



Make It Here 2030

Reimagining Tomorrow: Preparing Today for the Future of Manufacturing



 **CONNECTICUT**

Manufacturing Is Important to Connecticut

Connecticut's national rankings, across the board, have been steadily rising; we are a great place to live, work, and play, and manufacturing has contributed, in part, to this growth. Manufacturing represents 12.9% (2.05% increase over the previous year) of the state's annual GDP; 157,600 people work in the manufacturing sector, with an average annual salary of \$92,633, representing almost \$15 billion in wages¹

Make It Here 2030 — Driving manufacturing to a strong and resilient future.

The Connecticut manufacturing sector continues to struggle to find the skilled workforce needed to meet increased production demands. Around the state, in multiple industries, the backlog of work is only expanding, with 91,000 open jobs and a labor participation rate of 64.1%². Approximately 86% of all manufacturing companies report that it is difficult to find and/or retain workers³. When surveyed, employers stated that lack of applicants (81%), inability to offer a competitive wage (80%), and staff burnout (66%) were among the top three factors impacting their ability to hire and retain staff⁴.

Growing, training, and retaining a skilled workforce is the single most important priority facing manufacturers today and in the future. According to Creating Pathways for Tomorrow's Workforce Today research on the manufacturing workforce, the U.S. is projected to have 2.1 million open jobs in 2030, leading to a loss of \$1 trillion in national manufacturing GDP⁵. We are at a critical juncture in the manufacturing sector and the time to act is now.

The stark reality: Even with one of the best workforce development systems in the country, Connecticut still has a talent shortage. To put it another way, we are never going to hire our way out of the talent shortage with a 3.5% unemployment rate and thousands of open positions². There are not enough people to fill the vacant jobs in Connecticut, the country, and the world. We must come to terms with the fact that while strategies to develop and retain talent are a critical part of a balanced solution, they are not the entire solution.



“Connecticut’s workforce development system and Connecticut’s advanced skill manufacturing workforce are a national treasure.”

— Shane Eddy

President, Pratt and Whitney

— Kevin Graney

President, Electric Boat

¹DOC, <https://www.bea.gov/>; ²U.S. Chamber, <https://www.uschamber.com/workforce/the-states-suffering-most-from-the-labor-shortage?state=ct>; ³CBIA, <https://www.cbia.com/resources/manufacturing/2023-connecticut-manufacturing-report>; ⁴The Alliance, <https://ctnonprofitalliance.org/wp-content/uploads/2022/01/Nonprofit-Workforce-Crisis-Report-and-Survey-Results-The-Alliance-Jan-2022.pdf>; ⁵Deloitte, <https://www2.deloitte.com/us/en/insights/industry/manufacturing/manufacturing-industry-diversity.html/#executive-overview>

Make It Here 2030 is Connecticut's ambitious plan to effect full employment in the manufacturing sector by 2030. Companies will always have open positions; however, with more than 4,500 manufacturing companies in the state, 6,500 open manufacturing positions translate to 1.4 open positions per company. Considering that people leave jobs to look for new or better opportunities, this is reasonable. Keep in mind, General Dynamics Electric Boat is forecast to add 5,000 people a year until 2034 to replace attrition and maintain its rigorous submarine production schedule. In light of that,, 6,500 open positions across the sector is a good measure of full employment in the manufacturing sector.

The strategic plan to solve the talent and workforce issues in manufacturing is built with three components:



COMPONENT 1.
**DEVELOPING
TALENT**



COMPONENT 2.
**CREATING THE CLIMATE
FOR GROWTH**



COMPONENT 3.
**MAXIMIZING
PRODUCTIVITY**

Make It Here 2030 is a broad statewide approach to addressing our workforce challenges, which includes the following partners: Office of Workforce Strategy, Department of Labor, Department of Economic and Community Development, Office of Manufacturing, State Department of Education, Office of the Governor, Department of Housing, Department of Social Services, Connecticut State Colleges and Universities, the Connecticut technical high school system, and a multitude of committed nonprofit agencies.

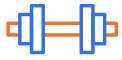
This plan will aggregate current resources targeted for talent development (not intended to be an exhaustive list) and build the foundation to drive innovation and automation through the manufacturing ecosystem. In our research, it is likely that we have not uncovered agencies or nonprofit organizations that are currently working to solve the talent shortage in the manufacturing sector in Connecticut. If we have not included your great work, please reach out. We would be very interested in learning about your work in helping to solve the workforce crisis in manufacturing, and in welcoming you as a part of **Make It Here 2030**.



