



# Economic Impact of Maryland's Military Installations and the Associated Defense Ecosystem

FY 2021 | August 2023



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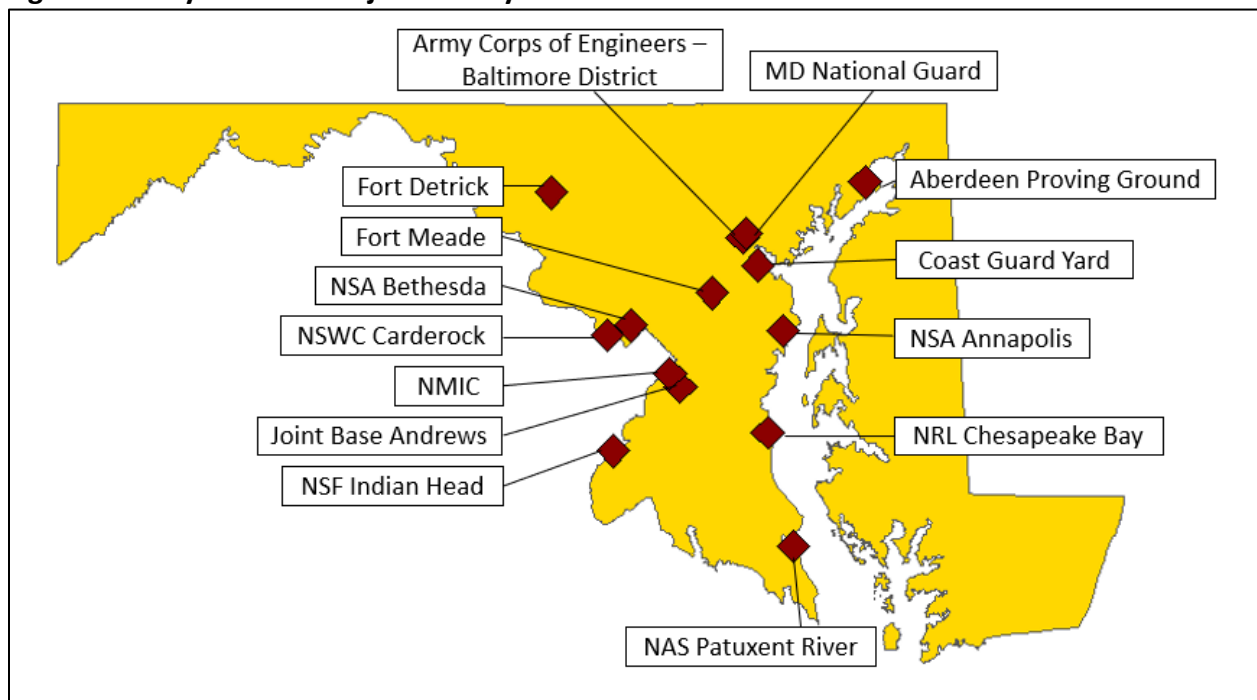


## Economic Impact of Maryland's Military Installations and the Associated Defense Ecosystem in FY 21

### 1. Executive Summary

The defense industry is a key part of Maryland's economy. Despite its relatively small size, Maryland ranks sixth in terms of total defense spending.<sup>1</sup> This strength is due to Maryland's proximity to the Pentagon – the headquarters for the Department of Defense – as well as the number of military installations in the state. Maryland's military installations provide critical infrastructure for the nation's security. For example, Fort Meade hosts the NSA and US Cyber Command, Fort Detrick hosts multiple government agency biomedical research laboratories and Space Force, and NSA Annapolis is the home of the US Naval Academy. This report estimates the economic impacts associated with 14 major military installations and the ecosystem of defense contractors and suppliers that operated in and around these bases in Fiscal Year (FY) 2021. The military installations covered in this report are displayed below.

**Figure 1: Maryland's 14 Major Military Installations**



In FY 21, Maryland's 14 major military installations, the contractors working onsite and nearby, and other supporting firms had a significant impact on the state's economy. In total, this ecosystem supported **389,949 jobs**, **\$61.4 billion in economic activity**, and **\$33.0 billion in employee compensation**. As a comparison, the jobs supported by Maryland's military installations and the defense industry are more than the employment levels in Maryland's largest industry – Health Services – which employed over 373,000 workers in 2021.

<sup>1</sup> Department of Defense, "Defense Spending by State - Fiscal Year 2021," <https://oldcc.gov/dsbs-fy2021>.



## Economic Impact of Maryland's Military Installations and the Associated Defense Ecosystem in FY 21

Notably, the impact of Maryland's major military installations and the associated defense ecosystem is growing over time. The Department of Commerce replicated the methodology used in this report for FY 16 using data provided by installations for a prior report. As the below table shows, employment grew by 12.5 percent between FY 16 and FY 21 and output grew by 25.0 percent.<sup>2</sup>

**Figure 2: Comparison of Economic Impacts in FY 16 and FY 21 of Maryland's Major Military Installations, Military Contractors, and Other Supporting Businesses**

Metric	FY 16	FY 21	Difference	Percent Change
Jobs	346,563	389,949	43,386	12.5%
Output	\$49,081,838,686	\$61,358,748,647	\$12,276,909,961	25.0%
Employee Compensation	\$25,119,511,822	\$32,990,063,457	\$7,870,551,635	31.3%

The table below presents total estimated impacts for Maryland's major military installations in FY 21. Further details on each installation are available in the full report.

**Figure 3: Summary of Estimated Economic Impacts for Maryland's Major Military Installations in FY 21**

Installation	Total Employment	Total Output	Total Employee Compensation
Aberdeen Proving Ground	23,698	\$4,012,803,591	\$2,339,462,807
Army Corps of Engineers – Baltimore District	7,271	\$1,280,765,339	\$476,717,493
Coast Guard Yard	6,561	\$907,721,148	\$426,836,499
Fort Detrick	66,409	\$11,201,819,402	\$5,698,323,854
Fort Meade	116,036	\$17,844,417,434	\$10,519,622,510
Joint Base Andrews	19,024	\$2,464,804,968	\$1,544,593,798
MD Army and Air National Guard	8,753	\$609,830,071	\$395,446,596
National Maritime Intelligence Center	6,049	\$879,445,174	\$495,361,214
NAS Patuxent River	52,317	\$6,270,951,666	\$4,169,392,025
Naval Research Laboratory Chesapeake Bay	61	\$9,757,444	\$5,314,955
NSA Annapolis	10,149	\$1,013,879,021	\$682,579,168
NSA Bethesda	14,620	\$1,886,464,026	\$1,386,617,334
NSF Indian Head	4,771	\$700,336,354	\$515,472,149

<sup>2</sup> FY 16 data does not include a measure of visitor spending as this data was unavailable. However, in FY 21 visitor spending constituted a very small portion of statewide impacts (less than 0.2 percent of total output).



## Economic Impact of Maryland's Military Installations and the Associated Defense Ecosystem in FY 21

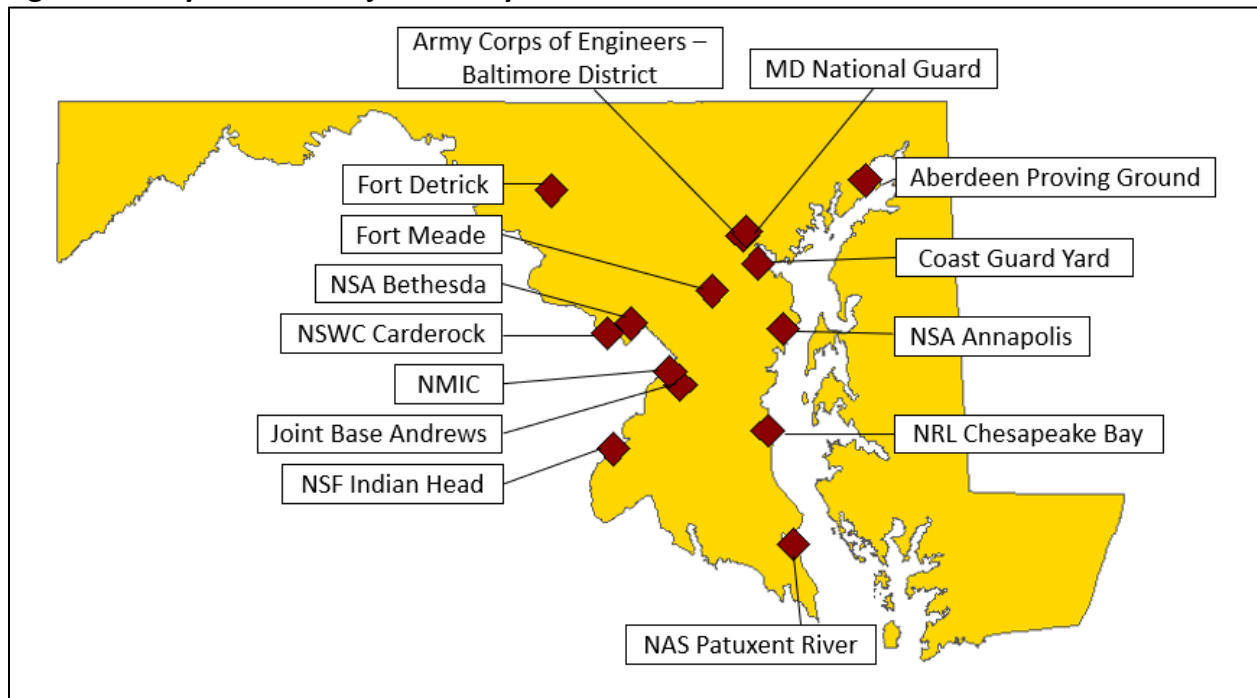
NSWC Carderock	3,799	\$580,127,776	\$426,821,850
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## 2. Introduction

The defense industry is a key part of Maryland's economy. Despite its relatively small size, Maryland ranks sixth in terms of total defense spending.<sup>3</sup> This strength is due to Maryland's proximity to the Pentagon – the headquarters for the Department of Defense – as well as the number of military installations in the state. Maryland's military installations provide critical infrastructure for the nation's security. For example, Fort Meade hosts the NSA and US Cyber Command, Fort Detrick hosts multiple government agency biomedical research laboratories and Space Force, and NSA Annapolis is the home of the US Naval Academy. This report estimates the economic impacts associated with 14 major military installations and the ecosystem of defense contractors and suppliers that operated in and around these bases in Fiscal Year (FY) 2021.

The 14 major military installations examined in this report and their location are displayed in the map below.

**Figure 4: Maryland's 14 Major Military Installations**



## 3. Methodology and Description of Impacts

In this report, the economic impacts associated with Maryland's defense ecosystem are derived from three sources:

<sup>3</sup> Department of Defense, "Defense Spending by State - Fiscal Year 2021," <https://oldcc.gov/dsbs-fy2021>.



## Economic Impact of Maryland's Military Installations and the Associated Defense Ecosystem in FY 21

1. Personnel directly employed by Maryland's major installations. These may be active-duty military, part-time service members, students, or federal civilians.
  - a. Data on personnel and associated payroll were provided by each installation.
2. Procurement and purchases made to support Maryland's military installations and the Department of Defense (DoD). These can include building construction and maintenance, utilities, research and development, IT and telecom services, and more.
  - a. For installation impact estimates, this information was provided by the installations.
  - b. The Department of Commerce used statewide contracting totals directly from the DoD when estimating the statewide impacts rather than summing up procurement self-reported by the installations.<sup>4</sup>
3. Visitors to Maryland's military installations who then spend money because of their trip. This is a relatively small portion of the economic impacts associated with Maryland's military installations (less than 0.2 percent of statewide output in FY 21).
  - a. Data on the number of visitors and their length of stay were provided by the installations.

When necessary, the data highlighted above were supplemented using information from USASpending.gov and prior studies. Payroll and procurement occurring in Maryland and estimated visitor spending were then modeled using IMPLAN, an industry-standard software for conducting economic impact analyses. A more detailed methodology is available in Appendix A of this report.

Based on the inputs provided by each installation and supplemented by Commerce, IMPLAN produces impact estimations across four categories:

1. **Direct impacts.** Direct impacts are those linked directly to the installation. For this report, that includes the personnel on each installation's payroll, the procurement and purchases made by the installation, and the direct spending by visitors to the installation.<sup>5</sup>
2. **Indirect impacts.** These impacts represent economic activity that supports the installation. For this report, that includes supplies for the procurement and purchases the installation makes as well as supplies associated with visitor spending.

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<sup>4</sup> Generally, installations were able to provide personnel and payroll data easily but found it more difficult to provide complete procurement and purchasing data. Some installations could only provide total contract dollars and some installations did not provide any contracting information. Using data from the DoD Office of Local Defense Community Cooperation (OLDCC) allows the Department of Commerce to better compare 'apples to apples' across installations and to have a replicable methodology for future analyses rather than rely on data that may vary based on what information installations are able to provide each year.

