DIGGING DEEPER: A CLOSER LOOK AT DEFENSE SPENDING IN VIRGINIA

We know that Virginia is heavily dependent upon defense spending – the Department of Defense (DOD) estimates that 11.8 percent of the value of the Commonwealth's economic activity is contingent upon defense spending. This is the highest in the nation (Office of Economic Adjustment, DOD, 2015).[1] Direct defense spending in Virginia will exceed $64 billion in 2015 (The Washington Post, Aug. 23, 2015).[2] To place this number in perspective, consider that Virginia's state government spends approximately $46 billion annually.

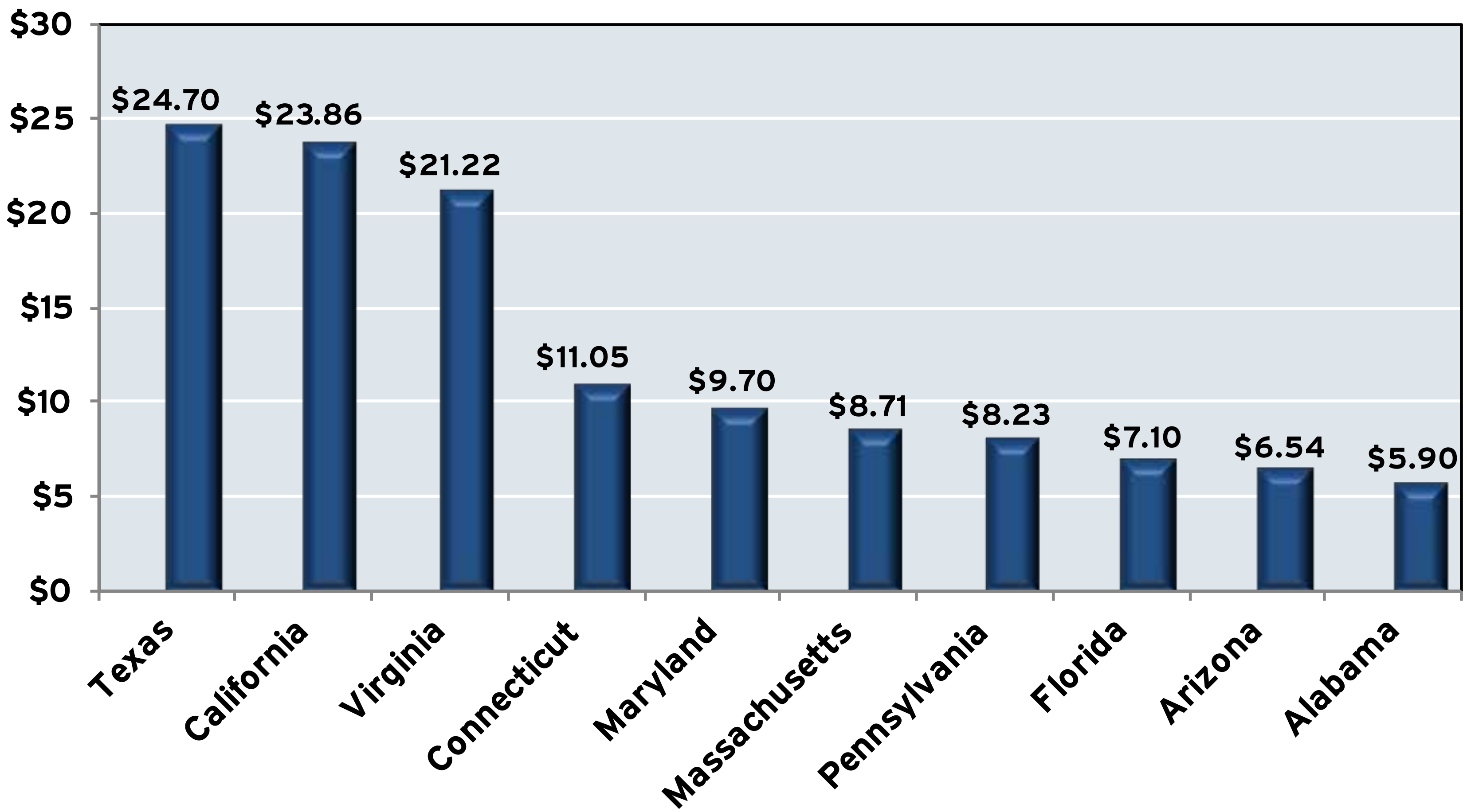
Further, in the federal government's 2015 fiscal year, the DOD will have awarded at least $21.22 billion in contracts to firms headquartered in the Commonwealth. Virginia ranks third nationally in terms of receiving the most defense contract awards (see Graph 1).

Two regions of the state – Northern Virginia and Hampton Roads – dominate defense spending in Virginia and together account for about 86 percent of all DOD spending in the Commonwealth. DOD spending in Northern Virginia is considerably greater than in Hampton Roads and accounts for 70 percent of all DOD spending in Virginia, while Hampton Roads is responsible for about 16 percent (JLARC Report, June 2014).

1 www.oea.gov/library/directory/defense-spending-by-state-fy14.
2 The DOD's Office of Economic Adjustment report for FY 2014 notes that DOD spending in Virginia in FY 2014 was only $54.7 billion.

