

Economic Impacts of the Military Bases in Washington

July 2004

The state of Washington hosts several major military bases and significant installations of all branches of the military. Pierce County is the home of McChord Air Force Base and an Army base, Ft. Lewis. Kitsap County is home to Puget Sound Naval Shipyard, Naval Base Kitsap and the Keyport Undersea Warfare Research Station. Island County is the location of Naval Air Station Whidbey, and Snohomish County hosts the Everett Navy Base. Spokane County is the location of Fairchild Air Force Base. Yakima County is home to a training facility that is organizationally part of Ft. Lewis. In addition to these major facilities, there are more than 100 smaller facilities including hospitals, camps, depots, signal stations and recruiting offices.

This study found that military bases contribute significantly to economic activity throughout the state. In Island County, 88 percent of the economic activity comes from military bases. Other counties with large percentages of economic activity from bases include Kitsap (54 percent), Pierce (30 percent), Spokane (9 percent), and Snohomish (5 percent).

Other findings in the report include data that sales by Washington companies to local bases total \$528 million per year. In King County alone, businesses sold \$174 million to bases statewide. Forty-four companies in the state derive 100 percent of their business from military bases, and 30 others generate more than half of their business from the bases.

While much of the health care is provided to service personnel and their families on base, \$116 million is paid out per year to private health care providers in Washington state. Schools also receive federal assistance for educating military dependents. Local districts receive \$31.7 million in school impact aid from the federal government.



OFFICE OF FINANCIAL MANAGEMENT

**ECONOMIC IMPACTS OF THE
MILITARY BASES IN WASHINGTON**

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JULY 2004



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Office of Financial Management

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Introduction

The State of Washington hosts several major military bases, and significant installations of all branches of the military. Pierce County is the home of McChord Air Force Base and an Army base, Ft. Lewis. Kitsap County is home to the Puget Sound Naval Shipyard, the Bangor submarine base, and the Keyport Undersea Warfare Research Station. Island County is the location of Naval Air Station Whidbey, and Snohomish County hosts the Everett Navy Base. Spokane County is the location of Fairchild Air Force Base. And Yakima County is home to a training facility that is organizationally part of Ft. Lewis. In addition to these major facilities, there are more than 100 smaller facilities including hospitals, camps, depots, signal stations, recruiting offices, and other miscellaneous facilities.

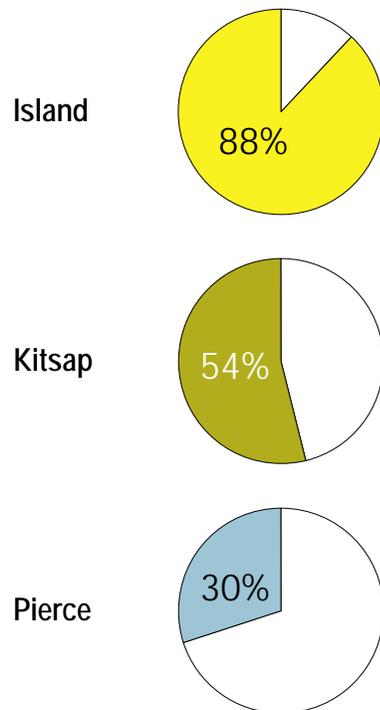
This report examines the economic impact of the following major facilities:

	County
Ft. Lewis	Pierce
McChord Air Force Base	Pierce
Naval Base Kitsap (Bangor and Bremerton Naval Stations)	Kitsap
Keyport Undersea Warfare Center	Kitsap
Northwest Regional Maintenance Center (Puget Sound Naval Shipyard and Bangor Intermediate Maintenance Facility)	Kitsap
Naval Station Everett	Snohomish
Naval Air Station Whidbey	Island
Fairchild Air Force Base	Spokane
Yakima Training Center	Yakima

These major facilities are the worksites for more than 83,000 military and civilian personnel, and they generate a \$3.7 billion payroll. The bases purchase a variety of goods and services from in-state vendors, and they generate significant economic impacts throughout the state, including \$174 million in King County, 42 percent of total procurements by the bases from within the state. Both statewide and local impacts are estimated in this report, totaling more than \$7.2 billion in total labor earnings when multiplier impacts are taken into account. On the order of 5 percent of all economic activity in Washington State is due to the total impacts of the major military bases located in the state. At the county level, the proportion of all activity dependent on the military bases is much larger for three counties (see figure, right).

Direct and total impacts of the major bases are discussed in detail below, based on a methodology presented in the Appendix.

Proportion of all activity dependent on military bases



Direct Impacts

In this section, each category of direct impact is examined, with estimates provided county by county. Note that individual bases are not distinguished for several types of impacts. Pensions, on-base retail spending, and health care expenditures are available by county but not by base, whereas payroll data came from each base individually. Consequently, most of the tables in this and subsequent sections of the report are organized by county, not base.

Military related civilian and uniformed employment at the major bases in Washington totals over 83,000 as shown in table 2.1 at right. Pierce and Kitsap Counties have the largest military contingents, followed by Island, Spokane, and Snohomish Counties. The training center in Yakima County also has a small permanent staff of about 500.

2.1 – Number of Uniformed and Civilian Personnel on Major Military Bases in Washington, 2003

		Percent of Employment
Island	10,066	68%
Kitsap	27,375	36%
Pierce	34,624	14%
Snohomish	4,517	2%
Spokane	6,262	3%
Yakima	500	1%
Statewide	83,344	3%

Payrolls

The payrolls of uniformed and civilian personnel working on military bases are shown by county in table 2.2 below. Pierce County, with large Army and Air Force bases, has the largest military payroll, nearly \$1.9 billion. Next in size is Kitsap, with several Navy installations and a payroll just over \$1 billion. Snohomish, Spokane, and Island follow with payrolls ranging from \$159 million to \$399 million. Yakima has a payroll just under \$9 million. The military payroll total for the state originating on the major bases in the six counties listed in the table below is \$3.737 billion annually.

2.2 – Uniformed and Civilian Payrolls of Military Bases by County, \$ millions, 2003

			Military Payroll as Percent of Countywide Wage & Salary Disbursements
Island	399.1	767	52.0%
Kitsap	1,001.4	3,236	30.9%
Pierce	1,876.1	9,417	19.9%
Snohomish	159.1	8,633	1.8%
Spokane	293.0	6,440	4.5%
Yakima	8.9	2,622	0.3%
Statewide	3,737.6	111,478*	3.4%†

* Represents Countywide Wage & Salary Disbursements for the entire state

† Military Payroll as Percent of Countywide Wage & Salary Disbursements for the entire state

Health Care Expenditures

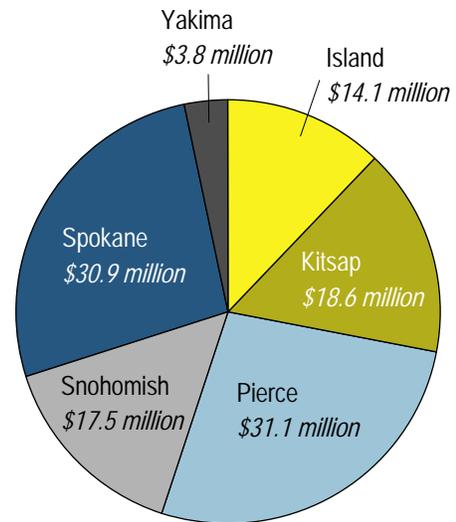
Health care is provided to active duty personnel, family members of active duty personnel including survivors, and military retirees. Health care services are provided by military health care centers such as Madigan Hospital in Pierce County, or by civilian providers who are reimbursed by TriCare. TriCare payments to health care providers in Washington are shown at top right, ranging from \$31.1 million per year in Pierce County to \$3.8 million in Yakima County. The statewide total is \$116 million.

Pensions

Pensions of retired military personnel are administered through the bases. Since the retirees may be eligible to shop in the on-base commissaries, get health benefits through the TriCare system, and may be eligible for free travel services on military aircraft, there is an on-going relationship between many of the retirees and the bases in this state. Many active duty personnel seek a last posting before retirement in a region of the country in which they want to retire, and the bases in Washington are very popular choices. Therefore, we have included the pensions paid to military retirees by each of the major bases in the state in the direct impact category along with payrolls (bottom right). These pension payments range from \$91.1 million in Island County to \$524.9 million in Pierce County (no retirees are shown for Yakima since the Yakima Training Center is part of Ft. Lewis in Pierce County, and pensions for any retirees living in Yakima County are not reported separately). The statewide total is \$1.153 billion.

