



MISSION MARYLAND:

**Measuring Economic Impact of
Maryland's Military Installations**

Executive Summary

The Maryland Department of Business and Economic Development (DBED) and the Maryland Department of Labor, Licensing and Regulation (DLLR) retained the Jacob France Institute of the Merrick School of Business at the University of Baltimore (JFI) to prepare an analysis of the economic impact of the seventeen military bases located in Maryland. The JFI implemented this study using the following methodology:

1. The JFI developed a standardized data collection form to be sent to each of the seventeen military installations in Maryland to be studied;
2. Because of its close working relationship with Maryland's military community, DBED personnel from its Office of Military and Federal Affairs worked with officials at each base to collect the information requested in the data collection form; and
3. The data collected for the seventeen military bases were analyzed by the JFI using the IMPLAN economic model.

Maryland Military Base Spending and Employment

The total and in-State levels of employment, payrolls, procurement and purchases and visitor spending are presented in Executive Summary Table 1. All of the data presented in this report are for Federal Fiscal Year 2008. As presented in this Table:

- The seventeen bases analyzed directly employ 118,022 workers;
 - Fort Meade/NSA has the largest level of employment, with 48,389 workers or 41% of the total employment of the seventeen military bases analyzed;
 - These 118,022 workers accounted for 3.4% of total employment in Maryland;
- A total of 105,933 of the employees of the seventeen military bases in Maryland, 90% of the total, live in Maryland.
- The seventeen bases analyzed reported \$9.8 billion in total payroll expenditures¹;
- Payroll expenditures paid to Maryland residents total just over \$9.0 billion;
- Military bases in Maryland reported total procurement of \$30.8 billion² and \$6.6 billion³ in purchases of goods and services from Maryland companies; and
- Maryland military bases reported attracting thousands of visitors into the State, who spend more than \$41.3 million.⁴

These employment, payrolls, procurement and purchases, and visitor spending data were the inputs to the economic impact analysis conducted. As presented in Chart 1, payrolls are the largest area of military base spending analyzed, accounting for 58% of total spending analyzed. Procurement is the second largest area of spending with 42% of total spending analyzed and visitor spending accounted for 0.3% of total spending analyzed.

¹ Not all bases reported total payrolls.

² Not all bases, most importantly NAS Pax River, were able to report total purchases and two bases did not report their procurement or purchases at all. As a result, this figure is likely to understate the total level of procurement.

³ This figure excludes medical expenditures in order to avoid double counting with the impacts of military payrolls, a portion of which is spent on medical care. Also, since not all bases reported in-State purchases, this figure is likely to be lower than actual in-State purchases.

⁴ Visitor and visitor spending data were available for only seven of the seventeen bases studied.

Executive Summary Table 1
Maryland Military Bases Employment , Payrolls and in-State Purchases

Item	Employment		Payrolls (Mil. \$) ¹		Purchases (Mil. \$) ²		Visitor
	Total	In-State	Total	In-State	Total ³	In-State ⁴	Spending (Mil. \$) ⁵
Total All Seventeen Bases	<u>118,022</u>	<u>105,933</u>	<u>\$9,809.3</u>	<u>\$9,037.3</u>	<u>\$30,760.5</u>	<u>\$6,597.7</u>	<u>\$41.3</u>
Aberdeen Proving Ground	11,096	10,111	\$698.6	\$606.3	\$13,118.2	\$1,143.7	n.a.
Andrews Air Force Base	8,057	4,858	\$406.1	\$356.5	\$128.4	\$128.4	\$0.8
Army Corps Engineers – Baltimore	1,208	647	\$77.7	\$41.8	n.a.	n.a.	n.a.
Army Research Laboratory	925	807	\$102.9	\$89.2	\$816.9	\$82.3	\$4.2
Fort Detrick	4,349	3,564	\$302.6	\$244.2	\$3,235.0	\$439.3	\$2.6
Fort Meade/NSA	48,389	46,937	\$5,640.7	\$5,471.4	\$10,133.3	\$2,633.3	n.a.
MD National Guard	7,197	7,053	\$166.3	\$163.0	\$115.2	\$49.5	n.a.
NAS Pax River	10,965	10,307	\$883.4	\$830.4	\$1,731.8	\$1,731.8	\$29.4
National Geospatial Agency	3,000	1,400	\$246.0	\$114.8	n.a.	n.a.	n.a.
National Maritime Intelligence Center	1,724	1,445	\$203.6	\$170.6	\$91.0	\$29.8	n.a.
NNMC Bethesda	8,108	7,191	\$357.2	\$331.8	\$214.6	\$69.6	n.a.
NRL- Chesapeake Bay	13	12	\$0.8	\$0.8	\$8.4	\$3.8	\$0.7
NSF Indian Head	2,918	2,494	\$186.3	\$158.9	\$681.6	\$95.9	n.a.
NSWC Carderock	1,543	954	\$141.7	\$88.4	\$311.5	\$61.4	n.a.
US Naval Academy	6,147	6,057	\$236.0	\$223.7	\$138.4	\$96.1	n.a.
USCG Curtis Bay Coast Guard Yard	1,518	1,338	\$92.1	\$87.7	\$19.1	\$19.1	\$0.3
Walter Reed, Forest Glenn Annex	865	758	\$67.3	\$57.7	\$17.1	\$13.7	\$3.3

(1) In several cases, entire bases or individual commands on bases did not provide total or in-State payrolls which were estimated by DBED based on available data.

(2) In order to avoid double counting, Medical (Champus/Tricare) spending is excluded from the analysis of local purchasing.

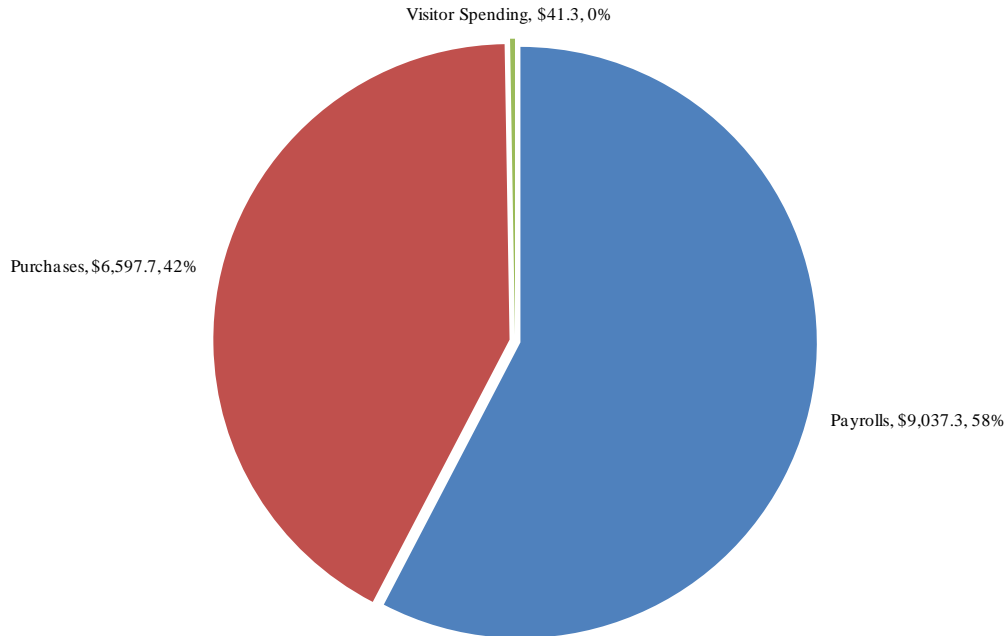
(3) In several cases, entire bases or individual commands on bases were unable to provide any procurement spending or only provided in-State purchases; thus, the total purchases presented here are likely to be lower than actual amounts.

(4) In several cases, entire bases or individual commands on bases were unable to any procurement spending; thus, in-State purchases presented here are likely to be lower than actual amounts. In some cases, only total procurement was provided, with in-State purchases estimated by the IMPLAN model.

(5) In several cases, entire bases or individual commands on bases were unable to provide any visitor data; thus, the total visitor spending presented here is likely to be lower than the actual amount.

Source: Military Bases, DBED, IMPLAN and the JFI.

Chart 1
Sources of Military Base Direct Impacts
(Mil. \$s)



The Economic Contribution of the Seventeen Military Bases Studied

The results of this economic impact analysis are summarized in Executive Summary Table 2 and Chart 2. As presented in this Table and Chart:

- The seventeen military bases generated \$15.7 billion in direct spending⁵ in Maryland through in-state purchases of goods and services, payroll paid to Maryland residents and visitor spending and employ 112,981 persons⁶ earning \$9.8 billion in FY2008;
- The in-State spending by the seventeen military bases analyzed generated nearly \$9.0 billion in *Indirect Impacts* from local purchases made by the bases and their varied suppliers and \$11.0 billion in *Induced Impacts* from the increase in Maryland incomes attributable to the bases and their suppliers;
- The seventeen bases analyzed generated a total of \$35.7 billion in economic activity in Maryland⁷ and, when multiplier effects are included, created or supported 268,029 jobs earning an estimated \$17.1 billion in employee compensation;

⁵ It is difficult to determine the “direct” impact of a military base. In the private sector the direct impacts are the revenues or spending associated with an activity. It is difficult to develop a “price” for national defense spending. The overall budget of a military base is often quite high in relationship to its actual local spending, and with the diversity of commands on Maryland’s bases – overall budget figures would be difficult to obtain. Thus, this analysis uses the level of in-State payroll, purchases and employment as the direct impact of a base.

⁶ In order to avoid double counting, this analysis excludes the 5,041 Maryland National Guard Reserve members as these persons are only employed part time by the military and are likely to have other employment.

⁷ It is important to note that military construction – apart from that which is reported by the bases is not included in this analysis. Also this analysis is of spending associated with the seventeen bases analyzed, it does not include military or civilian workers

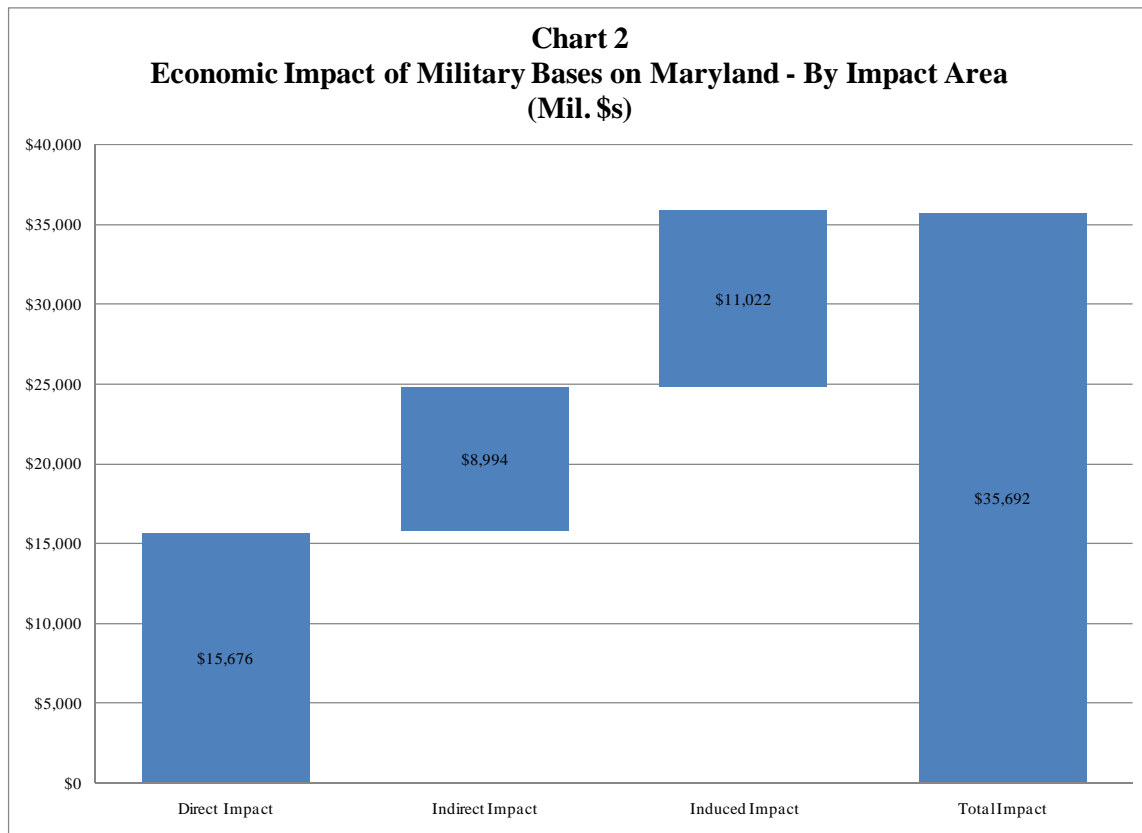
- The 268,029 jobs created or supported by the seventeen bases analyzed account for 7.7% of total 2008⁸ employment in Maryland; and
- The seventeen military bases analyzed generate an estimated nearly \$1.2 billion in combined state and local government revenues.

Executive Summary Table 2
Economic Impacts of the Seventeen Military Bases Analyzed
On the State of Maryland, FY2008

Item	Direct Impact	Indirect Impact	Induced Impact	Total Impact
Output (Mil. \$)	\$15,676.3	\$8,993.5	\$11,022.1	\$35,691.9
Employment (# of Jobs) ¹	112,981	64,894	90,154	268,029
Employee Compensation (Mil. \$)	\$9,809.3	\$3,890.6	\$3,357.1	\$17,057.0

(1) In order to provide a conservative estimate - the direct employment impact excludes the 5,041 Reserve members who are likely to have other full time employment.

Source: DBED, Military Bases and IMPLAN



residing in Maryland and commuting out of state or the DOD/Military spending occurring in Maryland but not associated with these bases.

⁸ 2008 employment was based on U.S. Bureau of Economic Analysis data.

The economic impacts of the seventeen bases analyzed are presented by base in Executive Summary Table 3, Executive Summary Table 4 and Chart 3. As presented in these Tables and Chart, the Maryland economic impacts associated with its seventeen military bases are highly concentrated in a few bases, with Fort Meade/NSA accounting for 49% of the spending impact, NAS Pax River for 18% and Aberdeen Proving Ground for 12%. These three bases account for 79% of the military base spending impact on Maryland.

