aerospace Technology Innovation, to promote and foster research and development activity to ensure that Washington remains at the cutting edge of aerospace technology
 - The Washington Aerospace Partnership and other organizations and agencies across the state, as necessary, to assist in the development, maintenance, and execution of a statewide aerospace industry strategy.



Aerospace Pipeline Advisory Committee

Governor's Office of Aerospace

Governor's Office of Aerospace

- Created in response to Project Pegasus/Accenture report
- Charged with coordinating statewide support and promotion of the aerospace industry
- Collaborates with Dept. of Commerce, Washington Aerospace Partnership, Aerospace Futures Alliance of Washington, ADOs and local economic development efforts
- Developing a statewide aerospace strategy



Aerospace Pipeline Advisory Committee

Governor's Office of Aerospace

Washington Aerospace Opportunities

- 1,248 aerospace-related companies, 128,000+ employees
- Unprecedented production increases (Boeing hired 13,000+ employees since February 2011)
- New commercial programs (737 MAX, 787-10X, 777X)
- Emergent subsectors:
 - Unmanned systems/vehicles
 - Aviation biofuels
 - Space



Aerospace Pipeline Advisory Committee

Second Substitute House Bill 2156

- Second Substitute House Bill 2156 was passed in the 2012 Legislative session. The bill relates to the “coordination and evaluation of workforce training for aerospace and materials manufacturing.” The bill aims to improve the state aerospace training system by better aligning it with the industry’s immediate and long term training needs. The legislation also seeks to “increase jobs available for Washington’s citizens” by increasing their skill development and training.

Aerospace Pipeline Advisory Committee

Second Substitute House Bill 2156

The State Board for Community and Technical Colleges (SBCTC) is to “facilitate coordination and alignment of aerospace training programs to the maximum extent possible.” This is to be done through coordination with other training and apprenticeship program providers. The alignment activities include:

- Providing current information about the state’s programs.
- Providing information about grants and partnerships.
- Coordinating professional development of faculty and training providers.
- Evaluating programs identified by the Aerospace Pipeline Advisory Committee.
- Making specific budget recommendations to the Governor and the Legislature for aerospace and advanced materials manufacturing programs.



Aerospace Pipeline Advisory Committee

Second Substitute House Bill 2156

SBCTC is empowered to “establish an aerospace and advanced materials manufacturing pipeline advisory committee” with the majority of the 11-15 members coming from the industry. Labor representation (2) from the industry is also included.

The Aerospace Pipeline Advisory Committee’s duties include:

- Providing direction for a skills gap analysis produced with the Workforce Training and Education Coordinating Board (Workforce Board) using data developed from the Education Research and Data Center (ERDC)
- Establishing goals for students served, program completion rates, and employment rates.
- Coordinating and disseminating industry advice from aerospace and advanced materials programs.
- Recommending training programs for review by the Workforce Board in coordination with SBCTC.



Aerospace Pipeline Advisory Committee Chronology

- SSHB 2156
 - Approved March 29, 2012
- First Aerospace Pipeline Advisory Committee meeting convened
 - July 19, 2012
- Executive Order 12-05
 - Enacted September 12, 2012
- Interim Pipeline Committee Report Published
 - September, 2012
- Pipeline Committee Meeting, vote on Chair and Vice-Chair
 - October 23, 2012
- Creation of Data Sub-Committee and Legislation Sub-Committee
 - October 23, 2012
- Pipeline Committee Meeting, legislative recommendations vetted
 - November 29, 2012
- Final Pipeline Committee Report Published
 - TBD



Aerospace Pipeline Advisory Committee Membership

Industry Representatives

- **Frank Nichols**, CEO, Silicon Forest Electronics
- **Eric Hahn**, Vice President/organization Development, General Plastics
- **Michael Greenwood**, Senior Manager, The Boeing Company
- **Al Pennell**, The Boeing Company
- **Debbie Byrd**, Human Resources Manager, GE Aviation Services LLC
- **John Theisen**, President and CEO, ORION
- **Jackie Davis**, Regional Sales Manager, AMI Metals Inc
- **Bahman Hadi**, Cascade Engineering Services
- **Tom Doughty**, VP Administration, Janicki Industries
- **Ben Hempstead**, Engineer-Mechanical Lead, Electroimpact
- **Linda Lanham**, Director, Aerospace Future Alliance

Education Representatives

- **David Beyer**, President, Everett Community College
- **Larry Cluphf**, Director, Washington Aerospace Training & Research Center
- **Steve Hanson**, President, Renton Technical College
- **Laura Hopkins**, Executive Director, Aerospace Joint Apprenticeship Program