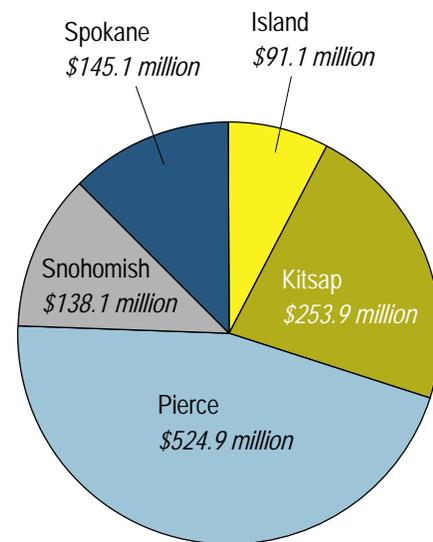
Health Care Payments by TriCare, 2003

Statewide total, \$116 million



Pensions of Military Retirees, 2003

Statewide total, \$1.153 billion



On-Base Retail Spending

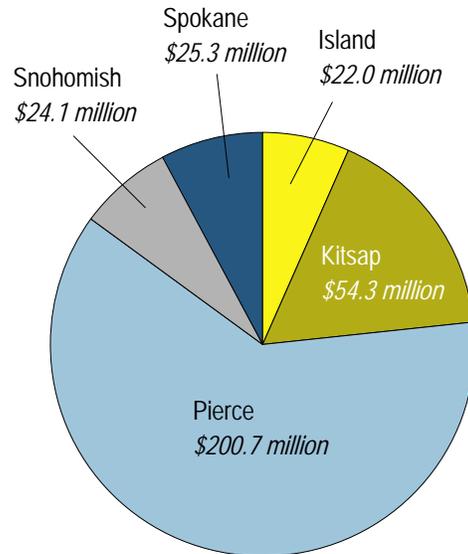
The larger military bases have their own retail outlets for use by military personnel, qualified retirees, and their dependents. Commissaries are the equivalent of a supermarket style grocery store, and base exchanges are similar to a *Fred Meyer* or *K-mart* store with a wide variety of merchandise. Counting active duty personnel, retirees, and spouses and children, on the order of 322,000 individuals have shopping privileges at these on-base retail outlets (estimate by OFM staff). Sales by commissaries and base exchanges are exempt from Washington State taxes, so they have no effect on the Washington economy unless the goods offered for sale in these outlets are procured from in-state sources. Any in-state procurements should be picked up in the DIOR contracts database discussed in the Appendix. The sales reported in each county by these facilities are *deducted* from the payroll and pension amounts for the county since the sales are not made by Washington businesses and there is no tax impact in the state.

Other Military Activities in Washington Not Related to the Major Bases

Information about direct economic impacts was also gathered from the Washington National Guard, the Washington Military Department, the Marine Corps, and the Coast Guard. These branches of the military services are not associated with the major bases that are the focus of this report. For the sake of completeness, total payroll amounts associated with these military branches are reported here, but are not included in the total impact estimates below, since those estimates are restricted to impacts of the major bases. The total payroll associated with these military service branches is \$491.7 million. Personnel of these services are housed in a wide variety of smaller military installations around the state.

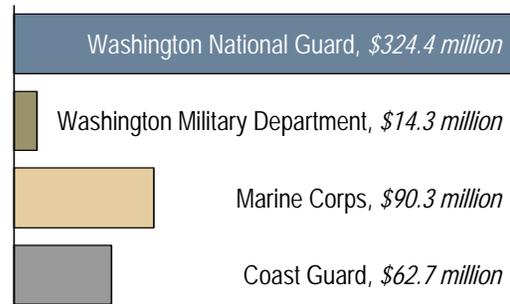
Commissary and Base Exchange Sales

Statewide total, \$326.4 million



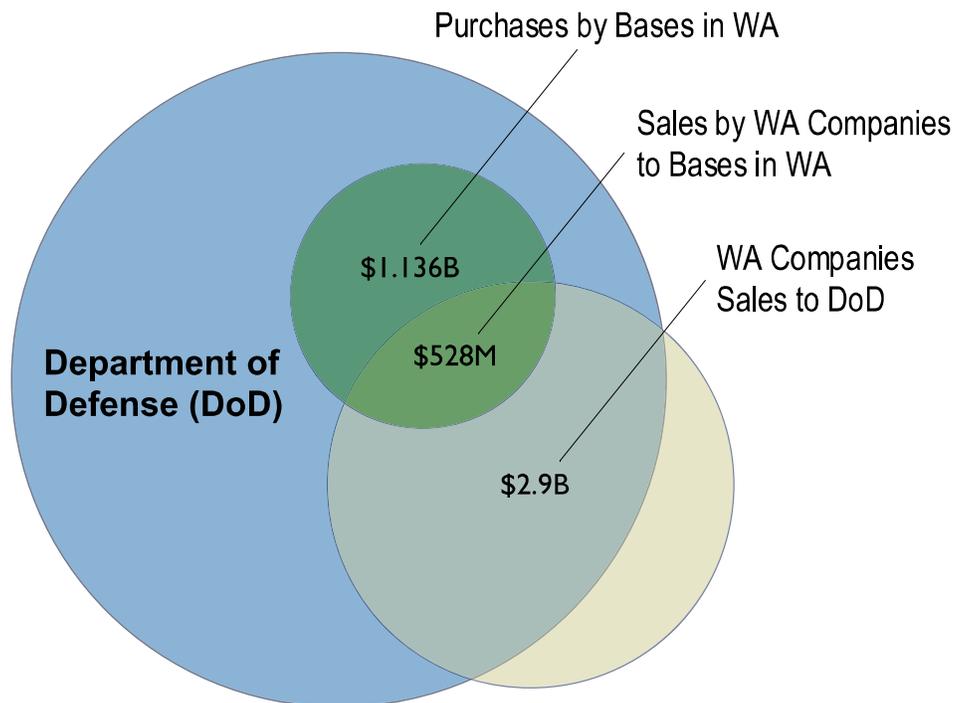
Other Military Payrolls in Washington

Total, \$491.7 million



Contracts Let by Bases

Contracting activity of purchasing offices located on the Washington bases can impact the state economy if the vendor is also within the state. The figure below was compiled from these data to show the relative importance of Washington suppliers to Washington bases. The bases in Washington procured \$1.1 billion in goods and services in 2002, and military contractors in Washington sold more than \$2.9 billion to DoD buyers nationwide. The overlap of these two sets of sales is the sales by Washington companies to bases located in Washington: \$528 million in 2002. Obviously, the bases located in this state have suppliers located elsewhere, and likewise, the military contractors based in this state make sales to military installations located elsewhere. The \$528 million supplied within the state to in-state bases by in-state contractors is further analyzed below.



Suppliers

The top 10 in-state contractors to the Washington bases are shown at right. These 10 suppliers account for \$288 million of the total of \$528 million of goods and services supplied to Washington bases by Washington contractors in 2003.

Top 10 Washington Suppliers to Washington Military Bases, 2003

Todd Pacific Shipyards
 Johnson Controls World Service
 Raytheon Company
 M. Kennedy Co. Inc.
 Pease Construction, Inc.
 Absher Construction Co.
 Colville Tribal Service Corporation
 Wade Perrow Construction, Inc.
 Triton Marine Construction Corp.
 JKT/PCL Tribal 8(A) Joint Venture

Military contractors vary in their business strategies, with some having few customers other than the military services, and others having very diversified customer bases, with a nearby base constituting just one of many customers. However, should a base be shut down or its activities significantly reduced, contractors significantly dependent on business from that base could be negatively impacted. By matching up contract volume by contractor with total revenues reported to the Washington State Department of Revenue (DOR), the vulnerability of 424 military contractors in Washington was estimated by the ratio of military contract obligations in 2002 to total revenues reported to DOR in that year. Forty-four firms appear to be completely dependent on DoD business; 100 percent (or more due to multi-year contracts) of revenue appear to be coming from DoD purchasing offices. Another 66 Washington businesses have a significant dependence on military business in that they receive between 25 and 100 percent of their business revenue from DoD. The bulk of the military contractors in the state are quite diversified and could probably survive a downturn in business from the bases; less than 25 percent of revenue is coming from DoD for these 314 firms.

