

# STATE OF NEW JERSEY MANUFACTURING INDUSTRY REPORT **2021**





# TABLE OF CONTENTS

## Manufacturing in New Jersey

HISTORY OF NEW JERSEY MANUFACTURING.....5  
ABOUT NEW JERSEY MANUFACTURING EXTENSION PROGRAM (NJMEP) .....6  
MANUFACTURING IMPACT.....7

## Observations 2021

OBSERVATIONS.....9

## Moving Forward with NJMEP

MOVING FORWARD WITH NJMEP .....17

## Manufacturers in New Jersey

NEW JERSEY KEY INDUSTRY CLUSTERS.....23  
NEW JERSEY MANUFACTURER LOCATIONS.....24

## Industry Clusters

ADVANCED MANUFACTURING – INDUSTRY 4.0.....29  
BIOPHARMACEUTICAL LIFE SCIENCES.....36  
TRANSPORTATION, LOGISTICS, AND DISTRIBUTION.....42



# **MANUFACTURING IN NEW JERSEY**



# HISTORY OF NEW JERSEY MANUFACTURING

Paterson, New Jersey, holds a unique place in history. It was here, in America's first planned industrial city, that the Industrial Revolution got a foothold in the New World. Centered around the Great Falls of the Passaic River, Paterson pioneered methods for harnessing hydroelectric power for industrial use. In Paterson, many of the factories that enabled the young United States to become an economic player on the world stage were established.



After the Revolutionary War ended, Alexander Hamilton began promoting his views on the economic needs of the new nation. He was concerned over the lack of industry in the United States; during colonial times, it was prohibited by English law. Hamilton believed that a strong industrial system was the best way to help the United States gain financial independence and become a world presence.

When Hamilton was appointed the United States first Secretary of the Treasury, he continued to advocate for the establishment of industry in America. Toward that end, he co-founded the 'Society for Establishing Useful Manufactures' (S.U.M.), a manufacturing society that would be operated by private interests but would have the support of government. The charter for S.U.M. called for the society to both manufacture goods and trade them as well.

New Jersey grew and prospered during the early 1800s. New factories sprung up throughout the state. Paterson became a textile center and later became known for producing trains and silk. Trenton produced clay products, iron, and steel. Camden, Elizabeth, Jersey City, Newark, and Passaic all became major manufacturing centers in the 1800s.

Today, New Jersey remains a vital contributor to the United States manufacturing industry. While systems have changed over the years, the state remains a leading player in the worldwide supply chain. Traditional production systems have shifted to technologically advanced and lean manufacturing processes to maximize efficiency and achieve optimal performance. This level of modernization allows New Jersey manufacturers to be a competitive industrial force, world-wide.

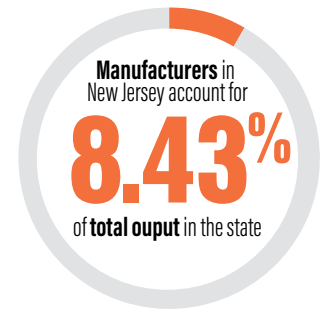


# ABOUT NEW JERSEY MANUFACTURING EXTENSION PROGRAM (NJMEP)

New Jersey Manufacturing Extension Program (NJMEP) operates through a cooperative agreement with the Hollings Manufacturing Extension Partnership (MEP) Program of the National Institute of Standards and Technology (NIST) under the Department of Commerce. NJMEP is part of the MEP National Network made up of 51 Centers throughout the country including Puerto Rico.

Utilizing staff expertise and collaborative partnerships, NJMEP enhances operational performance and productivity, drives new product development, market expansion, workforce development and upskilling initiatives, and technology adoption for New Jersey's manufacturers. NJMEP serves the unique needs and challenges of small and medium-sized manufacturers (SMMs) through a broad array of services that improve the top and bottom line. NJMEP will continue expanding the outreach to SMMs statewide to ensure every business has access to the services they require.

NJMEP is rated as one of the top MEP centers in the country. Over the last three years, the National NIST-MEP Network alone has provided a 15:1 Return on Investment nationally and since the creation of the NJ Legislative Manufacturing Caucus, the ROI increased to 15:1 – and – over 30:1 during 2020. NJMEP and the MEP National Network are dedicated to enhancing the productivity and technological performance of U.S. manufacturing. The impact these organizations have, and the benefits they bring to our economy are not just impressive - they are imperative to the sustainability of the nation.



Total output from manufacturing was **\$52.7 billion\*** \*2018



Average annual compensation is **\$94,610.87** for those in manufacturing\* \*2018

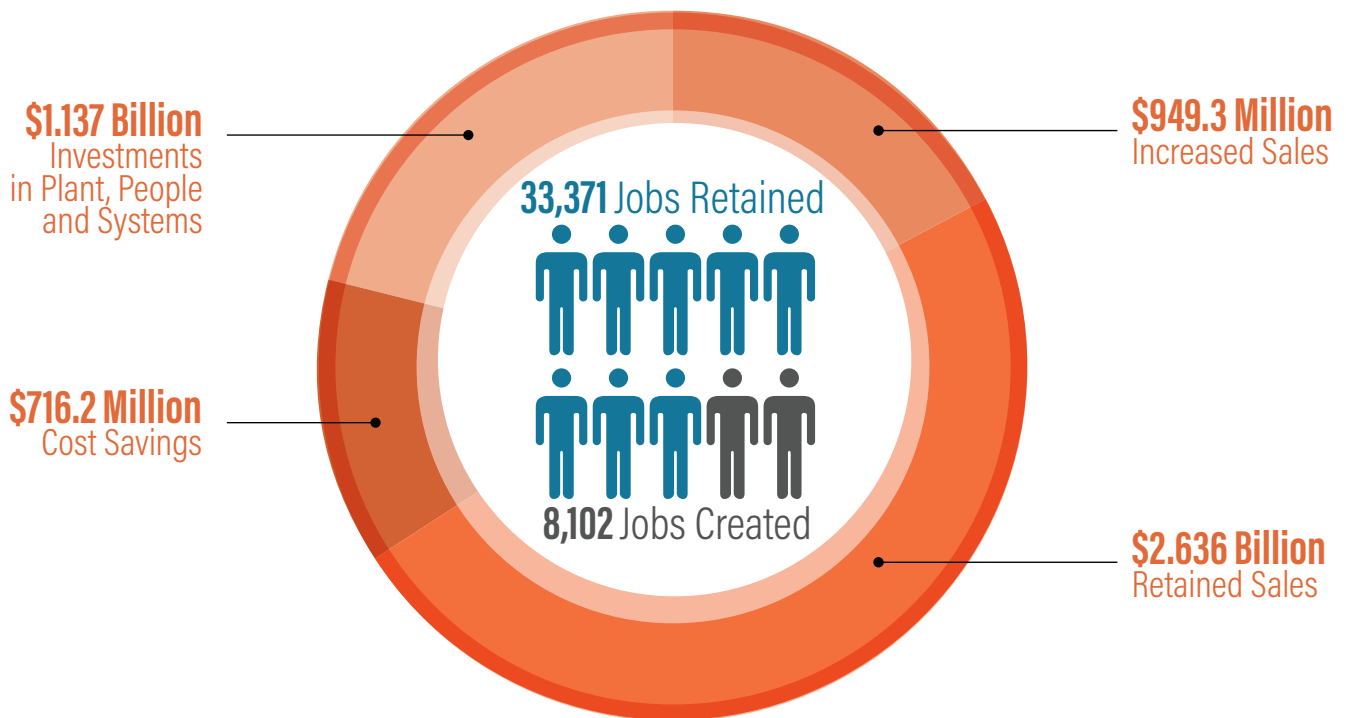


# MANUFACTURING IMPACT

NJMEP services produce measurable results for manufacturers in New Jersey. Quarterly independent third-party surveys of the clients we serve certify the economic impact.

