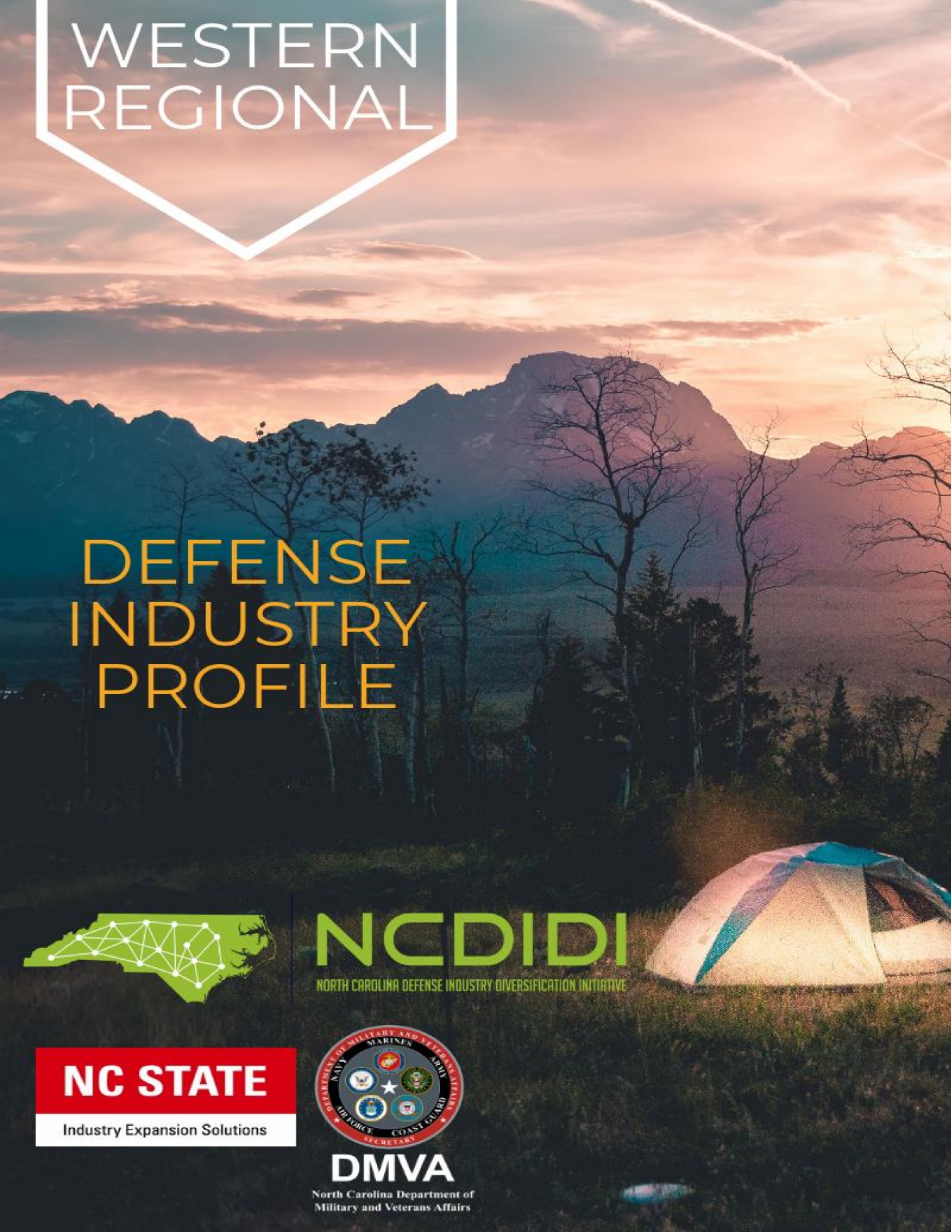


WESTERN REGIONAL

DEFENSE INDUSTRY PROFILE

NCDIDI

NORTH CAROLINA DEFENSE INDUSTRY DIVERSIFICATION INITIATIVE

NC STATE

Industry Expansion Solutions

DMVA

North Carolina Department of Military and Veterans Affairs

Secretary Larry D. Hall
North Carolina Department of
Military and Veterans Affairs

Executive Director Phil Mintz
Industry Expansion Solutions
North Carolina State University

North Carolina boasts significant defense assets. According to the United States Department of Defense Office of Economic Adjustment State by State Report, in fiscal year 2017, DoD spending in North Carolina totaled $3.3B, ranking the state 23rd nationally in total defense contracts spending. In addition, North Carolina is home to six active military installations, has over fifty percent of all Special Operations Forces and has the 3rd largest active duty presence in the nation.

With these active installations and a diverse industrial base, North Carolina has strong links to the military and the companies and people that support it. What North Carolina lacks, however, is a data-driven approach to quantifying the breadth of its defense sector – as well as its potential vulnerability and opportunities for enhancement and growth – amid a changing defense spending landscape.

In 2017, the North Carolina Defense Industry Diversification Initiative (NC DIDI) was established via a planning grant from the Department of Defense Office of Economic Adjustment (OEA). As Co-Chairs of the NCDIDI Advisory Board, it is our privilege to bring together partners and stakeholders from industry, government, and academia to improve the knowledge of the impact of the defense industry on North Carolina's economy.

As a preliminary step to helping local communities adapt to DoD program changes, expansions, and cutbacks, a DoD Supply Chain study was conducted in 2017-18. Today, data and information gathered for that study is being used to: 1) help identify suppliers and other sectors at risk in the event of a local company or plant closure; 2) identify potential new markets for these at risk firms; 3) identify local gaps in the supply chain where an OEM is using overseas suppliers and can help support reshoring efforts; 4) help point state, local and regional policy makers identify which existing assets can be aligned to respond to supply chain issues and opportunities.

We later traveled the state from Murphy to Manteo holding Supplier and Contractor Town Halls interviewing the states foremost authorities and stakeholders. Lastly, we sourced data from all the federal defense purchasing offices and federal spend records. All that has led us to having the state's most comprehensive defense cluster analysis, six regional defense industry profiles and a complete strategic plan. Our next task was to develop a commercialization project. We welcomed small-to-medium size manufacturers and service providers to apply to our commercialization program to receive services customized to suit their business. That successful work has expanded and continues.