<sup>5</sup> Military installations are not like a traditional business, and thus the way that economic impacts are calculated are slightly different by necessity. Some reports capture procurement and purchases as indirect impacts to reflect the fact that this spending supports the installation's mission. This report has procurement and purchases represented as direct impacts to illustrate that money flows from the federal government to the installation and then on to supplier firms. This spending is then not represented in the indirect impacts to avoid double counting.



## Economic Impact of Maryland's Military Installations and the Associated Defense Ecosystem in FY 21

3. **Induced impacts.** These impacts are those associated with the increase in household incomes due to the base. As active-duty military or federal contractors get paid, they spend their paychecks on items such as rent, groceries, bills, clothing, or travel. All of the ripple effects associated with this spending are captured under the induced impacts.
4. **Total impacts.** These are the sum of direct, indirect, and induced impacts.

This report breaks out economic impacts across three categories:

- **Employment.** This represents the number of direct, indirect, or induced jobs. These jobs may be part-time or full-time and are not measured in FTEs.
- **Output.** Output represents the value of all goods and services produced in Maryland in FY 21. In economic impact analyses, output is a way to measure the revenues accruing to firms in the region.
- **Employee Compensation.** Employee compensation represents an employee's wages as well as their benefits (health insurance, retirement funds, etc.).

### 4. Key Findings

The Department of Commerce estimated economic impacts for each of Maryland's 14 major military installations and also modeled these impacts statewide. The economic impacts of Maryland's military installation ecosystem are significant. As Figure 5 illustrates, this ecosystem supported nearly **390,000 jobs**, **\$61.4 billion in economic activity**, and **\$33.0 billion in employee compensation** in FY 21. As a comparison, the largest single sector of Maryland's economy is Health Care, which employed over 373,000 workers in 2021.<sup>6</sup>

**Figure 5: Impact of Maryland's Major Military Installations, Military Contractors, and Other Supporting Businesses in FY 21**

Impact	Employment	Output	Employee Compensation
Direct	252,331	\$36,253,468,657	\$25,230,712,085
Indirect	27,952	\$5,704,232,758	\$1,902,568,290
Induced	109,666	\$19,401,047,233	\$5,856,783,082
<b>Total</b>	<b>389,949</b>	<b>\$61,358,748,647</b>	<b>\$32,990,063,457</b>

The impact of Maryland's military installations, military contractors, and other supporting businesses has grown over time, as shown in Figure 6. In addition to measuring the economic impacts in FY 21, the Department of Commerce used data that installations submitted for a report in FY 16 to measure statewide impacts for that year.<sup>7</sup> Over the past five fiscal years, the number of jobs supported by the defense ecosystem in Maryland grew by 12.5 percent, the

<sup>6</sup> Impacts of Maryland's military installations include employment in healthcare. This comparison is solely to give a sense of scale.

<sup>7</sup> FY 16 data does not include a measure of visitor spending as this data was unavailable. However, in FY 21 visitor spending constituted a very small portion of statewide impacts (less than 0.2 percent of total output).



## Economic Impact of Maryland's Military Installations and the Associated Defense Ecosystem in FY 21

amount of output (economic activity) grew by 25.0 percent, and employee compensation grew by 31.3 percent.

**Figure 6: Comparison of Economic Impacts in FY 16 and FY 21 of Maryland's Major Military Installations, Military Contractors, and Other Supporting Businesses<sup>8</sup>**

Metric	FY 16	FY 21	Difference	Percent Change
Jobs	346,563	389,949	43,386	12.5%
Output	\$49,081,838,686	\$61,358,748,647	\$12,276,909,961	25.0%
Employee Compensation	\$25,119,511,822	\$32,990,063,457	\$7,870,551,635	31.3%

The table below presents total estimated impacts for Maryland's major military installations. Further details on each installation are available in the next section.

**Figure 7: Summary of Estimated Economic Impacts for Maryland's Major Military Installations in FY 21**

Installation	Total Employment	Total Output	Total Employee Compensation
Aberdeen Proving Ground	23,698	\$4,012,803,591	\$2,339,462,807
Army Corps of Engineers – Baltimore District	7,271	\$1,280,765,339	\$476,717,493
Coast Guard Yard	6,561	\$907,721,148	\$426,836,499
Fort Detrick	66,409	\$11,201,819,402	\$5,698,323,854
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Joint Base Andrews	19,024	\$2,464,804,968	\$1,544,593,798
MD Army and Air National Guard	8,753	\$609,830,071	\$395,446,596
National Maritime Intelligence Center	6,049	\$879,445,174	\$495,361,214
Naval Air Station Patuxent River	52,317	\$6,270,951,666	\$4,169,392,025
Naval Research Laboratory Chesapeake Bay	61	\$9,757,444	\$5,314,955
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Naval Support Activity Bethesda	14,620	\$1,886,464,026	\$1,386,617,334
Naval Support Facility Indian Head	4,771	\$700,336,354	\$515,472,149

<sup>8</sup> Output and employee compensation are reported in 2023 dollars.



## Economic Impact of Maryland's Military Installations and the Associated Defense Ecosystem in FY 21

Naval Surface Warfare Center Carderock	3,799	\$580,127,776	\$426,821,850
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As seen in Figure 7, of the 14 installations studied in this report, Fort Meade had the largest impact in FY 21. This is consistent with prior studies (not conducted by the Department of Commerce) of the impacts associated with Maryland's military installations. In FY 21, Fort Detrick had the second largest impact, up from fourth in a 2016 report conducted by Towson University. This change is attributable to both better reporting practices from the installation as well as a large increase in spending related to COVID-19.

Please note that the impacts in Figure 7 cannot be summed to arrive at the statewide totals presented in Figure 5. In working with the installations to collect data, the Department of Commerce found that installations were able to provide personnel and payroll data easily but found it more difficult to provide complete procurement and purchasing data. Some installations could only provide total contract dollars rather than information on in-state purchases and other installations were unable to provide any contracting information. Because installations were not reporting procurement and purchases in a consistent manner, the Department of Commerce used statewide contracting data from the DoD Office of Local Defense Community Cooperation (OLDCC). This ensures contract dollars statewide are reported in a consistent manner and will allow for greater confidence when comparing statewide impacts in FY 21 to those from other years (such as FY 16 as in Figure 6 or for future rounds of analysis not yet completed).

This is not the first report conducted on the impact of Maryland's military installations. Prior reports were conducted to estimated impacts in FY 2008, FY 2012, and FY 2016. However, as discussed in more detail in Appendix A, the methodology for this report is different and this makes a direct comparison to those prior reports impossible.

### 5. Installation Fact Sheets and Economic Impacts

This section contains fact sheets and economic impact estimates for each of Maryland's 14 major military installations. Each installation's fact sheet is two pages. The first page covers data provided by each installation to Commerce, primarily the number of total personnel and the total levels of procurement and purchases in FY 21. Information on in-state breakouts for payroll and purchases are provided at the bottom of the first page of each infographic. The second page presents results for each installation's economic impact analysis. The methodology used to estimate these economic impacts is located in Appendix A.

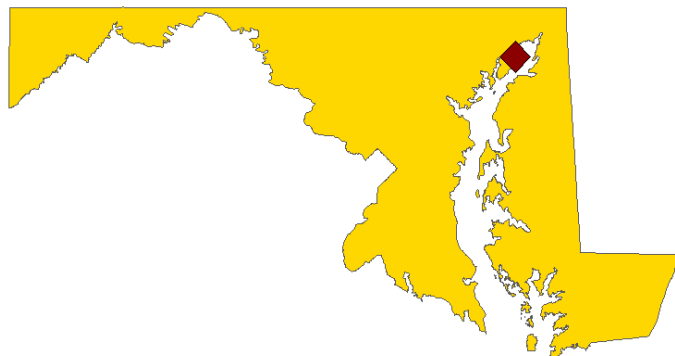


## **Economic Impact of Maryland's Military Installations and the Associated Defense Ecosystem in FY 21**

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# ABERDEEN PROVING GROUND

## FY 21 FACT SHEET



Aberdeen Proving Ground (APG) is a U.S. Army installation that spans approximately 72,500 acres in Harford County, Maryland. APG was first established in 1917, just months after the United States entered World War I. Initially, APG was used to test military equipment and to conduct military artillery training. Today, APG is the Army's oldest active proving ground and remains dedicated to a wide range of Army research, training, and testing.

## FY 21 Key Facts and Figures

### Personnel and Visitor Data



**976** full-time service members



**1,138** part-time service members



**11,389** civilians



**\$1,566,450,559** in total payroll



**9,345** total visitors

### Procurement and Purchasing Data



**\$55.7 million** in building construction



**\$52.9 million** in building maintenance



**\$3.785 billion** in research and development



**\$816.7 million** in IT and telecom



**\$54.9 million** in utilities



**\$24.971 billion** in all other procurement and purchases



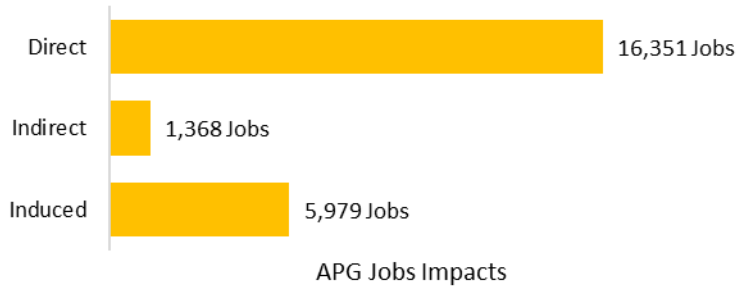
**\$30.267 billion** in total procurement and purchases

Of the \$1.6 billion in total payroll, an estimated \$1.1 billion is paid to Maryland residents. Of the \$30.3 billion in total procurement and purchases, APG estimates that approximately \$1.0 billion was paid to Maryland vendors. However, this likely underestimates the true impact of procurement in Maryland, as vendors may be based outside Maryland but employ Maryland workers to fulfil contracts at the installation. Additionally, subcontractors may be based inside Maryland even if the prime contractor has their headquarters out of state. Between payroll and total procurement and purchases, APG directly contributes an estimated total of \$31.8 billion to national GDP and \$2.23 billion to Maryland's gross state product.

## ABERDEEN PROVING GROUND

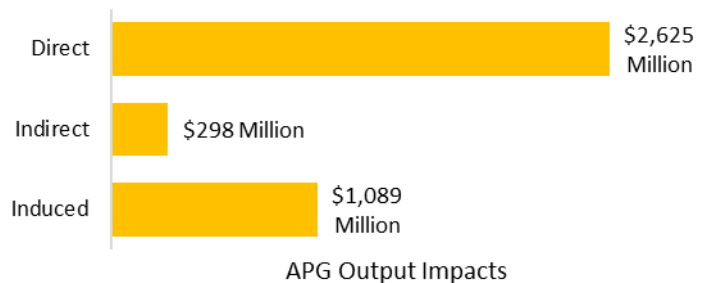
### FY 21 Maryland Economic Impact Data

This sheet measures the economic impact in Maryland for Aberdeen Proving Ground in FY 21. Direct impacts capture personnel employed by the base as well as at firms receiving contracts from the installation. Indirect impacts capture ripple effects from those companies that contract with the installation. Induced impacts are those due to increased spending by workers, either those employed on the installation or in supporting businesses.



**Total  
Jobs:  
23,698**

**Total  
Output:  
\$4,012,803,591**



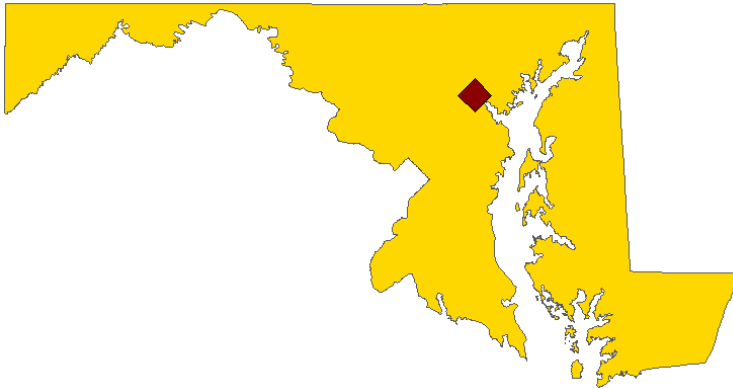
**Total  
Wages:  
\$2,339,462,807**

#### Comparison to past data:

In FY 21, APG had a smaller presence in Maryland than in previous years. In FY 2012, the installation supported 15,780 workers, and in FY 2016 the installation supported 14,806. This year, a combined 13,606 workers were on APG's payroll. In FY 21, total procurement and purchases increased from \$15.1 billion in FY 2012 and \$13.1 billion in FY 2016 to \$30.3 billion. However, although total procurement and purchases were roughly double the levels from prior study years, the amount paid to Maryland vendors in FY 2021 fell. In FY 2021 APG paid \$1.0 billion to Maryland vendors, down from \$1.3 billion in FY 2016.