Executive Summary Table 3
Maryland Military Bases - Output Impact

<u>Economic Impacts</u>	Direct Impact ¹	Indirect Impact ²	Induced Impact ³	Total Impact ⁴
Total All Seventeen Bases	<u>\$15,676.3</u>	<u>\$8,993.5</u>	<u>\$11,022.1</u>	<u>\$35,691.9</u>
Aberdeen Proving Ground	\$1,750.1	\$1,564.4	\$966.8	\$4,281.3
Andrews Air Force Base	\$485.7	\$170.3	\$367.0	\$1,023.0
Army Corps Engineers – Baltimore	\$41.8	\$0.0	\$36.8	\$78.6
Army Research Laboratory	\$175.7	\$114.4	\$121.2	\$411.3
Fort Detrick	\$686.0	\$589.2	\$416.4	\$1,691.6
Fort Meade/NSA	\$8,104.7	\$3,527.3	\$6,183.7	\$17,815.7
MD National Guard	\$212.5	\$64.2	\$154.5	\$431.2
NAS Pax River	\$2,591.5	\$2,443.5	\$1,542.5	\$6,577.5
National Geospatial Agency	\$114.8	\$0.0	\$104.0	\$218.8
National Maritime Intelligence Center	\$200.4	\$38.9	\$163.6	\$402.9
NNMC Bethesda	\$401.5	\$92.2	\$312.3	\$806.0
NRL- Chesapeake Bay	\$5.3	\$6.2	\$2.6	\$14.1
NSF Indian Head	\$254.8	\$125.0	\$168.9	\$548.7
NSWC Carderock	\$149.7	\$86.3	\$108.2	\$344.3
US Naval Academy	\$319.9	\$125.6	\$232.0	\$677.5
USCG Curtis Bay Coast Guard Yard	\$107.2	\$25.1	\$85.2	\$217.5
Walter Reed, Forest Glenn Annex	\$74.8	\$20.9	\$56.2	\$151.8

(1) Direct Impacts are the activities directly associated with the bases.

(2) Indirect Impacts are the result of the local purchase of goods and services by the bases and their suppliers.

(3) Induced Impacts are the result of the increase in local incomes associated with the Direct and Induced Impacts.

(4) Total Impacts are Direct plus Indirect plus Induced Impacts.

Source: Military Bases, DBED, IMPLAN and the JFI.

Executive Summary Table 4
Maryland Military Bases - Employment Impact

<u>Economic Impacts</u>	Direct Impact ^{1 2}	Indirect Impact ³	Induced Impact ⁴	Total Impact ⁵
Total All Seventeen Bases	<u>112,981</u>	<u>64,894</u>	<u>90,154</u>	<u>268,029</u>
Aberdeen Proving Ground	11,096	9,990	7,910	28,995
Andrews Air Force Base	8,057	1,454	2,994	12,506
Army Corps Engineers – Baltimore	1,208	0	299	1,507
Army Research Laboratory	925	915	991	2,831
Fort Detrick	4,349	4,204	3,380	11,932
Fort Meade/NSA	48,389	26,440	50,900	125,729
MD National Guard	2,156	457	1,237	3,850
NAS Pax River	10,965	17,829	12,392	41,185
National Geospatial Agency	3,000	0	858	3,858
National Maritime Intelligence Center	1,724	270	1,349	3,343
NNMC Bethesda	8,108	589	2,518	11,216
NRL- Chesapeake Bay	13	50	21	85
NSF Indian Head	2,918	879	1,368	5,165
NSWC Carderock	1,543	649	890	3,082
US Naval Academy	6,147	850	1,889	8,886
USCG Curtis Bay Coast Guard Yard	1,518	179	698	2,395
Walter Reed, Forest Glenn Annex	865	138	460	1,463

(1) In order to avoid double counting, Total Direct Employment excludes 5,041 reserve members of the Maryland National Guard, who are assumed to have other employment.

(2) Direct Impacts are the activities directly associated with the bases.

(3) Indirect Impacts are the result of the local purchase of goods and services by the bases and their suppliers.

(4) Induced Impacts are the result of the increase in local incomes associated with the Direct and Induced Impacts.

(5) Total Impacts are Direct plus Indirect plus Induced Impacts.

Source: Military Bases, DBED, IMPLAN and the JFI.

Chart 3
Total Output Impact By Base
(Mil. \$s)

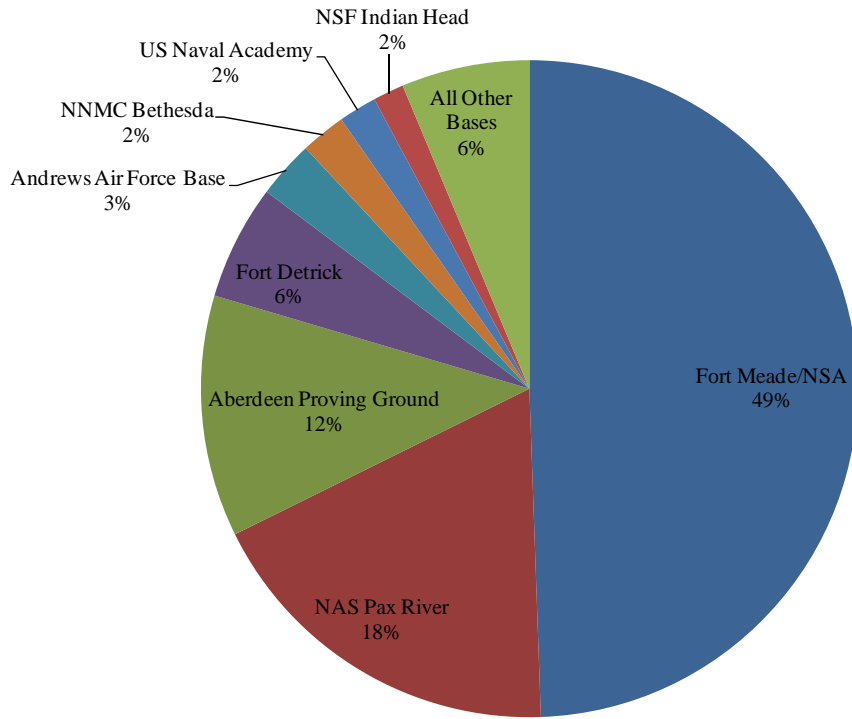


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Introduction and Summary of Findings

The Maryland Department of Business and Economic Development (DBED) and the Maryland Department of Labor, Licensing and Regulation (DLLR) retained the Jacob France Institute of the Merrick School of Business at the University of Baltimore (JFI) to prepare an analysis of the economic impact of the seventeen military facilities located in Maryland. The list of facilities analyzed is as follows:

- Aberdeen Proving Ground
- Andrews Air Force Base
- Army Corps Engineers – Baltimore
- Army Research Laboratory
- Fort Detrick
- Fort George G. Meade
- Maryland National Guard
- Naval Air Station Patuxent River
- National Geospatial Agency
- National Maritime Intelligence Center
- National Naval Medical Center Bethesda
- Naval Research Laboratory- Chesapeake Bay
- Naval Support Facility - Indian Head
- Naval Surface Warfare Center - Carderock Division
- U.S. Naval Academy
- U.S. Coast Guard - Curtis Bay Coast Guard Yard
- Walter Reed- Forest Glen Annex

All of the data in this analysis are for Federal Fiscal Year 2008. The findings of this analysis are as follows:

- The seventeen facilities analyzed directly employ 118,022 workers,¹ 90% of whom live in Maryland. These 118,022 workers accounted for 3.4% of total employment in Maryland;
- Total military facility employment of 118,022 includes 5,041 Maryland National Guard soldiers. Since serving in the Maryland National Guard is not a full time job and in order to avoid double counting, job impacts have been reduced by these 5,041 Maryland National Guard soldiers to 112,981 for the purposes of the economic impact analysis. In describing the economic impacts of military facilities in Maryland, the total employment figure of 112,981 will be used. These 112,981 jobs account for 3.3% of total employment in Maryland;
- The seventeen facilities analyzed pay \$9.0 billion in in-State payrolls and purchase \$7.1 billion² in goods and services from Maryland companies. These installations attract thousands of visitors into Maryland – who spend more than \$41.3 million³;
- When multiplier impacts are included, the seventeen facilities analyzed generate a total of \$35.7 billion in economic activity in Maryland⁴ and created or supported 268,029 jobs earning an estimated \$17.1 billion in employee compensation⁵;

¹ Employment numbers are for military and civilian government personnel only. Contractor jobs, including contractor jobs located on the installation, are estimated as part of the *Indirect Impacts* of the installations.

² In the economic impact analysis – a lower figure of \$6.6 billion is used as medical expenditures are excluded from the impact analysis in order to avoid double counting with the impacts of military payrolls, a portion of which is spent on medical care.

³ Visitor and visitor spending data were available for only seven of the seventeen facilities studied.

- The economic activity created or supported by the seventeen installations analyzed generate an estimated \$1.2 billion in state and local government revenues;
- Including both direct jobs on the installations and the multiplier effect jobs created by the induced and indirect effects, the 268,029 jobs created or supported the seventeen installations analyzed account for 7.7% of total 2008⁶ employment in Maryland;
- Aberdeen Proving Ground (APG) generates a total of \$4.3 billion in economic activity in Maryland and creates or supports 28,995 jobs earning an estimated \$1.6 billion in employee compensation⁷;
- Andrews Air Force Base generates a total of \$1.0 billion in economic activity in Maryland and creates or supports 12,506 jobs earning an estimated \$580.9 million in employee compensation;
- The U.S. Army Corps of Engineers – Baltimore District only provided data on employment and payrolls, not on construction expenditures or purchases. As a result, the analysis only includes a small portion of Army Corps activities. Army Corps of Engineers payrolls and employment generate \$78.6 million in economic activity in Maryland and create or support 1,507 jobs earning an estimated \$88.9 million in employee compensation⁸;
- The Army Research Laboratory (ARL) generates a total of \$411.3 million in economic activity in Maryland and creates or supports 2,831 jobs earning an estimated \$194.6 million in employee compensation;
- Fort Detrick generates a total of \$1.7 billion in economic activity in Maryland and creates or supports 11,932 jobs earning an estimated \$652.9 million in employee compensation;
- Fort George G. Meade/NSA generates a total of \$17.8 billion in economic activity in Maryland and creates or supports 125,729 jobs earning an estimated \$9.2 billion in employee compensation;
- The Maryland National Guard generates a total of \$431.2 million in economic activity in Maryland and creates or supports 3,850 jobs earning an estimated \$235.7 million in employee compensation;
- NAS Patuxent River generates a total of \$6.6 billion in economic activity in Maryland and creates or supports 41,185 jobs earning an estimated \$2.4 billion in employee compensation;
- The National Geospatial Agency (NGA) only provided data on employment and payrolls, not on procurement or purchases. As a result, the analysis only includes a portion of NGA spending. NGA employment and payrolls generate \$218.8 million in economic activity in

⁴ These impacts do not include the impacts of military construction activities other than those reported as part of the budget of each facility.

⁵ The results of the economic impact analysis are rounded and may not sum due to rounding. Furthermore, the IMPLAN model can estimate fractional jobs – i.e. less than one job might be created by an activity, and; therefore total job estimates may not sum due to rounding – especially in the detailed tables.

⁶ 2008 employment was based on U.S. Bureau of Economic Analysis data.

⁷ These employee compensation impacts are included in total impacts.

⁸ As described below in footnote 24 in the methodology section, it is difficult to determine the “direct” impact of a military installation. In the private sector the direct impacts are the revenues or spending associated with an activity. For this analysis, the level of in-State payroll, purchases and employment are used as the “direct” impact of a military facility. Because the Army Corp of Engineers – Baltimore was unable to provide any data on its construction spending or purchases, a key measure of the “direct” output impact of the installation is missing.

Maryland and create or support 3,858 jobs earning an estimated \$277.8 million in employee compensation⁹;

- The National Maritime Intelligence Center generates a total of \$402.9 million in economic activity in Maryland and creates or supports 3,343 jobs earning an estimated \$266.9 million in employee compensation;
- The National Naval Medical Center (NNMC) Bethesda generates a total of \$806.0 million in economic activity in Maryland and creates or supports 11,216 jobs earning an estimated \$480.3 million in employee compensation;
- The Naval Research Laboratory - Chesapeake Bay Detachment (NRL-CBD) generates a total of \$14.1 million in economic activity in Maryland and creates or supports 85 jobs earning an estimated \$4.3 million in employee compensation;
- The Naval Support Facility (NSF) Indian Head generates a total of \$548.7 million in economic activity in Maryland and creates or supports 5,165 jobs earning an estimated \$280.8 million in employee compensation;
- The Naval Surface Warfare Center (NSWC)- Carderock Division generates a total of \$344.3 million in economic activity in Maryland and creates or supports 3,082 jobs earning an estimated \$213.7 million in employee compensation;
- US Naval Academy – Naval Support Activities (NSA) Annapolis generates a total of \$677.5 million in economic activity in Maryland and creates or supports 8,886 jobs earning an estimated \$348.6 million in employee compensation;
- The U.S. Coast Guard – Curtis Bay Coast Guard Yard generates a total of \$217.5 million in economic activity in Maryland and creates or supports 2,395 jobs earning an estimated \$126.9 million in employee compensation; and
- The Walter Reed - Forest Glen Annex generates a total of \$151.8 million in economic activity in Maryland and creates or supports 1,463 jobs earning an estimated \$89.7 million in employee compensation.

Overall Study Methodology

The JFI reviewed available state-level and base specific military installation¹⁰ impact studies in order to determine the best methodology to apply to this study of military facilities in Maryland. Some studies, such as the 2004 and 2008 studies of the economic impact of the military on Missouri¹¹ and North Carolina,¹² analyze the economic impact for all military spending in aggregate. This allows the use of aggregated Department of Defense (DoD) data on procurement and payrolls, supplemented with base specific information; however, this methodology does not allow for the estimation of base specific impacts. Other studies, such as

⁹ See note 7 above. As with the Army Corps, the NGA did not provide data on its purchases.

¹⁰ The JFI reviewed numerous studies. Most of the studies reviewed were for single installations and used detailed installation-specific data. The studies briefly described in this section of the report are what the JFI determined to be the best examples of state-level studies that focus on estimating economic impacts for individual facilities rather than all defense related spending in a state.

