

STATE *of* CONNECTICUT
OFFICE *of* MILITARY AFFAIRS
(OMA)

Annual Report
Fiscal Year 2020-2021



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Executive Director

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I. Introduction

For its legendary support in the Revolutionary War, President George Washington called Connecticut the “*Provisions State*.” From the beginning of America’s democracy, Connecticut has played a key role in producing the diverse and highest quality human and physical resources for our nation’s defense.

Units of the Connecticut National Guard are dispersed in armories and other facilities across the state. Throughout its long history, dating back to colonial militias, Guard units have responded to state and national emergencies and performed combat operations around the world. The Connecticut National Guard is headquartered next to the State Capitol in Hartford, in the massive State Armory and Arsenal building dedicated by President William H. Taft in 1909.

In 1794, after the Continental Congress decided to create a United States Navy, an expedition sailed from New London to retrieve live oak, the hardest wood available, to build America’s first warships at different shipyards along the East Coast. These ships were not modified merchant vessels. They were designed from the keel up to be warships. One of them, the USS *Constitution*, remains the oldest commissioned warship in the world.

The Navy base in Groton was originally a Naval Yard and Storage Depot, established in 1868. It was built on land donated by the people of Connecticut. The State Legislature provided \$15,000 and the City of New London appropriated \$75,000 for the purchase of land on the east bank of the Thames River in the New London harbor. In 1916 the base was designated the nation’s first Naval Submarine Base (SUBASE) and home of the Submarine School.

The first land-based campus of the U.S. Coast Guard Academy was established at Fort Trumbull in 1910 and then moved

to land donated by the City of New London in 1915. The Coast Guard Academy is the single officer accession source of all commissioned officers for the U.S. Coast Guard. Today, the men and women of the Coast Guard serve at stations ashore and aboard cutters deployed throughout the U.S. and in every ocean.



U.S. Coast Guard Academy cadets furl a sail aboard USCGC Eagle (WIX 327) in the North Atlantic Ocean, June 24, 2021. Eagle was conducting summer cadet training in at-sea leadership and professional development, first visiting Portugal, then Iceland, followed by Bermuda. (U.S. Coast Guard photo by Petty Officer 3rd Class Ryan Schultz)

Since the first days of our democracy, Connecticut’s defense manufacturing industry has continued without interruption. The ships, submarines, aircraft, jet engines, helicopters, firearms and advanced weapon systems built in Connecticut reflect our state’s continuous innovation and highly skilled workforce. Connecticut’s defense industry and military bases produce billions of dollars in economic activity throughout the state, in large and small businesses in virtually every municipality.

Overview of OMA

The Office of Military Affairs (OMA) was established by Connecticut General Statute 32-58b in 2007. Accordingly, “the Office of Military Affairs shall promote and coordinate state-wide activities that enhance the quality of life of all branches of military personnel and their families and to expand the military and homeland security presence in this state.”

Mission of OMA

- Coordinate efforts to prevent the closure or downsizing of Naval Submarine Base New London in Groton (SUBASE).
- Support Connecticut’s military families and enhance their quality of life.
- Advocate for Connecticut’s defense industry, a major component of the state’s economy and an engine of innovation and quality production for the U.S. Armed Forces.
- Encourage the retention of established military and defense industry missions and the relocation of new ones to the state.
- Serve as liaison to the Connecticut congressional delegation on defense and military issues.

Structure and Organization

As directed in statute, OMA is established within the Department of Economic and Community Development (DECD) for administrative purposes only. OMA and DECD are co-located at 450 Columbus Boulevard in Hartford, Connecticut.

The office is minimally staffed with a full-time Executive Director, designated as a department head in the executive branch, reporting directly to the Office of the Governor. The Executive Director is supported by DECD staff members and interns who provide support for OMA in various functions including, but not limited to, office administration, public communications, financial management, legal counsel, information technology, economic research and legislative affairs.

OMA is an active member of the national Association of Defense Communities (ADC), a Washington-based organization that represents states and communities nationwide that host military installations. OMA Executive Director Bob Ross was elected to the ADC Board of Directors and serves as President. His many contributions to the organization include participation in numerous thought-leading programs in national and regional forums.

II. Key Defense Issues for the Nation and State

The year 2020 was tumultuous, with a previously unknown coronavirus breaking out in January and spreading rapidly in the United States and worldwide. It was named in February as COVID-19, with CO for corona, VI for virus, and D for disease. The Trump Administration declared a national emergency in March. By the year’s end 1.7 million people around the world had died, including some 350,000 in the United States.

The pandemic set off a global recession. By April 6.5 million Americans had filed for unemployment benefits; the unemployment rate reached 14.7%, the highest since the Great Depression 1929-1939. Restaurants and other businesses were shut down, schools were closed – education became virtual. Congress passed a \$2.2 trillion economic recovery bill, the highest in U.S. history.

The year ended on a positive note, with pharmaceutical companies announcing they had developed and tested vaccines that were over 90% effective. They became available for the public in early 2021. As vaccinations became widespread in the United States and elsewhere, things started to get better. U.S. COVID-19 cases dropped significantly in the summer of 2021, only to rise again due to a variant named Delta. But the economy improved substantially, and daily life returned to some level of normality.

Local Military Installations and Defense Industry Response

Within Connecticut, there was significant collaboration between the Navy, the National Guard, and the Coast Guard to have a coordinated response.



2100401-N-ME396-1009 GROTON, Conn. (April 1, 2021) Connecticut Army National Guard Sgt. 1st Class Sara Landon prepares COVID-19 vaccine doses in Morton Hall Gymnasium onboard Naval Submarine Base (SUBASE) New London. SUBASE New London and the Connecticut National Guard joined forces to administer 1,000 doses of vaccine to Sailors and eligible Navy personnel on the base, and validate the base's large-scale, vaccination concept of operations. (U.S. Navy photo by Mass Communication Specialist 2nd Class Tristan B. Lotz/Released)

Recognizing the unique challenges of supporting deploying submarine crews and training thousands of students in the midst of the COVID-19 pandemic, SUBASE quickly assembled a team to establish health protection protocols, conduct contact tracing, and enforce policy to mitigate the spread of the disease while maintaining continuity of operations and sustaining mission assurance.

A key component of this effort was the strong inter-service relationship between the Connecticut National Guard, led by the Adjutant General, Major General Fran Evon, and SUBASE, led by then Commanding Officer, Captain Todd Moore.

Connecticut's Army-Navy team exercised proactive leadership, supported COVID-19 response across the state, and contributed significantly to a relentless public awareness campaign. The team jointly conducting a mass vaccine distribution proof of concept, in which in one day at SUBASE, COVID-19 vaccines were distributed to more than 1,000 Sailors and eligible Navy personnel on the base. As a result, SUBASE maintained one of the highest vaccination rates in the area and provided uninterrupted Submarine Force operations.

The Coast Guard Academy coordinated closely with the OMA to ensure that campus mitigation measures aligned with rapidly evolving pandemic responses and executive orders coming from Hartford. Academy Superintendent, Rear Admiral Bill Kelly, made major adjustment to academic schedules and the arrival of new students to maintain throughput, fulfilling its mission to produce new officers required in the fleet.

In the early days of the pandemic, Governor Ned Lamont explicitly designated military organizations and defense industries as mission essential to national security to sustain operations.

