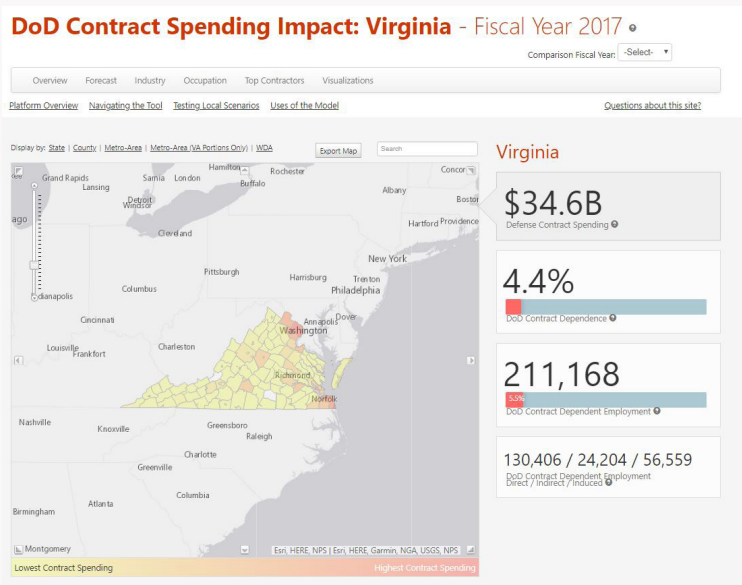


How to Navigate the Virginia Defense Contract Spending Impact Tool

The Virginia Department of Defense (DoD) Contract Spending Impact Tool, which is built with the Zonyx™ platform, provides supply-chain mapping of defense contract awards and includes the impacts on sales and employment based on product/service codes (PSCs), industries, and occupations. It provides state, local, and regional details about the current and projected economic impacts of defense contract spending. Detailed tables highlight spending by industry, estimated risk for defense contract-dependent occupations, and current and projected spending by PSC. Visualizations display the interconnectivity of firms and regions based on adjusted USASpending.gov data.



The first graphic on the website provides a summary of all defense contract spending for the entire state, counties, metropolitan statistical areas (MSAs), and workforce development areas. Redder areas receive more DoD-related contract spending. Total defense dollars spent, percent of regional output dependent on DoD-related contract spending, and DoD-dependent employment are displayed to the right of the map. Clicking on an area on the map updates the website to show data for the highlighted region.

Spending Forecast

Virginia, Based on Adjusted Data

Click on the + to run an alternative spending scenario

Product Service Category	DoD FY 2017	DoD FY 2019	2-Year Forecast	
	Millions	Millions	Millions	Percent
Total	\$34,582.6	\$38,932.9	\$4,350.3	12.6% 
Professional Services	\$6,722.5	\$7,481.3	\$758.9	11.3% 
Adp And Telecommunications	\$5,267.0	\$5,898.6	\$631.6	12.0% 
Ships, Small Craft, Pontoon, Docks	\$3,361.5	\$3,740.6	\$379.1	11.3% 
Adp Eqpt/software/supplies And Eqpt	\$2,698.0	\$3,006.5	\$308.5	11.4% 
Management Support Services	\$1,375.2	\$1,529.8	\$154.5	11.2% 
Maint, Repair, Rebuild Of Equipment	\$1,262.7	\$1,408.1	\$145.3	11.5% 
Defense (other) R&D	\$1,222.4	\$1,363.0	\$140.7	11.5% 
Fire/rescue/safety; Enviro Protect	\$1,190.4	\$1,367.0	\$176.6	14.8% 
Non-Nuclear Ship Repair	\$997.1	\$1,108.1	\$111.0	11.1% 
Other Research/development	\$961.6	\$1,081.8	\$120.1	12.5% 
Defense Systems R&D	\$823.4	\$959.6	\$136.2	16.5% 
Comm/detect/coherent Radiation	\$643.4	\$739.0	\$95.7	14.9% 

Below the map, the spending forecast table displays DoD-related contract spending by PSC¹ for fiscal year 2017, projected spending in fiscal year 2019, and the dollar and percent change over those two years. An alternative forecast can be created by clicking on the plus sign to the left of the PSC description. Color coded arrows in the last column indicate the directional change in each category.