# ARMY CORPS OF ENGINEERS BALTIMORE DISTRICT

## FY 21 FACT SHEET



The U.S. Army Corps of Engineers—Baltimore District supports the construction of Army medical and technological research facilities, the remediation of former defense and civilian sites, and the supply of drinking water to Washington, DC, as well as Arlington County and Falls Church in Virginia. The Baltimore District maintains 290 miles of federal channels, oversees 148 miles of federal flood protection levees, and manages 15 reservoir projects.

### FY 21 Key Facts and Figures

#### Personnel and Visitor Data



**11** full time-service members



**1,050** civilians



**\$125,953,333** in total payroll

#### Procurement and Purchasing Data



**\$900 million** in building construction



**\$200 million** in building maintenance



**\$200 million** in engineering



**\$50 million** in all other procurement and purchases

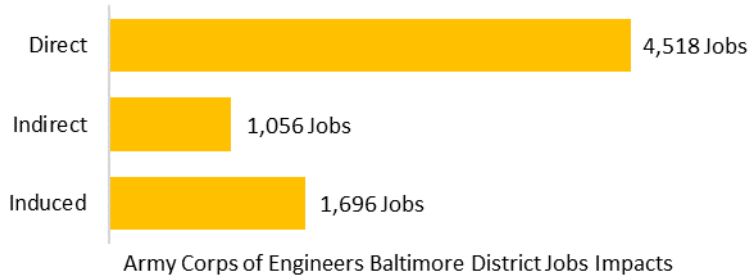


**\$1.35 billion** in total procurement and purchases

Of the \$126 million in total payroll, an estimated \$72 million is paid to Maryland residents. Of the \$1.35 billion in total procurement and purchases, an estimated \$613.4 million was paid to Maryland vendors. However, this likely underestimates the true impact of procurement in Maryland, as vendors may be based outside Maryland but employ Maryland workers to fulfil contracts at the installation. Additionally, subcontractors may be based inside Maryland even if the prime contractor has their headquarters out of state. Between payroll and total procurement and purchases, the US Army Corps of Engineers Baltimore District directly contributes an estimated total of \$1.476 billion to national GDP and \$686 million to Maryland's gross state product.

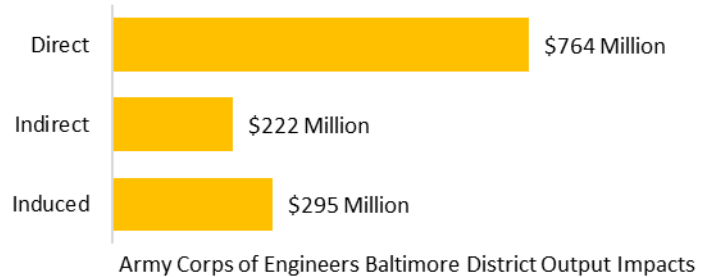
## ARMY CORPS OF ENGINEERS BALTIMORE DISTRICT FY 21 Maryland Economic Impact Data

This sheet measures the economic impact in Maryland for the US Army Corps of Engineers Baltimore District in FY 21. Direct impacts capture personnel employed by the District as well as at firms receiving contracts from the District. Indirect impacts capture ripple effects from those companies that contract with the District. Induced impacts are those due to increased spending by workers, either those employed on the District or in supporting businesses.



**Total  
Jobs:  
7,271**

**Total  
Output:  
\$1,280,765,339**

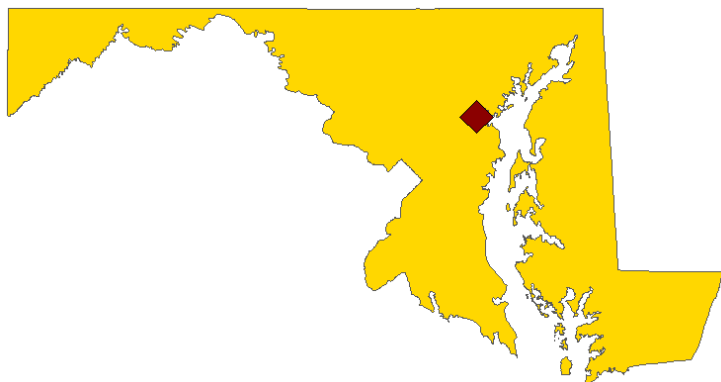


**Total  
Wages:  
\$476,717,493**

### Comparison to past data:

In FY 21, the US Army Corps of Engineers – Baltimore District had a larger footprint in Maryland relative to previous study periods. In FY 21, the Baltimore District employed more total workers than in FY 16, though fewer workers lived in Maryland. Additionally, pay per employee rose between FY 16 and FY 21. Notably, procurement and purchases nearly doubled. In FY 16, the Baltimore District procured \$332.8 million from in-state vendors, while in FY 21 this figure rose to \$613.4 million. This is due to total procurement and purchases rising by the Baltimore District, especially on building construction and maintenance and on engineering contracts.

## COAST GUARD YARD FY 21 FACT SHEET



As part of the Department of Homeland Security, the Coast Guard Yard (CGY) is the Coast Guard's only shipbuilding, repair, and renovation facility and has grown in size, scope, and technical capacity over its 119-year tenure. The site was initially an experimental shipyard on 36 acres; however, as the needs of the U.S. military developed and changed, the site has grown as well. Since World War II, the Coast Guard Yard has focused its work to meet the need of the US Coast Guard but also serves as an example to other facilities by, for example, being the first to open a Landfill Gas Renewable Energy Center.

### FY 21 Key Facts and Figures

#### Personnel and Visitor Data



**591** full-time service members



**142** part-time service members



**1,285** civilians



**\$154,583,589** in total payroll



**4,066** total visitors

#### Procurement and Purchasing Data



**\$393.3 million** in total procurement and purchases

For the FY 2021 report, the US Coast Guard Yard did not provide estimated breakouts of in-state vs out-of-state payroll or procurement and purchases. The Department of Commerce estimated in-state breakouts using figures provided by the installation for an impact study in FY 2012. Using these proportions, the Department of Commerce estimates that approximately 1,491 of the US Coast Guard Yard's 2,018 employees live in Maryland. Additionally, of the \$154.6 million in total payroll, an estimated \$112.4 million went to support Maryland residents. Between payroll and total procurement and purchases, the US Coast Guard Yard directly contributes an estimated total of \$547.9 million to national GDP and \$505.6 million to Maryland's gross state product.

## COAST GUARD YARD

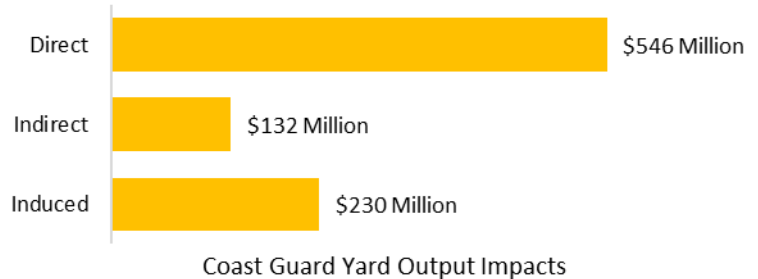
### FY 21 Maryland Economic Impact Data

This sheet measures the economic impact in Maryland for the US Coast Guard Yard in FY 21. Direct impacts capture personnel employed by the base as well as at firms receiving contracts from the installation. Indirect impacts capture ripple effects from those companies that contract with the installation. Induced impacts are those due to increased spending by workers, either those employed on the installation or in supporting businesses.



**Total  
Jobs:  
6,561**

**Total  
Output:  
\$907,721,148**

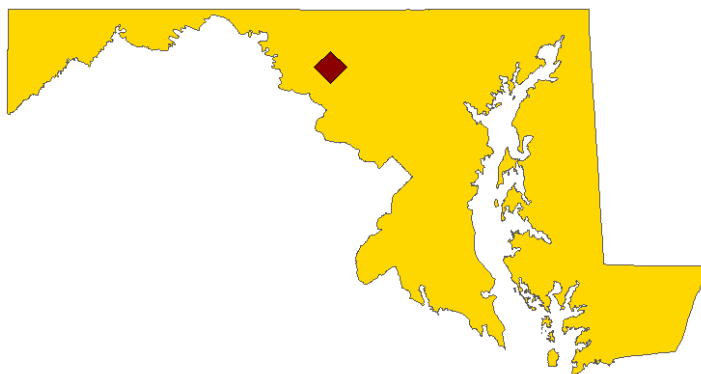


**Total  
Wages:  
\$426,836,499**

#### Comparison to past data:

In FY 21, the US Coast Guard Yard saw its economic footprint grow substantially compared to previous reporting periods. Most of this increase came due to an increase in procurement and purchases. In FY 16, the US Coast Guard Yard reported total procurement and purchases of \$50.0 million, up from \$34.7 million in FY 2012. In FY 21, in contrast, total procurement and purchases totaled \$393.3 million. According to the US Coast Guard Yard, this increase occurs because the installation improved its reporting and was able to gather information about the Coast Guard Yard and 14 tenant commands; in prior reports the 14 tenant commands were not included.

## FORT DETRICK FY 21 FACT SHEET



U.S. Army Fort Detrick hosts 5 Cabinet-Level Agencies with missions to protect global health, conduct biomedical research, support global communications, cyber, and space activities, as well as develop medical products and logistics that support the DoD that translates to medical innovation to protect U.S. Public Health with research on cancer, disease, medical devices, and agriculture.

### FY 21 Key Facts and Figures

#### Personnel and Visitor Data



**2,105** full-time service members



**2,907** part-time service members



**12,939** civilians



**430** students on payroll



**31,218** dependents (*not included in overall impact numbers*)



**\$5,934,389,173** in total payroll  
(*\$3.0 billion used for economic impact calculations*)



**32,456** total visitors

#### Procurement and Purchasing Data



**\$892.9 million** in building construction and maintenance



**\$25.3 million** in engineering



**\$6.1 billion** in research and development



**\$47.0 million** in IT and telecom



**\$55.2 million** in utilities



**\$2.358 billion** in all other procurement and purchases



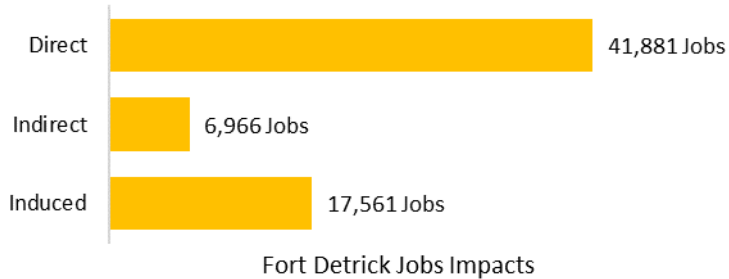
**\$9.478 billion** in total procurement and purchases

Fort Detrick has a large footprint in Maryland. In addition to an estimated \$9.5 billion in procurement and purchases, the installation has an estimated payroll of \$5.9 billion. However, to remain consistent with prior studies and with data provided by other facilities, only payroll spent on military, federal civilians, and students was modeled in the economic impact report. Of the \$3.0 billion in total payroll eligible for analysis, an estimated \$2.7 billion was made to in-state workers. Of the \$9.5 billion in total procurement and purchases, Fort Detrick estimates that \$3.5 billion was made to Maryland vendors. Between payroll and total procurement, Fort Detrick directly contributes an estimated total of \$12.5 billion to national GDP and \$6.3 billion to Maryland's gross state product.

## FORT DETRICK

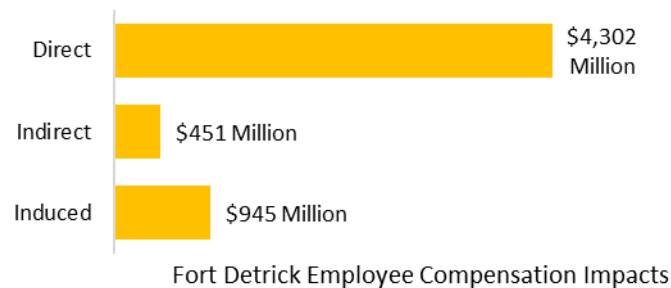
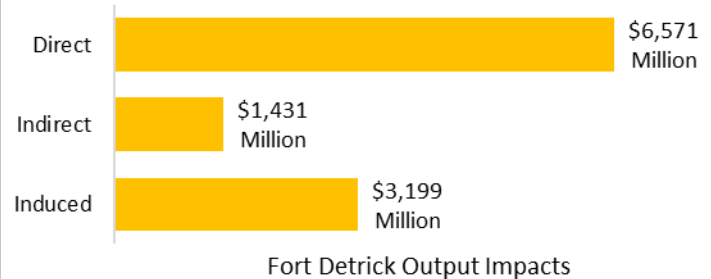
### FY 21 Maryland Economic Impact Data

This sheet measures the economic impact in Maryland for Fort Detrick in FY 21. Direct impacts capture personnel employed by the base as well as at firms receiving contracts from the installation. Indirect impacts capture ripple effects from those companies that contract with the installation. Induced impacts are those due to increased spending by workers, either those employed on the installation or in supporting businesses.