GRAPH 1

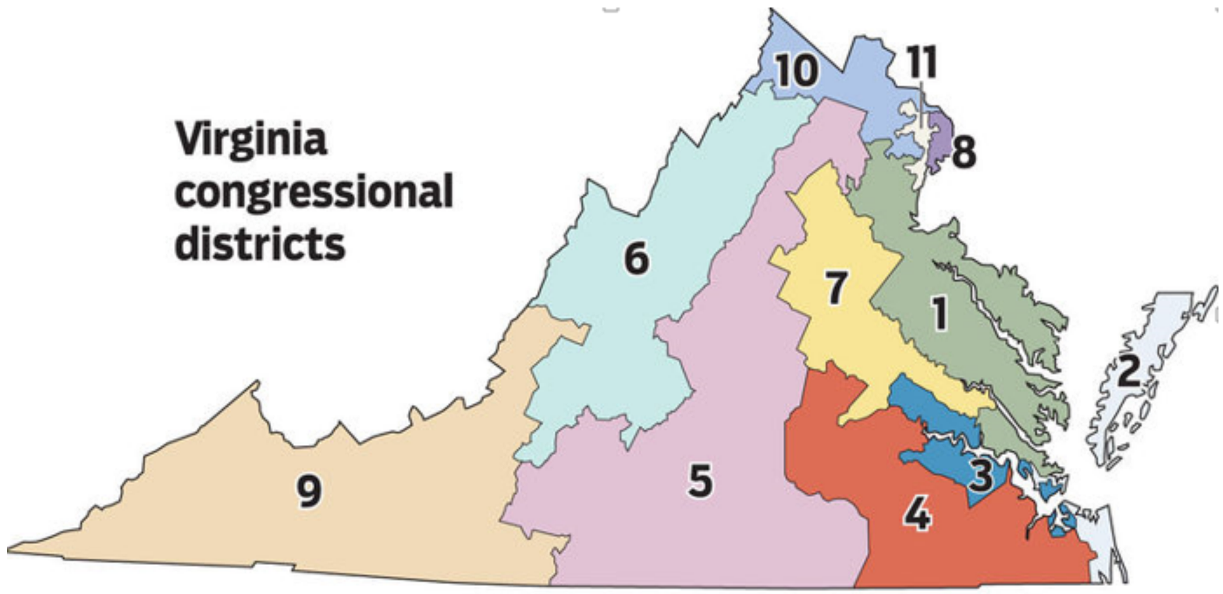
TOP 10 STATES IN TERMS OF TOTAL DEFENSE CONTRACT AWARDS RECEIVED (IN BILLIONS OF $)



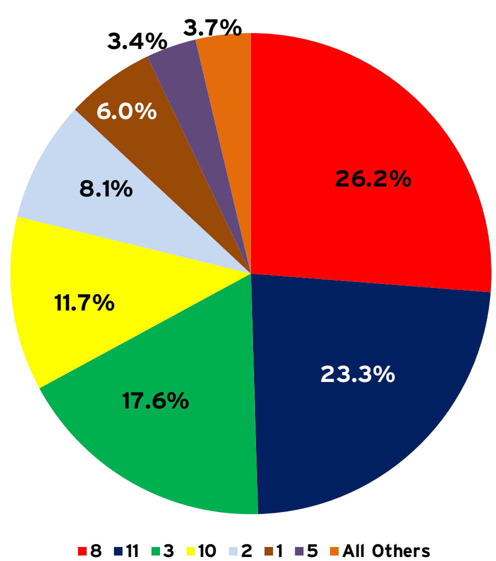
Source: www.usaspending.gov

GRAPH 2

VIRGINIA'S U.S. CONGRESSIONAL DISTRICTS AND DOD CONTRACT, GRANT AND GIFT AWARD ACTIVITY IN THOSE DISTRICTS, FY 2014



Source: John G. Ownby, Richmond Times-Dispatch, June 5, 2015



Source: www.usaspending.gov

Graph 2 provides two illustrations. The first is a map of Virginia's U.S. congressional districts. The second is a pie chart showing the percentage of DOD contract awards made to firms and organizations in these districts during FY 2014.

Congressional districts 8, 10 and 11 in Northern Virginia accounted for 61.2 percent of all contract award activity in Virginia in FY 2014, while districts 1, 2 and 3 in Hampton Roads were responsible for 31.7 percent of that activity. Critically, however, the economy of Hampton Roads is much less diversified than that of Northern Virginia. In 2014, more than 39 percent of all economic activity within Hampton Roads was related to DOD spending (The State of the Region report for Hampton Roads, 2015). This illustrates the vulnerability of Hampton Roads to defense spending reductions.

In 2014, an estimated 125,000 active-duty military members were stationed in Virginia and an estimated additional 90,000 civilians worked for the DOD within Virginia.[3] Approximately 72 percent of the *active-duty military personnel* were located in Hampton Roads, primarily at several U.S. Navy facilities. We estimate that 50 percent of the Commonwealth's *civilian* DOD employees are located in Northern Virginia, while almost 40 percent work in Hampton Roads. Reality is that despite the location of the Pentagon in Arlington, DOD activity in Northern Virginia is carried out predominantly via contractual relationships with private firms rather than at military installations.

These data easily demonstrate that the DOD spends large sums of money in Virginia and that the Commonwealth is one of the most important national locations for the DOD as well.

3 These 2014 estimates came from DOD personnel who cannot be quoted. However, 2013 data are available by service at http://www.governing.com/gov-data/military-civilian-active-duty-employee-workforce-numbers-by-state.html.

Sequestration

The bad economic news is that Department of Defense expenditures on both personnel and contracts have been declining and "sequestration" is a very important reason for this.[4] Sequestration is the term used to refer to automatic spending cuts that have been built into federal government budgets by virtue of the Budget Control Act of 2011.

One can see the impact of sequestration on DOD spending in Graph 3. Only "discretionary" DOD spending is reported in this graph; so-called "special operations" DOD spending for activities in areas such as Afghanistan and Iraq is not included. Discretionary DOD spending, then, represents the core DOD budget absent any items that Congress has declared to reflect special operational and one-time needs.