The impacts shown below are based on clients surveyed since 2000.

Since 2000, NJMEP has helped manufacturers realize more than  
**\$5.4 Billion** Realized Value





# OBSERVATIONS 2021



## OBSERVATIONS

The coming year promises to be an ever-changing environment for manufacturers as they try to regain their footing amidst continued volatility due to COVID-19. While the potential for uncertainty may continue for the foreseeable future, manufacturing leaders should increase operational resilience. They should also look at areas like the supply chain, mobilizing partnerships within their ecosystem to drive targeted business goals, and filling the skills gap with qualified individuals. Manufacturing leaders can begin by examining current supply networks and considering how they could build additional agility throughout, including adding digital technologies that increase visibility and transparency to drive the ability to flex production and resources.





Based upon conversations, business climate, and survey polls of manufacturers, there are nine observations we foresee for New Jersey manufacturing in 2021:

## EMPLOYEE SAFETY IS A PRIORITY

It almost goes without saying that employee safety is of the utmost importance for manufacturers. Workplace safety has been a top priority for modern manufacturers, but it takes on new significance considering the pandemic. In addition to basic safety precautions, such as enforcing social distancing measures on the production floor and ensuring that workers sanitize their workspace, manufacturers must closely and carefully monitor who enters and exits their facilities, and which individuals or equipment they interact with.

This renewed focus on employee safety even extends as far as field service; to minimize contact, technicians will need to be more prepared for each job so that they can quickly complete open work orders. It would not be at all surprising if there were a dramatic increase in manufacturers' first-time fix rates as a result. We also predict that this trend will have a direct effect on supply chain visibility, as manufacturers demand greater transparency from suppliers as they work to track issues and claims throughout the manufacturing process.



## INTERNET OF THINGS

Internet of Things (IoT), which entails the interconnection of unique devices within an existing internet infrastructure, has enabled manufacturers to make informed, strategic decisions using real-time data and achieve a wide variety of goals, including cost reduction, enhanced efficiency, improved safety, product innovation, and more.

COVID-19 has brought renewed interest to IoT technology due to its remote monitoring and predictive maintenance capabilities. From a public safety

perspective, it is impractical, if not impossible, for field service technicians to show up on job sites on a moment's notice; every work order must be meticulously planned well in advance. IoT-enabled devices make it possible for manufacturers to safely monitor equipment performance at a distance and identify potential issues before a malfunction even occurs; they also enable technicians to gain a complete understanding of the problem at hand and come up with potential solutions before they arrive at the job site, so they can get in and get out that much faster.

## PREDICTIVE MAINTENANCE KEEPS PRODUCTION ON TRACK

A breakdown in critical equipment is costly to manufacturers in terms of repairs, downtime, and loss of productivity. Manufacturers must ensure that all equipment functions at optimal performance levels, and many are turning to predictive analytics and predictive maintenance to do so.

Predictive maintenance is proven to reduce unplanned outages and to extend machinery life by years. Predictive analytics enables manufacturers to monitor

equipment performance using any number of performance metrics and to automate the data collection process using IoT technology. This insight provides manufacturers with a better understanding of how systems work and when they will fail, enabling them to administer predictive maintenance and save valuable time, money, and resources in the process. You can even conduct monitoring tests while equipment is in operation, which means there is no loss of production due to equipment shutdown.



## MANUFACTURERS PLAN THEIR COVID-19 EXIT STRATEGY

The COVID-19 pandemic hit manufacturers in an unexpected and unprecedented way. For the first time in modern manufacturing history, demand, supply and workforce availability are affected globally at the same time.

Some companies that provide and deliver vital goods like personal care, paper and pharmaceutical are struggling to meet demand driven by panic buying. Others are experiencing dramatic drops in demand and extreme pressure to cut operational costs. Every major manufacturer is now experiencing disruptions across their supply chains of parts and raw materials, driven by what may now become recurring volatility of supply from South Asia.

Manufacturers may need to reinvent themselves, either by focusing on new lines of business or refocusing capacity. They all need to be planning a

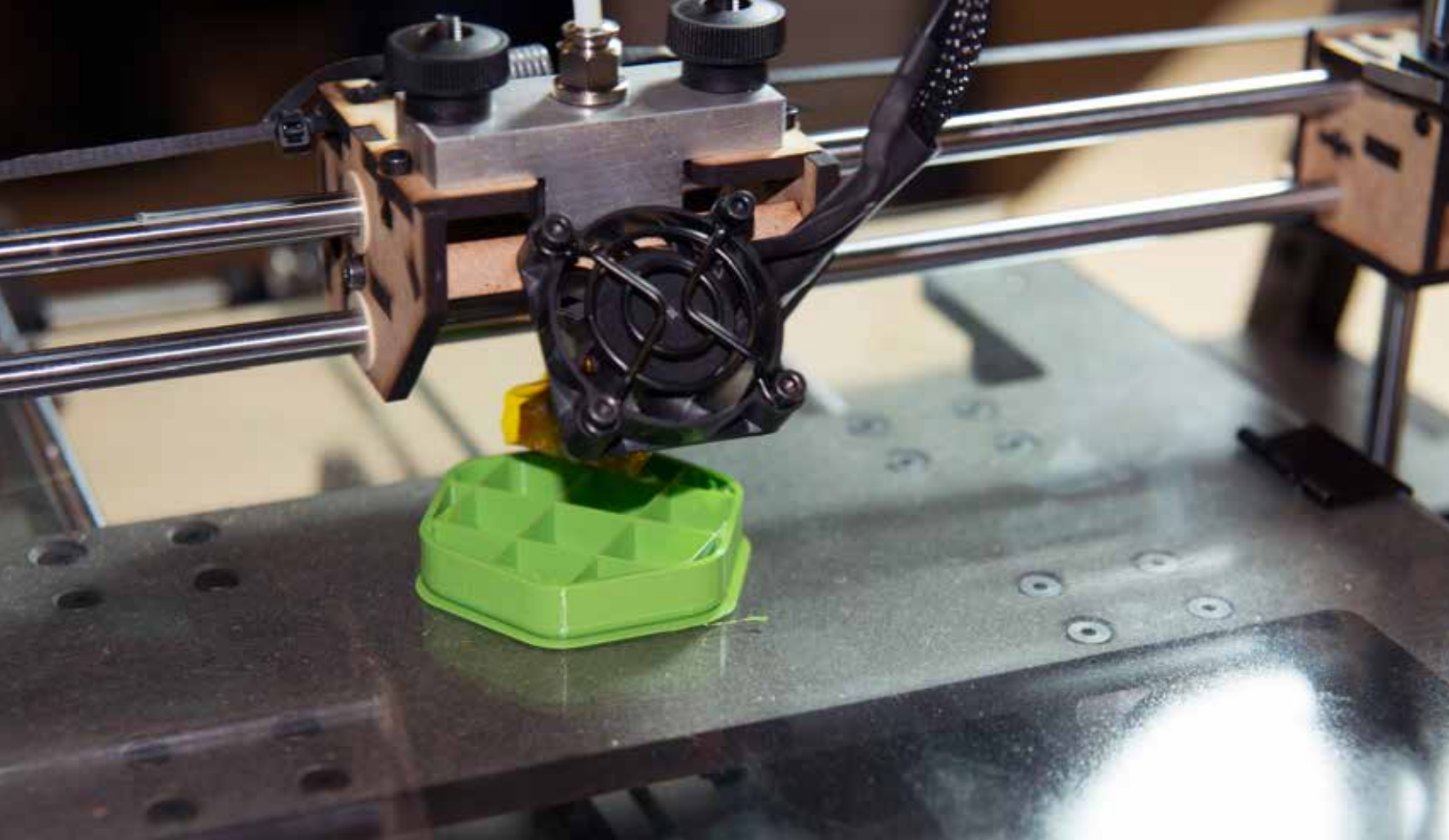
pandemic exit strategy:

**Phase 1, Respond:** Immediate actions required to keep people safe and essential business functions operating

**Phase 2, Recover:** Restart activities: reopen, rehire, re-budget, resupply; create a plan to restore scalable state

**Phase 3, Renew:** Strategic, durable execution across the organization; use learnings and emergent patterns from prior phases as elements of a new foundation

We can expect to see a lot of forecasting around future revenue as manufacturers roll into recovery and adapt to the "new normal" which will require manufacturers to readjust forecasts, assess impact to business, and determine where to retool, rescale, or draw back.



## A NEW APPROACH TO ERP

Enterprise Resource Planning (ERP) systems have become a mainstay amongst manufacturing companies due to their ability to streamline processes through automation, as well as provide leadership with accurate, real-time information that help reduce costs. COVID-19 has fundamentally changed the way in which manufacturers engage with and utilize their ERP systems.

We have seen a growing number of manufacturers layer agile applications on

top of their existing ERP systems, rather than try to make ERP do it all. There has also been an increase in manufacturers taking a data-driven approach to ERP upgrades. This approach enables businesses to move data forward, consolidate around modern data platforms, and build tangent functions on top of their existing data model without having to perform a full replacement or make any significant changes to their existing ERP, resulting in a faster time to value.

## 3D PRINTING MAKES PRODUCTION FASTER & CHEAPER

3D printing has been a staple in additive manufacturing for almost 40 years. Manufacturers depend on 3D printing to support prototyping, a highly cost-effective way for product designers to test and troubleshoot new products, and to produce items on demand rather than having to manufacture and warehouse them.

3D printing has transformed the expensive and time-consuming process of tooling. Historically, it took months for manufacturers to create the molds, jigs,

and fixtures necessary for the mass production of heavy equipment, and many manufacturers depended on the support of tooling companies headquartered overseas. Now with 3D printing, manufacturers can complete tooling onsite in just a matter of days; this has made 3D printing a fixture in the automotive and aerospace manufacturing industries in recent years.



## THE JOB MARKET REMAINS UNCERTAIN

We have all seen news about mass layoffs and furloughs as a result of COVID-19; naturally, the manufacturing industry has also been affected. However, the degree of disruption varies from one manufacturer to the next based on what they sell. Companies that produce non-essential goods have seen a significant reduction in staff, while those that produce essential goods have actually had to scale up, add product lines, and hire new workers in order to satisfy demand. Those that have had to reduce their workforce have turned to IoT automation and product line and factory process optimization to keep an operation as close to business as usual.

Optimization allows for cost control and profitability, which are essential for companies whose sales are down.

Manufacturers will likely continue to reevaluate their workforce based on shifts in demand. Those companies that find themselves in a position to hire will likely have their sights set on highly data-driven employees. Though this type of employee is likely rare, due to the ongoing shortage of tech-savvy talent, companies like Hitachi Solutions are producing easy-to-use technology that will create new opportunities for employees of all backgrounds.

## SLOW INDUSTRY 4.0 ADOPTION

Technology that is empowering modern manufacturing is slowly becoming more complex and is gaining wider adoption.

Early adopters of this technology are already providing value for their clients in ways they did not and could not before. For instance, predicting the order for your clients in advance can radically reduce lead times. Additionally, you will dramatically improve turnaround.

The full potential of industry 4.0 has yet been realized by most organizations. As more industry 4.0-related technologies continue to make their way into more manufacturing facilities, a change is expected. Businesses must adapt to survive. Waiting too long will prove to be catastrophic.



## SUPPLY CHAIN

The COVID-19 pandemic has highlighted the importance of supply chain management to manufacturers of all sizes. Greater collaboration, coordination and transparency among supply chain leaders has become a necessity. The pandemic has also demonstrated how costly a fragile supply chain can be for manufacturers and businesses downstream from the manufacturer.

When the pandemic became a global issue, organizations shut down, as did borders and governments, which left businesses scrambling for alternate supply chain options. Much of the challenges came from the speed at which materials, components, or products were delivered. Moving forward, manufacturers are preparing their organizations and bracing for other potential hurdles.

Identifying and collaborating with multiple suppliers of the same resource creates a more expensive and complex supply chain, but also a more resilient one. All those business-critical activities, whether it is sales, logistics or anything else, requires major business model changes — from talent shifts to contracts.

The bottom line is that manufacturers do not know what the future holds, but aggressive changes to business models by top performers reflect a desire to create an organization that can respond to whatever happens in the world. The goal is no longer the cheapest or highest-quality suppliers, but rather what will allow organizations to survive the next disruption with supplies that are made in New Jersey.





**MOVING FORWARD  
WITH NJMEP**





# MOVING FORWARD WITH NJMEP

Moving forward building on FY 2020's gains, NJMEP will continue to focus on enhancing education and workforce development, building sustainable and effective business models, and advancing manufacturing technology.

## WORKFORCE DEVELOPMENT TRAINING AND CERTIFICATION PROGRAMS

Developing a stable, reliable, and more accessible talent pipeline is vital to the success of the state's manufacturers. This has been one of NJMEP's main focuses in 2020 and will continue to be a primary initiative moving forward. Through the Pro-Action Education Network™, New Jersey manufacturers have access to an expansive selection of workforce development options. Businesses can upskill new hires, provide professional development opportunities, find new workers, and take part in individual training programs.

The Pro-Action Education Network™ represents a statewide, scalable platform to:

- Prepare students and workers to fill open positions that affect the profitability and growth of companies
- Refresh the skills of incumbent workers to remain globally competitive
- Assess and pool the demand for education and training across geographic and institutional boundaries
- Facilitate collaboration between education and workforce development stakeholders

The Pro-Action Education Network™ involves reconfiguring a collaborative partnership between and among diverse resource partners all attempting to help employers address workforce needs. NJMEP holds a unique

position to facilitate this effort. NJMEP, an intermediary organization, provides direct service to companies - including training, and connects these companies to resource partners and initiatives that accelerate technology transfer, innovation, growth, and profitability.

The Pro-Action Education Network™ is categorized into six unique sub-sections.

### 1. PRE-APPRENTICESHIP & FOUNDATIONAL CREDENTIALS

Providing manufacturers access to a pool of job seekers that have been pre-screened for aptitude and trained on essential manufacturing processes.

