

Hampton Roads Investment Playbook

Phase I - Diagnostic

This diagnostic assesses Hampton Roads' economic positioning in a context where disruptive global forces are reshaping regional opportunities and increasing the value of certain economic assets. It was originally completed in September 2024, and updates were incorporated in October 2025. The Hampton Roads economic diagnostic was developed independently by New Localism Associates and funded by the Hampton Roads Alliance.

This version was shortened and edited for publication purposes.

Executive Summary

- Hampton Roads stands at an inflection point. A new economic order is emerging — one driven by national security priorities, the reshoring of advanced production and energy security concerns, and catalyzed by massive federal spending and the accelerated deployment of next generation technologies.
- **The Hampton Roads metro is a major recipient of federal procurement and grant spending, averaging \$15.6 billion annually between FY 2020 and FY 2024.** Federal spending in the region is anchored by world-class defense assets, a growing energy platform, and major federal research centers such as NASA Langley Research Center and Jefferson Lab.
- Hampton Roads is home to 25% of the nation's shipbuilding and repair capacity and hosts critical federal institutions including Naval Station Norfolk, Norfolk Naval Shipyard, Huntington Ingalls Industries, NASA Langley Research Center, and Jefferson Lab. These unparalleled assets form the backbone of a globally significant industrial and innovation ecosystem that advances national defense, critical technologies, and strategic supply chains.
- This foundation positions Hampton Roads to capitalize on emerging sectors where the U.S. is investing heavily. The region can expand its footprint across offshore wind, nuclear energy, advanced manufacturing, defense technologies, and cybersecurity — translating federal demand into local supplier growth, research partnerships, and workforce pipelines.
- Hampton Roads is not a single hub; it is a constellation of high-value assets distributed across multiple municipalities — port infrastructure, military installations, research institutions, corporate anchors, and innovation centers. Better connecting these nodes — physically, institutionally, and through shared strategy — represents one of the region's greatest opportunities to accelerate knowledge spillovers, innovation, business creation, and industry expansion.
- Hampton Roads is well positioned to excel in sectors critical to national security and supply chain resilience. The region's strong military presence, world-class port, innovation centers, and advanced government contractors in areas such as shipbuilding and wind energy create demand for new technologies and provide a strong platform for innovation and testing.

Disruptive Forces Shifting the Global Economy

A Shifting Economy:

Remilitarization

Renewed importance of defense. Defense spending projected to reach **\$960 billion** in FY 2026.

Technological Acceleration

Explosive growth in AI, robotics, biotech. **Federal R&D budget** reached **\$200 billion** in 2024 (\$130 billion in defense innovation).

Energy Transition

Energy security and modernization are national security priorities. **DOE's FY 2026 budget** emphasizes **nuclear innovation** and aligns with **rising defense energy demands**.

Our Analytical Approach*:

- **Methodology** built to process all **transaction-level data** on **federal grants and contracts**.
- Reveals who gets what, when, and for what purpose—across both contractors, institutions and universities.
- Uncovers the regional defense footprint and federal spending spillovers.

- **Classification algorithms** to organize **multiple data sources**—R&D, patenting, SBIR/STTR awards, talent—around strategic technology domains defined by the NSF.
- Map metros and universities to these domains to identify who is leading, in what technologies, and where strategic gaps or opportunities exist.

- **Map civilian and defense energy sectors**—nuclear, EVs, batteries, grid, and more—to assess regional productive strengths.
- Classification algorithms to integrate diverse data sources—R&D, patenting, SBIR/STTR, jobs—and assess **energy-related innovation**.
- Evaluate regional positioning and specialization across energy domains.

The Playbook's Diagnostic Focuses on Areas of Analysis



Initial Assessment*

We analyze the region's economic structure and sectoral employment patterns to offer context to Hampton Roads' trends.

Additionally, we conduct a geographic assessment of the region's assets.

Playbook section:
"The Hampton Roads Region"



Federal Spending

We assess federal spending in Hampton Roads through grants and contracts, identifying relevant agencies, companies and universities within the region.

Playbook section:
"The Federal Spending Footprint"



Energy Supply Chains

We conduct a multi-dimensional analysis to assess the positioning of 10 supply chains relevant to the US energy transition, identifying a set of opportunity areas that Hampton Roads can leverage for further growth.

Playbook section:
"Hampton Roads' Energy Security Edge"



Key Technology Areas

We conduct a multi-dimensional analysis to assess the positioning of Hampton Roads across 10 critical and emerging technology areas prioritized by the federal government, highlighting key opportunities for Hampton Roads.

Playbook section:
"Critical Tech Landscape"

Note: (*) We focus the analysis on the Hampton Roads region, comprising the Virginia Beach–Norfolk–Newport News, VA/NC MSA. **Source:** The New Localism (2025).

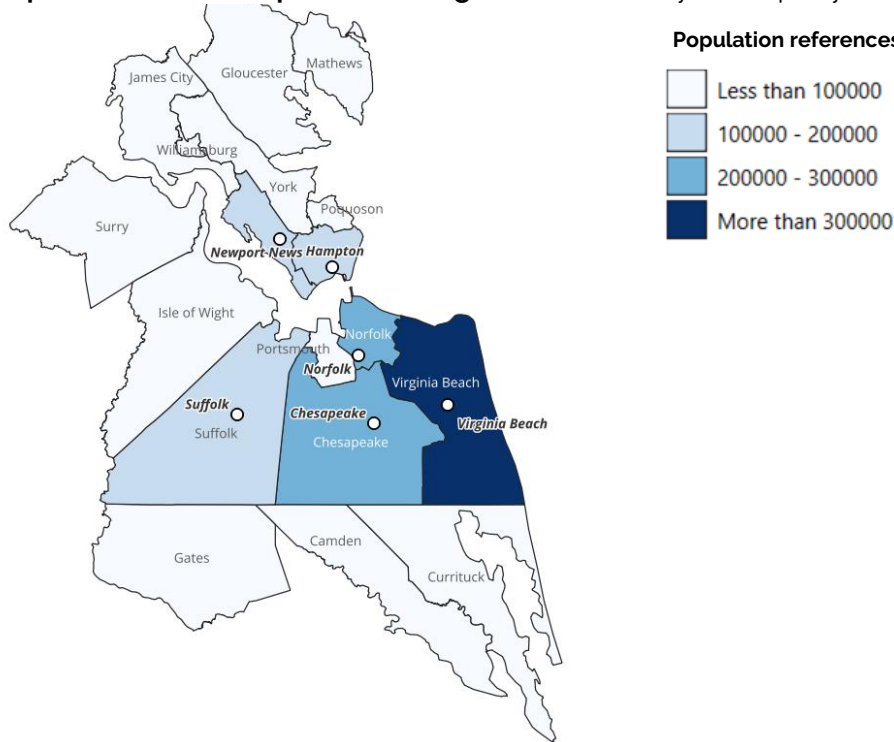


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- 1. The Hampton Roads Region**
2. The Federal Spending Footprint
3. Hampton Roads' Energy Security Edge
4. Critical Tech Landscape
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The 37th Most Populous Region in the United States

Population in the Hampton Roads region*. Estimates by Municipality, 2023.



The Hampton Roads region covers the **Virginia Beach–Norfolk–Newport News, VA–NC MSA***, an 18-municipality area that includes 15 jurisdictions in Virginia and 3 in North Carolina.

The region is **home to 1.8 million residents** and boasts 39,600 establishments that collectively generate 634k jobs. **It is the 37th most populous region in the US.**

Virginia Beach City, Chesapeake City, Norfolk City, Newport News City account for 45% of the population and 73% of the establishments.

