MANUFACTURING

on the South Shore of Massachusetts

South Shore wdb Workforce Development Board

Supporting private industry through the development of a skilled workforce and proactive economic development initiatives and resources.

Company Profiles

Acknowledgements

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MANUFACTURING on the South Shore of Massachusetts

South Shore wdb Workforce Development Board

Section I:
Setting the Table

Introduction

This report was put together by the South Shore Workforce Development Board (SSWDB), through the support of a Sector Partnership National Emergency Grant (SPNEG) by *Commonwealth Corporation and the U.S. Department of Labor Employment and Training Administration*. The focus of this initiative was to undertake a needs assessment and industry wide analysis of the region's manufacturing sector across the South Shore.

The manufacturing industry is a critical component of both the region and state economies, with a long history of creating economic prosperity and job opportunities. However, in recent years, the industry has experienced a significant reduction in the number of available jobs. Oddly enough, when jobs do become available and are posted, instead of being filled almost immediately (as one might likely assume), they are remaining unfilled for extended periods of time. Today's Advanced Manufacturers are learning that as positions become increasingly specialized, it is more challenging for them to adequately source individuals who possess both the interest and necessary skill sets to fulfill the job requirements in demand.

This initiative began with three primary objectives designed to better understand the challenges and opportunities impacting current and future growth potential of the manufacturing sector within the South Shore.

The first objective was to learn more about the number and types of manufacturers in the region, as well as the workforce, capital and the technology factors impacting their operations. A secondary objective was to understand the overall economic impact of the manufacturing industry in the South Shore, greater Southeast region and the Commonwealth of Massachusetts as a whole. The third objective was to assess the information gathered and establish a strategy to address the needs, challenges and opportunities of local manufacturers. The resulting strategy entails a series of action-items designed to support and foster the continued growth and sustainability of manufacturing in our region today, for tomorrow.

This report details a variety of information and data collected through multiple focus group discussions, an industry survey, and the analysis of local, regional and national data. The document identifies Manufacturing as a viable industry that is alive and well throughout the South Shore and the Commonwealth of Massachusetts.

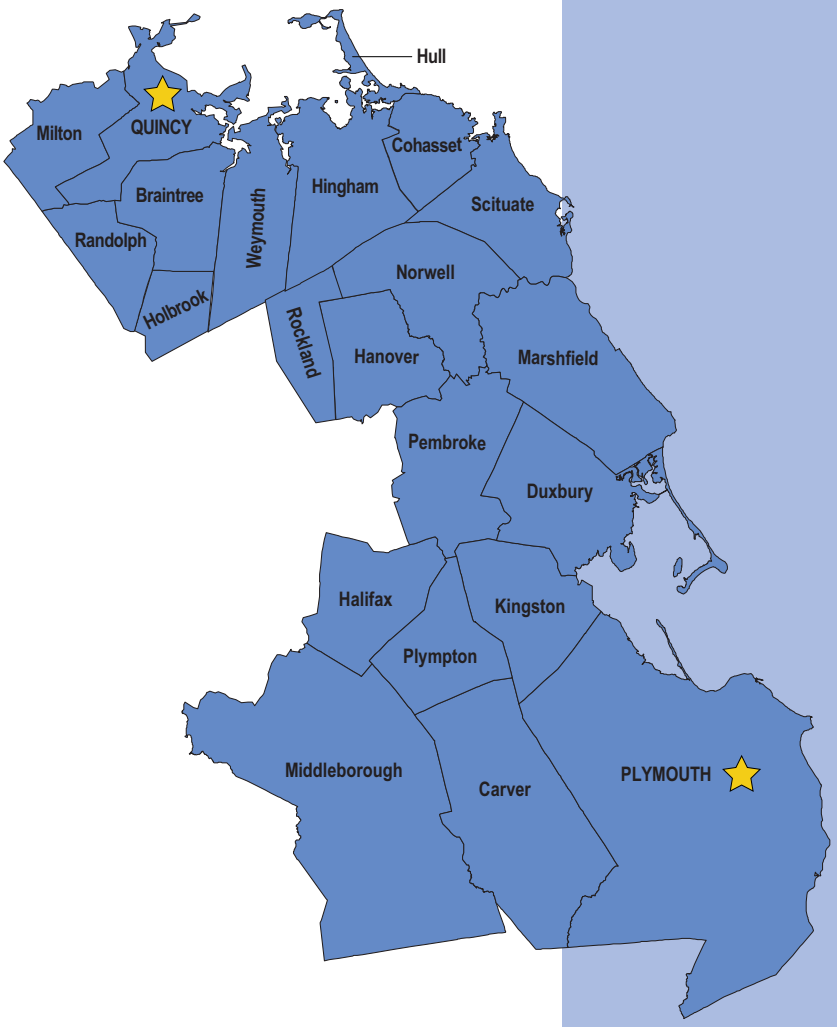
Manufacturing is a significant contributor to the local and state economy, with many attainable and sustainable career paths for job seekers of all ages and skill sets to take advantage of. However, it is clear that there are several key challenges restricting the growth of this industry, which need to be overcome if manufacturing is to remain competitive and sustainable in this region.

The South Shore Workforce Development Board

The SSWDB is one of 16 Workforce Development Boards across the Commonwealth of Massachusetts tasked with ensuring the alignment of strategic, market driven workforce goals and initiatives through collaboration among local businesses, educational institutions and community partners. Under the direction of Governor Charlie Baker and the Executive Office of Labor and Workforce Development the SSWDB has oversight responsibility and policy-making authority for federal and state workforce development activities in the South Shore. The SSWDB works in collaboration with the South Shore Career Centers (SSCC) to administer the work of the Massachusetts "One-Stop Career Centers" network in our region designed to support the workforce needs of businesses and job seekers. (SSCC locations signified by the star on the map.)

The South Shore Region

The Service Delivery Area (SDA) for the South Shore region consists of the following 22 cities and towns: Braintree, Carver, Cohasset, Duxbury, Halifax, Hanover, Hingham, Holbrook, Hull, Kingston, Marshfield, Middleborough, Milton, Norwell, Pembroke, Plymouth, Plympton, Quincy, Randolph, Rockland, Scituate and Weymouth.



The Region is home to a variety of industries with a higher concentration in education, healthcare, financial services, professional and scientific, entertainment/food services, and retail, in addition to a dynamic and diverse manufacturing sector.

The SSWDB SDA has two distinct sub-regions within the larger South Shore geographic area. Cities and towns from Hanover north have a greater population density; higher concentration of industries; and a stronger economic and employment link with Greater Boston. Cities and towns south of Hanover are more rural in character and have a higher concentration of agricultural based industries. Throughout the region there are approximately 400 manufacturers of various sizes and industry disciplines providing unique products and services, creating viable career paths for job seekers of all ages and skill sets.

One-Stop Career Centers: A Business Demand Approach to Services

The Local One-Stop Operator within the South Shore SDA is the South Shore Career Centers (SSCC), which oversees the operations of two comprehensive career centers in Plymouth and Quincy (noted by stars on the map on page 5).

The SSCC provide a variety of services and resources designed to match the workforce demands of businesses with job seekers in the region. This effort is undertaken by their dedicated teams who work to link the skill sets of those looking for sustainable employment with the needs required by area businesses. To enhance these connections, the SSCC provides access to a variety of training programs and workshops designed to address the skills gap that may occur between job seekers and the requirements of businesses.

Federal and state guidelines and policies are designed to ensure that workforce development programs are aligned with regional economic development strategies to meet the needs of area employers. The SSWDB, SSCC and numerous public, private and non-profit partners across the region are committed to Massachusetts Governor Charlie Baker's directive to improve the responsiveness to the needs of businesses, and prepare job seekers for high-demand employment opportunities – an initiative referred to as "Demand-driven 2.0".

This "demand driven" approach for business customers is designed to incorporate an industry-cluster model in support of certain sectors such as manufacturing. New partnerships among the SSWDB, economic development agencies, chambers of commerce, and community colleges are designed to foster new information about regional labor markets that can be used by public/private sector entities to redesign skills training and education programs to address the skills-gap that currently exists. Business involvement in industry forums will be important to ensure that their workforce development needs are met. This vision and approach will be applied to the region's Manufacturing sector; supported and designed through industry focused assessments and information gathered for this report.

South Shore SSCC Career Centers
PLYMOUTH | QUINCY
YOUR PATHWAY TO SUCCESS

Worked with approximately **600** businesses and managed over **200** job fairs and recruitments through the organization's Business Services Team.

Conducted over **8,000** workshops, administered **6,163** individual career counseling sessions and facilitated **7,665** individualized skill assessments.

Served over **647** Veterans, of which **94** secured employment.

Assisted **10,990** job seekers who elected to take advantage of the free services and resources.

Funded training for over **82** individuals.

Facilitated almost **26,000** unemployment insurance claims in the Quincy Career Center, which is the highest volume in the Commonwealth.

Methodology in Research and Data Collection

The SSWDB undertook an extensive outreach effort to gather input and ideas from manufacturers located within the South Shore region. The organization hosted three Focus Group meetings in different sections of the region within the towns of Hanover, Plymouth and Braintree. Participants included representatives from local manufacturers, vocational schools, higher educational institutions, industry trade organizations and business development entities.

In addition to the Focus Group meetings the SSWDB crafted an industry specific survey to assess the needs of manufacturers in regards to workforce, technology and training. Utilizing an online survey tool, the SSWDB disseminated a comprehensive 17 question e-survey via its email distribution list and through the assistance of area industry trade organizations.

Although the responses to the survey and participation in the Focus Group meetings was less than anticipated, the quality of data and information gathered supports much of the industry-wide findings identified in this report.

Some of the notable findings through the Focus Group meetings and Survey Responses include the need to:

- Develop a stronger connection with area vocational schools to address the "skills gap" and meet the future demands associated with an aging workforce.
- Attain employees who display a willingness to work hard, be reliable and trustworthy. (Manufacturers value a strong work ethic over technical skills.)
- Implement marketing and outreach efforts to help parents and students understand that manufacturing is a good career path opportunity that offers competitive salaries, security and benefits.
- Strengthen cross-training programs so that employees develop multiple skill sets to grow into other positions.
- Attract and retain new manufacturers to the Commonwealth, which will strengthen the industry and create a stronger eco-system to build upon.
- Enhance opportunities to work with local community colleges in the development of specialized industry specific curriculum to address the skill sets needs of local manufacturers.

Mayflower
BREWING COMPANY

Mayflower Brewing Company is a craft beer microbrewery located in historic Plymouth, Massachusetts. Founded in 2007 by a tenth-great grandson of John Alden, beer barrel cooper on board the Mayflower, the company brews and distributes high-quality, award-winning beer throughout New England. Its Plymouth facility includes 12,000 square feet of warehouse space that supports its brewery production, cellaring and packaging operations as well as its self-distribution business. The brewery also has a 2,000 square foot taproom where consumers can try beers on premise, take tours, and purchase packaged beer and retail items.

Alex Cordeiro, Cellarman, serving a half pint in the newly renovated Tasting Room.

Packaging Technician, Kevin Colebrooke, packaging the first batch of Mayflower's newest year-round release, New World IPA.

MayflowerBrewing.com

Founder & President Drew Brosseau

Full Time Employees 20

Headquarters location address
12 Resnik Road, Plymouth, MA 02360

Phone
508-746-2674

CAREER/JOB OPPORTUNITIES

Manufacturing jobs include Brewing, Cellaring and Packaging Operations. Distribution jobs include Delivery Drivers.

MARKETS/CUSTOMERS

Mayflower Brewing Company distributes its beer directly and through wholesalers to bars/restaurants and package/grocery stores in all five New England states. Consumers can also sample and purchase beer directly from the brewery.

PRODUCTS

Mayflower Brewing Company produces high-quality, award-winning beer for the New England market. Its products include six beers that it produces throughout the year (Golden Ale, Daily Ration Session IPA, Porter, IPA, New World IPA and EvoLupulin Double IPA) including four seasonal beers and a number of limited edition releases.

COMPANY BENEFITS

Jobs include salaried and hourly positions with overtime. Benefits include health care plan, paid holidays and 12 days of annual PTO.

COMMUNITY INVOLVEMENT

Strong supporters of many local charity organizations and events, including Nathan Hale Veteran's Outreach Center, South Shore Community Action Council, Plymouth Police, Plimoth Plantation, American Lung Association and others. Host several events at the brewery, including several road races and America's Hometown Throwdown Chef Competition.

AWARDS

Our beers have won multiple awards at a number of competitions including the Great American Beer Festival, the Great International Beer Festival and the British Beer Festival.

ENVIRONMENTAL AWARENESS

Our products use all natural ingredients, including water, malted grain, hops and yeast, and use no preservatives. We provide our spent grain to local farmers for composting and we purchased wastewater treatment rights from the town of Plymouth.

Now owned by AMETEK, Brookfield Ametek is a publicly traded global manufacturer of electronic instruments and electromechanical devices with annual sales of approximately $4.0 billion. The Brookfield brand began in 1934 with the invention of an instrument for measuring the viscosities of liquids at different shear rates. The company has grown over the years, enjoying a reputation for quality and reliability. The viscometers / rheometers have been the world standard in viscosity measurement and control of liquids and semi-solids for almost 80 years. Their CT-3 Texture Analyzer has also gained a reputation for being the ideal tool for tension and compression testing. The Powder Flow Tester has quickly gained market share as it delivers fast and easy analysis of powder flow behavior in industrial processing equipment. Research Labs, Quality Control and production environments count on Brookfield's reliable instrumentation for dependability and accuracy.

Here's a glimpse inside our facility.

Our team really functions like a "well oiled machine".

BrookfieldEngineering.com

CEO David A. Zapico

Full Time Employees 200

Headquarters 11 Commerce Boulevard, Middleboro, MA 02346

Phone
508-946-6200

Additional Locations
Essex, United Kingdom – Lorch, Germany – Guangzhou, China

SUCCESS STORIES

The development of our employees is key to our continued success. Our Senior Design Engineer attended a vocational high school, started out in our machine shop, attended college at night while working during the day and obtained his bachelor's degree in mechanical engineering. He was promoted to Mechanical Engineer and is now Senior Design Engineer. Similarly, our Operations Director graduated from a vocational high school, attended college at night, started her career as a Buyer in the Purchasing Department and was promoted to Production Planning Manager. She continued her education (using the tuition reimbursement benefit) and obtained her MBA; and she is now the Operations Director. Both of these individuals have been with the organization for 20 years! We have many employees that started their employment as summer interns and are now full-time employees. There are many opportunities when you choose a career in manufacturing; whether you are interested in finance, accounting, purchasing, machining, assembly or human resources, the possibilities are endless!

PRODUCTS

Brookfield's products include viscometers (an instrument that measures the viscosity (the resistance of material to flow of materials), rheometers (an instrument that measures the flow behavior of materials), texture testers/analyzers, powder flow testers as well accessories and software to increase or automate the functionality of their products.

MARKETS/CUSTOMERS

Brookfield services global markets across such diverse industries as chemicals, foods, packaging, pharmaceuticals, personal care products, oil and gas. Viscometers/rheometers are key in the quality control process of such commonly used items as relish, beverages, paints and gas. Texture analyzers are key in testing compression or tension for breads, cosmetics, packaging and fruits. Powder flow testers ensure powders such as medicine, seasonings and detergent flow freely in the manufacturing process.

Section II:
Manufacturing is an Economic Engine

MANUFACTURING on the South Shore of Massachusetts

South Shore wdb Workforce Development Board

Section II
Manufacturing is an Economic Engine

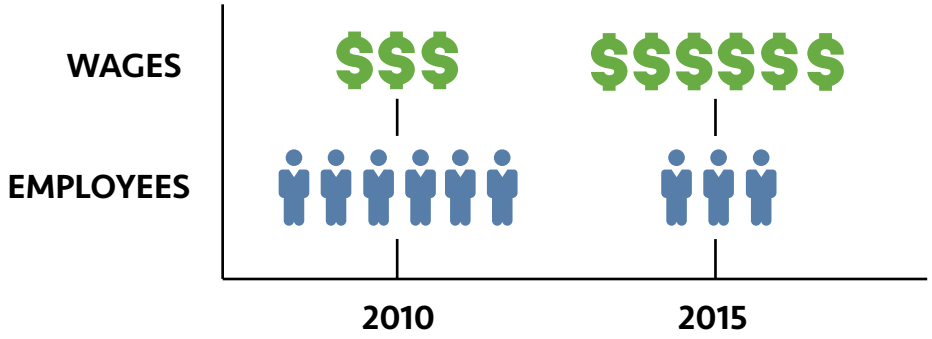
What is Manufacturing?

Manufacturing is dirty, loud, hot and all the jobs are going away...right? Well, not quite. You might be familiar with the phrase "this is not your father's Oldsmobile", the same could be said for manufacturing. Let's take a look at what manufacturing was — what it is now and where it's going. The truth is manufacturing was huge in this country and employed many, many americans for decades. Will we have the same volume of manufacturers and individuals working in manufacturing in the US in the future as we had in the past? The answer is, not likely.