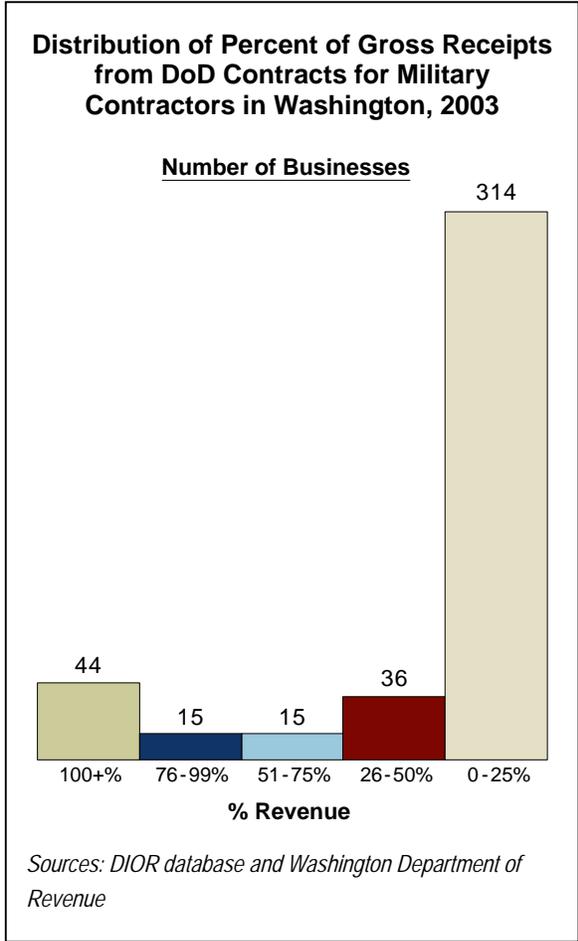


Table 7.1 (opposite page) breaks out the contract volume by purchasing office. The percent of the contracts let to businesses located in the same county as the military purchasing office varies greatly from a low of 32 percent for Madigan Hospital to a high of 97 percent for the Keyport Naval Undersea Warfare Center. These variations are due to some degree to the specialized nature of the goods or services required by each purchasing office; medical suppliers for Madigan are coming largely from sources outside the state and this may simply reflect the geographic distribution of pharmaceutical companies and other medical suppliers nationwide. On the other hand, Keyport and the shipbuilding and repair operations in Kitsap are buying nearly all of their supplies locally, and the requirements of these purchasing offices are also quite specialized, including exotic research and development services required by Keyport. These variations in local purchasing are intriguing and may warrant further investigation from an economic development viewpoint. A local high tech business cluster has grown up around Keyport for example, constituting an economic development success story that other regions of the state could perhaps emulate.

7.1 – Department of Defense Contracts to Washington Businesses by Purchasing Office

	Home County	Statewide	Percent from Home County
McChord AFB	11.2	25.3	44%
Ft. Lewis	7.2	18.1	40%
Madigan Army Medical Ctr.	1.7	5.3	32%
Fairchild AFB	14.0	26.8	52%
Navy Fleet & Ind'l. Supply Ctr.	9.4	23.9	39%
Naval Facilities Engineering	73.2	201.0	36%
Naval Undersea Warfare	25.8	26.4	97%
Supervisor— Shipbuilding/Conversion	96.6	100.6	96%

7.2 – Contract Volume by County

			Major Bases
Benton	1,525,995	0.4%	
Clallam	884,590	0.2%	
Clark	315,719	0.1%	
Cowlitz	2,046,370	0.5%	
Franklin	131,815	0.0%	
Grant	492,258	0.1%	
Grays Harbor	75,600	0.0%	
Island	12,181,297	2.9%	NAS Whidbey
Jefferson	5,994,038	1.4%	
King	174,654,208	42.1%	
Kitsap	115,318,884	27.8%	Naval Station Bremerton, Northwest Maintenance Facility, Keyport
Klickitat	210,743	0.1%	
Mason	40,800	0.0%	
Okanogan	18,233,058	4.4%	
Pierce	53,354,182	12.9%	McChord AFB; Ft. Lewis; Camp Murray; Madigan Hospital
Skagit	711,550	0.2%	
Snohomish	5,601,194	1.4%	Naval Station Everett
Spokane	18,582,478	4.5%	Fairchild AFB
Thurston	513,856	0.1%	
Whatcom	191,407	0.0%	
Yakima	3,545,684	0.9%	Yakima Training Center

The existing contracts let by Washington bases also impact more than half the counties in Washington, including many counties with no major bases, as table 7.2 (preceding page) shows. Benton County is home to the Hanford Reservation, where spent nuclear materials are stored; hence Benton houses some suppliers to the Navy installations in the Puget Sound that are servicing nuclear powered vessels. Okanogan County received \$18 million in contracts in 2003 due to the construction company owned by the Colville Tribe. King County is the single largest supplier to the Washington bases; King County suppliers provided 42 percent of the total contract volume let by Washington bases in 2003. King County is home of Todd Shipyard, which is the single largest military contractor in the state. Many other counties likewise have existing suppliers to the state's military bases, making the military bases a significant component of the economic base of more than half of the state's counties.

Other Impacts of the Major Bases

In addition to the impacts described above, the bases impact Washington's economy in several other ways for which we do not have complete data. The major types of additional impacts are assistance provided to college and university students who are active duty personnel, payments made to school districts to compensate them for schooling dependents of military personnel (in the absence of any tax revenues from the bases), and credit card purchases by military personnel for relatively small purchases to support base operations.

Several of the universities in the state provided information on the number of students who are either active-duty military personnel whose tuition and other costs are reimbursed by the military, or students who are active-duty military who are reclassified as residents for tuition purposes. The first type of student brings income into the state, while the second type is receiving a benefit from the state. Unfortunately, neither the universities nor the community and technical colleges can accurately identify the number of students whose tuition is being paid by the DoD. The University of Washington reported 193 students known to be on active-duty status, and Western Washington University identified one student on active duty. Several of the universities, but not the community and technical colleges, can estimate the number of students reclassified as residents because of their military status (see table 8.1). These students are being assisted by the state, but it is not known if they are also receiving tuition assistance or other aid from the DoD.

8.1 – Number of students reclassified as residents because of their military status



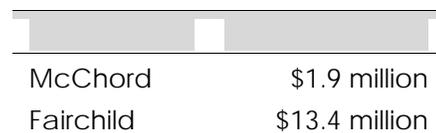
University of Washington	193
Washington State University	44
Eastern Washington University	49

8.2 – Expenditures for higher education assistance provided to their personnel



McChord	\$695,000
Navy - all stations	\$518,000

8.3 – Housing assistance payments* for personnel living off base



McChord	\$1.9 million
Fairchild	\$13.4 million

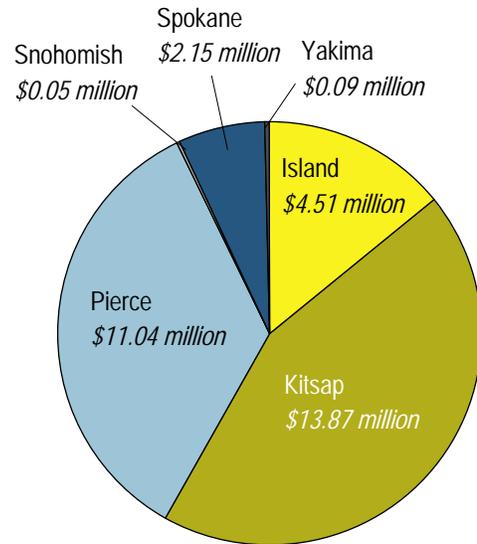
*Report from two bases

The bases themselves report expenditures for higher education assistance provided to their personnel (table 8.2, previous page). Unfortunately, there is no information as to how much of this assistance was used at higher education institutions in Washington. Two bases reported housing assistance payments for personnel living off base (table 8.3, previous page).