The blue line in Graph 3 indicates what DOD spending would have been without any sequestration reductions. The red line depicts the level of DOD spending after the sequestration agreement. Discretionary defense spending was scheduled to decline by a total of $454 billion between FY 2013 and FY 2021. Each individual year's DOD spending would have been 8 percent to 10 percent lower because of sequestration.

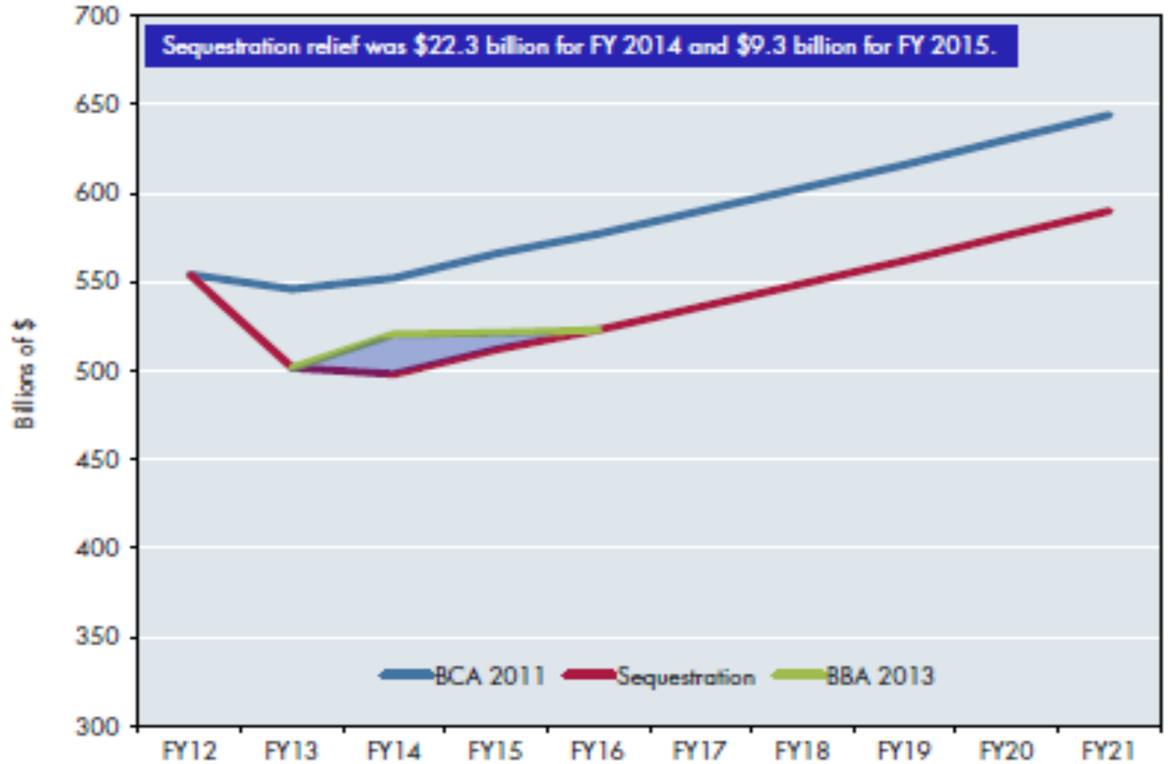
However, Congress agreed to sequestration relief in FY 2014 and FY 2015. The purple trapezoid in Graph 3 represents the amount of that relief, which totaled $31.6 billion for the DOD during the time period. This relief disappears in FY 2016 unless Congress reverses its current course.

If sequestration continues, then discretionary DOD spending will increase slightly in FY 2016 to $523.1 billion – only a 0.35 percent increase. Given the dependency of the Commonwealth's economy on defense spending, it is understandable why Virginia recorded a zero real growth rate in 2014 and also why there is likely to be only modest economic growth in 2015 and 2016.

4 For example, in Hampton Roads, DOD personnel expenditures declined 6.9 percent between 2010 and 2013 even while nonfarm personnel expenditures were increasing 9.3 percent. (See The State of the Region report for Hampton Roads, 2015.)

GRAPH 3

SEQUESTRATION FUNDING CAPS, FY 2012 TO FY 2021



Sources: Budget Control Act 2011, budget requests for FY14, Congressional Budget Office Sequestration Update Report and the Old Dominion University Economic Forecasting Project

Two Major Categories Of Defense Spending

The two major conduits for Department of Defense funds that come to Virginia are (1) expenditures made on personnel and (2) expenditures made via contracts negotiated by the DOD with private firms or other governmental units for construction, equipment, fuel, supplies, services, etc. In addition, the DOD makes loans and provides a variety of other kinds of financial assistance that may not fall directly into these two categories. We will focus initially on personnel costs.

DECLINING NUMBERS OF DOD PERSONNEL

The number of DOD personnel in Virginia – both active-duty and civilian – has been declining. **Table 1 reveals that active-duty military employment in Virginia now is 30 percent below where it was in 1991.**

Let's consider an instructive example. The aircraft carrier Gerald R. Ford (CVN 78), a Huntington Ingalls project that will join the fleet in 2016, will cost $13.7 billion. Its crew will number 4,500, about 1,000 fewer than those serving on existing carriers.[5] **This underscores a distinct trend in defense spending – increasingly expensive, technology-rich assets such as aircraft carriers translate into a reduced ability to employ and support personnel. The tradeoff is straightforward: As the DOD expends increasing proportions of its budget on expensive ships, airplanes and technology, it inevitably finds that it cannot hire as many people.** This means that the number of active-duty military personnel and DOD civilian employees must ineluctably decline until Congress is willing to spend more money.