COMPONENT 1. DEVELOPING TALENT

There is a substantial amount of cross-agency and inter-organizational collaboration occurring in Connecticut to develop the incumbent worker for Industry 4.0 roles, resulting in programming that addresses development from several different angles.

Maximizing the potential of tomorrow's talent today



Strengths

- Commitment to cross-agency and inter-organizational collaboration
- Robust ecosystem of support for manufacturers (e.g., government, education, nonprofits, associations, workforce investment boards, and regional sector partnerships)
- Digital Model Initiative – U.S. Department of Defense OLDCC award
- Scaling Model-Based Definition – U.S. Department of Defense OLDCC award
- U.S. Department of Commerce (EDA) Good Jobs Challenge award
- Pledge to Advance Connecticut (PACT) – Free community college education



Challenges

- College-track culture within communities that devalue manufacturing employment.
- The manufacturing career track lacks visibility with parents, students, and educators.
- SMMs' inability to keep pace with wage increases as workforce shortages expand.
- SMMs face a talent war with large CT manufacturing companies – we are all competing for the same labor pool.
- Achievement and opportunity gap in “college-readiness” for low-income and minority students⁶.



Goals

1. Increase awareness of manufacturing careers with educators, parents, and students
2. Support Industry 4.0 educational opportunities to drive future workforce
3. Drive demand-based training to fill critical jobs in the sector
4. 5,000 people in the Career Connect Portal for manufacturing pathways
5. 2,500 people enrolled in demand-driven training programs



Strategies

To achieve our workforce development needs, we are integrating our manufacturing initiatives into the Office of Workforce Strategy strategic plan. The role of the Office of Manufacturing is twofold:

1. Change the perception of manufacturing across Connecticut.
2. Foster and lead industry engagement to ensure that manufacturing companies take full advantage of the available resources to develop their talent and fill open positions.

Office of Workforce Strategy: Strategic Plan Highlights

1. Business Leadership

Build a dynamic workforce through a system of regional sector partnerships that integrate businesses' needs with supporting parties.

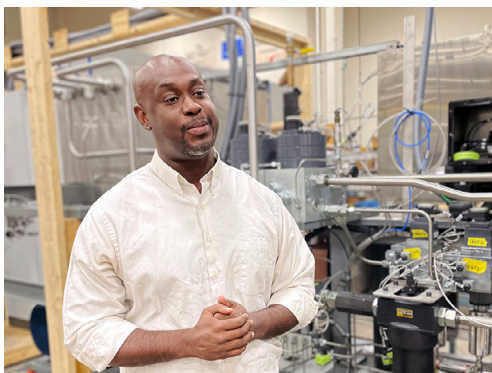
- Create a system of regional sector partnerships across the state
- Develop a credential registry system
- Promote a skills-based hiring and training system
- Retain Connecticut's college graduates
- Improve alignment of regional workforce board activities with state workforce board strategies



2. Career Building

Help students explore and enter educational programs that are aligned with in-demand career pathways.

- Align high school and postsecondary educational programs with in-demand career pathways
- Increase readiness to in-demand careers through sector-focused education and training and more robust computer science curricula
- Support student success through comprehensive academic and career advising
- Increase postsecondary access through increased dual enrollment opportunities, more flexible articulation agreements, and enhanced FAFSA support services
- Redesign adult education system to improve outcomes
- Enhance the supply of effective teachers through rigorous digital literacy standards, bolstered teacher professional development, and expanded teacher eligibility
- Develop work-based learning programs supporting target industries



COMPONENT 1. DEVELOPING TALENT (cont.)

3. Workforce Participation: Equity & Access

Reduce the barriers that have limited access to training, sustainable work, and high-quality career opportunities.

- Expand capacity of childcare system to support the sustainability of work
- Reduce transportation barriers that undermine sustained workforce participation
- Expand access to behavioral health services that allow individuals to lead healthy, productive careers
- Reduce the adverse effects of benefit cliffs

4. Accountability and Data-Driven Management

Design and implement innovative workforce solutions focused on delivering a comprehensive, intuitive, customer experience.

- Create a dynamic data and performance management infrastructure
- Enhance our digital front-end system that serves job seekers, employers, and policymakers
- Improve Connecticut's longitudinal data system used for analyzing educational and workforce outcomes

Tactics to achieve desired outcomes

We continue to focus on developing talent and building demand-driven workforce development programs, preparing for the future and meeting the needs of manufacturing today.