¹Product and service codes are used by the General Services Administration to describe all products or services procured by the federal government.

Spending by Industry ▲ ●

Virginia, Based on [Adjusted Data](#)

Industry	Contract Spending (Millions)	Contract Dependent Empl		Avg Ann Wages FY 2017
		Direct	Total	
Total - All Industries	\$34,582.6	130,406	211,168	\$55,126
NAICS 54 - Professional, Scientific, and Technical Services	\$17,190.2	70,780	111,955	\$100,376
NAICS 31 - Manufacturing	\$8,489.9	23,286	40,215	\$57,955
NAICS 51 - Information	\$2,313.1	3,126	6,680	\$90,206
NAICS 56 - Administrative and Support and Waste Management and Remediation Services	\$1,591.2	8,835	13,290	\$40,529
NAICS 42 - Wholesale Trade	\$1,433.0	5,545	9,730	\$78,580
NAICS 23 - Construction	\$1,119.1	4,950	7,413	\$52,687
NAICS 48 - Transportation and Warehousing	\$833.9	2,934	5,420	\$51,702
NAICS 99 - Unclassified	\$490.5	2,462	4,797	\$45,448
NAICS 81 - Other Services (except Public Administration)	\$357.2	1,715	2,522	\$36,186
NAICS 61 - Educational Services	\$280.4	2,610	3,362	\$44,453
NAICS 62 - Health Care and Social Assistance	\$248.0	2,820	3,716	\$49,806
NAICS 22 - Utilities	\$62.2	162	254	\$85,871
NAICS 53 - Real Estate and Rental and Leasing	\$55.4	99	180	\$55,586
NAICS 72 - Accommodation and Food Services	\$42.1	651	744	\$19,419
NAICS 52 - Finance and Insurance	\$35.1	109	260	\$90,132
NAICS 44 - Retail Trade	\$25.8	255	327	\$28,972
NAICS 21 - Mining, Quarrying, and Oil and Gas Extraction	\$5.6	13	21	\$68,057
NAICS 71 - Arts, Entertainment, and Recreation	\$4.5	39	50	\$25,840
NAICS 92 - Public Administration	\$4.5	9	20	\$77,692
NAICS 11 - Agriculture, Forestry, Fishing and Hunting	\$0.8	9	11	\$24,262

The next table displays detailed data on contract spending, DoD-dependent employment, and average annual wages by industry. Employment is estimated for direct, indirect, and induced impacts. Clicking the plus sign next to the top-level (2-digit NAICS² code) sectors reveals more detailed (4-digit NAICS code) industry data.

²NAICS is the North American Industry Classification System which is the standard used by federal agencies in classifying businesses.

Top Defense Contract Dependent Occupations ▲ ●

Virginia, Based on [Adjusted Data](#)

Rank	Title	Empl	% Contracts
1	Layout Workers, Metal and Plastic	291	42.3%
2	Shoe Machine Operators and Tenders	10	40.7%
3	Aerospace Engineering and Operations Technicians	83	32.8%
4	Civil Engineers	3450	32.2%
5	Aircraft Structure, Surfaces, Rigging, and Systems Assemblers	83	32.2%
6	Structural Metal Fabricators and Fitters	561	31.1%
7	Civil Engineering Technicians	675	30.9%
8	Electrical and Electronics Drafters	227	29.9%
9	Architectural and Civil Drafters	746	29.6%
10	Biochemists and Biophysicists	245	29.5%
11	Mechanical Drafters	613	28.8%
12	Mechanical Engineering Technicians	358	27.1%
13	Mining and Geological Engineers, Including Mining Safety Engineers	50	26.9%
14	Mechanical Engineers	1969	25.8%
15	Surveyors	376	24.5%
16	Environmental Engineering Technicians	116	24.1%
17	Architectural and Engineering Managers	1164	23.5%
18	Computer Hardware Engineers	585	23.0%
19	Welders, Cutters, Solderers, and Brazers	1867	22.9%
20	Drafters, All Other	87	22.9%

A list of the occupations in the selected area that are most dependent on DoD-related contract spending is presented below the industry table. Occupations are listed at the 6-digit Standard Occupation Classification (SOC) level, ranked according to the percentage of jobs in the region that are DoD-dependent. The number of DoD-dependent jobs in each occupation is listed in a column next to the percent of jobs in that occupation dependent on DoD-related contracts. Clicking the title of any column reorders the table based on the values in that column.