In fact, the DOD has fewer dollars available to hire people today than in the past. This is an important reason why the number of active-duty military declined from 2.04 million in 1990 to only 1.35 million in 2014. The decline has been even more significant in the U.S. Navy. Active-duty naval personnel in 2014 were only about half the number in 1990.[6] **In defense-heavy Hampton Roads, the most recent peak in the number of active-duty military personnel occurred in 2003, when 113,400 men and women were deployed here. This number has declined every year since then to 86,500 in 2013.**

The deployment of superior new technology sometimes results in smaller numbers of individuals being needed to accomplish necessary tasks. As already noted, the crew of the Gerald R. Ford will number 1,000 fewer individuals than the crews of predecessor aircraft carriers, and the Navy attributes much of this to the incorporation of new technology into its physical structure and operations. It is a trend, however, that encompasses all of the military services.

DECLINING COMPENSATION

Even if the deployment of new technology were not a factor in reducing the number of active-duty military personnel, there is another trend that also has played an important role in the decline in DOD employment – the increasingly expensive compensation packages received by DOD personnel. Table 1 compares the compensation increases received by active-duty military personnel, other government personnel and private-sector employees between 2001 and 2013. Because we have an all-volunteer military, the United States must offer compensation packages sufficient to attract and retain personnel. Important elements of these packages include housing allowances, health care coverage and pensions systems, all of which are attractive because of their mostly nontaxable status. One can see that between 2001 and 2010, *total* military employee compensation increased much more rapidly than either government or private-sector employee compensation. During this time period, total private, nonfarm compensation increased 38.5 percent, while military compensation increased 71.8 percent.

After historically large increases in compensation between 2000 and 2010, the *total* compensation earned by active-duty military personnel in the Commonwealth has been declining and fell 6.9 percent between 2010 and 2013 (see Table 1).

Total compensation is one thing; *average* compensation per employee is another. The data presented in Table 2 demonstrate **the average compensation of active-duty military personnel has stalled; there was**

5 www.naval-technology.com/projects/cvn-21.
6 http://historyinpieces.com/research/us-military-personnel-1954-2014.

only a 0.8 percent increase per individual between 2010 and 2013 and an actual 2.8 percent decline between 2012 and 2013. This contrasts visibly with the 3.3 percent increase in average federal civilian employee compensation and the 4.3 percent increase in the average compensation of private-sector nonfarm employees between 2010 and 2013.

Here is the rub for Virginia. Holding other things constant, the increased compensation costs inherited from the previous decade and the DOD's increased reliance upon more expensive assets such as aircraft carriers will result in fewer active-duty personnel at DOD installations throughout the Commonwealth. The same DOD dollar cannot be spent two places.

DOD asset cost escalation is exemplified by the cost of top-of-the-line fighter aircraft. In 1945, the foremost U.S. fighter was the P-51 Mustang, which cost about $50,000 per copy to produce. In 2015 prices, this translates to $656,000. Compare this to the estimated $300 million-plus cost of a single new F-35C fighter in 2015. Of course, the two planes are in no way equivalent, but it is precisely the tremendous upgrading of such equipment that has accelerated procurement costs and reduced the funds available to support personnel.

TABLE 1

CHANGES IN EMPLOYMENT AND TOTAL COMPENSATION (WAGES PLUS FRINGE BENEFITS) FOR MILITARY, FEDERAL CIVILIAN AND PRIVATE-SECTOR EMPLOYEES, 1991-2013

	PERCENT CHANGE, 1991-2000	PERCENT CHANGE, 2001-2010	PERCENT CHANGE, 2010-2013	PERCENT CHANGE, 2012-2013
Military Employment	-19.5%	-9.0%	-7.7%	-0.6%
Military Compensation	5.3%	71.8%	-6.9%	-3.4%
Federal Government Civilian Employment	-11.8%	21.8%	1.2%	-0.4%
Federal Government Civilian Compensation	27.0%	93.8%	4.5%	-0.7%
Private Nonfarm Employment	26.7%	7.7%	4.1%	1.0%
Private Nonfarm Compensation	89.15%	38.5%	8.6%	1.9%

Sources: Bureau of Economic Analysis and the Old Dominion University Economic Forecasting Project

TABLE 2

CHANGES IN EMPLOYMENT AND AVERAGE COMPENSATION (WAGES PLUS FRINGE BENEFITS) FOR SELECTED EMPLOYEE CATEGORIES IN VIRGINIA, 2001-2013

	EARNINGS IN 2001	EARNINGS IN 2012	EARNINGS IN 2013	PERCENT CHANGE, 2001-2010	PERCENT CHANGE, 2010-2013	PERCENT CHANGE, 2012-2013
Military Active-Duty Employees	$47,536	$93,058	$90,500	88.9%	0.8%	-2.8%
Federal Government Civilian Employees	$72,732	$120,022	$119,631	59.2%	3.3%	-0.3%
State and Local Government Employees	$42,796	$59,086	$60,122	36.8%	2.7%	1.8%
Private Nonfarm Employees	$35,891	$47,644	$48,090	28.5%	4.3%	0.9%

Sources: Bureau of Economic Analysis and the Old Dominion University Economic Forecasting Project

DOD CONTRACT AWARD ACTIVITY IN VIRGINIA

As Graph 1 disclosed, Virginia ranked third among the states in terms of the total annual volume of DOD contract awards received in FY 2015 to date. However, if anyone has been harboring doubts that DOD spending in Virginia has been on the decline, Graph 4 should erase such. It reports the total dollar value of all DOD contracts, grants, loans and other assistance to firms and organizations in Virginia, FY 2010 through FY 2015 to date. These awards declined 21.2 percent between FY 2011 and FY 2014.