**Total  
Jobs:  
66,409**

**Total  
Output:  
\$11,201,819,402**

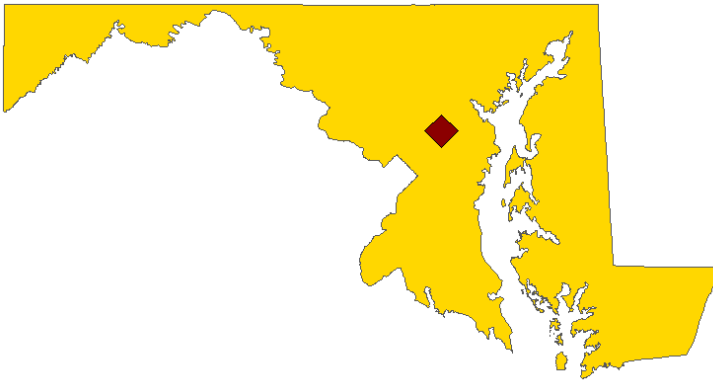


**Total  
Wages:  
\$5,698,323,854**

#### Comparison to past data:

In FY 21, Fort Detrick had a larger economic footprint than in FY 12 or FY 16. This increase occurred due to both employment on the installation as well as an increase in procurement and contracts. Notably, the number of total civilian workers directly paid by the installation rose from 4,126 in FY 16 to 12,939 in FY 21. Additionally, total procurement and purchases rose from \$2.0 billion in FY 2016 to \$9.5 billion in FY 21. Fort Detrick attributes this increase to improvements in the installation's ability to gather information from tenant commands as well as investments made by the federal government to identify the source and makeup of COVID-19, develop testing and protective equipment, and conduct research supporting vaccine development, testing, and deployment.

## FORT MEADE FY 21 FACT SHEET



Fort Meade, located in Anne Arundel County, was first established as an Army installation in 1917 and served as a training site for soldiers. Today, nearly 120 organizations from all branches of the military rely on services at Fort Meade. Units at Fort Meade include the United States Cyber Command, the National Security Agency (NSA), the Defense Information Security Agency, and the Defense Security Service, among others.

### FY 21 Key Facts and Figures

#### Personnel and Visitor Data



**13,736** full-time service members



**2,368** part-time service members



**30,963** federal civilians (*includes employment at NSA*)



**23** students on payroll



**\$6,001,374,8278** in estimated total payroll



**79,884** total visitors

#### Procurement and Purchasing Data



**\$338.5 million** in building construction



**\$199.4 million** in building maintenance



**\$6.2 million** in engineering



**\$4.6 billion** in IT and telecom



**\$74.7 million** in utilities



**\$7.1 billion** in all other procurement and purchases



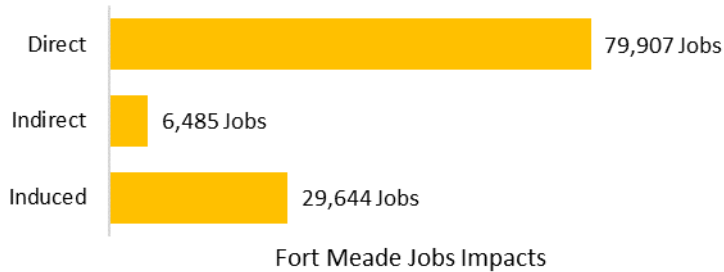
**\$12.3 billion** in total procurement and purchases

Of the 47,091 military, federal civilians, and students on Fort Meade's payroll, Fort Meade estimates 36,342 live in Maryland. This corresponds to in-state payroll of \$4.6 billion. Additionally, based on spending data from prior studies, an estimated \$5.1 billion (41.7 percent) of the installation's procurement was with Maryland vendors. This likely underestimates the true impact of procurement as vendors may be based outside Maryland but employ Maryland workers to fulfil contracts. Between payroll and total procurement and purchases, Fort Meade directly contributes an estimated total of \$18.3 billion to national GDP and \$9.8 billion to Maryland's gross state product.

## FORT MEADE

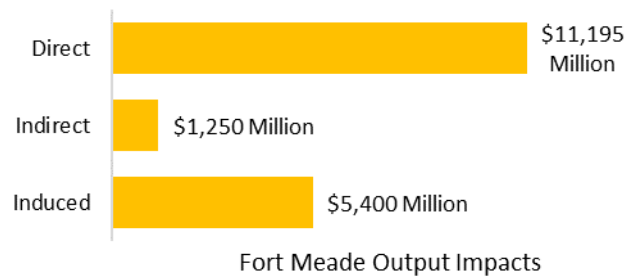
### FY 21 Maryland Economic Impact Data

This sheet measures the economic impact in Maryland for Fort Meade in FY 21. Direct impacts capture personnel employed by the base as well as at firms receiving contracts from the installation. Indirect impacts capture ripple effects from those companies that contract with the installation. Induced impacts are those due to increased spending by workers, either those employed on the installation or in supporting businesses.



**Total  
Jobs:  
116,036**

**Total  
Output:  
\$17,844,417,434**



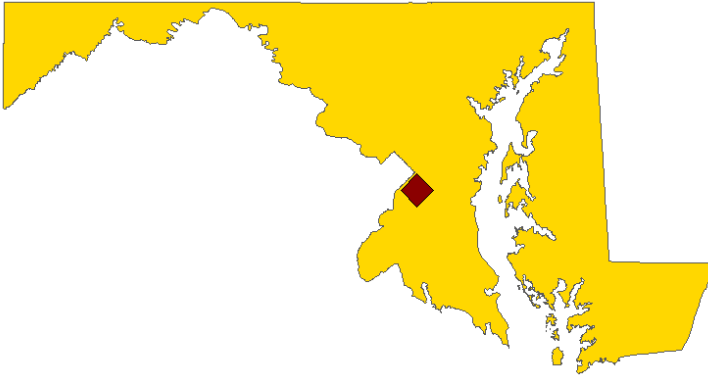
**Total  
Wages:  
\$10,519,622,510**

#### Comparison to past data:

Fort Meade's economic footprint in Maryland continued to expand. Total procurement and purchases rose from \$12.0 billion in FY 16 to \$12.3 billion in FY 21. Total employment also rose between the prior report and the current one. In FY 16, the installation reported 55,568 on-site workers including badged contractors. In FY 21 this number rose to 61,495 including badged contractors.

## JOINT BASE ANDREWS

### FY 21 FACT SHEET



Joint Base Andrews is located in Prince George's County. The site was first designated as a military airfield in 1942 and named Andrews Air Force Base in 1947. In 2009, Andrews Air Force Base and the Naval Air Facility Washington merged to form Joint Base Andrews. The installation serves as the home of Air Force One. For this analysis, Joint Force Andrews provided an annual report and economic impact analysis conducted by the installation.

### FY 21 Key Facts and Figures

#### Personnel and Visitor Data



**5,261** full-time service members



**2,409** part-time service members



**3,980** federal and non-appropriated civilians



**\$1.141 billion** in total payroll

#### Procurement and Purchasing Data



**\$65.3 million** in building construction



**\$256.2 million** in all other procurement and purchases



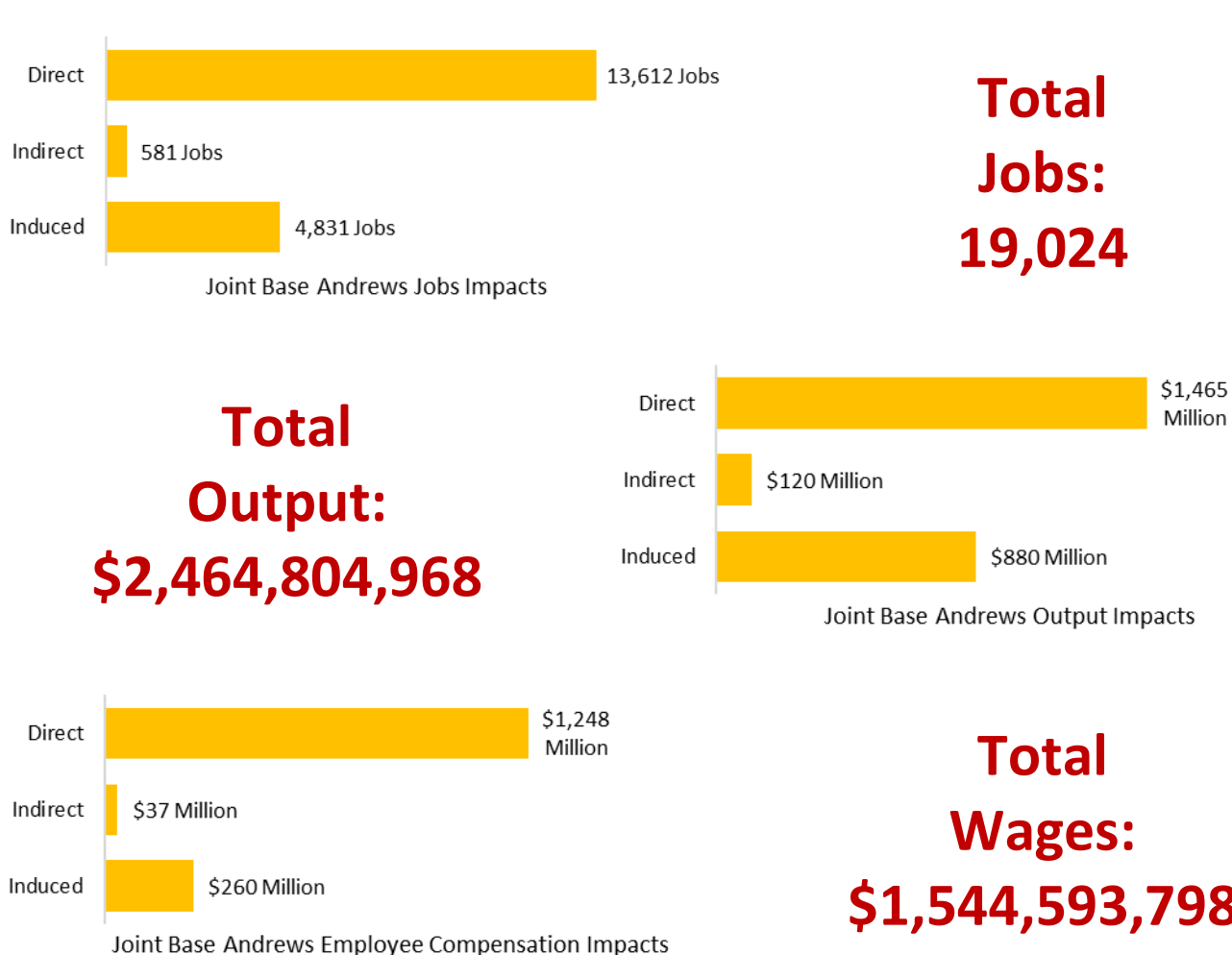
**\$321.5 million** in total procurement and purchases

Joint Base Andrews provided the Department of Commerce with an economic impact report conducted by the installation summarizing impacts in Maryland as of FY 21. Some of the numbers included in this report may not match the data provided by Joint Base Andrews as the Department of Commerce does not have access to the raw data used and cannot verify the methodology used by the installation. Additionally, the Department of Commerce did not include contractors in counts of direct employees. While Joint Base Andrews does record the amount paid to local vendors, this amount may underestimate the true impact of procurement in Maryland as vendors may be based outside Maryland but employ Maryland workers to fulfil contracts at the installation. Additionally, subcontractors may be based inside Maryland even if the prime contractor has their headquarters out of state. Between payroll and total procurement and purchases, Joint Base Andrews directly contributes an estimated total \$1.5 billion to Maryland's gross state product.

## JOINT BASE ANDREWS

### FY 21 Maryland Economic Impact Data

This sheet measures the economic impact in Maryland for Joint Base Andrews in FY 21. Direct impacts capture personnel employed by the base as well as at firms receiving contracts from the installation. Indirect impacts capture ripple effects from those companies that contract with the installation. Induced impacts are those due to increased spending by workers, either those employed on the installation or in supporting businesses.