A number of school districts receive federal aid as compensation for schooling the dependents of military personnel. The districts report the number of such students to the Office of the Superintendent of Public Instruction (OSPI), and these reports are forwarded to a federal office, but they are not tabulated by OSPI. Consequently, no comprehensive estimates are available of the number of students who are military dependents. However, the districts report the aid they receive from the federal government as part of their budget reports, with sub-accounts noting aid for dependents of uniformed personnel and civilian employees at federal facilities. The amounts reported by all districts within the counties housing the major bases are shown at right.

Federal Employee Impact Aid to Washington School Districts

Statewide total, \$31.71 million



Credit Card Purchases

Only one report is available on the issue of credit card purchases. These purchases on miscellaneous supplies totaled \$27 million for McChord AFB (estimate supplied by Tacoma – Pierce County Chamber of Commerce).

Adding up these incomplete reports across all of these impact categories suggests that something on the order of \$100 million in these miscellaneous impact categories. This is a relatively small amount compared to the direct impact totals, and suggests that the total impact estimates reported below are not seriously off the mark due to not including these miscellaneous impact categories.

Total Impacts by County and Statewide

The following tables summarize the total impact of the military bases in Washington, based on input-output model calculations of the multiplier impacts of the payrolls and purchases detailed above. Impacts on the home counties of the bases as well as statewide impacts are shown in table 9.1 at right. In terms of employment, Pierce County has the largest impact level, 74,500 jobs within the county and 87,500 statewide. Kitsap County follows, with a total workforce stemming from military activity in the county of nearly 47,000 and 53,800 statewide. The statewide total job impact is 187,900 jobs.

9.1 – Total Employment Related to Military Bases

		Statewide
Island	17,494	20,141
Kitsap	46,935	53,835
Pierce	74,466	87,534
Snohomish	10,545	11,877
Spokane	12,851	13,797
Yakima	640	709
Statewide		187,900

These jobs generate substantial payrolls, the largest being the Pierce payrolls: \$2.8 billion inside the county and \$3.4 billion in statewide payrolls due to the bases in Pierce County. The statewide total labor earnings impact of the military bases is estimated at \$7.24 billion (see table 10.1).

10.1 – Total Labor Earnings Related to Military Bases (millions \$)

		Statewide
Island	674	775
Kitsap	1,756	2,014
Pierce	2,867	3,370
Snohomish	431	474
Spokane	570	585
Yakima	19	22
Statewide		7,240

To put the statewide total impact estimate in perspective, total personal income in Washington was \$204 billion (personal income data from Bureau of Economic Analysis, U.S. Department of Commerce). While the components of personal income have not been published for 2003, the 2002 data show total personal income for the state at \$198 billion, of which labor earnings were \$152 billion (76.7 percent of total personal income). Based on this ratio, \$204 billion of personal income in 2003 should include \$156.7 billion in labor earnings. Of that total, \$7.2 billion (4.6 percent of the total) was due to the total impact of the major military bases in the state. Considering the incomplete nature of the military base impact estimates, something on the order of 5 percent of all economic activity in the state of Washington is due to the presence of the military bases and the impacts their payrolls and purchases have on the state economy.

For some of the counties that host these bases, the in-county total impact is proportionately larger as shown in table 10.2 below. The proportional impact on Island, Kitsap, and Pierce Counties is clearly much larger than for the other three host counties.

10.2 – Total Labor Earnings Due to Military Bases Compared to Wage and Salary Disbursements by County

			Military Total Impacts as Percent of Wage & Salary Disbursements
Island	674	767	87.9%
Kitsap	1,756	3,236	54.3%
Pierce	2,867	9,417	30.4%
Snohomish	431	8,633	5.0%
Spokane	570	6,440	8.9%
Yakima	19	2,622	0.7%
Statewide	6,317	111,478*	5.7%†

* Represents Countywide Wage & Salary Disbursements for the entire state

† Military Total Impacts as Percent of Countywide Wage & Salary Disbursements for the entire state

Appendix: Methodology

Direct Impacts

Payrolls and purchases originating on the major military bases in the state are the major sources of economic impact. Payrolls get spent by military personnel and civilian employees of the bases on a variety of consumer goods and services, as well as housing. Many active duty military personnel are housed off base and receive housing subsidies in addition to their salaries. Retirees are associated with the bases in that their pensions are administered through the accounting systems at the bases, and military retirees are eligible for certain services such as health care and goods sold at commissaries. Retiree pensions therefore contribute to the economic impact of the bases. Some of the bases have commissaries, base exchanges, or other facilities that sell retail goods to base employees and service members. These on-base stores are stocked with goods that may not be purchased inside the state, and they are exempt from Washington State taxes. Therefore, the sales at these facilities must be excluded from the impact estimates by subtracting them from the military-related payrolls. In addition, the bases contract for health care services that are provided by private sector providers in the state. These private sector health care expenditures contribute to the overall economic impact on the state economy. Finally, to support their operations, the bases also procure a wide variety of goods and services, and some proportion of these purchases come from Washington State vendors. All of these categories of economic activity are added up to form the estimate of *direct impacts* of the bases.

Multiplier Effects or Indirect Impacts

The direct impacts have multiplier effects for two reasons – the military payrolls generate additional activity to the extent that they are spent within the state, and the in-state purchases of the bases impact the sales and payrolls of the in-state vendors. Using an input-output model multiplier, *indirect impacts* are estimated. Adding together direct and indirect impacts produces an estimate of *total impacts*.

Other Impacts

There are other impacts of the military on the state economy that are not the focus of this report. In particular, there are several hundred Washington businesses that are contractors to the Department of Defense. These contractors, ranging from Boeing and Todd Shipyard, among the largest to independent consultants, and health care providers at the low end, may provide goods and services to in-state bases, bases in other states or countries, or directly to the Pentagon. For example, Boeing sells aircraft and other aerospace products directly to acquisitions offices at the Pentagon. Several Native American tribes have construction companies that might work on a military construction contract at a base in Washington or perhaps overseas at a U.S. military installation in another country. Aggregate estimates of the out-of-state military business revenues of in-state contractors are briefly mentioned in this report, but the total impacts of activity outside the state are not analyzed.

Statewide and County Impacts

This report also distinguishes two levels of impact: statewide and county. Statewide impacts result when goods or services are purchased anywhere in the state using funds from military payrolls, pensions, or purchases by the bases themselves. Statewide impacts are what economic impact studies usually report. In addition, using special county-specific versions of the state input-output model, impacts are estimated within the home county of each base. These county-specific estimates scale down the statewide impact estimates to the level of indirect impact on just the businesses in the home

county of each base. These county-specific estimates may be of interest particularly in the more remote counties (Spokane and Yakima), whereas all of the bases in western Washington are part of the larger Puget Sound regional economy, and many of the indirect impacts are likely to “leak” across county borders. The term “leakage” refers to the possibility that a portion of the payroll originating in one county may get spent in another, e.g., a service member stationed at a Kitsap County bases may spend money on entertainment or shopping in King County.

Input-Output Model

The model used to estimate impacts is the 1997 Washington Input-Output model. This is a new model just released by the state Office of Financial Management. It produces statewide indirect and total impact estimates based on direct impact estimates in terms of employment and payroll, and purchases from various industries in the state. The military contract data discussed below were allocated to the various industries in the model for all of the bases located in a particular county. Payrolls and pensions were added to the impact of contracts. On-base retail spending was subtracted from the payrolls since commissaries and base exchanges have no impact on the state economy unless they are stocked with goods purchased within the state. In-state purchases of the commissaries should be captured in the contract data, taking care of this small element of in-state impact.

The county-level impact estimates are made using county-specific versions of the statewide model created using a procedure recommended by University of Washington Geography Professor William Beyers. Location Quotients (LQs), or measures of the relative density of an industry in a particular county compared to the state, are estimated using employment data. LQs are often used as measures of competitive strength; low LQs, those less than 1, are associated with relatively weak or possibly non-competitive industries. The direct purchase coefficient of any industry with an LQ less than 1 is reduced by multiplying the original estimate by the location quotient; purchase coefficients for industries with location quotients over 1 are left unchanged. This procedure is well known in the input-output literature.¹ The effect of this procedure is to reduce the in-county purchase estimates from industries with low LQs on the rationale that military purchasing offices will be tempted to look for a larger, better known supplier elsewhere, rather than dealing with a small supplier of unknown quality who may be located nearby. The difficulties associated with becoming certified as a DoD supplier, and dealing with the paperwork requirements of government transactions, adds to the probability that small suppliers in smaller counties will not be chosen over larger suppliers in major cities.