DOD "TRANSACTIONS" IN VIRGINIA

DOD contracts for weapons, equipment, fuel, food, etc., often are less visible than personnel expenditures. Exceptions include the very large DOD contracts awarded to firms such as Huntington Ingalls relating to the construction or rehabilitation of aircraft carriers. These events justifiably garner considerable attention, but most other DOD contracts merit no more than a sentence in the business section of local publications. Even some large contracts occasionally float by without much notice. How many Virginians are aware of the $858 million contract for fuel that the DOD negotiated with Foster Fuels, which is located in the small town of Brookneal, south of Lynchburg?

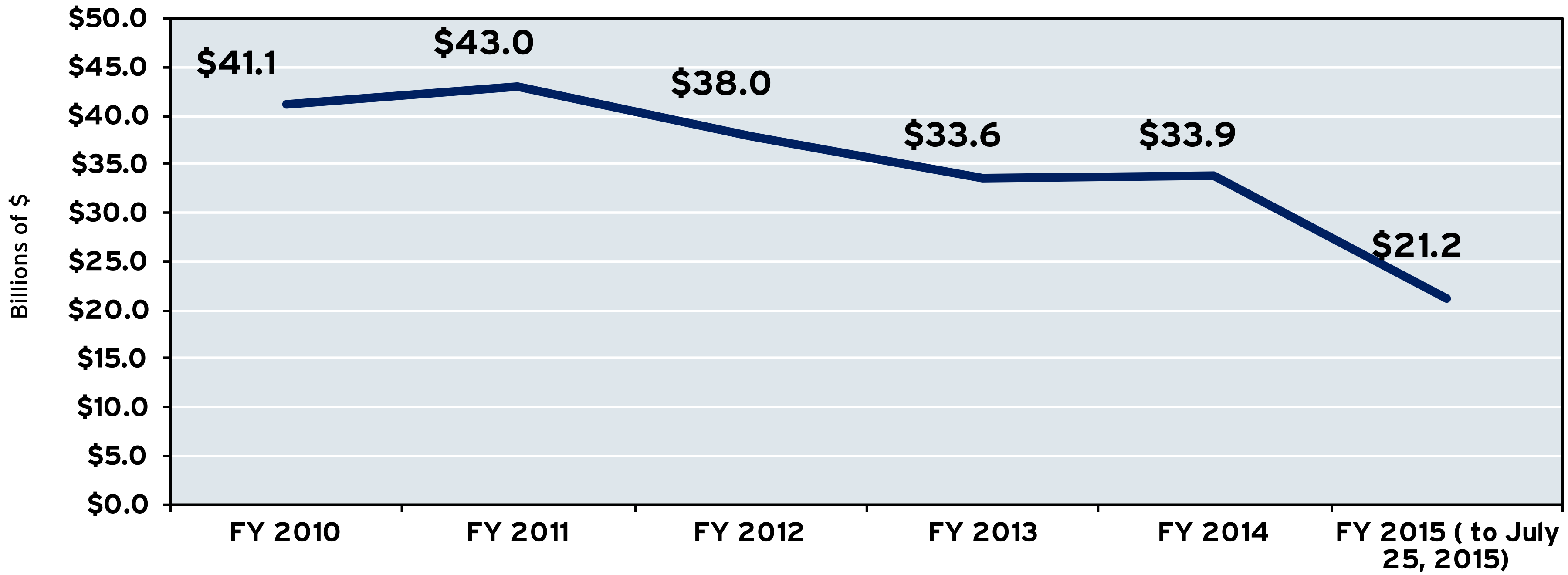
As Graph 5 indicates, DOD contracts made with firms and governmental units in Virginia, though below previous peak levels, still remain significant in number, not the least because after they are signed, they frequently are modified and extended. Such events are termed "transactions" and are commonplace. Despite their frequency and ultimate economic impact when considered as a whole, DOD transactions in Virginia seldom capture the public's attention for extended periods of time.

The total value of the DOD procurement contracts in Virginia metropolitan areas roughly mirrors the number of transactions, except for the Lynchburg metro area, which boasts the huge Foster Fuels contract. Let's initially consider those contracts awarded outside of Northern Virginia and Hampton Roads. One can see in Graph 6 that in FY 2014, Lynchburg (with the Foster Fuels contract) and Richmond dominated the play.

A major lesson of Graph 6, however, is that virtually every metropolitan area in Virginia has a stake in DOD contractual procurement spending. Metropolitan areas such as Charlottesville, Lynchburg, Richmond and Roanoke all are substantial DOD participants in addition to Northern Virginia and Hampton Roads. Taking a longer view, however, this is both good and bad for Virginia. During the first decade of this century, our dependence on the DOD turned out to be very good for us, economically speaking, because defense spending was increasing rapidly. However, conditions became less salubrious for the Commonwealth in 2015 as a consequence of sequestration and stagnant or declining DOD spending.

