

Agency: 350 Supt of Public Instruction
Decision Package Code/Title: SB Aerospace/Advanced Manufacturing
Budget Period: 2011-13
Budget Level: PL - Performance Level

Recommendation Summary Text:

Superintendent Dorn requests \$978,000 in Fiscal Year 2013 to partner with business, industry, apprenticeships and Community College Centers of Excellence to provide a career opportunity pipeline in aerospace/advanced manufacturing for K-14 students in Washington through the creation of new programs and increased implementation of instructional STEM programs in aerospace/advanced manufacturing. The advanced manufacturing program will teach students the skills and knowledge that are transferable to the aerospace, marine technology, pre-engineering, and transportation industries. Science, technology, engineering, and math will be infused and emphasized throughout all courses. Students will be provided the opportunity to demonstrate knowledge and skills attainment through achievement of industry recognized certifications. Relevance will be realized through Industry internships for instructors and students designed by industry directed partnerships.

Fiscal Detail

Operating Expenditures	<u>FY 2012</u>	<u>FY 2013</u>	<u>Total</u>
001-1 General Fund - Basic Account-State		978,000	978,000
Total Cost		978,000	978,000
Staffing	<u>FY 2012</u>	<u>FY 2013</u>	<u>Annual Average</u>
FTEs	.0	.5	.3

Package Description:

Background

Washington State is facing a critical shortage in its workforce needs related to aerospace/advanced manufacturing. To avoid this urgency for skilled employees, from machinists to engineers, this K-12 initiative will begin the creation of the career opportunity in these fields. OSPI will work with its post-secondary and industry partners to develop and implement the K-12 portions of the pipeline that will lead students, in a planned program of study, to industry validated stackable certifications and advanced education.

Industry and post-secondary partners will help design and implement the K-12 programs, based on industry validated standards and competencies, that will increase Washington State's ability to meet the future skill needs. In order to prepare students for their future, it is critical to align K-12, post-secondary, and business/industry expectations.

Current Situation

Currently, there is no K-14 pipeline or planned statewide Program of Study for students to move seamlessly from secondary through post-secondary programs to careers in aerospace/advanced manufacturing careers. The need exists to engage students in learning that comes about in applied settings and is reinforced by being applied and shown useful.

Proposed Solution

Elementary School (K-6) Awareness: Implement awareness opportunities for K-6 students to explore STEM related careers in aerospace/advanced manufacturing careers. Support elementary teachers through STEM learning activities through the provision of professional development and aerospace curriculum learning activities. Further promote awareness opportunities to elementary

schools by sharing best instructional practices learned from STEM Lighthouse schools. Partnerships will be developed with existing aerospace programs, such as Museum of Flight, Marine Days, Port of Seattle, that are geared for elementary students to expand these opportunities statewide. Lessons learned from middle school STEM Lighthouse Schools will be used to enable project based learning, business partnerships, and learning communities at the elementary level.

OSPI requests \$50,000 to develop professional development opportunities and curriculum tools to distribute to elementary schools around the state.

Middle School (7-8) Exploratory Programs: Develop and implement middle school aerospace/advanced manufacturing statewide programs using current industry standards which are as identified by industry partners. Provide professional development, instructional materials, and equipment necessary to implement the programs, such as: air tool kit, carbon fiber, and CNC. Deliver regional professional development, using industry trainers, around the state and utilizing best instructional practices learned from STEM project based learning. Project based lessons related to aerospace/advanced manufacturing will be shared with instructors to implement into statewide classrooms.

OSPI requests \$105,000 to provide 30 middle schools \$3,500 grants to purchase the necessary equipment and send teachers to regional professional development opportunities.

Comprehensive High School (9-12) Aerospace Assembler Program: Working with industry partners, create rigorous and relevant aerospace/advanced manufacturing secondary programs in comprehensive high schools across the state. Provide professional development, instructional support, and equipment for the new programs such as: Pneumatics, Composites, Computer Numeric Controlled Manufacturing, Manufacturing and Engineering Design Process, Non Destructive Testing, and Quality Assurance & Testing.

OSPI requests \$300,000 to provide 12 comprehensive high schools \$25,000 grants to purchase the equipment and send teachers to regional professional development opportunities.

Skill Center Regional Training Centers: Develop and implement aerospace, manufacturing, and marine technology in regional training centers throughout the state over the next two years utilizing skill centers. Efficiency is created through shared instruction and facilities by secondary and post-secondary, private institutions, and apprenticeship programs. Programs would meet industry standards identified by partners. Students would receive industry validated stackable certificates with the cost of tests paid for by the state. Equipment needs are regional based and similar to comprehensive high school; however the quantity of materials is greater due to increased emphasis on attaining specific skills and industry certifications processes.