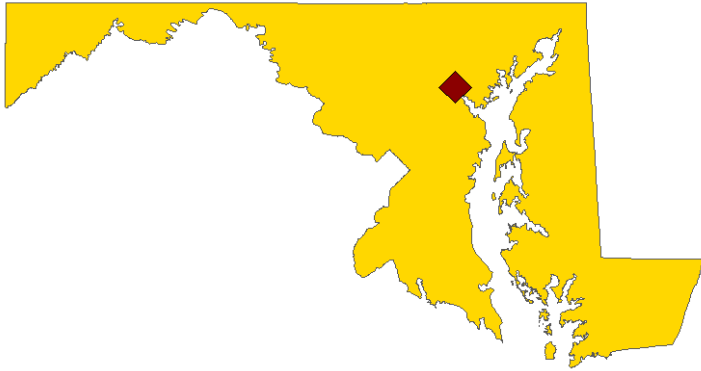


#### Comparison to past data:

Relative to FY 16, employment at Joint Base Andrews fell, largely due to a large drop in reservists/ANG personnel. In FY 16, the installation employed 6,609 of these personnel compared to only 2,409 in FY 21. In-state procurement and purchases did rise from \$283.0 million in FY 16 to \$321.5 million in FY 21. Joint Base Andrews' economic impacts are more driven by personnel paid by the installation rather than procurement and purchases as with other installations. This can be partially seen above in the relatively small indirect impacts when compared to direct or induced impacts.

# MARYLAND ARMY AND AIR NATIONAL GUARD

## FY 21 FACT SHEET



It is the mission of the Maryland Military Department—MD Army and Air National Guard to “stand ready to respond to and support any requirements our state and national have with a highly qualified team of soldiers, airmen, civilians, and volunteer forces.” The Maryland Military Department—MD Army and Air National Guard has 238 buildings totaling over 2.7 million square feet of facility space spread across the state.

### FY 21 Key Facts and Figures

#### Personnel and Visitor Data



**657** full-time service members



**5,929** part-time service members



**616** civilians



**\$306,024,795** in total payroll



**250** students not on payroll

#### Procurement and Purchasing Data



**\$27 million** in building construction



**\$17.1 million** in building maintenance



**\$4.5 million** in engineering



**\$2.5 million** in IT and telecom



**\$5.1 million** in utilities



**\$15.4 million** in all other procurement and purchases



**\$71.6 million** in total procurement and purchases

Of the 7,202 total personnel on the payroll for the Maryland Army and Air National Guard, the facility estimates 6,398 reside in Maryland. This corresponds with estimated payroll of \$270.7 million to Maryland residents. All procurement and purchases information provided by the Maryland Army and Air National Guard was paid to Maryland vendors. Between payroll and total procurement and purchases, the National Guard directly contributes an estimated total of \$342 million to Maryland's gross state product.

## MARYLAND ARMY AND AIR NATIONAL GUARD

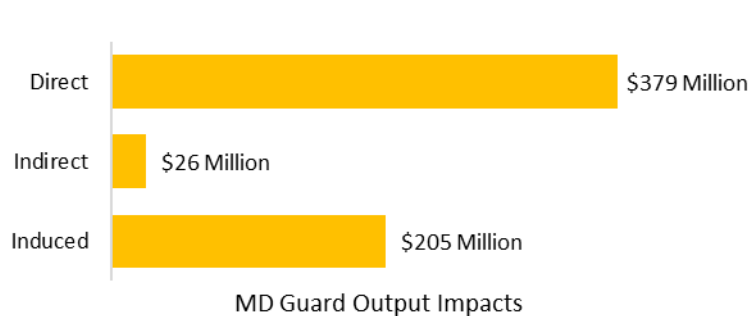
### FY 21 Maryland Economic Impact Data

This sheet measures the economic impact in Maryland for the Maryland Army and Air National Guard in FY 21. Direct impacts capture personnel employed by the base as well as at firms receiving contracts from the installation. Indirect impacts capture ripple effects from those companies that contract with the installation. Induced impacts are those due to increased spending by workers, either those employed on the installation or in supporting businesses.



**Total  
Jobs:  
8,753**

**Total  
Output:  
\$609,830,071**



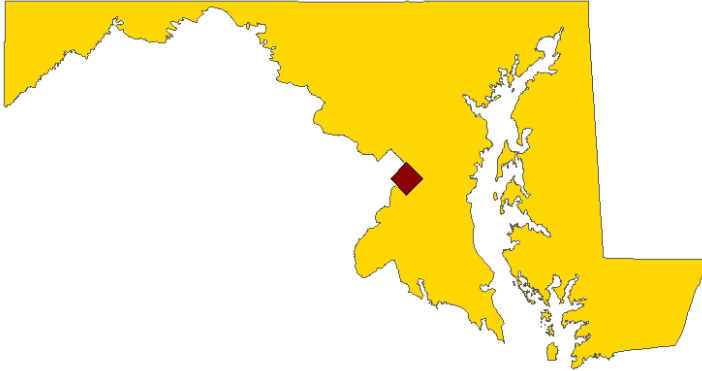
**Total  
Wages:  
\$395,446,596**

#### Comparison to past data:

The Maryland Army and Air National Guard's economic footprint has remained fairly stable over time. Total employment was slightly higher in FY 21 than FY 16 and while the number of in-state personnel fell slightly, in-state payroll rose (and rose faster than inflation) between FY 16 and FY 21. The largest change to the Army and Air National Guard's economic impact came from procurement and purchases. In-state procurement and purchases fell between FY 16 and FY 21 from \$96.1 million to \$71.1 million. However, the FY 21 total is significantly higher than the FY 12 in-state procurement total of \$37.6 million.

# NAVAL MARITIME INTELLIGENCE CENTER

## FY 21 FACT SHEET



Located in Suitland, the Naval Maritime Intelligence Center (NMIC) houses the National Maritime Intelligence-Integration Office (NMIO), with tenant commands including the Office of Naval Intelligence, the U.S. Coast Guard Intelligence Coordination Center, and the NMIO interagency staff. These tenants provide information about maritime matters to the intelligence community

### FY 21 Key Facts and Figures

#### Personnel and Visitor Data



**960** full-time service members



**834** part-time service members



**1,591** civilians



**31** students on payroll



**\$304** million in estimated total payroll

#### Procurement and Purchasing Data



**\$86.8 million** in research and development



**\$4.4 million** in IT and telecom



**\$210.8 million** in all other procurement and purchases

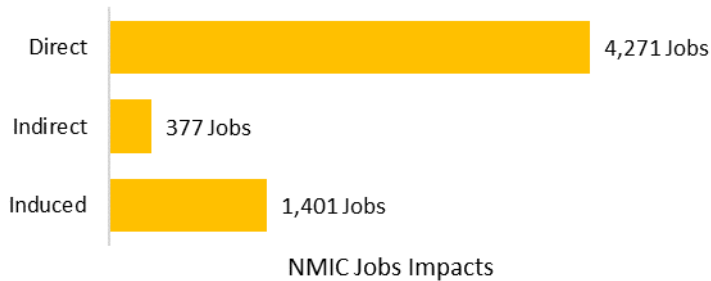


**\$302.0 million** in total procurement and purchases

Of the 3,416 military, civilians, and students on the Naval Maritime Intelligence Center's payroll, the Department of Commerce estimates that 2,870 of them reside in Maryland based on proportions from prior reports. These in-state residents are paid an estimated \$255.9 million. Of the \$302 million in total procurement and purchases, the Department of Commerce estimates that \$238.8 million was paid to Maryland vendors. This estimate likely underestimates the true impact of procurement in Maryland as vendors may be based outside Maryland but employ Maryland workers to fulfil contracts at the installation. Additionally, subcontractors may be based inside Maryland even if the prime contractor has their headquarters out of state. Between payroll and total procurement and purchases, the Naval Maritime Intelligence Center directly contributes an estimated \$606.5 million to national GDP and \$494.6 million to Maryland's gross state product.

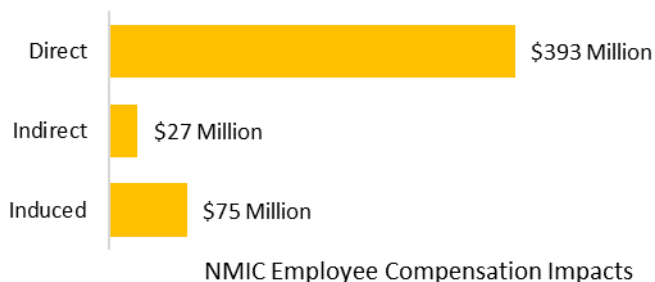
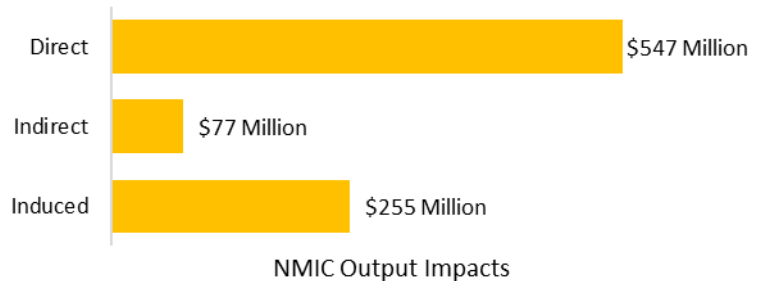
## Naval Maritime Intelligence Center FY 21 Maryland Economic Impact Data

This sheet measures the economic impact in Maryland for the Naval Maritime Intelligence Center in FY 21. Direct impacts capture personnel employed by the base as well as at firms receiving contracts from the installation. Indirect impacts capture ripple effects from those companies that contract with the installation. Induced impacts are those due to increased spending by workers, either those employed on the installation or in supporting businesses.



**Total  
Jobs:  
6,049**

**Total  
Output:  
\$879,445,174**



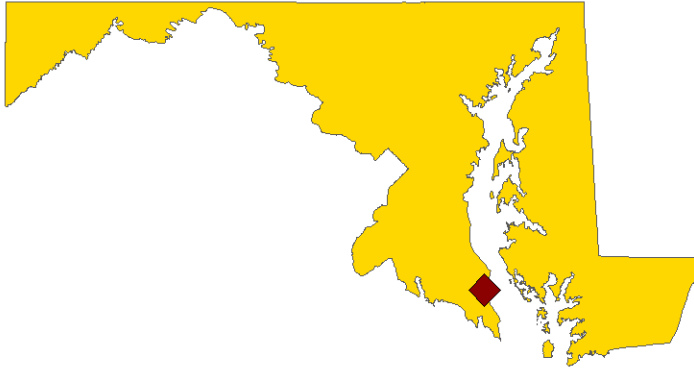
**Total  
Wages:  
\$495,361,214**

### Comparison to past data:

The Naval Maritime Intelligence Center had a much larger economic footprint in FY 21 than in FY 12 or FY 16. The economic footprint grew in part because employment at the installation has continued to increase over the years. In FY 12, the installation employed 1,890 total personnel; in FY 16 this number had risen to 2,985. In FY 21 the installation employed 3,416 total personnel. However, the bulk of the impact gains come from procurement and purchases. In FY 21 the installation made \$302.0 million in total procurement and purchases. This is much larger than the \$82.6 million in FY 12 or the \$14.6 million in FY 16.

# NAVAL AIR STATION PATUXENT RIVER

## FY 21 FACT SHEET



Naval Air Station Patuxent River (Pax River) was commissioned in 1943 to meet the Navy's need for a centralized air testing facility. Pax River is now a 14,500-acre complex and a nationally renowned Center of Excellence for Naval Aviation. Pax River is the headquarters for both the Naval Air Systems Command (NAVAIR) and the Naval Air Warfare Center Aircraft Division (NAWCAD).

### FY 21 Key Facts and Figures

#### Personnel and Visitor Data



**2,412** full-time service members



**266** part-time service members



**30,985** civilians



**67** students on payroll



**\$2,894,596,874** in total payroll



**1,706,217** total visitors

#### Procurement and Purchasing Data



**\$151.1 million** in building construction and maintenance



**\$676.9 million** in engineering



**\$3.343 billion** in research and development



**\$351.7 million** in IT and telecom



**\$25.6 million** in utilities



**\$30.400 billion** in all other procurement and purchases

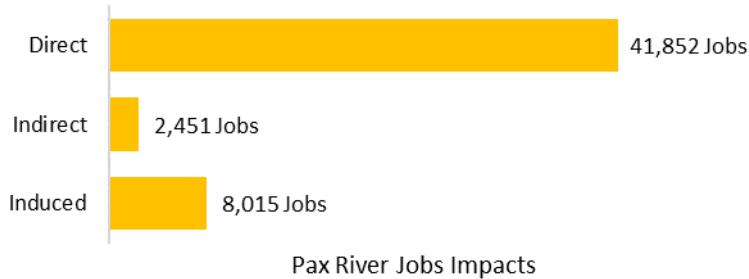


**\$34.948 billion** in total procurement and purchases

Of the 33,730 military, federal civilians, and students on Pax River's payroll, the installation estimates 11,501 live in Maryland. Of the \$2.9 billion in total payroll, \$1.2 billion is paid to Maryland residents. While Pax River's total procurement and purchases in FY 21 were \$34.9 billion, the installation estimates only \$1.4 billion was paid to Maryland vendors. This likely undercounts the economic impact of the installation as vendors may be based outside Maryland but employ Maryland workers to fulfil contracts at the installation. Between payroll and total procurement and purchases, Pax River directly contributes an estimated total of \$37.8 billion to national GDP and \$2.6 billion to Maryland's gross state product.