GRAPH 4

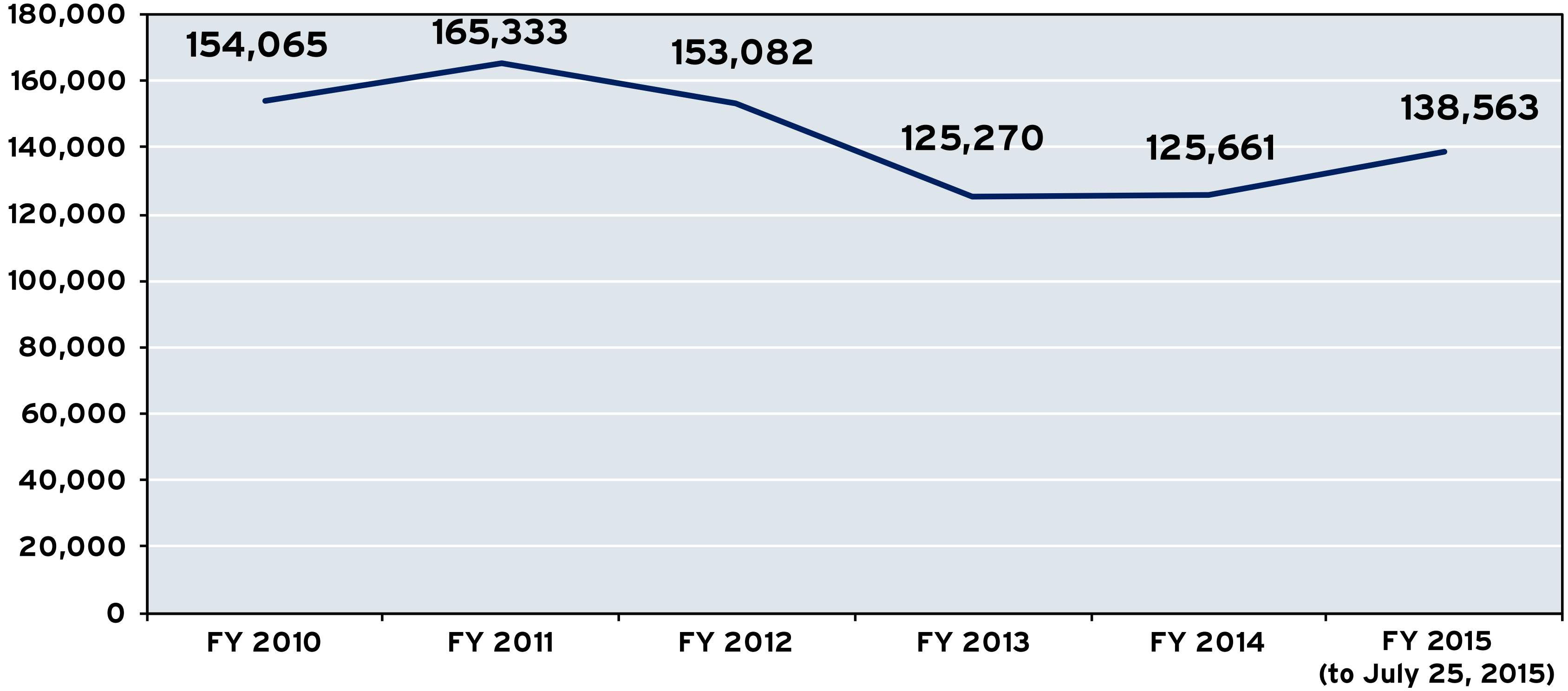
DOD CONTRACTS, GRANTS, LOANS AND OTHER ASSISTANCE AWARDED TO FIRMS AND ORGANIZATIONS IN VIRGINIA, FY 2010 TO FY 2015 TO DATE



