

Washington State's Defense Economy: Measuring and Growing its Impact



Prepared for the
**Washington Economic
Development Commission**



“Helping Communities and Organizations Create Their Best Futures”

Founded in 1988, BERK is an interdisciplinary strategy and analysis firm providing integrated, creative and analytically rigorous approaches to complex policy and planning decisions. BERK’s team of strategic planners, policy and financial analysts, economists, cartographers, information designers and facilitators work together to bring new ideas, clarity, and robust frameworks to the development of analytically-based and action-oriented plans.

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The WEDC’s mission and focus is to *“provide planning, coordination, evaluation, monitoring, and policy analysis and development for the state economic development system as a whole, and advice to the governor and legislature concerning the state economic development system”*

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WASHINGTON ECONOMIC DEVELOPMENT COMMISSION

Washington State's Defense Economy: Measuring and Growing Its Impact

Executive Summary

INTRODUCTION

The scale and impact of Washington State's defense-related economy has not been measured since 2004, and the State has never had an explicit strategy for supporting and growing its substantial defense-related businesses. The purpose of this effort by the Washington Economic Development Commission is to: 1) Create an updated analysis of the economic impact of Washington's bases and defense-related economy; 2) Identify new and emerging opportunities for Washington-based businesses based on trends in national defense strategy; and 3) Develop recommendations for a statewide economic development strategy building on the military presence and expanding Washington's share of national defense contracting.

THE SCALE OF WASHINGTON'S DEFENSE-RELATED ECONOMY

The measures of defense-related economic activities and the economic impact analysis in this report have been estimated in a conservative manner and the actual total is likely greater than reported here. We have chosen to do so due to time and resource constraints, and so that our methodology matched the approach of previous studies. For these reasons, only Department of Defense contracts are considered. Defense-related contracts from other federal and state agencies, purchases by the State's veteran hospitals, and items sold through base commissaries are not included.

Based on our analysis, Washington military installations spent more than \$7.9 billion in FY 2009. Payroll accounts for the largest share of spending by Washington military installations. There were a total of 103,385 military and civilian personnel in the State receiving \$5.1 billion in pay and compensations. Pension payments to retired personnel in the State account for almost \$1.4 billion in expenditures.

The table below shows expenditures by each installation or organization and statewide pension payments.

Payroll and Other Expenditures, FY 2009

	Total Personnel	Total Payroll	Other Expenditures
Joint Base Lewis McChord	47,136	\$2,445,659,776	\$1,076,972,841
Navy Region Northwest	39,009	\$2,079,568,943	\$51,848,689
Fairchild Air Force Base	5,828	\$229,633,649	\$70,993,134
Coast Guard (Dist. 13, WA)	2,694	\$148,021,723	\$137,583,694
Washington National Guard	8,718	\$215,264,511	\$106,839,297
Pension Payments (Statewide)	-	-	\$1,353,543,000
Total Washington State	103,385	\$5,118,148,602	\$2,797,780,655

Source: Joint Base Lewis McChord; Navy Region Northwest; Fairchild Air Force Base; Coast Guard District 13; Washington Military Department; Department of Defense Statistical Information Analysis Division; BERK

In addition to installation expenditures, Washington State received \$5.2 billion in Department of Defense contracts in FY 2009, ranking 23rd compared to other states. The large majority of the \$5.2 billion in defense contracts in Washington take place in only a few counties, with eight counties accounting for 93.5% of DoD contracts in the state. Total defense contract dollars obligated decreased slightly since FY 2006. Broken down by industry category, contracts in Washington are primarily based on manufacturing, construction, and facilities services.

THE ECONOMIC IMPACT OF DEFENSE-RELATED ACTIVITY

When the full economic impacts of defense related spending is considered, including direct, indirect, and induced effects, the impact of Washington's defense-related economy is considerable. Installation spending in 2009 resulted in an estimated \$8.5 billion of economic activity within Washington State. DoD contracting, with "place of performance" in Washington State resulted in an estimated \$3.7 billion in total output. The total defense activity is estimated to have created nearly \$12.2 billion in total output in the State. This activity supported approximately 191,600 jobs and nearly \$10.5 billion of labor income in the State in 2009.

To put these figures in context, consider that Washington State overall had 2,866,632 jobs covered through unemployment insurance and wages totaling \$134.8 billion (Washington ESD, Workforce Explorer) in fiscal year 2009. Total jobs and labor income resulting from the economic impacts of defense spending (as defined in this analysis) are approximately 7% and 8% of State totals respectively. The overall gross domestic product (GDP) for the State in 2008 was \$322.8 billion (BEA, U.S. Department of Commerce), meaning that total economic output resulting from defense spending is nearly 4% of the total State GDP.

STRATEGIC OPPORTUNITIES FOR WASHINGTON STATE

The above findings clearly demonstrates quantitatively the significance of Washington's defense economy, but the State's installation and defense contractors also play an important economic role in other ways:

- Bases provide employment opportunities for a very wide range of individuals, from relatively low-skilled to the construction trades to highly skilled knowledge workers.
- Washington's military installations also supply Washington State with an ongoing supply of skilled workers in the form of retiring military personnel.
- Defense contracting opportunities constitute the bulk of some Washington companies' work, and provide important supplementary markets for firms whose principal focus is not defense.
- Defense purchasing is generally not subject to the rises and falls of the consumer economy, and so provides a stable base for communities and contractors that supply these needs.
- The military can be an important innovative force in our economy, generating defense-related technologies that can be transitioned to civilian applications.

Given the importance of Washington's defense economy, both in terms of its quantifiable scale and for the appreciable economic benefits it provides, the State, its economic development partners, and its communities have an interest in supporting its growth and encouraging positive spinoff effects.

The State's Role in Growing Washington's Defense Economy

The recommended strategies that follow draw on the State's ability to play the following roles:

- **Promoter and advocate.** The State has the ability to promote the importance of Washington's defense economy, and to advocate for specific investment and initiatives to support the growth of related industries.
- **Information provider.** In addition to general promotion and advocacy, the State can compile, analyze, and propagate information and market opportunities, sharing this information with its economic development partners and the private sector.
- **Policymaker.** The State has direct influence over important policy levers that can be utilized to facilitate a strong defense-related economy in Washington.
- **Funder.** Finally, the State can provide funding that can make a substantial difference, even if applied in small and targeted amounts.

Recommended Economic Development Strategies

We recommend the State advance the following strategies to support and grow Washington's defense economy.

1. *Promote Washington's Defense-Related Economy*

The value of Washington's defense-related economy, and the strength and capabilities of its private sector firms, should be promoted at the national level, specifically in Washington D.C. Similarly, the support of the State government and local communities for the cluster and related activity should be conveyed to decision makers at the national level.

