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In eastern CT, Electric Boat military contracts launch economic boom

The U.S. Navy needs a new fleet of ballistic missile submarines, a \$112 billion acquisition its leaders have called “[foundational to our survival](#).”

In the coming decades, those ships will take shape, one by one, inside an enormous new facility at the General Dynamics Electric Boat campus on the Thames River in Groton, with the help of thousands of newly minted welders, ship-fitters and mechanics mobilized from eastern Connecticut and beyond.

“The sheer volume and complexity of work that we’re infusing into the submarine industrial base is something that we haven’t had in a very long time,” said Whitney Jones, director of the Submarine Industrial Base initiative at U.S. Naval Sea Systems Command.

It’s been roughly a generation since the last time the Navy built up its underwater ballistic fleet. In the intervening years, the two regions that support its shipyards — eastern Virginia and southeastern New England — had to find other ways to get by. It wasn’t always easy. The submarine industrial base, which included thousands of skilled workers and hundreds of small manufacturing businesses that supply tools, materials and components for Navy ships, went into decline.

Defense analysts have described that cycle as “boom and bust.” Over much of the last 25 years, while the U.S. manufacturing sector was shedding millions of jobs, analysts estimate the submarine industry supply chain lost 20,500 companies.

But submarine work is now on the upswing once again, and Eastern Connecticut — a region with 41 towns and a population of roughly 435,000 — is steadying for the boom.

State and regional leaders have taken an all-hands-on-deck approach to finding and training the workforce that Electric Boat and its many suppliers will need over the coming decades — an effort company president Kevin Graney has called “tremendous.”

“We are in the midst of a once-in-a-generation expansion. And frankly, it may be the biggest in our history,” Graney said earlier this year in remarks to the Connecticut Business and Industry Association.

Work on the Navy’s ballistic missile submarines started up just a few years after the company signed a major contract to double its production of attack submarines for the Navy. Then there was a global pandemic, enhancing the challenge.

“Our need to hire is persistent, and it’s going to be long-term,” Graney said.

Among the top private employers in the state, Electric Boat already counts more than 12,500 staff at its Groton and New London facilities. That number will rise: The company projects hiring for this round of contracts will peak in 2033 with an estimated 21,000 employees in Connecticut alone.

But that rapid acceleration in a single sector is already straining the region's resources, from public services to workforce capacity — particularly as shockwaves from the COVID-19 recession, and the widespread labor turnover that resulted, continue to reverberate across the economy.

Looking to the decades ahead, economists and business leaders have suggested that workforce investment be focused more on sectors that are poised for growth, like industrial automation, information technology, data processing and green energy — so that when the impending shipyard "bust" comes around again, the region won't experience a repeat of what happened last time.

Ebbs and flows

From its early days, America has called on Connecticut to supply the military with weapons and ammunition, earning it the moniker "[the provisions state](#)."

Since the late 1800s, New London County, home to both Electric Boat and the U.S. Naval Submarine Base, has been a hub for military manufacturing. The region's industrial base built much of the Navy's current ballistic missile submarine fleet, known as "boomers," in the 1980s and 1990s. But after the collapse of the Soviet Union, the military cut back on spending.

"The end of the Cold War, that was a tough time for us," said John Beauregard, former president of the Eastern Connecticut Workforce Investment Board.

By the late 1990s, things had gotten much quieter at Electric Boat's Groton and Quonset Point, R.I., shipyards. The company was working with Huntington Ingalls Industries' Newport News Shipbuilding to build attack submarines, known as "Virginia class," for the Navy at the rate of one per year.

Broadly, the U.S. economy was shifting from primarily producing goods to producing services. In eastern Connecticut, two new casinos, Mohegan Sun and Foxwoods, stepped in to become the region's economic engine during that period.

"They were not the same kind of high-paid jobs that were at Electric Boat," said state senator Cathy Osten, D-Sprague. "They didn't have the need for the technical expertise."

With fewer opportunities in manufacturing, young people were increasingly looking to college as the only way to get higher-paying, skilled jobs, Osten said. Many of those young people went into debt. "So it was a different mix. It just became a different dynamic in the area," Osten said.