¹¹ http://www.missourieconomy.org/pdfs/dod_spending_jan08.pdf

¹² http://www.nccommerce.com/NR/rdonlyres/62DA26B5-5B89-4115-AC32-120542018BA4/0/MilitaryReport_cover2.pdf and <http://www.eccog.org/common/ewe/documents/NCMillImpStdy.pdf>

Arizona's¹³ analyzed the economic impact of specific military facilities on the state's economy. This approach required the complex task of collecting detailed information from each of the installations on their payroll and procurement spending. Other studies, such as those conducted by Florida¹⁴ and New Jersey,¹⁵ collected detailed spending data from federal sources and individual installations, but analyzed the data at the state level. Because the goal of this analysis is to analyze the economic contribution made by individual military facilities to the Maryland economy, this analysis followed the approach taken in the Arizona study. This approach builds on and extends the methodology used in the JFI's 2002 *The Economic Impact of the Patuxent Naval Air Station and the Naval Surface Warfare Center at Indian Head on Maryland, Southern Maryland, Calvert County, Charles County, and St. Mary's County* report prepared for DBED.

Based on the review of available studies and discussions with some of the researchers involved in the studies reviewed,¹⁶ the JFI implemented this study using the following methodology:

1. The JFI developed a standardized data collection form to be sent to each of the seventeen military installations in Maryland to be studied. This form is included in Appendix A;
2. Because of its close working relationship with Maryland's military community, DBED personnel from its Office of Military and Federal Affairs worked with officials at each installation to collect the information requested in the data collection form; and
3. The data collected for the seventeen military facilities were analyzed by the JFI using the IMPLAN economic model.

Data Limitations

Because of its proximity to Washington, D.C., Maryland has a large concentration of military facilities. Rather than serving as the base for self-contained armed services combat or support units, many of the military facilities in Maryland perform administrative, medical and research functions to support the overall operations of the nation's military and the DoD. Thus, many of Maryland's military facilities combine military and civilian functions. Furthermore, many of Maryland's military facilities also house the operations of military commands and operations headquartered elsewhere. This complicates the collection of operational data from Maryland's military facilities. Indeed, only thirteen of the facilities provided detailed data, and two facilities (The Army Corps and NGA) provided only limited employment and payroll data. In several cases, DBED personnel estimated some of the required data based on published annual reports or other data available from the installations or DoD. In the case of Fort George G. Meade, only limited data were provided by individual commands on the installation and the largest tenant provided only estimates of employment, payrolls or purchases requiring substantial estimation by DBED and JFI staff. In several cases only aggregate spending data were provided; and in these cases, spending was treated as defense consumption expenditures in the IMPLAN model.¹⁷ As a result, the actual level of in-State spending analyzed in this report, while being quite large, may actually underestimate the actual level of expenditures. Furthermore, since this

¹³ http://www.azcommerce.com/doclib/commasst/military%20economic%20impact%20study/military_econ_impact_full_study.pdf

¹⁴ http://haas.uwf.edu/pdfs/impactStudies/FLdefense_Volume_1_2008.pdf

¹⁵ http://policy.rutgers.edu/cupr/project/economic_impact_of_military_bases_in_nj.pdf

¹⁶ The JFI discussed the methodologies used in the Arizona and Florida studies in detail with key personnel involved in each project.

¹⁷ This step distributes the spending across the broad spectrum of federal defense purchases and is likely to undercount the actual level of in-State spending.

analysis is based on federal fiscal year 2008 data, it does not reflect the increased level of spending in Maryland related to the 2005 Base Realignment and Closure (BRAC) decisions.

Modeling Inputs

This analysis is based on three major types of spending associated with each military facility in Maryland. These were:

Employment and Payrolls represent the number of military, DoD and other personnel working on each installation and their associated wage, salary and benefits payments. These data were provided by each facility. Each of the facilities analyzed were also requested to provide the number and associated wages of military, U.S. Department of Defense and other personnel residing in Maryland, so that only payroll paid to personnel residing in Maryland are included in the impact analysis. This provides a more conservative estimate of the local impact of the facilities studied.¹⁸ This in-State payroll data provides an estimate of the spending associated with the direct employment located on each of the installations studied. Payroll data were reduced to reflect only personal consumption expenditures – or the estimated level of local spending and purchases associated with each job. This analysis does not include the incomes associated with the spouses of military or DoD personnel, unless they are employed at another military installation analyzed, on the grounds that the jobs held by spouses are not linked to the military facilities studied, and would, therefore, exist in Maryland in the absence of these military facilities. It is very important to note that these employment figures *do not include* the many contractors employed on each installation in order to avoid double counting with the estimation of the jobs associated with procurement spending.

Spending and Procurement represent the contracts and purchasing expenditures associated with each of the military facilities in Maryland that were studied. These data were provided by each facility, with each installation requested to provide both total and in-State purchases by major type of spending.¹⁹ As in both the JFI's 2002 NAS Patuxent River study and the studies analyzed, only purchases made from contractors and suppliers located in Maryland were included in this analysis. This spending represents the local goods and services purchased from Maryland companies by each military facility.

The in-State purchases data may underestimate the actual level of local purchases made because they only include payments made to firms identified as located in Maryland. Payments made to firms located out-of-State but where the work performed was completed in Maryland would not be included. Because of Maryland's close proximity to the large concentration of defense-related contractors in Washington, D.C. and Virginia and the fact that many of these businesses operate in multiple jurisdictions, this may be a significant source of procurement spending omitted from this analysis. Because most government purchases are also tracked at a final project level, intermediate goods or services purchased from Maryland subcontractors may also be excluded. Thus, the figures used in this report are conservative.

As presented in the standardized data collection form included in Appendix A, installations were asked to provide expenditures in broad categories of purchases identified in the

¹⁸ For example, many of Maryland's military facilities have a significant number of workers who commute into the State from neighboring jurisdictions. These workers would spend a portion of their earnings in State on commuting and other associated spending. The JFI was unable to develop an estimate of this spending as part of this project.

¹⁹ In several cases – installations or commands only provided in-State purchases and were unable to provide total spending.

JFI's review of other military facilities studies. These data were sorted into key industries by the JFI and entered into the IMPLAN model. When an expenditure identified could not be coded to a specific industry, it was treated as general defense consumption spending, a category of spending in the IMPLAN model used. Medical spending by the installations was excluded from the analysis of purchases in order to avoid double counting with the impacts associated with military and other employee incomes.

It is important to note that this analysis of the economic impacts of military facilities in Maryland does not represent the impacts of all military and DoD spending occurring in the State. According to DBED, Maryland is ranked fifth nationally in per capita defense spending and sixth in total defense expenditures.²⁰ This analysis only includes the portion of this spending attributable to the installations studied. Because of Maryland's proximity to Washington D.C. and Virginia, Maryland also has a large number of persons employed by the DoD. The impact of Maryland resident military and Department of Defense workers, who commute out-of-state, to Washington D.C., Virginia and other states, are not included in this analysis. Maryland is also home to a large number of defense-related companies. Maryland is the headquarters location of the largest defense contractor in the nation, Lockheed Martin, and is also the headquarters location for one of the major divisions – the Electronic Systems Sector – of Northrop Grumman, the third largest U.S. defense contractor. The impacts of these and other Maryland military contractors who provide goods and services to DoD, but not necessarily to installations in Maryland, are not included in this analysis.

The spending and procurement figures for each facility do not include the revenues associated with commissary and exchange sales or on-installation lodging revenues. These are presented in the tables below but are excluded from the impact analysis in order to avoid double counting of these revenues with visitor and employee spending. Double counting would occur because this analysis includes the impacts of all employee salaries and wages and visitor spending, a portion of which is spent at installation commissaries, exchanges and lodging facilities. This may provide an under estimate of the impacts of the military facility because a portion of the installation commissary and exchange sales are made to out-of-state visitors, military personnel and retirees.

Visitor Spending represents the local spending associated with DoD, contractors, and other visitors to the military facilities analyzed. As described by DBED, "The majority of Maryland's military installations focus on research and development, test and evaluation (RDT&E) for various services, including the Army, Navy, Air Force, and Marines. These installations perform tasks that are essential to the nation's military and homeland security missions."²¹ As a result of this focus on RDT&E activities, as well as military-related medical (for the NNMC) and educational (U.S. Naval Academy) activities, large numbers of military, DoD, contractors and other persons are attracted into Maryland by the operation of our military installations. Each installation was asked to provide the estimated number of installation visitors as well as their spending.²² The U.S. Naval Academy also attracts a significant number of visitors, estimated at 2 million per year, as a tourism attraction in its own right, because of sporting activities, and as a

²⁰ <http://www.choosemaryland.org/Resources/pdffiles/marylandrankingsfiles/MarylandRankings.pdf>

²¹ <http://www.choosemaryland.org/businessinmd/militaryaffairs/militaryaffairs2.html>

²² Where a range was given, the JFI used the mid point of the range. When a spending estimate was not available, it was estimated by the JFI based on the military per diem rates for each installation in Maryland from <http://usmilitary.about.com/library/milinfo/pay/bl08perdiemmd.htm?p=1>.

result of its educational mission - for examples family members visiting attending Midshipmen. However, because the number of these visitors are from out-of-state and the reason for their visit is unknown, this large base of visitor activity is excluded from this analysis. Only seven of the seventeen installations provided data on visitors or expenditures, so the actual level of visitor spending is likely to be higher.

Total Expenditures at the Seventeen Facilities Analyzed

The military facilities analyzed were asked to provide employment and payroll information for five classes of personnel: Active Duty; Reserve; Rotational; Students and Civilian employees. Job figures are expressed as actual job count (including full and part-time workers) not as full-time equivalents (FTEs). The installations were also asked to provide data on the number of employees residing in Maryland and their associated payroll. As presented in Table 1, the seventeen military facilities in Maryland that were analyzed employ a total of 118,022 workers. Forty-five (45%) of these workers are civilians and 22% are active duty military personnel stationed on the installations analyzed. One agency, the NSA, accounts for 17% of all employees. As presented in Table 2, 105,933 or 90% of the total, of these workers reside in Maryland and these workers received total payroll payments of \$9.0 billion (Table 3).

As presented in Table 4, the fifteen military facilities that provided data that was analyzed in this report spend nearly \$7.1 billion on purchases inside of Maryland with contracts and purchases accounting for 81% of all spending. As described above, in order to avoid double counting with payroll and visitor spending, these figures do not include the \$403.5 million in commissary and exchanges sales and on-installation lodging revenues. Apart from the NNMC, installation medical spending is also not included because few installations were able to provide data and, more importantly, in order to avoid double counting with employee spending – a portion of which represents medical insurance and direct medical spending. It is also important to note that since many military construction projects are not funded through the military facilities themselves, this analysis does not include the full extent of military construction activities.

As presented in Table 5, the eight responding military facilities analyzed attract over 2 million visitors each year. Excluding visitor spending from the U.S. Naval Academy (see discussion above), the seven military installations that provided visitor data (Andrews Air Force Base, ARL, Fort Detrick, NAS Patuxent River, NRL-CBD, the Curtis Bay Coast Guard Yard, and Walter Reed-Forest Glen Annex) had a total of 170,169 visitors, who are estimated to have stayed in Maryland 317,481 days and spent an estimated \$41.3 million.

When the in-State payrolls, purchases and visitor spending are combined, the seventeen military facilities analyzed directly spend \$15.7 billion in the State of Maryland!

Table 1
Maryland Military Base Total Employment
 (Number of Jobs)

	Aberdeen Proving Ground	Andrews Air Force Base	Army Corps Engineers – Baltimore	Army Research Laboratory	Fort Detrick	Fort George G. Meade	MD National Guard	NAS Patuxent River	National Geospatial Agency ²
Total Employment	<u>11,096</u>	<u>8,057</u>	<u>1,208</u>	<u>925</u>	<u>4,349</u>	<u>48,389</u>	<u>7,197</u>	<u>10,965</u>	<u>3,000</u>
Active Duty Military	1,730	5,730	7	13	1,268	8,260	1,415	2,789	
Reserve	147	0	0	70	35	0	5,041	0	
Rotational	0	0	0	0	9	19	0	0	
Students	2,861	0	0	0	12	605	0	0	
Civilian	6,358	2,327	1,201	842	3,025	19,505	741	8,176	
National Security Agency ¹						20,000			
	National Maritime Intelligence Center	NNMC Bethesda	NRL-Chesapeake Bay	NSF Indian Head	NSWC Carderock	US Naval Academy	USCG Curtis Bay Coast Guard Yard	Walter Reed - Forest Glen Annex	Total All Seventeen Facilities ³
Total Employment	<u>1,724</u>	<u>8,108</u>	<u>13</u>	<u>2,918</u>	<u>1,543</u>	<u>6,147</u>	<u>1,518</u>	<u>865</u>	<u>118,022</u>
Active Duty Military	437	2,762	0	650	1	650	489	352	26,553
Reserve	0	5	0	0	0	10	151	0	5,459
Rotational	0	0	0	0	0	0	0	0	28
Students	0	1,321	0	0	63	4,449	0	0	9,311
Civilian	1,287	4,020	13	2,268	1,479	1,038	878	513	53,671
National Security Agency ¹									20,000

(1) NSA includes military and civilian personnel.

(2) The NGA did not provide a detailed breakdown of employment.

(3) Does not sum because NGA provided no detailed information.

Source: Military Facilities and the JFI

Table 2
Maryland Military Base - Maryland Resident Employment
 (Number of Jobs)

	Aberdeen Proving Ground	Andrews Air Force Base	Army Corps Engineers – Baltimore	Army Research Laboratory	Fort Detrick	Fort George G. Meade	MD National Guard	NAS Patuxent River	National Geospatial Agency ²
Total Maryland Resident Employment	<u>10,111</u>	<u>4,858</u>	<u>647</u>	<u>807</u>	<u>3,564</u>	<u>46,937</u>	<u>7,053</u>	<u>10,130</u>	<u>1,400</u>
Active Duty Military	1,730	3,456	7	8	1,184	8,012	1,387	2,445	
Reserve	147	0	0	70	28	0	4,940	0	
Rotational	0	0	0	0	8	18	0	0	
Students	2,861	0	0	0	12	587	0	0	
Civilian	5,373	1,402	640	729	2,332	18,920	726	7,685	
National Security Agency ¹	0	0	0	0	0	19,400	0	0	
	National Maritime Intelligence Center	NNMC Bethesda	NRL- Chesapeake Bay	NSF Indian Head	NSWC Carderock	US Naval Academy	USCG Curtis Bay Coast Guard Yard	Walter Reed - Forest Glen Annex	Total All Seventeen Facilities ³
Total Maryland Resident Employment	<u>1,445</u>	<u>7,191</u>	<u>12</u>	<u>2,494</u>	<u>954</u>	<u>6,057</u>	<u>1,338</u>	<u>758</u>	<u>105,756</u>
Active Duty Military	366	2,234	0	567	0	611	421	322	22,750
Reserve	0	3	0	0	0	10	81	0	5,279
Rotational	0	0	0	0	0	0	0	0	26
Students	0	1,255	0	0	23	4,449	0	0	9,187
Civilian	1,079	3,699	12	1,927	931	987	836	436	47,714
National Security Agency ¹	0	0	0	0	0	0	0	0	19,400

(1) NSA includes military and civilian personnel.