Defense contractors made reasonable workplace adjustments and maintained production.



2100401-N-ME396-1024 GROTON, Conn. (April 1, 2021) Hospitalman Alikha Bael administers a COVID-19 vaccine to Boatswain's Mate 2nd Class Brianna Martinez in Naval Submarine Base (SUBASE) New London's Morton Hall Gymnasium during a Navy and Connecticut National Guard joint effort to distribute COVID-19 vaccines to approximately 1,000 Sailors and eligible Navy personnel on the base. (U.S. Navy photo by Mass Communication Specialist 2nd Class Tristan B. Lotz/Released)

For Connecticut, the state's defense industrial base saw an outstanding year, with some \$18.3 billion in defense contracts. The year ended with congressional passage in December of the Fiscal Year (FY) 2021 National Defense Authorization Act (NDAA) and the FY21 defense appropriations bill. Together, the bills authorized and appropriated tens of billions of dollars for the key weapons programs in the state: Electric Boat's world-class submarines, Pratt & Whitney's engines for the renowned F-35 Joint Strike Fighter aircraft, and Sikorsky's varied helicopter programs.

National Security/Foreign Policy Issues

With respect to national security issues, at various times in 2020 the spotlight was on U.S. relations with China, Iran, Afghanistan, and Russia. At home, the presidential election in November and the preceding campaign brought out numerous differences between incumbent Republican President Donald Trump and his Democratic opponent, former Vice President Joe Biden.

China: Relations between the United States and China continued to deteriorate in 2020. The year started with both countries blaming each other for starting the pandemic. A trade war also continued. In January 2020 both countries signed an agreement: the United States agreed not to apply new tariffs; in return China would buy \$200 billion more in U.S. goods and services by 2021. China has not made the purchases; the United States has maintained tariffs on \$350 billion worth of Chinese goods. In addition, China in 2020 acted aggressively toward the United States and other countries. For example, it imposed a new national security law on Hong Kong aimed at crushing pro-democracy moves and took a hard line on dealings with Taiwan. Such actions have continued into 2021, particularly with respect to military planes and ships operating closely to Taiwan.

Iran: In January 2020 a U.S. drone strike killed Iranian General Qasem Soleimani, thought to be the second most powerful person in Iran after Ayatollah Ali Khamenei. In response, Iran launched rocket attacks on U.S. bases in Iraq, wounding dozens of U.S. troops and killing numerous Iraqis. Tensions continued through the year, with the United States imposing new sanctions on Iran despite calls from European countries to ease the economic pressure in light of the COVID-19 pandemic. In November Iran's top

nuclear scientist was assassinated. Iran responded by moving further away from the 2015 nuclear agreement.

Afghanistan: In February 2020 the Trump Administration reached an agreement with the Taliban to withdraw U.S. forces by May of 2021. In return, the Taliban was to meet certain conditions, including negotiating peace with the Afghanistan government. The United States withdrew 2,500 troops in early 2021 despite continued violence. There were little negotiations between the Taliban and the government. With the inauguration of President Joe Biden in January 2021, the United States announced it would end the war and bring home all U.S. troops later in 2021. After Taliban forces rampaged through and controlled most of the country, the controversial rapid final withdrawal of U.S. forces took place in August 2021, finally bringing a stunningly chaotic end to the 20-year war.

Russia: Tensions in the U.S.-Russia relationship continued through 2020, including attempted interference in the 2020 U.S. election, Russia's use of force against neighboring countries, attacks on political opponents, and involvement in conflicts worldwide. In December 2020 the U.S. government accused Russia of being behind a massive and sophisticated cyberattack that penetrated the computer networks of numerous U.S. companies and federal agencies. The Biden Administration has imposed sanctions on Russia and Russian persons for the cyberattack, the election meddling, the poisoning and arrest of opposition figure Alexei Navalny, and other malign actions.

Presidential Election: The November 2020 election of President Biden saw record voting. Both Biden and incumbent Donald Trump received more votes than any other candidates in U.S. history, with Biden receiving more than 81 million votes and Trump receiving some 74 million. In the campaign Biden offered a

different foreign policy approach than Trump, favoring a more multilateral policy rather than Trump's American First approach. After being elected President Biden reached out to NATO allies, reinforced U.S. support for the United Nations, announced that the United States would rejoin the 2016 Paris Climate Agreement, and pledged to work with other friendly countries to address global threats.

Connecticut Defense Funding

December 2020 was a good month for the state of Connecticut. As stated above, both the FY21 defense authorization and appropriations bills received final passage by Congress and were signed into law. Due in large part to the support from the state's congressional delegation, the bills contained very significant funding for CT-based defense programs.

Following is a summary of the key items:

- \$2.9B for construction of the first Columbia-class ballistic missile submarine.
- \$1.3B for advance procurement for the Columbia-class, including an additional \$175M above the budget request for submarine supplier development.
- \$2.3B for one Virginia-class submarine, and \$2.3B above the budget request for a second Virginia-class sub.
- \$2.4B in advance procurement for future submarines, including long-lead material.
- \$9.6B for 96 Pratt & Whitney-powered F-35 aircraft, 17 more aircraft than requested in the budget.
- \$862M for 42 UH/HH-60M Sikorsky Black Hawk helicopters, \$141M above the request.
- \$1.1B for nine Sikorsky CH-53 King Stallion helicopters, two more than requested in the budget.

- \$578M for five Sikorsky VH-92 presidential executive helicopters.
- \$1.1B for 19 Sikorsky HH-60W combat rescue helicopters.
- \$2.7B for 15 KC-46A tanker aircraft, powered by Sikorsky engines.

Rep. Joe Courtney of Connecticut, chairman of the House Armed Services Subcommittee on Seapower and Projection Forces, played a key role in obtaining funding for the second Virginia-class submarine. The Trump Administration budget contained funding for only one Virginia-class sub. President Trump also vetoed the FY21 Congress-passed NDAA, but Congress overturned the veto.

“We’re starting the New Year with a big win for our U.S. Navy and for eastern Connecticut,” Courtney said in a Jan. 1, 2021, press release. “The president’s attempt to veto the bipartisan NDAA has officially been voted down, and construction of the second Virginia-class submarine has once and for all been restored in 2021.”

Defense Contracts

As stated above, Connecticut’s defense industrial base saw a very good year in 2020 with \$18.3B in defense contract awards. Most of this came in November 2020, when companies in the Nutmeg state were awarded \$10.7B in military contracts. The largest was a \$9.5B contract to Electric Boat (EB) for construction of the lead and second Columbia-class submarines. EB is the prime contractor for design and construction of the 12 Columbia-class submarines, which will replace the aging Ohio-class ballistic missile submarines.

In addition, Pratt & Whitney (P&W) on Nov. 30 received a \$642M contract for maintenance and logistics of engines for the F-35 aircraft, and another on Nov. 25 in the amount of \$453M for the aircraft engine Component Improvement Program.

Electric Boat

EB has more work than at any time in the company’s history, according to EB President Kevin Graney. He made the statement on Feb. 1, 2021, at EB’s annual business outlook briefing for the company’s stakeholders. The company has a backlog of \$39B, including two of the new Columbia-class ballistic missile submarines and 19 Virginia-class attack submarines. Of the latter, 11 are currently under construction.