- A. Explicitly include defense in the State's economic development strategy.** Make defense an explicit focus in the State's economic development strategy will ensure that defense-related issues and opportunities are elevated and integrated into economic development decision making criteria and processes.
- B. Promote the economic benefits of the defense economy into stakeholder groups in the State.** The economic impacts found in this study and in subsequent updates should be communicated broadly to raise awareness about the magnitude and geographic breadth of the economic activity associated with Washington's bases and participation by its businesses in national defense contracting.
- C. Elevate and communicate the State's commitment to the cluster through high-level participation in trade shows and relationship-building in Washington D.C.** The participation of senior members of State government in national conferences and trade shows related to defense can help promote Washington's interest in its installations and defense-related economy. Similarly, outreach to decision makers in Washington D.C. should be a regular and productive affair.
- D. Communicate what's happening.** Washington's defense-related activities and successes should be seen as important public relations opportunities to raise appreciation for the defense cluster domestically and to elevate the State's profile nationally.

2. *Inform, Coordinate, and Support Statewide and Industry-Specific Economic Development Efforts*

A couple of key factors complicate Washington's economic development efforts. First, defense-related business opportunities are spread across a broad range of industries, which makes capturing the full potential of the cluster more challenging. Second, Washington's existing economic development infrastructure is both geographically focused and dispersed across the State and vertically structured in relatively isolated attempts to focus on specific industries or clusters. Within this fragmented environment, a well-functioning response to Washington's defense-related economic opportunities would:

- Raise awareness of defense applications and business opportunities for industries and businesses that may not currently even consider the defense market
- Support the growth of related industries through a well-informed and coordinated economic development approach.

Trends in National Defense Strategy

The trends in national defense strategy listed below have implications for Washington's economic opportunities and have been used in identifying opportunity areas and the recommended strategies shown to the left.

1. A potential decline in the overall defense budget, while the West Coast becomes an increasingly important strategic location.
2. A focus on smaller scale threats and responses and on emerging technologies.
3. A focus on energy efficiency and alternative energy production.
4. Ongoing role in peacekeeping and nation building.
5. Caring for veterans and wounded warriors.

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- A. Support emerging defense-specific economic development efforts: the PNDC and WDP.** The Pacific Northwest Defense Coalition and Washington Defense Partnership are evolving organizations that can provide tremendous value to the State's installations and bases, particularly if they are supported in their growth. Recognizing the important roles these organizations can play, we recommend the State explore ways of providing direct support, potentially in the form of funding or staff support.
- B. Share information, analysis, and opportunities with Associate Development Organizations (ADOs) and other economic development partners and provide direction to the State's ADOs.** One of the most important roles the State can play is in making information easily available to local economic development organizations, saving them the cost of obtaining it individually, or providing information. Much of the economic development work to be done to grow Washington's defense-related economy must be done at the local level, including efforts to grow and expand existing business and attracting new firms that will augment the existing defense cluster. These efforts can be encouraged through policy direction by the WEDC. This strategic focus would be substantially strengthened if funding can be provided to assist ADO's in directing staff resources to implement this direction.
- C. Raise awareness of business opportunities among businesses in broadly related fields.** The state should place a significant emphasis on providing information and raising awareness among industry and cluster-specific initiatives. The greatest return will be gained by focusing on areas where Washington is both well-positioned and well-organized to respond to defense-related opportunities. Through targeted outreach and partnership development, the State can likely raise awareness of significant new market opportunities for these industries. To support these conversations, the State could develop standard communications materials and discussion guides which can be used in presentations to industry organizations during their regularly scheduled sessions.
- D. Study, target, and support Washington's defense-related economy through industry-specific initiatives.** Building on Strategy C, the State should conduct further market analysis of potential defense applications in promising industries considering both domestic and export markets. This understanding of the relative scale of opportunity represented can be used to inform industry-specific initiatives.

3. Support Successful Contracting Bids and R&D Program Proposals

The State can support successful contracting bids and proposals for research grants. The desired outcome is a strong network of technical assistance providers, businesses with the knowledge and capacity required to make successful bids, and a robust network of partners, including businesses, research institutions, and economic development entities capable of writing successful proposals.

- A. Increase business training and support resources enhancing funding for PTACs.** The State can supplement the technical assistance available to smaller firms seeking military contracts, whether for daily goods and services provided to a local installation or an advanced technological component for national defense use. Procurement Technical Assistance Centers (PTACs) provide this training and assistance, and are very highly regarded among defense industry stakeholders. We recommend that the State consider augmenting the federal dollars that currently fund PTAC operations.
- B. Support the development of online resources and toolkits.** In addition to supporting Washington's network of PTACs, the State can support efforts to provide online access to toolkits, training materials, and contracting opportunities. This effort would involve collaboration with the PTACs, PNDC, the WDP, and other parties, as well as an upfront investment and ongoing maintenance and updating.
- C. Strengthen Washington's ability to attract research and development funding.** Washington State has a strong track record of receiving Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) funds. It is important to maintain this level of success, and the State's role can be to share information with its regional and industry-specific partners, help facilitate partnerships, and continue to nurture a positive reputation and strong relationships with decision-makers in D.C.

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1.0 CONTEXT AND PROJECT OBJECTIVES

Washington State is home to significant military installations and facilities east and west of the Cascades. In addition to the businesses that sell goods and services that directly support this in-state presence, Washington's defense-related economy is also comprised of businesses that sell to the Department of Defense (DoD) through national defense contracting. These businesses range from giants like Boeing to family-owned textile manufacturers. The scale and impact of this economy was last measured in 2004, and the State has never had an explicit strategy for supporting and growing defense-related businesses.

The purpose of this effort by the Washington Economic Development Commission is three-fold:

1. Update analysis of the economic impact of the Washington's bases and defense-related economy
2. Identify new and emerging opportunities for Washington-based businesses based on trends in national defense strategy and related changes in the mission of Washington's bases
3. Develop recommendations for a statewide economic development strategy building on the military presence and expanding Washington's share of national defense contracting

The results of this analysis and our recommendations are presented in this white paper and organized as follows:

- **Section 2.0** summarizes economic activity related base employment and purchasing as well as Department of Defense contracting
- **Section 3.0** then estimates the economic impact of this activity for a more complete measure of the importance of defense-related economic activity to Washington State
- **Section 4.0** describes trends in national defense strategy and potential roles that Washington State might play in supporting the defense-related economy
- **Finally, Section 5.0** outlines specific recommended strategies to grow Washington's defense economy

Additional information about stakeholder interviews and our analytic methodology is contained in the **Appendices** at the back of this document.

2.0 MEASURING THE SCALE OF WASHINGTON'S DEFENSE-RELATED ECONOMY

2.1 Overview

Defense-related economic activity in Washington State includes two types of activities: 1) expenditures by facilities in the State for on-base activities and 2) Department of Defense contracts that are performed (executed) in the State of Washington. Expenditures by facilities include payroll, purchases of food, maintenance, utility payments, training, and other activities not conducted through contracts. Contracts include activities that occur on military facilities, such as contracts for services and construction activity, and national defense contracts, which are performed around the State. National defense contracts are not related to local bases, but represent Washington-based businesses selling goods or services to the Pentagon as part of its national acquisition process.