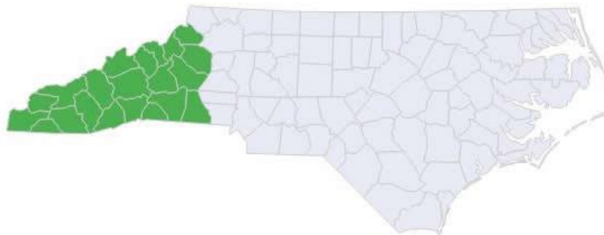
This data-driven DoD supply chain initiative is critical to North Carolina. We know that defense program impacts come in all shapes and sizes and, when defense programs change or are cut, contractors and business and industry may be faced with budget cuts, staff layoffs, or closings. Via funding from OEA, NCDIDI is well positioned to implement a series of proven strategies at a statewide and regional level with a focus on regional job creation through business development, attraction and expansion, workforce development, and community economic diversification. We invite you to join us!

All the best,

Secretary Larry D. Hall
North Carolina Department of
Military and Veterans Affairs

Executive Director Phil Mintz
Industry Expansion Solutions
North Carolina State University

Western Regional Defense Industry Profile



Counties included: Avery, Buncombe, Burke, Caldwell, Cherokee, Clay, Cleveland, Graham, Haywood, Henderson, Jackson, Macon, Madison, McDowell, Mitchell, Polk, Rutherford, Swain, Transylvania, Watauga and Yancey

Snapshot of Defense Contractors in the Western Region

The Western region ranks fourth in the state for the amount of DoD awards and fifth in the number of DoD contractor establishments. In the period used (FY 13-17), the Western region's DoD concentration decreased sharply in the number of establishments receiving awards. This region's awards are significantly concentrated in manufacturing, more so than any other region. The top 25 contractors account for almost 98% of the region's awards, leaving the remaining 2% or 137 contractors to split $34M in awards.

DEFENSE CONTRACTORS

162

DEFENSE CONTRACTS VALUE

$1.4 Billion

TOP FIVE INDUSTRIES BY AWARD

1. Manufacturing 84%
2. Professional, Scientific, & Technical Services 5%
3. Construction 4%
4. Other Services 3%
5. Wholesale Trade 2%

TOP FIVE INDUSTRIES BY PERCENTAGE OF ESTABLISHMENTS

1. Manufacturing 41%
2. Health Care & Social Assistance 36%
3. Retail Trade 6%
4. Professional, Scientific, & Technical Services 5%
5. Wholesale Trade 4%

JOBS SUPPORTED BY DEFENSE CONTRACTS

8800

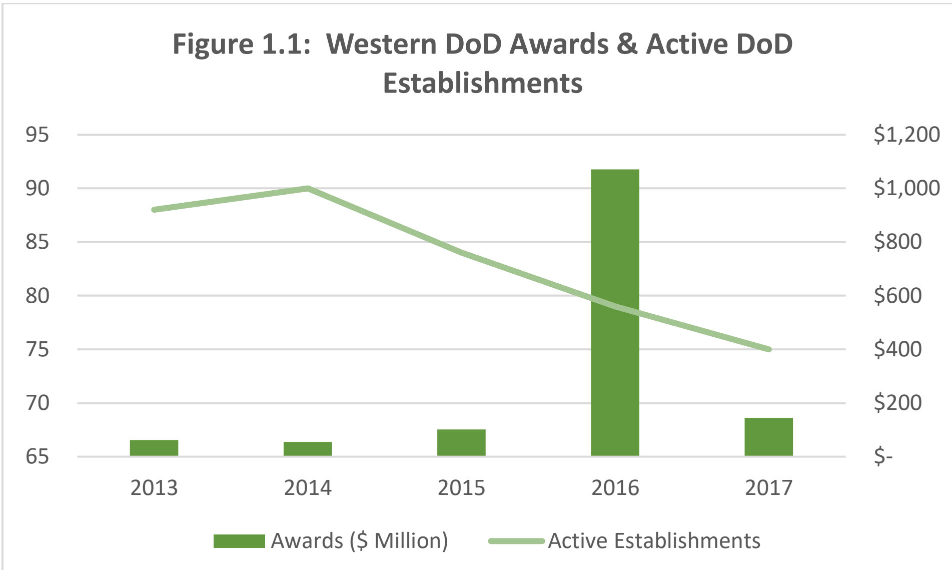
TOP FIVE CONTRACTORS BY AWARD

1. Curtiss-Wright Controls, Inc. $970M
2. Kearfott Corporation $78M
3. Saft America Inc $54M
4. Herve Cody $50M
5. Aermor LLC $45M

Five Year Trends

Figure 1.1 and Table 1.2 below show that until 2016 the Western region received the lowest value of DoD awards among the regions. A huge spike occurred in 2016, with 2017 returning to a value only slightly larger than the Northeast Region. The 2016 spike was due primarily to CURTISS-WRIGHT CONTROLS, INC. which received a major award of $962m.

Though with a bump in 2014, the number of firms receiving awards fell across the five-year span, ending with 2017 nearly 15% below 2013.



Sources: NC DIDI estimates, USAspending.gov

1. DoD awards are defined using USAspending reported "Base and Exercised Options Values" (both positive and negative) during the time span in question.
2. Regions are based on NC Commerce Prosperity Zones.
3. Awards included both prime and named sub-contracts.
4. An active DoD establishment is defined as one with at least one financial transaction (positive or negative) during the time span in question.

Over the 2013-2017 period, 162 firms (defined as establishments with unique DUNS numbers) received at least one financial transaction associated with a prime or named sub-contract award from DoD. This total represents the Western Region's defense contractor population.[1]

Table 1.2: Western, Active DoD Establishments, 2013-17

Fiscal Year	Firm Count
2013	88
2014	90
2015	84
2016	79

[1] The potential defense industrial base can be defined as including any establishment registered in SAM to engage in business with the federal government. In this report we use a narrower definition, focusing on those establishments that held at least one active contract or named subcontract with DoD during 2013-2017.

2017	75
Active Anytime 2013-17	162
Change 2013-17	-14.8%

Sources: NC DIDI estimates, USAspending.gov
1. Regions are based on NC Commerce Prosperity Zones.
2. An active DoD establishment is defined as one with at least one financial transaction (positive or negative) during the time span in question.