### 2. OPEN ENROLLMENT 'CAREER ADVANCEMENT' TRAINING

Individual workforce upskilling opportunities and Manufacturing Skill Standards Council (MSSC) credentials including but not limited to; Manufacturing Process and Production, Maintenance Awareness, Quality Practices and Measurement, and Safety Awareness.

### 3. ASSESSMENT & ON-THE-JOB TRAINING

Assistance in assessing new hires and providing a standardized on the job training curriculum.



#### 4. APPRENTICESHIPS

Accelerated United States Department of Labor Registered Apprenticeship programs to upskill incumbent workers and cultivate a more capable manufacturing workforce.

- i. Industrial Manufacturing Production Technician
- ii. Industrial Manufacturing Production Technician – Food
- iii. Industrial Manufacturing Production Technician – CNC
- iv. Technical Sales Representative
- v. Logistics Technician
- vi. Cybersecurity

#### 5. TRAIN-THE-MENTOR

Providing experienced manufacturing and logistics professionals the skills they need to adequately mentor apprentices.

#### 6. PROJECT 160

NJMEP is training 160 individuals through a partnership and the Manufacturing Skill Standards Council (MSSC) to provide qualified candidates. These individuals will receive foundational certifications in manufacturing. Acquiring these certifications upskill the individuals to create an easier onboarding experience for their future employers.

Through this partnership, candidates will earn industry-valued and nationally recognized credentials from MSSC, including the Certified Production Technician (CPT) certification.

Project 160 is focused on working with manufacturers from Newark, Paterson, Camden, Trenton, and surrounding areas.



## TRI-50 PROGRAMS

COVID-19 created an immensely challenging business landscape for manufacturers. In response to these disastrous disruptions, the 'Tri-50' programs have been developed. Ranging from helping employees feel more comfortable returning to work to strengthening manufacturers' digital marketing capabilities, Tri-50 programs are designed to address these unprecedented pain points.

#### BUSINESS PLANNING

- Business Recovery Strategies for Manufacturing Companies
- Emergency Communications & Managing Risk
- Intro to Risk and Opportunity Management
- Management Skills Training
- Building Blocks of Resilience

#### PROCESS PLANNING

- Food Safety Training Options
- Virtual Lean Training & Consulting
- Six Sigma Online
- ISO 13485-2016
- ISO 9001-2015
- Internal Auditing for Process Improvement
- Pharmaceutical, Medical Device and Cosmetic Manufacturing

#### HR / SALES

- Working and Managing in a Post-COVID Environment
- Digital Marketing for Manufacturers
- COVID-19 Back to Work Checklist

All CARES Programs include 20 hours of total training, broken up in modules to fit the manufacturers schedule. This training is provided at no cost to the manufacturer. Tri-50 programs are made possible through federal funding NIST MEP provided through the CARES Act. NJMEP allocated these funds to the development of the 'Tri-50' programs to help support New Jersey manufacturing recovery.

# CRITICAL SUPPLY CHAIN SUPPORT

At the start of the pandemic, NJMEP developed the Critical Supply Chain Database. Manufacturers can take part in this voluntary database to showcase critical capabilities that can assist the state and/or federal government in filling any supply chain gaps that came about due to COVID-19 disruptions. Additionally, these manufacturers can also explain their most disruptive pain points to secure support from organizations like NJMEP or be put in contact

with other manufacturers that may be able to provide them with the resources they need to continue producing.

The Critical Supply Chain Database will remain open and in use throughout 2021 or as long as COVID-19 continues to disrupt New Jersey manufacturing businesses.



# CONTINUED RELATIONSHIP WITH BI-PARTISAN AND BICAMERAL LEGISLATIVE MANUFACTURING CAUCUS

The Bi-Partisan Manufacturing Caucus will continue forward in 2021 with an aggressive, yet attainable set of goals. NJMEP is working closely with the Caucus and Legislators to advocate on behalf of manufacturers throughout New Jersey by providing a platform for business owners and industry influencers to speak directly with local legislators and voice their concerns about doing business in the state. Educating New Jersey lawmakers is the key in developing actionable legislation that assists in the ability of manufacturers to compete nation-wide and around the world.

For more than 20 years, NJMEP worked with clients and secured a strong return on investment of 11:1. Since the creation of the NJ Legislative Manufacturing Caucus, the ROI increased to 15:1 – and – over 30:1 in 2020. Throughout the recent disaster, NJMEP never faltered. The team provided immediate support to the states manufacturing businesses. It was because of their hard work and the collaboration with the NJ Legislative Manufacturing Caucus that all these successes were made possible.

## CAUCUS GOALS:

- Continue building and investing in the development of the relationships between NJ Manufacturers and the Legislature.
- Continue to build on the legislative success the Caucus priorities in 2020 for 2021.
- Ensuring that NJMEP maintains its current level of funding provided in fiscal year 2021's budgets and each year thereafter of \$1.5 million dollars.
- Advocate for future federal and state aid dollars go to NJ manufacturers to aid in the economic recovery efforts.
- Hold more roundtables and open discussions with manufacturers around the state.
- The Off-Shore Wind Investment needs to include NJ firms in the plan.
- The State of the State Manufacturing Roundtables will take place and are scheduled in 2021.

# FOOD & BEVERAGE

NJMEP is using a \$992,050 grant to expand upon an earlier regional grant, which was provided by the U.S. Department of Commerce National Institute of Standards and Technology Hollings Manufacturing Extension Partnership. The money is used to develop an invaluable national program for U.S. Food and Beverage manufacturers.

The grant gives NJMEP the ability to work with the MEP National Network to create a platform to deliver FSMA (Food Safety Modernization Act) and other core MEP services (cybersecurity, supply chain, etc.) to food manufacturing companies in the USA as well as Puerto Rico.

Training includes an online curriculum (five different course offerings) created by NJMEP and offered through the County College of Morris (CCM):

- cGMP Readiness
- Food Allergens
- Food Defense
- Food Recall and Withdrawals
- HACCP Overview

On top of this effort to create and offer online food training programs to manufacturers at a national level, NJMEP can scale the USDOL approved Food Production Safety Technician through the Pro-Action Education Network™. There are more than 1,200 food manufacturers throughout New Jersey that will be able to take advantage of this comprehensive program. The Food Production Safety Technician apprenticeship program is focused on food manufacturing, process standards, quality control, and food production compliance.

NJMEP has also solidified a partnership with the New Jersey Food Processors Association (NJFPA) to offer the NJMEP online, self-paced, food safety training courses to their members.





## CYBERSECURITY

Manufacturers tend to put cybersecurity on the backburner. This is no longer going to be an option for many. The manufacturing industry has consistently ranked in the top 5 of industries most vulnerable and targeted for cyberattacks. The Healthcare, Financial Services and Government Agencies sectors have all been held to a higher standard when it comes to security compliance and risk management. The manufacturing industry has not yet been held to a higher standard and therefore even more vulnerable to cybercrime.

The Cybersecurity Maturity Model Certification (CMMC) is bearing down on the industry. This certification takes a unique approach to ensuring critical intellectual property stays secure. At first, CMMC will only be required for manufacturers and suppliers that handle Controlled Unclassified Information (CUI) for the Department of Defense (DoD).