Within the decade, the casinos would lose a combined [10,000 jobs](#) as a result of the Great Recession.

Southeastern Connecticut was struggling to recover from that economic blow when, after hard-fought negotiations in Congress, Electric Boat won a contract to double Virginia class attack-submarine production to two per year beginning in 2012.

Regional leaders called it an “inflection point” for the economy. Eastern Connecticut’s Congressional Rep. Joe Courtney, largely credited for boosting the Navy’s submarine procurement, became known in his district as “Two-sub Joe.”

Then things started to accelerate. In 2016 the Navy selected EB as lead contractor for its new fleet of ballistic missile subs, kicking the region’s economic engine into an even higher gear. When complete — around 2040 — this new fleet of “boomers,” known as “Columbia class,” will carry 70% of the nation’s nuclear arsenal.

Any region would kill for this

At the company’s headquarters in Groton, which slopes downward from its main gate on Eastern Point Road toward the Thames River, audible whirring and clicking sounds emerge from clusters of brick buildings. A massive hangar structure looms at one end of the yard. Inside, two hulking Virginia-class subs, surrounded by scaffolding, are being welded together.

Workers in boots and hard hats navigate narrow stairways and alleys between the buildings, lined with bins of discarded metal shavings.

Roughly a third of the new contract work will happen here, and the company has invested hundreds of millions of dollars to expand the campus, including adding another [larger hangar facility](#) at the far end of the yard for assembling the immense Columbia-class ballistic missile subs. Those ships take around seven years to complete (Virginia class can take between five and seven years), meaning the region could be humming with shipbuilding activity for decades to come.

By 2020, annual defense spending in Connecticut totaled [\\$23.6 billion](#), roughly 8.2% of the state’s economy. New London County accounted for more than half of that.

“Any region around the country would kill for this kind of manufacturing,” Beaugard, of the Eastern Connecticut Workforce Investment Board, said.

Still, after the region’s decades-long shift away from manufacturing, Beaugard knew it would take a great effort to retrain workers and stoke the supply chain. Since the previous submarine boom, Connecticut’s manufacturing workforce had declined by half, from over 300,000 in the early 1990s to around 160,000 in 2012.

Electric Boat had estimated it would need to hire thousands more skilled workers at its Groton plant by 2030. With many of its older staff approaching retirement, that meant hundreds of new hires each year. And the company's suppliers in the region also needed to boost their ranks in order to meet the new demand.

"Everybody was starting to feel the pressure," Osten said. "Electric Boat was the main focus because they were seeing a dramatic increase based on the number of submarines they were having to accomplish every year."

Beauregard set to work. With help from a federal planning grant, the workforce board convened employers in the Eastern Advanced Manufacturing Alliance and representatives from community colleges across the region to design a short-term advanced manufacturing training program known as the Manufacturing Pipeline Initiative.

The employers, a group that included Electric Boat and hundreds of small manufacturers, agreed on a set of skills they needed graduates to have and committed to hiring students from the program. Community colleges supplied classroom and workshop facilities, as well as instructors. And the workforce board lined up case managers and funding for "wraparound services" like rent assistance, transportation and child care (an idea harkening back to World War II-era programs that [enabled women](#) to join the manufacturing workforce).

The MPI launched in the spring of 2016 with its first class of 15 students. Aside from an initial assessment, there were no prerequisites for the training — and it didn't cost the students anything. They earned a small stipend to attend for a full day, five days a week for several weeks. (MPI training ranges from five weeks to 10 weeks, depending on the skill focus.) By the end of the program, they students earned "pre-apprentice" certificates — and they had jobs waiting.

All hands on deck

In a brand-new [machine shop](#) at Quinebaug Valley Community College in northeastern Connecticut one afternoon this summer, a group of nine adult students — aged 19 to 36 — practiced carefully shaping a small hunk of metal to minute specifications on lathe and milling machines.

The latest cohort in Eastern Connecticut's intensive MPI work training program, all of them had job offers at General Dynamics Electric Boat in Groton, where they'd start out earning \$18.91 an hour.

"These guys are so, so super fortunate right now, to be able to fall into a program like this," said Mike Santangini, an MPI instructor at Quinebaug Valley.