Source: www.usaspending.gov

GRAPH 5

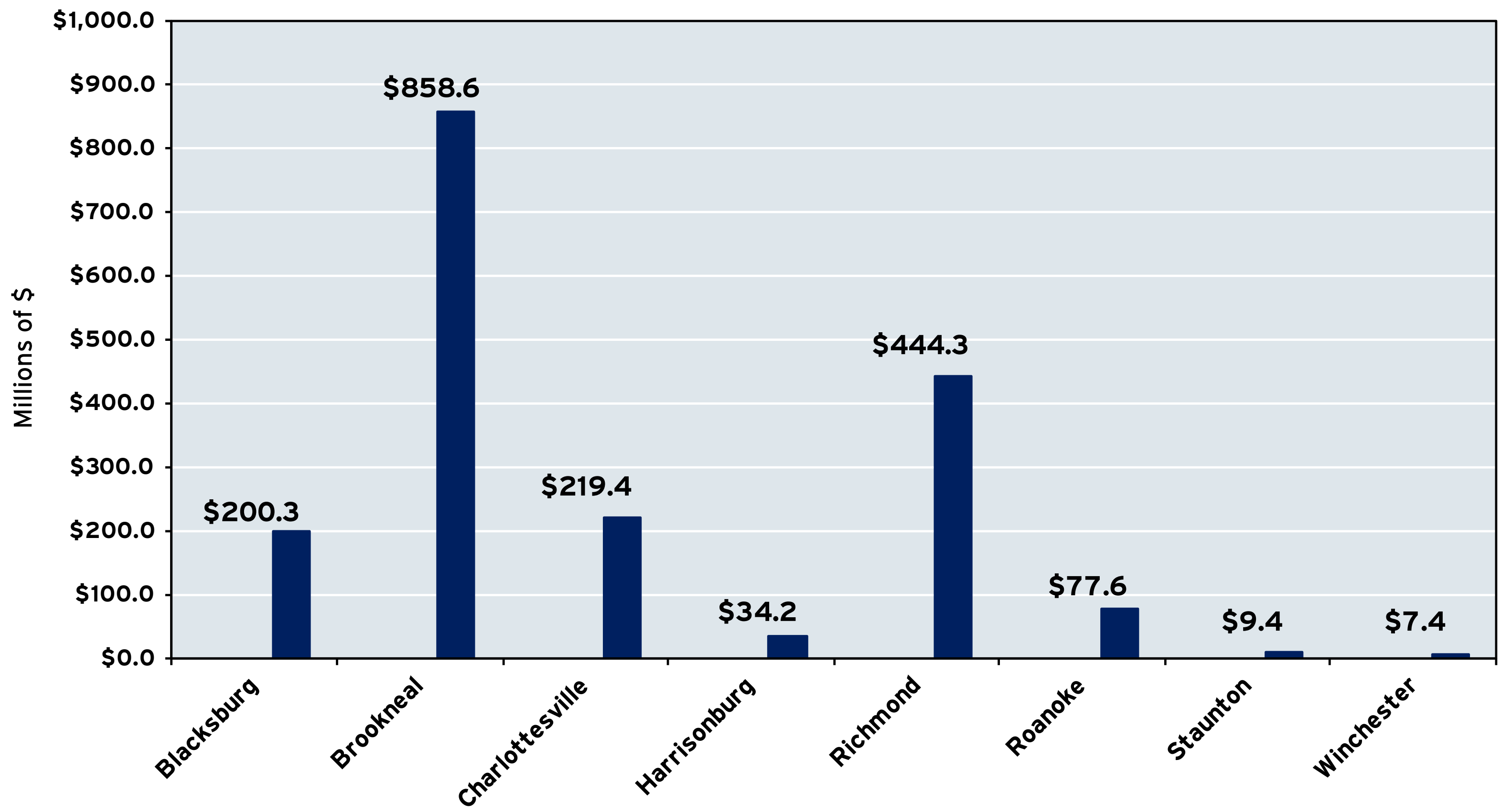
DOD CONTRACTUAL TRANSACTIONS IN VIRGINIA, FY 2010 TO FY 2015 TO DATE



Source: www.usaspending.gov

GRAPH 6

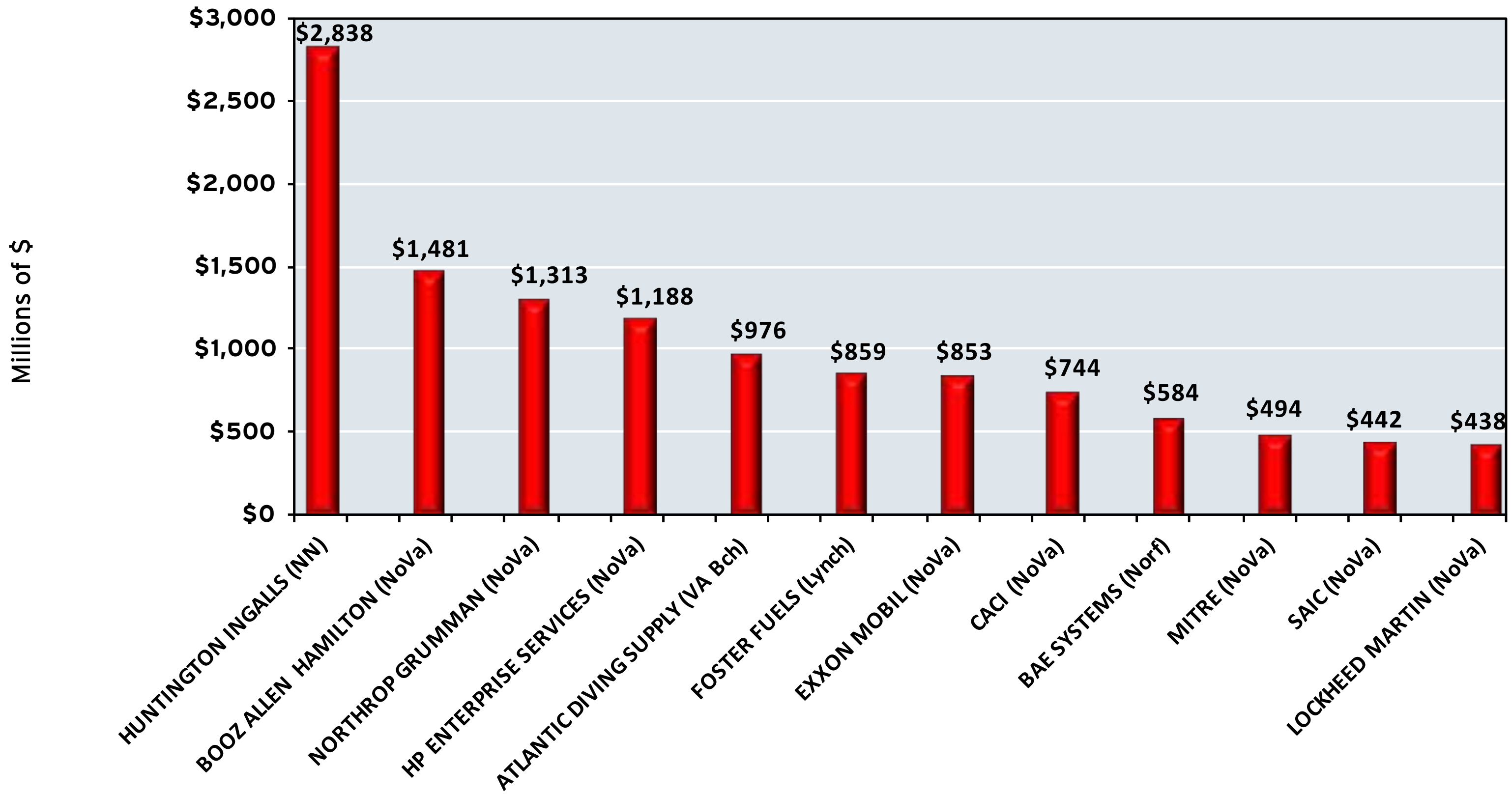
DOD CONTRACTS AWARDED TO RECIPIENT METROPOLITAN AREAS OUTSIDE OF NORTHERN VIRGINIA AND HAMPTON ROADS, FY 2015 TO DATE



Note: Brookneal is an incorporated city within Campbell County in the Lynchburg Metropolitan Area.
Source: www.usaspending.gov

GRAPH 7

LARGEST RECIPIENTS OF DOD CONTRACT AWARDS IN VIRGINIA, FY 2014



Source: www.usaspending.gov

Who Receives DOD Contracts In Virginia?