The measures of defense-related economic activities on the following pages have been estimated in a conservative manner and the actual total is likely greater than is reported here. This holds true for the economic impact analysis in **Section 3.0** that is based on these measures of activity. Our intention is to be conservative because some data would be very time consuming to gather and process, exceeding the resources available for this effort and because it was important that our methodology paralleled the approach used in previous studies, allowing for comparisons over time. For these reasons:

- Only Department of Defense contracts are considered. Defense-related contracts from other federal and state agencies, including the Department of Homeland Security and others, are not included.
- Purchases by the State's veteran's hospitals are similarly not included.
- Items sold through base commissaries are not included because the value of most commissary sales do not stay in Washington State. While local purchases by commissaries could logically be included, reflecting the value of that economic activity for local providers, it would require an inordinate level of effort to do so.

2.2 Analysis and Conclusions

Military Facility Personnel and Expenditures

Washington military installations spent more than \$7.9 billion in FY 2009. Payroll accounts for the largest share of spending by Washington military installations. There were a total of 103,385 military and civilian personnel in the State receiving \$5.1 billion in pay and compensation. Pension payments to retired personnel in the State account for almost \$1.4 billion in expenditures.

Exhibit 1 shows expenditures by each installation or organization and statewide pension payments.

Exhibit 1 - Payroll and Other Expenditures, FY 2009

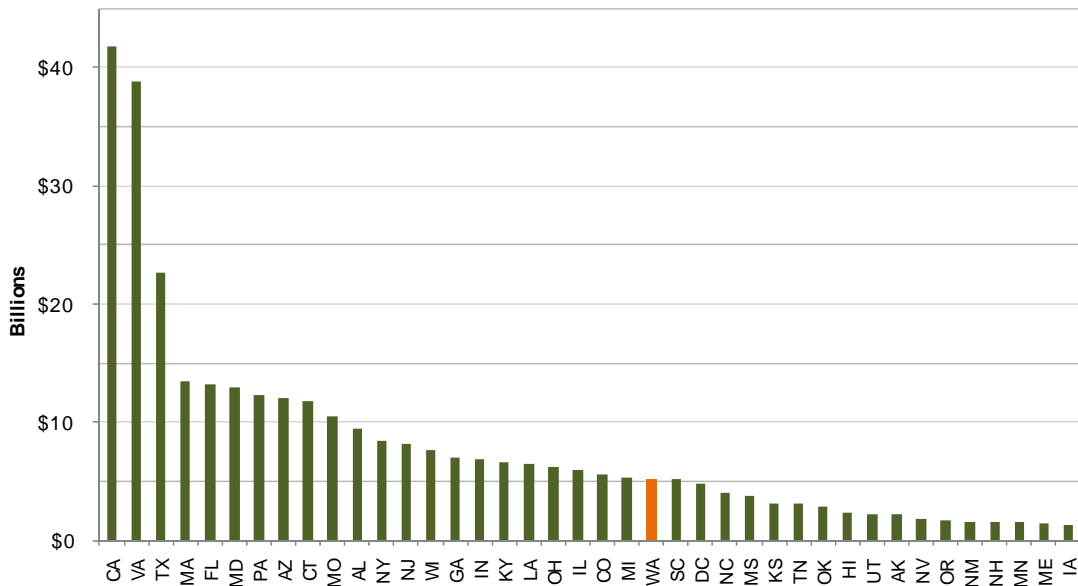
	Total Personnel	Total Payroll	Other Expenditures
Joint Base Lewis McChord	47,136	\$2,445,659,776	\$1,076,972,841
Navy Region Northwest	39,009	\$2,079,568,943	\$51,848,689
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Coast Guard (Dist. 13, WA)	2,694	\$148,021,723	\$137,583,694
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Pension Payments (Statewide)	-	-	\$1,353,543,000
Total Washington State	103,385	\$5,118,148,602	\$2,797,780,655

Source: Joint Base Lewis McChord; Navy Region Northwest; Fairchild Air Force Base; Coast Guard District 13; Washington Military Department; Department of Defense Statistical Information Analysis Division; BERK

Defense Contracting

Washington State received \$5.2 billion in Department of Defense contracts in FY 2009. Nationwide, Washington ranked 23rd compared to other states, as shown in Exhibit 2.

Exhibit 2 - Total Defense Contract Dollars Obligated Over \$1 Billion by State, FY 2009



Source: Federal Procurement Data System – Next Generation, 2010; BERK, 2010

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The large majority of the \$5.2 billion in defense contracts in Washington take place in only a few counties. Eight counties accounted for 93.5% of DoD contracts in Washington. King County received the most in defense contracts with \$2.3 billion - 43% of all dollars obligated in the State. Pierce County – the home of Joint Base Lewis McChord – had the second most contract dollars obligated for FY 2009 with \$862 million. Eighty-four percent of the contracts dollars in Pierce County are from the Army. Exhibit 3 lists the top eight counties and contract dollars obligated for FY 2009 and 2006. Overall defense contract dollars obligated decreased slightly since FY 2006.

Rank	County	2009		2006	
		Dollars Obligated	Percent of Total	Dollar Obligated (2009 \$)	Percent of Total
1	KING	\$2,257,266,547	43.3%	\$2,575,664,186	49.0%
2	PIERCE	\$862,361,235	16.6%	\$829,614,682	15.8%
3	KITSAP	\$784,588,962	15.1%	\$553,244,532	10.5%
4	WHATCOM	\$523,695,738	10.1%	\$670,499,485	12.8%
5	SNOHOMISH	\$141,164,565	2.7%	\$116,789,206	2.2%
6	ISLAND	\$135,628,560	2.6%	\$53,948,294	1.0%
7	YAKIMA	\$82,124,002	1.6%	\$75,400,744	1.4%
8	SPOKANE	\$81,806,155	1.6%	\$140,942,692	2.7%
Sub-Total		\$4,868,635,765	93.5%	\$5,016,103,820	95.5%
Total		\$5,209,714,705	100.0%	\$5,252,950,199	100.0%

Exhibit 3 - Defense Contracts Dollars Obligated by County, FY 2009 & 2006

Source: Federal Procurement Data System – Next Generation, 2010; BERK, 2010

Exhibit 4 displays what agencies the dollars obligated come from for the top eight counties. Overall, contracts with the Navy are the largest source of defense contracts for Washington State with 47% of all dollars obligated in the State. Ninety percent of the Navy's contracts take place in King, Kitsap, or Island Counties.