The Cybersecurity Maturity Model Certification (CMMC) is the method to certify that the appropriate levels of cybersecurity processes and protections are in place for the approximately 300,000 contractors and subcontractors in the DoD supply chain. The CMMC process will now require a CMMC Third Party Assessment Organization (C3PAO) to certify that companies are compliant, and that CUI is secure.

The Cybersecurity Framework is designed to reduce risk by improving the management of cybersecurity practices and procedures. Manufacturers using the Framework can measure and assign values to their risk along with the cost and benefits of steps taken to reduce risk. The better a manufacturer can measure its


cybersecurity risk and costs, the more effective its cybersecurity solutions will be. Over time, self-assessment should improve decision-making on a manufacturer's cybersecurity investment priorities. The Framework can be used to self-assess cybersecurity risk.

As of now, DoD contractors are the only ones at risk for losing DoD work if they do not acquire the CMMC. However, small-medium sized manufacturers are always at risk of a cyber-attack completely crippling their business, sometimes to the point where they will never be able to financially recover. This certification provides non-DoD manufacturers with a fantastic cybersecurity baseline and best practices. Depending on the results from a cybersecurity assessment, a business can determine which maturity level would work best for them.

NJMEP is providing awareness and assistance to all New Jersey manufacturers to help protect their information assets from the risks of cyberattacks and work with clients to help identify, assess, and manage their cybersecurity risks.

NJMEP assists manufacturers specifically in the DoD supply chain who must meet the DFARS Cybersecurity requirements. Our experienced team has designed a comprehensive NIST Special Publication 800-171 cybersecurity program and will help manufacturers gauge their current situation and tailor a plan specifically for their internal capabilities, budget, and time sensitivity.





# **MANUFACTURERS IN NEW JERSEY**



# NEW JERSEY KEY INDUSTRY CLUSTERS

## NEW JERSEY MANUFACTURING – IMPACTS BY CLUSTER

	EMPLOYEES	GDP CONTRIBUTION	AVERAGE WAGE
<b>MANUFACTURING</b>	240,350	\$52.7B	\$94,610
<b>LIFE SCIENCES</b>	76,430	\$33.5B	\$163,370
<b>STEM/TECHNOLOGY</b>	183,352	N/A	\$133,942
<b>TRANSPORTATION LOGISTICS &amp; DISTRIBUTION (TLD)</b>	414,613	\$66.9B	\$73,252

The economic impact of the Key Industry Clusters in New Jersey is estimated to be over \$161 Billion.

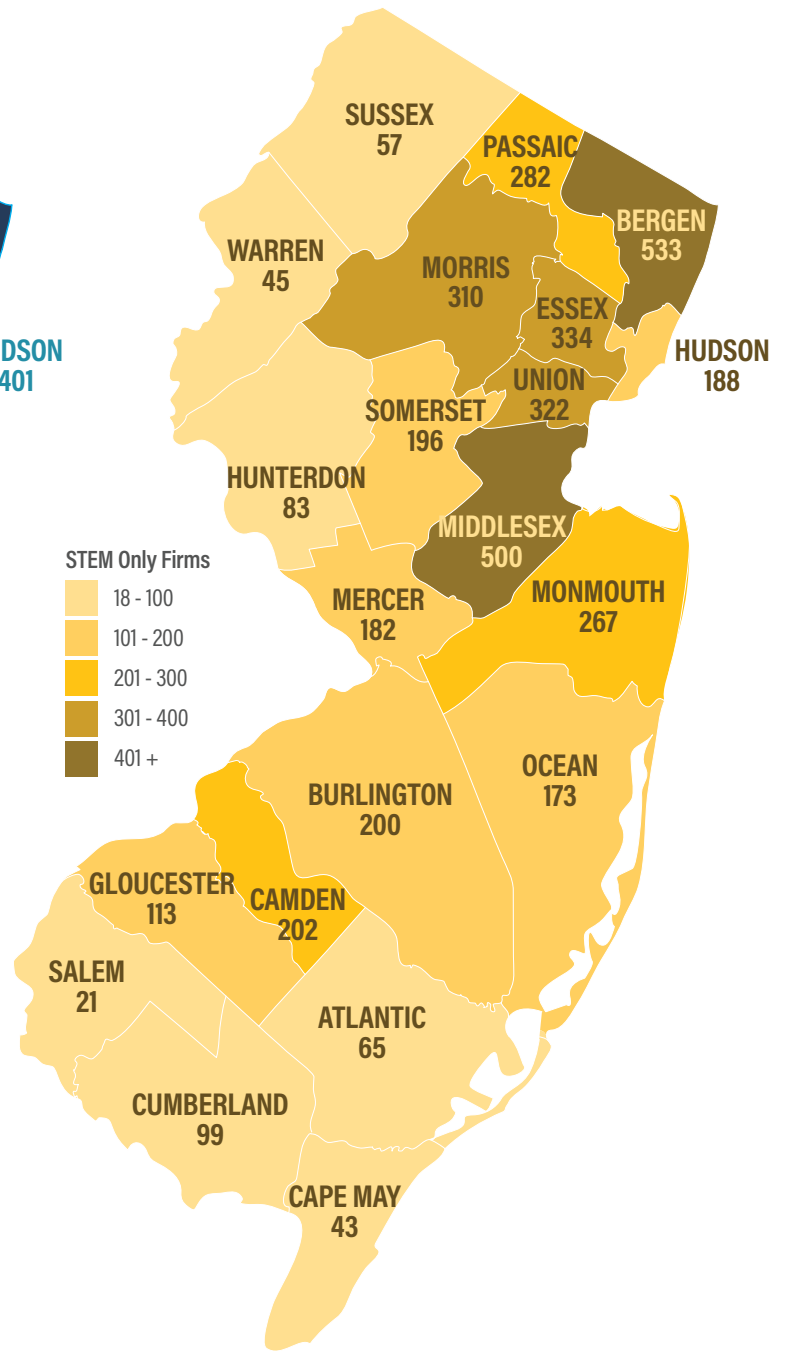
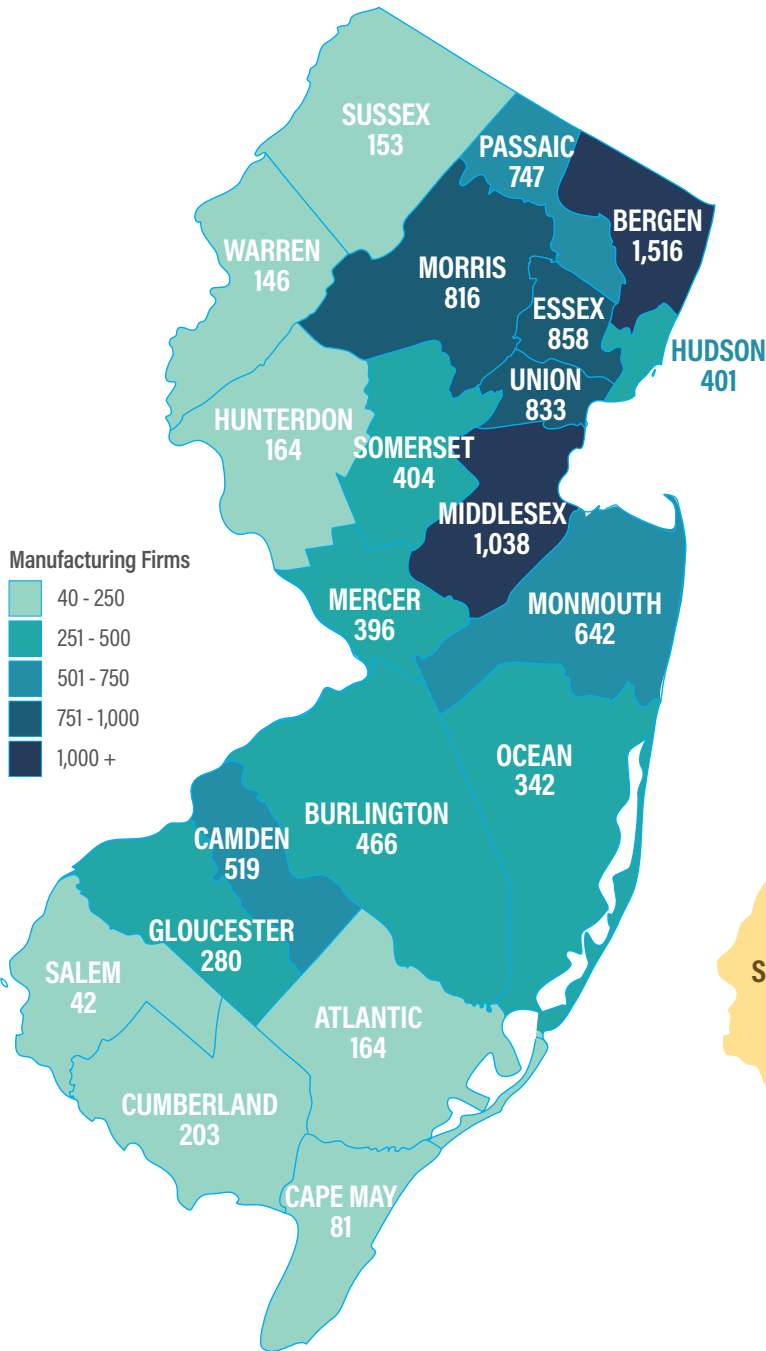