Largest Regional Defense Establishments: 2013-17

Table 1.3 below provides a list of the Western region's top 25 defense contractors based on cumulative DoD awards over 2013-2017. These 25 firms have total cumulative DoD awards over $1.4b, some 98 percent of all DoD awards to the region. CURTISS-WRIGHT CONTROLS, INC is by far the largest recipient of DoD awards accounting for 68.0% of the total and is the only firm receiving over $100m. Three additional establishments received between $50m and $100m cumulative 2013-17 DoD awards. Only 37 of the region's 162 establishments received over $1.0m during 2013-17.

Table 1.3: Western Region: Top 25 DoD Vendors, Cumulative 2013-17 Awards

DUNS	Vendor Name	Cumulative 2013-17 DoD Awards	Share of Region
960173748	CURTISS-WRIGHT CONTROLS, INC	$ 970,648,680	67.7%
1141274	KEARFOTT CORPORATION	$ 77,991,414	5.4%
197962202	SAFT AMERICA INC	$ 54,398,776	3.8%
24770141	HERVE CODY	$ 50,338,117	3.5%
962007634	AERMOR LLC	$ 44,903,957	3.1%
832839281	ULTRA ARMORING, LLC	$ 39,483,570	2.8%
3161122	MILLS MANUFACTURING CORPORATION	$ 33,952,325	2.4%
829877328	EPSILON, INC.	$ 23,975,879	1.7%
141876420	ACF TECHNOLOGIES, INC.	$ 17,694,517	1.2%
109016329	VOLVO CONSTRUCTION EQUIPMENT NORTH AMERICA, LLC	$ 15,892,949	1.1%
96790493	AVL TECHNOLOGIES INC	$ 11,699,876	0.8%
3154614	WC&R INTERESTS, LLC	$ 9,968,044	0.7%
805453669	WINSTON-SALEM INDUSTRIES FOR THE BLIND, INC.	$ 7,013,564	0.5%
170755479	THERMO FISHER SCIENTIFIC (ASHEVILLE) LLC	$ 5,290,045	0.4%
39051032	MOOG INC.	$ 5,054,003	0.4%
24671414	GREER LABORATORIES, INC.	$ 4,537,553	0.3%
927380881	AEGIS POWER SYSTEMS, INC.	$ 3,626,582	0.3%
5330592	EMERY CORPORATION	$ 3,622,467	0.3%
2329456	ROCKWOOD LITHIUM INC.	$ 3,247,172	0.2%
79365692	VETBIZCORP, LLC	$ 3,245,923	0.2%
40293818	MAINTENANCE AND INSPECTION SERVICES, INC.	$ 3,157,733	0.2%
784426954	BLUE RIDGE RESEARCH AND CONSULTING, LLC	$ 2,650,593	0.2%
41072547	BUCKEYE FIRE EQUIPMENT COMPANY	$ 2,597,256	0.2%
79604426	CONRAD EMBROIDERY COMPANY, LLC	$ 2,476,110	0.2%
809997695	BENTON ROOFING, INC.	$ 2,138,434	0.1%
	Top 25 Total	**$ 1,399,605,538**	**97.6%**
	Western Region Total	**$ 1,434,026,534**	**100.0%**

Sources: NC DIDI estimates, USAspending.gov
1. DoD awards are defined using USAspending reported "Base and Exercised Options Values" (both positive and negative) during the time span in question.
2. Regions are based on NC Commerce Prosperity Zones.

3. Awards included both prime and named sub-contracts.

Product Service Code Category Composition

Table 1.4 provides a summary of the major DoD awards to the Western region from 2013-17, by PSC Category. Numerical codes represent products, while alphanumeric codes represent service categories. Only those PSC categories that accounted for 3.0% or more of regional DoD cumulative awards are reported.

Nearly 80% of awards were concentrated in just 11 PSC categories: seven product and four services. Though small in aggregate, the composition of the Western region's prime awards is more diversified and more in manufacturing than the other regions and appears to be less focused on base and operational support.

Table 1.4: PSC Category Shares of the Western Region's Cumulative 2013-17 DoD Prime Awards
(Only PSC Categories with Awards > 1.0% of Regional Total Awards Shown)

PSC Category	PSC Category Name	DoD Award Concentration
16	AEROSPACE CRAFT COMPONENTS AND ACCESSORIES	14.4%
23	MOTOR VEHICLES, CYCLES, TRAILERS	8.9%
38	CONSTRUCT/MINE/EXCAVATE/HIGHWY EQPT	4.3%
59	ELECTRICAL/ELECTRONIC EQPT COMPNTS	3.3%
61	ELECTRIC WIRE, POWER DISTRIB EQPT	12.4%
83	TEXTILE/LEATHER/FUR; TENT; FLAG	3.4%
84	CLOTHING, INDIVIDUAL EQUIPMENT, INSIGNA, AND JEWELRY	3.8%
D	ADP AND TELECOMMUNICATIONS	10.1%
R	SUPPORT SVCS (PROF, ADMIN, MGMT)	3.9%
Y	CONSTRUCT OF STRUCTURES/FACILITIES	7.5%
Z	MAINT, REPAIR, ALTER REAL PROPERTY	7.5%
Total Region (%)		79.5%
Total Region ($million)		$ 368.98

Sources: NC DIDI estimates, USAspending.gov

1. DoD awards are defined using USAspending reported "Base and Exercised Options Values" (both positive and negative) during the time span in question.
2. Regions are based on NC Commerce Prosperity Zones.
3. Awards include only prime contracts.
4. An active DoD establishment is defined as one with at least one financial transaction (positive or negative) during the time span in question.

Industry Composition of Western Regional Defense Activity

This section addresses the industry composition of defense activity for the Western Region using several different measures. The detailed data for this analysis is provided in the companion spreadsheet. It is divided into two sections: *Industry Sector Concentration of Charlotte Region Defense* and *Cluster Concentration of Charlotte Region Defense Activity*.

Industry Sector Concentration of Western Region Defense Activity

This section will address each industry sector in which the sector share of cumulative 2013-17 DoD awards is at least 3.0%, instead of the 5.0% used for most of the other regions.

- **Manufacturing** has, by far, the largest concentration of the regional defense activity on all three metrics: 84.3% of cumulative awards, 41% of employees, and 34% of establishments. The Western Region's 55 manufacturing establishments received $1,208m cumulative DoD awards, and reported 3,612 employees (11 establishments did not report employment).