Exhibit 4 - Defense Contract Dollars Obligated by County by Agency, FY 2009

County	Air Force	Army	Navy	Other	Total
KING	\$555,927,919	\$116,241,913	\$1,365,102,515	\$219,994,199	\$2,257,266,547
PIERCE	\$51,633,358	\$726,037,727	\$14,463,834	\$70,226,316	\$862,361,235
KITSAP	\$17,392,897	\$4,594,280	\$733,029,135	\$29,572,650	\$784,588,962
WHATCOM	\$494,169	\$3,948,018	\$2,287,104	\$516,966,448	\$523,695,738
SNOHOMISH	\$13,966,600	\$46,067,115	\$69,207,906	\$11,922,945	\$141,164,565
ISLAND	\$3,344,500	\$393,746	\$130,088,509	\$1,801,805	\$135,628,560
YAKIMA	\$297,422	\$39,808,179	\$356,425	\$41,661,976	\$82,124,002
SPOKANE	\$64,921,115	\$8,817,381	\$3,060,085	\$5,007,573	\$81,806,155
Sub-Total	\$707,977,980	\$945,908,359	\$2,317,595,514	\$897,153,912	\$4,868,635,765
Total	\$720,504,425	\$1,101,726,054	\$2,458,602,478	\$928,881,749	\$5,209,714,705

Source: Federal Procurement Data System – Next Generation, 2010; BERK, 2010

Broken down by industry category, contracts in Washington are primarily based on manufacturing, construction, and facilities services. The aircraft manufacturing industry receives the most contract dollars in the State with over \$1.5 billion. Spending on aircraft manufacturing has increased 11.2% since FY 2006 when \$1.4 billion was obligated. Exhibit 5 lists the top ten industry categories receiving defense contracts in Washington.

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Exhibit 5 - Defense Contract Dollars Obligated by Industry, FY 2009

Rank	NAICS Description	2009 Dollars Obligated	2006 Dollar Obligated (2009 \$)
1	Aircraft Manufacturing	\$1,537,226,602	\$1,382,899,865
2	Commercial and Institutional Building Construction	\$685,989,589	\$267,317,173
3	Petroleum Refineries	\$568,829,359	\$765,666,332
4	Engineering Services	\$421,341,626	\$565,397,556
5	Technical Instrument Manufacturing	\$189,021,506	\$24,809,674
6	Ship Building and Repairing	\$137,633,289	\$74,473,655
7	Offices of Physicians, Mental Health Specialists	\$130,122,486	\$1,523,093
8	Facilities Support Services	\$120,255,388	\$72,171,775
9	Other Heavy and Civil Engineering Construction	\$101,046,838	\$91,082,889
10	Industrial Building Construction	\$67,571,002	\$32,525,949
Sub-Total		\$3,959,037,686	\$3,277,867,961
Total		\$5,209,714,705	\$5,252,950,199

Source: Federal Procurement Data System – Next Generation, 2010; BERK, 2010

Construction accounts for a large share of contracts in the State as well. Three construction categories are in the top ten categories, commercial/institutional, heavy and civil engineering, and industrial construction. Combined, these three categories received a total of \$854.6 million. Much of the construction work was likely installation-related work.

The Boeing Company is the largest contractor in the State. Boeing accounts for 34% of all contract dollars obligated in the State in FY 2009. Other contractors that made the top ten in contract dollars obligated in Washington include fuel supplies (BP West Coast Products and US Oil Trading), defense contractors (Raytheon), construction companies (M.A. Mortenson, Garco Construction), and facilities service providers (Skookum Educational Programs, EJB Facilities). Exhibit 6 ranks the top ten contractors based on dollars obligated for FY 2009.

Exhibit 6 - Defense Contract Dollars Obligated by Contractor, FY 2009

Rank	Contractor Name	Dollars Obligated (FY 2009)	Percent of Total
1	THE BOEING COMPANY	\$1,786,172,352	34.3%
2	B P WEST COAST PRODUCTS L. L. C.	\$516,830,010	9.9%
3	RAYTHEON COMPANY	\$189,393,256	3.6%
4	PACIFIC MEDICAL CENTER CLINIC	\$126,193,998	2.4%
5	M.A. MORTENSON COMPANY	\$99,970,295	1.9%
6	SKOOKUM EDUCATIONAL PROGRAMS	\$65,986,649	1.3%
7	TODD PACIFIC SHIPYARDS CORP	\$62,670,178	1.2%
8	EJB FACILITIES SERVICES	\$59,165,040	1.1%
9	GARCO CONSTRUCTION, INC.	\$52,754,917	1.0%
10	U.S. OIL TRADING LLC	\$52,550,010	1.0%
Sub-Total (Top 10 Contactors)		\$3,011,686,705	57.8%
Total		\$5,209,714,705	100.0%

Source: Federal Procurement Data System – Next Generation, 2010; BERK, 201

3.0 ESTIMATING THE ECONOMIC IMPACT OF DEFENSE-RELATED ACTIVITY

3.1 Overview

An assessment of economic impacts concerns itself with effects on patterns of commerce. Specifically, what shift in economic activity (business activity, income, or wages) can be attributed to a given action or investment? An economic impact is characterized by a net new change in economic activity, that is, economic activity that would otherwise not occur.

Our goal in this analysis is to estimate the impact on the economic activity in the State economy resulting from 1) spending by the military bases and installations located in the State, and 2) spending by the Department of Defense on commodities or services produced within Washington State. For the analysis, we used IMPLAN software (short for IMPact Analysis for PLANning), which sums the direct impacts with the indirect and induced impacts, accounting for the economic impact in full.

3.2 Reading the Economic Impact Table

Exhibit 7 below displays the results of the economic impact analysis. The table begins on the left with the summary expenditure categories (the analysis included over 300 different IMPLAN categories of expenditure). The information in the second column (highlighted in gray) shows total expenditures for all the military installations included in this analysis and was gathered directly from each of the military organizations.

The remainder of the table, in white, is a result of the analysis done with IMPLAN. The third column shows the estimated direct impacts to economic output resulting from these expenditures, i.e. those dollars spent by the installations that are assumed to remain in the State. The multiplier in the next column accounts for the indirect and induced impacts and is used to estimate the total impacts to economic output in the study area (in some cases this multiplier is an implied rate from an amalgam of multipliers in detailed subcategories). The estimated number of jobs supported within the community by the total output is shown in the sixth column, followed by impacts on labor income. Estimated jobs in the Payroll category include the actual number of FTEs in the installations as well as additional jobs supported by the indirect and induced impacts.