While there may not be as many individuals in manufacturing today, those that are, are earning a good salary and their skills are in demand!

Given this information, one might quickly draw the conclusion that Manufacturing is "drying up" or going away, when in fact it's remaining a very strong industry in our region, state, and in our country. As a matter of fact, we are producing more products now than ever before, the only difference is, we don't need the same volume of human beings to do the work that we once did. The up side is manufacturing jobs require a higher skill level today than they did many years ago. Along with the higher skill level requirement comes higher wages. While there may not be as many individuals in manufacturing today, those that are, are earning a good salary and their skills are in demand!

The charts below reflect the growth pattern in the South Shore, noting that although the number of jobs has decreased since 2010, the actual gross wages have increased.



Norfolk, Plymouth and Bristol Counties

Average Manufacturing Wage			
	2010	2015	Growth
Total	$58,864.00	$61,152.00	3.89%

Aggregate Wage, Manufacturing			
	2010	2015	Difference
Total	$ 4,490,442,250.00	$ 4,557,538,271.00	$ 67,096,021.00

Total Workers, Manufacturing			
	2010	2015	Difference
Total	78,295	76,543	-1,752

Eric J. Mason, Economist, City of Quincy, May 2017, *Synthesized from BEA/FRED/BLS/Census Data*

The Manufacturing sector today is extremely diverse; crossing numerous industry sectors that drive our local, state and national economy. The sector is comprised of establishments engaged in the mechanical, physical, or chemical transformation of materials, substances, or components into new products – this is considered manufacturing. Yes – the image we all have of an assembly line process to make a car is manufacturing. But so is the corner bakery, village tailor shop, local brewery and numerous other businesses that produce products evolved from the agriculture, fishing, forestry and quarrying industry sectors. The transformation of materials into new products is manufacturing, and as such, manufacturing entities can also be classified within other business sectors, making the lines of distinction a little murky. For example, a bakery can be classified a as manufacturer, a wholesale entity, a retail enterprise, as well as a business within the food industry sector.

It is important to note that there are multiple career pathway opportunities within the manufacturing sector. Numerous quality support positions such as Research and Development (R&D) Marketing, Financial Management, Administration, Public Relations and Human Resources positions can be transferrable from other industry clusters in the region. While many jobs involve working directly on machines or "on the line", they are certainly not the only career path opportunities in this industry.

The Manufacturing Outlook

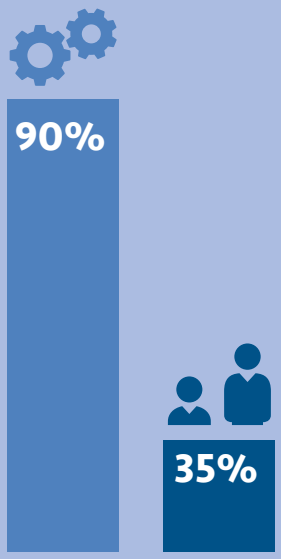
According to the National Association of Manufacturers (NAM)[1], the optimism of United States manufacturers is at a near 20-year high, with 93% of manufacturers indicating that they feel somewhat or very positive about the outlook of their company. Production, sales, employment and wages are expected to grow from 2-5% or more over the next twelve months, some at rates that have been unseen since 2011. NAM modeling confirms this positive outlook, with a predicted growth of 3.6% over the next twelve months.

In Massachusetts, manufacturing generates about 10% of the state's GDP and accounts for about 6% of the total employment base. Wage growth of over 27% is expected in Massachusetts manufacturing over the next ten years. The Manufacturing & Logistics Report Card for the United States[2] rates the overall health of manufacturing in Massachusetts as middle-of-the-road: However, Massachusetts ranks high in human capital in terms of the potential availability of qualified applicants, as well as global reach as it relates to the growth of manufacturing exports. Massachusetts ranks among the highest states for production and innovation as a result of the increasing growth of manufacturing productivity, high expenditures on R&D, and the large number of manufacturing patents issued in the state.

Manufacturing is the sixth largest industry by percent of workers in Massachusetts (behind Education, Healthcare, Professional and Scientific, Retail, Finance & Real Estate and Entertainment & Food Service). On the South Shore, manufacturing accounts for about 7% of the labor force in both Plymouth and Norfolk counties as noted in the following chart on page 14 of all Counties in the State.

1 "2017 Second Quarter Manufacturers' Outlook Survey." *National Association of Manufacturers.* The NAM Manufacturers' Outlook Survey, 2017. Web. <http://www.nam.org/outlook/>.

2 *2017 Manufacturing & Logistics Report Card for the United States*. Rep. Conexus Indiana & Ball State University Center for Business and Economic Research, 2017. Web. <http://conexus.cberdata.org/files/National2017.pdf>.



According to a recent survey, of over 1,000 Americans conducted by *The Manufacturing Institute*...

90% of Americans believe that manufacturing is important or very important for America's economic prosperity.

HOWEVER

35% of Americans say that they would encourage their children to pursue careers in manufacturing.

County	Manufacturing Workers	Labor Force	Density of Manufacturing Workers
Barnstable	3,805	102,995	3.69%
Berkshire	5,362	62,569	8.57%
Bristol	31,325	269,391	11.63%
Dukes	360	8,849	4.07%
Essex	42,185	383,882	10.99%
Franklin	3,881	37,218	10.43%
Hampden	24,223	212,742	11.39%
Hampshire	5,951	84,303	7.06%
Middlesex	82,230	832,753	9.87%
Nantucket	208	6,157	3.38%
Norfolk	25,124	358,283	7.01%
Plymouth	18,079	252,016	7.17%
Suffolk	19,076	401,271	4.75%
Worcester	51,665	403,519	12.80%

Eric J. Mason, Economist, City of Quincy, May 2017, *Synthesized from BEA/FRED/BLS/Census Data*

Promoting Manufacturing: Changing the Perception

The New England Council and Deloitte Consulting found that 18-24 year olds rank manufacturing 'dead last' among industries in which they would wish to begin a career.

> ***Children are losing interest in manufacturing as a career long before they enter high school ... education about advanced manufacturing needs to be expanded to include the guidance counselors, the teachers and the parents – all those who advise students as they think about their future[3],***

Targeting students is key in recruiting an interested and talented future workforce. 64% of high school students report that the greatest influence on their choice of future career is their own experience and interest, followed closely by their parent's and teacher's influences[4]. Those individuals who are familiar with manufacturing or have experience with the industry are more than twice as likely to recommend that others pursue a career in manufacturing.

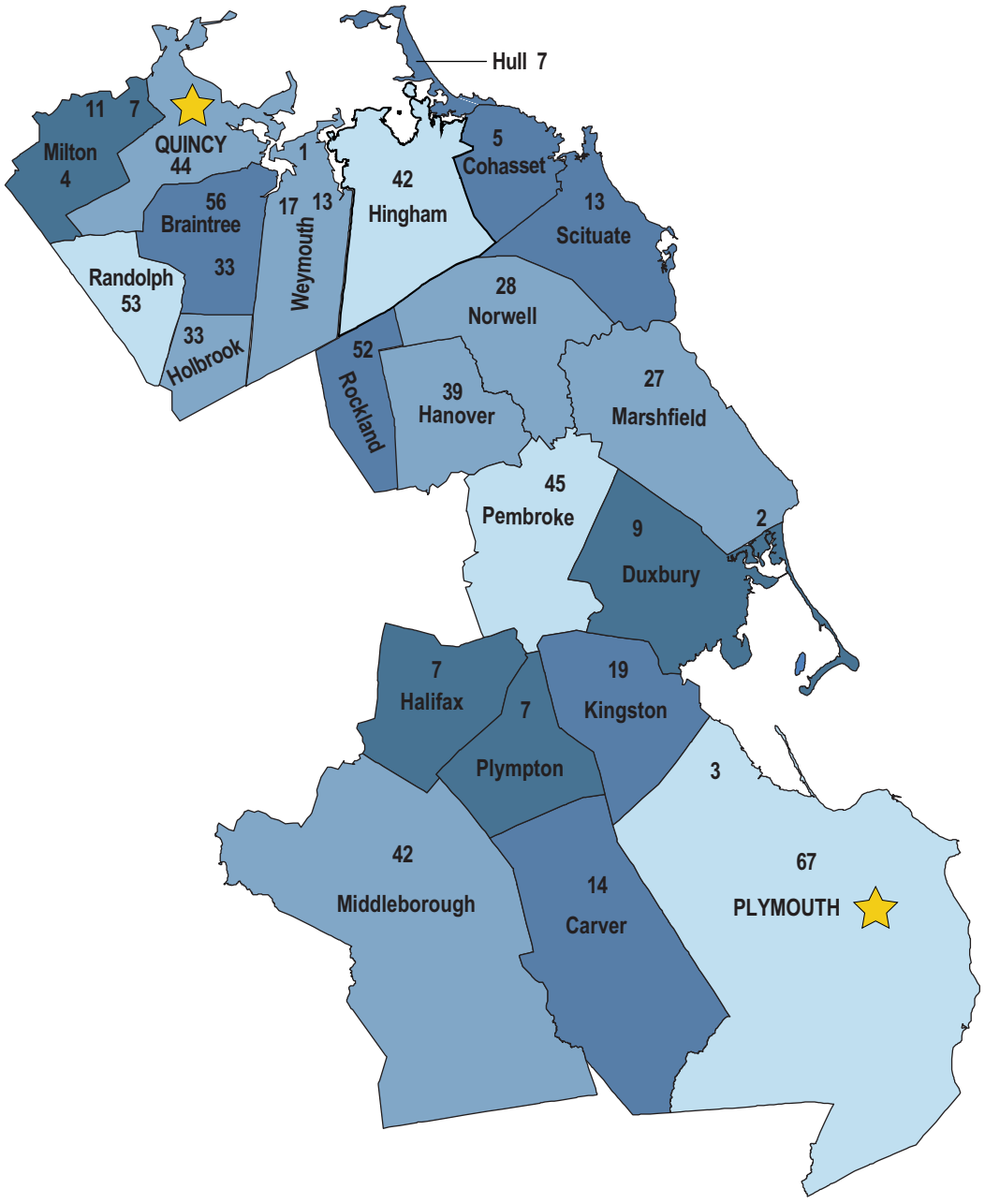
Though many people consider manufacturing important to the local and national economy, the public perception of manufacturing is that it is a dying industry. Many do not realize the technical complexity that modern manufacturing entails. Additionally, the cultural perception of manufacturing is seen as biased toward men. New recruiting strategies must consider reaching out to underrepresented populations, including women, as noted later in this report. However, an important part of that recruitment strategy, is to promote manufacturing as an inclusive and exciting environment for all workers. A plan for changing the perception of the manufacturing environment with regard to gender should include outreach and marketing featuring women and 'non-traditional' employees who may have come from other industry sectors, who may have overcome odds, or who may have worked to change their own institutional cultures.

3 *Advanced to Advantageous: The Case for the New England's Manufacturing Revolution*. Rep. The New England Council and Deloitte Consulting LLP, Apr. 2015. Web. <http://newenglandcouncil.com/assets/Advanced-to-Advantageous_FINAL-Report_04-08-2015.pdf>.

4 *Attracting the Next Generation Workforce*. Rep. The Manufacturing Institute, SkillsUSA and the Educational Research Center of America, 2015. Web. <http://www.themanufacturinginstitute.org/~/media/313BCA4C3721444CA8C48F7304F32027.ashx>

Manufacturing on the South Shore and in Southeastern Massachusetts

Manufacturing on the South Shore continues to remain one of the areas critical industry sectors. With over 400 manufacturers listed in our region alone, it is clear to see why it is an industry that requires our attention and focus. The South Shore has representation from virtually every type of manufacturing ranging from machinery manufacturing, chemical manufacturing to bakeries and breweries! In other parts of the state, you' ll find manufacturing organizations clustered together in industrial office park settings – that is not typically the case in the South Shore. Below you will find a map that depicts the locations of the manufacturers in our region. You can see there are some clusters, but for the most part, they are spread across the region and as such they are often times easy to miss!



The South Shore has representation from virtually every type of manufacturing ranging from machinery manufacturing, chemical manufacturing to bakeries and breweries!

Top 20 Types of Manufacturers on the South Shore		
Description	**No. of Establishments**	**Average Weekly Wages**
Manufacturing	**408**	**$1,334**
Durable Goods Manufacturing	245	$1,464
Non-Durable Goods Manufacturing	163	$1,133
Food Manufacturing	49	$918
Fabricated Metal Product Manufacturing	79	$1,299
Printing and Related Support Activities	59	$992
Printing and Related Support Activities	59	$992
Miscellaneous Manufacturing	42	$1,928
Machine Shops and Threaded Products	30	$1,149
Machinery Manufacturing	29	$1,295
Bakeries and Tortilla Manufacturing	28	$695
Computer and Electronic Product Manufacturing	28	$1,737
Medical Equipment and Supplies Manufacturing	21	$2,039
Other Miscellaneous Manufacturing	21	$1,399
Chemical Manufacturing	17	$1,801
Architectural and Structural Metals	17	$1,528
Electronic Instrument Manufacturing	15	$1,709
Nonmetallic Mineral Product Manufacturing	14	$1,183
Electrical Equipment and Appliances	14	$1,362
Coating, Engraving & Heat Treating Metal	13	$1,064
Furniture and Related Product Manufacturing	13	$957
Wood Product Manufacturing	11	$903
Other Fabricated Metal Product Manufacturing	11	$1,730

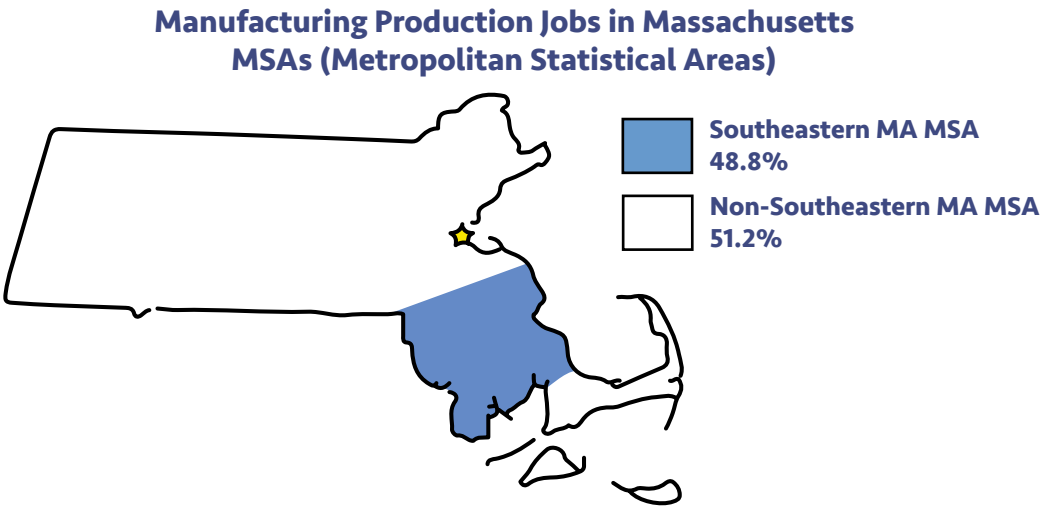
Employment and Wages Report (ES-202) South Shore WDA Year: 2015 Period Massachusetts Department of Economic Office of Labor and Workforce Development

This chart above represents the makeup of the Top 20 types of manufacturers located within the South Shore region. (There are an additional 31 other types of manufacturers not displayed in this chart.)

The largest segment of manufacturers in our region falls under the Durable Goods Manufacturing category. “Durable Goods include items like furniture, jewelry, stoves, washing machines and cars. The category also includes defense and commercial procurement of heavy equipment and assets; aircraft, trucks and ships. Non-durable goods include food, medicines and other consumables, as well as products that last a limited lifetime such as clothing, shoes and small electronic devices.”[5] Not terribly surprising, Non-Durable Goods manufacturing is our 2nd largest type of manufacturer. Fabricated Metal Product Manufacturers and Food Manufacturers are at the top of both of these respective lists. While the range of manufacturing types is rather broad, most of our manufacturers tend to be relatively small in size.