Top Contractors ▲ ●

Virginia, Based on [Adjusted Data](#)

Rank	Contractor Name	Total Awards (Millions)	DoD-Related Awards (Millions)
1	Huntington Ingalls Industries, Inc.	\$3,419.9	\$3,399.3
2	Northrop Grumman Systems Corporation	\$1,892.4	\$1,882.4
3	Atlantic Diving Supply Inc.	\$1,338.2	\$1,319.7
4	Booz Allen Hamilton Holding Corp	\$1,716.3	\$1,275.5
5	Leidos Holdings, Inc.	\$1,135.5	\$903.9
6	Hewlett-Packard Company	\$1,163.3	\$832.9
7	General Dynamics Corp	\$1,716.5	\$748.9
8	Lockheed Martin	\$780.2	\$653.3
9	CACI International Inc	\$792.1	\$614.6
10	Science Applications International Corporation	\$624.9	\$595.0
11	The MITRE Corporation	\$1,098.2	\$469.6
12	Insight Enterprises Inc.	\$467.2	\$449.1
13	Mantech International Corp	\$442.1	\$394.3
14	Michael Baker International, LLC	\$345.3	\$345.3
15	Accenture Public Limited Company	\$873.0	\$313.5
16	BAE Systems PLC	\$339.5	\$312.8
17	VSE Corporation	\$304.1	\$302.5
18	Raytheon	\$328.9	\$299.9
19	The Babcock Wilcox Company	\$309.2	\$283.6
20	L-3 Communications Holdings Inc.	\$277.5	\$269.1

Below the occupation table is a list of the top twenty firms that receive the greatest dollar amount of federal contract awards. The table shows both total federal contract awards and DoD-related awards to show the firm's dependence on DoD contracts relative to all federal contracts.

At the bottom of the website, the interconnectivity of firms and the number of DoD-related contracts performed by region is depicted in a hive chart, map, and chord diagram. The data behind the visualizations are exportable to Excel.

Visualizations ▲ ●

Virginia, Based on Adjusted Data

Search for a firm:

[Export Data](#)

Contractor Network

Shows the connections between prime- and sub-contractors.

County-to-County Flow Map

Geographic display of county-to-county contract spending flow.

Net County Flow

Illustrates the relative size of county-to-county contract spending flow.

Contractor Network

This visualization uses a “hive chart” to illustrate the interconnectivity between contractors that participate in Federal DoD-related contracts. The data are organized into four axes according to the contractor type (prime or sub) and location (in or out of Virginia). Each node, or bubble, represents a contractor that has participated in a contract under a specific industry code and place of performance. The lines connecting each bubble represent the flow of money from a prime to a sub. When the mouse is hovered over a line or bubble, the direct contracts will turn yellow, secondary contracts are shown in red, green, or blue, and all other contracts are lightened. The secondary connections show that several contracts can have vendors in common.

Visualizations ▲ ●

Virginia, Based on Adjusted Data

Search for a firm:

[Export Data](#)