Exhibit 7 - Economic Impacts of Defense Spending in Washington State, 2009

Expenditure Categories	Total Annual Expenditures	Output Direct Impact	Output Multiplier	Output Total Impact	Total Jobs Impact	Total Labor Income
Total Net Payroll (less spending in commissaries)	\$ 4,955,840,642	\$ 4,712,949,936	1.23	\$ 5,811,407,059	112,201	\$ 5,363,037,288
Pension Payments for In-State Retirees	\$ 1,353,543,000	\$ 1,287,204,504	1.23	\$ 1,587,215,956	13,941	\$ 1,464,756,861
Total Tri-Care/Other Health Payments*	\$ 114,394,366	\$ 70,611,659	1.64	\$ 115,989,154	1,617	\$ 91,037,579
Impact Aid Grants for Education (to local schools)	\$ 27,697,831	\$ 26,340,333	1.33	\$ 35,126,888	587	\$ 28,718,469
Other Purchases (not including contracts)*	\$ 1,302,145,458	\$ 481,327,673	1.82	\$ 876,349,164	14,824	\$ 677,934,183
Installation Totals*	\$ 7,753,621,297	\$ 6,607,559,290	1.28	\$ 8,477,648,420	144,210	\$ 7,665,954,357
DoD Contracting Totals*	\$ 5,180,161,708	\$ 2,074,155,378	1.77	\$ 3,674,808,675	47,373	\$ 2,817,805,522
Installation and Contracting Totals*	\$ 12,933,783,005	\$ 8,681,714,668	1.40	\$ 12,152,457,095	191,583	\$ 10,483,759,879

* These are summary categories containing more detailed spending categories. The multiplier is therefore the implied rate resulting from the amalgam of the multipliers in the detailed subcategories.

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As shown in the exhibit above, installation spending in 2009 resulted in an estimated \$8.5 billion of economic activity within Washington State. DoD contracting, with “place of performance” in Washington State resulted in an estimated \$3.7 billion in total output. The total defense activity is estimated to have created nearly \$12.2 billion in total output in the State. This activity supported approximately 191,600 jobs and nearly \$10.5 billion of labor income in the State in 2009.

3.3 Comparative Size of Washington's Defense-Related Economy

Washington State overall had 2,866,632 jobs covered through unemployment insurance and wages totaling \$134.8 billion¹ in fiscal year 2009. Total jobs and labor income resulting from the economic impacts of defense spending (as defined in this analysis) are approximately 7% and 8% of State totals respectively.

The overall gross domestic product (GDP) for the State in 2008 was \$322.8 billion², meaning that total economic output resulting from defense spending is nearly 4% of the total State GDP.

¹ Washington Employment Security Department, Workforce Explorer

² Bureau of Economic Analysis, U.S. Department of Commerce

4.0 IDENTIFYING STRATEGIC OPPORTUNITIES FOR WASHINGTON STATE

4.1 *Overview and Methodology*

The context in the preceding chapters demonstrates quantitatively the significance of Washington's defense economy. While the figures alone are impressive, when one considers the important economic role that the State's installations and defense contractors play, their value is appreciated to be even greater.

- Bases provide employment opportunities for a very wide range of individuals, from relatively low-skilled to the construction trades to highly skilled knowledge workers.
- Washington's military installations also supply Washington State with an ongoing supply of skilled workers in the form of retiring military personnel.
- Defense contracting opportunities constitute the bulk of some Washington companies' work, and provide important supplementary markets for firms whose principal focus is not defense.
- Defense purchasing is generally not subject to the rises and falls of the consumer economy, and so provides a stable base for communities and contractors that supply these needs.
- The military can be an important innovative force in our economy, generating defense-related technologies that can be transitioned to civilian applications.

Given the importance of Washington's defense economy, both in terms of its quantifiable scale and for the appreciable economic benefits it provides, the State, its economic development partners, and its communities have an interest in supporting its growth and encouraging positive spinoff effects.

This section describes trends that are occurring in the national defense strategy and broadly identifies potential linkages to the Washington economy. These trends and opportunities were identified through stakeholder interviews, research, and a discussion with members of the Washington Defense Partnership on June 1, 2010. Specific recommended roles and economic development strategies for the State are presented in **Section 5.0**.

4.2 *Trends in National Defense Strategy and Linkages to Washington's Economy*

1. **A potential decline in the overall defense budget, while the West Coast becomes an increasingly important strategic location**

Defense and related activities account for a very significant portion of the federal budget, with estimates ranging from 20% to more than 50% depending on the source and definition. Regardless of its actual current magnitude, with an increasing interest in reducing the federal deficit, all indications point to future reductions – or, at the most, only moderate increases – in the U.S. defense budget. Stakeholders were quick to point to signals in speeches by Secretary of Defense Robert Gates and in the Quadrennial Defense Review³ (QDR).

Despite this downward pressure, the West Coast, including Washington, is well-positioned to see an increase in military presence. Current and emerging threats are seen to be off the Pacific, rather than the

³ <http://www.defense.gov/qdr/>

Atlantic, resulting in an effort to shift readiness from an outdated Euro-centric focus. Climate change also increases the importance of access to the arctic, which is also more easily done from the West Coast.

As a result of these changes, it is likely that Washington will see an overall increase in military presence in Washington, resulting in more base spending and contracting activity to support local bases.

2. A focus on smaller scale threats and responses and on emerging technologies

Today's warfare challenges are different than in the past. The QDR released by the Department of Defense in February 2010 calls for "rebalancing the force" to support success in specific areas identified as "missions critical to protecting and advancing the nation's interests." Many of the priorities and initiatives identified in the QDR require substantial innovation and the practical application of emerging technologies:

- A focus on homeland defense requires advances in "monitoring the air, land, maritime, space, and cyber domains for potential direct threats to the United States," developing radiological/nuclear detection capabilities, and domestic capabilities to counter improvised explosive devices (IEDs).
- A strategic prioritization of succeeding in "counterinsurgency, stability, and counterterrorism operations" includes "expand(ing) manned and unmanned aircraft systems (UASs) for intelligence, surveillance, and reconnaissance (ISR)," "increas(ing) counterinsurgency, stability operations, and counterterrorism competency and capacity in general purpose forces," and "strengthen(ing) key supporting capabilities for strategic communication."
- A focus on deterring and defeating aggression in anti-access environments calls for enhancements in "assur(ing) access to space and the use of space assets," "enhance(ing) the robustness of key ISR capabilities," and "defeat(ing) enemy sensors and engagement systems."
- Cyber threats and the need for a strong cyber defense are addressed as priorities as well, calling for "greater cyber expertise and awareness."

Outside of the QDR, stakeholders stressed the importance of network-centric operations that rely on information technology to provide troops in the field with up-to-date information and a robust and shared situational awareness that creates significant strategic advantage in the field. In addition, stakeholders noted the importance not only of unmanned aircraft systems (UAS), which are referred to repeatedly in the QDR and heavily relied upon by the Obama administration, but also unmanned undersea vehicles (UUVs) which are being developed by the Navy and its contractors around Key Port.

Discussion of current and emerging strategic threats, described in the QDR as occurring "across a wide geographic and operational spectrum," raise often-repeated calls for the provision of technologically sophisticated goods in which Washington State has great expertise, including communications and networking equipment, manned and unmanned aircraft, and cyber security. Demand for these technologies from defense agencies and their partners will certainly continue to increase for the foreseeable future.