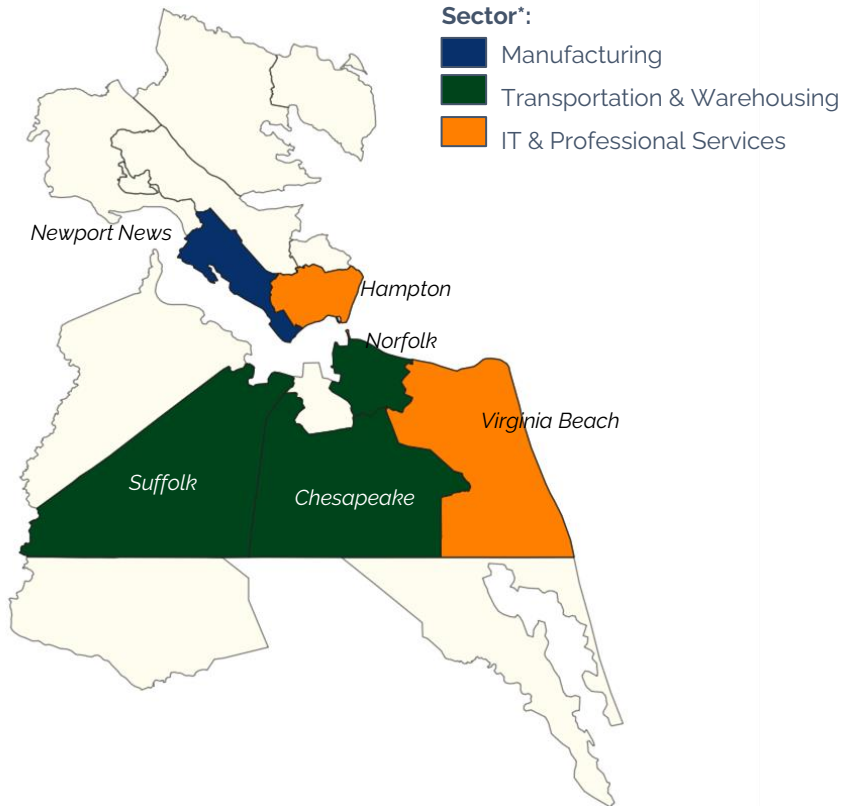
Located midway between Maine and Florida, **the region's central location also provides access to 47% of the U.S. population**—130 million+ consumers—within a day's drive.

Note: (*) The region is determined according to the July 2023 [US Census Bureau](#) definition, which excludes other municipalities in the region that some sources include, such as: Franklin (8k people), Southampton (17k people), and Accomack (33k people). **Source:** The New Localism (2024) based on [US Census Bureau](#) and [County Business Patterns \(CBP\)](#).

A Region with a Diverse Sector Mix

Industry Footprint in the Hampton Roads Region.

Employment by Municipality, 2023.*



Industry Footprint in Hampton Roads:

IT & Professional Services. Hampton Roads is a center for cutting-edge research and innovation. NASA Langley plays a significant role in aeronautical research. Virginia Beach stands out in innovation and professional services, with important universities such as ECPI University, Hampton University, and the Virginia Tech Hampton Roads Center, and in close proximity to Old Dominion University. Newport News also hosts key research facilities, including the Tech Center Research Park and Jefferson Lab.

Manufacturing. Huntington Ingalls Industries in Newport News (*Newport News Shipbuilding*) is Virginia's largest industrial employer and the leading shipbuilder in the U.S., with over 24,000 employees.

Transportation & Warehousing. The Port of Virginia is one of the most advanced and connected ports on the East Coast. Handling 3.2 million TEUs annually, backed by \$1.4 billion in recent investments, and boasting the highest on-dock rail share in the region, the Port serves as a true global gateway. Suffolk and Chesapeake host many logistics companies strategically located along key highways linking directly to the Port. Norfolk is home to Naval Station Norfolk, a global hub for naval operations, while nearby Portsmouth houses the Norfolk Naval Shipyard—part of the Navy's Shipyard Infrastructure Optimization Program, which will bring significant investment to modernize its facilities over the next decade.

Note: (*) We set threshold levels for identifying main sectors within municipalities. For the mfg. sector, the cutoff is 20k employees, 6k for transportation and warehousing, and 15k for professional services and IT. Suffolk and Hampton municipalities color code is assigned based on the sector's relative representativeness, regardless of employment level. **Source:** The New Localism (2024).

A Strong Existing Position in Shipbuilding, Engineering, and Logistics

Location Quotients (2022) and Employment Change (2016-2022) in Hampton Roads. 5-digit NAICS codes*. Bubble size represents employment.



Note: (*) Only a selection of 5-digit NAICS codes from the Mfg., Transportation, Professional Services, Construction, and Wholesale sectors is presented. **Source:** The New Localism (2024).

A Constellation of Catalytic Assets

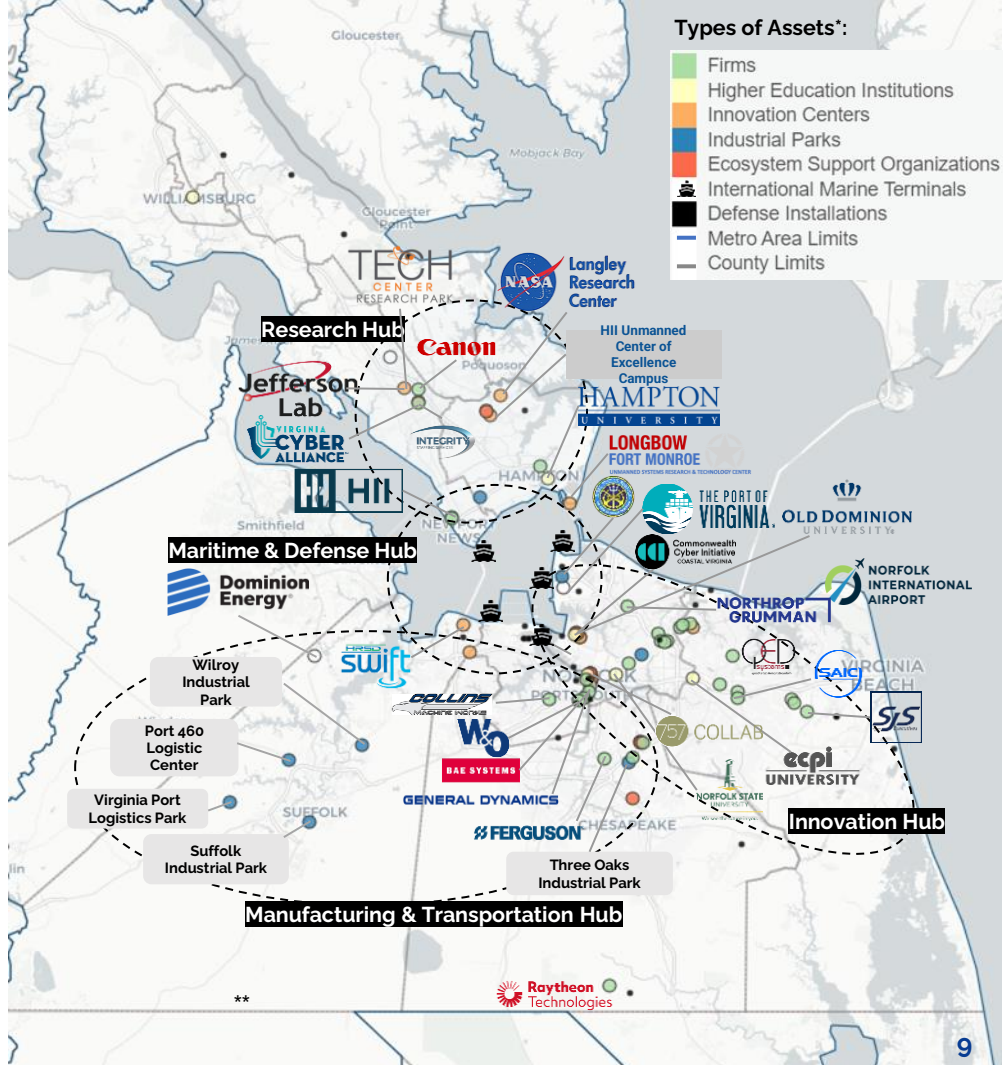
Hampton Roads' Assets. *[Not exhaustive]*

Research Hub. Some important research facilities such as Jefferson Lab, NASA Langley Research Center, and Tech Center Research Park are concentrated in the northern part of the region, primarily in Hampton and Newport News cities.

Innovation Hub. Virginia Beach and Norfolk are home to universities such as Old Dominion University, Hampton University, the Virginia Tech Hampton Roads Center, Norfolk State University, and ECPI University, as well as innovative companies including WR Systems and Mythics.