¹ Miller, Ronald E. *Input-output analysis: Foundations and extensions*. Englewood Cliffs, NJ: Prentice-Hall, 1985, pp. 296-7.

Data Sources

Data from the Bases

All of the data presented below were provided by the bases in the state, with the exception of the contracts data as discussed in the Contracts section below. The author appreciates the cooperation of the each base as well as the Washington Military Department and its commander, Gen. Lowenberg, who facilitated contacts with the bases.

Contract or Procurement Data

The Department of Defense (DoD) Directorate for Information Operations and Reports (DIOR) provides an annual database listing all contract obligations issued by the DoD each year. The database lists each contractor, including the home address of the business, and specifies the purchasing office that created the obligation. This data source provides a very rich description of the purchasing behavior of military bases. There are two significant shortcomings of this database, however. There is no figure for the actual spending on a contract, just the dollar amount obligated. The obligation amount sets a ceiling, subject to future contract amendments, on the amount a contractor can bill the purchasing office. If a contract is completed at less than the ceiling amount, then the obligation amount is an over-estimate of actual charges. On the other hand, cost over-runs do occur and are handled by contract amendments. Lacking any information on the variation between obligations and actual payments, and recognizing that both positive and negative errors are possible, we use the obligation amount as the best available estimate of actual spending. The second shortcoming is that the industry coding provided in the database appears to be a misuse of the NAICS industry classification system, based on the product or service being provided rather than the actual industry of the contractor. However, by checking the contractor names against Washington Department of Employment Security and Department of Revenue records, correct NAICS and SIC codes were assigned to about 80 percent of the contractors. For the remaining contractors, the DIOR code was used and converted to the most likely SIC code. Coding by SIC category was necessary because the state input-output model was created using industries coded by SIC.

The analysis of the DIOR database took several steps. First, a list of purchasing offices on Washington bases was created by comparing a list of military installations in Washington provided by the Washington Military Department to the list of purchasing offices in the DIOR database. Then, a list of contractors selling goods or services to bases located in Washington was extracted from the nationwide DIOR database.



Impacts of the Military Bases in Washington

Office of Financial Management

June 16, 2005

Major Military Installations in Washington

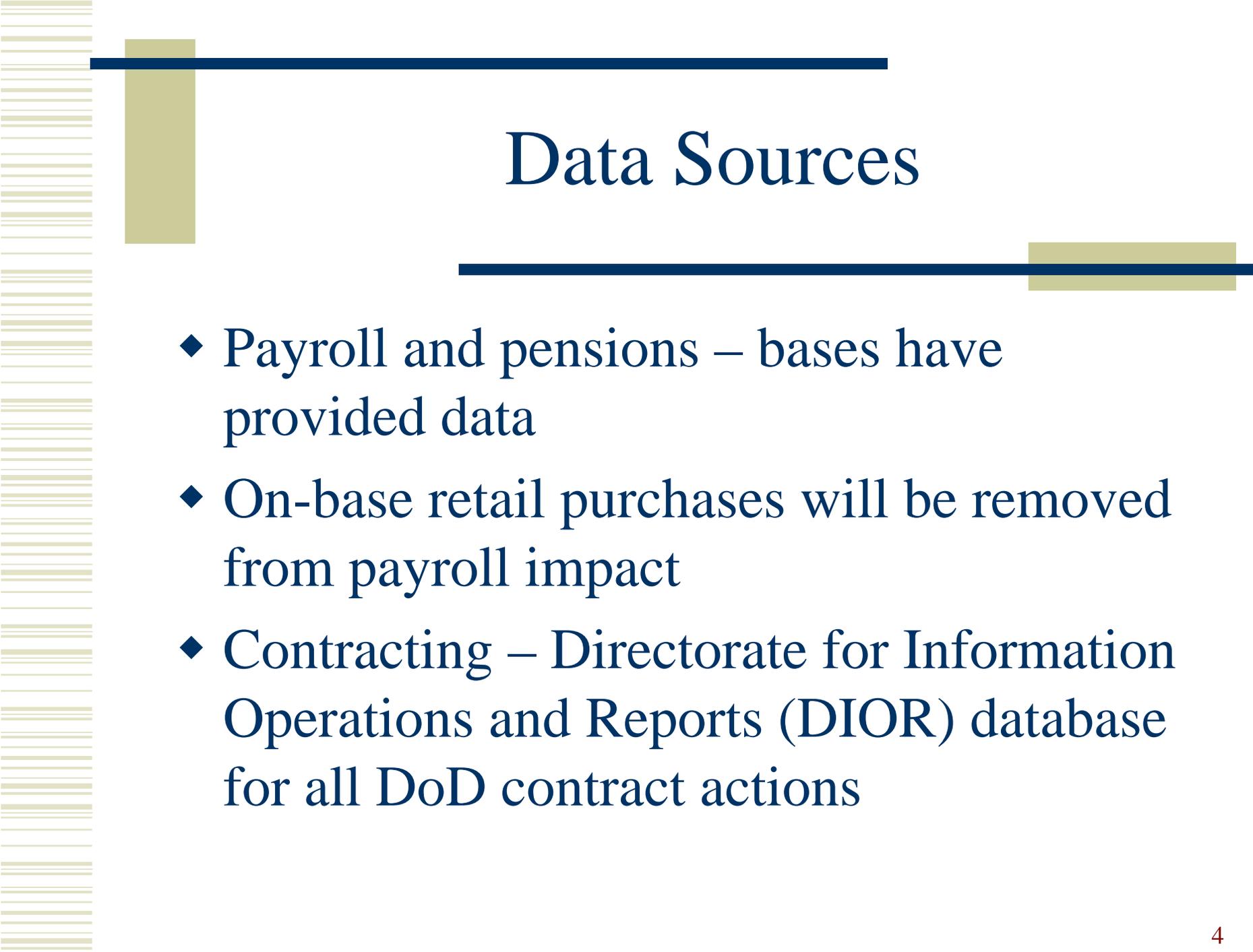
Base County	County
Ft. Lewis	Pierce
McChord Air Force Base	Pierce
Naval Base Kitsap (Bangor and Bremerton Naval Stations)	Kitsap
Keyport Undersea Warfare Center	Kitsap
Northwest Regional Maintenance Center (Puget Sound Naval Shipyard and Bangor Intermediate Maintenance Facility)	Kitsap
Naval Station Everett	Snohomish
Naval Air Station Whidbey	Island
Fairchild Air Force Base	Spokane
Yakima Training Center	Yakima

- There are over 100 military installations in the state



Direct Impacts

- Payroll of uniformed/civilian personnel (\$3.74B)
- Pensions of military retirees (\$1.15B)
- TriCare payments to private providers (\$0.12B)
- Purchases of bases from companies in Washington (\$0.53B)



Data Sources

- ◆ Payroll and pensions – bases have provided data
- ◆ On-base retail purchases will be removed from payroll impact
- ◆ Contracting – Directorate for Information Operations and Reports (DIOR) database for all DoD contract actions

Home and Statewide Sales to DoD Purchasing Offices in WA

(Millions \$)	Home County	Statewide	% from Home County
McChord AFB	11.2	25.3	44%
Fort Lewis	7.2	18.1	40%
Madigan Army Medical Ctr.	1.7	5.3	32%
Fairchild AFB	14.0	26.8	52%
Navy Fleet & Ind'l. Supply Ctr.	9.4	23.9	39%
Naval Facilities Engineering	73.2	201.0	36%
Naval Undersea Warfare	25.8	26.4	97%
Supervisor—			
Shipbuilding/Conversion	96.6	100.6	96%