Contractor Network

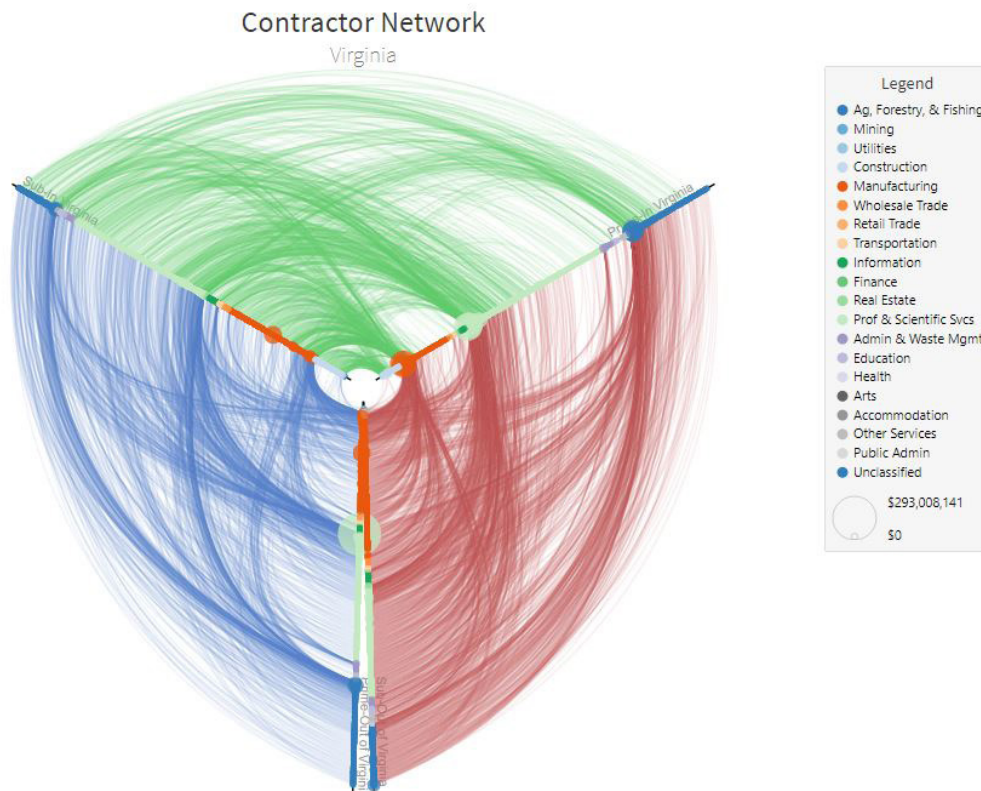
Shows the connections between prime- and sub-contractors.

County-to-County Flow Map

Geographic display of county-to-county contract spending flow.

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When you click on a circle, only contracts associated with that contractor are shown and the yellow lines highlight the contracts associated with that contractor in that specific sector. In the example below, the large light green circle on the “Prime-In Virginia” axis represents SAIC’s prime contracts with an identified industry sector of professional & scientific services. The yellow lines represent the individual contracts. If you hover over a line, the net value of contracts flowing into, flowing out of, or flowing within Virginia between a prime contractor and a subcontractor as well as the subcontractor’s industry is displayed.

Visualizations

Virginia, Based on Adjusted Data

Search for a firm:

[Export Data](#)

Contractor Network

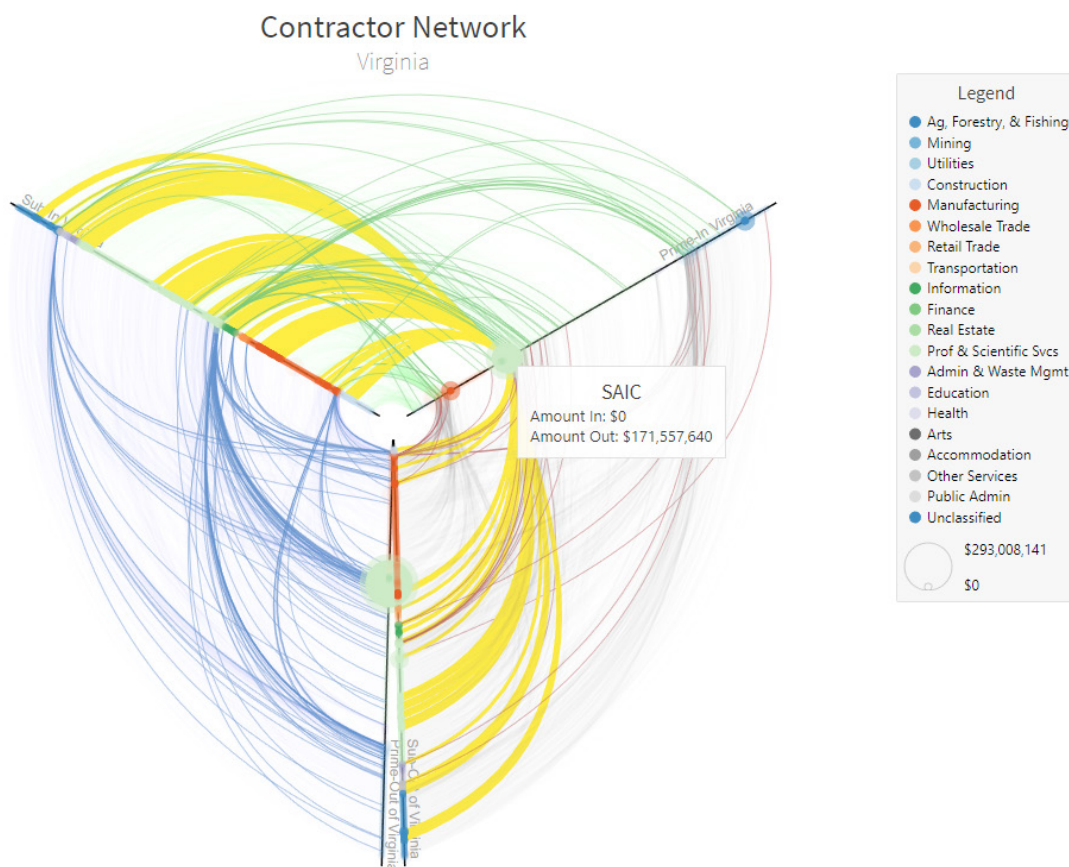
Shows the connections between prime- and sub-contractors.