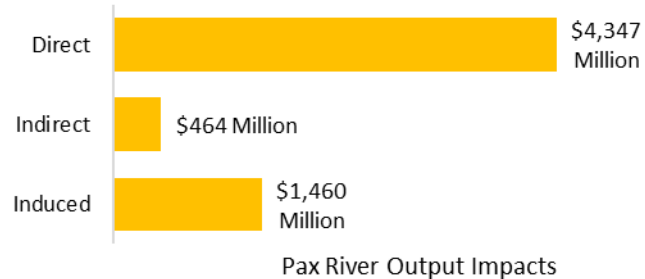
## NAVAL AIR STATION PATUXENT RIVER FY 21 Maryland Economic Impact Data

This sheet measures the economic impact in Maryland for Naval Air Station Patuxent River in FY 21. Direct impacts capture personnel employed by the base as well as at firms receiving contracts from the installation. Indirect impacts capture ripple effects from those companies that contract with the installation. Induced impacts are those due to increased spending by workers, either those employed on the installation or in supporting businesses.



**Total  
Jobs:  
52,317**

**Total  
Output:  
\$6,270,951,666**



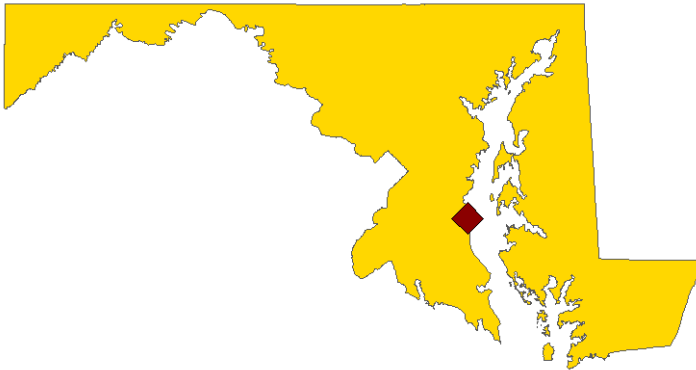
**Total  
Wages:  
\$4,169,392,025**

### Comparison to past data:

In FY 21, Pax River saw an uptick in employment relative to previous reports. In FY 16, total employment was 21,858 compared to 33,730 in FY 21. In FY 16, an estimated 8,935 workers lived in Maryland compared to 11,501 in FY 21. However, in FY 21 local procurement and purchases fell. Pax River paid \$1.7 billion to Maryland vendors in both FY 12 and FY 16. This number fell to \$1.4 billion in FY 21, even while total procurement and purchases ticked up slightly. Pax River has the lowest ratio of total procurement and purchases at Maryland vendors and the figures here potentially undercount the true economic impact in the state.

# NAVAL RESEARCH LABORATORY CHESAPEAKE BAY DETACHMENT

## FY 21 FACT SHEET



The Naval Research Laboratory (NRL) is the Navy's first modern research institution. Since 1992, the NRL has been operating in its current form, after the Navy Research, Development, Test and Evaluation Engineering facilities and Fleet Support facilities merged into one entity. The Chesapeake Bay Detachment of the NRL "provides facilities and support services for research in radar, electronic warfare, optical devices, materials, communications, and fire research."

### FY 21 Key Facts and Figures

#### Personnel and Visitor Data



**27** civilians



**\$2,746,848** in total payroll

#### Procurement and Purchasing Data



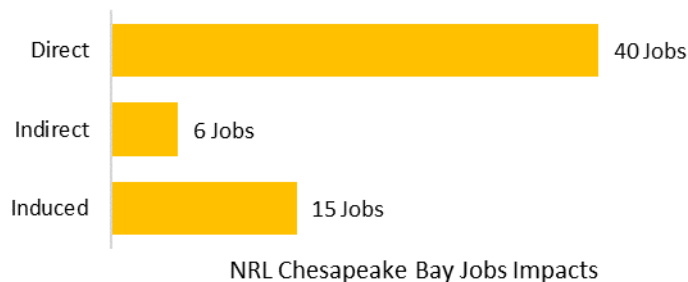
**\$3.0 million** in estimated in-state procurement and purchases

For the FY 21 report, NRL Chesapeake Bay Detachment was able to provide information on payroll and personnel. Procurement and purchases data were not provided but were estimated based on FY 2016 data provided by the installation and adjusted for inflation.

# NAVAL RESEARCH LABORATORY CHESAPEAKE BAY DETACHMENT

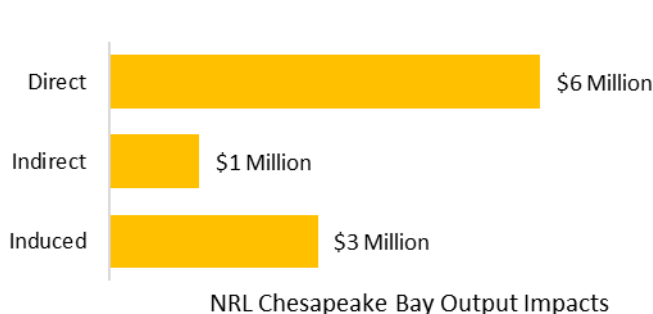
## FY 21 Maryland Economic Impact Data

This sheet measures the economic impact in Maryland for NRL Chesapeake Bay Detachment in FY 21. Direct impacts capture personnel employed by the base as well as at firms receiving contracts from the installation. Indirect impacts capture ripple effects from those companies that contract with the installation. Induced impacts are those due to increased spending by workers, either those employed on the installation or in supporting businesses.



**Total  
Jobs:  
61**

**Total  
Output:  
\$9,757,444**



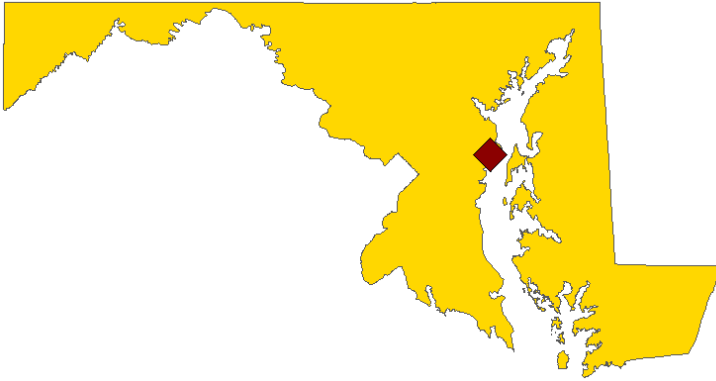
**Total  
Wages:  
\$5,314,955**

### Comparison to past data:

In FY 21, NRL Chesapeake Bay Detachment saw personnel and payroll levels increase above FY 12 or FY 16 levels. Procurement and Purchases data for FY 21 were estimated using FY 16 data and thus may differ from reality.

# NAVAL SUPPORT ACTIVITY ANNAPOLIS

## FY 21 FACT SHEET



The Naval Support Activity (NSA) Annapolis is located on the opposite side of the Severn River from the U.S. Naval Academy. This facility provides operating support to the Chesapeake Bay Detachment in Randle Cliff, Maryland; the Navy Operational Support Center in Baltimore, Maryland; the North Severn complex; and the United States Naval Academy.

### FY 21 Key Facts and Figures

#### Personnel and Visitor Data



**764** full-time service members



**6,760** civilians



**\$546,230,508** in total payroll



**330,750** total visitors

#### Procurement and Purchasing Data



**\$3.7 million** in building construction



**\$54.0 million** in building maintenance



**\$325,547** in engineering



**\$5.4 million** in utilities



**\$1.4 million** in all other procurement and purchases



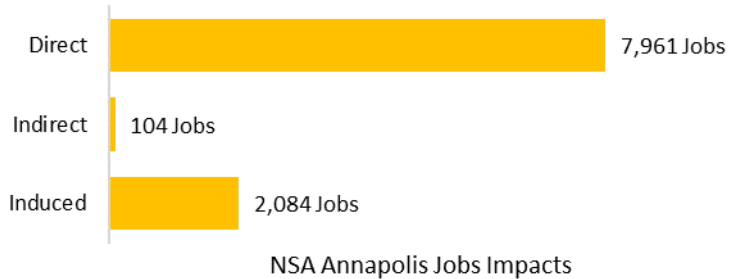
**\$64.8 million** in total procurement and purchases

Of the \$546 million in total payroll, an estimated \$538 million was paid to 7,414 Maryland military and civilian personnel at NSA Annapolis. Of the \$64.8 million in total procurement and purchases, an estimated \$30.4 million was paid to Maryland vendors. This estimate likely understates the true impact of procurement in Maryland as vendors may be based outside Maryland but employ Maryland workers to fulfil contracts at the installation. Additionally, subcontractors may be based inside Maryland even if the prime contractor has their headquarters out of state. Between payroll and total procurement and purchases, NSA Annapolis directly contributes an estimated total of \$305.5 million to national GDP and \$284.3 million to Maryland's gross state product.

## NAVAL SUPPORT ACTIVITY ANNAPOLIS

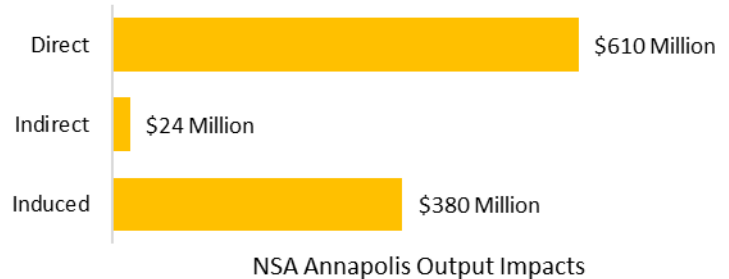
### FY 21 Maryland Economic Impact Data

This sheet measures the economic impact in Maryland for Naval Support Activity (NSA) Annapolis in FY 21. Direct impacts capture personnel employed by the base as well as at firms receiving contracts from the installation. Indirect impacts capture ripple effects from those companies that contract with the installation. Induced impacts are those due to increased spending by workers, either those employed on the installation or in supporting businesses.



**Total  
Jobs:  
10,149**

**Total  
Output:  
\$1,013,879,021**



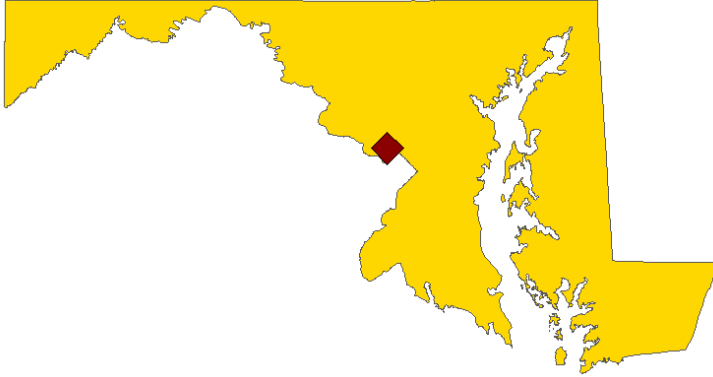
**Total  
Wages:  
\$682,579,168**

#### Comparison to past data:

NSA Annapolis's economic footprint was smaller in FY 21 than in previous iterations of this report due to drops in both employment and procurement. In FY 16, the installation employed a total of 8,197 workers; this total fell to 7,524 in FY 21 (and 7,414 in-state military and civilian personnel). Procurement and Purchases reported by the installation have fallen steadily across reports. NSA Annapolis reported total procurement and purchases of \$200.1 million in FY 12 and \$100.8 million in FY 16; in FY 21 the installation reported \$64.8 million.

# NAVAL SUPPORT ACTIVITY BETHESDA

## FY 21 FACT SHEET



Naval Support Activity Bethesda is home to over 40 tenants, including the Walter Reed National Military Medical Center, the Navy Medicine Professional Development Center, the Uniformed Services University of the Health Sciences, the Armed Forces Radiobiology Research Institute, the Armed Forces Blood Bank, the Naval Dosimetry Center, and the Warrior Transition Brigade.