  Dominant subsectors for awards:

Subsector	Percentage
NAICS 336 –Transportation Equipment Manufacturing	73.2%
NAICS 335 – Electrical Equipment, Appliance, & Component Mfg	4.4%

  Dominant subsectors for reported employees:

Subsectors	Employees
NAICS 336 -- Transportation Equipment Manufacturing	9%
NAICS 335 -- Electrical Equipment, Appliance, & Component Mfg.	8.1%
NAICS 333 -- Machinery Manufacturing	6.2%
NAICS 334 -- Computer and Electronic Product Manufacturing	5.7%
NAICS 337 -- Furniture and Related Product Manufacturing	3.1%
NAICS 332 -- Fabricated Metal Product Manufacturing	2%
NAICS 325 -- Chemical Manufacturing	1.3%

  Of the 55 regional manufacturing establishments one, CURTISS-WRIGHT CONTROLS, INC received cumulative awards of $971m (reporting 25 employees), concentrated in 2016. This represented 80% of the region's total cumulative DoD awards in Manufacturing.
  For the remaining 54 establishments, 18 had cumulative DoD awards over $1.0m; four of which were between $10m and $80m; four between $5m and $10m; and 10 between $1.0m and $5m.

  The top five were:

Company	Awards	Employees
CURTISS-WRIGHT CONTROLS, INC	$971M	25
KEARFOTT CORPORATION	$78M	405
SAFT AMERICA INC	$54M	275
MILLS MANUFACTURING CORPORATION	$34M	87
AVL TECHNOLOGIES INC	$12M	100

  Only 10 firms reported more than 100 employees. Of those, seven reported 200 or more employees and three more than 300. The top employers reporting were:

Company	Awards	Employees
KEARFOTT CORPORATION	$78M	405
MOOG INC.	$5M	400
PARKER-HANNIFIN CORPORATION	$202K	350

- **Professional Scientific and Technical Services** is the second largest regional recipient of cumulative DoD awards (5.5%), fourth in reported employees (5.0%) and second in number of DoD establishments (17.3%). The sector contains of 28 DoD establishments receiving $78m in awards and reporting 436 employees (with seven establishments not reporting employees—some 25%).

The dominant industry groups by awards were:

Subsector	Percentage
NAICS 5413 -- Architectural, Engineering, and Related Services	3.7%
NAICS 5415 -- Computer Systems Design and Related Services	1.7%

The dominant industry groups by reported employees were the same:

Subsector	Employees
NAICS 5413 -- Architectural, Engineering, and Related Services	2.4%
NAICS 5415 -- Computer Systems Design and Related Services	1.7%

DoD awards were distributed to five establishments with awards over $1M and two establishments between $20M-$45M.

The top two awardees were:

Company	Awards	Employees
AERMOR LLC	$45M	97
EPSILON, INC.	$24M	90

No establishment reported employment over 97.

- **Construction** has the third largest regional concentration of cumulative DoD awards (4.2%), and of DoD establishments (9.9%) but only a modest share of reported employees (2.1%). The cluster's 16 establishments received cumulative DoD awards of $60m and reported 186 employees, with 5 establishments not reporting employees.

The dominant industry group for awards was:

Subsector	Percentage
NAICS 2379 -- Other Heavy and Civil Engineering Construction	3.6%

Only five establishments received cumulative awards over $1.0m, with one dominant firm over $50m:

Company	Awards	Employees
HERVE CODY	$50M	Not reported
BENTON ROOFING, INC.	$2.1M	35
CHAMBER MTN. CONSTRUCTION INC.	$2M	Not reported
INTRAM COMPANY	$1.9M	25
PHILLIPS AND JORDAN, INCORPORATED	$1.3M	15

No establishment reported more than 44 employees

- **Other Services (except Public Administration)** ranks fourth in the share of cumulative DoD awards received (3.0%), with just 2.6% of reported employees and 3.7% of establishments. The sector contains six establishments, reporting $43m in awards and 229 employees (with one establishment not reporting employees).

  The dominant industry group by awards was:

Subsector	Percentage
NAICS 8111 -- Automotive Repair and Maintenance	2.8%

  The top three awardees were:

Company	Awards	Employees
ULTRA ARMORING, LLC	$39M	82
ARCHWAY SERVICE, INC.	$1.4M	43
DUOTECH SERVICES, INC	$1.2M	25

  No establishments reported employment over 82.

Table 1.5: Western Region: Distribution of DoD Activity by Industry Sector (2-Digit NAICS)

(Shares of Region Cumulative 2013-17 DoD Awards, 2017 Reported Employees, and Number of Active DoD Establishments)

NAICS Sector	NAICS Sector Title	DoD Awards Concentration	DoD-Related Employee Concentration	DoD Establishment Concentration
11	Agriculture, Forestry, Fishing & Hunting	0.0%	0.0%	0.6%
21	Mining, Quarrying, & Oil & Gas Extraction	0.0%	0.0%	0.0%
22	Utilities	0.0%	0.0%	1.2%
23	Construction	4.2%	2.1%	9.9%
31-33	Manufacturing	84.3%	41.0%	34.0%
42	Wholesale Trade	2.4%	3.6%	9.3%
44-45	Retail Trade	0.1%	5.9%	6.2%
48-49	Transportation & Warehousing	0.0%	0.0%	0.0%
51	Information	0.0%	0.1%	1.9%
52	Finance & Insurance	0.0%	0.1%	0.6%
53	Real Estate & Rental & Leasing	0.0%	0.0%	0.6%
54	Professional, Scientific, & Technical Services	5.5%	5.0%	17.3%
55	Management of Companies & Enterprises	0.0%	0.0%	0.0%
56	Administrative & Support & Waste Management & Remediation Services	0.5%	1.4%	6.2%
61	Educational Services	0.0%	0.0%	0.6%
62	Health Care & Social Assistance	0.1%	35.6%	1.9%
71	Arts, Entertainment, & Recreation	0.0%	0.1%	0.6%
72	Accommodation & Food Services	0.0%	2.5%	5.6%
81	Other Services (ex. Public Administration)	3.0%	2.6%	3.7%
92	Public Administration	0.0%	0.0%	0.0%
	Unknown			0.0%
	Region Totals (%)	**100.0%**	**100.0%**	**100.0%**
	Region Totals ($ million)	**$ 1,434**	**8,800**	**162**

Sources: NC DIDI estimates, USAspending.gov, Hoovers

1. DoD awards are defined using USAspending reported "Base & Exercised Options Values" (both positive & negative) during the time span in question (here cumulative 2013-17 DoD awards).
2. Primary NAICS are as reported to Hoovers or, for firms not reporting NAICS in Hoovers, are estimated based on the predominant share of principal NAICS associated with each firm's DoD contracts.
3. Regions are based on NC Commerce Prosperity Zones.
4. Awards included both prime & named sub-contracts.
5. An active DoD establishment is defined as one with at least one financial transaction (positive or negative) during the time span in question (here active anytime during 2013-17).
6. Data on employees is "employees at location" reported in Hoovers for 2017, and is for all employees, not just those working on DoD contracts. Not all defense establishments report employees in Hoovers.