Labor Representatives

- **Ken Atkinson**, Design Engineer, SPEEA, IFPTE Local 2001
- **Ron Harrell**, Staff Assistant, IAM&AW District Lodge 160

Ex-Officio Members

- **Alex Pietsch**, Director, Governor's Office of Aerospace
- **Mary Kaye Bredeson**, Director, Center of Excellence for Aerospace & Advanced Materials Manufacturing
- **Betty Klattenhoff**, Career and Technical Education Director, Office of the Superintendent of Public Instruction
- **Marty Brown**, Executive Director, WA State Board for Community & Technical Colleges
- **Alexis Holzer**, Assistant Director-Economic Development, Washington State University

Committee Staff

- **Jim Crabbe**, Director-Workforce Education, WA State Board for Community & Technical Colleges
- **Kendra Hodgson**, Policy Associate, WA State Board for Community & Technical Colleges
- **Bryan Wilson**, Deputy Director, Workforce Training & Education Coordinating Board
- **Tina Bloomer**, Policy Research Associate, WA State Board for Community & Technical Colleges
- **Jon Agnone**, Assistant Research Manager, Workforce Training & Education Coordinating Board



Program Evaluation – Identifying programs

- Identified industry codes (NAICs) consistent with Aerospace and related activities.
- Reviewed employment records, as recent as 2012, of students from three school years (2001-02, 2005-06, and 2010-11).
- 14 Community and Technical College (CTC) programs of study identified with 10 or more former students employed in aerospace and related firms. (not all manufacturing related)

Aerospace Employer Survey

- Broadly distributed Fall 2012.
- 186 firms responded.
- 26.2 percent response rate.
- Collected responses throughout state.
- Roughly half from Pierce, King & Snohomish Counties.
- Some firms are still reporting back.

Who do they do business with:

- The Boeing Company – 77 percent
- Bombardier, Inc. – 41 percent
- Airbus – 39 percent
- Lockheed Martin – 32 percent
- Gulfstream Aerospace – 29 percent
- Northrop Grumman – 29 percent

Aerospace Industry & Employment

- 128,000 employed in 1,248 aerospace and related firms
 - 92,000 employed in 175 core aerospace firms
- Survey suggests 6.2 percent annual growth compared to national forecast of 3.6 percent or roughly 5,000 net openings per year (survey responses still coming in)
- Tool Maker and Metal Worker - greatest percentage growth
- Engineers, Machinists - greatest need by number and most difficulty filling

Skill Gap Consequences

Employer response to hiring difficulties

- **Employees work overtime** (65 percent of firms)
- **Increase recruiting efforts** (51 percent)
- **Leave position vacant** (49 percent)
- **Hire less qualified applicant** (44 percent)

CTC Program Employment & Earnings

Results of participants in 14 CTC programs

(7 to 9 months after exiting program during the 2010-2011 school year – employment observed in 2012)

- 58 percent with employment (reported in state wage records)
- 784 students were employed by Washington aerospace and related firms
- \$46,782 median annual salary for those working in aerospace & related firms
- \$31,409 median annual salary for all employed program exiters

Aerospace Pipeline Advisory Committee

CTC Skill Gap Investments

Community and technical colleges have ramped up training to narrow the skills gap and move well-trained workers into well-paying jobs.

- Twenty-four of Washington's 34 community and technical colleges offer aerospace-related training: Bates, Bellingham, Big Bend, Centralia, Clark, Clover Park, Columbia Basin, Edmonds, Everett, Green River, Highline, Lake Washington, Lower Columbia, North Seattle, Olympic, Peninsula, Renton, Shoreline, Skagit Valley, South Seattle, South Puget Sound, Spokane, Wenatchee Valley, and Yakima Valley.
- Community and technical colleges make up the largest sector of Washington's higher education system, serving 60 percent of students in our public colleges and universities.
- From 2006 to 2011, two-year colleges increased training in aerospace and manufacturing-related fields by 37 percent to narrow a growing skill gap in these fields.
- Thirty-five percent of engineering majors in our state's four-year public colleges and universities transferred from a community or technical college with at least 40 college credits or a degree.



Aerospace Pipeline Advisory Committee

CTC Skill Gap Investments

Two-year colleges have collectively reprioritized their lean budgets to support the aerospace industry. Governor Gregoire, the Legislature, and the federal government also made significant investments.