### FY 21 Key Facts and Figures

#### Personnel and Visitor Data



**10,762** total onsite employees



**7,073** Maryland resident employees



**\$778,873,951** in Maryland resident payroll



**1,043,577** total visitors

#### Procurement and Purchasing Data



**\$89.4 million** in building construction



**\$2.8 million** in building maintenance



**\$32.3 million** in utilities



**\$2.4 million** in engineering

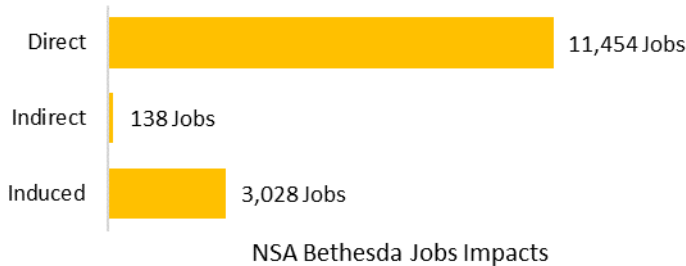


**\$126.9 million** in total procurement and purchases

NSA Bethesda estimates that \$778.8 million was paid to 7,073 Maryland military, civilians, and students. Of the total \$126.9 million in total procurement and purchases, the installation estimates a total of \$53.0 million was spent in-state. However, this likely underestimates the true impact of procurement in Maryland, as vendors may be based outside Maryland but employ Maryland workers to fulfil contracts at the installation. Additionally, subcontractors may be based inside Maryland even if the prime contractor has their headquarters out of state. Between payroll and total procurement and purchases, NSA Bethesda directly contributes an estimated total of \$1.3 billion to national GDP and \$831.8 million to Maryland's gross state product.

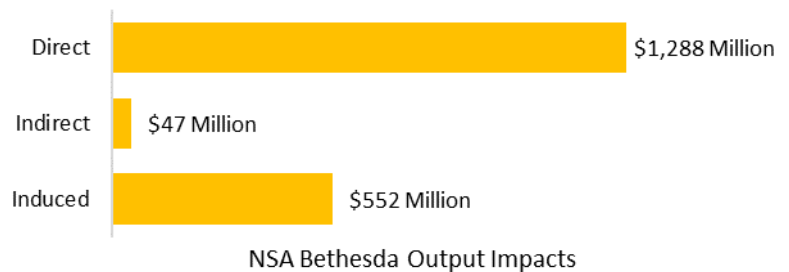
## NAVAL SUPPORT ACTIVITY BETHESDA FY 21 Maryland Economic Impact Data

This sheet measures the economic impact in Maryland for Naval Support Activity (NSA) Bethesda in FY 21. Direct impacts capture personnel employed by the base as well as at firms receiving contracts from the installation. Indirect impacts capture ripple effects from those companies that contract with the installation. Induced impacts are those due to increased spending by workers, either those employed on the installation or in supporting businesses.



**Total  
Jobs:  
14,620**

**Total  
Output:  
\$1,886,464,026**



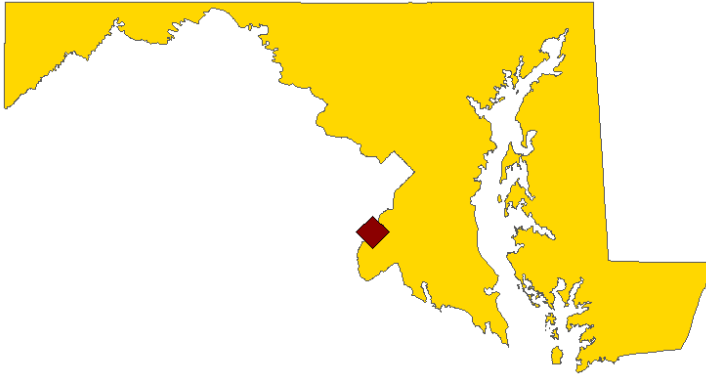
**Total  
Wages:  
\$1,386,617,334**

### Comparison to past data:

Compared to FY 16, NSA Bethesda saw a very slight drop in employment of Maryland residents, but the installation reported that payroll significantly rose; in FY 16 the installation reported Maryland payrolls of \$424.6 million. In FY 21, this number rose to \$778.8 million. However, while payrolls rose, procurement and purchases fell (both totals and amounts paid to Maryland vendors). In FY 16, NSA Bethesda reported total expenditures of \$178.6 million, \$105.9 of which went to Maryland vendors. In FY 21, the installation reported total purchases of \$126.9 million, \$53.0 million of which was spent in-state. In FY 21, not only did the installation's total procurement and purchases fall, but the proportion paid to Maryland vendors fell as well, compounding the effect.

# NAVAL SUPPORT FACILITY INDIAN HEAD

## FY 21 FACT SHEET



Established in 1890, Naval Support Facility Indian Head was the Navy's first facility in southern Maryland. Over the course of its history, the Naval Support Facility Indian Head has evolved from a gun-testing facility to a multifaceted research and operational support facility that serves multiple branches of the U.S. military. The Naval Support Facility Indian Head is a "center of excellence" for guns; rockets and missiles; energetic chemicals; ordnance devices; missile weapon simulators; explosive process development engineering; and explosive safety.

### FY 21 Key Facts and Figures

#### Personnel and Visitor Data



**615** full-time service members



**2,684** civilians



**\$428,910,000** in total payroll



**893** total visitors

#### Procurement and Purchasing Data



**\$8.1 million** in estimated building construction and maintenance



**\$224.9 million** in estimated engineering



**\$3.7 million** in estimated research and development



**\$4.1 million** in estimated IT and telecom



**\$31,932** in estimated utilities



**\$253.0 million** in all other estimated procurement and purchases



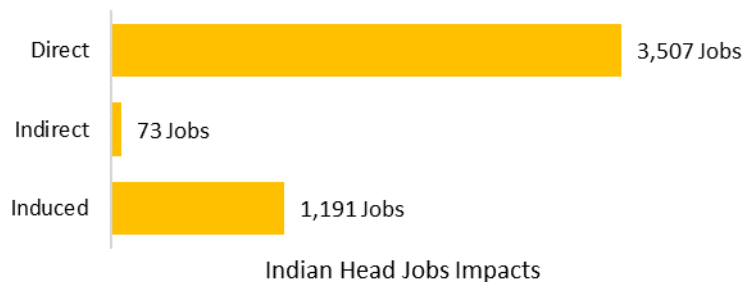
**\$493.8 million** in total procurement and purchases

Of the \$428.9 million in total payroll, Naval Support Facility Indian Head estimates that \$298.1 million was paid to 2,293 Maryland residents. Of the \$493.8 million in total procurement and purchases in FY 21, the installation estimated that \$40.2 million was paid to Maryland vendors. However, this likely underestimates the true impact of procurement in Maryland as vendors may be based outside Maryland but employ Maryland workers to fulfil contracts at the installation. Between payroll and total procurement and purchases, Naval Support Facility Indian Head directly contributes an estimated total of \$922.7 million to national GDP and \$338.3 million to Maryland's gross state product.

## NAVAL SUPPORT FACILITY INDIAN HEAD

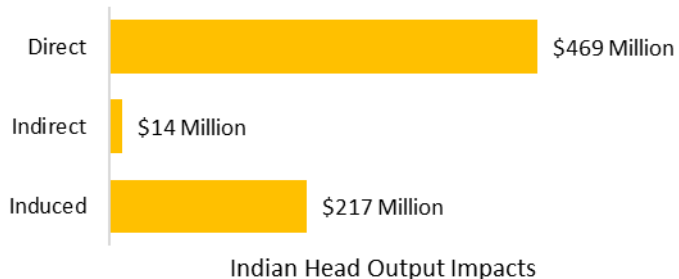
### FY 21 Economic Impact Data

This sheet measures the economic impact in Maryland for Naval Support Facility Indian Head in FY 21. Direct impacts capture personnel employed by the base as well as at firms receiving contracts from the installation. Indirect impacts capture ripple effects from those companies that contract with the installation. Induced impacts are those due to increased spending by workers, either those employed on the installation or in supporting businesses.



**Total  
Jobs:  
4,771**

**Total  
Output:  
\$700,336,354**



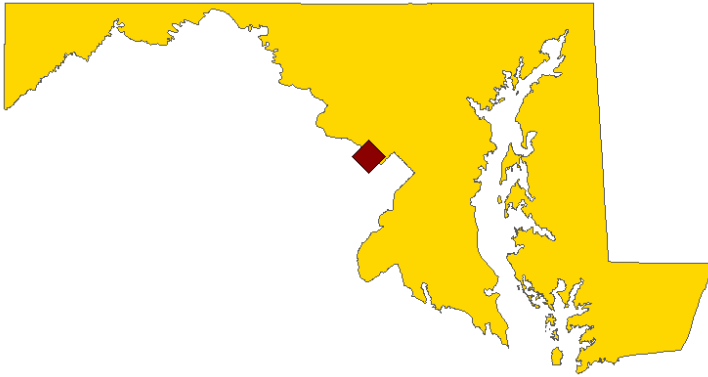
**Total  
Wages:  
\$515,472,149**

#### Comparison to past data:

In FY 21, Naval Support Facility Indian Head reported similar employment levels as in FY 16, though fewer Maryland residents. Naval Support Facility Indian Head did report an increase in purchases made with Maryland vendors. This increase comes with a corresponding increase in total procurement and purchases. Naval Support Facility Indian Head has one of the lowest ratios of total procurement and purchases at Maryland vendors and the figures here potentially undercount the true economic impact in the state.

# NAVAL SURFACE WARFARE CENTER CARDEROCK

## FY 21 FACT SHEET



NSWC Carderock was founded in 1898 at the Washington Navy Yard and moved to its current location prior to World War II. The site has evolved as technologies have developed and now engages in physical design and testing as well as computer simulations. As part of its mission, NSWC Carderock has the ability to partner with private industry, academic institutions, and state, local, and foreign governments through Cooperative Research and Development Agreements (CRADA).

### FY 21 Key Facts and Figures

#### Personnel and Visitor Data



**1** estimated full-time service member



**41** estimated part-time service members



**2,565** estimated civilians



**11** estimated students on payroll



**\$355,300,000** in total payroll



**70** total visitors

#### Procurement and Purchasing Data



**\$5.8 million** in building construction and maintenance



**\$284,320** in utilities



**\$52.5 million** in research and development



**\$6.9 million** in IT and telecom



**\$165.9 million** in engineering



**\$272.2 million** in all other procurement and purchases



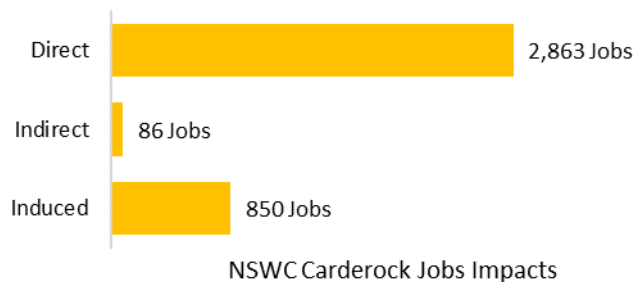
**\$331.5 million** in total procurement and purchases

Of the \$355.3 million in total payroll, Commerce estimates \$201.9 million was paid to Maryland residents in FY 21 based on data provided by NSWC Carderock. Of the \$331.5 million in total procurement and purchases, the installation estimates \$32.8 million was paid to Maryland vendors. This likely underestimates the true impact of procurement in Maryland as vendors may be based outside Maryland but employ Maryland workers to fulfil contracts at the installation. Between payroll and total procurement and purchases, NSWC Carderock directly contributes an estimated total of \$686.8 million to national GDP and \$234.7 million to Maryland's gross state product.

## NAVAL SURFACE WARFARE CENTER CARDEROCK

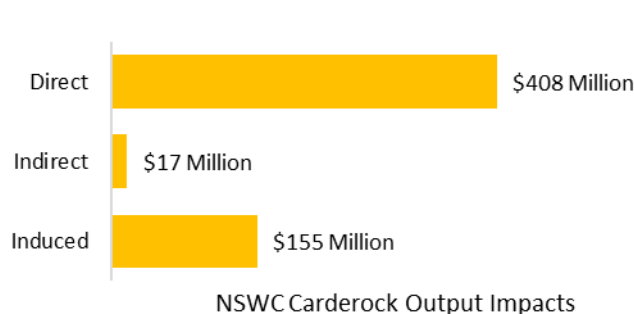
### FY 21 Maryland Economic Impact Data

This sheet measures the economic impact in Maryland for NSWC Carderock in FY 21. Direct impacts capture personnel employed by the base as well as at firms receiving contracts from the installation. Indirect impacts capture ripple effects from those companies that contract with the installation. Induced impacts are those due to increased spending by workers, either those employed on the installation or in supporting businesses.



**Total  
Jobs:  
3,799**

**Total  
Output:  
\$580,127,776**



**Total  
Wages:  
\$426,821,850**

#### Comparison to past data:

NSWC Carderock's estimated economic footprint in FY 21 is in line with previous studies. In FY 16, the installation employed fewer Maryland residents but procurement and purchases from Maryland vendors was slightly higher.