The Virginia-class attack submarine USS Colorado (SSN 788) makes its way up the Thames River and past the City of New London returning home to Submarine Base New London, Tuesday, April 6, 2021. Colorado is the 15th Virginia-class attack submarine and is the fourth United States ship to be named for The Centennial State. (U.S. Navy Photo by John Narewski/Released)

“This increased demand requires additional investment across the submarine industrial base, that is, the suppliers and shipyards, and will significantly increase demand for maintenance and modernization of existing ships,” Graney said.

He said EB has been preparing for the unprecedented work level in recent years, hiring thousands of workers and investing in its supply chain and facilities. In 2020 EB hired just under 2,000 employees, including 567 at Quonset Point, RI, where the submarine modules are built, and 154 for EB’s shipyard at Groton where final assembly takes place. More than 2,000 workers are expected to be hired in 2021, he stated, mostly at Quonset Point.

EB is building a new facility to support construction of the Columbia-class submarines. In June 2020 EB signed a \$544M contract to complete work on the South Yard Assembly Building, the centerpiece of EB’s facility expansion at the Groton shipyard. Some 1,400 skilled personnel will work at the building upon its completion. EB is also expanding and improving other facilities in Groton and building a floating dry dock. Overall, EB and its parent company, General Dynamics, are investing \$1.8B in capital expenditures for constructing the Columbia-class submarines.

Sikorsky

Sikorsky was awarded four contracts in 2020 totaling some \$2B, along with numerous smaller contracts. The most notable were:

- Feb. 20: \$470.8M for six VH-92A presidential helicopters, part of the Presidential Helicopter Replacement Program. They are part of the program to build 23 helicopters for the Marine Corps. Sikorsky helicopters have flown every U.S. commander-in-chief since President Dwight D. Eisenhower in the 1950s.

- March 10: \$525.4M for two UH-60M Black Hawk helicopters, part of a program to provide 38 Black Hawks for the Army.
- Oct. 26: \$550.4M for six CH-53K King Stallion heavy lift helicopters for the Marine Corps, part of a program for 200 such aircraft. This was the fourth lot of the program. The first CH-53K was delivered to the Marine Corps on Sept. 24, 2021. The next one is scheduled for delivery in early 2022.
- Dec. 9: \$507M for additional Army Black Hawk helicopters.

Pratt & Whitney

P&W’s most prominent defense program continues to be the F135 engine for the F-35 Joint Strike Fighter aircraft. By the end of 2020 the company had produced about 700 of the propulsion systems. By September 2021 some 850 engines had been delivered worldwide. P&W has 220 suppliers in 35 states that provide parts for the engine.

In addition to the \$642M contract for F-35 engines P&W received in November 2020, it was awarded two contracts for F-35 engines in March 2020 for \$193.8M and \$319.8M, respectively. It received a contract in the amount of \$147.7M for F135 engine spare parts in September 2020.

A Namesake Salute

As 2020 ended, Connecticut paid tribute to its namesake submarine, the USS Connecticut, commissioned in 1998. Gov. Lamont issued a proclamation declaring Dec. 22, 2020, “USS Connecticut Day.” The boat has the hull number SSN-22; it was commissioned on Dec. 11, 1998. However, recognizing the

significance of the boat's 22nd birthday and its hull number, Gov. Lamont fittingly chose to issue the proclamation on Dec. 22.

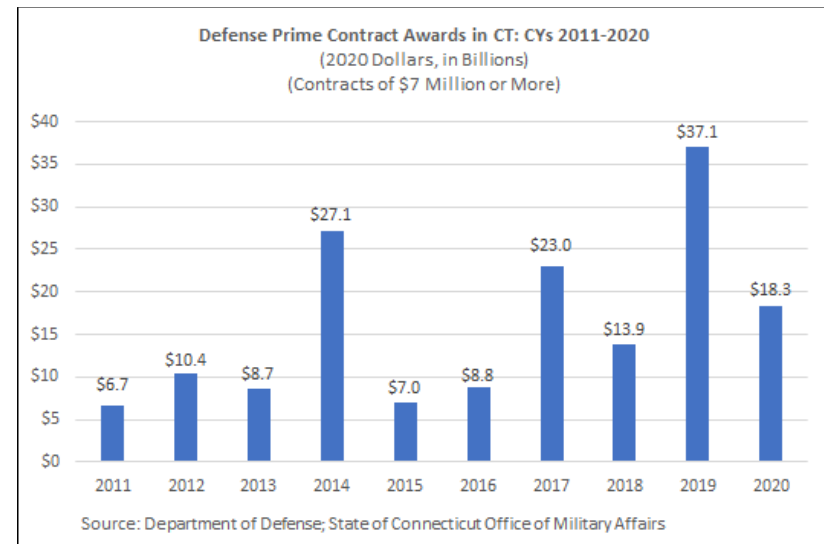
III. Connecticut Defense Industry Outlook

As stated earlier in this report, the Connecticut defense industrial base received \$18.3B in defense contracts in 2020. However, this number is very conservative. It is based on the Department of Defense's daily announcement of contract awards. However – importantly -- DOD's contract announcements apply only to prime contracts with a value of \$7M or more. The many thousands of DOD contracts under \$7M awarded annually are not included.

Connecticut's OMA has been closely tracking defense contracts via the DOD daily contract announcements since it was established in 2007. Since then, the state's annual defense contract awards have generally been in the \$6-14B range. Recently, however, there have been years that soared above this range. This has mainly been due to (1) EB's building of two Virginia-class submarines per year and now the start of Columbia-class construction, (2) P&W turning out significant numbers of engines for the F-35 aircraft and sustainment of military engines, and (3) Sikorsky's steady and continued production of Black Hawk helicopters and, more recently, the CH-53K King Stallion and VH-92 presidential helicopters.

Trend in Prior Year Contracts

Figure 1 below shows annual amounts of DOD prime contract awards of \$7M or more for calendar years 2011 through 2020. From 2011 through 2013 the highest single-year defense skyrocketed to \$27.1B. This was mainly due to a \$17.6B contract awarded to EB for 10 "Block 4" Virginia-class submarines. At the time, this was the largest Navy shipbuilding contract ever awarded.



[Figure 1]

In 2015 and 2016 the amounts dropped to more modest levels of \$7.0B and \$8.8B, respectively. The number zoomed up again in 2017, with a total of \$23B. This was due largely to a \$6.7B contract to P&W for sustainment of the F-119 engine used in the Air Force's F-22 Raptor jet fighter, through 2025.

The 2018 amount dropped down to \$13.9B. But it soared again in 2019 to \$37.1B, by far the highest amount since OMA has been tracking defense contracts. It was mainly the result of a staggering \$22.2B contract awarded to EB in December 2019, the Navy's largest single shipbuilding contract, surpassing the 2014 record award by \$5B. The 2019 contract was for nine "Block 5" Virginia-class submarines. Eight of them will have an 84-foot expansion of the hull, known as the Virginia Payload Module, that will increase the missile capacity. The 2020 amount of \$18.3B is the fourth highest since 2007.