1.1 Awareness

- Hearts and Minds Marketing Campaign
- Career Roadshow – ReadyCT
- Manufacturing Career Advancement – CCAT
- Regional Sector Partnerships (5 Manufacturing RSPs)

1.2 Training

- Incumbent Worker Training – MIF, CCAT
- Registered Apprenticeship – DOL
- Career ConneCT – OWS
- Digital Thread Lab – CCAT
- REV-UP! Manufacturing – CCAT

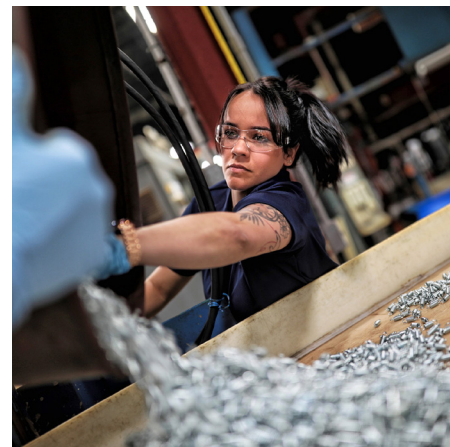




Photo credit: Ørsted

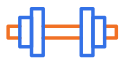


COMPONENT 2. CREATING THE CLIMATE FOR GROWTH

Efforts to increase labor participation and attract new residents are critical and include initiatives that improve assets and remove barriers. Among these programs are those that touch affordable housing, access to childcare, and expanding transportation.

The Office of the Governor, State Legislature and our elected officials, Department of Transportation, Department of Early Child Care, Department of Social Services, Department of Housing, and many nonprofit organizations work tirelessly to remove barriers to employment

Restoring the foundations of a sustainable workforce



Strengths

- Robust technical education system, integrated community college campuses, and career pathways across institutions of higher education⁷
- Federal investments in infrastructure (roads, bridges, public transit, ports, and airports⁸)
- Increase in multi-family residential properties⁹
- Development of critical energy infrastructure, expanding renewable energy programs, and residential and commercial investments in energy efficiency¹⁰
- Ranked 6th in the nation for healthcare quality 2020¹¹
- Model-Based Definition Enterprise – U.S. Department of Commerce Tech Hub Planning award
- Connecticut Offshore Wind Collaborative – leveraging the New London State Port¹²



Challenges

- High cost of living and lack of affordable housing¹³
- Regional racial and economic segregations – 2nd in the nation for income inequality¹⁴
- Aging population with sluggish growth¹⁵
- Rising cost of healthcare¹¹
- Fragmented, multi-layered regulatory landscape hindering timing and development of housing¹⁰



Goals

1. Increase in labor participation rates
2. Overall net increase in population



“Too many people cannot find a place to live – it is not available or affordable. Our biennial budget doubles our investment in housing – workforce housing, affordable housing, supportive housing, elder housing, and downtown apartments.”

– Ned Lamont
Governor of Connecticut

⁷U.S. Census Bureau, [https://data.census.gov/table/ACSSTIY2022.S1501?q=educational%20attainment&g=010XX00US\\$0400000](https://data.census.gov/table/ACSSTIY2022.S1501?q=educational%20attainment&g=010XX00US$0400000); ⁸White House, <https://www.whitehouse.gov/wp-content/uploads/2023/10/Connecticut-Fact-Sheet.pdf>; ⁹Point2, <https://www.point2homes.com/news/us-real-estate-news/decade-trends-residential-construction.html>; ¹⁰DEEP, <https://portal.ct.gov/DEEP/Landscape-Stewardship/Land-Use-Regulation/How-Does-the-Regulation-of-Land-Use-and-Development-Affect-You>; ¹¹DPH, https://portal.ct.gov/-/media/Departments-and-Agencies/DPH/dph/state_health_planning/dph-plans/hct2020statehlthasmt032514pdf.pdf; ¹²CT Port Authority, <https://statepiernewlondon.com/>; ¹³Forbes, <https://www.forbes.com/advisor/mortgages/cost-of-living-by-state/>; ¹⁴Urbanomics, <https://portal.ct.gov/datapolicy/-/media/DataPolicy/General/FINAL-CT-Housing-and-Segregation-Study-2024.pdf>; ¹⁵World Population Review, <https://worldpopulationreview.com/state-rankings/oldest-states>

COMPONENT 2. CREATING THE CLIMATE FOR GROWTH (cont.)

Tactics to achieve desired outcomes

We continue to make significant investments in making Connecticut a destination to live, work, and play. We are investing in eliminating barriers of entry into the workforce, investing in available and affordable housing, and creating a sticky relationship between our colleges and universities and industry.