# NEW JERSEY MANUFACTURER LOCATIONS

## NEW JERSEY MANUFACTURING FIRMS BY COUNTY

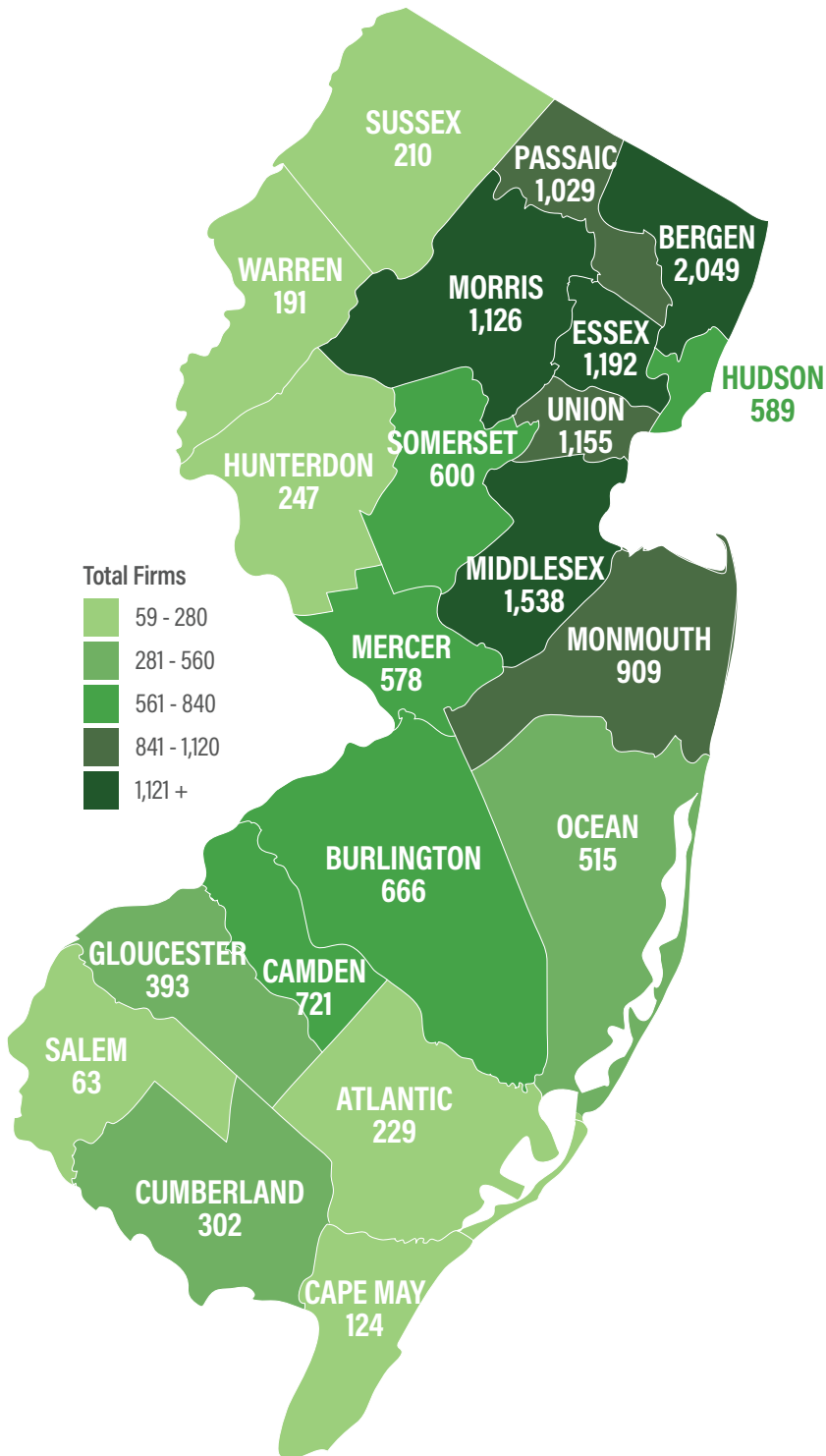
## NEW JERSEY STEM ONLY FIRMS BY COUNTY





## NEW JERSEY TOTAL FIRMS BY COUNTY

## NEW JERSEY MANUFACTURERS - COUNTY TOTALS - RANKED BY NUMBER OF FIRMS



NJ County	MFG's Firms	STEM Firms	Total Firms
Bergen	1,516	533	2,049
Middlesex	1,038	500	1,538
Essex	858	334	1,192
Union	833	322	1,155
Morris	816	310	1,126
Passaic	747	282	1,029
Monmouth	642	267	909
Camden	519	202	721
Burlington	466	200	666
Somerset	404	196	600
Hudson	401	188	589
Mercer	396	182	578
Ocean	342	173	515
Gloucester	280	113	393
Cumberland	203	99	302
Hunterdon	164	83	247
Atlantic	164	65	229
Sussex	153	57	210
Warren	146	45	191
Cape May	81	43	124
Salem	42	21	63
<b>Total</b>	<b>10,211</b>	<b>4,215</b>	<b>14,426</b>