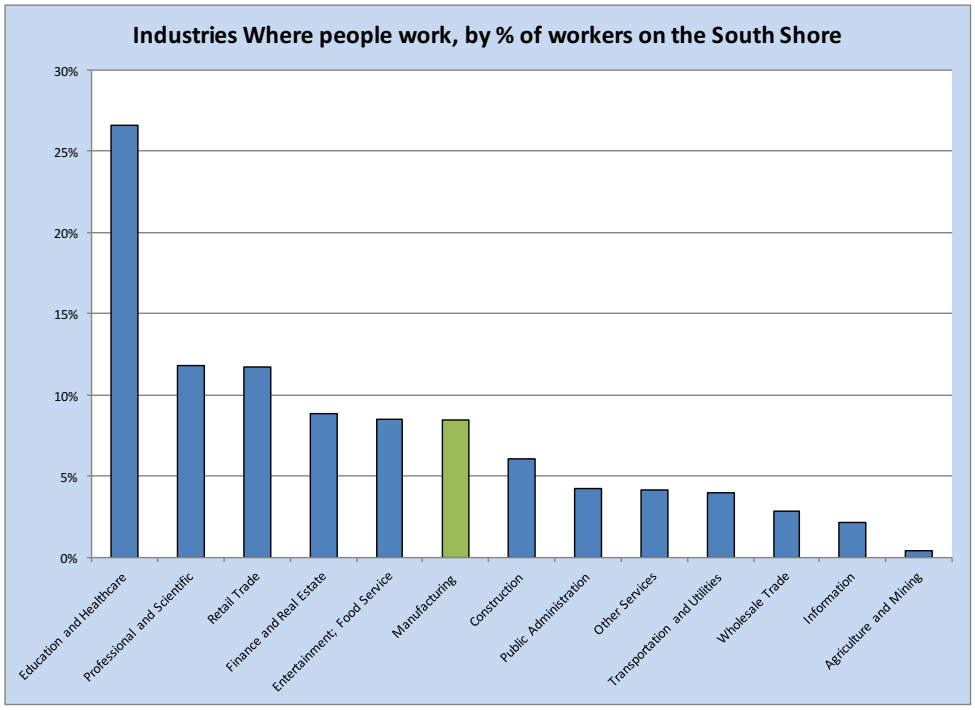
5 Adkins, W.D. “What Is the Difference Between Durable Goods and Non-Durable Goods?” *Chron.com*. Chron, 2017. Web. < http://smallbusiness.chron.com/difference-between-durable-goods-nondurable-goods-34928.html>

However, an interesting fact remains that **almost half of the Production Workers in manufacturing in Massachusetts are employed in the Southeastern part of the state** as noted in the pie chart below.



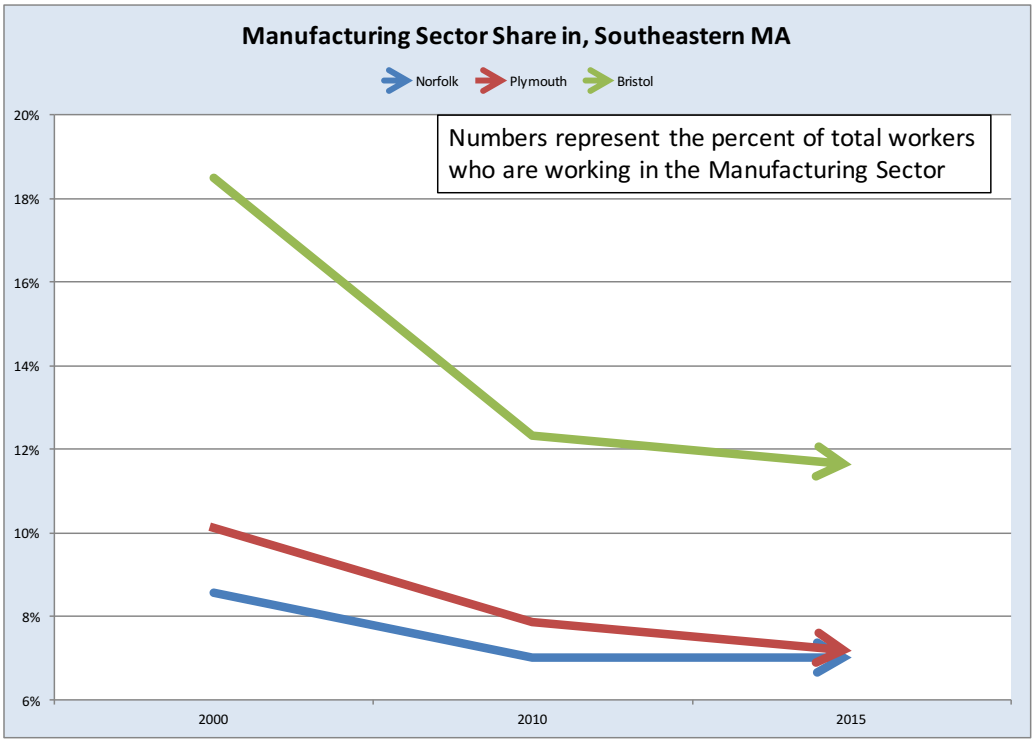
Eric J. Mason, Economist, City of Quincy, May 2017, Synthesized from BEA/FRED/BLS/Census Data

Although a significant percentage of our labor force is currently employed in the manufacturing industry you will note in the graph below that our region has an exceptionally high volume of individuals working in the Education and Healthcare sector (over 25%). Our workforce is spread out relatively evenly among Professional and Scientific, Retail, Entertainment and Food Service and Construction. While manufacturing is still a driver in our economy, it has seen its' share of job loss in recent years.



Eric J. Mason, Economist, City of Quincy, May 2017, Synthesized from BEA/FRED/BLS/Census Data

As indicated in the following chart, from 2000 to 2010 during the recession, there was a significant loss of jobs in the manufacturing sector. It's not anticipated that manufacturing employment will ever rebound to come remotely close to the level of individuals it employed in the past. The industry has changed as a whole, many jobs have been automated and many manufacturing companies have closed. The landscape of the manufacturing workforce has changed as well moving from a high volume of "lower" skilled employees to a lower volume of "higher" skilled employees. This is seen throughout the state as well as across the country. While newly created jobs may not be plentiful, the chart shows that job numbers from 2010–2015 have been consistent, displaying that the current jobs are sustaining. Many manufacturers indicate they have an aging workforce and are anticipating future hiring needs to fill the positions that will become open due to retirements. We need to be prepared to meet the demands of manufacturers by creating a pipeline of individuals who are aware of opportunities that exist within the industry, are excited about the career pathways it provides and are equipped with the appropriate skills. To adequately prepare students to successfully transition into new careers in manufacturing, our vocational and higher education partners must be in communication with local manufacturers and have a clear understanding of their workforce requirements.



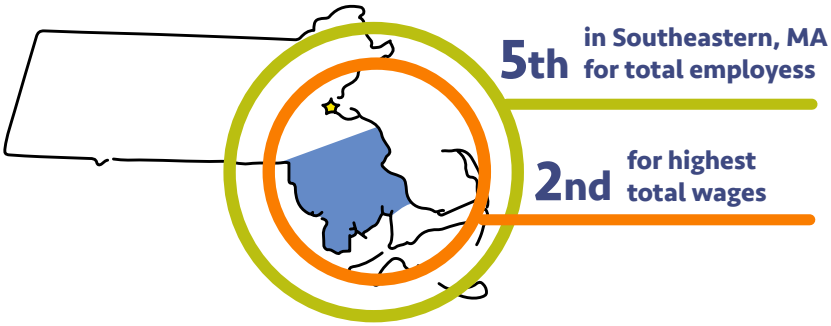
Recession shows significant loss of manufacturing jobs (recovery to 2000 not expected.)
However, 2010–2015 shows the solidity of the industry and projection for future sustainability.
Eric J. Mason, Economist, City of Quincy, May 2017, Synthesized from BEA/FRED/BLS/Census Data

An interesting fact in reference to Manufacturing in Southeastern MA is depicted in the charts on page 19. The Manufacturing industry cluster is the 5th largest creator of jobs in the region, and as an aggregate, creates the 2nd highest value of gross wages for the region. Thus, although the *number* of manufacturing jobs may be declining in recent years, the salaries being generated are very competitive when compared to other industry sectors in the region.

SOUTHEASTERN MASSACHUSETTS REGION SECTOR MAKEUP

SECTOR	TOTAL EMPLOYED*
Health Care and Social Assistance	104,514
Retail Trade	77,441
Accommodation and Food Services	52,889
Educational Services	48,679
Manufacturing	40,450
Construction	35,858
Administrative and Waste Services	27,179
Finance and Insurance	24,439
Wholesale Trade	23,905
Other Services, Ex. Public Administration	20,736
Public Administration	20,431
Professional and Technical Services	20,333
Transportation and Warehousing	17,870
Management of Companies and Enterprises	9,478
Information	9,173
Utilities	3,070

Manufacturing ranks



SECTOR	TOTAL WAGES*
Health Care and Social Assistance	$96,570,936
Manufacturing	53,434,450
Construction	48,444,158
Retail Trade	47,781,097
Educational Services	42,399,409
Wholesale Trade	39,084,675
Finance and Insurance	36,829,573
Professional and Technical Services	33,366,453
Public Administration	27,336,678
Administrative and Waste Services	25,874,408
Accommodation and Food Services	21,261,378
Transportation and Warehousing	18,549,060
Management of Companies and Enterprises	18,102,980
Other Services, Ex. Public Administration	13,685,760
Information	13,621,905
Utilities	6,652,690

* http://www.mass.gov/massworkforce/wioa/acls/local-plan/south-shore/deck-southeast.pdf

Manufacturing in the Commonwealth

Advancing the Commonwealth's Support for Advanced Manufacturing

By Ira Moskowitz, Director of Advanced Manufacturing Programs, Innovation Institute at Mass Tech Collaborative

For well over 100 years, manufacturing has been a critical part of the Commonwealth's economy. Since the early days of American manufacturing, from the textile mills in Lowell to metal fabrication in Springfield, Massachusetts has been a leader in developing and delivering cutting edge products. Today, its advanced manufacturing sector is demonstrating leadership in automation, computing, precision, components and connectivity.

Manufacturing has a critical role to play in driving the Commonwealth's economy and one that we can grow over the coming decades. Today, the manufacturing sector employs over 252,000 workers at 7,200 companies located across the Commonwealth, firms that generate over 10 percent of the gross domestic product (GDP) in Massachusetts. As the sector has become more highly skilled, wages have begun to reflect that specialization, with workers taking home on average $20,000 more than the average worker in Massachusetts.

As the sector has become more highly skilled, wages have begun to reflect that specialization, with workers taking home on average $20,000 more than the average worker in Massachusetts.

M2I2 Aims to Ensure Future of Mass. Manufacturing

As would be expected, the companies, jobs and products of 100 years ago do not reflect our manufacturing sector today. The digitization of our economy is creating a convergence in technologies that is transforming everything we do. An evolution of our world is underway, driven by an acceleration in the capability of both hardware and software that is powering the engine of innovation. A convergence of higher-performing sensors and automation, combined with massive increases in data, advanced analytics, computing power and communication systems is enabling products and services with unprecedented capabilities.

The rapid growth of our technology-based manufacturing sector is quickening the pace of this evolution. To help firms across Massachusetts participate in this transformation and stay competitive, the Commonwealth has developed a range of programs to help manufacturers with creating a business, financing, international expansion, site selection and workforce/talent development.

One of the newest efforts is a program to address the rapid pace of manufacturing innovation. This program, called the Massachusetts Manufacturing Innovation Initiative, or M2I2, provides state funds that help Massachusetts firms co-invest in critical R&D infrastructure, partner with our top-tier research institutions and create new opportunities to manufacture cutting-edge products. M2I2 was launched last year by the Baker-Polito Administration and is aimed at boosting R&D in several specific advanced manufacturing sectors. As part of this effort, the **Administration has committed over $100 million in capital grants to projects under the Manufacturing USA program**, national institutes that seek to boost promising early-stage research and propel new products to market. While Massachusetts organizations have established footholds in all 14 of these national institutes, under M2I2 the Commonwealth has made dedicated investments in five specific research areas. This includes a leadership role in the effort to develop revolutionary fibers and textiles, but also as a home to major R&D nodes in **robotics, integrated photonics, flexible hybrid electronics and biopharma manufacturing**.

M2I2
Massachusetts Manufacturing
Innovation Initiative

This program, called the Massachusetts Manufacturing Innovation Initiative, or M2I2, provides state funds that help Massachusetts firms co-invest in critical R&D infrastructure, partner with our top-tier research institutions and create new opportunities to manufacture cutting-edge products.

The Commonwealth will invest a combined $113 million over five years in these research centers, which will leverage an additional $100 million-plus in funding from the federal Manufacturing USA program. The grants made under the M2I2 program represent a **nation-leading commitment** to develop R&D infrastructure that will allow us to work hand in hand with our academic, research and manufacturing partners.

Here in Massachusetts, we are the beneficiaries of numerous homegrown strengths that support and sustain innovation, factors such as the density and diversity of our technology and innovation companies; a trailblazing startup ecosystem; and a top education system underpinned by world-class universities and nation leading K-12 system. The M2I2 effort looks to deepen the connection between these pillars, helping further innovation and potential job growth by connecting manufacturing companies with top-tier universities and other academic/research/training institutions.

The M2I2 program aims to accelerate these innovation sectors and has identified these as areas where Massachusetts has the potential to become a global leader. As the foundation for this support, each of these sectors brings with it a strong academic presence, a legacy of manufacturing prowess, leading R&D centers (existing infrastructure) and a deep pool of talented workers in the state.

These sectors also align with several emerging global markets, with customers ready and eager to purchase innovative 'Made in Massachusetts' products. These markets include:

- Business automation (advanced sensors, manufacturing robots);
- Construction (new fabrics, materials for 'smart' buildings or roadways);
- Consumer goods (advanced sensors, flexible electronics);
- Defense (smart fabrics, sensors, robotics);
- Digital Health (robotics, wearable sensors, photonics); and
- The Internet of Things (advanced sensors, flexible electronics, photonics).

For questions about the M2I2 program, contact Ira Moskowitz, Director of Advanced Manufacturing Programs, Innovation Institute at MassTech at moskowitz@masstech.org or 508-870-0312 x278. Or visit MassTech.org/M2I2 to learn more.

By advancing R&D in these core sectors and addressing these multi-billion dollar markets, Massachusetts can help spur new company growth, add jobs and develop revolutionary new products which will provide increased revenue for the Commonwealth and its companies.

Below are summaries of the M2I2 target centers and the rationale for the Commonwealth's investments in each:

AFFOA (Advanced Functional Fabrics of America)

Focus area: Revolutionary Fibers and Textiles

M2I2 Commitment: $40 million

Massachusetts Partners include: Massachusetts Institute of Technology (MIT), UMass Lowell, Saint Gobain, New Balance, Flex, IDEO, Boston Engineering, Ministry of Supply, E Ink and Biowear.

Details: Only national Manufacturing USA headquartered in Massachusetts. AFFOA is working to enable a manufacturing-based revolution by transforming traditional fibers, yarns and fabrics into highly sophisticated, integrated and networked devices and systems.

AIM Photonics (American Institute for Manufacturing Integrated Photonics)

Focus area: Photonics

M2I2 Commitment: $28M

Massachusetts Partners include: Analog Photonics, MIT, Quinsigamond Community College, Worcester Polytechnic Institute (WPI), Acacia Communications, Lincoln Labs, Draper Labs, Boston University, Analog Digital Inc., Applied Materials, Avago Optical Components, Polatis.

Details: AIM Photonics is working to accelerate the transition of integrated photonic solutions from innovation to manufacturing-ready deployment in systems spanning commercial and defense applications.

NIIMBL (National Institute for Innovation in Manufacturing Biopharmaceuticals)

Focus area: Biopharma Manufacturing

M2I2 Commitment: $20M

Massachusetts Partners include: Massachusetts Institute of Technology (MIT), Quincy College, UMass Lowell, UMass Medical School, and Worcester Polytechnic Institute (WPI)

Details: NIIMBL is working to enable more efficient and flexible manufacturing capabilities for existing and emerging biopharmaceutical products, and develop a world-leading biopharmaceutical manufacturing workforce.

NextFlex

Focus area: Flexible Hybrid Electronics

M2I2 Commitment: $20M

Massachusetts Partners include: UMass Amherst, UMass Lowell, SI2 Technologies and Raytheon.

Details: NextFlex takes key steps toward furthering U.S. development and adoption of the flexible hybrid electronics that will revolutionize the way we live, work and play.

ARM (Advanced Robotics Manufacturing)

Focus area: Robotics

M2I2 Commitment: $5M

Massachusetts Partners include: Mass Robotics, Massachusetts Institute of Technology (MIT), Worcester Polytechnic Institute (WPI), and UMass Lowell.

Details: ARM is the leading catalyst of robotics innovation and expertise to fuel growth of U.S.-based manufacturing and high value careers. As a member-driven organization, the ARM Institute was created to influence four primary outcomes – assert leadership in manufacturing, lower the technical, operational, and economic barriers for companies to adopt robotics technologies, empower American workers to be cost-competitive with low-wage workers abroad, and aid in creation and sustenance of valuable jobs.

Engaging in the M2I2 Program

So how will the program work from a business or grant-making standpoint? M2I2 provides **capital cost shares** for projects or discovery centers located within the Commonwealth's borders. Entities may apply for a cost share grant from the Commonwealth of Massachusetts (which will be managed by the Massachusetts Technology Collaborative) for projects initiated under one of the targeted federal institutes. The following criteria are used to evaluate proposals:

- Market Potential (industry/market impact, knowledge creation/IP, new jobs created, business expansion and/or new MA businesses established)
- Workforce Training implemented
- Industry-Academia Collaboration
- Impact on regions of the state beyond Greater Boston

Entities may apply for a cost share grant from the Commonwealth of Massachusetts (which will be managed by the Massachusetts Technology Collaborative) for projects initiated under one of the targeted federal institutes.