Manufacturing & Transportation Hub. Most supplier companies specializing in the shipbuilding and repair industry, and transportation equipment are concentrated in Chesapeake, Suffolk, and Newport News, along with industrial and logistics parks. Additionally, the Coastal Virginia Offshore Wind project is under development along this region's coasts.

Maritime & Defense Hub. Defense facilities, international marine terminals and specialized shipbuilding and repair centers like Huntington Ingalls Industries are concentrated around the Port of Virginia.



Note: (*) The category *Firms* includes the largest suppliers of Newport News Shipbuilding. The category *Innovation Centers* includes incubators, accelerators, and other economic development organizations that are located in HR.

Source: The New Localism (2024).



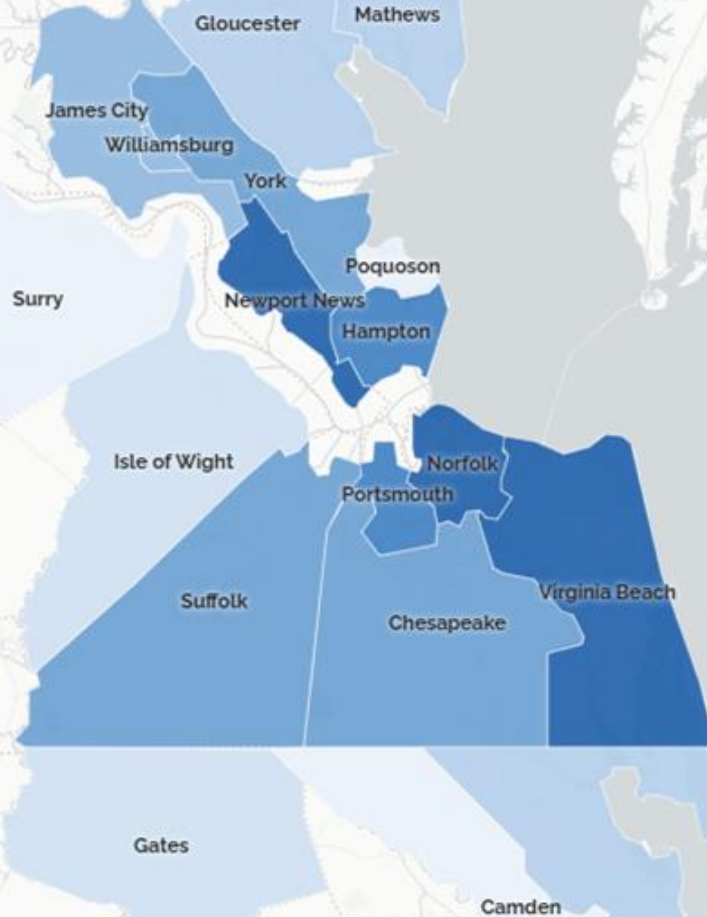
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Federal Spending Concentrated in Select Municipalities

Federal Spending (Contracts and Grants) in the Hampton Roads Region.*

Municipalities shaded by avg. annual federal spending, 2020-2025.



Top 10 Municipalities in Hampton Roads		Federal Spending Avg. 2020-2025
#1	Virginia Beach	\$ 4.8 B
#2	Newport News	\$ 4.2 B
#3	Norfolk	\$ 3.2 B
#4	Hampton	\$ 956 M
#5	Portsmouth	\$ 917 M
#6	Chesapeake	\$ 531 M
#7	Suffolk	\$ 285 M
#8	York	\$ 168 M
#9	Williamsburg	\$ 73 M
#10	James	\$ 35 M

- From FY 2020 to FY 2024, Hampton Roads captured an average of \$15.6 billion in annual federal spending (contracts and grants).
- For FY 2025, USAspending.gov currently reports \$13.2 billion (data is still partial).
- Federal spending in Hampton Roads is concentrated within three municipalities: Virginia Beach, Newport News City, and Norfolk City.

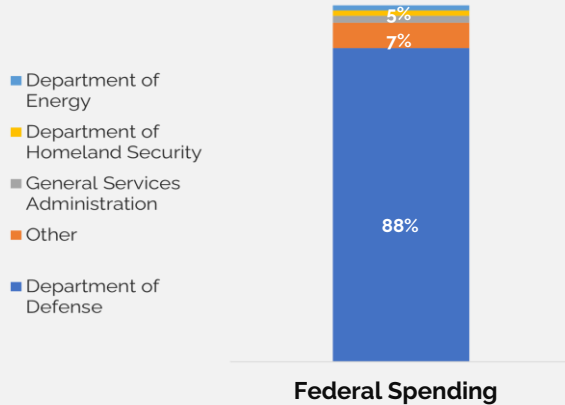
Note: (*) Own calculations based on transaction-level data from USAspending.gov as of October 25, 2025. Federal spending accounts for the sum of both contracts and grants. Note that the USAspending database is continuously updated retroactively, which means that information for previous months and years may change. 2025 data is still partial and does not yet reflect the full FY.

Source: The New Localism (2025).

Defense Contracts in Hampton Roads Are Large and Growing

Federal Spending in Hampton Roads, by Agency.*

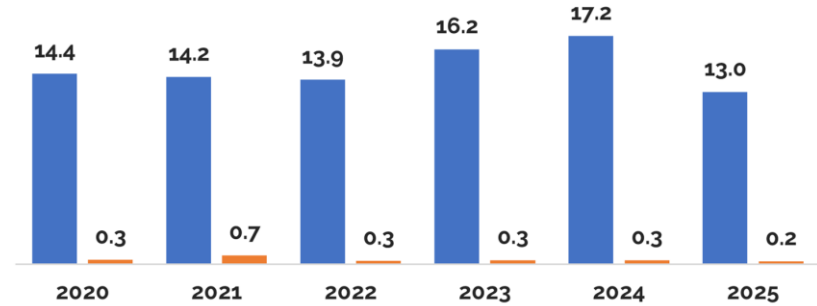
Annual average contracts and grants. 2020-2025.



- From FY 2020 to FY 2024, Hampton Roads captured an average of **\$15.6 billion** in annual federal spending.
- During that same period, the DoD awarded an average of **\$13.7 billion** annually in contracts to Hampton Roads.
- This DoD spending accounts for **88% of federal spending in the region**.

Federal Spending in Hampton Roads, by Year.*

Contracts and grants, from 2020 to 2025. In billions.



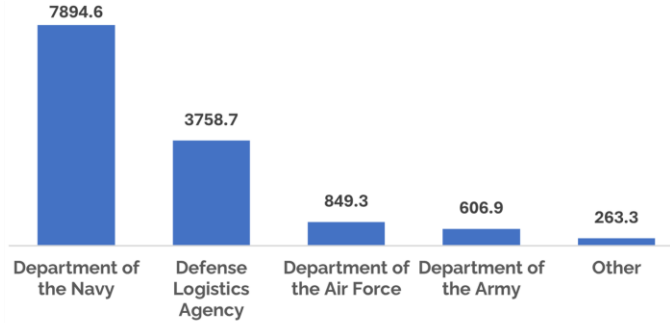
■ **Contracts** Growth 20-24: \square 20% Avg. \$15.2 B
 ■ **Grants** Growth 20-24: \square 13% Avg. \$371 M

- **Nationally, continued growth in sectors like shipbuilding, military equipment and R&D signals a strategic opportunity for Hampton Roads** to expand and diversify its role in the U.S. defense economy.

Note: (*) Own calculations based on transaction-level data from USAspending.gov as of October 25, 2025. Federal spending accounts for the sum of both contracts and grants. Note that the USAspending database is continuously updated retroactively, which means that information for previous months and years may change. 2025 data is still partial and does not yet reflect the full FY. **Source:** The New Localism (2025).