2.1 Developing Connecticut Assets

- Workforce Housing (\$7.5B bipartisan bond package) – General Assembly
- Transportation Expansion¹⁶ – General Assembly
- Regional Sector Partnerships¹⁷ – OWS
- ElevateHER Manufacturing (established January 2024) – OOM
- Connecticut Technical Education and Career System – CTECS
- Connecticut State Community College (7 statewide manufacturing centers) – CSCC

2.2 Early Awareness

- FIRST Robotics Program (established January 2024) – MIF, ReadyCT
- Maker Multiplier – CCAT
- Careers Roadshow (renewed January 2024) – MIF, ReadyCT
- Faculty Fellowship Program (established March 2024) – MIF, CCAT

2.3 Job Readiness

- Vocational Villages¹⁸ – DOC, OWS, GWC
- Manufacturing Pipeline Initiative (\$6M USDOL grant) – EAMA-RSP
- Inclusive Manufacturing Program – MIF, CCARC
- Internship Program – ReadyCT



¹⁶\$1.1B State Bond Funding, <https://portal.ct.gov/Office-of-the-Governor/News/Press-Releases/2023/10-2023/Governor-Lamont-Announces-1-Billion-in-Funding-Approved-for-Improvements-to-Transportation-System>; ¹⁷\$23.9M American Rescue Plan, <https://portal.ct.gov/Office-of-the-Governor/News/Press-Releases/2022/08-2022/Governor-Lamont-Announces-Connecticut-Awarded-Grant-To-Support-Workforce-Training-Initiative>; ¹⁸2021SB.3 § 6, <https://www.cga.ct.gov/2021/ba/pdf/2021SB-00003-R01-BA.pdf>



COMPONENT 3. MAXIMIZING PRODUCTIVITY

Powering automation and innovation in manufacturing

Maximizing productivity through Industry 4.0 technologies is paramount to transforming the Connecticut manufacturing landscape. Simply put, Connecticut needs a well-defined and well-funded plan to drive industrial automation across the manufacturing industrial base. To stay competitive, manufacturers must tap into new, advanced technologies and smart practices to improve efficiency. Forward-looking manufacturers will need to invest in automation and robotics to address workforce gaps, mitigate rising production and materials costs, and become more agile to better respond to supply chain disruption and emerging opportunities. Automation can offer Connecticut manufacturers a first-to-market advantage, positioning Connecticut at the center of U.S. manufacturing with a substantial impact to the state's GDP.

Manufacturers must tap into new, advanced technologies and smart practices to stay competitive.

Industrial automation is not a job replacement strategy; it is the key to the comprehensive **Make It Here 2030** plan. Automation provides the manufacturing sector with three key benefits: 1) a workforce tool that fills the workforce gap created by the people we will never be able to hire or develop; 2) a succession planning device, allowing manufacturers to upskill incumbent workers and move them into better, higher-paying positions; and 3) a retention aid to shift employees away from those roles that are physically demanding, repetitive, and injury-prone.

It will require a well-planned and well-funded three-step approach with the existing manufacturing companies and incumbent workers to support their adoption of these technologies and drive their survival strategies to 2030 and beyond. Adopting industrial automation is not a short-term strategy or a quick-turn program. This is a long-term commitment to driving the survival of the manufacturing sector in CT.

1

Step One. Engage

First, we need deep engagement with our large manufacturing companies such as Pratt & Whitney, Electric Boat, Collins Aerospace, Kaman, Sikorsky/Lockheed Martin, Trumpf, Medtronic, ASML, and many others to understand new technologies and the direction they are heading regarding the implementation of Industry 4.0 technologies. This will allow the Office of Manufacturing to form strategies to assist small- and medium-size manufacturers (SMM) to drive digital transformation, additive manufacturing, and industrial automation, which we have identified as three key areas of growth for CT SMMs.

Second, we need to engage with our SMMs with fewer than 500 employees – develop and deliver a robust communication and education strategy. Many Connecticut SMMs are not aware that we have an Office of Manufacturing that provides coordinated advocacy or a Manufacturing Innovation Fund that provides resources for training, capital purchases, and tools to strengthen their businesses.



National leaders in the manufacturing industry agree that Connecticut supports manufacturers better than any other state, with bipartisan policy, dedicated leadership, and targeted funding.





2

Step Two. Educate

Educate the manufacturing ecosystem – to include manufacturing leadership, incumbent workers, and the newest group of employees coming out of high school and college – about the value, application, and integration of automation technologies. Connecticut SMM owners are dedicated to strengthening their businesses, but require assistance to help them better understand the return on investment (ROI) inherent in automation and lack the resources to develop a comprehensive roadmap, which includes assessment, training, procurement, integration, etc.