With the significant annual contract spikes in 2014, 2017, and 2019, Figure 1 can give the impression of economic instability in the CT defense industrial base. But this is not the case, for the following reason: The total amounts of contracts announced by DOD are very often considerably greater than the amounts actually obligated, i.e., paid to the contractor, at the time the contracts are awarded. Rather, the contract amounts are spread out over many years. This is particularly true for very large contracts.

For example, of the \$9.5B contract awarded to EB on Nov. 5, 2020, for the first two Columbia-class submarines, only \$565M was obligated at the time of the award. The remainder will be paid in increments in the years to come.

Similarly, in November 2020 P&W was awarded a \$642M contract for spare parts, maintenance, and logistics for the F135 engine. The amount actually paid to P&W at the time was \$215.4M, with the remainder to be paid in subsequent years. Many other examples could be cited.

In sum, the amounts from large defense contracts are often spread out over many years, providing a cushion of stability and predictability for the state's defense industrial base. This stability is important in years with more modest contract awards.

Suppliers to Leading Contractors

With construction of Columbia-class submarines getting started and the planned continued construction of two Virginia-class submarines each year, the future is extremely bright for Connecticut's submarine industrial base. But there is a significant challenge for suppliers in the state and around the country to keep up with the demanding pace of construction.

EB and its sub construction counterpart, Huntington Ingalls's Newport News Shipbuilding, award hundreds of million dollars in sub-contracts to suppliers every year. While it is difficult to track such spending, the Submarine Industrial Base Council in Washington, DC, compiles amounts spent or contracted to submarine suppliers for the major submarine programs. More than 2,700 first-tier companies nationwide make up the submarine industrial base. Moreover, the Council estimates that thousands of lower-tier companies exist across the United States.

In February 2021 the Council issued a state-by-state report on contracts awarded to 2,700 known submarine industrial base suppliers over the last five years. The total amount nationwide was \$23B, some \$3B higher than a similar report issued in February 2020. For Connecticut, the amount was \$1.1B, for such products as air revitalization equipment, control valves, specialty filters and alloys, oxygen generators, microswitches, high speed bearings, and pipe fittings, etc.

The \$1.1B amount is significantly higher than the total for CT suppliers in the Council's 2020 survey, \$864.2M. The increase no doubt is due to the Columbia-class and Virginia-class construction demands. The Council's 2021 report also states that Connecticut has 392 first-tier suppliers, plus an unknown number of lower-tier supplier companies.

While Connecticut is a major submarine supplier state, it ranks 7th in supplier sub-contract amounts over the past five years, according to the Council's report. California is far and away in 1st place, at \$5.2B, followed by Virginia at \$3.3B and Pennsylvania at \$2.2B. See Table 1 below, listing the top 10 submarine supplier states by dollar amounts over the past five years, with Connecticut at \$1.1B.

Top U.S. Submarine Supplier States

(By Dollar Amounts, 2016-2021)

1.	California	\$5.2B
2.	Virginia	\$3.3B
3.	Pennsylvania	\$2.2B
4.	Ohio	\$1.6B
5.	Maryland	\$1.5B
6.	Massachusetts	\$1.1B
7.	Connecticut	\$1.0B
8.	New York	\$667M
9.	Florida	\$644M
10.	Washington	\$588M

[Table 1]

However, Connecticut has by far the largest number of submarine suppliers with 392, followed by Virginia at 286 and Massachusetts, 251. Table 2 below shows Connecticut at the top. Most of the states below it have much larger populations. Interestingly, three of the top 10 sub supplier states are in New England, with Rhode Island in 7th place with 130.

Top U.S. Submarine Supplier States

(By Number of Suppliers, 2021)

1.	Connecticut	392
2.	Virginia	286
3.	Massachusetts	251
4.	Pennsylvania	191
5.	California	172
6.	New York	148
7.	Rhode Island	130
8.	Florida	107
9.	New Jersey	148
10.	Ohio	86

[Table 2]

Overall, there are almost 400 known small to medium size submarine supply chain companies in Connecticut -- with thousands more in Rhode Island, Massachusetts and elsewhere -- that provide products to three of DOD's largest Original Equipment Manufacturers (OEM): Electric Boat, Pratt & Whitney, and Sikorsky.

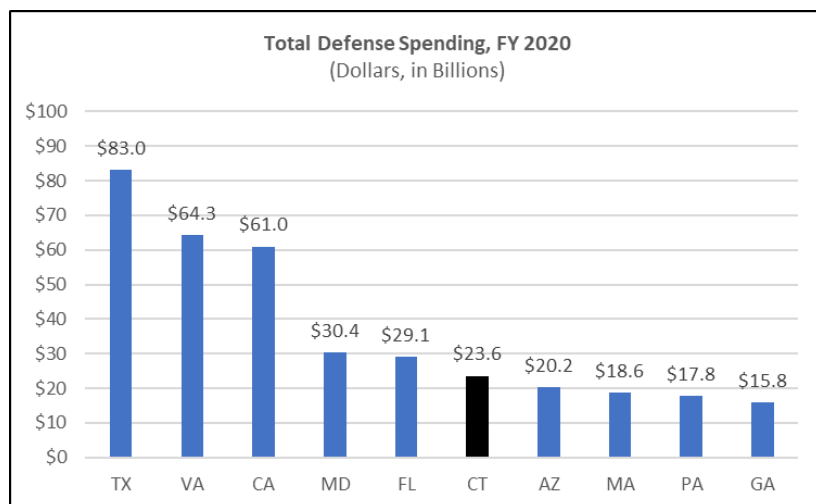
Connecticut's Defense Spending Ranking

The most recent comprehensive analysis of state-by-state defense spending is *Defense Spending by State, Fiscal Year 2020*, released in October 2021 by the Office of Local Defense Community Cooperation (OLDCC) in the Department of Defense, formerly known as the Office of Economic Adjustment. The report is based on research done between March and September of 2020, longer than originally anticipated due to the COVID-19 pandemic. It is drawn from numerous sources, mainly DOD's Defense Manpower Data Center and USAspending.gov, managed by the Department of the Treasury.

Connecticut did extremely well in the rankings, especially with its small population of 3.6 million compared to other major defense spending states. It is ranked 6th overall in total defense spending, 3rd in defense spending as a percentage of state gross domestic product (GDP), and 4th in defense contract spending. The latter two rankings are advances from last year's similar report by OLDCC.

On the other hand, the state is ranked much lower in defense personnel spending, i.e., salaries paid to active duty, National Guard, and reserve personnel in a state, along with civilian DOD employees. This category is dominated by states with many large military bases such as Virginia, California, and Texas. Not surprisingly, CT came in 36th in this category.

Figure 2 below shows the rankings for total defense spending, which includes defense contracts and personnel. No. 6 Connecticut is at \$23.6B, a remarkable achievement, behind states with large amounts of defense contractors and military bases: California, Virginia, Texas, Maryland, and Florida.