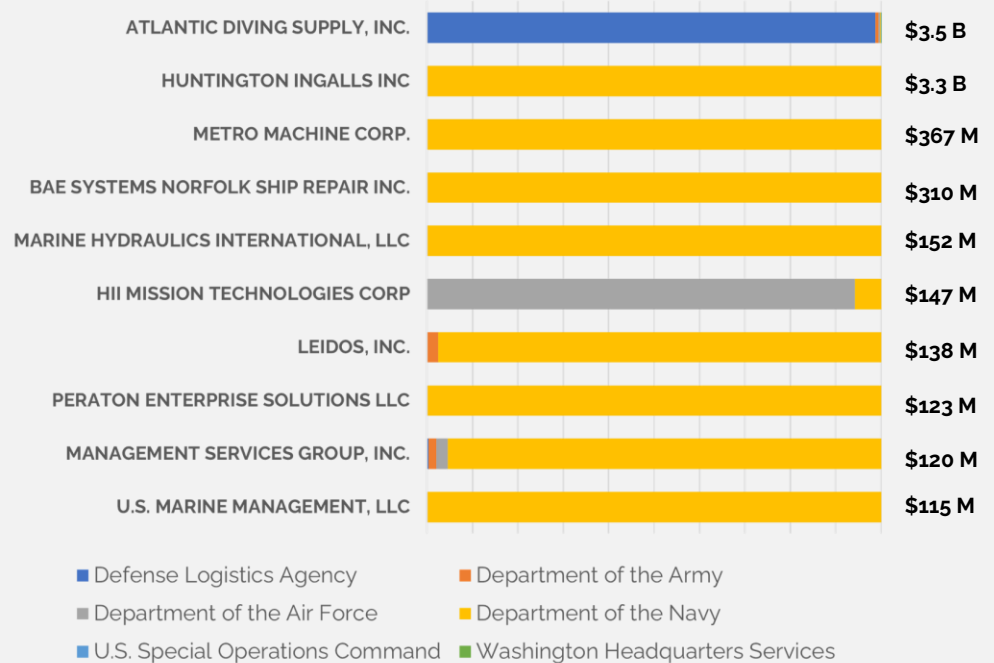
The Navy Dominates Defense Spending in Hampton Roads

Federal Spending in Hampton Roads, by DoD Sub-Agency. Average 2020-2025. In millions.*



- In **Hampton Roads**, the **Navy** awarded an average of **\$7.9 billion in contracts** annually during FY 2020-2025, accounting for **59% of DoD contract spending** in the region.
- In FY 2024, Navy spending in the region totaled \$8.8 billion. Figures shown for FY 2020–2025 appear lower largely because FY 2025 data is still partial

Top 10 DoD Vendors in Hampton Roads, by DoD Sub-Agency. Sorted by average contract value. 2020-2025.*



Note: (*) Own calculations based on transaction-level data from USAspending.gov as of October 25, 2025. Federal spending accounts for the sum of both contracts and grants. Note that the USAspending database is continuously updated retroactively, which means that information for previous months and years may change. 2025 data is still partial and does not yet reflect the full FY. **Source:** The New Localism (2025).

Shipbuilding and Military Equipment Traction Defense Spending

Top Subsectors in DoD Contract Spending in Hampton Roads.* Based on annual average contracts. 2020–2025. By 4-digit NAICs.

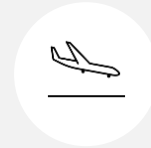
Top Subsectors



Shipbuilding & Marine Transportation*
\$4.9B



Defense Supplies & Electronics**
\$3.6B



Military Construction***
\$836M



Defense Tech, Engineering & R&D****
\$2.9B

Main Vendors

Construction, maintenance, and logistics of naval vessels and maritime systems.

Huntington Ingalls Inc: America's largest military shipbuilding company, responsible for building the U.S. Navy's nuclear-powered aircraft carriers and submarines.

Metro Machine Corp.: Norfolk-based surface ship repair company.

Bae Systems Norfolk Ship Repair Inc.: A full-service shipyard in Norfolk specializing in the repair and modernization of naval vessels.

Manufacturing and wholesaling of tactical gear, technical components, and defense-grade equipment.

Atlantic Diving Supply, Inc.: Provides military gear and logistics solutions for the U.S. Department of Defense, federal agencies, and first responders.

Management Services Group, Inc.: Delivers high-tech engineering products and services for defense, homeland security, and other critical government sectors.

Design and construction of defense facilities, base infrastructure, and civil engineering works.

RQ Construction, LLC: A design-build construction contractor that specializes in constructing and renovating military facilities.

RQ-Magann JV: A joint venture that executes large Navy construction projects (such as the replacement of Submarine Pier 3 at Naval Station Norfolk).

Meb General Contractors Inc: A leading construction firm providing general contracting, design-build, and construction management services.

Advanced technologies, scientific R&D, and professional services supporting defense missions.

Jefferson Science Associates, LLC: Manages and operates the Thomas Jefferson National Accelerator Facility (Jefferson Lab) in Newport News for the U.S. Department of Energy's Office of Science.

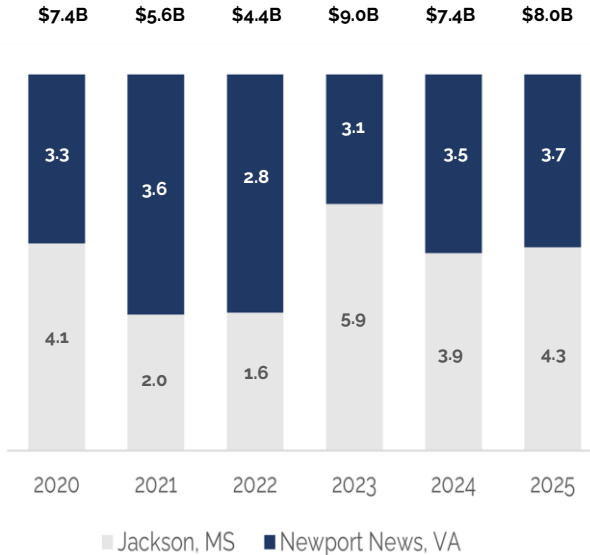
HII Mission Technologies Corp: The technology-focused division of HII that develops integrated all-domain defense solutions.

Leidos, Inc.: A science and technology contractor providing engineering, IT, and technical services across defense, intelligence, civil, and health domains.

Notes: Based on 4-digit NAICS codes. All vendors featured are based in the Hampton Roads region. The sub-sectors are defined as: (*) NAICS 3366 and 4831. (**) 4238, 3399, 3345 and 3341. (***) 2362 and 2379. (****) 5415, 5417, 5413 and 5416. **Source:** The New Localism (2025).

DoD Increasing Spending Puts Pressure on the Region's Top Suppliers

Huntington Ingalls Direct Federal Contracts.
By Year and Recipient Location. In Billions.



DoD FY 2026 Budget Highlights for Submarine Production.

\$65.0B
SEA POWER INVESTMENTS

Including the construction of two Virginia-class attack submarines.

\$5.7B
SUBMARINE INDUSTRIAL BASE

For Columbia- and Virginia-class delivery acceleration and nuclear shipyard productivity.

\$47.1B
FACILITY INVESTMENTS
Including \$19.8 billion partly for Military Construction.

Newport News, VA: HII in Newport News captures consistent DoD spending, averaging \$3.3 B annually from FY 2020 to FY 2025, indicating a stable base for future growth.

Newport News, VA: HII's Newport News location faces significant delays in expanding its supplier base, a major obstacle to fully meeting the growing demand for submarines.

Jackson, MS: contract funding to HII in Jackson surged to \$5.9 B in 2023, driven by major DoD contracts for DDG 51 destroyers and LPD 30 amphibious transport docks, signaling potential growth opportunities.

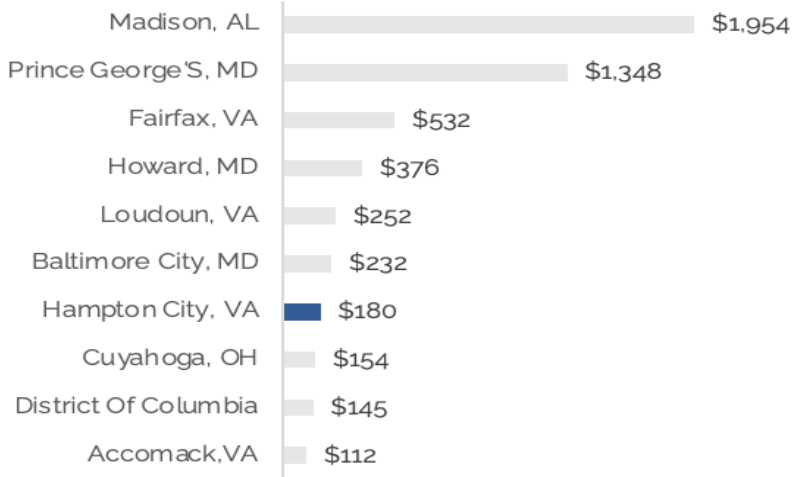
In late 2024, HII secured a \$5.8 billion contract to design and build three new San Antonio-class amphibious transport dock ships (LPD-33, 34, 35).