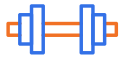
3

Step Three. Enable

Enable the adoption of automation technologies. If you have gone through the education journey and you are ready to begin implementing new technologies in digital transformation, additive manufacturing, and industrial automation, we need to have the resources and grant funding in place to adequately lead manufacturing companies on the journey.



COMPONENT 3. MAXIMIZING PRODUCTIVITY (cont.)



Strengths

- Workforce shortages and rising labor costs are substantially impacting SMM operations, creating an environment where challenging solutions, like automation and robotics, are gaining appeal
- The Manufacturing Innovation Fund (MIF)¹⁹ provides SMMs with access to capital to adopt digital solutions (e.g., robotics, software, consulting, etc.)
- Connecticut is home to the Connecticut Center for Advanced Technology (CCAT)²⁰, driving industrial innovation and talent development
- Connecticut has five (5) universities boasting robust robotics programs: Yale, UConn, University of Bridgeport, University of Hartford, and the Connecticut College
- The Connecticut College of Technology²¹, an overarching pathway program, offers coordinated programming among all state-funded schools and seamless transfer options
- The existence of clear and compelling research that articulates the return on investment (ROI)



Challenges

- The belief that automation will threaten jobs and income, replacing human labor
- The belief that robotic solutions will be making decisions through calculations without taking into account human considerations (i.e., morality)
- The initial cost, time, and expertise required to research solutions, reimagine production, purchase software/hardware, integrate, and deploy solutions



Goals

1. Develop an Industrial Automation plan for approval from DECD, OTG, Governor by 9/30/2024 for inclusion in the 2026–2027 budget
2. Present to the Commerce Committee during session
3. Gain approval and budget funding for the comprehensive program



¹⁹Manufacturing Innovation Fund, https://manufacturing.ct.gov/MIF?language=en_US; ²⁰CCAT, <https://www.ccat.us/>; ²¹Connecticut College of Technology, <https://www.nextgenmfg.org/pathways>

COMPONENT 3. MAXIMIZING PRODUCTIVITY (cont.)

Tactics to achieve desired outcomes

The adoption of a statewide initiative to drive industrial automation will require a robust strategic plan and the coordination of resources across the state. We will leverage federal grant opportunities, current state initiative, and new programmatic outcomes to drive Connecticut manufacturing to full employment.

- Digital Thread Lab (opening March 2024) – IBAS, CCAT
- Advanced Laboratory for Automation, Robotics and Manufacturing (ALARM)²² – UConn
- Laboratory of Intelligent Networked Systems and Robotics (LINKS)²³ – UConn
- Digital Model Initiative grant (DMI) – DECD, CONNSTEP, CCAT, and CCSU
- Scaling Model-Based Definition grant (SMBD) – DOD, DECD, CONNSTEP, CCAT, and CCSU
- Model-Based Enterprise Tech Hub grant – EDA, DECD
- Connecticut State Community College Robotics programming – CSCC
- FIRST Robotics statewide programming – MIF, ReadyCT

Advancing our way into the future

Bringing the three components of a robust workforce plan together will provide a strategic roadmap to ensure that Connecticut achieves full employment in the manufacturing sector by 2030. Building a strong talent pipeline, creating an environment conducive to attracting and retaining people to fill our jobs, and driving industrial automation to ensure that we have capacity and capability to drive productivity and efficiency will deliver a strong manufacturing economy and provide a high quality of living for Connecticut residents.



The time is now!

Acronyms:

CBIA	Connecticut Business and Industry Association
CCAT	Connecticut Center for Advanced Technology
CSCC	Connecticut State Community College
CSCU	Connecticut State Colleges and Universities
CTECS	Connecticut Technical Education and Career System
DECD	Department of Economic and Community Development
DEEP	Department of Energy and Environmental Protection
DMI	Digital Model Initiative

DOC	U.S. Department of Commerce
DOD	U.S. Department of Defense
EAMA	Eastern Advanced Manufacturing Alliance
EDA	U.S. Economic Development Agency
GWC	Governor's Workforce Council
MIF	Manufacturing Innovation Fund
OOM	Office of Manufacturing
OWS	Office of Workforce Strategy
RSP	Regional Sector partnership
SMBD	Scaling Model-Based Definition
UConn	University of Connecticut

²²ALARM, <https://alarm.engr.uconn.edu/>; ²³LINKS, <https://linkslab.uconn.edu/>



“Adopting industrial automation is not a short-term strategy or a quick turn program. This is a long-term commitment to driving the survival of the manufacturing sector in Connecticut.”

— Paul Lavoie

Connecticut’s Chief Manufacturing Officer