OSPI requests \$450,000 to provide 6 skills centers \$75,000 to purchase the equipment and materials.

Post Secondary: Statewide articulation with community & technical colleges & Boeing WATR Center.

OSPI requests \$73,000 for 0.5 FTE WMS3 to oversee the grant programs, work with industry partners and school districts to coordinate the professional development and assure statewide articulation.

Narrative Justification and Impact Statement

What specific performance outcomes does the agency expect?

By providing a K-14 pipeline for aerospace/advanced manufacturing, more students will gain the necessary knowledge and skills to become employed in a high demand field.

Is this decision package essential to implement a strategy identified in the agency's strategic plan?

This decision package supports two of the Superintendent's strategic priorities: increasing student achievement and reducing the dropout rate and expanding CTE and STEM opportunities.

Does this decision package provide essential support to one of the Governor's priorities?

This decision package supports the Governor's priorities to improve student achievement, expand opportunities for Washington students in the new economy and improve the economic vitality of businesses and individuals. It also builds on the Governor's workforce development efforts.

Does this decision package make key contributions to statewide results? Would it rate as a high priority in the Priorities of Government process?

Creating a K-14 pipeline for aerospace/advanced manufacturing will increase the high school graduation rate, the number of students attaining degrees in a high demand field, and employment.

What are the other important connections or impacts related to this proposal?

There are many businesses interested in partnering with OSPI to create this pipeline. The state contribution will be matched by private dollars to create even more opportunities for students.

What alternatives were explored by the agency, and why was this alternative chosen?

The alternative to funding this proposal is to continue to let districts expand their CTE programs in a piecemeal fashion, with little state level guidance and support. Funding this proposal will support a coordinated effort to creation of a K-14 aerospace/advanced manufacturing pipeline.

What are the consequences of not funding this package?

Given the fact that many businesses are interested in partnering with OSPI to create this program, not providing a state contribution could lead to a lost opportunity of private funds.

What is the relationship, if any, to the state's capital budget?

There is no relationship between this decision package and the current biennial capital budget. However, in future years if districts decide to expand their programs they may need capital resources to fund new construction and renovations of existing facilities.

What changes would be required to existing statutes, rules, or contracts, in order to implement the change?

No changes to existing statute, rules, or contacts are required. A competitive grant program for school districts will be implemented.

Expenditure and Revenue Calculations and Assumptions

The grant funding amounts are based on an assumed level of funding each school would need to implement an aerospace/advanced manufacturing program. The total request of \$978,000 is made up of \$50,000 for elementary awareness, \$105,000 for 30 middle school exploratory programs, \$300,000 for 12 comprehensive high school programs, \$450,000 for 6 skill center programs, and \$73,000 for a 0.5 program supervisor.

Which costs and functions are one-time? Which are ongoing? What are the budget impacts in future biennia?

It is assumed that the elementary, middle and high school grant programs would be ongoing in order to offer the opportunity for more schools to implement an aerospace/advanced manufacturing program each year. Since there are only 13 skills centers, it is assumed that 7 skills centers would be added in FY14 for a cost of \$525,000, but that grant program would not continue past FY14. Therefore, the cost would be \$1,053,000 in FY14 and \$528,000 in FY15 and ongoing. Please see the attached table for a breakdown of costs.

<u>Object Detail</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>Total</u>
A Salaries And Wages		44,000	44,000
B Employee Benefits		22,000	22,000
E Goods And Services		3,000	3,000
G Travel		4,000	4,000
N Grants, Benefits & Client Services		905,000	905,000
		978,000	
Total Objects			978,000

Aerospace/Advanced Manufacturing DP Expenditure Detail

	Number of Schools		Grant Cost	FY13	FY14	FY15 and Ongoing
	FY13	FY14				
Elementary Awareness				\$50,000	\$50,000	\$50,000
Middle School Exploratory	30	30	\$3,500	\$105,000	\$105,000	\$105,000
Comprehensive High School	12	12	\$25,000	\$300,000	\$300,000	\$300,000
Skills Center	6	7	\$75,000	\$450,000	\$525,000	\$0
0.5 WMS				\$73,000	\$73,000	\$73,000
Total	48	49	\$103,500	\$978,000	\$1,053,000	\$528,000