- **The 2026 DoD budget places significant emphasis on submarine-related investments**, intensifying the pressure on HII to not only meet this demand but also to expand its supplier base accordingly.

A Growing Demand for Skilled Workers

Top Municipalities in the US Receiving NASA Direct Spending.

By place of performance. 4-year avg. In millions.



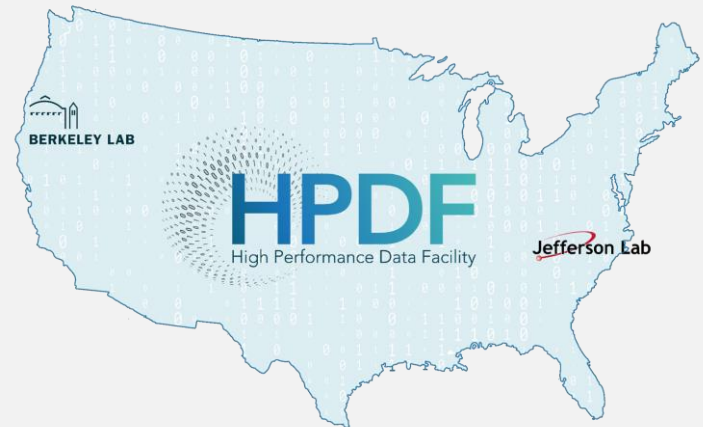
- **The influx of funding and projects creates a high demand for skilled workers.**
- The region currently faces a shortage of such talent.

Newport NASA Langley and Jefferson Lab drive significant spending in the region, creating high demand for skilled workers.

Langley Research Center: Hampton City, where Langley Research Center is located, ranks 7th nationwide in terms of receiving the highest amount of NASA federal procurement spending.

Jefferson Lab: In October 2023, DoE chose Jefferson Lab to lead the new \$300-500 M High Performance Data Facility Hub. Partnering with Lawrence Berkeley National Laboratory*. Jefferson Lab will develop advanced infrastructure for data analysis, networking, and storage, providing researchers with cutting-edge tools to enhance scientific research.

Locations of DOE High Performance Data Facilities.



Note: (*) Vendor not located in the Hampton Roads Area.

Source: The New Localism (2024) based on [USASpending](https://www.usaspending.gov).

Shipbuilding Deep Dive: 25% of America's Shipbuilding & Repair Capacity

Hampton Roads: Ecosystem Components of the Shipbuilding and Repair Industry.

Regional Supply Chain

(more details in the next slide)

Hampton Roads hosts 25% of U.S. shipbuilding and repair capacity. The presence of the Port of Virginia enhance naval operations in the region.

It is home to Huntington Ingalls Industries (HII), which relies on a wide and geographically distributed supply network of over 2,000 suppliers, 97 of which are Approved Level 1 suppliers.

Only 8 out of the 97 HII Approved Level 1 suppliers are located in the state of Virginia.



Demand Drivers

The U.S. Navy is a significant driver of demand in this sector. The Naval Station Norfolk (NAVSTA)—the world's largest naval base—and the Norfolk Naval Shipyard (NNSY) play critical roles.

NNSY is part of the Navy's Shipyard Infrastructure Optimization Program (SIOP), which aims to modernize infrastructure and equipment across the four Navy-owned shipyards nationwide.

With government contracts for new Navy ship construction extending over the next five decades, U.S. vessel production is expected to reach a steady and increased volume.



R&D & Innovation Landscape

HII leads various R&D initiatives in Hampton Roads, such as the REMUS 130 UUV and the Unmanned Systems Center of Excellence, focused on prototyping, production, and testing.*

Old Dominion University (ODU) hosts the Maritime Initiative in collaboration with HII and its Virginia Modeling, Analysis, and Simulation Center (VMASC).**

Future innovation opportunities in defense tech for this sector could benefit from the expertise of Jefferson Lab, NASA Langley, and the Office of Naval Research in testing and scaling efforts.



Workforce & Talent Pipeline

Hampton Roads leads in shipbuilding and repair employment but faces labor shortages in key roles like welders, fitters, and machinists due to an aging workforce and retention issues.

Efforts to address these gaps include the HRWC's Regional Maritime Training Program and ODU's initiatives, such as the NNS Scholars program and MAP-to-E, which supply over 20% of HII-Newport News shipbuilding engineering workforce.

















Notes: (*) The REMUS 130, unveiled at the Oceanology International 2024 conference, features enhanced battery life and cost-efficiency, improving HII's capabilities in underwater operations. (**) ODU's VMASC is a leading enterprise research center playing a crucial role in digital shipbuilding, providing innovative solutions and advanced research to enhance ship design and construction processes. (***) **Source:** The New Localism (2024) based on [ODU](#), [Teconomy](#), [Hampton Roads Alliance](#), [State of the Region](#), [HII](#), and [Hampton Roads Global Commerce Council \(HRGCC\)](#).

Shipbuilding Deep Dive: Opportunity to Attract More Local Suppliers

Hampton Roads: Deep Dive in the Shipbuilding & Repair Supply Chain. By selected nodes*.

High Medium Low

	Design & Engineering	Raw Materials	Component Manufacturing	Logistics	Shipyard Building, Maintenance & Repair
Description	Includes ship design, structural and systems engineering, and the creation of detailed drawings.	Includes the manufacture of raw materials for the production of ship components as well as those used in the infrastructure where ships are constructed.	Includes suppliers of components such as propulsion systems, electrical and electronic equipment, navigation system and internal structures.	Transportation of components and materials to the shipyards, and eventually of the finished vessel to its final destination.	Involves assembling and constructing ships and boats, as well as maintaining and repairing them to ensure operability throughout their useful life.
Jobs in related NAICs (2022)	US: 1,577,313 Hampton Roads: 14,368	US: 499,069 Hampton Roads: 982	US: 445,126 Hampton Roads: 1,300	US: 82,774 Hampton Roads: 4,375	US: 123,175 Hampton Roads: 29,629
Intensity (LQ)**	 1.9	 0.4	 0.6	 10.3	 55.4
US Ranking***	 # 28	 # 160	 # 78	 # 9	 # 1
Key players	The region has leading companies designing the next generation of nuclear-powered aircraft carriers. 	HII relies on third parties for raw materials. Hampton Roads currently lacks approved suppliers for steel foundry, which is the most critical material****. 	HR hosts approved suppliers for fittings, pipes, and machinery, but lacks suppliers for submarine forging, electrical components, fasteners, and other areas****.	HR is home to the Port of Virginia, a national leader in port automation and innovations. 	VSRA**** has 300+ members, with HR hosting key players such as HII and Colonna's Shipyard. 

Notes: (*) There are other indirectly related supply chain sectors in which the region has a presence, such as Machinery Manufacturing (NAICS 333) to raise material, Heavy and Civil Engineering Construction (NAICS 237), and Cement Manufacturing (NAICS 3273), with companies such as Mazzella, Fay Southeast, Century Concrete Services, Papco Inc and Integrity Staffing Services located in Hampton Roads. (**) Intensity metric corresponds to the location quotients of the MSA in the corresponding category. When Intensity > 1.1, it is considered high; 0.9 < Intensity < 1.1 it is moderate; and Intensity < 0.9 signifies low intensity. (***) When Hampton Roads ranks between 1 and 40 among US MSAs, it is considered high; between 41 and 54, it is moderate; and 55 and below, it is low. For reference, Hampton Roads ranks 47th in GDP. (****) Virginia Ship Repair Association. (*****) A significant portion of the Approved Level 1 Suppliers contracting with HII are situated outside Virginia, primarily in Pennsylvania and Massachusetts. Finding based on the analysis of Approved level 1 suppliers list published by HII.

Source: The New Localism (2024) based on [Teconomy](#), [Hampton Roads Global](#), [Commerce Council](#), [HII](#), [CBP](#) and Newport News Shipbuilding profile report.