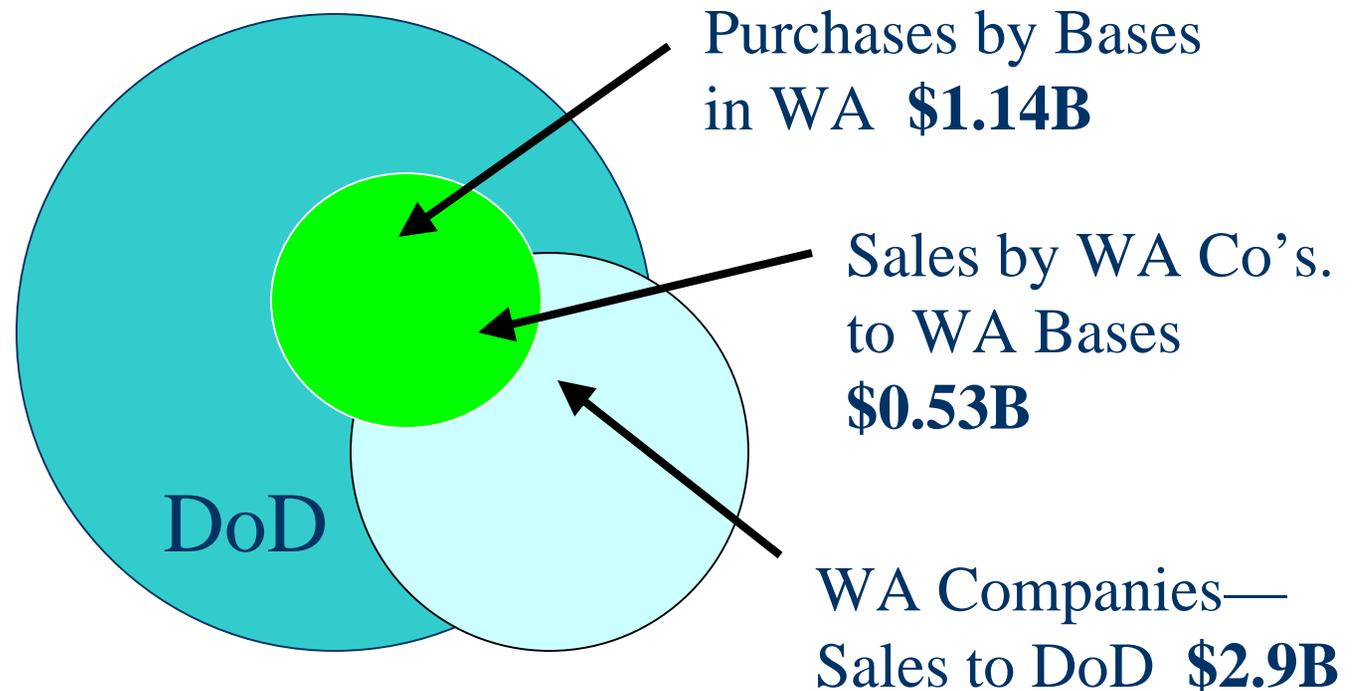
Total State Impact – Labor Earnings

(millions \$)	Home County	Statewide
Island	674	775
Kitsap	1,756	2,014
Pierce	2,867	3,370
Snohomish	431	474
Spokane	570	585
Yakima	19	22
Statewide		7,240
% of WA Total		(4.6%)

Total County Impact – Labor Earnings

(millions \$)	Home County Labor Earnings Total Impact, 2003	Wage & Salary Disbursements, 2003	Military Total Impacts as % of Wage & Salary Disbursements
Island	674	762	88.5%
Kitsap	1,756	3,368	52.1%
Pierce	2,867	9,975	28.7%
Snohomish	431	8,915	4.8%
Spokane	570	6,660	8.6%
Yakima	19	2,754	0.7%
Statewide	6,317	114,150	5.5%

Contracts Let by WA Major Bases (FY2003)



Top 10 WA Suppliers to WA Bases

- ◆ TODD PACIFIC SHIPYARDS
- ◆ JOHNSON CONTROLS WORLD SERVICE
- ◆ RAYTHEON COMPANY
- ◆ M KENNEDY CO , INC
- ◆ PEASE CONSTRUCTION, INC
- ◆ ABSHER CONSTRUCTION CO
- ◆ COLVILLE TRIBAL SERVICE CORPOR
- ◆ WADE PERROW CONSTRUCTION, INC
- ◆ TRITON MARINE CNSTR CORP
- ◆ JKT/PCL, TRIBAL 8(A) JT VEN

Contracts from Washington Bases by County

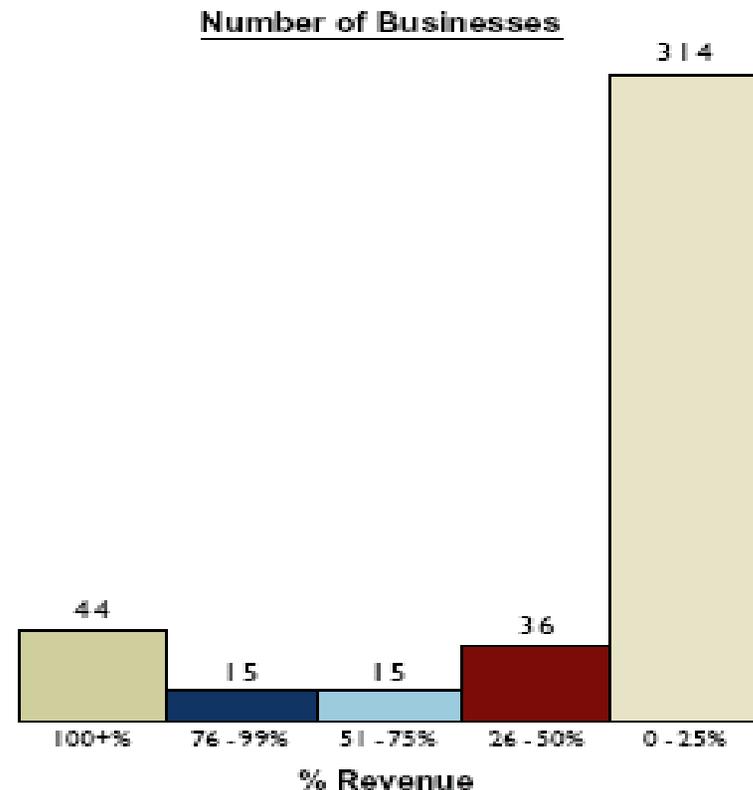
- Over half of Washington's counties have some impact from purchasing practices of bases in the state

- King County has no major bases, but many specialized construction companies wholesale suppliers, and shipyards working on military vessels

County	Total Contracts	% of Total	Major Bases
Benton	1,525,995	0.4%	
Clallam	884,590	0.2%	
Clark	315,719	0.1%	
Cowlitz	2,046,370	0.5%	
Franklin	131,815	0.0%	
Grant	492,258	0.1%	
Grays Harbor	75,600	0.0%	
Island	12,181,297	2.9%	NAS Whidbey
Jefferson	5,994,038	1.4%	
King	174,654,208	42.1%	
Kitsap	115,318,884	27.8%	Bremerton NAS, PS Shipyard, Bangor
Klickitat	210,743	0.1%	
Mason	40,800	0.0%	
Okanogan	18,233,058	4.4%	
Pierce	53,354,182	12.9%	Ft. Lewis; Camp Murray;
Skagit	711,550	0.2%	
Snohomish	5,601,194	1.4%	NAS Everett
Spokane	18,582,478	4.5%	Fairchild AFB
Thurston	513,856	0.1%	
Whatcom	191,407	0.0%	
Yakima	3,545,684	0.9%	Yakima Training Center
	414,605,726		

Vulnerability- Portion of Gross Receipts from DoD Contracts

- ◆ 44 Firms are completely dependent on DoD (multi-year contracts account for over 100% observations)
- ◆ Another 66 receive between a quarter and 100% of their revenues from DoD contracts
- ◆ 314 firms are well diversified – less than 25% of revenues from DoD



Based-Purchased Products or Services with Low Leakage (FY2004)

DoD Contracts in Washington Products/Services (\$M)	WA Suppliers	Out-of- State Suppliers	Total Purchase	Leakage
Water Transportation	15.8	0.0	15.8	0%
Utilities	17.1	1.6	18.7	9%
Repair and Maintenance	29.4	2.7	32.1	8%
Wholesalers, Nondurable Goods	52.7	0.9	53.5	2%
Computer and Electronic Products	195.3	41.1	236.4	17%
Transportation Equipment	600.5	99.2	699.7	14%
Professional & Scientific Services	776.1	50.5	826.6	6%

Based-Purchased Products or Services with High Leakage (FY2004)

DoD Contracts in Washington Products/Services (\$M)	WA Suppliers	Out-of- State Suppliers	Total Purchase	Leakage
Educational Services	4.6	11.0	15.6	70%
Textile Products	3.0	14.2	17.2	83%
Food Services	2.3	20.5	22.8	90%
Wholesalers, Durable Goods	13.3	26.1	39.5	66%
Waste Management Services	15.9	24.6	40.6	61%
Fabricated Metal Products	19.2	29.6	48.8	61%
Civil Engineering Construction	59.9	64.7	124.7	52%
Construction of Buildings	95.6	111.6	207.2	54%

**ECONOMIC IMPACTS OF THE
MILITARY BASES IN WASHINGTON**

July 2004

NAS Whidbey in Island County

Prepared by: Dr. Paul Sommers

Island County is home to Naval Air Station Whidbey, a modern facility providing marine reconnaissance and electronic warfare capabilities. Other than this base, Whidbey Island is a largely rural area. Consequently, nearly 88 percent of all economic activity in Island County is directly and indirectly linked to the Navy presence.