Cluster Concentration of Western Region Defense Activity

This section for most of the regions will address each industry cluster in which the cluster share of cumulative 2013-17 DoD awards, reported employees, or establishments is at least 3.0%. A cluster is a regional concentration of related industry. The clusters have been defined by the U.S. Cluster Mapping Project.

Note that over 90% of total cumulative DoD awards were in 10 clusters that met these threshold criteria (six traded and four local).[2]

The 6 clusters below are Traded Clusters and are the engines of regional economies. They serve markets in other regions or nations.

- **Aerospace Vehicles and Defense Cluster:** This is by far the most defense awards concentrated regional cluster (73.2%), reporting 5% of employment but only 2.5% of the DoD establishments. It contains just four establishments, receiving $1,049M in awards and reporting 444 employees (one firm not reporting employees).

  One establishment dominated awards, with one distant second place:

Company	Awards	Employees
CURTISS-WRIGHT CONTROLS, INC	$971M	25
KEARFOTT CORPORATION	$78M	495

- **Business Services Cluster**: This is the second largest cluster based on cumulative DoD awards (5.5%), fifth largest based on employees (4.5%), and first based on the regions total DoD establishments (11.7%). It consists of 19 establishments, receiving $79m in cumulative DoD awards and reporting 398 employees (three firms did not report employees).

  The top firms by DoD awards were distributed:
    - Six greater than $1.0m,
    - of which two were between $20M and $45M
    - and four between $1M and $4M.

---

[2] Dropping the award threshold from 5% to 3% added two clusters to the deeper analysis; the Communications Equipment Services Cluster and the Construction Products and Services Cluster.

The top two firms by cumulative DoD awards included:

Company	Awards	Employees
AERMOR LLC	$45M	97
EPSILON, INC.	$25M	90

No establishment reported employee totals more than 97.

- **Communications Equipment Service Cluster:** This cluster had the third highest share of DoD cumulative awards (4.6%), a small share of establishments (1.2%), and a modest (sixth largest) share of reported employees (4.3%). This cluster includes only two establishments, $66m in cumulative awards, and reports 375 employees.

  The two players were:

Company	Awards	Employees
SAFT AMERICA INC	$54M	275
AVL TECHNOLOGIES INC	$12M	100

- **Construction Products and Services Cluster**: This cluster just cleared the lower awards concentration threshold established for this region (3.7%), with a tiny share of reported employment (0.3%) and a small share of DoD establishments (3.1%). This cluster includes five establishments, $53m in cumulative awards, and reports only 24 employees (two establishments did not report employees).

  This cluster's awards were dominated by one establishment, with only one additional establishment receiving over $1.0m:

Company	Award	Employees
HERVE CODY	$50M	Not reported
RES PHILLIPS AND JORDAN, INCORPORATED	$1.3M	15

- **Distribution and Electronic Commerce Cluster:** Distribution had low DoD awards (2.4%) and employment (3.1%) concentrations but represented 8.6% of regional DoD establishments. The cluster contained 14 DoD establishments, received cumulative awards of $34m, and reported 274 employees.

  Only 2 establishments had cumulative DoD awards over $1.0m, both over $15m. The top award recipients were:

Company	Awards	Employees
ACF TECHNOLOGIES, INC.	$18M	24
VOLVO CONSTRUCTION EQUIPMENT NORTH AMERICA, LLC	$16M	80

No establishment reported more than 80 employees.

- **Production Technology and Heavy Machinery Cluster**: This cluster received a tiny share of DoD awards (0.6%), a modest share of establishments (4.3%) and only made the cut by reporting 5.3% of the regions DoD-related employment. Seven DoD establishments are in this regional cluster, with 465 employees (one establishment not reporting employees), and $8m in DoD awards.

  Only 2 establishments had cumulative DoD awards over $1.0m. The top award recipients were:

Company	Awards	Employees
THERMO FISHER SCIENTIFIC (ASHEVILLE) LLC	$5.3M	260
BUCKEYE FIRE EQUIPMENT COMPANY	$2.6M	45

  Only THERMO FISHER SCIENTIFIC (ASHEVILLE) LLC reported employment over 60.

- **Local Commercial Services Cluster:** The 16 DoD establishments in this cluster (5.6% of total regional DoD establishments) provide a wide array of services. They represent a tiny 0.4% concentration of DoD awards ($14m) and a small 1.4% share of reported employees (587), with 3 establishments not reporting employees.

  Four establishments received over $1.0m in cumulative DoD awards, all between $1.5m and $5.5m. The top four were:

Company	Awards	Employees
THERMO FISHER SCIENTIFIC (ASHEVILLE) LLC	$5.3M	260
MAINTENANCE AND INSPECTION SERVICES, INC.	$3.2M	70
BUCKEYE FIRE EQUIPMENT COMPANY	$2.6M	45
MIND YOUR BUSINESS, INC.	$1.6M	12

  Only THERMO FISHER SCIENTIFIC (ASHEVILLE) LLC reported employment of more than 70.

- **Local Health Services Cluster:** This 3-establishment cluster has a tiny 0.1% DoD awards concentration ($1.0m) and a small 1.9% establishment concentration (1.9%) but by far the highest 35.6% regional employee concentration (3,129). As noted for other regions, very large reported employment by hospital systems often gives this cluster a very high DoD concentration ranking, and this is the case for the Western Region as well. This cluster makes the list primarily due to MISSION HOSPITAL, INC. It received only $80k in awards and reported 3,000 employees (some 96% of the cluster total).

  No establishment received more than $1.0m in awards, and only one besides the hospital reported more than 100 employees.