What companies and firms are actually receiving the Department of Defense contracts? Graph 7 supplies FY 2014 data to date for the Commonwealth. These numbers should be interpreted with care. While Huntington Ingalls easily is one of the largest DOD contract recipients, not all of the $2.838 billion of activity in FY 2015 actually relates to Newport News, the company's headquarters. Some of these dollars may well have been spent in other locations.

The money received by a firm headquartered in one city or county may be spent in another city or county, or even in another state. For example, approximately three-quarters of all employed individuals in Northern Virginia cross city or county lines when they commute to their jobs. Thus, DOD contractual spending tends to diffuse broadly across that region, and hence the information in Graph 7 should be regarded as guidance, not as gospel.

There are two other things to bear in mind. First, the federal government's fiscal year begins on Oct. 1 and therefore cannot be compared to a calendar year. Second, many widely publicized DOD contracts involve multiple years' activity. In June 2015, for example, Huntington Ingalls announced that it had received a $3.35 billion contract award for future work on the detail, design and construction of the nuclear-powered aircraft carrier John F. Kennedy (CVN 79). The company also received a $941 million contract for modifications on existing construction on the ship. Work on the 100,000-ton John F. Kennedy began in 2011; it is scheduled to join the fleet in 2017. The lesson is that DOD contract expenditures in a specific fiscal year sometimes by themselves do not provide an accurate picture of the influence of DOD expenditures on economic activity.

Assessing The Future For Defense Spending In Virginia

In addition to sequestration, the rising cost of military assets and increased DOD employee costs, there are other things for Virginians to worry about where the future of defense spending in the Commonwealth is concerned. These include: (1) the refocusing of U.S. defense attention toward the Pacific Rim as a consequence of rising consideration being given to China; (2) risk factors associated with homeporting so many carriers in a single location, such as Norfolk; (3) questions whether aircraft carriers really are the most cost-effective assets the United States can deploy in a variety of combustible, confined naval situations and unconventional warfare situations around the world; (4) shifting DOD expenditure emphasis away from assets such as aircraft carriers and submarines, and toward activities involving drones and cyber warfare; and (5) rising sea levels that could make Naval Base Norfolk a comparatively less attractive place for the U.S. Navy.

Of the five factors noted above, only Nos. 3 and 4 offer Virginia the possible prospect of increased defense spending, and those would occur because of defense spending shifting from Hampton Roads to Northern Virginia.

With respect to No. 1, the refocusing of attention toward the Pacific Rim might well translate into the loss of an aircraft carrier group to the Pacific. Each aircraft carrier group has an economic impact of approximately $800 million per year, so this is hardly a negligible consideration.

Where No. 2 – homeporting – is concerned, both military and political factors could cause the Navy to move aircraft carriers out of Norfolk to locations such as Jacksonville. It would be expensive for the Navy to replicate the public- and private-sector facilities currently available in Hampton Roads, but perceived needs for disbursal of defense assets might eventually override those costs.

Nos. 3 and 4 overlap and eventually reduce to this question: Will emerging emphases on nonconventional warfare (including cyber warfare) and changing international weaponry make aircraft carriers a less effective way for the DOD to spend its limited dollars? China, for example, now boasts that it will deploy a "carrier-killer" missile (Charles Clover, Financial Times, Sept. 3, 2015). One can conceive of circumstances where Northern Virginia's collection of private-sector and governmental talent might result in significantly increased DOD expenditures there and decreased DOD expenditures in Hampton Roads because of a de-emphasis on aircraft carriers and increased emphasis upon cyber warfare and related technology.

Rising sea levels, noted in No. 5, afflict the entire East Coast, but Hampton Roads more virulently than nearly all other regions because of its gradually sinking ground. At some point, the Navy might decide that it simply is too expensive to deal with these challenges in Hampton Roads and/or increase its investment in nonship assets as a result.

What's the bottom line on the future of defense spending in Virginia? It is clear that the outlook for future DOD spending in Hampton Roads is not particularly favorable. However, Hampton Roads' losses might translate into Northern Virginia's gain. Increased emphasis upon cyber warfare, drone technology and unconventional warfare could fit Northern Virginia's portfolio of strengths rather well. Northern Virginia already dominates DOD spending in Virginia and future developments may only increase that ascendancy.

Summing It Up

One prominent Virginian, upon reviewing the list of the largest Department of Defense contract recipients provided in the previous graphs, exclaimed, "I've never heard of half of these companies." He's not the only one. Defense contracting is very big business in the Commonwealth, but much of it occurs outside of public and media scrutiny.

While DOD activities in Virginia have been adversely affected by sequestration, our statewide numbers can be sensitive to the periodic awarding of large contracts to firms such as Foster Fuels or Huntington Ingalls. Year-to-year changes, therefore, sometimes can be deceptive.

Even so, the post-sequestration trend in DOD spending in Virginia cannot be mistaken – it is constant or declining in most categories. As a consequence, it seems likely that the roster of DOD employees will continue to decline in Virginia, at least partially because the prices of major defense assets, such as aircraft carriers, continue to increase significantly and personnel costs have accelerated upward. The DOD simply does not have sufficient funds to purchase these expensive assets, compensate its current and former employees, and maintain its current active-duty numbers. Unless counteracted by sequestration spending relief or other intervening events, this new reality will exercise a noticeable drag on the Commonwealth's economic growth for the remainder of this decade.