- **Governor's Investment in Aerospace** – a \$1.4 million investment from Governor Gregoire from her discretionary portion of federal Workforce Investment Act funds. As of December 1, 2012, colleges have served a total of 623 students with the Governor's Investment in Aerospace grant.
- **Air Washington grant** – a \$20 million competitive federal grant to a consortium of 11 community and technical colleges and the Aerospace Joint Apprenticeship Committee (AJAC). During the first year of the grant the 11 colleges have served 811 students in AIR Washington Training Programs. The grant will end September 2014.
- **AJAC Apprenticeships** – The Legislature appropriated money for aerospace and advanced manufacturing apprenticeships, which are developed by the Aerospace Joint Apprenticeship Committee.



Aerospace Pipeline Advisory Committee

CTC Skill Gap Investments

Center of Excellence

Colleges share cutting-edge curricula designed jointly with aerospace leaders and industry subject-matter experts. Leading the way is the Center of Excellence for Aerospace and Advanced Materials Manufacturing at Everett Community College. The center is a one-stop hub for the industry and experts to design curricula that's deployed system-wide.

Curricula mapped to jobs: The job skills needed by Boeing were matched against college courses in a project by the Aerospace Curriculum Alignment Team (ACAT) and the Center of Excellence for Aerospace and Advanced Materials Manufacturing. The two organizations looked for gaps in key program areas and designed courses to meet the need:

- composites
- electronics
- machine tool technology
- industrial manufacturing technology
- aircraft mechanics

ACAT is made up of 16 community and technical colleges along with local and state workforce development agencies.



Aerospace Pipeline Advisory Committee

CTC Skill Gap Investments

- **FAA-certified courses:** Five community and technical colleges offer Federal Aviation Administration-certified training so students can test for their Airframe and Powerplant licenses and repair planes built in the United States. A similar effort is underway to train students in European Aviation Safety Agency standards so companies here can bid on repair contracts for overseas airlines.
- **Composites:** Composites are high impact, fiber-reinforced resins used in the aerospace, shipbuilding, and construction industries. Future Boeing aircraft will likely be made of this lighter, stronger and more efficient material. Seven community and technical colleges offer composites training patterned after a highly successful program at Clover Park Technical College, where students learn how to fabricate, assemble, and repair composite materials. Clover Park and South Seattle community colleges partnered with community colleges in Maryland, Tennessee and Ohio as part of a \$20 million federal grant to expand the program nationally.

Aerospace Pipeline Advisory Committee

CTC Skill Gap Investments

Training centers

Washington Aerospace Training Center (WATR)/Edmonds Community College: Located at Paine Field, the WATR training center offers short-term certificates for aircraft-assembly, maintenance, and inspection jobs in the large aerospace manufacturing plants and related businesses of the Puget Sound corridor. From the first graduating class of August 2010 to December 2012, 1418 students had completed training.

The assembly mechanic program is also available through Renton Technical College.

Inland Northwest Aerospace Technology Center/Spokane Community College: The Inland Northwest Aerospace Technology Center provides training needed by aerospace companies that supply tools and parts for aircraft. Courses include CADD (computer-aided design and drafting) and design technology, CNC machinist, computer software engineering, electronics, hydraulic and pneumatic automation, and welding. The programs fill training gaps identified in an analysis of the Eastern Washington-North Idaho employment area.



Aerospace Pipeline Advisory Committee Recommendations to the Governor

- New Aerospace FTE's – Full Time Equivalents
- Credentials and Certifications – Testing to measure worker readiness to meet employer hiring standards
- Professional Development of Faculty – Improving faculty experience with aerospace needs
- Marketing to Industry/Center for Excellence – Providing an pathway from secondary school to a career
- Renton Training Facility – Expand the training capacity in Renton

Aerospace Pipeline Advisory Committee

Governor Gregoire's 2013 Budget Proposal

- K-12 STEM education and Aerospace certification training (\$700,000)
- Establish the National Career Readiness Certification assessment program for 2500 students at K-12 level (\$195,000)
- 330 new STEM/Aerospace FTE's – Full Time Equivalents at the Community and Technical Colleges (\$5.0 million)
- Expand staffing and resource for the Center of Excellence for Aerospace & Advanced Manufacturing (\$200,000)
- Renton Training Facility – Develop a multi-institutional, multi-age aerospace training facility in Renton (\$5.0 million)
- Public Universities create a STEM and aerospace enrollment pool (\$11 million)
- Public University support colleges of engineering (\$4.0 million)
- Governor's Office of Aerospace continued funding (\$200,000)



QUESTIONS