Continued Support for Manufacturing across the Board

As the #1 state in the U.S. for R&D spending per capita, the creation of the M2I2 program by the Baker-Polito Administration is a continuation of the Commonwealth's strong commitment to support R&D and the manufacturing sector. While it is one of the newest efforts to support manufacturing across the state, it is far from the only program available, and we urge you to reach out and engage with each of the programs offered to see if there are programs that could provide a good fit for your firm. These include programs that are aimed at kick starting company growth providing critical training opportunities and developing new markets for Massachusetts-made products.

Twin Rivers Technologies

Twin Rivers Technologies (TRT) is one of the largest Oleochemical producers in North America. Their facility is designed and operated as a world-class fatty acid and glycerin production site.TRT has the unique capability of meeting the changing demands of the market with the most comprehensive product line in the industry and R&D capabilities to support their customers changing needs. They provide solutions that deliver superior quality, service and value to their customers.

Community involvement is one of the foundational pillars of Twin Rivers Technologies. Our partnership with RTR is an example of how getting involved can make a world of difference to the communities that we live and work in.

Example of equipment at TRT's Quincy, MA facility used to manufacture products.

TwinRiversTechnologies.com

President and CEO Scott Chatlin

Full Time Employees 120

Headquarters 780 Washington Street, Quincy, MA 02169

Phone 617-472-4200

CAREER/JOB OPPORTUNITIES

Twin River Technologies greatest asset is its people. Twin Rivers enjoys the benefits of a highly trained, skilled and experienced manufacturing staff that operates with a noticeable and impressive "can-do" attitude. All Twin Rivers employees are empowered to act to deliver on our commitments to our business customers.

PRODUCTS

Twin Rivers Technologies offers the most comprehensive line of oleochemials, naturally based specialty chemicals and glycerin products in the North American marketplace with over 80 different product offerings.

MARKETS/CUSTOMERS

All of the products produced at Twin River Technologies impact a wide variety of market segments and customers. Industrial applications for oleochemicals, fatty acids and glycerin include food, cosmetics, pharmaceutical, textile, plastics, soap and detergents.

COMPANY BENEFITS

The health and safety of our employees is extremely important to our team and our long-term success. TRT has resources available to our employees to further their education, skills and knowledge of our business, industry and the technical skills that support both. These resources include safety training programs, tuition assistance lectures, roundtables, seminars and training systems for technical training. Our new onsite fitness center, monthly wellness bulletins, and free health and fitness assessments incentivize our team to stay on track with a healthy regime. Many of our employees recently competed in a "Biggest Loser Challenge". The 12 week challenge was a great success with a total loss of 439 lbs!

COMMUNITY INVOLVEMENT

Twin Rivers Technologies continuously strives to develop and maintain positive relationships that result in meaningful contributions to our community. In April 2017, our employees contributed $1000.00 for the Jimmy Fund raising $2000.00 for the cause with TRT's match. Each December our employees host a toy drive that benefits Toys for Tots. Additionally, Twin Rivers maintains a partnership with Road to Recovery (RTR) a local non-profit that supports citizen's with disabilities to take their place as productive members of the community. We completed a fall clean-up of one of RTR's residences and planted spring gardens for the residents to be able to enjoy at two other residences.

ENVIRONMENTAL AWARENESS

Twin Rivers Technologies Sustainability Program is designed to deliver continuous growth while reducing impact on the global community. This is primarily accomplished through the following initiatives: water conservation, energy conservation/efficiency, responsible raw material sourcing and waste reduction. Our Sustainability Program focuses on the future of our business and the environment. Twin Rivers strives to be the sustainability leader in our industry and to utilize our foundational pillars to meet the current and future needs of our customers and stakeholders, while continuing to hold sustainability as the core of our business model.

BENDON GEAR AND MACHINE, INC

Bendon Gear and Machine, Inc. has been in continuous operation since 1966, concentrating on the production of precision machined components, custom precision gears, mechanical assemblies and gear assemblies. In addition to machined parts, gears and assemblies, they also manufacture pulleys and sprockets.

CAREER/JOB OPPORTUNITIES

A Career at Bendon Gear really is like joining a family. Our organization was founded with the guiding principles of Honesty, Sincerity, Frankness and Integrity. The primary driver of all of Bendon Gear activities is the satisfaction of the customer's values of Price, Quality, Delivery and Service. We look for the same attributes in our staff and strive to provide ongoing training and opportunities to our team to continuously develop their skills. We are always looking for quality Machinists that are dedicated to their craft and looking to continue to develop and grow within the industry.

Bendon Gear is conveniently located off of Route 3 for easy commuting.

Peter Belezos (center left) and Doug Tressel (center right) receiving the Raytheon 4-Star Operational Excellence Supplier Award.

www.bendongear.com

President G. Peter Belezos

Vice President Douglas Tressel

Full Time Employees 32

Headquarters 100 Weymouth Street, Unit A, Rockland, MA 02370

Phone 781-878-8100

MARKETS/CUSTOMERS

Bendon Gear has worked on U.S. government parts since the company's inception, with prime contractors and directly with the government. Other customer bases include semi-conductor, medical and precision commercial industries. In a very competitive environment, what sets us apart is that we focus on our customers' needs before anything else. Not only do we provide technical expertise, we spend time, at no cost to our customers, to learn as much as possible about their industry and product line. Doing so helps us become an invaluable member of our customer's supplier base. Whether we are manufacturing gears to be used in sport fishing or parts for a defense contractor — maintaining a healthy and long relationship with our customers is essential to our success.

PRODUCTS

Manufacture small to medium sized precision-machined parts and assemblies. All our products are "custom made" to meet our customer's needs.

COMPANY BENEFITS

Bendon Gear & Machine, Inc. offers a competitive salary/benefits package to our employees. This includes 100% paid medical, dental and life insurance along with a 401K retirement plan.

DO YOU HAVE AN INTERNSHIP PROGRAM?

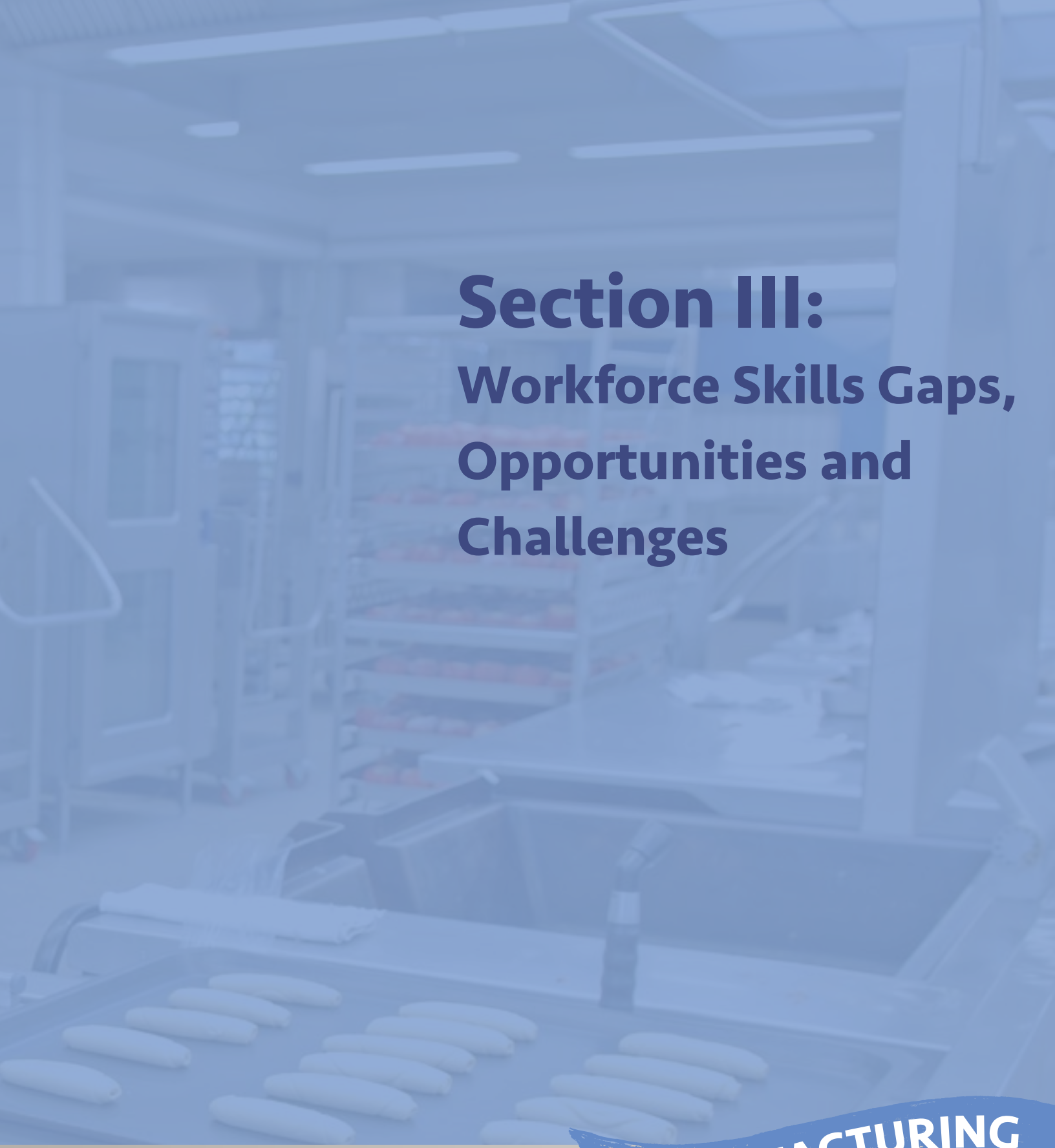
Yes. Each year we welcome Interns from South Shore Vocational Technical High School (SSVT) and have many alumni working here full time. Peter Belezos, President of Bendon Gear and Machines, Inc., has served for many years in an advisory capacity to their Precision Machine Technology program and each year we welcome student interns to work part time, side by side, with seasoned professional's to give them an opportunity to experience real world applications. This program has proven to be a real win-win relationship for all.

AWARDS

Awarded multiple Workforce Training Fund Program Grants and honored to have been recognized for our outstanding quality and performance by Raytheon's Integrated Defense Systems, as a multi-year recipient of their 3-Star and 4-Star Supplier Excellence Awards. Every member of the Bendon team takes great pride in knowing that what we make is used to support and protect the men and woman of our U.S. Armed Forces.

ENVIRONMENTAL AWARENESS

Bendon utilizes "green" best practices whenever possible; then we recycle the bulk of all solids and liquids used in production.



Section III:
Workforce Skills Gaps, Opportunities and Challenges

South Shore wdb Workforce Development Board

MANUFACTURING on the South Shore of Massachusetts

Section III – Workforce Skill Gaps, Opportunities and Challenges

This section was prepared in collaboration with the Office of Institutional Research and Assessment and the Office of Workforce Development & Community Outreach at Quincy College.

The Current Manufacturing Workforce

Nearly half of manufacturers indicate that they have increased their hiring since this time last year and smaller manufacturers are predicting that they will be hiring more workers at rates higher than their larger competitors.

Currently, 31% of manufacturing employees have earned a baccalaureate degree or higher and an additional 23% have had some College training or earned an Associate's degree. Though this makes up the majority of the manufacturing workforce, the proportion of this workforce with post-secondary training is lower compared to Massachusetts state averages. Significant pay increases follow those employees who do go on to earn a bachelor's degree following an associate's degree. **Workers can go from making an average of about $45,000 to about $75,000 with a four-year degree**.

Though the manufacturing workforce is changing across the nation, these changes are not happening rapidly enough. Data from the American Community Survey (ACS) indicates that the median age for the manufacturing workforce is 47 years of age, two years older than the median age of the state as a whole. More than 27% of today's manufacturing workforce in the southeastern Massachusetts region will reach retirement age within the next 10 years[6]. This segment of the workforce is larger in southeastern Massachusetts respective to the state or the nation as a whole. The need for a steady pipeline of qualified candidates for manufacturing jobs is therefore higher in Southeastern Massachusetts than most other areas.

Moving Forward: The Manufacturing Skills Gap

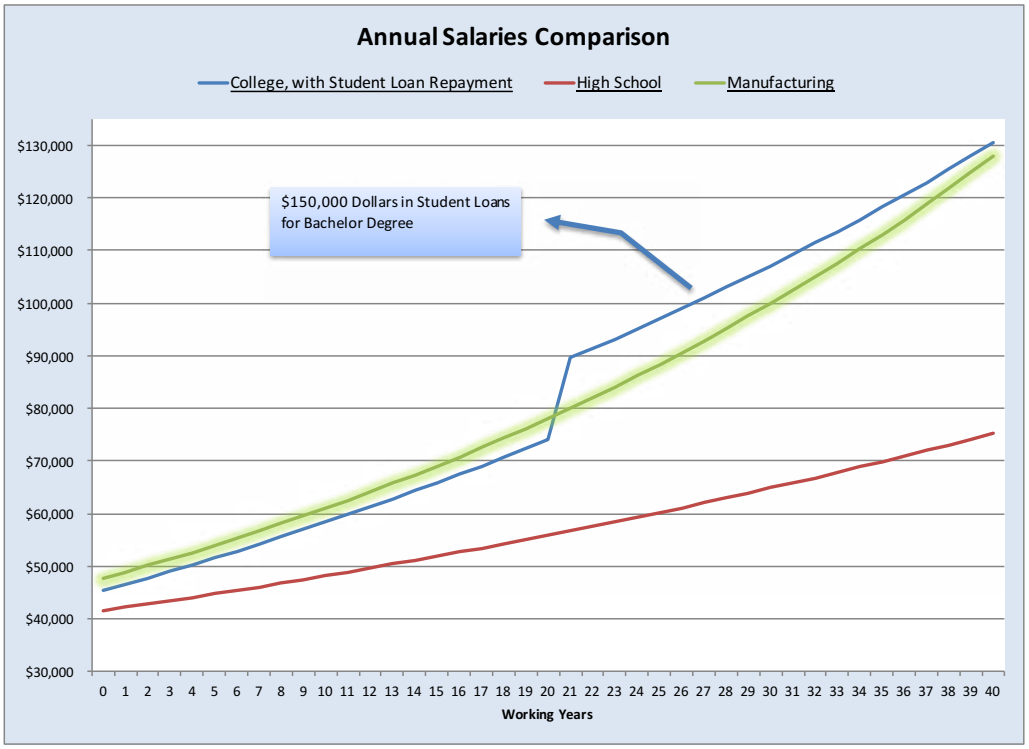
Though the outlook for the manufacturing industry is optimistic, employers are growing increasingly concerned about hiring the right people to fill the necessary positions left by the aging and retiring workforce. Manufacturers also worry about finding qualified candidates for new technology-driven positions necessary for manufacturing innovation. **The top priority that many manufacturers list in their strategy for continued growth is recruiting and retaining a high quality workforce[1]. According to the Massachusetts Manufacturing Extension Partnership (MassMEP), this challenge is the number one barrier to manufacturing growth in the state**.

6 Renski, Henry, PhD, and Ryan Wallace. *A Profile of Advanced Manufacturing in the Commonwealth: Key Industry and Occupational Trends*. Rep. Center for Economic Development University of Massachusetts Amherst, July 2014. Web. <https://www.massdevelopment.com/assets/what-we-offer/manufacturing/profileofadvancedmanufacturinginMA_072014.pdf>.

Across New England, six out of ten open skilled production positions are unfilled because of talent shortages[7]. If employers cannot find skilled employees, additional capital investments are necessary to 'compensate for the unavailability of skilled labor and product engineering to meet increasing customer needs'. Additionally, The Manufacturing Institute reports that over 70% of employers say that overtime has increased, with nearly half of these employers indicating an increase of 10% or more in recent years[8]. This is creating an increased financial burden on manufacturers.

Often, manufacturers must supplement the skills of their new hires in order to adequately prepare them for difficult-to-fill positions. Though many manufacturers are willing to do so, in an era where it is less common for employees to search for or assume a lifelong career with a single employer, it is not practical to expect that an employer should solely shoulder the cost of investing in their increasingly mobile workforce.

The Chart below compares the net salary comparison of an individual that embarks on a manufacturing career pathway from high school and an individual that achieves a Bachelor Degree with a corresponding $150,000 in Student Loans. Both individuals have a similar salary projection over their working career.



Recession shows significant loss of manufacturing jobs (recovery to 2000 not expected.)
However, 2010–2015 shows the solidity of the industry and projection for future sustainability.
Eric J. Mason, Economist, City of Quincy, May 2017, Synthesized from BEA/FRED/BLS/Census Data

The Massachusetts Department of Education projects that by 2025, the state's public colleges and universities will fall short of producing their share of the necessary credentialed employees for the state's needs by a minimum of 60,000[9].