Company	Awards	Employees
TRANSYLVANIA VOCATIONAL SERVICES INC	$610K	125

- **Local Real Estate, Construction, and Development Cluster**: This cluster has a tiny regional concentration of DoD awards (0.5%), a small concentration of reported employees (1.8%), but

makes the cut with a 6.8% concentration of DoD establishments. Eleven DoD establishments are in this regional cluster, with 162 employees (three establishments not reporting employees), and $7.8m in DoD awards. Reported employee counts in this cluster are highly deceptive, since most firms use an extensive array of subcontractors and vendors on each project. Though defined as a local cluster, we note that in the DoD contracting world, some construction companies support out-of-region, indeed, out-of-state projects. Analysis of specific DoD award portfolios for individual firms would be required to sort out the flows.
This may be the least active defense-related Local Real Estate, Construction, and Development Cluster among the six regions. Three of the 11 establishments received at least $1.0m in cumulative DoD awards.

The top three establishments by cumulative DoD awards were:

Company	Awards	Employees
BENTON ROOFING, INC.	$2.3M	35
CHAMBER MTN. CONSTRUCTION INC.	$2M	Not reported
INTRAM COMPANY	$1.9M	25

No establishment reported more than 44 employees.

- **Local Retailing of Clothing and General Merchandise Cluster:** This cluster has a tiny regional concentration of DoD awards (<0.1%), a small concentration of DoD establishments (1.2%) but makes the cut with a reported employees concentration of 5.1%. Only two DoD establishments are in this regional cluster, with 450 employees (one establishment not reporting employees), and only $12k in DoD awards.

Table 1.6: Western Region: Distribution of DoD Activity By High Concentration Industry Clusters
(Shares greater than 3% of Region Cumulative 2013-17 DoD Awards, or shares greater than 5% of 2017 Reported Employees and Number of Active DoD Establishments)

Cluster	DoD Awards Concentration	DoD-Related Employment Concentration	DoD Establishment Concentration
Traded Clusters High Concentration			
Aerospace Vehicles and Defense	73.2%	5.0%	2.5%
Business Services	5.5%	4.5%	11.7%
Communications Equipment Services	4.6%	4.3%	1.2%
Construction Products and Services	3.7%	0.3%	3.1%
Distribution and Electronic Commerce	2.4%	3.1%	8.6%
Production Technology and Heavy Machinery	0.6%	5.3%	4.3%
Local Clusters High Concentration			
Local Commercial Services	0.4%	1.4%	5.6%
Local Health Services	0.1%	35.6%	1.9%
Local Real Estate, Construction, and Development	0.5%	1.8%	6.8%
Local Retailing of Clothing and General Merchandise	0.0%	5.1%	1.2%
Summary			
Traded Clusters High Concentration	89.9%	22.5%	31.5%
Local Clusters High Concentration	1.0%	43.9%	15.4%
Total High Concentration	90.9%	66.4%	46.9%
Total ($million, counts)	$1,434	8,800	162

Sources: NC DIDI estimates, USAspending.gov, Hoovers, U.S. Cluster Mapping Project

1. DoD awards are defined using USAspending reported "Base & Exercised Options Values" (both positive & negative) during the time span in question (here cumulative 2013-17 DoD awards).
2. Clusters are composite of 6-digit Primary NAICS codes based on a variety of interdependencies, as defined by the U.S. Cluster Mapping Project. Primary NAICS are as reported to Hoovers or, for firms not reporting NAICS in Hoovers, are estimated based on the predominant share of principal NAICS associated with each firm's DoD contracts.
3. Regions are based on NC Commerce Prosperity Zones.
4. Awards included both prime & named sub-contracts.
5. An active DoD establishment is defined as one with at least one financial transaction (positive or negative) during the time span in question (here active anytime during 2013-17).
6. Data on employees is "employees at location" reported in Hoovers for 2017, and is for all employees, not just those working on DoD contracts. Not all defense establishments report employees in Hoovers.

Regional Comparisons

Each region of the state has a unique defense industry profile, and the regional patters are markedly different. Table 1.7 summarizes DoD awards to North Carolina and its regions for fiscal years 2013-2017. The Western region would have been the smallest region for cumulative DoD awards if not for a very large spike due to one award in 2016 and has seen remarkable growth over the timeframe, with the 2017 DoD awards 132% higher than the 2013 awards.

Table 1.7: North Carolina: DoD Awards by IES Region, 2013-17 ($ millions)

Region	2013 DoD Awards	2014 DoD Awards	2015 DoD Awards	2016 DoD Awards	2017 DoD Awards	Cumulative 2013-17 Awards	Regional Shares, 2013-17 Awards	Percent Change 2013-17	Absolute Change

Charlotte	$500.60	$336.50	$429.90	$267.60	$1,030.10	$2,564.70	21.00%	105.80%	$529.50
Eastern	$396.20	$412.20	$292.20	$236.20	$374.10	$1,710.80	14.00%	-5.60%	($22.10)
Northeast	$252.80	$152.90	$113.00	$77.30	$114.20	$710.20	5.80%	-54.80%	($138.60)
Piedmont Triad	$171.20	$197.60	$268.20	$318.80	$303.10	$1,258.90	10.30%	77.00%	$131.90
Research Triangle	$1,014.20	$919.60	$806.30	$850.40	$923.30	$4,513.90	37.00%	-9.00%	($90.90)
Western	$62.10	$55.50	$101.80	$1,070.60	$144.00	$1,434.00	11.80%	131.70%	$81.80
Annual Totals	$2,397.10	$2,074.20	$2,011.30	$2,820.90	$2,888.80	$12,192.40	100.00%	20.50%	$491.70

Sources: NC DIDI estimates, USAspending.gov

1. DoD awards are defined using USAspending reported "Base and Exercised Options Values" (both positive and negative) during the time span in question.
2. Regions are based on NC Commerce Prosperity Zones.
3. Awards included both prime and named sub-contracts.
4. An active DoD establishment is defined as one with at least one financial transaction (positive or negative) during the time span in question.

Table 1.8 summarizes the number of active DoD establishments in North Carolina and its regions for fiscal years 2013 through 2017. These totals include both prime and sub-contractors (some firms are both and are not double counted). The resulting patterns show significant differences among the regions as well as with DoD award totals.

The state and all regions have lost active DoD establishments over the 2013-17 span. At the state level, 2017 is some 13% below 2013. The **Western** region experienced a 15% decline in active DoD establishments.