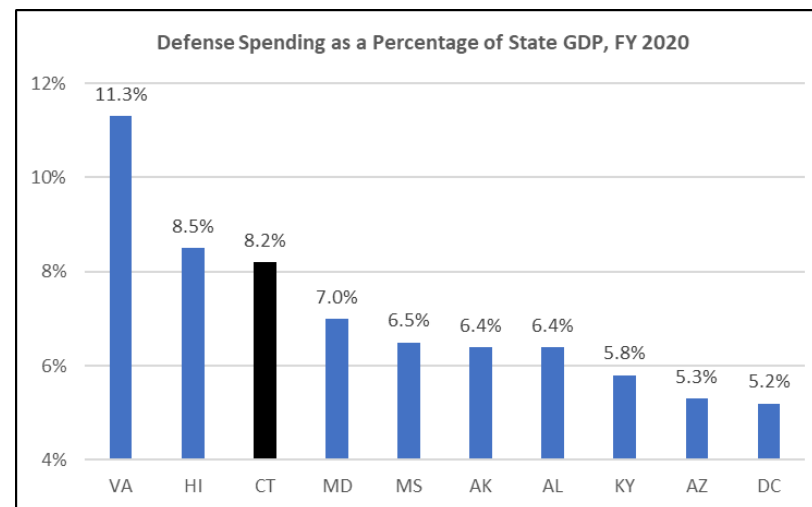


[Figure 2]

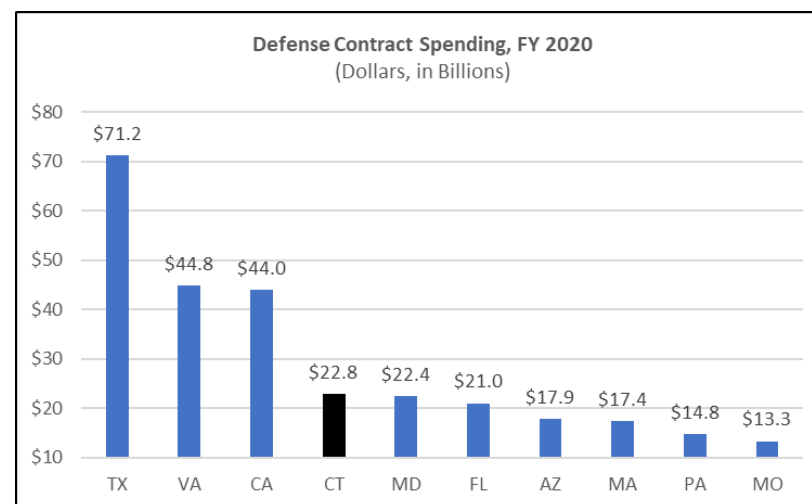
As shown in Figure 3 below, Connecticut also does very well in the ranking of defense spending as a percentage of Gross Domestic Product (GDP), in 3rd place at 8.2% and closely behind Hawaii. Virginia is at the top, with Hawaii a distant second. Last year's report had CT in 4th place in this category, so the advance from FY 2019 to FY 2020 is impressive. On average for all states, defense spending comprised 2.8% of a state's GDP, some one third of the GDP spending in Connecticut.

In the category of defense contract spending -- excluding DOD spending on personnel -- Connecticut is 4th in the nation at \$22.8B, also quite noteworthy. It is behind only Texas, Virginia, and California, all with much larger populations. In OLDCC's FY 2019

report, Connecticut was ranked 5th in this category. See Figure 4 below.

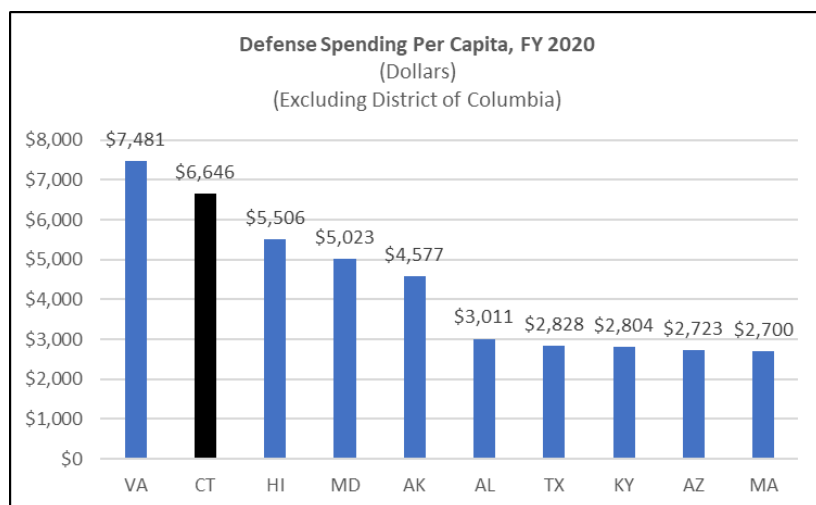


[Figure 3]



[Figure 4]

Another way of measuring the strength of Connecticut's defense industrial base relative to other states is by per capita defense spending. According to the OLDCC report, FY 2020 per capita defense spending in Connecticut – both for contracts and personnel spending – was \$6,646. Remarkably, the state is ranked second, behind only Virginia at \$7,481. Also, CT's per capita defense spending is far above the average state per capita defense spending across the entire United States, \$1,803. As shown in Figure 5 below, the state immediately behind Connecticut, Hawaii (\$5,506) has a low population.



[Figure 5]

The ODLCC report lists the 10 leading defense contractors in each state, based on defense contract spending in FY 2020, i.e., from Oct. 1, 2019, through Sept. 30, 2020. It shows EB at the top with \$11.6B, followed by P&W at \$5.8B and Sikorsky at \$4.1B. Readers may wonder why EB is shown with \$11.6B in contracts when it received the massive \$22.2B contract in December 2019 for nine Virginia-class submarines, as stated above. Although the award

was made to EB as prime contractor, the amount is shared with Huntington Ingalls's Newport News Shipbuilding, the only other U.S. company constructing submarines. Table 3 shows the entire list.

Top CT Defense Contractors, FY 2020

1. Electric Boat	\$11.6B
2. Pratt & Whitney	\$5.8B
3. Sikorsky	\$4.1B
4. Apiject Systems	\$138.0M
5. Sonalysts	\$77.8M
6. Weeks Marine	\$67.3M
7. Spectrum Associates	\$66.4M
8. Ensign-Bickford	\$55.6M
9. Triumph Group	\$46.7M
10. Gartner	\$44.3M

[Table 3]

Finally, the OLDCC report lists the top 10 defense contract spending locations nationwide in FY 2020. Interestingly, New London (County) is listed as 5th, at \$12B, due no doubt to EB contract awards. New London is behind only locations in the large states of Texas, Virginia, and California. See Table 4 below.

Top Defense Contract Spending Locations, FY 2020

1. Tarrant, TX	\$42.1B
2. Fairfax, VA	\$17.7B
3. San Diego, CA	\$13.5B
4. Dallas, TX	\$12.3B
5. New London, CT	\$12.0B
6. St. Louis, MO	\$11.4B
7. Pima, AZ	\$10.8B
8. Middlesex, MA	\$10.5B
9. Los Angeles, CA	\$9.9B
10. Madison, AL	\$8.9B

[Table 4]

Summary

As shown in this report, Connecticut continues to rank among the leading states nationwide for defense contracting despite its modest population. All the data discussed above points to a vibrant defense industrial base providing the nation with critical weapons. In the last few years in particular – due in large part to EB’s Virginia-class and Columbia-class submarines and P&W’s F-35 engines – the state’s defense contracts have been growing substantially. Suppliers have been busier than ever, particularly for submarines.