(2) The NGA did not provide a detailed breakdown of employment.

(3) Does not sum because NGA provided no detailed information.

Source: Military Facilities and the JFI

Table 3
Maryland Military Bases - Maryland Resident Payroll
(Mil. \$s)

	Aberdeen Proving Ground	Andrews Air Force Base	Army Corps Engineers – Baltimore	Army Research Laboratory	Fort Detrick	Fort George G. Meade	MD National Guard ²	NAS Patuxent River	National Geospatial Agency ²
Total Maryland Resident Payroll	<u>\$606.3</u>	<u>\$356.5</u>	<u>\$41.8</u>	<u>\$89.2</u>	<u>\$244.2</u>	<u>\$5,471.4</u>	<u>\$163.0</u>	<u>\$830.4</u>	<u>\$114.8</u>
Active Duty Military	\$97.6	\$281.3	\$0.8	\$0.8	\$51.5	\$901.4		\$159.0	
Reserve	\$8.3	\$0.0	\$0.0	\$0.0	\$0.3	\$0.0		\$0.0	
Rotational	\$0.0	\$0.0	\$0.0	\$0.0	\$0.2	\$2.0		\$0.0	
Students	\$65.2	\$0.0	\$0.0	\$0.0	\$0.3	\$66.0		\$0.0	
Civilian	\$435.3	\$75.2	\$41.0	\$88.4	\$192.0	\$2,246.7		\$671.3	
National Security Agency ¹						\$2,255.3			
	National Maritime Intelligence Center	NNMC Bethesda	NRL- Chesapeake Bay	NSF Indian Head	NSWC Carderock	US Naval Academy	USCG Curtis Bay Coast Guard Yard	Walter Reed - Forest Glen Annex	Total All Seventeen Facilities ³
Total Maryland Resident Payroll	<u>\$170.6</u>	<u>\$331.8</u>	<u>\$0.8</u>	<u>\$158.9</u>	<u>\$88.4</u>	<u>\$223.7</u>	<u>\$87.7</u>	<u>\$57.7</u>	<u>\$9,037.3</u>
Active Duty Military	\$38.4	\$51.2	\$0.0	\$23.8	\$0.0	\$72.3	\$18.5	\$21.8	\$1,718.4
Reserve	\$0.0	\$0.2	\$0.0	\$0.0	\$0.0	\$1.2	\$0.6	\$0.0	\$10.5
Rotational	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$2.2
Students	\$0.0	\$43.9	\$0.0	\$0.0	\$0.1	\$62.1	\$0.0	\$0.0	\$237.6
Civilian	\$132.2	\$236.6	\$0.8	\$135.1	\$88.3	\$88.2	\$68.6	\$35.9	\$4,535.4
National Security Agency ¹	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$2,255.3

(1) NSA includes military and civilian personnel.

(2) The Maryland National Guard and NGA did not provide a detailed breakdown of payroll.

(3) Does not sum because the Maryland National Guard and NGA provided no detailed information.

Source: Military Facilities and the JFI

Table 4
Maryland Military Base Maryland Procurement and Purchases
(Mil. \$s)

	Aberdeen Proving Ground	Andrews Air Force Base	Army Corps Engineers – Baltimore	Army Research Laboratory	Fort Detrick	Fort George G. Meade	MD National Guard	NAS Patuxent River	National Geospatial Agency
Total In-State Purchases	<u>\$1,512.1</u>	<u>\$145.0</u>	<u>\$0.0</u>	<u>\$82.3</u>	<u>\$509.4</u>	<u>\$2,633.3</u>	<u>\$49.5</u>	<u>\$1,762.1</u>	<u>\$0.0</u>
Building Construction and Maintenance	\$86.3	\$17.1	n.a.	\$0.0	\$100.4	\$10.6	n.a.	\$182.4	n.a.
Utilities	\$42.7	\$8.7	n.a.	\$0.0	\$22.0	\$0.0	n.a.	\$32.7	n.a.
Medical Health Services ¹	\$368.3	\$16.6	n.a.	\$0.0	\$70.1	\$0.0	n.a.	\$30.4	n.a.
Contracts and Purchases	\$1,005.1	\$101.8	n.a.	\$82.1	\$315.5	\$2,622.8	n.a.	\$1,514.6	n.a.
Education Payments	\$9.6	\$0.9	n.a.	\$0.2	\$1.3	\$0.0	n.a.	\$2.2	n.a.
Commissary and Exchange Sales and Lodging ¹	\$55.2	\$53.4	n.a.	n.a.	\$19.2	\$138.3	n.a.	\$46.7	n.a.
	National Maritime Intelligence Center	NNMC Bethesda	NRL-Chesapeake Bay	NSF Indian Head	NSWC Carderock	US Naval Academy	USCG Curtis Bay Coast Guard Yard	Walter Reed Forest Glen Annex	Total All Seventeen Facilities ³
Total In-State Purchases	<u>\$29.8</u>	<u>\$69.6</u>	<u>\$3.8</u>	<u>\$95.9</u>	<u>\$61.4</u>	<u>\$96.1</u>	<u>\$19.3</u>	<u>\$13.7</u>	<u>\$7,083.3</u>
Building Construction and Maintenance	\$0.0	\$38.3	\$0.4	n.a.	\$10.0	\$59.4	\$18.0	\$3.7	\$526.6
Utilities	\$1.0	\$17.9	\$0.1	n.a.	\$1.1	\$13.2	\$0.0	\$9.0	\$148.3
Medical Health Services ¹	\$0.0	\$8.5	\$0.0	n.a.	\$0.0	\$0.0	\$0.2	\$0.0	\$494.1
Contracts and Purchases	\$28.4	\$4.9	\$3.4	n.a.	\$50.1	\$22.9	\$1.0	\$1.0	\$5,753.6
Education Payments	\$0.3	\$0.0	\$0.0	n.a.	\$0.2	\$0.6	\$0.0	\$0.0	\$15.4
Commissary and Exchange Sales and Lodging ¹	n.a.	\$34.4	n.a.	n.a.	n.a.	\$31.6	\$1.6	\$23.1	\$403.5

(1) Not included in analysis in order to avoid double counting with payroll and visitor impacts.

(2) Does not sum because the Maryland National Guard and NGA provided no detailed information.

Source: Military Facilities and the JFI

Table 5
Maryland Military Base Visitors and Spending

	Aberdeen Proving Ground	Andrews Air Force Base	Army Corps Engineers – Baltimore	Army Research Laboratory	Fort Detrick	Fort George G. Meade	MD National Guard	NAS Patuxent River	National Geospatial Agency
Total Visitor	n.a.	2,132	n.a.	15,700	62,298	n.a.	n.a.	72,000	n.a.
Visitor Days	n.a.	3,198	n.a.	15,700	62,508	n.a.	n.a.	216,000	n.a.
Visitor Spending (Mil. \$) ¹	n.a.	\$0.8	n.a.	\$4.2	\$2.6	n.a.	n.a.	\$29.4	n.a.

	National Maritime Intelligence Center	NNMC Bethesda	NRL-Chesapeake Bay	NSF Indian Head	NSWC Carderock	US Naval Academy ²	USCG Curtis Bay Coast Guard Yard	Walter Reed - Forest Glen Annex	Total All Seventeen Facilities ³
Total Visitor	n.a.	n.a.	5,220	n.a.	n.a.	over 2 million	1,313	11,506	170,169
Visitor Days	n.a.	n.a.	5,220	n.a.	n.a.	n.a.	2,299	12,556	317,481
Visitor Spending (Mil. \$) ¹	n.a.	n.a.	\$0.7	n.a.	n.a.	n.a.	\$0.3	\$3.3	\$41.3

(1) Provided by the bases - when unavailable the JFI used data from <http://usmilitary.about.com/library/milinfo/pay/bl08perdiemmd.htm?p=1>.

(2) The Naval Academy has over 2 million visitors per year as part of its educational mission, for sporting events, and for other military support functions. Because the number of these visitors from out of state and the reason for their visit is unknown, these large based of visitor activity is excluded from this analysis.

(3) The total does not include the over 2 million visitors to the U.S. Naval Academy.

Source: Military Facilities and the JFI

The Economic Contribution of the Seventeen Military Facilities Studied

The Maryland Department of Business and Economic Development was able to provide payroll data for all seventeen military facilities, procurement data for fifteen of the installations, and visitor data for seven of the installations for inclusion in this analysis. The payroll, procurement and visitor spending data from each of the facilities were analyzed using the IMPLAN model²³ (for a description of the terms used – please see the Methodology section below).

The results of this economic impact analysis are summarized in Table 6. As presented in this table:

- The seventeen military facilities generated \$15.7 billion in direct spending²⁴ in Maryland through in-State purchases of goods and services, payroll paid to Maryland residents and visitor spending, and employ 112,981 persons²⁵ earning \$9.8 billion in FY2008;
- The in-State spending by the seventeen military facilities analyzed generated nearly \$9.0 billion in *Indirect Impacts* from local purchases made by the installations and their varied suppliers and \$11.0 billion in *Induced Impacts* from the increase in Maryland incomes attributable to the installations and their suppliers;
- The seventeen military facilities analyzed generated a total of \$35.7 billion in economic activity in Maryland in FY2008 and, when multiplier effects are included, created or supported 268,029 jobs earning an estimated \$17.1 billion in employee compensation; and
- The 268,029 jobs created or supported the seventeen installations analyzed account for 7.7% of total 2008²⁶ employment in Maryland.

²³ See www.implan.com.

²⁴ It is difficult to determine the “direct” impact of a military installation. In the private sector the direct impacts are the revenues or spending associated with an activity. It is difficult to develop a “price” for national defense spending. The overall budget of a military facility is often quite high in relationship to its actual local spending, and with the diversity of commands on Maryland’s installations – overall budget figures would be difficult to obtain. Thus, this analysis uses the level of in-State payroll, purchases and employment as the direct impact of a military facility – while these figures are in actuality the indirect and induced impacts of the facility.

²⁵ In order to avoid double counting, this analysis excludes the 5,041 Maryland National Guard Reserve members as these persons are only employed part-time by the military and are likely to have other employment.

²⁶ 2008 employment was based on U.S. Bureau of Economic Analysis data.

Table 6
Economic Impacts of the Seventeen Military Facilities Analyzed
On the State of Maryland, FY2008

Facility Spending	Total	In-State		
Payroll (Mil. \$)	\$9,809.3	\$9,037.3		
Employment (# of Jobs)	118,022	105,933		
Purchases (Mil. \$)	\$30,760.5	\$6,597.7		
Visitor Spending (Mil. \$)	n.m.	\$41.3		

Economic Impacts	Direct Impact	Indirect Impact	Induced Impact	Total Impact
Output (Mil. \$)	\$15,676.3	\$8,993.5	\$11,022.1	\$35,691.9
Employment (# of Jobs)	112,981	64,894	90,154	268,029
Employee Compensation (Mil. \$)	\$9,809.3	\$3,890.6	\$3,357.1	\$17,057.0

(1) In order to provide a conservative estimate - the direct employment impact excludes the 5,041 Reserve members who are likely to have other full or part-time employment.

Source: DBED, Military Facilities and IMPLAN

Methodology

This report analyzes the impact of seventeen military facilities on the State's economy using the IMPLAN model. The IMPLAN model is based on economic multipliers, which describe the response of an economy to a change in demand or production. The IMPLAN model uses multipliers to estimate the economic impacts of a project or activity. Multiplier effects occur as an initial round of spending is spent and re-spent in the State economy. For example, an industry pays a worker a salary, a portion of which is then spent on goods and services from local companies, which in turn becomes income for other workers and supplier firms. Thus, each dollar of spending creates more than one dollar in economic activity, as that spending is earned and, in turn, spent by others in the State.

This analysis focuses on three measures of economic activity or impact: output (a figure similar to business volume); employment; and employee compensation. Multipliers capture the effect of the introduction of a new source of economic activity in an economy. Multiplier effects occur as the spending associated with an economic activity are earned and then re-spent by others in the local economy, through three types of impacts:

- *Direct Impacts* are those impacts occurring in the impacted sector and related industries as a direct result of the activity being studied, in this case the spending associated with seventeen military facilities operating in Maryland;²⁷
- *Indirect Impacts* are those impacts created as a result of the in-State expenditures associated with the seventeen installations estimated by the IMPLAN model as likely to occur based on structural conditions in the State of Maryland's economy; and
- *Induced Impacts* are estimated based on the increase in local incomes attributable to the operation of the seventeen installations.

The total impacts presented above are the aggregation of these direct, indirect and induced impacts and are greater than the direct effects as a result of the induced and indirect – “multiplier” impacts occurring because of the seventeen military facilities analyzed.

²⁷ See note 23.

Individual Facility Reports

Aberdeen Proving Ground

The Aberdeen Proving Ground (APG) was established in 1917 to provide the nation a site where Army materiel could be developed and tested. At the same time, the Edgewood Arsenal was established nearby to provide a site for the development, production, and testing of chemical warfare materiel. The two installations were officially joined as Aberdeen Proving Ground in 1971.

Aberdeen Proving Ground is home to 9 major commands and supports 70 tenants, 20 satellite and 17 private activities. The installation provides facilities to perform research, development, testing and evaluation of Army materiel. Facilities include laboratories for research investigations, state-of-the-art ranges, engineering test courses for wheeled and tracked vehicles and a wide variety of research. The installation also supports a wide variety of training, including mechanical maintenance, health promotion and preventive medicine, chemical and biological defense, and chemical casualty care, chemical demilitarization. APG also is host to the National Guard and U.S. Army Reserve operations and training.