Table 1.8: North Carolina: Active DoD Establishments by IES Region, 2013-17

Region	Active 2013 DoD Estab	Active 2014 DoD Estab	Active 2015 DoD Estab	Active 2016 DoD Estab	Active 2017 DoD Estab	Active DoD Estab 2013-17	Shares, 2013-17 Estab	Percent Change 2013-2017	Absolute Change
Charlotte	334	349	354	323	317	727	20.60%	-5.10%	-17
Eastern	406	360	357	335	317	762	21.60%	-21.90%	-89
Northeast	80	80	78	73	72	160	4.50%	-10.00%	-8
Piedmont Triad	227	196	198	183	185	421	11.90%	-18.50%	-42
Research Triangle	615	591	602	586	559	1,292	36.70%	-9.10%	-56
Western	88	90	84	79	75	162	4.60%	-14.80%	-13
Grand Total	1,750	1,666	1,673	1,579	1,525	3,524	100.00%	-12.90%	-225

Sources: NC DIDI estimates, USAspending.gov

1. DoD awards are defined using USAspending reported "Base and Exercised Options Values" (both positive and negative) during the time span in question.
2. Regions are based on NC Commerce Prosperity Zones.
3. Awards included both prime and named sub-contracts.
4. An active DoD establishment is defined as one with at least one financial transaction (positive or negative) during the time span in question.

Regional Industry Sector Comparisons

Table 1.9 below presents the regional concentrations of cumulative 2013-17 awards to active DoD establishments at the 2-digit NAICS industry sector level. Regional and Sector totals are provided to show scale. Manufacturing, Construction and Professional, Scientific and Technical Services dominate overall; however, this pattern is not consistent across the regions. Manufacturing dominates the Western region, representing 84% of all regional cumulative DoD awards, with Professional, Scientific and Technical Services and Construction very distant second and third place finishers.

Table 1.9: North Carolina: Regional Concentration of DoD Awards by Industry Sector
(Share (%) of Region Cumulative 2013-17 DoD Awards and US$ Millions)

NAICS Sector	NAICS Sector Title	Charlotte	Eastern	Northeast	Piedmont Triad	Research Triangle	Western	Sector Totals (%)	Sector Totals ($ mil)
11	Agriculture, Forestry, Fishing & Hunting	0.00%	0.10%	0.00%	0.00%	0.00%	0.00%	0.00%	$2
21	Mining, Quarrying, & Oil & Gas Extraction	0.10%	0.00%	0.00%	0.00%	0.10%	0.00%	0.00%	$5
22	Utilities	9.20%	0.40%	0.00%	0.00%	6.00%	0.00%	4.20%	$511
23	Construction	9.60%	64.50%	18.10%	4.70%	26.60%	4.20%	23.00%	$2,800
31-33	Manufacturing	46.90%	2.90%	9.80%	59.00%	7.90%	84.30%	29.80%	$3,628
42	Wholesale Trade	9.00%	3.40%	6.90%	3.90%	3.50%	2.40%	4.80%	$580
44-45	Retail Trade	0.40%	2.20%	0.00%	0.30%	7.40%	0.10%	3.20%	$385
48-49	Transportation & Warehousing	0.80%	0.80%	0.30%	0.90%	0.50%	0.00%	0.60%	$70
51	Information	0.30%	0.20%	13.90%	4.40%	4.70%	0.00%	3.10%	$374
52	Finance & Insurance	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	$1
53	Real Estate & Rental & Leasing	0.00%	0.40%	0.20%	0.10%	0.20%	0.00%	0.20%	$19
54	Prof, Scientific, & Tech Services	17.10%	9.70%	4.60%	4.20%	18.80%	5.50%	13.20%	$1,615
55	Mgmt of Companies & Enterprises	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	$0
56	Admin & Support & Waste Mgmt & Remediation Services	4.80%	6.20%	2.30%	0.00%	9.00%	0.50%	5.40%	$655

61	Educational Services	0.00%	0.30%	33.60%	2.80%	10.00%	0.00%	6.00%	$731
62	Health Care & Social Assistance	0.80%	7.30%	9.90%	19.30%	1.40%	0.10%	4.30%	$524
71	Arts, Entertainment, & Recreation	0.00%	0.10%	0.00%	0.00%	0.00%	0.00%	0.00%	$3
72	Accommodatio n & Food Services	0.10%	0.20%	0.00%	0.10%	3.40%	0.00%	1.30%	$158
81	Other Services (ex. Public Admin)	0.90%	0.30%	0.40%	0.40%	0.30%	3.00%	0.80%	$94
92	Public Administration	0.10%	0.90%	0.00%	0.00%	0.40%	0.00%	0.30%	$38
	Region Totals (%)	100.00%	######	######	100.00%	100.00%	######	100.00%	$12,192
	Region Totals ($mil)	$2,565	$1,711	$710	$1,259	$4,514	$1,434	$12,192	

Sources: NC DIDI estimates, USAspending.gov, Hoovers

1. DoD awards are defined using USAspending reported "Base and Exercised Options Values" (both positive and negative) during the time span in question.
2. Primary NAICS are as reported to Hoovers or, for firms not reporting NAICS in Hoovers, are estimated based on the predominant share of principal NAICS associated with each firm's DoD contracts.
3. Regions are based on NC Commerce Prosperity Zones.
4. Awards included both prime and named sub-contracts.
5. An active DoD establishment is defined as one with at least one financial transaction (positive or negative) during the time span in question.