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Ten Supply Chains Critical to the U.S. Energy Transition











Selected Supply Chains (SCs) Relevant to the Energy Transition.

Supply chain	Description	Supply chain	Description
 Electric Vehicles	EVs reduce emissions, and drive demand for clean energy sources.	 Grid & Microgrid	Localized energy system that supplies electricity, with the capacity to operate both connected to the conventional power grid and independently of it.
 EV Charging Infrastructure	EV charging infrastructure is crucial for widespread EV adoption.	 Nuclear Power	Nuclear energy provides emissions-free, reliable power that serves diverse industries. As part of the expanded supply chain, we also explore industrial applications (e.g., nuclear reactors).
 Solar energy	Decarbonizes the energy sector, with the capability to generate clean electricity for the grid.	 Green Hydrogen	Hydrogen as an energy carrier can help drive the decarbonization of numerous industries such as steel production.
 Wind energy	Decarbonizes the energy sector by generating clean electricity for the grid, and includes the potential for both onshore and offshore wind energy.	 Semiconductors	Current flow regulators enable the development of more efficient technologies for sectors such as automotive and electronics.
 Batteries	Batteries are a key component of EVs and crucial for storing renewable energies, ensuring a stable and sustainable energy supply.	 Materials	Refinement of raw materials critical to the energy transition.

A Multi-Dimensional Assessment of Hampton Roads' Energy Strengths

Hampton Roads: Positioning of Selected Energy Supply Chains. By Dimension and Metric.

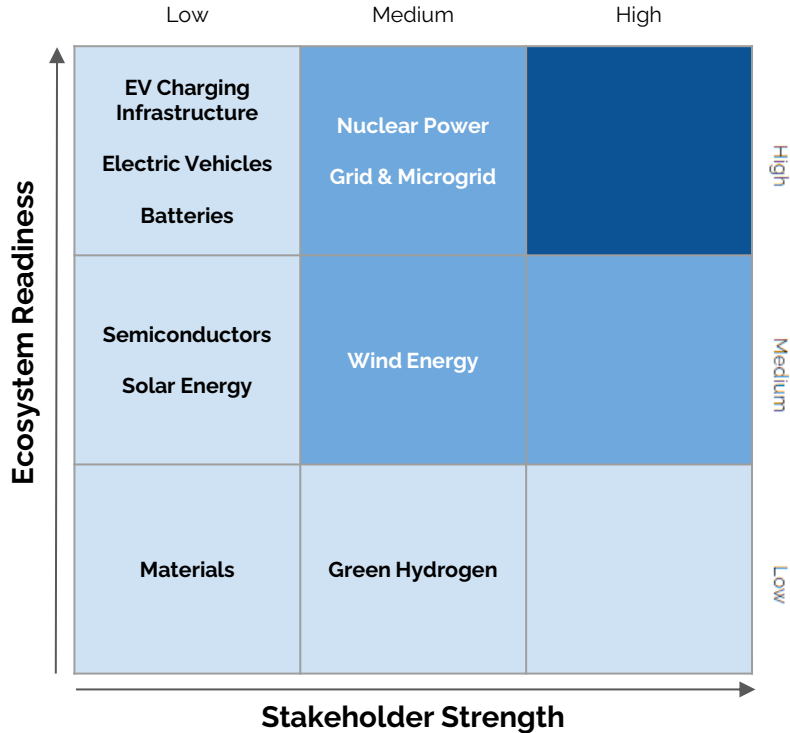
High Medium Low

#	Energy Supply Chain	Stakeholder Strength			Ecosystem Readiness							
		Key Players	Industry Base (2022)		Talent Pipeline (2021/2022)		Higher Education R&D (2018-2022)		Patents (2013-2023)		SBIR/STTR Awards (2019-2023)	
		Q*	I**	R***	I**	R***	I**	R***	I*	R***	I**	R***
	1 Nuclear Power****	Medium	Medium	Medium	Low	Low	High	Low	High	High	Low	Low
	2 Grid & Microgrid	Medium	Low	Medium	High	High	High	Low	Low	Low	High	Medium
	3 Wind Energy*****	High	Low	Low	Low	Low	Low	Low	Low	Low	High	High
	4 EV Charging Infrastructure	Low	Medium	Medium	High	High	High	Low	Low	Low	High	Medium
	5 Electric Vehicles	Low	Low	Low	High	High	High	Medium	High	Low	Low	Low
	6 Batteries	Low	Low	Low	Medium	Medium	High	Low	Low	Low	High	Medium
	7 Semiconductors	Low	Medium	High	Low	Medium	High	Low	Medium	Low	Low	Low
	8 Green Hydrogen*****	Medium	Low	Low	Low	Low	High	Low	Low	Low	Low	Low
	9 Solar Energy	Low	Low	High	Low	Low	High	Low	High	Low	Low	Low
	10 Materials	Low	Low	Low	Low	Low	Low	Low	High	Low	Low	Low

Notes: (*) Q = qualitative research. (**) I = Intensity metric corresponds to the location quotients of the MSA in the corresponding category. When Intensity > 1.1, it is considered high; 0.9 < Intensity < 1.1 it is moderate; and Intensity < 0.9 signifies low intensity. (***) R = Corresponds to the US Ranking. When Hampton Roads ranks between 1 and 40 among US MSAs, it is considered high; between 41 and 54, it is moderate; and 55 and below, it is low. For reference, Hampton Roads ranks 47th in GDP. (****) In assessing the nuclear power industry base, quantitative analysis was complemented by qualitative research to provide a broader view of the supply chain. This approach acknowledges that the data reflects only nuclear energy generation, without capturing innovation, supply chain, and deployment activities related to nuclear power. (*****) As the wind energy-related projects in the region are currently under construction and scheduled to be operational in 2026, the data does not show industry presence up to 2022. (*****') Its positioning is low because the ecosystem is not yet fully developed. However, a demonstration project in green hydrogen is underway, with an investment of \$1.5 M. **Source:** The New Localism (2024).

Energy-Related Strengths and the Largest Offshore Wind Project in America

Hampton Roads: Positioning of Selected Energy Supply Chains.



Opportunity Areas*: We identified three energy supply chains where Hampton Roads has a strong position that could be further leveraged.

Nuclear Power: Dominion Energy is a key player in large-scale nuclear power generation in the state. The region's strong maritime and defense industries also support industrial applications of nuclear technology, with additional opportunities for innovation in advanced nuclear applications.

Grid & Microgrid: Dominion Energy is advancing grid innovation, including through unmanned systems. Old Dominion University and the DoE are leading research in microgrids, creating opportunities to strengthen the regional innovation ecosystem. Military demand for energy security creates new solutions for the civilian grid.





Wind Energy: Dominion is investing \$10B in the 2.6-GW CVOW** project, serving 650K+ customers. While local colleges are building specialized talent, 1,100+ projected jobs will require additional workforce development. Reducing reliance on international suppliers will be critical to maximize regional economic benefits.

Notes: (*) To identify a subset of energy supply chains that offer opportunities for the region, additional qualitative analyses were conducted. (**) Dominion Energy's 2.6 GW Coastal Virginia Offshore Wind project. **Source:** The New Localism (2025).

Wind Energy Deep Dive: Opportunity to Attract Offshore Wind Suppliers

Hampton Roads: Starting Point in the Wind Energy Supply Chain.