3. A focus on energy efficiency and alternative energy production

Under the Energy Policy Act of 2005, Executive Order 13423, and Energy Independence and Security Act of 2007, all federal agencies face significant energy and water efficiency requirements. In fact, energy issues are particularly important for defense, as stated by the QDR: "climate change and energy are two key issues that will play a significant role in shaping the future security environment." DoD's response to climate change includes anticipating and responding to how climate change might change the strategic operating environment, changing geographies and access routes and potentially accelerating resource-related conflict and destabilizing fragile governments. DoD is also responding by reducing its energy consumption and reliance on fossil fuels; both in an effort to minimize its own contributions to climate

change and as an important effort to minimize a potential strategic vulnerability. By increasing its energy efficiency and energy independence, the US can increase the range and effectiveness of its troops in the field, and avoid a dangerous reliance on energy sources controlled by others.

Each branch of the military is responding to the need for greater energy efficiency and self-sufficiency in different ways. Green buildings, the use of alternative fuels and renewable energy sources in installations and vehicles, and independent energy generation are all components of this response and all create opportunities for Washington's businesses and communities. As an example, the City of Everett is working with Naval Station Everett to make a bid to host the Navy's "Great Green Fleet": a carrier strike group run entirely on fuels other than petroleum.⁴

4. Ongoing role in peacekeeping and nation building

In addition to its defense and combat roles, the US military plays an active role in strengthening the infrastructure and stability of many countries worldwide. In this capacity, the military may have a need for the products, services, and expertise of Washington businesses and non-profits in the information technology, technology, energy, and even global health arenas.

5. Caring for veterans and wounded warriors

"Taking care of our people" is one of the key areas of focus called out in the QDR, with a very significant focus on providing care for wounded military personnel. With advances in battlefield medical care, more troops are surviving to return home from overseas, resulting in greater numbers of "wounded warriors" here in the US. The Warrior Transition Battalion at Joint Base Lewis McChord recently broke ground on a \$52 million facility designed to house 408 wounded warriors, building on Madigan's role as a research center and teaching hospital. Washington's considerable medical and life sciences assets, both public and private, provide additional support for growth of this sector.

The final section of this paper focuses on specific strategies designed to leverage Washington's existing bases, defense contractors, economic strengths, and economic development infrastructure in the interests of strengthening the State's defense-related economy.

⁴ HeraldNet, July 1, 2010 - <http://www.heraldnet.com/article/20100517/NEWS01/705179927/-1/rss02>

5.0 DETERMINING THE STATE'S ROLE IN GROWING WASHINGTON'S DEFENSE ECONOMY

5.1 *Recommended Roles*

The specific recommendations that follow draw on the State's ability to play the following roles:

- **Promoter and advocate.** The State has the ability to promote the importance of Washington's defense economy, and to advocate for specific investment and initiatives to support the growth of related industries.
- **Information provider.** In addition to general promotion and advocacy, the State can compile, analyze, and propagate information and market opportunities, sharing this information with its economic development partners and the private sector.
- **Policymaker.** The State has direct influence over important policy levers that can be utilized to facilitate a strong defense-related economy in Washington.
- **Funder.** Finally, the State can provide funding that can make a substantial difference, even if applied in small and targeted amounts.

Base Retention

The ongoing presence and health of Washington's military installations is critical in strengthening the State's defense economy. While base retention is a fundamental goal, with specific and actionable strategies related to policy environment, encroachment, infrastructure, and support for military personnel and their families, it is not the focus of this paper.

5.2 *Recommended Economic Development Strategies*

Based on our analysis and conversations with stakeholders, we recommend the State advance the following strategies to support and grow Washington's defense economy. These strategies are discussed in more detail on the following pages.

1. Promote Washington's Defense-Related Economy
 1. Inform, Coordinate, and Support Statewide and Industry-Specific Economic Development Efforts
 2. Support Successful Contracting Bids and R&D Program Proposals

1. Promote Washington's Defense-Related Economy

Objectives

The value of Washington's defense-related economy is not well-understood among important state stakeholder groups, including Washington State government, regional and local government, and local communities. The important role that this cluster plays needs to be fully communicated to generate the level of support desired.

The strength and capabilities of private sector firms related to the defense economy should also be promoted at the national level, specifically in Washington D.C. Similarly, the support of the State government and local communities for the cluster and related activity should be conveyed to decision makers at the national level. Perception and personal relationships are important factors in how locational decisions are made and contracts are awarded, and so it is important to cultivate a positive image and strong relationships in seeking to grow Washington's share of defense-related economic activity.

Recommended Actions

A. Explicitly include defense in the State's economic development strategy

Given its current magnitude, market potential, and ability to fuel innovation and spinoffs in other industries, defense should be an explicit focus in Washington State's economic development strategy. This will ensure that defense-related issues and opportunities are elevated and integrated into economic development decision-making criteria and processes.

The WEDC can explicitly incorporate the defense economy into its dashboard metrics, conversations, and written strategies, ensuring that related issues and opportunities are tracked and considered appropriately, along with existing areas of focus.

B. Promote the economic benefits of the defense economy to stakeholder groups in the State

The economic impacts found in this study and in subsequent updates should be communicated broadly to raise awareness about the magnitude and geographic breadth of the economic activity associated with Washington's bases and participation by its businesses in national defense contracting.

C. Elevate and communicate the State's commitment to the cluster through high-level participation in trade shows and relationship-building in Washington D.C.

The participation of senior members of State government in national conferences and trade shows related to defense can help promote Washington's interest in its installations and defense-related economy. This demonstration of support will help to solidify the State's reputation as a major player and a state in which defense-related activity is welcomed. In addition to this general profile-raising, concrete opportunities could develop for Washington's businesses, particularly if participants are well-informed about the State's capabilities in relevant fields.

Similarly, outreach to decision makers in Washington D.C. should be a regular and productive affair. In addition to relationship-building and profile-raising, these visits should be guided by a well-informed agenda. The Washington Defense Partnership currently meets twice a year; once to focus on the state of Washington's installations and once to develop a legislative agenda. Participation by the WEDC in this discussion can identify defense investments and programs such as centers of excellence or specific R&D initiatives that could have a positive impact on Washington's economy. These legislative priorities should then be packaged in a way that makes it easy for a visiting delegation to D.C. to communicate them effectively.

D. Communicate what's happening

Washington's defense-related activities and successes should be seen as important public relations opportunities to raise appreciation for the defense cluster domestically and to elevate the State's profile nationally. These opportunities exist both for on-base activities or investments and efforts by private sector firms related to the military.

2. Inform, Coordinate, and Support Statewide and Industry-Specific Economic Development Efforts

Objectives

The desire to inform and target Washington's economic development efforts around defense is complicated by several factors:

- Business opportunities related to defense, selling either to local installations or to the Pentagon, are spread across a wide range of industries, including food services, construction, engineering, advanced manufacturing, and even textiles. Rather than thinking of a single "defense industry," capturing the full potential of the cluster requires consideration of this broad range of defense-related economic activities.
- Washington's existing economic development infrastructure is both geographically focused and dispersed across the State (in the form of Associate Development Organizations, Economic Development Districts, and even local chambers of commerce) and vertically structured in relatively isolated attempts to focus on specific industries or clusters (in the form of industry associations, innovation partnership zones, and other similar efforts).