Direct Impacts

The direct impacts of this base include employment, payrolls, retiree pension, payments to private health care providers, and purchases of goods and services from local vendors. These impacts are shown in Table 1. On base employment of over 10,066 constitutes 68 percent of total employment in Island County. The annual payroll earned by these civilian and military workers is \$399.1 million, 52 percent of countywide labor earnings. The Navy operates a hospital in Oak Harbor. However, the services offered at the Navy hospital are supplemented with \$14.1 million of health care services purchased from private providers. Military retiree pensions are administered through the bases, and many retirees live in counties near the base administering their pension so that they can take advantage of on-base services such as overseas travel or access to commissaries. Pensions administered at NAS Whidbey sum to \$91.1 million annually. Contracts let by the base for a variety of goods, services, and on-base construction total \$12.2 million. Active duty personnel, military retirees, and their spouses and dependents are eligible to use the on-base retail facilities provided by commissaries and base exchanges. Spending at these facilities does not impact the state economy in any way unless the goods are provided by in-state vendors (captured in the contracts data). Therefore, the payroll and pension amounts are reduced by the \$22 million spent at the commissaries and base exchanges in Island County to calculate net direct impact as shown in Table 1. This net direct impact sums to \$494.5 million.

1 – Direct Impacts of Major Military Bases in Island County, 2003

Employment, uniformed and civilian	10,066
Payroll	\$399.1 million
Military retiree pensions	\$91.1 million
TriCare payments to private providers	\$14.1 million
Contracts for goods and services	\$12.2 million
On-base retail spending	\$22.0 million
Net direct impact*	\$494.5 million

** Reduced by on-base retail spending*

In addition, the federal government compensates school districts for schooling the dependents of federal employees including service personnel. School districts in Island County receive \$4.5 million annually in impact aid for schooling of the dependents of military personnel.

Multiplier Impacts

When military related payrolls get spent within the county or state, and when the base lets contracts to businesses in the county or state, these expenditures have multiplier or indirect impacts that generate additional economic activity. These multiplier impacts are estimated using a new input-output model just released by the Office of Financial Management, resulting in total impact estimates (the sum of direct impacts and the multiplier impact). NAS Whidbey directly and indirectly account for nearly 17,500 jobs in Island County and over 20,100 statewide. The total impacts in terms of labor earnings sum to \$674 million within Island County (about 88 percent of wage disbursements in this county) and nearly \$775 million statewide.

2 – Total Impacts of the Major Bases in Island County

Employment in Island County	17,494
Statewide employment	20,141
Labor earnings in Island County	\$674 million
Statewide labor earnings	\$775 million

**ECONOMIC IMPACTS OF THE
MILITARY BASES IN WASHINGTON**

July 2004

Military Bases in Kitsap County

Prepared by: Dr. Paul Sommers

Kitsap County is home to Naval Base Kitsap (the Bremerton naval station and the Bangor submarine base), Puget Sound Naval Shipyard, and, the Keyport Undersea Warfare Center. About 54 percent of all economic activity in Kitsap County is directly and indirectly linked to the personnel and procurements at these bases.

Direct Impacts

The direct impacts of this base include employment, payrolls, retiree pension, payments to private health care providers, and purchases of goods and services from local vendors. These impacts are shown in Table 1. On base employment of 27,375 constitutes about 36 percent of total employment in Kitsap County. The annual payroll earned by these civilian and military workers is \$1.0014 billion, 30.9 percent of countywide labor earnings. The Navy operates a hospital in Bremerton, but in addition it contracts with private sector providers for additional health care services for its personnel, employees, retirees, and their direct family members living in the area. Contracts for health care services amount to \$18.6 million annually. Military retiree pensions are administered through the bases, and many retirees live in counties near the base administering their pension so that they can take advantage of on-base services such as overseas travel or access to commissaries. Pensions administered by the Navy facilities in Kitsap County sum to \$253.9 million annually. Contracts let by the bases for a variety of goods, services, and on-base construction total \$115.3 million. Active duty personnel, military retirees, and their spouses and dependents are eligible to use the on-base retail facilities provided by commissaries and base exchanges. Spending at these facilities does not impact the state economy in any way unless the goods are provided by in-state vendors (captured in the contracts data). Therefore, the payroll and pension amounts are reduced by the \$54.3 million spent at the commissary/base exchanges in Kitsap County to calculate net direct impact as shown in Table 1. This net direct impact sums to nearly \$1.335 billion.

1 – Direct Impacts of Major Military Bases in Kitsap County, 2003

Employment, uniformed and civilian	27,375
Payroll	\$1.0014 billion
Military retiree pensions	\$253.9 million
TriCare payments to private providers	\$18.6 million
Contracts for goods and services	\$115.3 million
On-base retail spending	\$54.3 million
Net direct impact*	\$1.335 billion

** Reduced by on-base retail spending*

In addition, the federal government compensates school districts for schooling the dependents of federal employees including service personnel. School districts in Kitsap County receive \$13.870 million annually in impact aid for schooling of the dependents of military personnel.

Multiplier Impacts

When military related payrolls get spent within the county or state, and when the base lets contracts to businesses in the county or state, these expenditures have multiplier or indirect impacts that generate additional economic activity. These multiplier impacts are estimated using a new input-output model just released by the Office of Financial Management, resulting in total impact estimates (the sum of direct impacts and the multiplier impact). The bases in Kitsap County directly and indirectly account for nearly 47,000 jobs in Kitsap County and over 53,800 statewide. The total impacts in terms of labor earnings sum to \$1.756 billion within Kitsap County (about 8.9 percent of wage disbursements in this county) and \$2.014 billion statewide.

2 – Total Impacts of the Major Bases in Kitsap County

Employment in Kitsap County	46,935
Statewide employment	53,835
Labor earnings in Kitsap County	\$1.756 billion
Statewide labor earnings	\$2.014 billion

**ECONOMIC IMPACTS OF THE
MILITARY BASES IN WASHINGTON**

July 2004

Ft Lewis and McChord AFB in Pierce County

Prepared by: Dr. Paul Sommers

Pierce County is home to Fort Lewis and adjoining McChord Air Force Base. These two bases are an important component of the United States' capacity to quickly respond to military situations around the world. Their substantial employment levels, payrolls, and other economic impacts also constitute approximately 30 percent of all economic activity in Pierce County.

Direct Impacts

The direct impacts of the two bases include employment, payrolls, retiree pension, payments to private health care providers, and purchases of goods and services from local vendors. These impacts are shown in Table 1. On-base employment of over 34,600 constitutes 14% of total employment in Pierce County. The annual payroll earned by these civilian and military workers is \$1.876 billion, nearly 20 percent of countywide labor earnings. The Army operates Madigan Hospital in Pierce County; this is a major medical facility and a teaching hospital affiliated with the University of Washington. However, the services offered at Madigan are supplemented with \$31.1 million of health care services purchased from private providers. Military retiree pensions are administered through the bases, and many retirees live in counties near the base administering their pension so that they can take advantage of on-base services such as overseas travel or access to commissaries. Pensions administered at Ft. Lewis and McChord AFB sum to \$524.9 million annually. Contracts let by these two installations for a variety of goods, services, and on-base construction total \$52.1 million statewide, of which \$25.2 million is supplied by vendors located in Pierce County. Active duty personnel, military retirees, and their spouses and dependents are eligible to use the on-base retail facilities provided by commissaries and base exchanges. Spending at these facilities does not impact the state economy in any way unless the goods are provided by in-state vendors (captured in the contracts data). Therefore, the payroll and pension amounts are reduced by the \$200.9 million spent at the commissaries and base exchanges in Pierce County to calculate net direct impact as shown in Table 1. This net direct impact sums to \$2.2312 billion.