High Medium Low

	Project Development & Testing	Wind Energy Subcomponents Manufacturing	Wind Turbines Components Manufacturing	Transportation & Logistics	Installation	Operation & Maintenance
Description	Includes studies to inform the project design and components of a wind farm. Led by utilities, universities and research centers in the region.	Includes wind farm infrastructure not related to the turbines, such as cables, substations and foundations.	Includes the manufacture of the windmill components such as rotors, nacelles and towers,	Includes logistics services contracted to assemble and construct an offshore wind energy project	Includes services contracted to assemble and install an offshore wind energy project	Includes the products and services necessary to operate and maintain the offshore wind farm
Jobs HR (2022)	17,797	484	327	2,010	2,629	3,604
Intensity* (LQ)	1.12	0.5	1.5***	0.9	1.0	0.4
US Ranking** (Jobs)	#33	#87	#42	#49	#47	#39
Key players		-	-			
Status	<ul style="list-style-type: none"> - Mostly handled by Dominion Energy, with contributions to the testbed from ODU. - Companies like Compass Insurance Solutions are involved in some stages of the project development. 	<ul style="list-style-type: none"> - The manufacture of components and parts is primarily led by foreign companies. - The South Korean company, LS GreenLink, plans to build a \$681 M manufacturing facility for undersea cables. 	<ul style="list-style-type: none"> - No local firms with experience in offshore wind energy. This node is led by foreign companies - Hampton Roads' strength in engine equipment manufacturing for other industries could be an asset to leverage 	<ul style="list-style-type: none"> - Hampton Roads presents a set of companies in the adjacent marine industry supply chain that have the capability to support this node of the OSW industry (e.g. CERES, Norfolk Southern Corporation). 	<ul style="list-style-type: none"> - There is little experience with the installation of offshore wind turbines and wind farms - Fugro and James Fisher companies support the installation of cables for the CVOW project. 	<ul style="list-style-type: none"> - Hampton Roads has a robust base of firms specializing in operational services - Opportunities in maintenance remain untapped, as many projects are still in their early development stages.

Notes: (*) Intensity metric corresponds to the Location Quotients of the MSA in the corresponding category. When Intensity > 1.1, it is considered high; 0.9 < Intensity < 1.1 it is moderate; and Intensity < 0.9 signifies low intensity. Note that since this analysis is based on NAICS codes, it may include activities that are not directly related to this specific supply chain. (**) Corresponds to the US Ranking. When Hampton Roads ranks between 1 and 40 among US MSAs, it is considered high; between 41 and 54, it is moderate; and 55 and below, it is low. For reference, Hampton Roads ranks 47th in GDP. **Sources:** [DoE](#), [XODUS & Hampton Roads Alliance](#) and [CBP](#).

Wind Energy Deep Dive: Efforts to Secure a Skilled Workforce Are Required

Hampton Roads: Graduates Related to Wind Energy.

By institution and degree, 2022.

■ High ■ Medium ■ Low

Institution	Degree	Graduates	Intensity*	Ranking**
College	Electrical, Electronic Technician	73	High	#10
	Civil Engineering Technician	20	High	#8
	Wind Energy Technician	21	Medium	#1
University	Mechanical Engineering	114	Medium	#97
	Mechanical Eng. Technician	91	High	#3
	Electrical, Electronic Engineering	77	Medium	#68
	Civil Engineering, General	50	Medium	#98
	Electrical, Electronic, and Commss Engineering Technician	4	Medium	#46

~26,720 graduates in Hampton Roads

~460 graduates in Hampton Roads related to wind energy

Talent and R&D Related to Wind Energy. By municipality in HR and surrounding municipalities***, 2022.

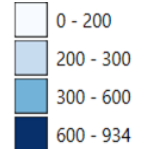
George Mason University & Northern Virginia Community College

~300/270 related graduates

~\$32.05 M related R&D spending



Graduates related to wind energy chain



Virginia Tech

~880 related graduates.

~\$300.5 M related R&D spending



Old Dominion University

~220 related graduates.

~\$16.9 M related R&D spending

Centura College Norfolk

~20 wind energy technicians graduates.



University of North Carolina at Charlotte

~580 related graduates.

~\$38.1 M related R&D spending



Tidewater Community College

~50 related graduates.

North Carolina State University at Raleigh

~820 related graduates.

~\$148.9 M related R&D spending

Notes: (*) Intensity metric. When Intensity > 1.1, it is considered high; 0.9 < Intensity < 1.1 it is moderate; and Intensity < 0.9 signifies low intensity. (**) US Ranking metric. When Hampton Roads ranks between 1 and 40 among al US MSAs in that field, it is considered high; between 41 and 54, it is moderate; and 55 and below, it is low. For reference, Hampton Roads ranks 47th in GDP. (***) The R&D spending shown corresponds to the period 2018-2022. Municipalities displayed are those with 600+ graduates related to the wind energy supply chain in 2022. For each of these municipalities, the map displays detailed information for the main university. **Source:** The New Localism (2024) based on [NCES](#) and [NSF](#).













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1. The Hampton Roads Region
2. The Federal Spending Footprint
3. Hampton Roads' Energy Security Edge
4. **Critical Tech Landscape**
5. A Hampton Roads Investment Playbook

Ten Technology Areas Prioritized by the Federal Government

Technology Areas Prioritized by the Federal Government and Top Related Sectors in Hampton Roads.

Technology	Example of applications	Top applications	Technology	Example of applications	Top applications
 Artificial Intelligence	Diagnosis; drug discovery; integrative medicine; autonomous vehicles; algorithmic trading and fraud detection	Defense* Manufacturing Telecommunications & IT	 Advanced Communications Technology	5G and beyond; gaming and content streaming; telemedicine and remote surgery	Defense* Logistics Energy
 High Performance Computing	Threat detection and encryption; simulation and design for aerospace; big data analysis	Cybersecurity Defense*	 Biotechnology & Medical technology	Precision medicine and gene therapy; drug development and manufacturing; genetically modified crops; bioremediation	Life sciences
 Quantum Information Science	Secure communication, new materials discovery; supply chain management; molecular simulations for drug discoveries	Applied research Laboratory manufacturing	 Cybersecurity, Data Storage, Data management	Secure transactions and digital currencies; secure health records; traceability and transparency; secure data sharing	Cybersecurity Telecommunications & IT Defense* Energy
 Advanced Mfg. (includes Unmanned Systems)	Unmanned systems (UxS) and exoskeletons, smart factories and industrial robots; surgical robots; automated fulfillment centers.	Machinery & Equipment Defense* Logistics	 Advanced Energy Efficiency Technologies	Renewable energy generation and energy storage; energy-efficient processes	Energy Manufacturing Logistics Defense*
 Disaster Prevention or Mitigation	Disaster response and recovery; resilient construction; early warning systems; protecting critical infrastructure	Environmental monitoring	 Advanced Materials Science	Lightweight and high-strength materials; semiconductors and flexible displays; advanced battery and energy storage materials	Defense* Energy

The Region's Technology Landscape Shows Clear Competitive Advantages

Hampton Roads: Positioning of Selected Key Technologies. By Dimension and Metric.

High Medium Low

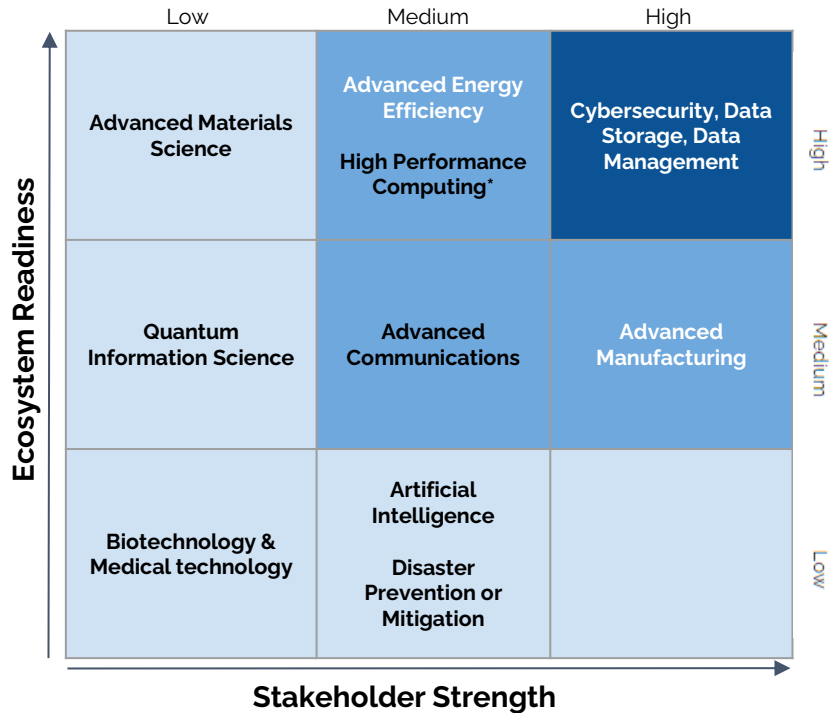
#	Key Technology	Stakeholder Strength			Ecosystem Readiness							
		Key Players	Potential Applications		Talent Pipeline		Higher Education R&D		Patents		SBIR/STTR Awards	
			(2022)		(2022/2023)		(2018-2022)		(2013-2023)		(2019-2023)	
			Q*	I**	R***	I**	R***	I**	R***	I**	R***	I**
1	Cybersecurity, Data Storage, Data Management	High	High	High	High	High	High	Low	Low	Low	High	High
2	Advanced Mfg. (includes Unmanned Systems)	High	High	High	Medium	Medium	High	Medium	Low	Low	Low	Low
3	Advanced Energy Efficiency	Medium	High	High	High	High	High	Low	Medium	Low	High	Medium
4	High Performance Computing	Low	High	High	High	Medium	High	Low	Low	Low	Low	High
5	Advanced Communications	Low	High	High	High	High	Low	Low	Low	Low	High	High
6	Advanced Materials Science	Low	Low	Medium	High	Medium	High	Low	High	Low	Medium	Medium
7	Artificial Intelligence	Low	High	High	Low	Medium	High	Low	Low	Low	Low	Medium
8	Disaster Prevention or Mitigation	Medium	Medium	High	Low	Low	Low	Low	High	Medium	High	High
9	Quantum Information Science	Medium	Low	Low	Low	Medium	High	Low	Low	Low	High	High
10	Biotechnology & Medical technology	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low