Within this fragmented environment, a well-functioning response to Washington's defense-related economic opportunities would:

- Raise awareness of defense applications and business opportunities for industries and businesses that may not currently even consider the defense market
- Support the growth of related industries through a well-informed and coordinated economic development approach

An example of a relevant funding source that should be shared with economic development organizations and industry representatives is the recently announced Advanced Defense Technology program offered by the Small Business Association. The program solicits "proposals from existing regional innovation clusters specializing in defense technologies to provide counseling, training, mentoring, matchmaking and other services to support small business development and growth in cluster areas and industries" specializing in advanced defense technologies such as advanced robotics, advanced defense systems, power/energy innovations, cyber-security and applied lightweight materials⁵.

Recommended Actions

A. Support emerging defense-specific economic development efforts: the PNDC and WDP

Two economic development organizations specific to the military are active in Washington State: the Pacific Northwest Defense Coalition (PNDC) and the Washington Defense Partnership (WDP). Both are evolving organizations that can provide tremendous value to the State's installations and bases, particularly if they are supported in their growth. PNDC is a membership-based industry association with a presence in both Oregon and Washington. PNDC seeks to connect its members with businesses and teaming opportunities in the defense industry and has been active in defense-related economic development efforts. The WDP grew out of an initiative by the Prosperity Partnership to establish a four-county military

⁵ http://www.sba.gov/idc/groups/public/documents/sba_homepage/news_release_10-36.pdf

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Washington State's Defense Economy: Measuring and Growing Its Impact

cluster strategy. Following conclusion of the effort in 2010, the WDP was formed to broaden the focus statewide. The WDP now meets twice a year to coordinate efforts to retain and support Washington's military and to develop a legislative agenda. Participants include representatives of the State's military branches, public sector entities with an economic or workforce development focus, and defense contractors.

Given their dedicated focus on defense issues and the broad range of participants, these two efforts can be of great value to efforts to grow the State's economy, serving as direct economic development actors, advocates for the bases and issues related to military personnel and their families, and sources of information. The State should at a minimum continue to participate in conversations hosted by both organizations.

Recognizing the important roles these organizations can play, we recommend the State explore ways of providing direct support, potentially in the form of funding or staff support. The PNDC has four staff members (one based in Oregon and one based in Washington), and the WDP is operating without staff support or a host organization. While both could benefit from State support, there are also sensitive issues that have to be better understood and carefully navigated. The PNDC may compete for members with other existing economic development organizations. A role of the WDP is to inform and lobby State government, which could become less effective, or impossible, if it is a recipient of State support.

B. Share information, analysis, and opportunities with Associate Development Organizations (ADOs) and other economic development partners and provide direction to the State's ADOs

Washington's regional and local economic development entities are by definition and necessity focused on local issues and opportunities. In the case of defense, this means that localities with a strong Navy presence are focused on the Navy; those near Joint Base Lewis-McChord are focused on the needs and opportunities related to the base. In the past, private businesses tended to focus on local opportunities as well, and while this is still largely the case even in today's digital age, it means that opportunities further afield may be missed.

In a well-functioning system, the State's diverse and geographically dispersed economic development partners would have a broader understanding of changes happening in the military and related economic development opportunities. This understanding would be leveraged in a coordinated approach that benefits from successes and lessons learned elsewhere in the State. Furthermore, relevant businesses opportunities would be communicated among the participants in this interconnected network based on a strong understanding of the economic development assets of each locale.

One of the most important roles the State can play is in making information easily available to local economic development organizations, saving them the cost of obtaining it individually, or providing information that they would not otherwise have. This white paper is an example the value the State can provide by communicating a synopsis of changes occurring in the military and related economic development opportunities, as well as measures of economic activity and economic impact that can be used by local agencies to communicate the importance of this part of the economy.

In addition to providing this information, the WEDC has the authority to provide direction to the State's Associate Development Organizations. Much of the economic development work to be done to grow Washington's defense-related economy must be done at the local level, including efforts to grow and expand existing business – perhaps helping some who are focused on other markets to see defense applications for their goods and services – and attracting new firms that will augment the existing defense cluster. These efforts can be encouraged through policy direction by the WEDC. This strategic focus would be substantially strengthened if funding can be provided to assist ADOs in directing staff resources to implement this direction.

C. Raise awareness of business opportunities among businesses in broadly related fields

In addition to providing information and guidance to Washington's geographically dispersed network of economic development entities, the State should place an even greater emphasis on providing information and raising awareness among industry- and cluster-specific initiatives. The greatest return will be gained by focusing on areas where Washington is both well-positioned and well-organized to respond to defense-related opportunities.

Exhibit 8 summarizes industries that 1) will likely see ongoing or increasing demand from the military based on trends in national defense policy (see **Section 4.0**); and 2) are existing areas of strength for Washington. These industries should be targeted in the State's efforts.

Sample industry or cluster organizations are also listed. It is likely that many of these industry groups (and the businesses within these industries) do not currently consider potential defense applications and are focused on other markets. For example, do businesses in Washington's electronic gaming industry consider defense training software as a potential market? Are defense applications being fully considered in ongoing economic development efforts related to energy efficiency? Through targeted outreach and partnership development, the State can likely raise awareness of significant new market opportunities for these industries.

To support these conversations, the State could develop standard communications materials and discussion guides which can be used in presentations to industry organizations during their regularly scheduled sessions:

- Summary information available on WEDC website, highlighting the importance of defense economy to Washington State and drawing attention to contracting opportunities in particular industries
- Presentation materials and a discussion guide for use in outreach meetings with industry points of contact
- Resource sheets that provide brief overviews of potential funding sources

D. Study, target, and support Washington's defense-related economy through industry-specific initiatives

Building on the outreach and conversations in **Strategy C**, we recommend the State conduct further market analysis of potential defense applications in promising industries considering both domestic and export markets. This refined understanding of the relative scale of opportunity represented by these industries can be used to inform targeted, industry-specific initiatives that will help these portions of the economy continue to innovate and grow. Industry initiatives may address any number of related obstacles and impediments, including:

- Policy and business environment⁶
- Workforce development and technical training
- Infrastructure needs
- Priority business retention, expansion, and recruitment targets

⁶ Interviews conducted for this study surfaced widespread support among defense stakeholders for broadening Washington's current tax exemption for aviation to include aerospace. Another requested policy change mentioned by a few stakeholders was streamlining permitting for marine industries. These are examples of potential policy shifts related to specific industries that should be more carefully studied to ensure that they are indeed in the State's best interests to implement.