The state’s high level of defense production will likely to be the case for years to come, as Connecticut continues to build and maintain the world’s most sophisticated nuclear submarines, state-of-the-art military jet engines, and a variety of military helicopters used in the United States and worldwide. Simply put, the future for the state’s defense economy is very bright.

IV. U.S. Naval Submarine Base New London and the Submarine Industrial Base

Chief among the reasons to create OMA was the very real probability that the SUBASE in Groton would be closed. Twice it was targeted by the DOD for closure in the Base Realignment and Closure (BRAC) process. Twice, *Team Connecticut*, a group of public and private sector individuals, got organized and worked tirelessly to reverse the almost certain closure of the base. Today, the primary task of OMA is to do proactively what *Team Connecticut* had to do reactively in the BRAC rounds of 1993 and 2005. We don’t want to wage this battle again.

The predictable economic catastrophe associated with the potential closure of the SUBASE is obvious to anyone familiar with southeastern Connecticut. The loss of the positive effects we

realize from the base as it generates over \$6B in annual economic impacts and over 30,000 jobs would be devastating. The ripple effect throughout the state would simply be the reverse of what we experience today. Hundreds of small businesses deriving their business and clientele from the base would go under. Without this economic anchor, the regional economy would be severely impacted, in every industry cluster.

Creating Military Value

It is clear that that DOD will continue to make adjustments to force structure and military bases. However, another formal BRAC round is not currently requested by DOD and the Congress continues to resist this politically difficult process. Subject matter experts widely believe DOD will eventually request another BRAC round. However, future BRAC rounds may be much different from previous rounds. Previous rounds focused on cost savings and strategic basing. Future rounds will likely have new criteria added, including the quality of host community public schools, state level efforts to address military spouse unemployment and licensure reciprocity, and relocations required due to the effects of climate change and sea level rise.

OMA will continue to closely monitor developments in BRAC requests and basing criteria. And OMA will continue to focus on developing and executing strategic initiatives to enhance the *military value* of the base in preparation for the next BRAC round whenever it comes.

In 2007, the Connecticut General Assembly authorized \$40 million for future investments in *military value* at the SUBASE to protect it from closure. Since then, funding has been directed to several carefully selected projects. This strategy is built on the criteria used by prior BRAC commissions and aims to assess and

enhance the *military value* of the base, thereby decreasing the likelihood it will be targeted for closure. By increasing *military value* in operations, infrastructure and efficiency, we reduce the likelihood of closure because DOD simply can't afford to recreate that strategic capacity anywhere else. It's not about sunk cost. It's about current and future *military value*.

Today the SUBASE is undergoing a remarkable transformation as old infrastructure is demolished and replaced with modern capacity. People familiar with the SUBASE recognize its ongoing dramatic transformation into a modern campus of new buildings specifically designed for unique operations, specialized training and high-tech support functions associated with producing and maintaining our nation's submarine force.

Working in a close partnership with Navy officials in Connecticut and at the Pentagon, OMA has established a legal framework through which the state can transfer funds directly to the Navy for carefully selected projects at the SUBASE. Connecticut was the first state to develop such a process.

In May 2019, Governor Lamont participated in the formal change of command ceremony at SUBASE New London. In his remarks, he reconfirmed the state's unwavering commitment to enhancing the *military value* of the SUBASE. While the state had a new Governor and the SUBASE a new commanding officer, the innovative investments and unprecedented partnership endures.

Previous state-funded projects have included construction of new buildings to support operations and maintenance, construction of training equipment, installation of a new high efficiency boiler for base-wide steam utilities, and purchases of land and structures for encroachment mitigation on both the northern and southern perimeters of the base and in the Navy's area of

operations within the Thames River. The state funded a complete renovation of the road leading to the main gate, making significant improvements to public safety, traffic management and physical security. Collectively, these projects represent a wholly unique partnership with the Navy in diverse and creative areas of base improvements.

In 2015, the State Bond Commission authorized OMA to provide funding to the Navy for early planning of a microgrid to be developed on the base. This microgrid will provide resilient infrastructure and energy security for base operations and potentially reduce the operating cost of the base by incorporating clean cogeneration capacity and highly efficient power controls and distribution systems. In response to the state's proposal, the Secretary of the Navy agreed to provide staff authority and expertise. The Secretary sent delegations to meet with state and local officials to advance the microgrid project.

Fuel cell construction is complete. The microgrid, with a high-tech integrated distribution and monitoring systems, is expected to be fully operational in 2022. The project was initiated with funding from OMA, then with a larger grant from the CT Department of Energy and Environmental Protection. The total value of this project is projected to be close to \$100M over the life of several agreements, including an Enhanced Use Lease (EUL), Energy Savings Performance Contract (ESPC), Long-term Power Purchase Agreements (PPA) and other Public-Private Partnerships (PPP) agreements. This project reflects an impressive collection of innovative financing tools and creative partnering between public and private sector organizations, all dedicated to creating affordable resilient energy security for the SUBASE.

In response to another proposal from OMA, the Navy agreed to join in a new partnership with the State of Connecticut

and a third-party investor to build a Consolidated Emergency Management Center on the base. This new facility will enable the Navy to demolish two archaic buildings, repurpose two other buildings and enhance security and safety throughout the base with state-of-the-art equipment at a much-improved location. The State Bond Commission authorized OMA to invest up to \$13M in the \$28M project.



200831-N-ME396-257 GROTON, Conn. (August 31, 2020) - The Los Angeles-class submarine USS Newport News (SSN 750) arrives at Naval Submarine Base New London in Groton, Conn. for a scheduled homeport shift August 31, 2020. Newport News and crew, previously homeported in Norfolk, Va., expects to complete a maintenance overhaul period and will join the ranks of Submarine Squadron (SUBRON) 12. (U.S. Navy photo by Petty Officer 2nd Class Tristan Lotz/RELEASED)

The State Bond Commission also authorized OMA to fund the removal of a derelict floating dock on the Town of Waterford shore of the Thames River. This abandoned structure was removed to create additional maneuvering room and a turning basin for the much longer Block 5 Virginia class submarines to be homeported at the SUBASE beginning in 2025.

As important as these ongoing state-funded investments are, they represent only a small fraction of the military construction projects underway on the base. Since 2005, there have been over \$500M worth of planning, demolition and construction projects on the base, with about \$27M funded by the state. So, the state is an important but modest partner in a much larger effort to modernize the base.

OMA will continue to work closely with our congressional delegation, state and local officials, regional stakeholders and Navy leadership to identify future projects and missions as part of our ongoing strategy to enhance the *military value* of the base and protect it from closure in a future BRAC round.

Connecticut's Submarine Industrial Base

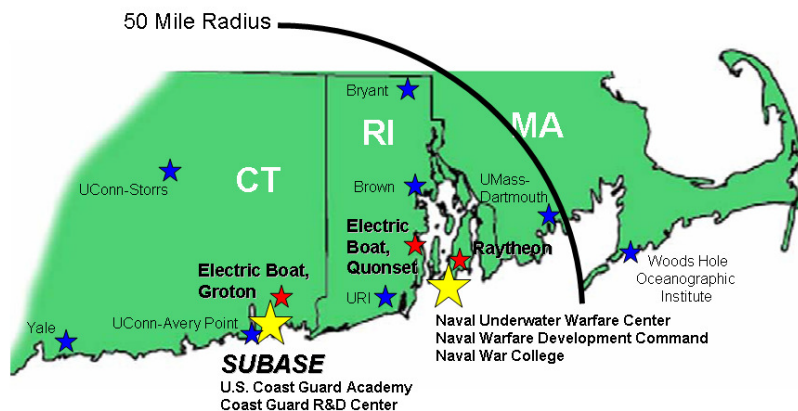
Central to the argument *Team Connecticut* advanced in the 2005 BRAC was that the SUBASE was not given adequate credit for the *unparalleled synergy* created in the close proximity and interactions among so many public and private submarine-related defense industry and military organizations.