7 *Advanced to Advantageous: The Case for the New England's Manufacturing Revolution*. Rep. The New England Council and Deloitte Consulting LLP, Apr. 2015. Web. <http://newenglandcouncil.com/assets/Advanced-to-Advantageous_FINAL-Report_04-08-2015.pdf>.

8 *Building a Manufacturing Talent Pipeline*. Working paper. The Manufacturing Institute, 2015. Web. <http://www.themanufacturinginstitute.org/Skills-Certification/Educator-Resources/~/media/03E96B264D7745BA88DC2E8551DB3DAF.ashx>.

9 *The Degree Gap*. Rep. Massachusetts Department of Higher Education, June 2016. Web. <http://www.mass.edu/visionproject/_documents/2016%20The%20Degree%20Gap%20-%20Vision%20Project%20Annual%20Report.pdf>.

In order to meet current demands, the state must make headway in order to at least double the number of students completing advanced manufacturing programs.

Manufacturers note that they feel frustrated with the lack of educational preparation for those who apply to or are hired in modern manufacturing positions. Often, manufacturers insist that they cannot find employees who 'want to work'. The necessity to find workers who are knowledgeable and dedicated is creating an increasing gap between available jobs and qualified candidates. Several data-driven strategies to address this gap can be found below.

Building Educational Partnerships

One of the most important opportunities for the manufacturing industry comes in the availability of educational resources across the state of Massachusetts. If a current talent pool is not available to fill necessary jobs, one must be carefully crafted to inform the future workforce.

As a result of rapidly evolving technology and innovation in the manufacturing and similar sectors, companies are creating new entry-level positions which are necessary for production, but may not align with current industry or academic credentials. This often means, the "right" candidates for these entry level jobs are difficult to find because they do not possess the specialized skills required and educational programs may not exist where they could be trained to acquire the necessary skills. In order to fill these gaps, faculty, specifically at community colleges, can work directly with businesses to develop new training programs tailored to specifically address positions in high demand or new positions where the educational tracks are not yet captured by traditional academic programs.

The need for a steady pipeline of qualified candidates for manufacturing jobs is therefore higher in Southeastern Massachusetts than most other areas.

It is important that these partnerships exist on the regional level and are tailored to community and industry demand[10]. It is also imperative that industry partners are involved at every stage of educational or credential development. This includes needs assessments, curriculum development, training delivery, hiring preparation and perhaps most importantly, constant formative and summative feedback. Industry partners must share the burden in evaluating how well curricula are meeting their needs as well as continuosly adapting the curricula for changes and advances in the manufacturing sectors.

These new programs also do not have to be at the graduate or even baccalaureate level. Historically, community colleges have had both the need and the flexibility to align with community needs. This offers an opportunity for individual businesses or companies within the local community to work directly with faculty members to create curricula that build a strong talent pool and thus create an effective and efficient career ladder from which companies can easily recruit. Cross-sector partnerships can and must provide apprenticeship opportunities and hands-on training. These partnerships can also work to provide certification and combine this with on-the-job training for a mutually agreeable relationship between employer and new employee.

More general manufacturing certifications (for credit or non-credit), however, can also be useful. Analyses of manufacturing credentials and necessary skills find that there is considerable overlap in skill requirements across subsectors of the manufacturing industry. This suggests that the opportunity is ripe to create targeted educational programming that meets the needs of a variety of manufacturers in these communities.

10 Nakajima, E. "Meeting the Needs of Manufacturers in Massachusetts." *MassBenchmarks* 16.2 (2014): 30-32. Print.

Curriculum and Assessment Development

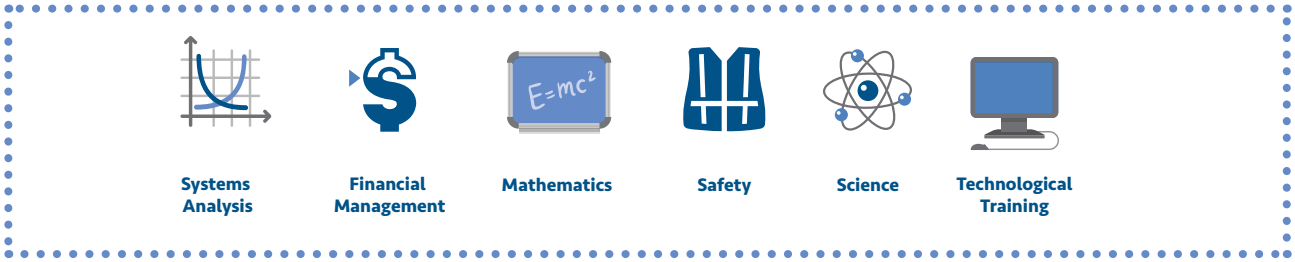
Literature suggests that manufacturing skills and knowledge acquisition be rooted in 'learning-by-doing' as opposed to strictly formal educational training. Employers favor prospective employees with hands-on training or experience in programs such as apprenticeships, internships or mentoring programs. These opportunities help to enhance the pipeline of talented employees by giving students hands-on experience and training, as well as allowing students the opportunity to network with potential employers[11].

Though the necessary level of skill attainment understandably differs by occupation and manufacturing sector, employers most often indicate that their employees need an array of soft skills as well as technical knowledge and hands-on experience. Skills such as active listening, critical thinking, speaking, judgment or decision-making, persuasion, negotiation, social perceptiveness and time management may be just as, if not more important, to many employers as necessary skills in systems analysis, financial management, mathematics, safety, or science and technological training.

Additional Skills may be just as, if not more important to many employers as Necessary Skills.

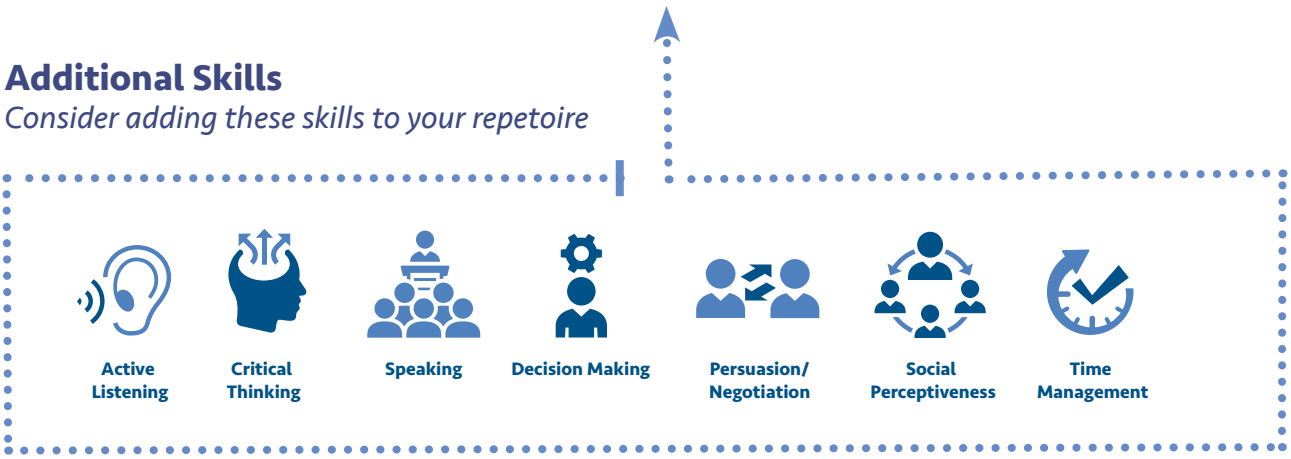
Necessary Skills

Skills that you are required to have



Additional Skills

Consider adding these skills to your repetoire



11 *Massachusetts Life Sciences Center. Fiscal Year 2016 Annual Report*. Rep. Massachusetts Life Sciences Center, 2016. Web. <http://www.masslifesciences.com/wp-content/uploads/2016-Annual-Report-FINAL.pdf>.

SMAMC Training Update

The Southeastern Mass Advanced Manufacturing Consortium (SMAMC) Steering Committee, Southeast Regional Workforce Boards, Bristol Community College and MassMEP worked together to provide training for incumbent manufacturing employees, as well as unemployed individuals to provide them with new skills to be adequately prepared to enter into a manufacturing position.

Earmarked funds totaling $200K will be utilized to benefit both employed (incumbent) and unemployed (pipeline) workers in Southeastern Massachusetts. To date, 283 incumbent employees were trained from a total of 22 companies in the region. Pipeline training is ongoing.

SMAMC.org

In coordination with industry partners, vocational and technical schools, as well as post-secondary institutions, must consider stackable credentials where students and employees can progress to enter the manufacturing workforce, sharpen their skills or progress in their careers[12]. These stackable credentials allow new students to receive basic, entry-level training to enter the manufacturing workforce.

Additionally, these credentials at the certificate, associate, bachelors and advanced levels for new, continuing offered and returning employees ensure that regardless of their entry point, they will have the necessary foundation skills to succeed in all levels of the manufacturing industry.

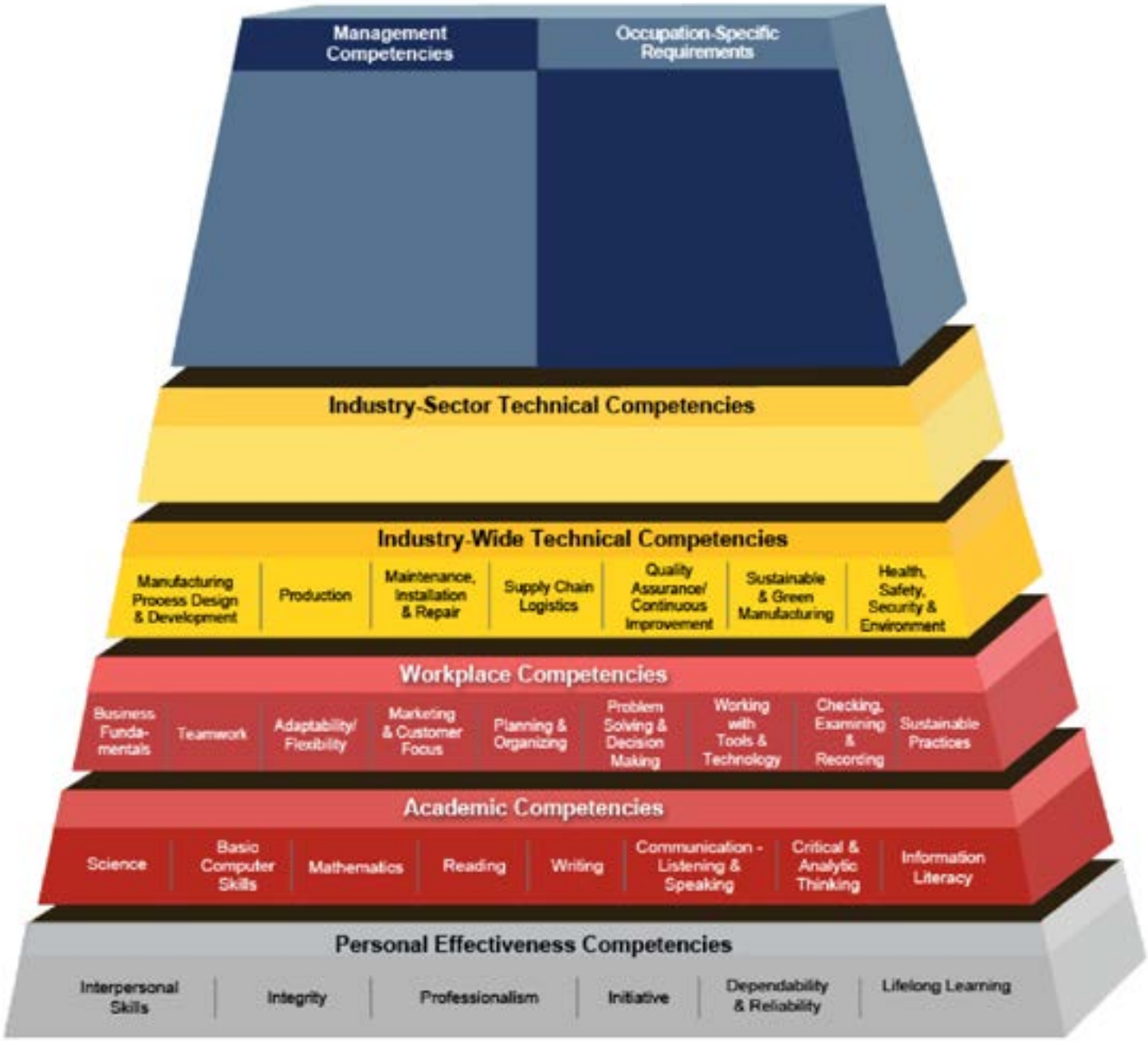
Individual manufacturers may also consider working with community organizations, national or regional industry organizations and/or other industry partners in order to develop the necessary programming that will create a qualified talent pipeline from which to recruit. This requires manufacturers to work with one another to agree on the competencies, skills and work habits that are needed within their specific field(s) of manufacturing and area specializations.

The Competency Model Clearinghouse's Advanced Manufacturing framework[13] has compiled feedback from members of industry to create a model for advanced manufacturing skills and competencies necessary in the workforce. See the model on the next page and explanations of each level of skills as defined by the Competence Model Clearinghouse, as well as other literature compiled by the authors of this report.

12 *Advanced Manufacturing Workforce Plan*. Rep. Massachusetts Department of Higher Education, 2015. Web. <http://www.mass.edu/strategic/documents/16a_AttachmentAdvancedManufacturingWorkforcePlan_Spring2015.pdf>.

13 Advanced Manufacturing." *Competency Model Clearinghouse - Advanced Manufacturing Industry Competency Model*. Employment and Training Administration (ETA), Apr. 2010. Web. <https://www.careeronestop.org/competencymodel/competency-models/advanced-manufacturing.aspx>.

Figure 1. Example of competency model for manufacturing skills



Advanced Manufacturing Competency Model. Digital image. *Competency Model Clearinghouse*. N.p., Apr. 2010. Web. Sept. 2017.

In addition to crafting an effective curriculum, schools and colleges must recruit and retain faculty who are experienced with contemporary advanced manufacturing processes and familiar with industry best practices. These faculty members must be able to engage students at a high level and work with industry partners to recruit and retain qualified candidates.

Interpersonal Competencies and Values

All employers seek workers who are motivated and willing to do what the requirements of their individual jobs entail. Manufacturers are no different; however, businesses have revealed that the talent pool currently available for manufacturers are not necessarily invested in the work they are doing, nor are they often prepared for the dynamic working environment that manufacturing offers them.

Individuals must first demonstrate a foundational level of interpersonal, social and professional competencies that make them key employees in any workplace. Manufacturing employees are no different here. These candidates must possess basic tenets of **professionalism, integrity, responsibility, self-motivation and dependability**. Individuals must be able to engage in dialogue with their colleagues as well as with current and potential clients. In an ever-changing sector of the workforce such as manufacturing, it is also important that these individuals are willing to take initiative, especially with regard to the continued learning of new technologies, techniques and best practices.

Manufacturing employers are interested in hiring employees who 'want to work', but who are also interested in being proactive in improving the business as well as their own respective job descriptions. **Interpersonal skills and values are most often ranked as the top competencies needed in choosing the correct candidate for the correct position in manufacturing**[14].

Thinking and Problem-Solving Skills

A dependable and proactive employee must also possess the skills that allow him or her to identify problems, come to a creative solution and implement necessary changes. These types of skills are among those that the Bureau of Labor Statistics, the Office of Labor and Workforce Development and individual manufacturers suggest are among the most important for the incoming Manufacturing workforce, and also the areas in which employers see the largest gap between the skills of the talent pool and the level needed to fill key positions. At its core, these foundational skills are based in the Liberal Arts[15].

Some educational institutions and manufacturers are currently coordinating their efforts to increase efficacy in these areas and align industry needs with students looking to enter the manufacturing workforce. A pilot initiative with Northeastern University and MassBay Community College links students with demonstrated training in critical thinking and analysis with industry needs. Data suggest that close to half of Liberal Arts, Communications, Business and Social Science graduates may be underemployed, working in positions that required a baccalaureate degree[16]. The TRANSFORM Program, a 12-month manufacturing certificate program targeted to these students, includes pathways in Manufacturing Technology and Manufacturing Innovation. With courses in Engineering, Design, Mathematics, Quality Assurance, Coding, Robotics, Management, Marketing, Sustainability and Co-op capstone experience, students not only receive additional educational training, but also at least 80 hours of hands-on experience with industry partners[17]. Both formative and summative assessments from the

14 Rasul, M.S. et al. "Development of Employability Skills Assessment Tool for Manufacturing Industry." *Jurnal Mekanikal* 30 (2010): 48-61. Print.

15 Bevins, Scott. "STEM: Moving the Liberal Arts Education into the 21st Century." *Technology and Engineering Teacher* 71.4 (2011): 10. Web.