County-to-County Flow Map

Geographic display of county-to-county contract spending flow.

Net County Flow

Illustrates the relative size of county-to-county contract spending flow.



County-to-County Flow Map

The flow map shows the flow of money from one region to another in the form of a subcontract. Though money may flow in both directions, the lines are colored according to the net flow. For example, if more money is being sent to subs outside of a Virginia county than is being sent to subs within the county, the line will be colored red. Thicker lines represent larger aggregated contract values. When the mouse is hovered over a line, the net value of contracts flowing from one county to another is displayed.

Visualizations

Virginia, Based on Adjusted Data

Search for a firm:

[Export Data](#)

Contractor Network
Shows the connections between prime- and sub-contractors.

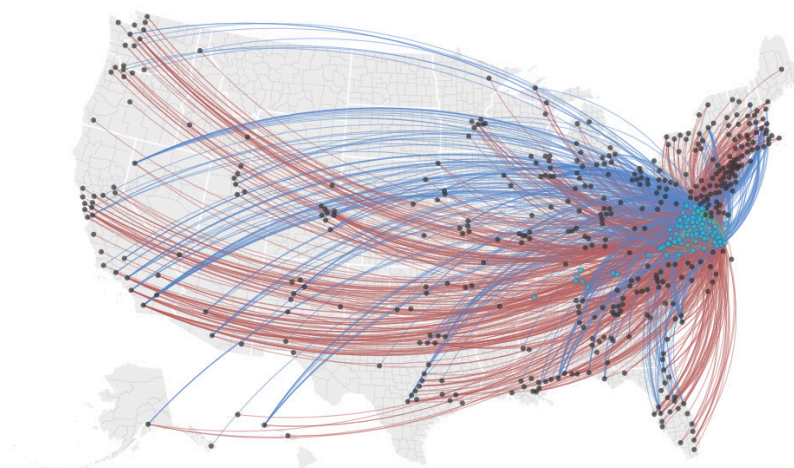
County-to-County Flow Map
Geographic display of county-to-county contract spending flow.

Net County Flow
Illustrates the relative size of county-to-county contract spending flow.

County-to-County Flow Map

Virginia



Legend
Flow In
Flow Out
Flow Within

Visualizations

Virginia, Based on Adjusted Data

Search for a firm:

[Export Data](#)

Contractor Network
Shows the connections between prime- and sub-contractors.