Aberdeen Proving Ground covers more than 72,500 acres, more than half of which is water or wetlands. There are more than 6,800 acres of improved grounds, nearly 300 miles of road, and more than 567,000 square yards of airfield pavement. APG's facilities include nearly 15 million square feet of building space in more than 2,000 buildings (including offices, administrative and training facilities, and warehouses, barracks and family housing). There are more than 40 miles of track, nearly 200 firing positions, 8 medical research laboratories, 10 chemical laboratories, 2 physics laboratories, 5 human engineering laboratories, a materials research laboratory as well as Phillips Army Airfield and Weide Army Aviation Support Facility.

Major tenants include:

- U.S. Army Research, Development and Engineering Command (RDECOM)
- U.S. Army Research Laboratory (APG (ARL))
- U.S. Army Edgewood Chemical Biological Center (ECBC)
- U.S. Army Materiel Systems Analysis Activity (AMSAA)
- U.S. Army Research, Development and Engineering Command Contracting Center (RDECOM CC)
- U.S. Army Communications-Electronics Research, Development and Engineering Center (CERDEC)
- U.S. Army Test and Evaluation Command (ATEC)
- U.S. Army Development Test Command (DTC)
- U.S. Aberdeen Test Center (ATC)
- U.S. Army Evaluation Center (AEC)
- U.S. Army Public Health Command (USAPHC)
- US Army Environmental Command (USAEC)
- U.S. Army 20th Support Command (CBRNE)
- U.S. Army 22nd Chemical Battalion
- U.S. Army Communications-Electronics Command - Command Life Cycle Management Center (CECOM) (LCMC)
- U.S. Army Communications-Electronics Command Contracting Center of Excellence (CECOM CC)
- US Army Medical Research Institute of Chemical Defense (MRICD)
- U.S. Army 203rd Military intelligence Battalion

- U.S. Army Chemical Materials Agency (CMA)

As presented in Table 7, the various commands operating on the Aberdeen Proving Ground that reported data on payroll and procurement have a total operational budget approaching \$14 billion and employ 11,096 military and civilian personnel. Aberdeen Proving Ground generates nearly \$4.3 billion in economic activity in Maryland and creates or supports 28,995 jobs earning an estimated \$1.6 billion in employee compensation. It is important to note that these economic impact estimates are for Federal Fiscal Year 2008; and therefore, do not include any major elements of the expansion in APG's operations occurring as part of the ongoing Base Realignment and Closure (BRAC) process.

Table 7
Aberdeen Proving Ground Impact

<u>Facility Spending</u>	Total	In-State		
Payroll (Mil. \$)	\$698.6	\$606.3		
Employment (# of Jobs)	11,096	10,111		
Purchases (Mil. \$)	\$13,118.2	\$1,143.7		
Visitor Spending (Mil. \$)	n.m.	n.a.		

<u>Economic Impacts</u>	Direct Impact	Indirect Impact	Induced Impact	Total Impact
Output (Mil. \$)	\$1,750.1	\$1,564.4	\$966.8	\$4,281.3
Employment (# of Jobs)	11,096	9,990	7,910	28,995
Employee Compensation (Mil. \$)	\$698.6	\$589.3	\$294.7	\$1,582.7

Source: DBED, Military Facilities and IMPLAN

Andrews Air Force Base

Andrews Air Force Base is the home of Air Force One and the Air Force District of Washington's 316th Wing -- the base's host wing -- with several partner units on base including Air Mobility Command's 89th Airlift Wing, the Air Force Office of Special Investigation headquarters, Air Force Reserve Command's 459th Air Refueling Wing, D.C. Air National Guard's 113th Wing, the Naval Air Facility, and Army and Marine Corps detachments.

Some of the core units active on the base are described below.

The **316th Wing** is responsible for maintaining emergency reaction rotary-wing airlift and other National Capital Region contingency response capabilities critical to national security, and for organizing, training, equipping and deploying combat-ready forces for Air and Space Expeditionary Forces (AEFs). The wing also provides installation security, services and airfield management to support the President, Vice President, other U.S. senior leaders and more than 50 tenant organizations and federal agencies.

The **89th Airlift Wing** provides global Special Air Mission (SAM) airlift, logistics, aerial port and communications for the President, Vice President, Combat Commanders, senior leaders and the global mobility system as tasked by the White House, Chief of Staff of the Air Force and Air Mobility Command. The 89th Airlift Wing maintains 24/7 alert, operating the Executive Airlift Training Center and Government Network Operation Center.

The **459th Air Refueling Wing** consists of 1,300 Air Force reservists involved in heavy airlift and currently in air refueling.

The **79th Medical Wing** has oversight for medical care at Air Force bases and work sites across Maryland, Washington, D.C. and Virginia. Activated on May 10, 2006, it is one of three medical wings in the Air Force. The 79th Medical Wing is a tenant unit on Andrews AFB, and has two subordinate units, the 779th Medical Group located on Andrews AFB, and the 579th Medical Group located on Bolling AFB. Additionally, these groups have medics working across the National Capital Region (NCR) including Walter Reed Army Medical Center, National Naval Medical Center, Fort Belvoir, Fort George G. Meade, and the Pentagon. One of the other unique capabilities of the Wing is the Aeromedical Staging Facility (ASF). The 779th ASF serves as the primary East Coast hub for aeromedical evacuation aircraft returning sick or injured patients from Europe to the United States.

As presented in Table 8, Andrews Air Force Base generates a total of just over \$1.0 billion in economic activity in Maryland and creates or supports 12,506 jobs earning an estimated \$580.9 million in employee compensation.

Table 8
Andrews Air Force Base Impact

<u>Facility Spending</u>	Total	In-State		
Payroll (Mil. \$)	\$406.1	\$356.5		
Employment (# of Jobs)	8,057	4,858		
Purchases (Mil. \$) ¹	\$128.4	\$128.4		
Visitor Spending (Mil. \$)	n.m.	\$0.8		

<u>Economic Impacts</u>	Direct Impact	Indirect Impact	Induced Impact	Total Impact
Output (Mil. \$)	\$485.7	\$170.3	\$367.0	\$1,023.0
Employment (# of Jobs)	8,057	1,454	2,994	12,506
Employee Compensation (Mil. \$)	\$406.1	\$63.4	\$111.3	\$580.9

(1) No data on total purchases was available; data is for Maryland purchases only.

Source: DBED, Military Facilities and IMPLAN

Army Corps Engineers – Baltimore District

The U.S. Army Corps of Engineers – Baltimore District oversees the execution of Military, Civil Works and International and Interagency programs across Maryland; northern Virginia; Washington, D.C.; West Virginia; Pennsylvania; Delaware; lower central New York; overseas; and across the Susquehanna, Potomac and Chesapeake Bay watersheds. The Baltimore District provides design, engineering, construction, environmental and real estate expertise to a variety of important projects and customers. Within the North Atlantic Region, the district supports the construction of state-of-the-art Army medical and technological research facilities; the design and cleanup of formerly used defense sites (FUDS) and civilian sites; performs the unique mission of providing drinking water to the District of Columbia, Arlington County and Falls Church, Va.; and is the geopolitical capital of the Base Realignment and Closure 2005 mission, meeting the challenges of an unprecedented \$7.1 billion military construction workload. In FY 2010, the U.S. Army Corps of Engineers – Baltimore District was involved in 1,128 military, BRAC, civil works, environmental, American Recovery & Reinvestment Act, and other projects with total project budgets approaching \$2.4 billion.

The U.S. Army Corps of Engineers – Baltimore District was unable to provide data on its Maryland spending in FY2008. DBED estimated its total and in-State employment and payrolls based on published reports and data. DBED was unable to obtain data on the many FY2008 Army Corps projects underway in Maryland, or the general purchases made to support its operations. As a result, the economic impact estimates below are for the U.S. Army Corps of Engineers – Baltimore District payroll expenses only and do not include the millions of dollars in construction activity overseen by or purchases made by the Corps as part of its mission. These results, therefore, significantly understate the impacts of the U.S. Army Corps of Engineers – Baltimore District on the State of Maryland’s economy.

As presented in Table 9, the U.S. Army Corps of Engineers – Baltimore District had total payroll expenses of \$77.7 million and employed 1,208 personnel, with \$41.8 million in payroll expenses paid to 647 Maryland residents. U.S. Army Corps of Engineers – Baltimore District payroll expenditures generate a total of \$78.6 million in economic activity in Maryland and create or supports 1,507 jobs earning an estimated \$88.9 million in employee compensation.²⁸

²⁸ As described above in footnote 24 in the methodology section, it is difficult to determine the “direct” impact of a military facility. In the private sector the direct impacts are the revenues or spending associated with an activity. For this analysis, the level of in-State payroll, purchases and employment are used as the “direct” impact of an installation. Because the Army Corp of Engineers – Baltimore was unable to provide any data on its construction spending or purchases, a key measure of the “direct” output impact of the bases is missing. However, as there is no better way to measure the direct impact of the Army Corps, and since the result of this missing data is to reduce the overall estimated output impact, this lower figure was retained in the report.

Table 9
Army Corps of Engineers – Baltimore District Impact

Facility Spending	Total	In-State		
Payroll (Mil. \$) ¹	\$77.7	\$41.8		
Employment (# of Jobs) ¹	1,208	647		
Purchases (Mil. \$) ²	n.a.	n.a.		
Visitor Spending (Mil. \$)	n.m.	n.a.		

Economic Impacts	Direct Impact ³	Indirect Impact ⁴	Induced Impact	Total Impact
Output (Mil. \$)	\$41.8	\$0.0	\$36.8	\$78.6
Employment (# of Jobs)	1,208	0	299	1,507
Employee Compensation (Mil. \$)	\$77.7	\$0.0	\$11.2	\$88.9

(1) The Army Corps did not provide detailed information on employment or payrolls, which were estimated by DBED.

(2) The Army Corps did not provide data on total or in-State spending or projects.

(3) Direct effects include only payrolls.

(4) No Indirect Impacts were estimated since the Army Corps did not provide total or in-State purchases.

Source: DBED, Military Facilities and IMPLAN

Army Research Laboratory

The Army Research Laboratory (ARL) is the Army's corporate basic and applied research laboratory. Its mission is to provide innovative science, technology, and analysis to enable full-spectrum operations. ARL consists of the Army Research Office (ARO) and six Directorates-- Weapons and Materials, Sensors and Electron Devices, Human Research and Engineering, Computational and Information Sciences, Vehicle Technology, and Survivability and Lethality Analysis. The Army relies on this ARL Team for scientific discoveries, technologic advances, and analyses to provide warfighters with capabilities to succeed on the battlefield.

ARL's diverse assortment of unique facilities and its workforce of government engineers and scientists comprise the largest source of world-class integrated research and analysis in the Army. ARL's programs consist of basic and applied research and survivability/lethality analysis and focus on technology areas critical to strategic dominance across the entire spectrum of operations:

- Computational and Information Sciences Directorate (CISD) - conducts a broad spectrum of research focused on high bandwidth communication, advanced command and control techniques, battlefield visualization, weather decision aids, and defensive information operations;
- Human Research and Engineering Directorate (HRED) - scientific research and technology directed toward optimizing Soldier performance and Soldier-machine interactions to maximize battlefield effectiveness, and to ensure that soldier performance requirements are adequately considered in technology development and system design;
- Sensors and Electron Devices Directorate (SEDD) - vertically integrated research and technology for developing advanced solid-state components and state-of-the-art sensor systems;
- Survivability and Lethality Analysis Directorate (SLAD) - integrated survivability and lethality analysis of Army systems and technologies across the full spectrum of battlefield threats and environments as well as analysis tools, techniques, and methodologies;
- Vehicle Technology Directorate (VTD) - addresses propulsion and structural engineering technologies for both air and ground vehicles in a leveraged partnership with NASA;
- Weapons and Materials Research Directorate (WMRD) - material and weapons research to develop the technologies for future land combat systems; and
- Army Research Office (ARO) - scientific and far-reaching technological discoveries in extramural organizations (educational institutions, nonprofit organizations, and private industry).

ARL has consistently provided the enabling technologies in many of the Army's most important weapons systems. Technology and analysis products are moved into Army Research, Development, and Engineering Centers (RDECs) and to other Army, Department of Defense (DOD), government, and industry customers. ARL's programs are focused on key underpinning science and technology underpinnings that will enable the transformation of the Army into a more versatile, agile, survivable, lethal, deployable, and sustainable force.

As presented in Table 10, the Army Research Laboratory generates a total of \$411.3 million in economic activity in Maryland and creates or supports 2,831 jobs earning an estimated \$194.6 million in employee compensation.

Table 10
Army Research Laboratory Impact

Facility Spending	Total	In-State		
Payroll (Mil. \$)	\$102.9	\$89.2		
Employment (# of Jobs)	925	807		
Purchases (Mil. \$) ¹	\$816.9	\$82.3		
Visitor Spending (Mil. \$)	n.m.	\$4.2		
Economic Impacts	Direct Impact	Indirect Impact	Induced Impact	Total Impact
Output (Mil. \$)	\$175.7	\$114.4	\$121.2	\$411.3
Employment (# of Jobs)	925	915	991	2,831
Employee Compensation (Mil. \$)	\$102.9	\$54.8	\$36.8	\$194.6

(1) No data on total purchases was available; data is for Maryland purchases only.

Source: DBED, Military Facilities and IMPLAN

Fort Detrick

Fort Detrick is a 1,200 acre U.S. Army Medical Command installation that is home to 40 military, DoD and civilian agency tenants. With a history dating back to 1931, Fort Detrick served as the military's center for biological weapons programs since World War II. It is home to the U.S. Army Medical Research and Materiel Command (USAMRMC), with its bio-defense agency, the U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID) and many other commands. It also hosts the National Cancer Institute-Frederick (NCI-Frederick) of the National Institutes of Health and U.S. Department of Agriculture and Vaccine Healthcare Centers Network operations. Fort Detrick's largest tenants include:

U.S. Army Medical Research & Materiel Command The U.S. Army Surgeon General's Medical Research and Development Board was established in 1943 to coordinate all medical department research with other components of the Army as well as with non-Army agencies. In 1958, the Army Medical Research Board was converted to the U.S. Army Medical Research and Development Command (USAMRDC), the central agency for all military medical research and development to improve preventive medicine measures and rapid treatment techniques. The research programs of the USAMRDC addressed military-unique problems and applied directly to preserving health and safety of Soldiers. The USAMRDC mission was summed up in its motto, "Research for the Soldier."