Exhibit 8 - Washington Industries with Potentially Significant Opportunities Related to Defense

Industries	Sample Economic Development Organizations and Industry Associations
Aerospace and aviation	Aerospace Futures Alliance of Washington Prosperity Partnership Aerospace Technology Cluster Snohomish Aerospace Convergence Zone Washington Aerospace Partnership
Biotech, medical, and life sciences	Prosperity Partnership Life Sciences Cluster Bothell Biomedical Device Innovation Zone
Energy efficiency and alternative energy	Prosperity Partnership Clean Technology Cluster Puget Sound Metropolitan Business Plan for Energy Efficiency Goods and Services Grays Harbor Sustainable Industries Innovation Partnership Zone Pullman Innovation Partnership Zone Clean Technology Center of Excellence Tri-Cities Innovation Zone Washington Clean Technology Alliance
Engineering research and design	Northwest Aerial Robotics Cluster
Information technology (software, hardware, communications, gaming)	Washington Technology Industry Association
Manufacturing ⁷	Center for Advanced Manufacturing Puget Sound Impact Washington
Marine industries	Bellingham Innovation Zone

⁷ Many of Washington's manufacturing sectors, including advanced composites, textiles, transportation, and others may have opportunities to enter or expand their sales in defense markets. Within each of these sectors, opportunities likely range from traditional products to innovative technologies.

3. Support Successful Contracting Bids and R&D Program Proposals

Objectives

The strategies described above focus on highlighting defense-related market opportunities, raising awareness of potential defense applications among strong Washington industries and businesses that are not explicitly focused on this market. In addition to awareness raising, there is an opportunity to provide assistance that will support successful contracting bids and proposals for research grants. The desired end-state is a strong network of technical assistance providers, businesses with the knowledge and capacity required to make successful bids, and a robust network of partners, including businesses, research institutions, and economic development entities that are capable of writing successful research and development proposals.

Recommended Actions

A. Increase business training and support resources by enhancing funding for PTACs

Stakeholders describe the process of selling to the military as “intimidating,” with one individual stating that, “You have to learn how to sell to the government.” While Washington’s larger businesses have this knowledge already, or the resources to acquire that knowledge, the State can play an important role in supplementing the technical assistance available to smaller firms seeking military contracts, whether they are for daily goods and services provided to a local installation or an advanced technological component for national defense use.

Procurement Technical Assistance Centers (PTACs) provide exactly this kind of training and assistance, and they are very highly regarded among defense industry stakeholders. Washington’s PTACs are managed through the Snohomish County Economic Development Council, with centers in nine locations across the State. These resources are uniformly considered to provide substantial value to the local and State economy, and stakeholders strongly believe them to be under-resourced. We recommend that the State consider augmenting the federal dollars that currently fund PTAC operations.

B. Support the development of online resources and toolkits

In addition to supporting Washington’s network of PTACs, the State can support efforts to provide online access to toolkits, training materials, and contracting opportunities. This effort would involve collaboration with the PTACs, PNDC, the WDP, and other interested parties, as well as an upfront investment and consideration of ongoing maintenance and updating.

C. Strengthen Washington’s ability to attract research and development funding

Each year, the Department of Defense provides more than \$1 billion in Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) funds that support small business early stage research and development in areas with defense applications.

Washington State has a strong track record of receiving SBIR and STTR funds, finishing in the top third of recipient states for 2000 to 2009. It is important to maintain this level of success, and the State’s role can be to share information with its regional and industry-specific partners, help facilitate partnerships, and continue to nurture a positive reputation and strong relationships with decisionmakers in Washington D.C.

APPENDIX A – LIST OF STAKEHOLDERS INTERVIEWED

1. Brice Barrett, Executive Director, Pacific Northwest Defense Coalition
2. Gary Brackett, Manager of Business & Trade Development, Tacoma-PC Chamber of Commerce
3. Lynne Chronister, Assistant Vice President of Research, University of Washington Applied Physics Lab
4. Ryan Dumm, District Representative, Office of Representative Norm Dicks
5. Carol Evanoff, Resident Director, Lockheed Martin
6. Gary Frogner, Senior Director, Concurrent Technologies Corporation
7. Grant Gilmore, Executive Director, Association of Washington Businesses
8. Sally Hintz, Northwest Washington Director, Office of Senator Maria Cantwell
9. Rear Admiral John Lockwood (Retired), Marketing & Business Development, Todd Shipyards
10. Jeff Marcel, President and Chief Executive Officer, enterpriseSeattle
11. Dallas Meggitt, Technical Director, Sound and Sea
12. Suzanne Mitchell, Program Manager, Washington Technology Center
13. Erin Nielsen and Matt Smith, Washington Procurement and Technical Assistance Center, Snohomish County Economic Development Council
14. Bill Stewart, Executive Director, Kitsap Economic Development Alliance
15. Rear Admiral Symonds, Commander, Navy Region Northwest

APPENDIX B – METHODOLOGY

Measuring the scale of Washington's defense-related economy

All data for the assessment, with the exception of Department of Defense contracting data, is self reported by the military facilities and organizations in the State. Data for the assessment, when available, is for fiscal year 2009 (October 1, 2008 to September 30, 2009). When the best available data was for years prior to FY 2009, expenditures were assumed to be the same and inflated to 2009 dollars.

Base Payroll and Purchases

Base payroll and purchasing data was gathered directly from the following military installations:

- Coast Guard, District 13 (Washington State only)
- Fairchild Air Force Base
- Joint Base Lewis McChord
- Navy Region Northwest
- Washington Army and Air National Guard

Contracting

Department of Defense contracts figures are from the Federal Procurement Data System – Next Generation (<https://www.fpds.gov/>). All figures are for fiscal year 2009. Only contracts for which the “place of performance” was listed as in Washington State were included.

Estimating the Economic Impact of Defense-Related Activity

IMPLAN is an input/output model that traces the ripple effects of an expenditure that occurs within an economy. The model is used to track how an economic action, such as wages paid to employees or the purchases of supplies, will ripple through a regional economy creating different levels of revenue, jobs, and income in many different economic sectors.

Expenditures within an economy are passed from hand to hand, creating more economic activity than just the original transaction. This is called a multiplier effect: one dollar spent within the community becomes more than one dollar of economic activity when passed along several times. Or, likewise, if a portion of that money is sent out of the region, one dollar spent becomes less than one dollar of economic activity in the area. IMPLAN provides information on the direct, indirect and induced economic effects that model this multiplier effect in the local region. These effects, as used in our IMPLAN analysis are described below:

- **Direct effects** are impacts from the portion of direct expenditures made by DoD or military installations *that remain within the State*. As an example, if an installation purchases a piece of equipment, the manufacturer of that equipment may send a portion of the money out of state to purchase supplies, and return a portion to the State economy through local purchases. The direct impacts are those dollars that are returned to the local economy.
- **Indirect effects** are impacts caused when an industry makes purchases from another industry. For example, if an installation purchases equipment, the equipment supplier must then make more purchases from its supplier; this is an indirect effect.
- **Induced effects** are impacts that occur from the expenditures of household wages. Employees receive wages from the installations and businesses that support military activity. The wages that are then put back into the economy as that person makes purchases for his or her household is the induced effect of the original salary payment.

Error! Reference source not found.Exhibit 9 further illustrates the flow of money and resulting direct, indirect, and induced effects.

Exhibit 9 - Approach to Calculating Economic Impacts