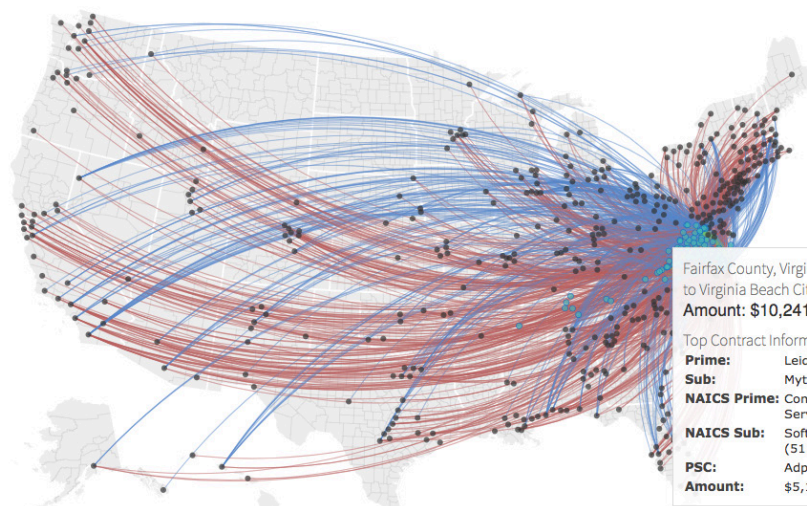
County-to-County Flow Map
Geographic display of county-to-county contract spending flow.

Net County Flow
Illustrates the relative size of county-to-county contract spending flow.

County-to-County Flow Map

Virginia



Legend
Flow In
Flow Out
Flow Within

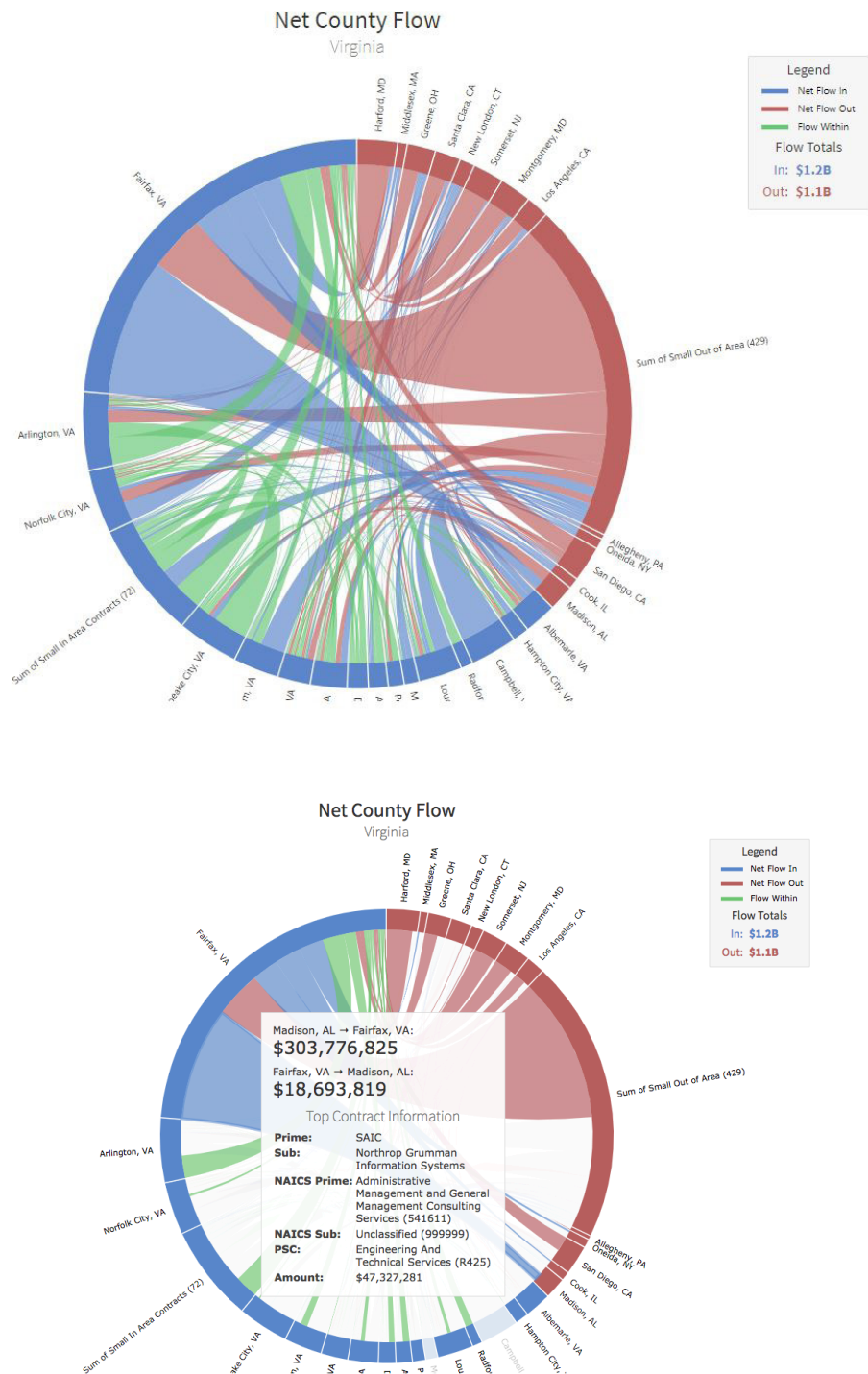
Fairfax County, Virginia
to Virginia Beach City, Virginia
Amount: \$10,241,176