## NEW JERSEY MANUFACTURERS BY STATE DISTRICT

District	Senate	Assembly	Assembly	# of Manufacturers	Main Counties	Employees-EST Per Entity
1	Michael L. Testa, Jr.	Antwan McClellan	Erik Simonsen	273	Atlantic, Cape May, Cumberland	9,282
2	Christopher A. Brown	John Armato	Vince Mazzeo	138	Atlantic	4,692
3	Stephen M. Sweeney	John J. Burzichelli	Adam Taliaferro	258	Cumberland, Gloucester, Salem	8,772
4	Fred H. Madden, Jr.	Paul D. Moriarty	Gabriela Mosquera	136	Camden, Gloucester	4,624
5	Nilsa Cruz-Perez	William F. Moen, Jr.	William Spearman	175	Camden, Gloucester	5,950
6	James Beach	Louis Greenwald	Pamela R. Lampitt	374	Burlington, Camden	12,716
7	Troy Singleton	Herb Conway, Jr.	Carol A. Murphy	306	Burlington	10,404
8	Dawn Marie Addiego	Ryan Peters	Jean Stanfield	157	Atlantic, Burlington, Camden	5,338
9	Christopher J. Connors	DiAnne Gove	Brain E. Rumpf	145	Atlantic, Burlington, Ocean	4,930
10	James W. Holzapfel	John Catalano	Gregory P. McGuckin	72	Ocean	2,448
11	Vin Gopal	Joann Downey	Eric Houghtaling	293	Monmouth	9,962
12	Samuel D. Thompson	Robert D. Clifton	Ronald S. Dancer	189	Burlington, Middlesex, Monmouth, Ocean	6,426
13	Declan O'Scanlon	Serena DiMaso	Gerard Scharfenberger	125	Monmouth	4,250
14	Linda R. Greenstein	Daniel R. Benson	Wayne DeAngelo	158	Mercer, Middlesex	5,372
15	Shirley K. Turner	Verlina Reynolds-Jackson	Anthony Verrelli	249	Hunterdon, Mercer	8,466
16	Christopher Bateman	Roy Freiman	Andrew Zwicker	372	Hunterdon, Mercer, Middlesex, Somerset	12,648
17	Bob Smith	Joseph Danielsen	Joseph V. Egan	238	Middlesex, Somerset	8,092
18	Patrick J. Diegnan, Jr.	Robert Karabinchak	Nancy Pinkin	387	Middlesex	13,158
19	Joseph F. Vitale	Craig Coughlin	Yvonne Lopez	167	Middlesex	5,678
20	Joseph P. Cryan	Jamel Holley	Annette Quijano	277	Union	9,418
21	Thomas H. Kean Jr.	Jon Bramnick	Nancy F. Munoz	331	Morris, Somerset, Union	11,254
22	Nicholas P. Scutari	Linda S. Carter	James J. Kennedy	279	Middlesex, Union, Somerset	9,486
23	Michael J. Dougherty	John DiMaio	Erik Peterson	375	Hunterdon, Somerset, Warren	12,750
24	Steven Oroho	Parker Space	Hal Wirths	224	Morris, Sussex, Union	7,616
25	Anthony M. Bucco	Brian Bergen	Arua Dunn	366	Morris, Somerset	12,444
26	Joseph Pennacchio	BettyLou DeCroce	Jay Webber	492	Essex, Morris, Passaic	16,728
27	Richard Codey	Mila Jasey	John F. McKeon	200	Essex, Morris	6,800
28	Ronald Rice	Ralph R. Caputo	Cleopatra Tucker	145	Essex	4,930
29	M. Teresa Ruiz	Eliana P. Marin	Shanique Speight	251	Essex	8,534
30	Robert W. Singer	Sean T. Kean	Edward Thomson	251	Monmouth, Ocean	8,534
31	Sandra B. Cunningham	Nicholas Chiaravalloti	Angela V. McKnight	33	Hudson	1,122
32	Nicholas J. Sacco	Angelica M. Jimenez	Pedro Mejia	232	Bergen, Hudson	7,888
33	Brain P. Stack	Annette Chaparro	Raj Mukherji	171	Hudson	5,814
34	Nia H. Gill, Esq.	Thomas P. Giblin	Britnee Timberlake	230	Essex, Passaic	7,820
35	Nellie Pou	Shavonda E. Sumter	Benjie E. Wimberly	314	Bergen, Passaic	10,676
36	Paul A. Sarlo	Clinton Calabrese	Gary Schaer	543	Bergen, Passaic	18,462
37	Loretta Weinberg	Valerie Huttle	Gordon M. Johnson	348	Bergen	11,832
38	Joseph A. Lagana	Lisa Swain	P. Christopher Tully	275	Bergen, Passaic	9,350
39	Gearld Cardinale	Robert Auth	Holly T. Schepisi	295	Bergen, Passaic	10,030
40	Kristin Corrado	Christoper P. DeFillips	Kevin Rooney	367	Bergen, Essex, Morris, Passaic	12,478
				<b>10,211</b>	<b>Direct Employment *</b>	<b>347,174</b>

\* An estimate supported by data from NIST & NAM - 34 employees per firm in NJ

## NEW JERSEY MANUFACTURERS BY FEDERAL DISTRICT

District	Senate	House	# of Manufacturers	Main Counties	Employees-EST Per Entity
State	Robert Menendez		10,211		
State	Cory Booker		10,211		
1		Donald Norcross	759	Gloucester, Camden, Burlington	25,806
2		Jeff Van Drew	597	Atlantic, Cape May, Cumberland, Salem, Ocean	20,298
3		Andy Kim	577	Burlington, Ocean	19,618
4		Christopher Smith	717	Ocean, Monmouth, Mercer	24,378
5		Josh Gottheimer	978	Sussex, Passaic, Bergen, Warren	33,252
6		Frank Pallone	808	Monmouth, Middlesex	27,472
7		Tom Malinowski	1,026	Warren, Hunterdon, Somerset, Union, Morris	34,884
8		Albio Sires	605	Union, Essex, Hudson, Bergen	20,570
9		Bill Pascrell Jr.	1,335	Bergen, Hudson, Passaic	45,390
10		Donald Payne Jr.	611	Union, Essex, Hudson	20,774
11		Mikie Sherrill	1,318	Morris, Sussex, Essex, Passaic	44,812
12		Bonnie Watson Coleman	880	Middlesex, Mercer, Somerset, Union	29,920
			<b>10,211</b>	<b>Direct Employment *</b>	<b>347,174</b>

*\* An estimate supported by data from NIST & NAM - 34 employees per firm in NJ*



The background is a vibrant green color with a complex, layered pattern of hexagons and 3D cubes. Some hexagons are solid, while others are outlined or contain smaller, darker hexagons. The 3D cubes are rendered with perspective, creating a sense of depth and architectural structure. The overall effect is a modern, geometric, and industrial aesthetic.

# INDUSTRY CLUSTERS



## ADVANCED MANUFACTURING - INDUSTRY 4.0

Manufacturing is a driver of New Jersey's economy and has been for over 200 years. From the machines that drove the industrial revolution to the world's first transistor, to advanced aerospace components and lifesaving medical devices, New Jersey manufactures the products that drive innovation and improve lives.

Advanced manufacturing or Industry 4.0 refers to a systems-based approach to maximizing efficiency and precision in manufacturing, using technology such as sensors, automation, and wireless communications.

Advanced manufacturing companies are critical to the future of New Jersey's economy. They create high-value added, high-wage jobs that leverage New Jersey's unique assets to create innovative products.

The occupational composition within manufacturing industries is continuously changing as more technical skills are required to operate more advanced processes. The expectation of higher skills has resulted in many higher paying jobs, especially among chemical manufacturing firms.