1 – Direct Impacts of Major Military Bases in Pierce County, 2003

Employment, uniformed and civilian	34,624
Payroll	\$1.876 billion
Military retiree pensions	\$524.9 million
TriCare payments to private providers	\$31.1 million
Contracts for goods and services	
Pierce County vendors	\$25.2 million
Statewide	\$52.1 million
On-base retail spending	\$200.9 million
Net direct impact*	\$2.2312 billion

** Reduced by on-base retail spending*

In addition, the federal government compensates school districts for schooling the dependents of federal employees including service personnel. School districts in Pierce County receive \$11 million annually in impact aid for schooling of the dependents of military personnel.

Multiplier Impacts

When military related payrolls get spent within the county or state, and when the base lets contracts to businesses in the county or state, these expenditures have multiplier or indirect impacts that generate additional economic activity. These multiplier impacts are estimated using a new input-output model just released by the Office of Financial Management, resulting in total impact estimates (the sum of direct impacts and the multiplier impact). The two major bases in Pierce County directly and indirectly account for over 74,000 jobs in Pierce County and over 87,000 statewide. The total impacts in terms of labor earnings sum to nearly \$2.9 billion within Pierce County (about 30 percent of wage disbursements in this county) and nearly \$3.4 billion statewide.

2 – Total Impacts of the Major Bases in Pierce County

Employment in Pierce County	74,466
Statewide employment	87,534
Labor earnings in Pierce County	\$2.867 billion
Statewide labor earnings	\$3.370 billion

**ECONOMIC IMPACTS OF THE
MILITARY BASES IN WASHINGTON**

July 2004

Naval Station Everett in Snohomish County

Prepared by: Dr. Paul Sommers

Snohomish County is home to Naval Station Everett. NS Everett is the homeport for a nuclear powered aircraft carrier, plus three destroyers and three frigates. About 5 percent of all economic activity in Snohomish County is directly and indirectly linked to the personnel and procurements at these bases.

Direct Impacts

The direct impacts of this base include employment, payrolls, retiree pension, payments to private health care providers, and purchases of goods and services from local vendors. These impacts are shown in Table 1. On base employment of 4,517 constitutes about 2 percent of total employment in Snohomish County. The annual payroll earned by these civilian and military workers is \$159.1 million, 1.8 percent of countywide labor earnings. The Navy operates medical and dental clinics in Everett, but in addition it contracts with private sector providers for additional health care services for its personnel, employees, retirees, and their direct family members living in the area. Contracts for health care services amount to \$17.5 million annually. Military retiree pensions are administered through the bases, and many retirees live in counties near the base administering their pension so that they can take advantage of on-base services such as overseas travel or access to commissaries. Pensions administered by the Navy facilities in Snohomish County sum to \$138.1 million annually. Contracts let by the bases for a variety of goods, services, and on-base construction total \$5.6 million. Active duty personnel, military retirees, and their spouses and dependents are eligible to use the on-base retail facilities provided by commissaries and base exchanges. Spending at these facilities does not impact the state economy in any way unless the goods are provided by in-state vendors (captured in the contracts data). Therefore, the payroll and pension amounts are reduced by the \$24.1 million spent at the commissary/base exchanges in Snohomish County to calculate net direct impact as shown in Table 1. This net direct impact sums to \$296.2 million.

1 – Direct Impacts of Major Military Bases in Snohomish County, 2003

Employment, uniformed and civilian	4,517
Payroll	\$159.1 million
Military retiree pensions	\$138.1 million
TriCare payments to private providers	\$17.5 million
Contracts for goods and services	\$5.6 million
On-base retail spending	\$24.1 million
Net direct impact*	\$296.2 million

** Reduced by on-base retail spending*

In addition, the federal government compensates school districts for schooling the dependents of federal employees including service personnel. School districts in Snohomish County receive \$53,000 annually in impact aid for schooling of the dependents of military personnel.

Multiplier Impacts

When military related payrolls get spent within the county or state, and when the base lets contracts to businesses in the county or state, these expenditures have multiplier or indirect impacts that generate additional economic activity. These multiplier impacts are estimated using a new input-output model just released by the Office of Financial Management, resulting in total impact estimates (the sum of direct impacts and the multiplier impact). The bases in Snohomish County directly and indirectly account for over 10,000 jobs in Snohomish County and nearly 12,000 statewide. The total impacts in terms of labor earnings sum to \$431 million within Snohomish County (about 5.0 percent of wage disbursements in this county) and \$474 million statewide.

2 – Total Impacts of the Major Bases in Snohomish County

Employment in Snohomish County	10,545
Statewide employment	11,877
Labor earnings in Snohomish County	\$431 million
Statewide labor earnings	\$474 million

**ECONOMIC IMPACTS OF THE
MILITARY BASES IN WASHINGTON**

July 2004

Fairchild AFB in Spokane County

Prepared by: Dr. Paul Sommers

Spokane County is home to Fairchild Air Force Base, housing a fleet of tanker aircraft, and supporting airlift missions of the Air Force. The base also houses a survival school, search and rescue services, and Washington Air National Guard units. About 9 percent of all economic activity in Spokane County is directly and indirectly linked to the personnel and procurements at Fairchild AFB.

Direct Impacts

The direct impacts of this base include employment, payrolls, retiree pension, payments to private health care providers, and purchases of goods and services from local vendors. These impacts are shown in Table 1. On base employment of 6,262 constitutes about 3 percent of total employment in Spokane County. The annual payroll earned by these civilian and military workers is \$293 million, 4.5 percent of countywide labor earnings. The Air Force contracts for health care services for its personnel, employees, retirees, and their direct family members living in the area. Contracts for health care services amount to \$30.9 million annually. Military retiree pensions are administered through the bases, and many retirees live in counties near the base administering their pension so that they can take advantage of on-base services such as overseas travel or access to commissaries. Pensions administered at Fairchild AFB sum to \$145.1 million annually. Contracts let by the base for a variety of goods, services, and on-base construction total \$18.6 million. Active duty personnel, military retirees, and their spouses and dependents are eligible to use the on-base retail facilities provided by commissaries and base exchanges. Spending at these facilities does not impact the state economy in any way unless the goods are provided by in-state vendors (captured in the contracts data). Therefore, the payroll and pension amounts are reduced by the \$25.3 million spent at the commissary/base exchange at Fairchild AFB to calculate net direct impact as shown in Table 1. This net direct impact sums to \$462.3 million.

**1 – Direct Impacts of Major Military
Bases in Spokane County, 2003**

Employment, uniformed and civilian	6,262
Payroll	\$293 million
Military retiree pensions	\$145.1 million
TriCare payments to private providers	\$30.9 million
Contracts for goods and services	\$18.582 million
On-base retail spending	\$25.3 million
Net direct impact*	\$462.3 million

** Reduced by on-base retail spending*

In addition, the federal government compensates school districts for schooling the dependents of federal employees including service personnel. School districts in Spokane County receive \$2.15 million annually in impact aid for schooling of the dependents of military personnel.

Multiplier Impacts

When military related payrolls get spent within the county or state, and when the base lets contracts to businesses in the county or state, these expenditures have multiplier or indirect impacts that generate additional economic activity. These multiplier impacts are estimated using a new input-output model just released by the Office of Financial Management, resulting in total impact estimates (the sum of direct impacts and the multiplier impact). Fairchild AFB directly and indirectly account for 12,850 jobs in Spokane County and nearly 13,800 statewide. The total impacts in terms of labor earnings sum to \$570 million within Spokane County (about 8.9 percent of wage disbursements in this county) and nearly \$585 million statewide.

**2 – Total Impacts of the Major Bases
in Spokane County**

Employment in Spokane County	12,851
Statewide employment	13,797
Labor earnings in Spokane County	\$570 million
Statewide labor earnings	\$585 million