In recent years new organizations have emerged to collaborate and leverage the region's undersea expertise. The National Institute for Undersea Vehicle Technology (NIUVT) is a university-industry partnership that collaborates with the Navy to advance innovations in workforce, research and technology. The Naval and Maritime Consortium (NMC) is a network of companies that collectively address challenges, share solutions, and collaborate on opportunities in growing national undersea, maritime, and offshore wind supply chains. The OMA Executive Director serves on the advisory boards of both organizations.

Submarines are designed and built at EB in Groton. All submarine personnel receive basic and advanced training at the

Naval Submarine School on SUBASE. Fleet-wide integrated tactics are developed by the newly established Naval Undersea Warfighting Development Center. The Naval Undersea Warfare Center in nearby Newport, RI, conducts research and development activities in Rhode Island and on the SUBASE. The Naval Undersea Medical Research Labs are located on the base. And the base is home to the Naval Submarine Force Library and Museum and the Historic Ship Nautilus. This is the Submarine Capital of the World, where the nation's submarine force history and heritage is archived and commemorated. These organizations, and many others, coalesce to create a Submarine Force Center of Excellence – the center of gravity for nation's military undersea profession.

The Nation's Center of Undersea Warfare Excellence



One of the greatest affirmations of this synergy is demonstrated in the Navy's decision to establish the Naval Undersea Warfighting Development Center headquarters at Submarine Base New London. This global command impacts fleet operations and organizations all over the world from its headquarters in southeastern Connecticut.

Understanding the value of this synergy led the state also to enter into assistance agreements with EB as the nation's premier manufacturer of undersea platforms and technologies. In 2007 the State helped EB refurbish dry docks in its Groton shipyard. The state's \$9.9M investment helped EB complete a \$65M renovation project that helped keep submarines in Connecticut and brought other business to the region. Since 2008, EB has generated billions in sales and hundreds of millions in wages related to submarine work performed in these dry docks. That work includes overhaul, repair, maintenance, modernization and post shake down availability. These depot-level facilities, in such close proximity to the SUBASE, are also a positive consideration that a future BRAC commission will take into account when assessing the total *military value* of the SUBASE.

Subsequently, the state granted EB \$15M to help purchase the former Pfizer headquarters buildings and campus in New London. This major expansion has given EB the space needed for its work in designing the new *Columbia-class* replacement for the aging *Ohio-class* strategic ballistic missile submarines (SSBN). Since 2011, EB has hired 3,206 engineers and 1,264 designers. The building also accommodates a workforce to produce ongoing technology upgrades for the *Virginia-class* submarines. This facility has already reached its capacity as new employees are being added to the industrial base in New London.

In October 2014, the state announced an agreement with EB to help finance the company's expansion in Groton. Under the terms of this agreement, the Department of Economic and Community Development provided a \$10 million grant to EB in support of this \$31.5M capital expansion project to purchase and renovate a building in Groton. This new space was needed to accommodate 200 new purchasing and supply chain management jobs.

In 2019, as previously described, EB held a groundbreaking ceremony for a massive \$852M shipyard expansion project to prepare for the construction of *Columbia*-class nuclear-powered SSBNs to replace the decommissioning *Ohio*-class submarines. All of the new Columbia class submarines will be assembled in the Groton shipyard.

While investments in our submarine industrial base are concentrated in southeastern Connecticut, the impacts are state-wide. For example, in the *Virginia*-class program, almost 400 suppliers are dispersed throughout the state. All together, they supply over \$1B worth of goods and services over a five-year period. As we seek to maintain production of *Virginia*-class submarines at two or more per year, the positive impacts on our state economy will be pervasive. And the new *Columbia*-class submarines will further enhance this economic impact and create thousands of high-end jobs. The direct and indirect employment related to submarine construction and repair is forecast to last for decades.

V. The National Coast Guard Museum

The United States Coast Guard (USCG) is the only Armed Service that does not have a national museum. On April 5, 2013, after a decade of false starts and failed attempts, the Commandant of the Coast Guard announced the decision to build a National Coast Guard Museum (NCGM) in downtown New London. The National Coast Guard Museum Association (NCGMA), a non-profit organization chartered to build the museum, proposed a state-of-the-art building at the head of New London City Pier. It will be adjacent to the Union Station, the Greyhound bus station and Cross Sound and Fisher's Island Ferry landings. The State Bond Commission authorized up to \$20M in state funding to build a pedestrian bridge to connect the museum with all elements of New London's multi-modal transportation hub.

The Governor directed all state agencies to collaborate in this undertaking and to help the USCG and City of New London advance the project. He also directed the OMA to coordinate the efforts of state agencies on his behalf.

The State Bond Commission approved \$500,000 for advance engineering and design of the pedestrian bridge and authorized the DECD to enter into an assistance agreement with the NCGMA. The State of Connecticut, City of New London, USCG and NCGMA negotiated a Memorandum of Agreement to clearly define roles and responsibilities in this partnership to build the museum.

State agencies worked closely with project stakeholders to complete the Environmental Impact Evaluation (EIE) as required by the Connecticut Environmental Protection Act. The EIE authorized detailed engineering and design to proceed on the pedestrian bridge portion of the project.

Much of the financing for the \$100M museum is being raised in a national fundraising campaign coordinated by the NCGMA. Contingent upon this fundraising effort and a series of prerequisite agreements with area stakeholders, site preparation is scheduled to begin in 2022.

Related to the National Coast Guard Museum project is the Thames River Heritage Park (TRHP) designation for the New London Harbor. Centuries of American maritime history at sites along the shores of the Thames River is connected by a water taxi service. The TRHP Foundation obtained three surplus 40-foot USN utility boats to provide this service and become part of the maritime heritage exhibit. The OMA Executive Director serves on the TRHP Foundation Board of Directors and worked with local officials to obtain the authentic Navy boats which provide waterborne access

to Thames River historic sites, to eventually include the Submarine Force Museum and future National Coast Guard Museum.

The Connecticut Port Authority granted the Town of Groton a \$750,000 grant through the Small Harbor Improvement Project Program (SHIPPP) to construct a floating pier at the Submarine Force Library & Museum to receive TRHP boats. This new pier should be operational for the 2022 summer season. In the years ahead these Coast Guard and Navy museums, connected by the Thames River, will become the TRHP major anchor sites and are expected to draw tens of thousands of people to southeastern Connecticut.

VI. Quality of Life and Military Service in Connecticut

Advocating for service members and their families has become one of the most important roles of OMA. Military families stationed in Connecticut for duty assignments and training enjoy supportive local communities, excellent public schools and the unique experience of living in New England. As families in transition, they occasionally need reasonable accommodations and OMA actively engages state agencies and local organizations on their behalf.