On November 3, 1994, a stand-up ceremony marked the establishment of the U.S. Army Medical Research and Materiel Command., with a new motto. "Protect, Project, Sustain." The reorganization improved the Army Medical department's ability to prevent illness and injury in deploying forces, to equip the Army's medics to provide the best possible combat casualty care, and to ensure medical logistics systems enhance medical readiness.

U.S. Army Medical Research Institute of Infectious Diseases Since its inception in 1969, USAMRIID has spearheaded research to develop medical solutions—vaccines, drugs, diagnostics, and information—to protect our service members from biological threats. Our unique capabilities include biosafety level-3 and -4 laboratories, world-class expertise in the generation of biological aerosols for testing candidate vaccines and therapeutics, and fully-accredited animal research facilities.

National Cancer Institute - Frederick The National Cancer Institute at Frederick (NCI-Frederick), part of the National Institutes of Health (NIH), is one of two NCI campuses. The NCI's clinical researchers, and the NIH Clinical Center are located on the NIH campus in Bethesda, Maryland. The NCI's Frederick campus is located within Fort Detrick, a U.S. Army base in Frederick, MD.

NCI-Frederick focuses on direct research aimed at identifying the causes of cancer, AIDS, and related diseases. More than 100 scientists are investigating the genetic, molecular, environmental, and behavioral factors that contribute to human cancers, as well as identifying new targets for cancer diagnosis, treatment, and prevention. NCI-Frederick also provides core scientific expertise and advanced technology development to NCI, NIAID (the National Institute for Allergy and Infectious Diseases), and other components of NIH via the Advanced Technology Program (ATP) and other programs directed by SAIC-Frederick, Inc., a subsidiary of Science Applications International Corporation.

U.S. Department of Agriculture - Foreign Disease-Weed Science Research Unit The USDA, Agricultural Research Service, Foreign Disease-Weed Science Research Unit has two distinct

missions united by a common relationship to plant pathology and the unit's unique P-3 plant pathogen laboratory and greenhouse containment facilities.

The mission of the Foreign Disease program is to develop techniques for the rapid detection and identification of new and emerging crop pathogens. Research is conducted to provide fundamental information on emerging pathogens for risk assessment and the development of practical phytosanitary regulations for the import and export of agricultural commodities and germplasm. The Foreign Disease program is within National Program 303, Plant Diseases.

The mission of the Weed Biological Control program is to collect foreign pathogens overseas from weeds in their native habitat, and to evaluate, characterize and release the pathogens in the U.S. for biological control of introduced weeds, leading to improved, sustainable weed control practices in agricultural systems with reduced dependence on chemical herbicides.

Vaccine Healthcare Centers Network The Vaccine Healthcare Centers Network (VHC) was established in 2001 in response to Congressional concern for ensuring quality vaccine administration and improving surveillance and reporting of adverse reactions in the military. The original effort was a collaboration between the Centers for Disease Control and Prevention (CDC) and the Department of Defense (DoD). Today the VHC is a Department of Defense organization, whose role is to support the military immunization and readiness mission through our expert clinical consultation services, education programs, and research.

As presented in Table 11, Fort Detrick has total employment of 4,349 and payroll of \$302.6 million and reports in-State purchases of \$439.3 million. Fort Detrick generates a total of more than \$1.7 billion in economic activity in Maryland and creates or supports 11,932 jobs earning an estimated \$652.9 million in employee compensation.

Table 11
Fort Detrick Impact

Facility Spending	Total	In-State		
Payroll (Mil. \$)	\$302.6	\$244.2		
Employment (# of Jobs)	4,349	3,564		
Purchases (Mil. \$)	\$3,235.0	\$439.3		
Visitor Spending (Mil. \$)	n.m.	\$2.6		
Economic Impacts	Direct Impact	Indirect Impact	Induced Impact	Total Impact
Output (Mil. \$)	\$686.0	\$589.2	\$416.4	\$1,691.6
Employment (# of Jobs)	4,349	4,204	3,380	11,932
Employee Compensation (Mil. \$)	\$302.6	\$223.9	\$126.3	\$652.9

Source: DBED, Military Facilities and IMPLAN

Fort George G. Meade/National Security Agency

Fort George G. Meade was established in 1917. In the 1950s, the post became headquarters of the NSA. The post was scheduled to close in the 1990s, but was kept open to support the NSA. Fort George G. Meade is an administrative installation supporting the missions of over fifty tenants representing a wide variety of training, intelligence, and educational programs. As a result of past BRAC actions, Fort George G. Meade has an increased mission as a major federal administrative center and has the need to accommodate additional tenants and activities.

Fort George G. Meade consists of 5,415 acres with 65.5 miles of paved roads, 3.3 miles of secondary roads, and about 1,300 buildings. There is a modern exchange mall, bank, credit union, post office, chapels and many other facilities. Today, Fort George G. Meade provides support and services for more than 50 tenant units, which include:

- National Security Agency
- 694th Intelligence Wing
- 704th Military Intelligence Brigade
- 902nd Military Intelligence Group
- Naval Security Group Activity
- Defense Courier Service
- Defense Information School
- 55th Signal Company (Combat Camera)
- First United States Army - East
Headquarters U.S. Army Garrison
- NCO Academy
- U.S. Army 1st Recruiting Brigade
- U.S. Army Central Personnel Security Clearance Facility
- U.S. Army Field Band
- U.S. Army Recruiting Battalion-Baltimore
- U.S. Medical Department Activity
- 85th General Hospital

Fort George G. Meade's largest tenant is the NSA/Central Security Service (CSS). The NSA/CSS is a key member of the Intelligence Community and, collects, processes, and disseminates intelligence information from foreign electronic signals for national foreign intelligence and counterintelligence purposes and to support military operations. NSA/CSS is also tasked with preventing foreign adversaries from gaining access to classified national security information.

As part of the Base Realignment and Closure Commission (BRAC) process in 2005, DoD is moving the Defense Information Systems Agency (DISA), the Defense Media Activity (DMA) and the Defense and Military Adjudication Activities into Fort George G. Meade. The BRAC process is scheduled to be completed by September of 2011, and as a result, 5,695 additional jobs will be consolidated to Fort George G. Meade from around the Country. In 2010, it was also announced that the U.S. Department of Defense Cyber Command will be located at Fort George G. Meade. Because this analysis is of activities on the installation in fiscal 2008, the impacts of BRAC and the Cyber Command decisions are not included in this analysis.

As presented in Table 12, the Fort George G. Meade/National Security Agency has a total combined operational budget of over \$15.7 billion and employs 48,389 military, civilian and National Security Agency personnel.²⁹ The Fort George G. Meade/National Security Agency report the largest level of employment, payrolls and purchases in Maryland and together generate a total of \$17.8 billion in economic activity in Maryland and create or support 125,729 jobs earning an estimated \$9.2 billion in employee compensation. The direct Fort George G. Meade/National Security Agency employment of 48,389 accounts for 1.4% of all employment in Maryland and when multiplier impacts are included, the 125,729 jobs in, created or supported by Fort George G. Meade/National Security Agency account for 3.6% of all employment in Maryland.³⁰

Table 12
Fort George G. Meade/NSA Impact

<u>Facility Spending</u>	Total	In-State		
Payroll (Mil. \$)	\$5,640.7	\$5,471.4		
Employment (# of Jobs)	48,389	46,937		
Purchases (Mil. \$)	\$10,133.3	\$2,633.3		
Visitor Spending (Mil. \$)	n.m.	n.a.		
<u>Economic Impacts</u>	Direct Impact	Indirect Impact	Induced Impact	Total Impact
Output (Mil. \$)	\$8,104.7	\$3,527.3	\$6,183.7	\$17,815.7
Employment (# of Jobs)	48,389	26,440	50,900	125,729
Employee Compensation (Mil. \$)	\$5,640.7	\$1,675.4	\$1,889.5	\$9,205.6

Source: DBED, Military Facilities and IMPLAN

²⁹ The NSA provided only its total and in-State levels of procurement, not a detailed breakdown of actual expenditures. Because NSA is not similar to other DOD entities – its procurement could not be treated as general defense consumption, as was done in the case of other installations where only total spending was provided. Instead, its in-State expenditures distributed into to the core computer, engineering, and R&D sectors based on Maryland’s level of employment in each sector.

³⁰ Employment data is from the U.S. Bureau of Economic Analysis - <http://www.bea.gov/regional/spi/action.cfm>.

The Maryland Military Department – Maryland National Guard

The Maryland Military Department consists of the Maryland Army National Guard, Maryland Air National Guard, Maryland Emergency Management Agency and Maryland Defense Force. The Maryland Military Department's mission is to staff, train, equip and deploy its National Guard units in support of federal and state missions as directed by the President of the United States and the Governor of Maryland. The Department's Citizen-Soldiers and Airmen, emergency management professionals, civilian staff and volunteer forces also coordinate and support state responses to any major emergency or disaster, support local governments, coordinate assistance from the federal government, and respond to requests for assistance from other states.

The major National Guard Units:

Joint Forces:

- Joint Force Headquarters – Baltimore/Reisterstown

Army National Guard (ARNG) units:

- 29th Combat Aviation Brigade, Edgewood Area, APG
- 58th IBCB, Towson
- 58th Troop Command, Adelphi
- 70th Training Regiment, Reisterstown

Air National Guard (ANG) units:

- 175th Wing Warfield ANGB, Middle River, MD
- 175th Operations Group
 - 104th Fighter Squadron (A-10 Warthog)
- 135th Airlift Group
 - 135th Airlift Squadron (C-130 Hercules)
- 175th Mission Support Group
- 175th Maintenance Group
- 175th Medical Squadron

The Maryland National Guard did not provide detailed information for use in this study. DBED estimated the inputs to the economic modeling based on data contained in their annual report. As presented in Table 13, the Maryland National Guard has a total operational budget of \$281.5 million.³¹ The Maryland Military Department employs 2,012 full time personnel and has 5,041 reservists. The Maryland Military Department generates a total of \$431.2 million in economic activity in Maryland and creates or supports 3,850 jobs³² earning an estimated \$235.7 million in employee compensation.

³¹ Excluding state funding.

³² In order to provide a conservative estimate - the impact analysis excludes the 5,041 Reserve members who are likely to have other full or part-time employment

Table 13
Maryland National Guard Impact

Facility Spending	Total ¹	In-State ^{2 3}		
Payroll (Mil. \$)	\$166.3	\$163.0		
Employment (# of Jobs) ⁴	7,197	7,053		
Purchases (Mil. \$)	\$115.2	\$49.5		
Visitor Spending (Mil. \$)	n.m.	\$0.0		
Economic Impacts	Direct Impact	Indirect Impact	Induced Impact	Total Impact
Output (Mil. \$)	\$212.5	\$64.2	\$154.5	\$431.2
Employment (# of Jobs) ⁵	2,156	457	1,237	3,850
Employee Compensation (Mil. \$)	\$166.3	\$22.5	\$46.8	\$235.7

(1) The Maryland National Guard did not provide detailed data on employment, payrolls or purchases. Data were taken from their annual report and estimated by DBED.

(2) The Maryland National Guard did not provide detailed data on Maryland employment or payrolls, which were estimated by the JFI as 98% - based on information provided by the MD National Guard.

(3) The Maryland National Guard did not provide detailed data on Maryland procurement. Data were estimated by the IMPLAN model based on data on military purchases. This is likely to underestimate in-State spending.

(4) Includes 5,041 Reserve members who are likely to have other full or part-time employment.

(5) In order to provide a conservative estimate - the impact analysis excludes the 5,041 Reserve members who are likely to have other full or part-time employment.

Source: DBED, Military Facilities and IMPLAN

Naval Air Station Patuxent River

The Naval Air Station (NAS) Patuxent River is a center for naval aviation test, evaluation and systems acquisition. NAS Patuxent River is home to the Naval Air Systems Command (NAVAIR) Headquarters, the Air Test Wing Atlantic, and the Naval Air Warfare Center Aircraft Division Commands. NAS Patuxent River's mission is to support the Navy by providing the warfighter with technologies that deliver dominant combat effects and matchless capabilities. Its tenant commands provide effective and affordable integrated warfare systems and life cycle support through RDT&E, acquisition, engineering and fleet support for manned and unmanned aircraft, engines, avionics, aircraft support systems and ship/shore/air operations.

NAS Patuxent River is now known as the center of excellence for naval aviation. NAS Patuxent River hosts the full spectrum of acquisition management, research and development capabilities, air and ground test and evaluation, aircraft logistics and maintenance management. This distinctive synergy supports land based and maritime aircraft and engineering, testing and evaluation, integration, and life cycle support for ship/shore electronics. These combined capabilities are unique within the DoD and ensure NAS Patuxent River's status as an aviation leader working effectively to continue progress into the 21st century.

NAVAIR's Aircraft Division at Patuxent River (including Webster Field Annex) is the Navy's principal research, development, test, evaluation, and engineering and fleet support activity for manned and unmanned aircraft, engines, avionics, aircraft support systems and ship/shore/air operations. With more than 165,000 air operations annually, activities at Patuxent River fly 140 aircraft (40+type/model/series) over 780 restricted and 5,000 controlled square miles. The RDT&E capability ranges from concepts analysis and procurement to flight testing and support equipment. Patuxent River has approximately a 20,000 -member work force (including contractors), 13,800 acres, five runways and 935 buildings with an estimated \$2.8 billion value.

NAS Patuxent River is also home to the U.S. Naval Test Pilot School which provides fixed-wing and rotary-wing instruction to experienced pilots, flight officers and engineers in the processes and techniques of aircraft and systems test and evaluation. The school educates and trains military and civilians from all U.S. military services, other U.S. government agencies and foreign nations. The school investigates and develops new flight test techniques, publishes manuals for use by the aviation test community in standardization of flight test techniques and project reporting and conducts special projects. The squadron maintains its staff as a focal point of expertise providing the aviation test community with engineering and training consultation.

As presented in Table 14, the NAS Patuxent River generates a total of \$6.6 billion in economic activity in Maryland and creates or supports 41,185 jobs earning an estimated \$2.4 billion in employee compensation.