Sakai Cort, Sharde Vessells, Clarence Rizer, and Kyle Tyszka, left to right, learn to read blueprints at Quinebaug Valley Community College in Danielson. Students in the Manufacturing Pipeline Initiative enter the program with a wide range of skills but often little experience in manufacturing. Yehyun Kim / ctmirror.org
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The students received \$1,500 to attend the training and were reimbursed up to \$1,500 on top of that to cover basic expenses so they could complete the program without distractions — as most do. In just over six years, the initiative has sent nearly 2,700 trained students into manufacturing careers, most of them at Electric Boat.

Beauregard said the program was aimed at “discovering undiscovered talent” within the unemployed and underemployed adult population in the region. He knew it had met that mark when a 2017 assessment found that only 20% of the people who’d found work through the MPI had any previous experience in manufacturing.

The MPI has received national accolades. Federal labor and education secretaries have paid visits. It’s won federal grants, attracted philanthropic donations and drawn additional state funding each year since it launched. And it keeps growing, expanding to additional locations and adding a “youth MPI” program for high-school students.

“People are getting religion about the pipeline model,” said Rep. Courtney.

The war for talent

With the submarine sector’s peak hiring still a decade off, eastern Connecticut is working to expand its successful training program and get the word out as widely as possible.

Nearly \$16 million from federal and state grants and private sources have supported MPI thus far. In fiscal year 2023, the program's budget has jumped to roughly \$10 million, about a third of which comes from the state of Connecticut.

With submarine work expected to run into the late 2030s, perhaps beyond, Courtney said the intensive efforts can't let up. "The fact is that they've got to size this thing up even more," he said.

The pressure is now coming from the top. In a 2020 report to Congress, the Navy identified the depleted U.S. shipbuilding workforce as a "key vulnerability" in its mission to modernize and replace its aging ballistic missile submarine fleet.

This year's defense spending bill, which is currently [proceeding through Congress](#), calls for over \$225 million to go toward workforce development in the submarine industrial base, a more-than 10-fold increase from previous years' budgets.

"One thing that is gating our ability to execute the mission is just making sure that we have the people with the right skill sets in the right places," said Jones of the Navy's Submarine Industrial Base initiative.

"We're calling it a war for talent," Jones said.

Electric Boat is running advertisements during National Football League broadcasts, and blasting hiring announcements across social media networks. The Navy and EB have introduced programs for elementary and middle school-aged students in the region, teaching them about submarines and the basics of welding.

At the CBIA event earlier this year, Graney closed his remarks with a recruiting pitch. "EB ... is looking for people who want to join a company with a great history, a strong future and a very noble mission," Graney said. "So come on and join us."

Shockwaves

With such rapid workforce mobilization come shocks to the regional economy.

"One thing that causes is a huge strain on all kinds of public services," said Balazs Zelity, assistant professor of economics at Wesleyan University in Middletown. He likened EB's swift buildup to that of shale oil fracking operations in other parts of the country.

"So you might have a shortage of teachers, our roads might be overcrowded and start deteriorating," he said. "All these public services get overcrowded or overutilized, and that creates an additional burden on the local population and on local governments."

The demand is overwhelming for the pipeline program itself. Last fiscal year, 49 cohorts of students completed the MPI training program. Not yet halfway through this year, that number is already at 39.

MPI instructor Santangini said the workforce board has proposed training a second section of students in the evenings at Quinebaug Valley. "I don't know how we can do it," Santangini said. "They'd have to hire another guy or two."

And it could be difficult finding those other guys. Just as the region's submarine industrial base was ramping up hiring, COVID-19 upended the labor market, with thousands of people leaving the workforce or changing jobs. Without enough staff, Electric Boat had to slow down its Virginia-class production in order to meet the tight deadlines for the higher-priority Columbia-class ships.

Competition for skilled labor in Connecticut is now as stiff as ever: In a recent survey of business owners in the state, the "labor shortage" came up as [a top concern](#).

In some cases, that's worked to the benefit of the submarine industrial base, which has lured some workers away from other fields that can't exactly spare them.