- **Federal labs and universities drive breakthroughs in AI, autonomy, and advanced manufacturing**, with hundreds of millions annually in related R&D.

Notes: (*) Q = qualitative research. (**) I = Intensity metric corresponds to the location quotients of the MSA in the corresponding category. When Intensity > 1.1, it is considered high; 0.9 < Intensity < 1.1 it is moderate; and Intensity < 0.9 signifies low intensity. (***) R = Corresponds to the US Ranking. When Hampton Roads ranks between 1 and 40 among all US MSAs, it is considered high; between 41 and 54, it is moderate; and 55 and below, it is low. For reference, Hampton Roads ranks 51th in GDP. **Source:** The New Localism (2024).

Hampton Roads is a Worldwide Leader in Advanced Computing

Hampton Roads: Positioning of Selected Technologies.



Opportunity Areas**:

We identified 3 technologies where HR shows dual-use innovation and where ideas move from military to civilian markets and back again.

Cybersecurity, Data Storage, Data Mgmt. The region has a strong military presence, a vibrant shipbuilding industry, and a growing wind energy sector that fuels demand for technology applications and data management. Jefferson Lab will host a High Performance Data Facility to accelerate scientific discovery in an era of exascale Supercomputing. Strengthening connections between academia and industry, and expanding access to capital to bring ideas to market, can further leverage the region's existing strengths.

Advanced Energy Efficiency. The region offers a favorable environment for advancing energy efficiency technologies, particularly those related to wind energy and nuclear power. Colleges are leading the way in generating specialized talent, but there is still a need to enhance R&D and innovation given the growing market for these technologies in the region.

Advanced Mfg. (includes Unmanned Systems). These technologies benefit from a prosperous ecosystem for testing and innovation, due to the presence of key players and the demand for these technologies. Hampton Roads is particularly well positioned to advance technology applications in autonomous systems, with organizations such as NASA Langley, Huntington Ingalls, Dominion Energy, and ODU driving innovation in these areas.

Notes: (*) There is considerable scope for the application of artificial intelligence in the region, although the level of current activity is relatively limited. (**) To identify a subset of Key Technologies that offer opportunities for the region, additional qualitative analyses were conducted. **Source:** The New Localism (2024).

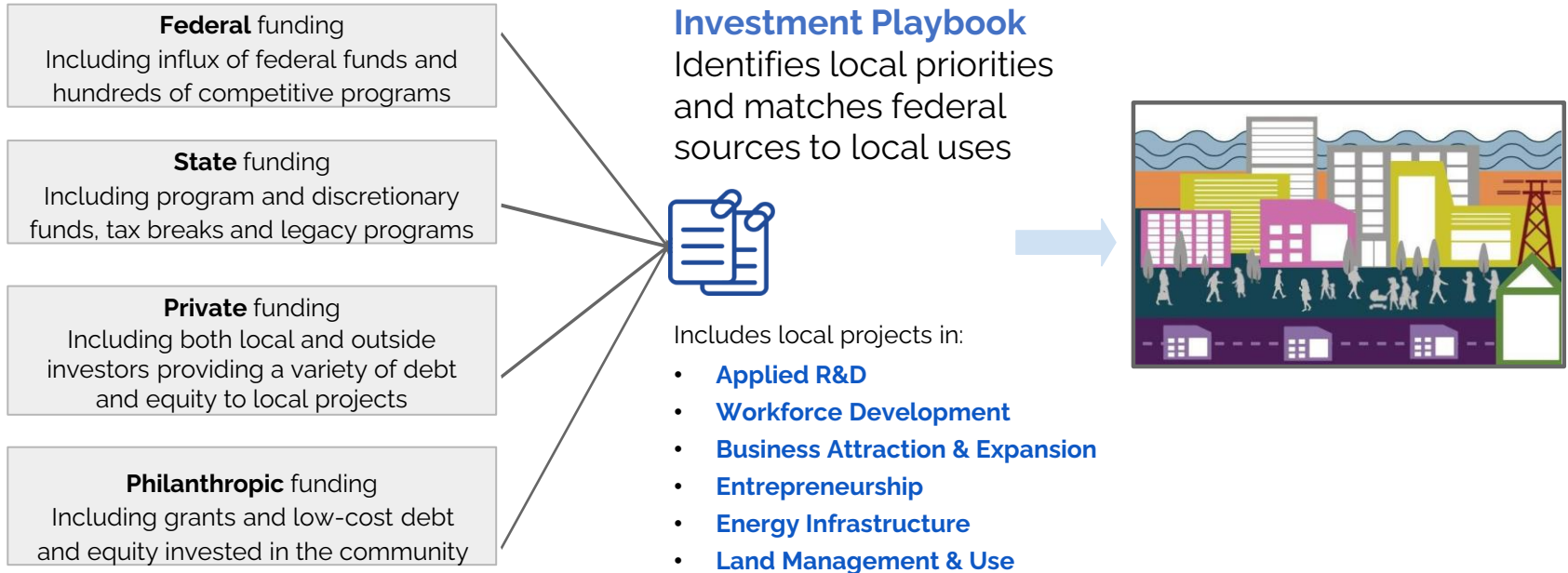


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Hampton Roads Investment Playbook Phase I | What's Next?

Investment Playbooks identify needed investments and match them to federal, state, and civic sources that can maximize the cumulative local effect of the investments.



Hampton Roads Investment Playbook

Phase I - Diagnostic

THANK YOU!

Appendix: Hampton Roads Investment Playbook Phase I - Interviews conducted

Organization	Stakeholder	Position
US Navy	Matt Zirkle	Former Rear Admiral
Hampton Roads Regional Planning District Commission	Bob Crum	Executive Director
Hampton Roads Military and Federal Facilities Alliance	Todd Nichols	Deputy Executive Director
Hampton Roads Military and Federal Facilities Alliance	Rick Dwyer	Executive Director
Jefferson Lab (SURA)	Sean Hearne	President & CEO
NASA Langley	Deborah Tomek	NASA Senior Executive
NASA Langley	Brandi Quam	Business Development Specialist
The Port of Virginia	Stephen Edwards	CEO & Executive Director
Hampton Roads Workforce Council	Sean Avery	CEO
Virginia Peninsula Chamber	Bob McKenna	President/CEO
Hampton Roads Executive Roundtable	Nancy Grden	President & CEO
Virginia Tech	Brett Malone	Executive Director
Virginia	Chelsea Jenkins	Deputy Secretary of Commerce and Trade

We received additional written feedback from the following stakeholders:

Organization	Stakeholder	Position
757 COLLAB	Paul Nolde	Managing Director & Executive Director
Hampton Roads Executive Roundtable	Nancy Grden	Executive Roundtable
CIVIC Leadership Institute	Mary Kate Andris	President & CEO
Hampton Roads Military and Federal Facilities Alliance	Rick Dwyer	Executive Director