16 Abel, Jaison R., Richard Deitz, and Yaqin Su. "Are Recent College Graduates Finding Good Jobs?" 20.1 (2014) *Federal Reserve Bank of New York*. 2014. Web. <https://www.newyorkfed.org/medialibrary/media/research/current_issues/ci20-1.pdf>.

17 *MassBay Community College*. Web. <http://www.massbay.edu/transform-program/>.

TRANSFORM project are still pending, however, this partnership represents a segment of the educated workforce that can be targeted for improved skill building and ultimately employment in manufacturing fields.

Manufacturers indicate that these Liberal Arts-based skills are imperative to an efficient and effective workforce. Qualified candidates need to have attained skills in time management, active learning, active listening, problem solving, judgement and decision-making and ultimately, critical thinking. The Liberal Arts give students a foundational understanding of processing and assessing information and making informed decisions based on that information. Effective candidates in manufacturing can apply these skills to everyday problems and work collaboratively on solutions and innovations within their fields.

Academic and Technical Skills

After a foundational understanding of critical and creative thinking, manufacturing candidates must also have a strong understanding and working knowledge of academic and technical skills that are relevant to Science, Technology, Engineering and Mathematics (STEM) fields. This includes skills and experience in reading and writing, mathematics, science, computer technology and technological literacy. Ideal candidates must have a sufficient understanding of math, science and computers, but should also have a demonstrated interest in and familiarity with understanding and applying different types of technology for a wide variety of tasks and problems.

Critical thinking and problem-solving skills are engaged and improved in the continued studies of reading, writing and technical skills. These academic and technical skills may be of a wide breadth, but depth in knowledge and content will be specific to the industries in which an employee will be working.

Workplace and Business Competencies

The ideal, high-quality manufacturing candidate will also have a basic understanding of workplace basics and business practices, per manufacturing employers. Once again, these skills are built on a foundation of workplace values, of critical thinking and social skills, as well as some content knowledge. Specific skills that manufacturers require include: marketing, customer service, industry sustainability, persuasion and negotiation, financial management, systems analysis management and collaboration.

Current manufacturers need their employees to be flexible and team-oriented, as well as proactive and willing to tackle any problems that come their way. This is necessary, as the landscape of manufacturing has changed drastically over the last generation and innovation in production, delivery and customer service is necessary for many manufacturers today.

The Greater Boston Manufacturing Partnership (GBMP) is a not-for-profit corporation whose sole focus is to help companies become more productive and competitive through Continuous Improvement education and hands-on implementation of best practices. GBMP provides access to a variety of training programs designed to not only help companies make initial improvements, but on helping them develop a self-sustaining Continuous Improvement and LEAN program, one that delivers bottom line results year after year.

GBMP.org

COMMONWEALTH CORPORATION
Building skills for a strong economy.

WORKFORCE TRAINING FUND

The Workforce Training Fund Program (WTFP) is a State sponsored grant program that helps address business productivity and competitiveness by providing resources to upgrade the skills of their workers. The WTFP is a program of the Executive Office of Labor and Workforce Development, and is administered by Commonwealth Corporation. In 2016, a total of 157 grants were awarded to businesses, of which 53% were from the Manufacturing industry sector. A total of 35 grants for all industry sectors were awarded in the Southeast region of the State totaling $3,929,959, representing 22% of the total for the Commonwealth. Manufacturing companies in Southeastern MA received $1,884,311 in Workforce Training Funds in 2016.

CommCorp.org

WorkforceTrainingFund.org

Industry-Specific Competencies

The most refined skills that employers seek of their employees are those that are specific to large-scale manufacturing processes and specific to the manufacturing subsector. Understanding the roles and skills required for the manfacturing process and design, production, quality, assurance health and safety and maintenance repair is key to appreciating the intricacies of the manufacturing industry. Additionally, a solid understanding with regard to supply chain logistics and operational control and analysis is preferable. Additional sector competencies may be necessary with regard to whether an employee works in plastics manufacturing, computer manufacturing, fabricated metal manufacturing, or food processing and production, for example. Training and education for these competencies may be available in higher-level academic programs and/or hands-on job training directly from industry manufacturers.

Resources for Educational Partnerships on the South Shore

Five important educational institutions exist within the service area of the South Shore Workforce Development Board: South Shore Regional Vocational Technical High School, Quincy High School, Plymouth High School (North and South), Massasoit Community College (Middleborough Campus only), and both the Quincy and Plymouth Campuses of Quincy College. Table 1, to the right, is a list of the programs at each institution that align with the six largest manufacturing subsectors, initially discussed by Renski & Wallace.

The largest number of existing educational programs in the South Shore are available in Computers and Electronics, followed by Fabricated Metal Products and Machinery and Medical Equipment and Supplies; however, there are a large number of programs relative to the number of occupations in the fields of fabricated metal products and medical equipment and supplies. This represents an opportunity for additional programs, especially with industry support, in Computers and Electronics, Paper and Printing, as well as Chemicals and Plastics (including pharmaceuticals).

Manufacturing industry organizations in the South Shore should consider partnering with one of these educational institutions, even as a member of a program Advisory Board, in order to ensure that their labor needs are being met by the current curricula offered in the area. This will ensure a stream of qualified and talented applicants to future key positions.

Targeted Recruitment

Creating a sustainable manufacturing workforce development plan and program requires time and effort, as well as a systemic, cultural shift. This is necessary to ensure that the long-term needs of the industry are met[18]. This includes collaborating with other manufacturers in your community or region, agreeing on the qualities and skills of ideal candidates for jobs, and then collaborating with educational stakeholders to ensure that the educational training aligns with industry demand.

18 *Overcoming the Manufacturing Skills Gap: A Guide for Building a Workforce-Ready Talent Pipeline in Your Community*. Rep. National Association of Manufacturers, 2014. Web. <http://www.nam.org/uploadedFiles/NAM/Site_Content/Issues/Workforce/Workforce_Task_Force_Toolkit/MFGWorkforce.pdf>.

Table 1. Academic and Curricular Programming Relevant to Manufacturing Subsectors

Advanced Manufacturing Subsector Definitions	South Shore Regional Vocational Technical High School	Quincy High School	Plymouth South High School	Massasoit Community College (Middleborough Campus)*	Quincy College
Chemicals and Plastics (Including Pharmaceuticals)		• Engineering Technology	• Science and Technology/ Engineering	• Architectural Technology • Biotechnology Certificate • Engineering Transfer Program	• Biotechnology and Compliance • Engineering Technology
Computers and Electronic	• Drafting • Electricity • Electronics	• Engineering Technology • Electrical Technology • Information Technology	• Science and Technology/ Engineering	• Architectural Technology • Computer Technology: Programming Option • Computer Repair & Maintenance Certificate • Engineering Transfer Program • Electronic Circuit Technology	• Computer Science: Programming • Web & Mobile Development • Engineering Technology
Fabricated Metal Products and Machinery	• Drafting • Electricity • Electronics • HVAC • Machine Tool Technology • Metal Fabrication and Welding • Precision Machine Technology	• Metal Fabrication/ • Welding Technology • Plumbing Technology		• Architectural Technology • Engineering Transfer Program • HVAC Technology	• Engineering Technology
Food Processing and Production	• Culinary Arts	• Culinary Arts		• Culinary Arts • Food Production • Pastry	
Medical Equipment and Supplies	• Electricity • Engineering Technology • Machine Tool Technology	• Engineering • Electrical	• Science and Technology/ Engineering	• Architectural Technology • Biotechnology Certificate	• Biotechnology and Compliance
Paper and Printing	• Design & Visual Communications • Graphic Communications	• Graphic Arts	• Visual Arts	• Engineering Transfer Program	• Engineering Technology • Fine Arts: Visual Arts

Subsectors defined by Renski & Wallace, Programs summarized by Bridgewater State University and BAWIB[19], and author.
*Middleborough Campus of Massasoit Community College may not offer all courses necessary to complete degree requirements for these programs.

19 *Education & Training Opportunities for Advanced Manufacturing at Higher Education and Vocational Schools in SE Massachusetts*. Rep. Institute for Policy and Regional Engagement, Bridgewater State University & BAWIB, Dec. 2016. Web. <http://bawib.org/wp-content/uploads/2017/02/Adv-Manf-Report-2-17-Final.pdf>.

MassMEP
Manufacturing Extension Partnership
YOUR RESOURCE FOR MANUFACTURING GREATNESS

The Massachusetts Extension Partnership (MassMEP) creates economic impact by transforming manufacturing enterprises and the manufacturing ecosystem. This is achieved through providing operational excellence, training programs, workforce development strategies and innovative growth initiatives, enhanced through leveraging strategic public/private relationships. In 2016 MassMEP trained 353 individuals with a 93% placement rate upon graduation through their Applied Manufacturing Technology Pathway Certification Level 3 Training. Also in 2016 a total of 406 vocational students at 28 of the 33 vocational high schools in the Commonwealth were tested to the Levels 1 & 2 MACWIC Certification.

MassMEP.org

Recruitment in Schools and Colleges

Though manufacturers recognize the need for targeted recruitment and development of talent, many manufacturers rely on outdated methods for finding the right people. The top sources for new employees are most often word-of-mouth or staffing agencies, as opposed to partnering with technical schools or community colleges. Only 8% of manufacturers report using technical schools as a source for new employees and only 14% indicate using community colleges as a source. As evidenced above, partnerships with educational institutions at both the secondary and post-secondary level offer industry partners the opportunity to craft curricula and develop the types of workers that they need.

Evidence suggests that those individuals who are familiar with manufacturing or have experience with the industry are more than twice as likely to recommend that others pursue a career in manufacturing. Career and Technical Education (CTE) programs in high schools are an ample opportunity to not only educate the community and change public perceptions about manufacturing, but also an opportunity for students to gain early exposure to and experience with many types of manufacturing. Over 80% of CTE high school teachers believe their courses of study prepare their students for either the workforce or postsecondary education, so that students may choose this path for themselves. However, fewer than 20% of CTE students have participated in some kind of active involvement with manufacturing industry partners. Those students who have had experience with a Co-op program, an apprenticeship, an internship, job shadowing or even a mentoring opportunity with industry partners are more exposed to the realities of the industries, and thus, more likely to be interested in pursuing careers in this field.

Recruitment in the Current Workforce – Women in Manufacturing

Twenty percent or fewer manufacturing employers indicate that they are focused on recruiting new and diverse workforce segments in order to meet their employment needs. This includes diversity initiatives in terms of race, background and gender[20]. However, these are talent pools that are far underdeveloped and underutilized. Women account for nearly 47% of the total US labor force, but only about 25% of the durable manufacturing workforce[21]. In Massachusetts, 32% of the manufacturing workforce is comprised of women, and although higher than average, still demonstrates a vast gender disparity across manufacturing sectors.

Manufacturing as a whole is still facing a perception problem. Most working age Americans still view manufacturing as a dark, dirty and dangerous place to work. Additional stereotypes prevail as well that the manufacturing skills required are a better fit for men. These types of misperceptions have impacted women's interest in pursuing careers in manufacturing. Often times the focus is only on production roles within the manufacturing industry.

20 *Boiling Point? The Skills Gap in US Manufacturing*. Rep. Deloitte and The Manufacturing Institute, 2011. Web. <http://www.themanufacturinginstitute.org/~/media/A07730B2A798437D98501E798C2E13AA.ashx>.

21 Catalyst Research. 2012. US Women in Business, Women in Us Manufacturing.

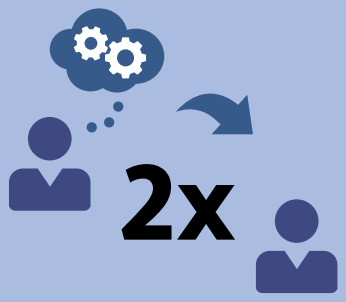
Representation of women is clearly lower in the manufacturing industry and retention for women also falls behind their male counterparts. In order for women to succeed in the manufacturing sector, however, a cultural shift is necessary. The Manufacturing Institute, APICS Supply Chain Council and Deloitte identify crucial steps through which to align the industry with the changing workforce needs and resources:

> Document diversity as a business priority and address gender biases head on (financial disparities, organizational or management disparities, as well as decision-making).
>
> Targeted diversity strategy among senior leadership, as well as trainings of gender bias awareness for employees.
>
> Promote personal development of all employees through professional development opportunities, experiential learning programs, mentorship opportunities and/or networking groups.
>
> Create a flexible work environment to support work-life balance for all employees.

Additional opportunities exist in recruiting, training and retaining workers of color and workers who were born outside of Massachusetts. The American Community Survey (ACS) indicates that 83% of the current advanced manufacturing workforce in Massachusetts is white, 55% of workers were born in Massachusetts and 24% were born outside of the United States. As Massachusetts becomes a hub for innovation and global reach in manufacturing, the state will surely continue to attract people from across the country and across the world to work in these sectors; however, retaining these workers and continuing to build an industry culture that is accepting of those from different cultural, language and racial or ethnic backgrounds will be key.

Recruiting those from outside of the area may also continue to develop growth in the South Shore. The ACS reports that 75% of the southeast manufacturing workforce lives in the southeastern Massachusetts region and another 10% lives in the Boston Metro West region. On average, employees travel about 26 minutes to get to work. The South Shore offers workers the ability to access necessary public transit, interstate highways, as well as to take advantage of educational and economic institutions within this service area.

Allison Giddons, Director of Order Management of Win-Tech Inc. in an interview with WIM (Women in Manufacturing) shared, “We need to do a better job of not limiting the manufacturing industry to the production floor or engineering. There is so much more to manufacturing than production staff and engineers. While many young women are perfect for those positions, there are still more young women looking for something else. There are plenty of roles that don’t necessarily require a desire for hands-on manufacturing involvement or a post-undergraduate college degree. Manufacturing requires people who are organized, who like analyzing data and who are good at finding cost savings. Manufacturing also needs people with marketing capabilities and to assist in training, safety and human resources. Manufacturing is a great industry for people who want to be a part of a supply chain and for people who can see the big picture.”

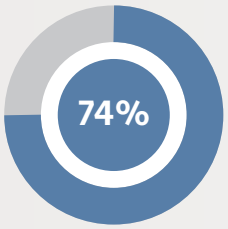


Those individuals who are familiar with manufacturing or have experience with the industry are more than **twice as likely to recommend** that others pursue a career in manufacturing.

What Can Manufacturers Do to Attract Women?

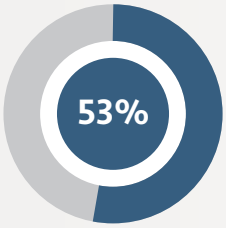
Make sure Women are represented in their leadership teams:

A 2015 Manufacturing Study by Deloitte revealed that 74% of women in manufacturing believe the manufacturing industry has a leadership bias towards men for leadership positions compared to other industries.



Focus on Corporate Culture:

In a survey by WIM, 53% of women polled believed changing the corporate culture should be the top priority to address and improve the attraction and retention of women.



Competitive Pay – Equitable Pay:

According to a survey by *Deloitte & Manufacturing Institute*,

71%

Believed standards of performance differ for men and women

87%

Believe standards are higher for women

Challenging Interesting Work – Recognition:

Second to pay, women surveyed ranked challenging and interesting work as the most important aspect of their career;

41%

Left manufacturing industry assignment due to lack of promotion opportunities

36%

Left manufacturing industry due to lack of challenging assignments

Women make up a greater percentage of the workforce and they are a virtually untapped talent for manufacturers. However, it's unlikely without a conscious effort to attract and recruit/retain women; they will be drawn to the industry on their own.

Without a concerted effort to change industrial culture, an entire segment of the potential workforce pool will be left underdeveloped. Additionally, if women and members of other underrepresented groups are not involved in the designing of manufacturing systems and the future of the industry, the systems that are being produced and cultivated will not be friendly for all users.

South Shore Vocational Technical High School

South Shore Vocational Technical High School, located in Hanover, Massachusetts, offers a Precision Machining major as part of its Manufacturing Engineering Technologies (MET) program. This well-established program offers students the basics of machining, blueprint reading, safe tool and machine use, shop math, and inspection procedures, as well as the fundamentals of CNC (Computer Numerical Control) programming, setup, and machining, including 3D Solid modeling.

Skilled machinists are in high demand. This program offers the first step towards achieving this goal. With new machines and an advisory board made up of local manufacturers who review the curriculum, SSVT ensures their students are learning the skills that companies need. Students can even receive college credits for courses they take in this program!

Jeremiah Johnson

Along with a thorough MET curriculum, students also participate in cooperative education (Co-op) where they are employed during the school day, gaining valuable workplace experience. Companies such as Bendon Gear & Machine, Inc. in Rockland stepped up to help SSVT teach their vision of learning "on the job". This allowed students Jeremiah Johnson and Jared Keith to gain "on-the-job" experience and develop the skills they had been taught in the classroom. Jeremiah confirmed, "I would never get this experience if it was not through Co-op. This program allowed me to show my stuff!"