Sharde Vessels and Sakai Cort, recent graduates of the MPI program at Quinebaug Valley Community College, both left jobs as medical assistants to undertake the intensive course.

"They don't treat people right, and they don't pay enough," Cort said of his previous employer.

Like many people during the pandemic, Vessels and Cort left jobs they didn't like to pursue a better opportunity and make more money. Both applied at Electric Boat and were given job offers contingent upon completing the training.

Vessels said she was drawn to the wide array of options she could picture for herself at Electric Boat. "Everybody's primary goal is to get in there. They just want to get in," Vessels said. "They'll kind of just take whatever job they get called for, you know, just to get their foot in the door."

But in so doing, Vessels and Cort turned away from a sector with an equally urgent need for workers — [health care](#).

Harry Holzer, a senior fellow in economic studies at the Brookings Institution, said that raises a separate problem. "You might have to deal with the fact that [many] jobs in health care have become unattractive" he said. "They are hard, they're stressful, and patients can be difficult."

And that can drive broader economic shifts, Zelity said.

"If people are moving from nursing to defense contractors ... then the nursing jobs will also have to compete." That, in turn, could drive up wages across all sectors, he said, and as they adjust, "there could be some inflation in order to accommodate higher wages."

Tick ... tick ...

Health care isn't the only other sector on the hunt for skilled labor right now.

In the years since submarine building last ramped up to this degree along the Groton riverfront, the rise of the internet created widespread new demand for technology specialists. Cybersecurity, mechatronics, green energy and biomedical fields are gaining ground. Some economists say the state should direct a larger portion of workforce development funding toward these growing sectors, strengthening the economy for future generations.

Meanwhile, businesses taking on new federally funded [infrastructure](#) and [broadband](#) work could have thousands of jobs to fill in the coming years. And many of Connecticut's school districts are facing [teacher shortages](#).

Within the manufacturing sector, technology is changing, and businesses need people with new kinds of expertise. Mark Burzynski of The Arthur G. Russell Co. in Bristol lamented the lack of support for workforce training that goes beyond computer numerical control, or "CNC," machines — a standard part of the MPI's advanced manufacturing curriculum.

"We keep creating CNC operators," Burzynski said, noting that the majority of Connecticut's manufacturing companies — like his — aren't defense industry suppliers. "That leaves the rest of us lacking in getting programs for the kind of workers we need. The growth areas and the high-paying manufacturing jobs are in technology," he said.

"If we're trying to lift people out of poverty, we should be going where the jobs are going to be, not where Uncle Sam wants the jobs to be right now," Burzynski said.

Osten said those competing dynamics present "a very complicated discussion" for lawmakers. But she said it's important to her that people have opportunities to learn skills and find high-paying jobs that can become lifelong careers.

"Across the board, we need more workers," Osten said.

In the near-term, that presents a challenge. In the medium-term, military contract work may lend needed steadiness to the economy amid COVID-induced volatility and a possible recession. But in the long-term, once again, the region faces the prospect of another "bust" in the military-industrial cycle. As analysts reported to President Trump in 2018: "Over the last 60 years, Navy procurement profiles have shown sharp peaks in shipbuilding followed by significant breaks or valleys in production, severely degrading the ability of shipyards to conduct long-term planning."

Still, businesses and workers in eastern Connecticut mostly see submarine work as an economic engine that will steadily power the region for a generation to come. And that's not nothing.

MPI student Ethan Castillo recently moved back to Connecticut from Alaska, where he had been working as a deep-sea fisherman for several years. The opportunity at EB was more promising, he said.



Sharde Vessels makes a hole to fit a screw on the milling machine. Vessels used to work as a medical assistant, but she enrolled in the Manufacturing Pipeline Initiative to pursue a career with more opportunities. Yehyun Kim / ctmirror.org
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"The job security is pretty good because they just signed some big old contract for, like, the next 25 years," Castillo said, chatting with his MPI classmates after wrapping up the day's assignment in the machine shop. "So if we get jobs and you're good at your job, you're probably working there —"

"Forty years," Sharde Vessels interjected.

"You're set for life," Santi Rodriguez, the youngest in the class, chimed in.

"That's everything," Castillo said.