OMA worked with regional leaders at LEARN (a regional educational service center), and the Military Superintendent's Liaison Committee to make charter and magnet schools more available to military families. The DOD tends to transfer families in the summer months to avoid moves during the school year. However, the unintended consequence of this policy is that newly arriving military families often can't establish residency in time to compete in the drawing/lottery for seats in charter and magnet schools. Area superintendents implemented a program to hold back a number of seats to be made available to highly mobile families when they arrive later in the summer months. This benefits

military families, giving them a level playing field to compete for seats in these unique educational programs.

The State of Connecticut is an active member of the Interstate Compact on Educational Opportunity for Military Children. This national organization recognizes the unique challenges military children face as members of families in transition. Making reasonable accommodations for these children in matters such as immunizations, physicals, administrative and academic documentation reduces the stress and challenges associated with the many relocations imposed on military families.

The OMA Executive Director served on the outreach steering committee for the Military Child Education Coalition in Connecticut. This organization facilitates training and awareness of teachers, healthcare providers and other community leaders to the unique challenges faced by children in military families. Deployments, relocations, separations, and service-related disabilities all take a toll on children and through awareness and training we enable communities to better recognize and respond to these issues.

In August 2021, Governor Lamont visited the SUBASE to meet with military leaders, military spouses, and community leaders to sign into law an Act that expanded economic opportunities for licensed professionals in Connecticut. The new law directs licensing agencies to grant licenses to professionals moving into Connecticut and explicitly identifies military spouses arriving with professional licenses in good standing from other states. The law also directs commissioners to investigate existing interstate compacts to determine if membership in such compacts can further expedite employment for military spouses.



In an August ceremony, Connecticut Gov. Ned Lamont signs a law to help military spouses get professional licenses. The bill signing ceremony took place at Naval Submarine Base New London.

OMA contributed significant time and resources to help the Town of East Lyme and the Connecticut National Guard complete a DOD funded Joint Land Use Study (JLUS) to identify compatibility issues that arise from training operations in proximity to current and future municipal development. This study guides the Town planners in preventing encroachment and protecting the shared benefits of having two major military installations in their municipality.

A similar DOD-funded JLUS has been completed with the municipalities surrounding the SUBASE in Groton. A JLUS Implementation Committee was formed to take actions recommended in this study. The OMA Executive Director serves as chairman of the Implementation Committee. A subsequent project related to the JLUS was a follow-on study that investigated impacts expected in the regional housing market related to significant growth at EB as civilian and military families are added to the workforce in southeastern Connecticut. And a new project is underway

examining parking and transportation challenges and opportunities created by the expansions of facilities and workforce at EB.

Working with the Chamber of Commerce of Eastern Connecticut, annual military appreciation events have been established in southeastern Connecticut to honor service members from all branches of the military. These venues offer excellent opportunities to showcase the supportive relationships and professional partnerships established between the State and our military communities. OMA has been closely involved with these initiatives.

In partnership with the Chamber of Commerce, the Navy, the Coast Guard, and the National Guard, OMA orchestrated an annual Military Orientation Day to expose future community leaders to all of the military branches in eastern Connecticut. The day includes an orientation at the SUBASE, a tour of a nuclear-powered submarine, a tour of the USCG Academy or USCG Station New London, and visits to several National Guard facilities throughout southeastern CT. Weather permitting, air transportation is provided by National Guard Black Hawk helicopters, ground transportation is donated by a local livery service, and waterborne transportation by the USCG. This program is designed to educate future community leaders on Connecticut based military missions, ongoing operations, economic impacts, and civic contributions to the region. These future leaders can in turn inform other people within their spheres of influence.

The OMA Executive Director was a founding board member of the Southeastern CT Cultural Coalition and now serves on its Advisory Council. This newly formed non-profit advocates for the entertainment, arts, and cultural sectors of the region's economy. Military art, history and performance units have played an instrumental role in the region, and having the military represented

in the organization's leadership reflects an appreciation of how the military is so deeply ingrained in the social, civic and economic landscape of Connecticut.

VII. Conclusion

Connecticut's Office of Military Affairs demonstrates an efficient model for achieving tangible strategic outcomes. Since it was established, the office produced a partnership with the Navy that was unprecedented in the United States. The SUBASE is now in a much better position to withstand another round of BRAC. The Connecticut National Guard and U.S. Coast Guard are realizing and planning for expansions with new facilities to support their missions. The state and City of New London are looking forward to being the home of the National Coast Guard Museum. OMA has helped coordinate consistent and sustained support for increases in defense and military spending, and positive economic impacts within the state. Most importantly, OMA has advanced the *quality of life* and *quality of service* for service members and their families stationed here and deploying to destinations around the world.

The state's diversified defense industries continue to thrive. Connecticut defense industrial base is thriving due to the high quality and strategic relevance of the products designed and manufactured throughout the state. Our defense industries enjoy superb reputations for their highly skilled workforces, outstanding management, and efficient business practices.

Residents should be proud of Connecticut's long history as the *Provisions State*. It is a foundational part of our character, embedded in the economic fabric of our state and a legacy that should be carefully protected. The Office of Military Affairs will continue to seek opportunities to enhance the military and defense industry presence in Connecticut and advocate for the many

organizations and people in our state - particularly military members and their families - who serve and support our nation's defense.



Robert T. Ross
Executive Director

Questions or comments concerning this report should be directed to the OMA Executive Director, at (860) 500-2374 or to bob.ross@ct.gov.

Appendix A: Biography of OMA Executive Director



ROBERT T. ROSS

Bob Ross is Executive Director of the Connecticut Office of Military Affairs. He was originally appointed by Governor M. Jodi Rell in July 2009, reappointed twice by Governor Dannel P. Malloy, and reappointed to a fourth term by Governor Ned Lamont. He serves as an advisor to the Governor and legislature on defense industry issues and is the primary liaison to the Connecticut congressional delegation on military and defense matters. He is responsible for coordinating state-wide efforts to protect Connecticut military bases and facilities from closure in future Base Realignment and Closure (BRAC) rounds. He also represents the state in local efforts to enhance quality of life for service members and military families residing in or deploying from Connecticut.

He is a retired naval officer who piloted aircraft carriers and guided missile cruisers before directing public affairs for the U.S. Sixth Fleet, encompassing naval operations ashore and at sea in the Mediterranean, European and North African areas of responsibility. He also served as a spokesman at the Pentagon and was director of community and media relations for the U.S. Atlantic Fleet.

He holds an M.A. in National Security and Strategy from the U.S. Naval War College in Newport, RI, and an M.A. in Public Policy and Administration from the University of Connecticut. As a former City Administrator for the City of Cripple Creek, Colorado, and former First Selectman (Mayor) of the Town of Salem, Connecticut, he has decades of experience in federal, state, and municipal government. He was previously selected by the national Association of Defense Communities as their Member of the Year for leadership and commitment and currently serves as President of their Board of Directors. He is a Trustee of the Chamber of Commerce of Eastern Connecticut and former Commissioner on the Connecticut Maritime Commission. He is a former Adjunct Professor of Public Policy in the UCONN Graduate School and is a recipient of the UCONN Department of Public Policy Distinguished Alumni award for continued commitment and excellence in public administration.