Table 1.10: Regional Concentration of DoD Awards by NAICS Sector

NAICS Sector	NAICS Sector Title	Charlotte	Eastern	Northeast	Piedmont Triad	Research Triangle	Western	Sector Totals	Sector Total ($ million)
11	Agri, Forestry, Fishing & Hunting	0.40%	113.70%	8.90%	-29.70%	6.40%	0.20%	100.00%	$2
21	Mining, Quarrying, & Oil & Gas Extraction	30.30%	5.70%	0.00%	0.00%	64.00%	0.00%	100.00%	$5
22	Utilities	46.00%	1.40%	0.00%	0.00%	52.60%	0.00%	100.00%	$511
23	Construction	8.80%	39.40%	4.60%	2.10%	43.00%	2.20%	100.00%	$2,800
31-33	Manufacturing	33.20%	1.40%	1.90%	20.50%	9.80%	33.30%	100.00%	$3,628
42	Wholesale Trade	39.70%	10.10%	8.40%	8.50%	27.40%	5.90%	100.00%	$580
44-45	Retail Trade	2.50%	9.80%	0.10%	1.00%	86.30%	0.40%	100.00%	$385
48-49	Transportation & Warehousing	31.20%	20.10%	3.00%	16.30%	29.40%	0.00%	100.00%	$70
51	Information	2.00%	0.90%	26.40%	14.70%	56.10%	0.00%	100.00%	$374
52	Finance & Insurance	0.80%	3.60%	0.00%	0.00%	63.40%	32.20%	100.00%	$1
53	Real Estate & Rental & Leasing	5.40%	36.20%	7.20%	6.20%	44.80%	0.10%	100.00%	$19

54	Prof, Scientific, & Tech Services	27.20%	10.20%	2.00%	3.20%	52.50%	4.80%	100.00%	$1,615
55	Mgmt of Companies & Enterprises	0.00%	8.30%	0.00%	91.70%	0.00%	0.00%	100.00%	$0
56	Admin & Support & Waste Mgmt & Remediation Services	18.70%	16.10%	2.50%	-0.10%	61.80%	1.00%	100.00%	$655
61	Educational Services	0.10%	0.70%	32.60%	4.90%	61.60%	0.00%	100.00%	$731
62	Health Care & Social Assistance	3.80%	23.70%	13.40%	46.40%	12.50%	0.20%	100.00%	$524
71	Arts, Entertainment, & Recreation	8.70%	66.80%	1.80%	12.30%	10.10%	0.30%	100.00%	$3
72	Accommodation & Food Services	0.80%	2.50%	0.00%	0.50%	96.10%	0.10%	100.00%	$158
81	Other Services (except Public Admin)	23.30%	6.10%	2.70%	5.90%	16.30%	45.60%	100.00%	$94
92	Public Administration	6.60%	43.10%	0.00%	0.20%	50.10%	0.00%	100.00%	$38
	Region Totals (%)	21.00%	14.00%	5.80%	10.30%	37.00%	11.80%	100.00%	$12,192
	Region Totals ($ million)	$2,565	$1,711	$710	$1,259	$4,514	$1,434	$12,192	

Sources: SDG estimates, USAspending.gov, Hoovers

1. DoD awards are defined using USAspending reported "Base and Exercised Options Values" (both positive and negative) during the time span in question.
2. Primary NAICS are as reported to Hoovers or, for firms not reporting NAICS in Hoovers, are estimated based on the predominant share of principal NAICS associated with each firm's DoD contracts.
3. Regions are based on NC Commerce Prosperity Zones.
4. Awards included both prime and named sub-contracts.
5. An active DoD establishment is defined as one with at least one financial transaction (positive or negative) during the time span in question.

Definitions

Industry-related terminology is often used in very confusing ways. The following definitions are provided to help the report be as clear as possible.

Establishment: An establishment is a single physical location at which business is conducted or services or industrial operations are performed. It is not necessarily identical with a company or enterprise, which may consist of one or more establishments. We define an establishment in the data as a location having a unique DUNS number. Dun & Bradstreet (D&B) provides a DUNS Number, a unique nine-digit identification, for each physical location of a business. All defense establishments are required to have a DUNS number.

Defense Establishment: An active DoD establishment is defined as one with at least one financial transaction (positive or negative) during the time span in question.

Defense Related Employment: Data on employees is based on numbers of "employees at location" reported by defense establishments in Hoovers for 2017, and is for all employees, not just those working on DoD contracts. Not all defense establishments report employees in Hoovers.

Defense (or DoD) Awards: DoD awards are the "Base and Exercised Options Values" (both positive and negative) reported in USAspending during the time span in question.

NAICS: The North American Industry Classification System (NAICS) is the standard used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy, based upon a mutually agreed upon system among the statistical agencies of Canada, Mexico and the USA.

- NAICS divides the economy into 20 Sectors (2-digit). Industries within these sectors are grouped according to production criterion
- The 20 Sectors are further divided into Subsectors (3-digit), Industry Groups (4-digit), NAICS Industry (5-digit), and National Industry (6-digit)

Primary NAICS: The NAICS associated with a company that reflects their primary line of business. This is the NAICS that is use by the U.S. Government is collecting and compiling all official industry data. Many companies have secondary NAICS.

Principal NAICS: This is a NAICS assigned (sometimes) by a DoD project/program office to specific awards. A principal NAICS may or may not be the same as the contractor's primary NAICS.

Product Service Code (PSC): DoD also classifies its awards by PSC to describe the products, services, and research and development purchased by the federal government. PSC codes differ from NAICS Codes in that PSC Codes describe "WHAT" was bought for each contract transaction reported in the Federal Procurement Data System (FPDS), whereas NAICS Codes tend to describe "HOW" purchased products and services will be used.

Cluster or Sub-Cluster: A regional concentration of related industries that arise out of the various types of linkages or externalities that span across industries in a particular location. This analysis uses the definitions generated by the U.S. Cluster Mapping Project, which are mutually exclusive aggregations of 6-digit primary NAICS codes.

Local Cluster or Sub-Cluster: A local cluster or sub-cluster is composed of local industries, which are present in most (if not all) geographic areas, and primarily sell locally. Local industries are grouped based on similarities in activities reflected in aggregated U.S. industry categories.

Traded Clusters or Sub-Clusters: A traded cluster or sub-cluster is composed of traded industries, which are concentrated in a subset of geographic areas and sell to other regions and nations. Sets of traded industries are organized into traded clusters and sub-clusters based on an overall measure of relatedness between individual industries across a range of linkages, including input-output measures, use of labor occupations, and co-location patterns of employment and establishments.

The distinction between Traded and Local Clusters is an important one. Traded Clusters export goods and services outside of a state or region and, therefore, bring new capital and wealth into the state or region. They are also described as basic employers, and because they increase wealth and disposable income, they are generally the primary focus of economic development officials.

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IES applies tailored business solutions that enable companies to improve their operations and their bottom line. Let IES craft a solution that fits your specific needs. Feel free to contact:

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The NC DIDI will be making presentations statewide and sharing information about the initiative. Are you interested in receiving information about upcoming events, scheduling a speaker for your next lunch and learn, or allowing us to set up a booth at your next conference? Feel Free to Contact:

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