Table 14
Naval Air Station Patuxent River Impact

Facility Spending	Total	In-State		
Payroll (Mil. \$)	\$883.4	\$830.4		
Employment (# of Jobs)	10,965	10,307		
Purchases (Mil. \$)	\$1,731.8	\$1,731.8		
Visitor Spending (Mil. \$)	n.m.	\$29.4		

Economic Impacts	Direct Impact	Indirect Impact	Induced Impact	Total Impact
Output (Mil. \$)	\$2,591.5	\$2,443.5	\$1,542.5	\$6,577.5
Employment (# of Jobs)	10,965	17,829	12,392	41,185
Employee Compensation (Mil. \$)	\$883.4	\$1,078.2	\$465.5	\$2,427.1

(1) No data on total purchases was available; data is for Maryland purchases only.

Source: DBED, Military Facilities and IMPLAN

National Geospatial - Intelligence Agency

The National Geospatial-Intelligence Agency (NGA) was formed in 2003, from the National Imagery and Mapping Agency (NIMA). NIMA was created in 1996 which to combine the nation's most capable imagery and geospatial assets into a single agency. NGA's mission is to provide timely, relevant and accurate geospatial intelligence in support of national security objectives. The term "geospatial intelligence" (GEOINT) means the exploitation and analysis of imagery and geospatial information to describe, assess and visually depict physical features and geographically referenced activities on the Earth. Geospatial intelligence consists of imagery, imagery intelligence and geospatial (e.g., mapping, charting and geodesy) information. NGA provides support to civilian and military leaders and contributes to the state of readiness of U.S. military forces. NGA also contributes to humanitarian efforts, such as tracking floods and disaster support, and to peacekeeping. NGA is a member of the U.S. Intelligence Community and a Department of Defense (DOD) Combat Support Agency. Headquartered in Bethesda, MD, NGA operates major facilities in the St. Louis, MO and Washington, D.C. areas. The Agency also fields support teams worldwide.

The NGA only provided data on total and Maryland employment and payrolls. No data on total or in-State purchases or out-of-State visitors was provided. As a result, the impact estimates below understate the actual economic contribution of the Agency. As presented in Table 15, the NGA has total employment of 3,000 with an associated \$246.0 million in payroll, with estimated Maryland resident employment of 1,400 and payroll of \$114.8 million. The in-State payroll associated with the NGA generates a total of \$218.8 million in economic activity in Maryland and creates or supports 3,858 jobs earning an estimated \$277.8 million in employee compensation.³³

³³ See note 27 above.

Table 15
National Geospatial Agency Impact

<u>Facility Spending¹</u>	Total	In-State		
Payroll (Mil. \$) ¹	\$246.0	\$114.8		
Employment (# of Jobs) ¹	3,000	1,400		
Purchases (Mil. \$) ²	n.a.	n.a.		
Visitor Spending (Mil. \$)	n.m.	n.a.		

<u>Economic Impacts</u>	Direct Impact ³	Indirect Impact ⁴	Induced Impact	Total Impact
Output (Mil. \$)	\$114.8	\$0.0	\$104.0	\$218.8
Employment (# of Jobs)	3,000	0	858	3,858
Employee Compensation (Mil. \$)	\$246.0	\$0.0	\$31.8	\$277.8

(1) The NGA did not provide detailed information on employment or payrolls, which were estimated by DBED.

(2) The NGA did not provide data on total or in-State spending or projects.

(3) Direct effects include only payrolls.

(4) No Indirect Impacts were estimated since the NGA did not provide total or in-State procurement or purchases.

Source: DBED, Military Facilities and IMPLAN

National Maritime Intelligence Center

The National Maritime Intelligence Center (NMIC) is part of the Office of Naval Intelligence (ONI). Founded in 1882, ONI is the longest continuously operating intelligence service in the nation. ONI organizes and trains intelligence personnel; provides highly specialized intelligence analysis related to maritime activities; and operates in an oversight capacity with regard to security and intelligence manpower issues for the Navy. It serves as a liaison between DOD and non-DOD agencies, and supports foreign liaisons. Additionally, it is engaged in long-term analysis of foreign military (particularly naval) forces and operations, as well as broader scientific, technical, and strategic trade analysis. ONI is also involved in intelligence systems acquisition. After more than a century of operating with parts of the organization scattered throughout the Washington Metropolitan area, the Office of Naval Intelligence (ONI) dedicated a new facility, the National Maritime Intelligence Center, on October 20, 1993 at the Suitland Federal Center. NMIC was formed as a joint operating center for four tenants:

- Office of Naval Intelligence (ONI);
- Naval Information Warfare Activity (NIWA) is responsible for threat analysis and assessment of vulnerabilities. It evaluates and assesses new forms of information technology, and other concepts relating to naval defensive information warfare systems;
- Marine Corps Intelligence Activity (MCIA) is focused on providing threat assessments and expeditionary intelligence to Marine Corps headquarters; and
- U.S. Coast Guard - Intelligence Coordination Center USCG-ICC, and the Coast Guard as a whole, has been tasked with monitoring ships destined for the United States as a means of intercepting terrorist operatives.

As presented in Table 16, the NMIC has a total operational budget of \$294.6 million and employs 1,724. The NMIC generates a total of \$402.9 million in economic activity in Maryland and creates or supports 3,343 jobs earning an estimated \$266.9 million in employee compensation.

Table 16
National Maritime Intelligence Center Impact

Facility Spending	Total	In-State		
Payroll (Mil. \$)	\$203.6	\$170.6		
Employment (# of Jobs)	1,724	1,445		
Purchases (Mil. \$)	\$91.0	\$29.8		
Visitor Spending (Mil. \$)	n.m.	n.a.		
Economic Impacts	Direct Impact	Indirect Impact	Induced Impact	Total Impact
Output (Mil. \$)	\$200.4	\$38.9	\$163.6	\$402.9
Employment (# of Jobs)	1,724	270	1,349	3,343
Employee Compensation (Mil. \$)	\$203.6	\$13.3	\$50.0	\$266.9

Source: DBED, Military Facilities and IMPLAN

National Naval Medical Center Bethesda

The National Naval Medical Center Bethesda (NNMC) is the flagship of the U.S. Navy's system of medical centers. It is one of the nation's largest and most renowned military medical centers, best known for its history of providing care to war heroes and presidents alike for the past 65 years.

NNMC consists of 88 buildings on 243 acres and is the Navy's third-largest health care delivery system and provides more than 12,500 ambulatory surgeries and almost 8,000 inpatient admissions each year. As the headquarters for the regional Health Care System, NNMC encompasses facilities in five states and the District of Columbia (Northern Virginia, Maryland, Pennsylvania, West Virginia and New Jersey).

NNMC will be expanded under the 2005 BRAC process, and will be the destination for the relocated operations of the Walter Reed Army Medical Center, which will be closed in 2011. The two institutions will be combined, creating the new Walter Reed National Military Medical Center (WRNMMC) at Bethesda. Under current plans, specific changes at the realigned Bethesda campus will likely include construction and renovation of approximately 2,400,000 square feet of clinical and administrative and construction of support facilities such as gymnasium improvements, lodging expansion, additional parking, a Traumatic Brain Injury/Post Traumatic Stress Disorder Intrepid Center of Excellence, and a dedicated Warrior Transition Brigade Barracks. In total, these new facilities will accommodate an estimated 1,862 patients and visitors daily and increase staffing by approximately 2,200 additional medical and administrative personnel from the Army and Air Force, who will join the staff at WRNMMC to support the BRAC-mandated changes.

As presented in Table 17, the NNMC Bethesda generates a total of \$806.0 million in economic activity in Maryland and creates or supports 11,216 jobs earning an estimated \$480.3 million in employee compensation.

Table 17
National Naval Medical Center Bethesda Impact

Facility Spending	Total	In-State		
Payroll (Mil. \$)	\$357.2	\$331.8		
Employment (# of Jobs)	8,108	7,191		
Purchases (Mil. \$)	\$214.6	\$69.6		
Visitor Spending (Mil. \$)	n.m.	n.a.		

Economic Impacts	Direct Impact	Indirect Impact	Induced Impact	Total Impact
Output (Mil. \$)	\$401.5	\$92.2	\$312.3	\$806.0
Employment (# of Jobs)	8,108	589	2,518	11,216
Employee Compensation (Mil. \$)	\$357.2	\$28.7	\$94.4	\$480.3

Source: DBED, Military Facilities and IMPLAN

Naval Research Laboratory - Chesapeake Bay Detachment

The Naval Research Laboratory - Chesapeake Bay Detachment (NRL-CBD) was formed in 1923 at the instigation of Thomas Edison. In 1946, upon the establishment of the Office of Naval Research, NRL was placed under the direction of the Chief of Naval Research. NRL in its current form was created in 1992 after the Navy consolidated existing R&D facilities to form a single corporate laboratory. The Chesapeake Bay Detachment occupies a 168-acre site near Chesapeake Beach, Maryland, and provides facilities and support services for research in radar, electronic warfare, optical devices, materials, communications, and fire research.

Because of its location high above the Chesapeake Bay on the western shore, unique experiments can be performed in conjunction with the Tilghman Island site 16 km across the bay from CBD. Some of these experiments include low clutter and generally low background radar measurements. By using CBD's support vessels, experiments are performed that involve dispensing chaff over water and radar target characterizations of aircraft and ships. Basic research is also conducted in radar antenna properties, testing of radar remote sensing concepts, use of radar to sensor ocean waves, and laser propagation. CBD also hosts facilities of the Navy Technology Center for Safety and Survivability, which conducts fire research on simulated carrier, surface, and submarine platforms.

As presented in Table 18, NRL-CBD has a total operational budget of \$9.2 million and employs 13.³⁴ NRL-CBD generates a total of \$14.1 million in economic activity in Maryland and creates or supports 85 jobs earning an estimated \$4.3 million in employee compensation.

Table 18
Naval Research Laboratory - Chesapeake Bay Detachment Impact

Facility Spending	Total	In-State		
Payroll (Mil. \$)	\$0.8	\$0.8		
Employment (# of Jobs)	13	12		
Purchases (Mil. \$)	\$8.4	\$3.8		
Visitor Spending (Mil. \$)	n.m.	\$0.7		
Economic Impacts	Direct Impact	Indirect Impact	Induced Impact	Total Impact
Output (Mil. \$)	\$5.3	\$6.2	\$2.6	\$14.1
Employment (# of Jobs)	13	50	21	85
Employee Compensation (Mil. \$)	\$0.8	\$2.7	\$0.8	\$4.3

Source: DBED, Military Facilities and IMPLAN

³⁴ Not including civilian contractors.

Naval Support Facility Indian Head

The Naval Support Facility (NSF) Indian Head has a history dating back to 1890, when the U.S. Navy established the facility as the Naval Proving Ground with the responsibility for testing naval guns, powder, fuses, and other naval ordnance. When the U.S. entered World War I in 1917, Indian Head was a major producer of smokeless powder for the Navy. The name of the base has varied over the years from Naval Powder Factory, to Naval Propellant Plant, to Naval Ordnance Station, to the present Naval Support Facility Indian Head. Indian Head is home to seven commands:

- Indian Head Division, Naval Surface Warfare Center
- Marine Corps Chemical Biological Incident Response Force
- Naval Explosive Ordnance Disposal Technology Division
- Joint Interoperability Test Command
- Naval Ordnance Safety and Security Activity
- Naval Sea Logistics Center, Detachment Indian Head

The largest command on the facility, the Indian Head Naval Surface Warfare Center, is a component of the Naval Sea Systems Command (NAVSEA), which is responsible for developing, delivering and maintaining ships and systems for the United States Navy. Indian Head NSWC houses a vibrant community of over 1,300 scientists, engineers, technicians, and support personnel dedicated to ensuring the safety of the U.S. Armed Forces and securing the nation's military superiority in present and future armed conflicts. In state-of-the-art laboratories and facilities, it is developing, testing, and manufacturing the newest generation of explosives and propellants for use in 21st century U.S. weapons systems and aboard the most advanced Navy ships and aircraft.

As presented in Table 19, the NSF Indian Head has a total operational budget of over \$867.9 million and employs 2,918. NSF Indian Head generates a total of \$548.7 million in economic activity in Maryland and creates or supports 5,165 jobs earning an estimated \$280.8 million in employee compensation.³⁵

³⁵ NSF Indian Head only provided data on procurement from Southern Maryland; thus, the actual impact on the State is likely to be higher than presented here.

Table 19
Naval Support Facility Indian Head Impact

Facility Spending	Total	In-State		
Payroll (Mil. \$) ¹	\$186.3	\$158.9		
Employment (# of Jobs)	2,918	2,494		
Purchases (Mil. \$) ²	\$681.6	\$95.9		
Visitor Spending (Mil. \$)	n.m.	n.a.		

Economic Impacts	Direct Impact	Indirect Impact	Induced Impact	Total Impact
Output (Mil. \$)	\$254.8	\$125.0	\$168.9	\$548.7
Employment (# of Jobs)	2,918	879	1,368	5,165
Employee Compensation (Mil. \$)	\$186.3	\$43.3	\$51.2	\$280.8

(1) NSF Indian Head did not provide a breakdown of payroll by place of residence. This was estimated based on the reported share of in-State residence multiplied by the total payroll.

(2) NSF-Indian Head provided total procurement for Southern Maryland only.

Source: DBED, Military Facilities and IMPLAN

Naval Surface Warfare Center - Carderock Division

The Naval Surface Warfare Center (NSWC)- Carderock Division is the Navy's center of excellence for ships and ship systems. Part of the Naval Sea Systems Command (NAVSEA), whose mission is to develop, deliver and maintain ships and systems for the United States Navy, Carderock has helped preserve and enhance the nation's presence on and under the seas for over 100 years. Carderock, headquartered in Maryland, is the full-spectrum research and development, test and evaluation, engineering, and Fleet support organization for the Navy's ships, submarine, military watercraft, and unmanned vehicles.

Carderock Division is the U.S. Navy's state-of-the-art research, engineering, modeling, and test center for ships and ship systems. It is the largest, most comprehensive establishment of its kind in the world, serving a dual role in support of both our U.S. naval forces and the maritime industry. Navy and maritime communities have come to depend on the Carderock Division's expertise and innovative spirit in developing advanced platforms and systems, enhancing naval performance, reducing operating costs, and addressing the Navy's evolving mission. Carderock's core competencies include:

- Design & Integration Technology;
- Environmental Quality Systems;
- Hull Forms & Propulsors;
- Structures and Materials;
- Signatures and Silencing Systems,;
- Machinery Systems and Components; and
- Vulnerability and Survivability Systems.