Jared Keith

As this program continues to grow, it will allow SSVT to partner with other local manufacturers in the community. Jacob Kirkland remarked, "Without the past five months of Co-op at Nova Machine and Design, I would never have had all the opportunities I did." Alex McPherson explained in detail that without the engineering training and the focus on math at SSVT, he could not have determined the needs required for his Co-op experience at Smith and Sons when going into detail on parts needed for a government project.

Alex McPherson

SSVT Superintendent Tom Hickey sees the value in this type of education: "There are so many opportunities to start a career in manufacturing. The industry is very diverse and our employer partners are very committed to helping our students." Hickey hopes to attract interest in manufacturing careers by using the school's machine shop for training adults or other high school students after school or in the summer. Anyone interested in partnering with SSVT should contact the school.

Superintendent-Director Tom Hickey and Lieutenant Governor Karyn Polito visit SSVT's Manufacturing Engineering Technologies program.

Secretary of Education James Peyser speaks with students in the Engineering class.

Precision Machine student operates a 4 Axis CNC machine in the MET program.

ELITE ENVELOPE & GRAPHICS, INC

Elite Envelope & Graphics, Inc. is a custom envelope manufacturer and cold web printer. They specialize in envelope converting, envelop printing, and 8 color web printing, best known for quality and quick turnaround.

The Elite Envelope Team.

Production facility conveniently located in Randolph, MA.

EliteEnvelope.com

President-Owner/Founder David Theriault

Executive VP-Owner/Founder Jerry Velona

Headquarters 280 Pond Street, Randolph, MA 02368

Phone 781-961-1800

Blog Info.EliteEnvelope.com/blog

CAREER/JOB OPPORTUNITIES

Elite employs skilled factory staff as well as office and clerical personnel. We look for many qualities in the individuals we hire — the ability to communicate effectively, a high level of organization, strong interpersonal skills and so on. Regardless of an applicant's qualifications, we always look for one attribute in particular — the desire to provide excellent customer service. We can train people how to work with clients or run pieces of equipment, but to have passion for customer service and pride for your work takes a unique individual.

SUCCESS STORY

At Elite Envelope & Graphics, Inc., we have a reputation for handling some very tough envelope conversions and custom die cutting is a big part of that. When one of the best die cutters in the industry, Luis Sousa, told us he was going to be retiring, he assured us we didn't have to look any further than his own family. Luis's grandson, Cam, was having trouble finding a steady job, with regular hours, that paid a good salary. So Cam joined our cutting team, which also included his father, to train with one of the best, his own grandfather. We enjoyed having our 3 generation cutting team for a little over a year. Although Luis wasn't able to show him all of the tricks he learned over 40 years before he retired, he certainly gave Cam a great foundation, and Cam has a bright future with a new trade under his belt.

PRODUCTS

Business envelopes of all types, letters, flyers, brochures, and most direct mail pieces.

COMMUNITY INVOLVEMENT

Active in the Randolph Chamber of Commerce and supportive of various charities in the South Shore.

ENVIRONMENTAL AWARENESS

Our commitment to the environment goes beyond slogans and gestures. As part of our general business operations, we take the time each day to do those things that will have a direct, positive effect. Each week, Elite Envelope recycles thousands of pounds of waste paper. All chemicals and ink used in our printing department are disposed of in the most environmentally-friendly way possible. We also incorporate the use of soy-based ink for many of our print jobs.

MARKET/CUSTOMERS

Direct mail, financial printing, and printers.

SYMMONS®
the smart choice™

Since 1939, Symmons Industries has been a premier manufacturer of commercial and residential plumbing products, producing a variety of durable, reliable and beautifully designed products for everything from private homes to five-star hotels. Built on a 75+ year foundation of quality craftsmanship, Symmons places a premium on exceptional service. Beginning with the Temptrol® pressure-balancing, anti-scald shower valve, Symmons has always known it's what's inside that matters most. Today, we continue to innovate with custom fittings that create distinctive design solutions for commercial projects through Symmons Design Studio. It's an inner strength and outward focus that makes Symmons the smart choice. Built to last, designed to stand out, and backed by a customer-first culture.

Headquartered in Braintree, MA, Symmons is a privately held company with regional sales offices and local representatives located throughout the United States, Canada, and Asia.

Conveniently located in Braintree, MA.


At Symmons, we believe in four core values: Teamwork, Ideas, Solutions and Customers. Our Core Values drive all of our decisions, actions and relationships.

Symmons.com

CEO Timothy O'Keefe

Full Time Employees 300 in US, Asia & Canada (122 in Braintree location)

Headquarters 31 Brooks Drive, Braintree, MA 02184

Phone 1-800-796-6667

CAREER/JOB OPPORTUNITIES

Symmons culture is founded on four core values: teamwork, ideas, solutions, and customer-focus. We believe that when teamwork is paired with ideas, we create solutions that our customers value, which generate opportunities for us all. Explore and apply to any of our job postings on our careers page here: http://bit.ly/symmonscareers

Don't see an opening that suits your interests? Submit your resume for general consideration, and we will keep you in mind for future openings.

MARKETS/CUSTOMERS

Symmons services both commercial and residential customers throughout North America. Commercial customers span a variety of segments including Hospitality, Multifamily, Healthcare, and Facilities. Residential customers can purchase Symmons products through a growing number of e-commerce channels, such as Amazon and Wayfair, as well as at Home Depot and Lowes stores throughout New England.

PRODUCTS

Symmons specializes in the design and manufacturing of bathroom and kitchen plumbing fixture suites to suit our customers' projects and needs. Our faucet, shower, and accessory collections can complement any design aesthetic—contemporary to traditional. Commercial customers can partner with our Design Studio™ to create one-of-a-kind fixtures and accessories. Many of our products meet the Buy American Act standards, as they are manufactured in our Braintree, MA facility.

COMPANY BENEFITS

Symmons offers a competitive compensation package that includes excellent benefits, such as medical/dental/vision care, short-term and long-term disability coverage, and a 401k plan with 100% match up to the first 6% of eligible wages with immediate vesting. Braintree employees can also enjoy our onsite fitness center, locker rooms, and onsite vegetable farm.

AWARDS

Symmons Industries supplied essential parts for the construction of U.S. Naval torpedoes during World War II and received an award for product excellence. In 2001, Symmons Industries won the American Production and Inventory Control Society's "Company of the Year" in the Boston area. The American Society of Plumbing Engineers (ASPE) inducted Symmons into the Honor Roll of Employees in the same year.

Section IV:
Conclusion

Section IV – Conclusion

Conclusion

It is clear that manufacturing is an important segment of the South Shore economy, providing sustainable employment opportunities and economic benefits throughout the region. It is also evident that manufacturing has evolved in recent decades - becoming more dependent on advancements in technology and less dependent on a large workforce. Although industry trends show a continuous decline in the size of the workforce, the demand for higher skilled employees continues to rise.

The manufacturing higher skilled positions in demand today in fact generate higher wages, creating viable and sustainable career path opportunities. Data shows that manufacturing ranks the second highest in gross wages in Southeastern MA, compared to other industry sectors that employ far more people, yet generate gross wages that are significantly lower.

Like many industries today, manufacturers must be flexible and nimble, able to adjust research, design and production processes to meet the demands and expectations of a continuously changing marketplace. Manufacturers must remain cognizant that they are not only competing on a regional and national level, but also within a very competitive and innovative international economy.

It is imperative that our local manufacturers stay “ahead of the curve” and are prepared for the requirements that their customers might demand from them. If they do not keep up with technology, hire the appropriate skilled talent and continue to invest in training their incumbent employees with new skills, they may become left behind as their competition outpaces them by delivering what the customer wants.

Ensuring that the manufacturing industry continues to evolve and expand in our region requires a long-term comprehensive and inclusive strategy that addresses a number of contributing factors. Factors include the development of a motivated and trained workforce pipeline; clear training opportunities for incumbent workers; open communication channels to ensure access to available tools and resources; establishment of a South Shore eco-system that supports one another in all phases of growth and development; and pro-active education and marketing to promote the various career path opportunities available now and in the future.

Additionally, job seekers need to be made aware of the changes in the manufacturing sector as well. We need to help dispel the myths of manufacturing and provide job seekers, parents and students with a better understanding of what manufacturing is today and what manufacturing will look like in the future. It is clear that the skills required within this field are getting greater not smaller, and as such the pay is increasing along with the demand for individuals with the appropriate skill sets.

We also learned through our research and focus groups that many of our manufacturing companies within the region have an aging workforce. These businesses are anxious about upcoming retirements as many do not have the appropriate staffing “in house” to fill those positions internally. This is becoming increasingly challenging as many of the available jobs are highly technical in nature and often require “on the job” experience that really only comes with years of work practice.

It is essential to have ongoing communication between the manufacturers, vocational schools and post-secondary educational institutions. Having a clear understanding of the specific skill requirements for the positions currently in demand is essential to building curriculum that aligns the classroom with the “real world”. It is not only just as important to capture those skill requirements, as it is to make sure they are periodically updated as the landscape continuously changes. The region must have a workforce “system” that is in sync with the market and skill level changes in order to make the appropriate modifications to curriculum and programming that effectively address the needs and demands.

State leaders and industry groups recognize the important role of manufacturing in our state economy; and it is imperative that the SSWDB and its Partners maintain a similar focus on a regional level. The region’s manufacturing community must be connected with the greater manufacturing eco-system across the Commonwealth, which will benefit all through a sharing of resources, ideas and innovative advancements in the design, production and marketing processes.

It is clear we have only just begun to address the needs of the manufacturers in our region. However, we are in a strong position to take the necessary steps to ensure that manufacturing remains a viable career path and industry leader in the South Shore. While most would agree, manufacturing will likely never return to the “glory days” of it’s past, as long as it continues to innovate, adapt and reinvent itself, manufacturing will thrive – the South Shore and the state as a whole are well suited for both.

Section V:
Action Items

MANUFACTURING on the South Shore of Massachusetts

South Shore wdb Workforce Development Board

Section V - Action Items to Consider in support of Manufacturing on the South Shore

The SSWDB can help manufacturers in Southeastern Massachusetts gain a competitive edge, not only in the region, but in the state as well. The outlook for manufacturing in Massachusetts overall is very positive; however, there are some challengers to consider moving forward.

The identified action items are informed by national, state and regional-level data, as well as through industry findings and best practices. These items should be considered when looking to build and develop the Manufacturing workforce in the South Shore:

Action Items:

1. Market the manufacturing sector as the dynamic, technical, challenging and innovative sector it has evolved into.

The public perception of manufacturing in general is outdated, inaccurate, not friendly to women, individuals of color or the upcoming workforce. A strategic marketing campaign should focus on those who are change agents and those who are 'non-traditional' manufacturing organizations or employees. This campaign should capture innovative strategies in improving manufacturing in Massachusetts, as well as the diverse, challenging and changing landscape of job opportunities available in manufacturing sectors today.

2. Develop and deliver quality Labor Market Information materials to businesses and job seekers on the South Shore.

Having quality and effective data on hand is critical to ensure industry leaders remain abreast of the manufacturing trends. Data will help guide companies during their decision making process as they plan future growth and development opportunities. Determine what Labor Market Information manufacturers in our region consider valuable to their business and offer a "digestible" format to deliver the information so that it is easy to read, understand and utilize. Additionally, it's important for our job seekers to understand the local labor market and materials should be created that capture data that would be of interest and are informative. It's imperative that we recognize two different audiences and that we seek feedback and look to continuously improve our content and format to meet the needs of each individual group.

3. Collaborate and partner with educational institutions in the South Shore in order to ensure a qualified and well-developed talent pipeline.

A significant body of research suggests that only through stackable, industry-developed credentials can manufacturers ensure that they will have an efficient supply of qualified and trained workers for the future. Industry partners may begin working with schools and colleges in an Advisory Board capacity, recommending courses of study or curricular changes so that students have the necessary skills for manufacturing; however, the industry must also consider being invested, in both time and funding, in creating real pathways to actual jobs. By working directly with educational institutions, industry has the ability to rearrange or update programs for their near-immediate needs, especially at the Community College level. Stackable credentials like the following should be considered:

- Non-credit workforce training (workshops, courses, certificates) to get candidates familiar with the manufacturing sectors, or workshops and trainings on specific manufacturing processes or subsectors
- For-credit certificates to facilitate deeper understanding about the manufacturing process or specific manufacturing sectors
- Associate Degrees with ample coursework in Science, Mathematics, the Liberal Arts and Business for mid-level positions
- Bachelor's Degrees with a deep focus on industry standards, processes and technological literacy
- Advanced degrees with content based largely on manufacturing subsector needs

4. Lobby and support necessary tax and regulation changes that make Massachusetts manufacturing more attractive and profitable.

Ball State University's Center for Business and Economic Research grades Massachusetts' Manufacturing Industry Health as a "C", with low grades in industry logistics (total share of state income, commodity flows, infrastructure), worker benefits (cost of health care, workers' compensation, and fringe benefits), and tax climate (business taxes, income taxes, sales, insurance, and property taxes). This threatens Massachusetts manufacturer's ability to continue to be leaders in global reach and innovation across the United States.

5. Utilize the help of regional and community industry partners to share ideas and collaborate on a manufacturing strategy through a South Shore Manufacturers Advisory Group.

When manufacturing sectors and individual manufacturers come together to collaborate, share information, and move toward a shared goal, the industry in the region can flourish. Evidence suggests that when manufacturers collaborate and align their strategic plans in production and workforce growth, they are more effective in creating political capital as well as a more powerful and effective regional educational focus. This will ensure that the needs of manufacturers are considered in regional and state legislation, and that a curriculum aligned with industry needs is standardized across the region. Establish a Manufacturing Advisory Group to guide the design, development and implementation of programs, resources and initiatives to support the needs of manufacturers in the region and to act as their Representative at the Southeastern Massachusetts Manufacturing Advanced Manufacturing Consortium (SMAMC) Steering Committee meetings.

6. Maintain open communication and collaboration with regional, state and national public, private and non-profit entities.

Ensure that all available resources and services available are communicated effectively to the region's manufacturers. The SSWDB will also support the growth and development of the South Shore manufacturing industry through training, education, funding, marketing and innovative and streamlined research, development and production processes.

7. Continue efforts underway to conduct a comprehensive needs assessment among manufacturers on the South Shore.

The needs assessment must be representative in scope in order to understand the needs of the varying manufacturing sectors in the region. Questions to consider:

- What is the current need in terms of unfilled positions (skills, positions, wage allotments)?
- What are the current plans for hiring and recruitment? How are top-performing employees hired and retained?
- What problems do businesses face in retaining and training current employees? (What are the reasons employees don't work out? Why do they leave manufacturing?)
- What skills do top-performing employees have in common?
- What do current employees enjoy about their positions? What would they change?
- How do current employees participate in professional development?
- What regional organizations can help to recruit and educate upcoming talent and/or retrain, develop current workers?

8. Collect and disseminate a comprehensive Wage Survey among manufacturers on the South Shore.

A common theme expressed by manufacturers was to have a better understanding on what the "going rate" is for their current openings. Manufacturers would like to see wage information to make certain they are meeting or exceeding the salary requirements of the local labor market in order to maintain a quality workforce.

9. Create and support diversity initiatives in the hiring and retention of employees across the board.

Underrepresented groups, specifically women and individuals of color, provide such a large opportunity for manufacturing sectors on which to capitalize. However, this requires a cultural shift and documented, explicit focus on encouraging collaboration, professional growth and development and work-life balance. Additional trainings and programmatic initiatives can help drive a culture shift to attract and retain qualified workers in manufacturing.

10. Ensure SSWDB Partner Agencies are effectively engaged and have a clear understanding of the ongoing needs and opportunities within the manufacturing sector.

The SSWDB works closely with public, private and non-profit entities throughout the region to provide a holistic approach to workforce development. It is essential that this network is educated about the variety of career pathways, training programs and earning potential within the industry so they can encourage job seekers they work with to take advantage of all the opportunities available to them within Manufacturing on the South Shore.

Section VI:
Resources

MANUFACTURING on the South Shore of Massachusetts

South Shore wdb Workforce Development Board

Section VI – Resources

Advanced Manufacturing Collaborative

One Ashburton Place, Room 210l
Boston, MA 02108
617-788-3610; masstech.org

Leaders from industry, academia and government help inform, implement and evaluate state policies to support the competitiveness or Massachusetts manufacturers.

Advanced Manufacturing Futures

33 Andrews Parkway
Devens, MA 01434
978-784-2965
massdevelopment.com/what-we-offer/financing/grants/#manufacturing-futuresprogram

Two initiatives of the Massachusetts Development agency.

Associated Industries of Massachusetts (AIM)

290 Donald Lynch Blvd.
Marlborough, MA 01752
508-786-9494; aimnet.org

Public-policy advocacy organization focused on increasing workforce productivity and improving recruitment, retention and training.