### Appendix A Detailed Methodology

To quantify the economic impacts of Maryland's major military installations, the Department of Commerce relied on data provided by each installation. Installations were contacted in April 2022 and asked to provide data on three main sources of economic impacts:

1. Personnel and payroll,
2. Procurement and purchases, and
3. Visitors to the installation.

An example of the questionnaire distributed to each installation is found in Appendix B. The data provided by the installations were then cleaned, augmented as described further below, and modeled using IMPLAN, an industry-standard software program used to conduct economic impact analyses.<sup>9</sup>

Economic impact analyses are designed to estimate four types of impacts:

1. **Direct impacts.** Direct impacts are those linked directly to the installation. For this report, that includes the personnel on each installation's payroll, the procurement and purchases made by the installation, and the direct spending by visitors to the installation.
2. **Indirect impacts.** These impacts represent economic activity that supports the installation. For this report, that includes supplies for the procurement and purchases the installation makes as well as supplies associated with visitor spending.
3. **Induced impacts.** These impacts are those associated with the increase in household incomes due to the base. As active-duty military or federal contractors get paid, they spend their paychecks on items such as rent, groceries, bills, clothing, or travel. All of the ripple effects associated with this spending are captured under the induced impacts.
4. **Total impacts.** These are the sum of direct, indirect, and induced impacts.

A military installation is not like a typical business modeled in an economic impact analysis. A typical business uses workers and some intermediate goods and services to produce new goods or services. The sale of those goods and services is then used to pay employee salaries and to cover the cost of any intermediate inputs. A military installation has 'employees,' but the primary thing it produces – national defense – is impossible to accurately quantify. An installation purchases goods and services to support its mission but the installation does not 'sell' national defense to cover the cost of these inputs.

Instead, the cost of any goods and services procured by the installation, as well as the payroll for its personnel, are paid for, generally, by the Department of Defense or another federal agency. This report attempts to quantify what the economic impacts are of the funding flowing into Maryland to support the mission of each of the 14 major military installations. This means

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<sup>9</sup> The Maryland Department of Commerce modeled all events using IMPLAN's 2021 data for Maryland. All figures in this report are modeled in 2021 dollars and reported in 2023 dollars.



## Economic Impact of Maryland's Military Installations in FY 21

that the interpretation of direct and indirect impacts are slightly different in this report than they would be for a report looking at a 'typical' business. In most analyses, the direct impacts capture the revenue, employees, and salaries for the business itself while the indirect impacts capture the cost of any supplies purchased to support those goods and services. For example, if a business generates \$100 in revenue and spends \$50 on supplies and \$20 on staff salaries, direct output totals \$100 and indirect output totals \$50 (plus any additional ripple effects as supplier firms buy supplies). The cost of staff salaries is included in the direct impacts.

A military installation does not have revenue in the same way. The cost of an installation's payroll is captured in direct impacts, as with a traditional business. However, payroll costs are often dwarfed by the value of procurement and purchasing. Procurement and purchases would typically be counted as indirect impacts. However, for this report the initial procurement and purchases made by the installation are presented as direct impacts. This is done to illustrate that the installation does have significant value by being located in Maryland and to minimize confusion that may arise by having an installation's effects appear to almost entirely be ripple effects. Although revenue may be thought of as flowing from the federal government to the installation and then out to suppliers, it would be misleading to present procurement and purchases in *both* direct and indirect impacts. Doing so would overstate the impact of money flowing from the federal government to the installation.

To remain consistent with above, the Department of Commerce modeled payroll, procurement and purchases, and visitor spending as direct impacts associated with the installation. Supplies purchased by firms contracting with the installation show up in indirect impacts. Any impacts that arise due to the increase in worker incomes is presented as induced impacts.

To model the economic impact of personnel and payroll, the Department of Commerce modeled total payroll to in-state residents as a change in labor income in IMPLAN. Doing so only results in induced impacts. Therefore, the number of employees and total payroll were added to the direct impacts after modeling in IMPLAN was completed. In the event that incomplete information was provided, the Department of Commerce used ratios or inflation-adjusted salary information from current data or from prior reports. For example, Fort Meade provided data on total personnel, Maryland personnel, and total payroll but not payroll for Maryland residents. The Department of Commerce assumed that average payroll was similar for all personnel and for in-state personnel and calculated Maryland payroll accordingly. The Coast Guard Yard was only able to provide information on total payroll and personnel. To calculate in-state levels, the Department of Commerce used ratios of in-state to total personnel and payroll from the FY 2012 report, the most recent report where this information was provided.

To model the impact of procurement and purchases, the Department of Commerce first matched inputs from each installation's questionnaires to the IMPLAN codes in the table below. Only in-state procurement and purchases were modeled in IMPLAN. The six codes in the



## Economic Impact of Maryland's Military Installations in FY 21

questionnaire were selected after analyzing USASpending data for Maryland and identifying the Product Service Codes with the largest total expenditures.

**Figure 8: IMPLAN Codes Used to Model Procurement and Purchases**

Questionnaire Description	IMPLAN Code	IMPLAN Description
Building Construction	56	Construction of other new nonresidential structures
Building Maintenance	60	Maintenance and repair construction of nonresidential structures
Utilities	47	Electric power transmission and distribution
Engineering	457	Architectural, engineering, and related services
Research and Development	464	Scientific research and development services
Information Technology and Telecom	460	Computer systems design services
All Other Procurement/Purchases	Based on top ten codes from USASpending not listed above	

To model the impact of ‘all other procurement and purchases,’ the Department of Commerce analyzed FY 21 USASpending data for each installation and identified the ten NAICS codes with the most federal dollars obligated *not* accounted for in the questionnaire categories. The Department of Commerce then calculated the percentage that each of these ten codes represented for the total dollars obligated across the ten codes. This percentage was then multiplied by the amount listed by the installation under ‘all other procurement and purchases.’ As with payroll, if an installation did not provide complete data, ratios from prior reports were used to provide the most accurate approximation of an installation’s impacts. All procurement and purchasing activities were modeled as a change in industry output in IMPLAN.

Visitor spending was modeled based on the number of visitors to an installation and the length of time installations estimated visitors stayed. If an installation did not provide an estimate of how long a visitor stayed, it was assumed they stayed for one day (graduation visitors were assumed to stay overnight). Visitor spending was estimated based on military per diem rates specific to each installation and presented in the table below.<sup>10</sup>

<sup>10</sup> Defense Travel Management Office, “Per Diem Rates Query,” United States Department of Defense, September 7, 2022, <https://www.defensetravel.dod.mil/site/perdiemCalc.cfm>.



## Economic Impact of Maryland's Military Installations in FY 21

**Figure 9: FY 21 Per Diem Rates Used for Visitor Spending Calculations**

Installation	Location in source sheet	Max Lodging	Local Meals	Proportional Meals	Incidentals
Aberdeen Proving Ground	Aberdeen Proving Ground	\$104	\$56	\$36	\$5
Army Corps of Engineers – Baltimore District	Baltimore City	\$137	\$66	\$41	\$5
Coast Guard Yard	Coast Guard Yard	\$137	\$66	\$41	\$5
Fort Detrick	Fort Detrick	\$100	\$56	\$36	\$4
Fort Meade	Fort Meade	\$133	\$61	\$38	\$5
Joint Base Andrews	Joint Base Andrews	\$257	\$71	\$43	\$5
Maryland Military Department - MD Army and Air National Guard	Baltimore City	\$137	\$66	\$41	\$5
National Maritime Intelligence Center	Suitland	\$257	\$71	\$43	\$5
Naval Air Station Patuxent River	Naval Air Station Patuxent River	\$96	\$50	\$33	\$5
Naval Research Laboratory Chesapeake Bay	Chesapeake Beach	\$96	\$50	\$33	\$5
Naval Support Activity Annapolis	U.S. Naval Academy	\$133	\$61	\$38	\$5
Naval Support Activity Bethesda	Walter Reed	\$257	\$71	\$43	\$5
Naval Support Facility Indian Head	Naval Support Facility Indian Head	\$96	\$50	\$33	\$5
Naval Surface Warfare Center Carderock	Naval Surface Warfare Center Carderock	\$257	\$71	\$43	\$5

Generally, only graduation visitors were assumed to stay overnight and require a hotel. Only ‘all other visitors’ spent money on proportional meals while other visitors spent the ‘local meals’ amount. All visitors spent the incidentals amount for each day assumed to be on-site. The table below shows the IMPLAN codes used to model visitor spending.

**Figure 10: IMPLAN Codes Used to Model Visitor Spending Types**

Visitor Spending Category	IMPLAN Code	IMPLAN Description
Lodging	507	Hotels and motels, including casino hotels
Local Meals	509	Full-service restaurants
Proportional Meals	509	Full-service restaurants
Incidentals	411	Retail - General merchandise stores



## Economic Impact of Maryland's Military Installations in FY 21

All data was entered into IMPLAN using the 2021 data year, in 2021 dollars, and with a study region of Maryland. Impacts were recorded in 2023 dollars. As mentioned above, on-site employment and payroll were added to direct impacts as these fall out of the IMPLAN modeling of labor income.

In addition to modeling the impacts of each of Maryland's 14 major military installations, the Department of Commerce also modeled statewide impacts. Statewide impacts could not be estimated simply by summing up the impacts of each of the 14 major installations. In working with the installations to collect data, the Department of Commerce found that installations were able to provide personnel and payroll data easily but found it more difficult to provide complete procurement and purchasing data. Some installations could only provide total contract dollars rather than information on in-state purchases and other installations were unable to provide any contracting information at all. Because installations were not reporting procurement and purchases in a consistent manner, the Department of Commerce used statewide contracting data from the DoD Office of Local Defense Community Cooperation (OLDCC). This ensures contract dollars statewide are reported in a consistent manner and will allow for greater confidence when comparing statewide impacts in FY 21 to those from other years.

To estimate the statewide totals, the Department of Commerce modeled personnel, payroll, and visitor spending as described above at the installation level. Procurement and purchases were modeled in IMPLAN as follows:

1. The overall amount of procurement and purchases was obtained from OLDCC's annual report.<sup>11</sup> OLDCC processes data on prime awards and subcontractors and their locations from USASpending.gov and reports statewide totals.
2. The total procurement and purchases reported out by OLDCC was distributed across all three digit NAICS codes using data on prime awards from USASpending.gov.
3. This data was then modeled in IMPLAN and combined with estimates of payroll, personnel, and visitor spending.

The Department of Commerce ran this statewide analysis for FY 21 and for FY 16 (using data submitted by installations for a prior report). This is not the first report conducted on the impact of Maryland's military installations. Prior reports were conducted to estimated impacts in FY 2008, FY 2012, and FY 2016. However, the methodology for this report is different and this makes a direct comparison of impact estimates to those prior reports impossible.

Prior modeling approaches were not appropriate given the granular data provided by the installations in FY 2021. For example, the FY 2008 report appears to have reported some expenditures by the installations in both direct and indirect impacts. The FY 2016 report follows

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<sup>11</sup> Department of Defense, "Defense Spending by State - Fiscal Year 2021," <https://oldcc.gov/dsbs-fy2021>.



## Economic Impact of Maryland's Military Installations in FY 21

guidance from IMPLAN on how to model economic impacts of military installations.<sup>12</sup> However, doing so adds in a measure of depreciation designed to capture spending on things such as building maintenance. Because the questionnaire installations completed (as seen in Appendix B) asks about items captured under depreciation, this approach results in double counting. The Department of Commerce confirmed with IMPLAN support staff that the modeling approach described below was appropriate given the data provided by the installations.

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<sup>12</sup> Candi Clouse, "Military Bases," IMPLAN, December 28, 2021, accessed October 24, 2022, <https://support.implan.com/hc/en-us/articles/4414457694107-Military-Bases>.



## Economic Impact of Maryland's Military Installations in FY 21

### Appendix B Example Questionnaire

The below questionnaire was distributed to each of Maryland's 14 major military installations in April 2022.

Personnel Data				
Personnel Type	Total Personnel	Total Personnel Residing in Maryland	Total Payroll	Total Payroll for Maryland Residents
Full Time Service Members (e.g., Active Duty Military)				
Part Time Service Members (e.g., Reservists or Guard)				
Federal Civilian Employees				
Students on Installation Payroll				
<b>Total Personnel</b>				
Procurement and Purchases Data				
Procurement and Purchases	Total Paid to All Vendors	Total Paid to Maryland Vendors		
Building Construction				
Building Maintenance				
Utilities				
Engineering				
Research and Development				
Information Technology and Telecom				
All Other Procurement/Purchases				
<b>Total Procurement and Purchases</b>				
Visitor Data				
Visitor Type	Total Visitors	Estimated Average Length of Stay		
Graduation Attendees				
Rotational Personnel				
Students Not on Installation Payroll				
All Other Visitors				
<b>Total Visitors</b>				