Carderock Division's offers unique laboratories, modeling and simulation facilities, at-sea-assets, and large-scale, land-based engineering and test sites at nine locations across the country.

As presented in Table 20, the NSWC Carderock Division has a total operational budget of over \$453.2 million and employs 1,543. NSWC Carderock Division generates a total of \$344.3 million in economic activity in Maryland and creates or supports 3,082 jobs earning an estimated \$213.7 million in employee compensation.

Table 20
Naval Surface Warfare Center – Carderock Division Impact

<u>Facility Spending</u>	Total	In-State		
Payroll (Mil. \$)	\$141.7	\$88.4		
Employment (# of Jobs)	1,543	954		
Purchases (Mil. \$)	\$311.5	\$61.4		
Visitor Spending (Mil. \$)	n.m.	n.a.		

<u>Economic Impacts</u>	Direct Impact	Indirect Impact	Induced Impact	Total Impact
Output (Mil. \$)	\$149.7	\$86.3	\$108.2	\$344.3
Employment (# of Jobs)	1,543	649	890	3,082
Employee Compensation (Mil. \$)	\$141.7	\$39.0	\$33.1	\$213.7

Source: DBED, Military Facilities and IMPLAN

U.S. Naval Academy/Naval Support Activity Annapolis

The U.S. Naval Academy, founded in 1845, is the service academy for the U.S. Navy. The Naval Academy is the nation’s premier source of leaders for the Navy and the Marine Corps. The Naval Academy has a faculty of 600 and enrollment of 4,449. The Naval Support Activity (NSA) Annapolis command is responsible for the delivery of common operating support services to the Naval Academy Complex, Naval Research Laboratory Chesapeake Beach Detachment, and Commander Naval Security Group at Fort George G. Meade, Maryland. Data were provided for the United States Naval Academy, Public Works Division Annapolis (NAVFAC), and the Naval Health Clinic Annapolis. NSA Annapolis was officially established in 2006 to streamline operations to support the U.S. Naval Academy.

As presented in Table 21, U.S. Naval Academy – NSA Annapolis generates a total of \$677.5 million in economic activity in Maryland and creates or supports 8,886 jobs earning an estimated \$348.6 million in employee compensation.

Table 21
U.S. Naval Academy/ Naval Support Activity Annapolis Impact

<u>Facility Spending</u>	Total	In-State		
Payroll (Mil. \$)	\$236.0	\$223.7		
Employment (# of Jobs)	6,147	6,057		
Purchases (Mil. \$)	\$138.4	\$96.1		
Visitor Spending (Mil. \$)	n.m.	n.a.		
<u>Economic Impacts</u>	Direct Impact	Indirect Impact	Induced Impact	Total Impact
Output (Mil. \$)	\$319.9	\$125.6	\$232.0	\$677.5
Employment (# of Jobs)	6,147	850	1,889	8,886
Employee Compensation (Mil. \$)	\$236.0	\$42.1	\$70.4	\$348.6

Source: DBED, Military Facilities and IMPLAN

USCG Curtis Bay Coast Guard Yard

For over a century, the United States Coast Guard has built, repaired and renovated ships in Baltimore, Maryland at its Curtis Bay Coast Guard Yard facility. Curtis Bay is the Service's sole shipbuilding and major repair facility, and is an essential part of the Coast Guard's core industrial base and fleet support operations. The facility was first leased by the Revenue Cutter Service in 1899, acquired in 1905 and grew into a major shipbuilding and repair facility in World War II. Since then, the Yard has continued to take the lead in major shipbuilding and repair operations. The Yard undertook the largest renewable energy project in Coast Guard history in 2007 with the groundbreaking of a methane-powered co-generation plant that will provide electricity and steam to all Yard facilities for the next 15 years. The methane will come from a City of Baltimore landfill located one mile from the shipyard. In February 2008, the Yard graduated its first class of Trades Training students after four years of trades theory training and on-the-job instruction, an effort to assure that the Yard's future includes a high quality, highly trained workforce.

As presented in Table 22, the USCG Curtis Bay Coast Guard Yard has a total operational budget of \$111.2 million and employs 1,518. The Yard generates a total of \$217.5 million in economic activity in Maryland and creates or supports 2,395 jobs earning an estimated \$126.9 million in employee compensation.

Table 22
USCG Curtis Bay Coast Guard Yard Impact

<u>Facility Spending</u>	Total	In-State		
Payroll (Mil. \$)	\$92.1	\$87.7		
Employment (# of Jobs)	1,518	1,338		
Purchases (Mil. \$) ¹	\$19.1	\$19.1		
Visitor Spending (Mil. \$)	n.m.	\$0.3		
<u>Economic Impacts</u>	Direct Impact	Indirect Impact	Induced Impact	Total Impact
Output (Mil. \$)	\$107.2	\$25.1	\$85.2	\$217.5
Employment (# of Jobs)	1,518	179	698	2,395
Employee Compensation (Mil. \$)	\$92.1	\$8.7	\$26.0	\$126.9

(1) Only partial data on total purchases were available, data is for Maryland purchases only.

Source: DBED, Military Facilities and IMPLAN

Walter Reed Forest - Glen Annex

The Walter Reed - Forest Glen Annex is a 136 acre site located in Silver Spring, MD. The Annex is home to the Walter Reed Army Institute of Research (WRAIR) and Naval Medical Research Command, and several smaller commands. As of October 2009, control over the installation and most elements has been transferred to Fort Detrick. Under BRAC, the Forest Glen Annex will soon become home to the National Museum of Health and Medicine (currently at the main Walter Reed Army Medical Center campus) as well as a Joint Center of Excellence in Infectious Disease Research.

As presented in Table 23, the Forest Glen Annex has total employment of 865 and payroll of \$67.3 million and reports in-State purchases of \$13.7 million. The Annex generates a total of \$151.8 million in economic activity in Maryland and creates or supports 1,463 jobs earning an estimated \$89.7 million in employee compensation.

Table 23
Walter Reed - Forest Glen Annex Impact

<u>Facility Spending</u>	Total	In-State		
Payroll (Mil. \$)	\$67.3	\$57.7		
Employment (# of Jobs)	865	758		
Purchases (Mil. \$) ¹	\$17.1	\$13.7		
Visitor Spending (Mil. \$)	n.m.	\$3.3		

<u>Economic Impacts</u>	Direct Impact	Indirect Impact	Induced Impact	Total Impact
Output (Mil. \$)	\$74.8	\$20.9	\$56.2	\$151.8
Employment (# of Jobs)	865	138	460	1,463
Employee Compensation (Mil. \$)	\$67.3	\$5.2	\$17.1	\$89.7

(1) Only partial data on total purchases was available, most data is for Maryland purchases only.

Source: DBED, Military Facilities and IMPLAN

The Estimated State and Local Government Revenues Impact of the Seventeen Facilities Analyzed

A secondary goal of this report was to estimate the state and local tax revenues associated with the operation of the seventeen military facilities analyzed. The IMPLAN model used in this analysis estimates the total combined state and local government tax and related revenues from the economic activity generated by and resident incomes supported by the activity studied. The IMPLAN model estimates several state and local revenue sources, including social insurance (unemployment), income, sales and property taxes as well as other government revenues. The JFI used the results of this IMPLAN state and local revenue analysis to estimate Maryland state and local government revenues. The JFI estimated the share of each tax paid to the State and local (county and sub-county) governments for each revenue type, based on available U.S. Bureau of the Census state and local government revenue data.³⁶ The JFI applied the share of state and local government revenues from each source to the IMPLAN-estimated state and local tax revenues by type to estimate total State and local government revenues.

As presented in Table 24, based on the IMPLAN estimated state and local government revenue projections, the JFI estimates that the seventeen installations studied generate nearly \$1.2 billion in combined State and local government revenues composed of \$690.8 million in State revenues and \$492.4 million in local government revenues.

Table 24
Estimated State and Local Government Revenues
From the Seventeen Military Facilities Analyzed

Item	Revenues (Mil. \$s)	% of Total
Total State and Local Government Revenues	<u>\$1,183.2</u>	<u>100%</u>
State Government Revenues	<u>\$690.8</u>	<u>58%</u>
Personal and Corporate Income Tax	\$241.0	20%
Sales Tax	\$296.7	25%
Other Revenues	\$153.1	13%
Local Government Revenues	<u>\$492.4</u>	<u>42%</u>
Personal Income Tax	\$127.0	11%
Property Tax	\$286.9	24%
Other Revenues	\$78.5	7%

Source: IMPLAN and the JFI

³⁶ See <http://www.census.gov/govs/estimate/>

Appendix A
Data Collection Form

**Draft Data Collection Form
DBED Military Base Impact Project**

Introduction

The Maryland Department of Business and Economic Development retained the Jacob France Institute of the University of Baltimore to conduct an analysis of the economic impacts of military base, facilities and installations on the State of Maryland. In order to conduct this analysis, we will need information on the spending levels associated with your facility. This *Data Collection Form* is being sent to you in order to facilitate the collection of the data required to measure and analyze the economic contribution your installation makes to the State of Maryland.

This data collection for _____ has been sent to you as the principle command on the base. Hopefully, your command is able to answer all of the questions on this Data Collection Form, but if your command lacks access to the required data – please refer this to the appropriate offices or commands that have access to this data.

Richard Clinch, the Director of Economic Research at the France Institute is available to answer any questions you have about this report and to work with your staff on collecting the required information. He can be reached at (410) 837-4988 and rclinch@ubalt.edu.

Employment and Payrolls

Responding Command _____ (Enter command)

Contact person for personnel and Payroll Data _____
(Contact Name) (Phone #)

Please provide the following information about employment on your installation.

Personnel - On-Base

Personnel		
Total (Enter #)	Total Residing in Maryland (Enter #)	Total Residing in County (Enter #)

Total Personnel			
Active Duty Military - Permanent			
Living On-Base			
Living Off-Base			
Reserve			
Living On-Base			
Living Off-Base			
Rotational			
Students			
Civilian			
DOD Civilians			
Non-Military Civilians			

Employment and Payrolls continued

Personnel - On-Base

Total Payroll Outlay		
Total (Enter \$)	Total Paid to Persons Residing in Maryland (Enter \$)	Total Paid to Persons Residing in County (Enter \$)

Total Personnel		
Active Duty Military - Permanent		
Living On-Base		
Living Off-Base		
Reserve		
Living On-Base		
Living Off-Base		
Rotational		
Students		
Civilian		
DOD Civilians		
Non-Military Civilians		

Military Retirees

We are interested in the relationship between your installation and the number of Military Retirees that reside in your surrounding County and in the State of Maryland.

Do you have any information on the number Military Retirees from your installation that live in:

Maryland _____ and the County in which your Installation is located _____ (enter #)

Do you have any information on the number Military Retirees from your installation that currently work on your installation as/for a contractor? _____ (enter #)

Base and Command Visitors

As part of the function of your Base/Command, do non- Base/Command military personnel visit your installation as part of its basic mission? **Yes / No** (circle one)

If Yes, How Many Visited in FY 2008? _____ (enter number)

How long on average did they stay? _____ (enter number of days)

Do you know how much they spent per day? _____ (enter number of days)

As part of the function of your Base/Command, do non-Base/Command civilian contractors or DOD personnel visit your installation as part of its basic mission? **Yes / No** (circle one)

If Yes, How Many Visited in FY 2008? _____ (enter number)

How long on average did they stay? _____ (enter number of days)

Do you know how much they spent per day? _____ (enter number of days)

Procurement and Purchases

In order to assess the impact your installation has on the State of Maryland, we will need information on the amount and types of purchases your installation makes in total and in particular from suppliers located in Maryland and in the County surrounding your installation. We would like this information in as much detail as is possible. The researchers at the University of Baltimore have provided the following table to facilitate the collection of the procurement and purchases data required for this analysis but would like to discuss this request with you as your schedule permits. The lead researcher on this project, Richard Clinch, can be reached at (410) 837-4988 and rclinch@ubalt.edu.

Responding Command _____ (Enter command)

Contact person for personnel and Payroll Data _____
 (Contact Name) (Phone #)

What is you Base/Command's total FY2008 Procurement and Purchases? _____ (enter \$)

Procurement and Purchases

	Total	\$ Paid to Maryland Suppliers, Vendors and Contractors	\$ Paid to County Suppliers, Vendors and Contractors
Building Construction/Maintenance - Total			
Infrastructure Construction			
Institutional Building Construction			
Multifamily Residential Building Construction			
Single Family Residential Building Construction			
Architecture & Engineering			
Environmental			
Custodial			
Grounds-keeping and Maintenance			
Other _____			
Other _____			
Utilities - Total			
Electricity			
Natural Gas			
Water/Sewer			
Telephone			
Mobile Telephone			
Internet			
Cable Television			

Used additional space as needed

Procurement and Purchases – continued

Procurement and Purchases

	Total	\$ Paid to Maryland Suppliers, Vendors and Contractors	\$ Paid to County Suppliers, Vendors and Contractors
Medical - Total			
CHAMPUS/TRICARE			
Health			
Dental			
Medical Supplies			
Other _____			
Other _____			
Contracts - Total			
Research and Development Services			
Engineering Services			
Computer Services			
Computer Hardware			
Other _____			
Other _____			
Other _____			
Other _____			
Purchases - Total			
Government Purchase Card			
Ground Fuel			
Aviation Fuel			
General Equipment			
Computer/IT Equipment			
Communications Equipment			
Travel			
Food			
Other _____			
Other _____			
Other _____			
Other _____			

Used additional space as needed

Procurement and Purchases – continued

Procurement and Purchases

	Total	\$ Paid to Maryland Suppliers, Vendors and Contractors	\$ Paid to County Suppliers, Vendors and Contractors
Education			
College/University Tuition			
Community College Tuition			
Elementary Education - Impact Funds			
Other _____			
Other _____			
Other Procurement and Purchases			
Other _____			
Other _____			
Other _____			
Other _____			
Other _____			
Other _____			
Other _____			
Other _____			

Used additional space as needed

Other Installation-Related Revenues and Activities

	Please Enter \$ Amount
Commissary Sales	
Exchange Sales	
Lodging Revenues	
Other _____	
Other _____	

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