Top Contract Information

Prime:	Leidos, Inc.
Sub:	Mythics, Inc.
NAICS Prime:	Computer Systems Design Services (541512)
NAICS Sub:	Software Publishers (511210)
PSC:	Adp Software (7030)
Amount:	\$5,161,504

Net County Flow

A “chord chart” is used to show the net contract volume, and relative size of subcontracts into and out of Virginia counties. Similar to the spending flow map, when the net flow out of a Virginia county is greater than the flow in, the line or “chord”, is colored red. The thickness of each county’s placeholder around the edges of the chart shows the relative size of the money coming into the region. For example, a county with \$1 million in subcontracts coming into the region will have a larger slice of the chart than a county with \$500,000 coming in, regardless of the net flow direction. Like the map visualization, the chords represent the aggregate data between two counties. A mouseover will show the total value of contracts flowing into and out of a Virginia county from another county. Please note that county names may overlap when adjacent chords represent small slices of the chart as these chord charts are not static.



Alternative Scenarios

The Alternative Scenario analytic in the Spending Forecast table allows users to run alternative forecasts with the tables dynamically updating to reflect the alternative spending scenario. In the example below, a \$500 million cancellation of ships, small craft, pontoons, and floating docks contracts is entered.

Spending Forecast

Virginia, Based on Adjusted Data

Click on the + to run an alternative spending scenario

Product Service Category	DoD FY 2017	DoD FY 2019	2-Year Forecast	
			Millions	Percent
Total	\$34,582.6	\$38,932.9	\$4,350.3	12.6%
Professional Services	\$6,722.5	\$7,481.3	\$758.9	11.3%
Adp And Telecommunications	\$5,267.0	\$5,898.6	\$631.6	12.0%
Ships, Small Craft, Pontoon, Docks	\$3,361.5	\$3,740.6	\$379.1	11.3%

Alternative Scenario

Contract **cancellation of \$500.0M including leakage.**

Adp Eqpt/software/supplies And Eqpt	\$2,698.0	\$3,006.5	\$308.5	11.4%
Management Support Services	\$1,375.2	\$1,529.8	\$154.5	11.2%
Maint, Repair, Rebuild Of Equipment	\$1,262.7	\$1,408.1	\$145.3	11.5%
Defense (other) R&D	\$1,222.4	\$1,363.0	\$140.7	11.5%
Fire/rescue/safety; Enviro Protect	\$1,190.4	\$1,367.0	\$176.6	14.8%
Non-Nuclear Ship Repair	\$997.1	\$1,108.1	\$111.0	11.1%
Other Research/development	\$961.6	\$1,081.8	\$120.1	12.5%
Defense Systems R&D	\$823.4	\$959.6	\$136.2	16.5%
Comm/detect/coherent Radiation	\$643.4	\$739.0	\$95.7	14.9%
Construction Of Buildings	\$516.8	\$613.9	\$97.2	18.8%
Operate Govt Owned Buildings	\$469.5	\$524.2	\$54.7	11.6%

As shown in the updated Spending by Industry table, 1,132 jobs may be lost including 1,091 jobs lost in the manufacturing sector because of their direct ties to the defense contract. When the multiplier effect is considered, the loss of jobs in the manufacturing sector could total 2,075.