Boston U.S. Export Assistance Center

JFK Federal Building
55 New Sudbury Street, Suite 1826A
Boston, MA 02203
617-565-4301; 2016.export.gov/Massachusetts

The U.S. Commercial Service is the trade promotion arm of the U.S. Department of Commerce's International Trade Administration provides market intelligence reports, events and more.

Commonwealth Corporation Workforce Training Fund

2 Oliver Street, Fifth floor
Boston, MA 02109
617-727-8158; commcorp.org

Description: Mission to afford businesses access to highly skilled workers and youth pathways to good jobs.

Executive Office of Labor and Workforce Development (EOLWD)

1 Ashburton Place
Boston, MA 02108
617-626-7100; mass.gov

EOLWD manages the Commonwealth workforce development and labor departments to ensure that workers, employees, and the unemployed have the tools and training needed to succeed in the Massachusetts economy.

GBMP

60 Austin Street #102
Newton, MA 02460
617-969-1396; gbmp.org

Not-for-profit organization providing customized onsite Lean & Six Sigma training and open-to-the-public Lean & Six Sigma workshops for the manufacturing and healthcare industries.

Manufacturing Advancement Center Workforce Innovation Collaborative (MACWIC)

100 Grove Street, Suite 108
Worcester, MA 01605
508-831-7020; macwic.org

Employer-led workforce training initiatives to preserve manufacturing knowledge and critical skills and transfer to current and future workforce.

Mass Export Center

State Transportation Building
10 Park Plaza, Suite 3730
Boston, MA 02116
617-973-8664; mass.gov/export

Export assistance including counseling, overseas trade shows and offices, educational tools, on-demand training modules, video guides and workbooks.

MassTech Collaborative Innovation Institute

75 North Drive
Westborough, MA 01581
508-870-0312; masstech.org

Supporter of industry-based growth initiatives in the digital economy and the economic structures of underserved regions.

Massachusetts Executive Office for Administration and Finance, Vocational School Equipment Grants

Massachusetts State House
Room 373
Boston, MA 02133
617-727-2040; mass.gov

Grants to purchase equipment to prepare students for a modern workforce.

Massachusetts Labor and Workforce Development, Work Opportunity Tax Credit Program (WOTC)

19 Staniford Street
Boston. MA 02114
617-626-5353; https://www.mass.gov/orgs/executive-office-of-labor-and-workforce-development

Federal incentives for hiring veterans, food stamp recipients, ex-felons, vocational rehabilitation referrals, summer youth employees and more.

Massachusetts Life Sciences Center

1000 Winter Street, Suite 2900
Waltham. MA 02451
781-373-7777; masslifesciences.com

Quasi-public agency that implements the Massachusetts Life Sciences Initiative through programs including tax incentives, small business matching grants, internship challenge and STEM equipment and supplies grants.

Massachusetts Manufacturing Extension Partnership (MassMEP)

100 Grove Street, Suite 108
Worcester, MA 01605
508-831-7020; massmep.org

Resources services and support focused on operational excellence, workforce strategies and innovative growth solutions.

Massachusetts Office of Business Development (MOBD)

Boston Regional Office

UMass Boston
100 Morrissey Boulevard,
Wheatley Hall, 3rd Floor
Boston MA 02125
617-287-7750; mass.gov/hed/economic/eohed/bd/

Southeast Regional Office

200 Pocasset Street
Fall River MA 02721
508-673-9783; mass.gov/hed/econom ic/eohed/bd/

Central point of contact for businesses looking to expand or relocate to the Commonwealth.

Massachusetts Office of International Trade and Investment (MOITI)

10 Park Plaza, Suite 3730
Boston, MA 02116
617-973-8664; mass.gov/hed/economic/eohed/moiti

Markets and facilitates foreign direct investment in the Commonwealth.

MassDevelopment

Regional Office-Greater Boston

1515 Hancock Street, Suite 402
Quincy, MA 02169
617-405-5250; massdevelopment.com

Regional Office-South

275 Martine Street, Suite 201
Fall River, MA 02723
508-6 78-0533; massdevelopment.com

State finance and development authority acting as both lender and developer with private and public sector clients to stimulate growth, eliminate blight and create jobs.

Massasoit Community College (Middleborough Campus)

49 Union Street
Middleborough, MA 02346
1-800-CAREERS; massasoit.edu

Massasoit Community College has 3 campuses, located in Brockton, Canton and Middleborough, MA. Massasoit offers associate degree programs in arts, sciences, and applied sciences, and one-year and short-term certificates for a range of occupations and interests. (See pg. 37 for more detailed manufacturing related course information.)

National Association of Manufacturers

733 10th Street NW, Suite 700
Washington, DC 2000
202-637-3000; nam.org

Public-policy advocate for over twelve million manufacturing workers nationwide.

National Tooling and Machining Association

1357 Rockside Road
Cleveland, OH 44134
800-248-6862; ntma.org

Industry advocate with nonprofit foundation to support manufacturing education.

Plymouth South High School

490 Long Pond Road
Plymouth, MA 02360
508-224-7512; plymouth.k12.ma.us/page.cfm

Plymouth South High School is a comprehensive educational facility offering academic and technical studies programs currently serving over 1263 students. (See pg. 37 for more detailed manufacturing related course information.)

Quincy College

1250 Hancock Street
Quincy, MA 02169
1-800-698-1700; quincycollege.edu

Quincy College is a two-year, municipally affiliated college with campuses located in Quincy and Plymouth, MA. Quincy College offers 37 associate degree programs and 25 certificate programs in a variety of disciplines, including those within Professional Programs, Liberal Arts, Natural & Health Sciences and Nursing. (See pg. 37 for more detailed manufacturing related course information.)

Quincy High School

100 Coddington Street
Quincy, MA 02169
617-984-8754; quincypublicschools.com/qhs

Quincy High School offers courses to meet every student's needs: challenging, advanced courses for college-bound students, technical certification courses, standard courses for all students, remedial courses for students who need additional help and training for students who choose to enter the workforce after graduation. (See pg. 37 for more detailed manufacturing related course information.)

Small Business Administration (SBA)

10 Causeway Street, Room 265A
Boston, MA 02222
617-565-8416; sba.gov/ma

Loans, loan guarantees. Contracts, counseling sessions and other forms of assistance to small business.

Southeastern Massachusetts Advanced Manufacturing Consortium (SMAMC)

smamc.org

SMAMC is a collaborative group of industry, academia, workforce, and government entities, focused on growing and enhancing advanced manfacturing in the SE Massachusetts region.

South Shore Career Centers (SSCC)

SSCC at Quincy

617-745-4000; southshorecareercenters.org

SSCC at Plymouth

508-732-5300; southshorecareercenters.org

Offer businesses, job seekers and youth access to workforce development services and resources as part of the "One-Stop" Career Center network throughout the Commonwealth.

South Shore Regional Vocational Technical High School (SSVT)

476 Webster Street
Hanover, MA 02339
781-878-8822; ssvotech.org

South Shore Vocational Technical High school provides students with a full academic program based on the Massachusetts Curriculum Frameworks. South Shore offers honors and standard academic programs which prepare students for post-secondary college and career opportunities. (See pg. 37 for more detailed manufacturing related course information.)

South Shore Workforce Development Board

15 Cottage Avenue, Suite 302
Quincy, MA 02169
617-328-7001; southshorewdb.org

Creates connections with local businesses, educational institutions and community partners ensuring the alignment of strategic, market driven, workforce goals and initiatives to support the 22 cities and towns within the South Shore region.

Additional online resources for Massachusetts Manufacturers

Manufacturing in Massachusetts - MAManufacturing.com

Massachusetts government homepage - Mass.gov

Business Support

- Mass. Manufacturing Extension Partnership (MassMEP) - Massmep.org
- Small Business Centers - MSBDC.org
- Mass Save - Masssave.com/en/learn/business/process-and-manufacturing-equipment

Finance

- M2I2 - Masstech.org/m2i2
- MassDevelopment - MassDevelopment.com/what-we-offer/financing/loans-and-guarantees
  - Equipment Loans
  - Working Capital Loans
  - Green Loan Program - Mass.gov/eea/energy-utilities-clean-tech/green-communities/gc-grant-program

Site Selection

- MassEcon - MassEcon.com

Tax Credits

- EDIP - Mass.gov/hed/economic/eohed/bd/econ-development/
- R&D Tax Credit - Mass.gov/hed/economic/eohed/bd/econ-development/r-and-d-tax-credit.html
- Investment Tax Credit - Mass.gov/hed/economic/eohed/bd/econ-development/investment-tax-credit.html
- Single Sales Factor - Mass.gov/hed/economic/eohed/bd/econ-development/single-sales-factor.html

International/Exports

- Mass Export Center - Mass.gov/export
- Exporter Loans - Massdevelopment.com/what-we-offer/financing/loans-and-guarantees/#exporter-financing
- STEP Grants - Mass.gov/export/step

Workforce

- One Stop Career Centers - Mass.gov/lwd/employment-services/one-stop-career-centers/about-career-centers/
- On Site Consultation Program - Mass.gov/lwd/labor-standards/on-site-consultation-program/
- On the Job Training & Apprenticeship Programs - Massmep.org/workforce-strategies/on-the-job-training-and-apprenticeships/
- Safety Grant Program - Mass.gov/lwd/workers-compensation/safety/grant-program/
- Rapid Response - Mass.gov/lwd/employment-services/business-services/rapid-response/
- Workforce Training Grants Workforcetrainingfund.org

Mass BizWork$

www.mass.gov/bizworks
1-800-252-1591

What is Massachusetts Biz*Works*?

Massachusetts Biz*Works* is a federal and state collaboration designed to enhance and align the services offered to Massachusetts businesses. It simplifies and coordinates efforts among agencies that work with businesses. You don't have to contact multiple agencies to take advantage of the Commonwealth's resources. Just contact Biz*Works*, and you'll be connected to a variety of services.

Hiring and Recruiting

Department of Career Services (DCS) - One Stop Career Centers
Employment-related services for businesses' needs
Contact: 617-626-5300
www.mass.gov/careercenters

JobQuest
Online resource to post job openings
Contact: JobQuest Helpline – 617-626-6571
www.mass.gov/jobquest/employers

Dept. of Career Services - Work Opportunity Tax Credit (WOTC)
Tax credits for hiring targeted populations
Contact: 617-626-5353
www.mass.gov/dcs/wotc

Massachusetts State Colleges and Universities
Talented graduates and contract training
www.mass.edu/system/campusdirectory.asp

Training and Workplace Safety

ACLS Workplace Education Programs
Workplace adult basic education (ABE)
English for speakers of other languages (ESOL)
http://www.doe.mass.edu/acls

Commonwealth Corporation – Workforce Training Fund Program (WTFP)
Funding and resources to train current and new employees
Contact: 617-727-8158
www.commcorp.org/wtfp

Dept. of Career Services – On-the-Job Training (OJT) Program
Assistance with the cost of hiring and training new employees
Contact: Your local career center (www.mass.gov/careercenters)
www.mass.gov/dcs/ojt

Div. of Apprentice Standards (DAS) – Apprenticeship Programs
Apprenticeship programs available to businesses
Contact: 617-626-5409
www.mass.gov/das

Department of Industrial Accidents (DIA) – Safety Grant Program
Funding for workplace safety training
Contact: 617-727-4900
www.mass.gov/dia/safety

Department of Labor Standards (DLS) – OSHA Consultation Program
Free service to assist private employers meet OSHA requirements
Contact: 508-616-0461
www.mass.gov/dols/consult

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Layoff Aversion and Management

Department of Career Services (DCS) – Rapid Response
Assistance with layoffs/closings and access to skilled workers
Contact: 617-626-5703
www.mass.gov/dcs/rapidresponse

Department of Unemployment Assistance (DUA) – UI Program
Temporary income and support for Massachusetts workers
Contact: Unemployment Insurance (UI) Unit – 617-626-5075
www.mass.gov/dua

Dept. of Unemployment Assistance (DUA) – WorkShare Program
Layoff aversion – supplements reduced pay in slow periods
Contact: WorkShare Unit – 617-626-5521
www.mass.gov/dua/workshare

Business Development/Partnerships

Massachusetts Office of Business Development (MOBD)
Tax incentives to create jobs and stimulate business growth
Contact: 617-973-8600
www.mass.gov/mobd

Mass Development
Finance and real estate development services
Contact: 1-800-445-8030
www.massdevelopment.com

The MA Small Business Development Center (MSBDC) Network
Advising and training programs for businesses
Contact: 413-545-6301
www.msbdc.org

Massachusetts Growth Capital Corporation (MGCC)
Working capital and loan guarantees
Contact: 617-523-6262
www.massgcc.com

Operational Service Division (OSD)
Commerce between government and businesses
Contact: 617-720-3300
www.mass.gov/osd

Workforce Development Boards
Partnerships and strategies to address workforce issues
www.mass.gov/lwd/eolwd/mwib/local-workforce-investment-boards-16.html

External Resources (Non-State Affiliated)

MassMEP
Mentoring and training that help businesses grow and innovate
Contact: 508-831-7020
www.massmep.org

Office of Federal Contract Compliance Programs (OFCCP)
Guidance for nondiscrimination compliance
Contact: 617-624-6780
www.dol.gov/ofccp

U.S. Small Business Administration (SBA)
Assistance in starting, building, and growing businesses
Contact: 617-565-5590
www.sba.gov

Division of Apprenticeship Standards
Commonwealth of Massachusetts

Registered Apprenticeship: "Earn while you Learn"

Apprenticeships are a tried and true workforce development strategy that have paid dividends for companies who use the program. Employers who utilize apprentices report higher productivity, higher retention rates and a substantial return on investment. As the economy continues to grow, business leaders across all industries are in the best position to tell their success stories: that apprenticeships fulfill their need to create a pipeline of skilled workers to help them take their companies to the next level.

Benefits of Training an Apprentice

For employers, apprenticeship training brings tremendous value to the organization, including:

- Cultivation of a well-trained, talented workforce that is productive from the start
- Ability to diversify the workforce by acquiring new talent
- Opportunity to train workers using the exact pieces of equipment, protocols and procedures that are relevant to your business
- Increase in higher performance among employees
- Decrease in error and accident rates
- Added sense of loyalty between employers and employees
- Increased employee retention and advancement
- Tool to fill challenging vacancies
- Means to maintain institutional knowledge, allowing "soon-to-retire" workers and recent retirees to serve as instructors and mentors to new workers
- Financial return on investment, averaging $1.40 earned for every dollar spent on the program

For even more compelling reasons to take a closer look at Apprenticeship check out our website: Division of Apprenticeship Standards www.mass.gov/das

Division of Apprentice Standards (DAS) staff will work with employers to:

- Determine whether a proposed occupation is "apprenticeable"
- Develop related training schedule and work processes, including helping to identify training providers (Community Colleges, etc.)
- Complete program application & paperwork
- Provide technical assistance once the program is established
- DAS waives the application fee for new employers

Employer Benefits of a Registered Apprenticeship program in Manufacturing

Apprenticeship - Meeting the Needs of Employers

Apprenticeship is not the ONLY workforce solution, but it IS a solution that addresses skills gaps and places the employer at the center of the model. Apprenticeship is flexible and each program is designed and tailored to meet a specific employer need.

For employers interested in exploring Apprenticeship and developing a registered program, there is a community of resources available–businesses don't have to do it alone.

Massachusetts EOLWD Executive Office of Labor and Workforce Development - DAS Division of Apprenticeship Standards and DCS Department of Career Services connect employers to the Apprenticeship network.

Key Components of Apprenticeship

Employment: The Employer is at the center of the model-Apprenticeship programs are designed to ensure that apprentices master every skill and have all the knowledge needed to be fully proficient for a specific occupation.

Knowledge Gain: Classroom Training/Related Instruction (150 hour per year)

Knowledge Application: One the job application of classroom taught skills and knowledge (2,000 hours per year)

Wage & Competency Increase: Apprenticies begin a program at a percentage of the average wage for their occupation. As they gain skill, wages increase.

Industry Recognized Credential: Those who complete program requirements receive a certificate of completion and an industry recognized credential. Apprenticeship programs are designed to ensure that apprentices master every skill and have all the knowledge needed to be fully proficient for a specific occupation.

Flexibility of Apprenticeship Program in MA

- Registered Apprenticeship (RA) programs can be time-based, competency based, or a hybrid
- RA programs generally range from 1 to 5 years with approximately 150 hours training annually
- Sponsors can be Employers, Employer Associations and Labor Management Organizations
- RA Programs can encompass collective bargaining agreements
- Related Technical Instruction (RTI) can include some of the onboarding and training already in place in a business
- Training can be provided internally by the employer or by an external trainer
    - If an external provider is selected, the training can take place in the providers facility or the instructors can provide training at the employer's facility
- Training can be front-based or in conjunction with on the job learning
- Can develop Articulation agreements between certain apprenticeship training programs and 2- and 4-year colleges that create opportunities for college credit and future degrees

South Shore
wdb
Workforce Development Board

Main Office

15 Cottage Avenue
Suite 302
Quincy, MA 02169

617-328-7001

SouthShoreWDB.org