Spending by Industry

Virginia, **Alternative Scenario**, Based on Adjusted Data

Industry	Contract Spending Baseline (Millions)	Contract Spending Alternate (Millions)	Contract Dependent Empl Alternate		Empl Change from Baseline		Avg Ann Wages FY 2017
			Direct	Total	Direct	Total	
Total - All Industries	\$34,582.6	\$34,082.6 (-1.4%)	129,274	209,020	-1,132	-2,148	\$55,126
NAICS 54 - Professional, Scientific, and Technical Services	\$17,190.2	\$17,181.8 (0.0%)	70,744	111,891	-36	-64	\$100,376
NAICS 31 - Manufacturing	\$8,489.9	\$7,999.4 (-5.8%)	22,195	38,140	-1,091	-2,075	\$57,955
NAICS 51 - Information	\$2,313.1	\$2,313.1 (0.0%)	3,126	6,880	0	0	\$90,206
NAICS 56 - Administrative and Support and Waste Management and Remediation Services	\$1,591.2	\$1,591.1 (0.0%)	8,834	13,289	-1	-1	\$40,529
NAICS 42 - Wholesale Trade	\$1,433.0	\$1,432.7 (0.0%)	5,543	9,728	-1	-2	\$78,580
NAICS 23 - Construction	\$1,119.1	\$1,118.9 (0.0%)	4,950	7,412	0	-1	\$52,687
NAICS 48 - Transportation and Warehousing	\$833.9	\$833.9 (0.0%)	2,934	5,419	0	-1	\$51,702
NAICS 99 - Unclassified	\$490.5	\$490.3 (-0.1%)	2,460	4,794	-2	-3	\$45,448
NAICS 81 - Other Services (except Public Administration)	\$357.2	\$357.1 (0.0%)	1,715	2,521	-1	-1	\$36,186
NAICS 61 - Educational Services	\$280.4	\$280.4 (0.0%)	2,610	3,362	0	0	\$44,453
NAICS 62 - Health Care and Social Assistance	\$248.0	\$248.0 (0.0%)	2,070	2,716	0	0	\$40,006

The alternative scenario also updates the DoD-Dependent Occupations table. In the example below, the \$500 million cancellation of ships, small craft, pontoons, and floating docks contracts could result in, among other losses, job losses of 121 welders, cutters, solderers, and brazers.

Top Defense Contract Dependent Occupations ▲ ●

Virginia, Alternative Scenario, Based on Adjusted Data

Rank	Title	Employment			% Contracts
		Baseline	Alternative	Change	
22	Welders, Cutters, Solderers, and Brazers	1867	1745	-121	21.4%
125	Team Assemblers	1515	1453	-63	8.0%
131	First-Line Supervisors of Production and Operating Workers	1101	1047	-55	7.8%
239	Plumbers, Pipefitters, and Steamfitters	653	610	-43	4.0%
267	Electricians	669	627	-42	3.3%
10	Structural Metal Fabricators and Fitters	561	523	-38	29.0%
82	Machinists	727	697	-31	11.0%
14	Mechanical Engineers	1969	1943	-26	25.4%
259	Carpenters	964	939	-25	3.4%
2	Layout Workers, Metal and Plastic	291	267	-24	38.7%
53	Painters, Transportation Equipment	328	303	-24	14.6%
11	Mechanical Drafters	613	591	-23	27.8%
122	Production, Planning, and Expediting Clerks	726	706	-21	8.2%
30	Aerospace Engineers	450	431	-20	19.1%
189	Helpers--Production Workers	438	420	-19	5.6%
42	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	247	229	-18	16.1%
45	Riggers	209	192	-17	15.7%
296	Laborers and Freight, Stock, and Material Movers, Hand	1507	1490	-17	2.6%
102	Inspectors, Testers, Sorters, Samplers, and Weighers	926	911	-15	9.3%
71	Engineers, All Other	608	594	-14	11.9%

Showing 1 to 20 of 598 entries

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