According to the U.S. Census Bureau's 2019 American Community Survey, the profile of the average New Jersey resident worker is generally older than average and male. Nearly 57 percent of the workforce is aged 45 and over. Racially, it is more diverse than average, especially among the Asian population. The workforce is highly educated, as greater than 44 percent having attained at least a bachelor's degree.

## Nearly 2 of every 10 dollars of output generated by manufacturing in the United States occurs in these Northeastern states

State	Manufacturing GDP (in billions \$)
Pennsylvania	\$86
New York	\$65
Massachusetts	\$52
<b>New Jersey</b>	<b>\$51</b>
Connecticut	\$27
Maryland	\$23
Delaware	\$5

New Jersey ranks fourth among these states in the region. New Jersey GDP from manufacturing exceeded \$51 billion in 2019.

Chemical manufacturing is the primary contributor in the tri-state area (NJ, NY & PA) and combined, it accounts for nearly 15 percent (nearly \$43 billion) of all chemical manufacturing GDP in the US.

Data shows that Massachusetts and New Jersey are leaders in the region in medical device manufacturing.

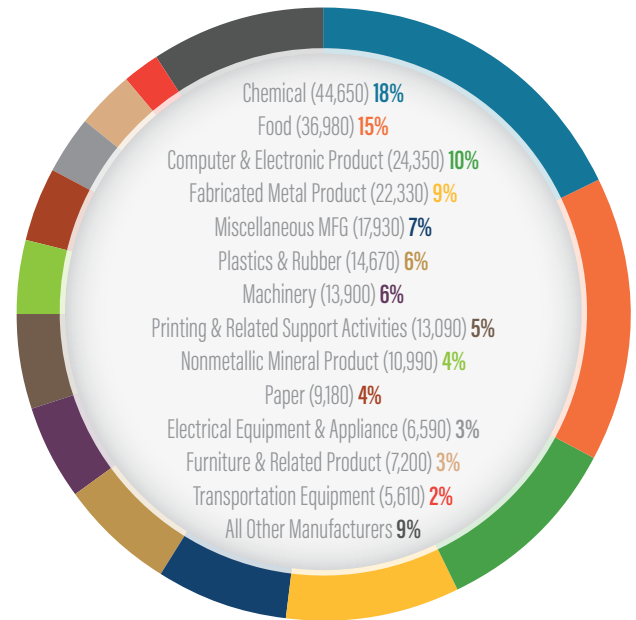
## Chemical Manufacturing sector dominates GDP output

Chemical manufacturing accounted for 51 percent of manufacturing GDP in 1997 (\$29 billion), but only 36 percent in 2019 (\$18 billion).

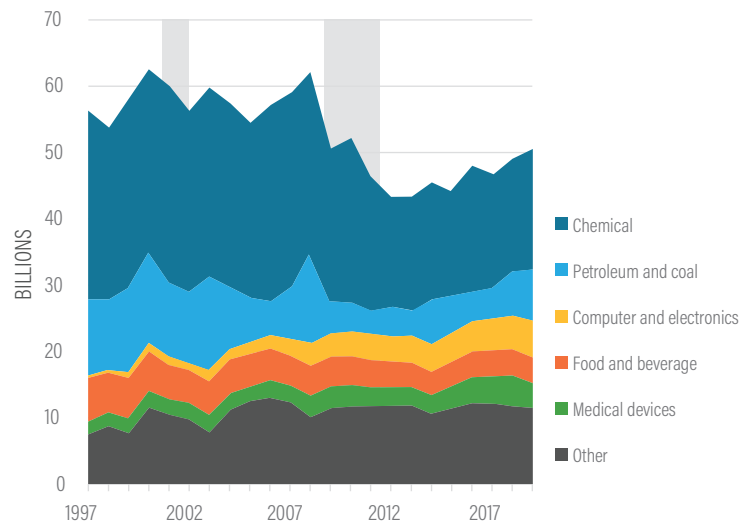
Computer and electronic products manufacturing has been the best performing industry among this group, increasing its GDP from \$465 million in 1997 to \$5.4 billion in 2019, and now sits as the third highest component in terms of GDP in New Jersey.

Medical devices manufacturing has doubled its output since 1997 to nearly \$4 billion in 2019.

## ALL MANUFACTURING INDUSTRIES AS A PERCENTAGE OF TOTAL MANUFACTURING IN NEW JERSEY, 2019



## GROSS DOMESTIC PRODUCT (IN BILLIONS \$) BY MANUFACTURING SEGMENT, 1997-2019

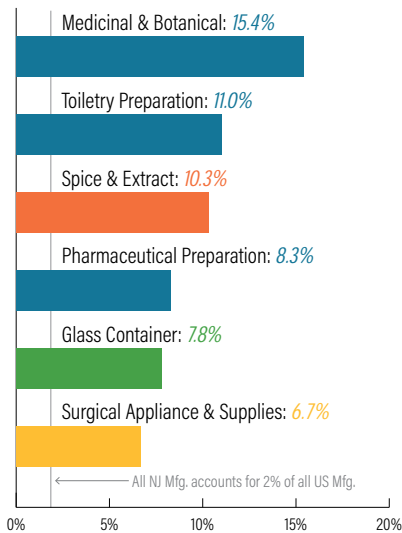


Gray area denotes U.S. economic recession as defined by the National Bureau of Economic Research (NBER)

Source: United States Bureau of Economic Analysis, GDP in Chained 2012 Dollars  
Prepared by: New Jersey Department of Labor and Workforce Development December, 2019

# New Jersey has added manufacturing jobs for four consecutive years, reversing a trend of annual declines that spanned decades.

## NEW JERSEY EMPLOYMENT AS A PERCENTAGE OF THE NATION: 2019



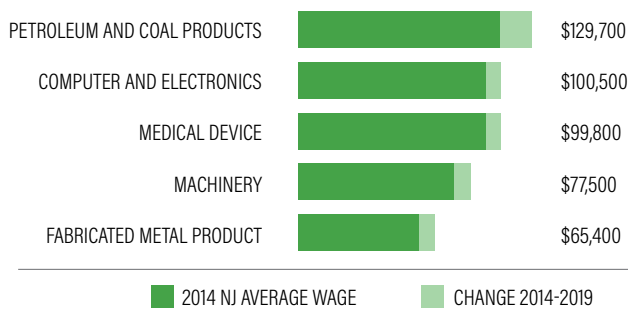
## These industries each employ a disproportionately high number of people in New Jersey and are among the manufacturing industries that define the state in 2019

Chemical manufacturing in New Jersey, where three of the six industries on this list are classified, accounts for 5.3 percent of chemical manufacturing employment in the nation.

Glass container manufacturing still remains a prevalent industry in the Southern counties of the state.

New Jersey is one of the world leaders in surgical appliances and supplies manufacturers.

## ANNUAL AVERAGE WAGE OF MAJOR COMPONENTS OF MANUFACTURING NEW JERSEY, 2019



Source: NJLWD, Quarterly Census of Employment and Wages, 2018 Annual Averages  
Prepared by: New Jersey Department of Labor and Workforce Development December, 2019

## New Jersey annual average wages in the manufacturing sector have increased by nearly \$1,600 over the past five years

Although relatively small in terms of employment, the petroleum and coal products industry earned more than any other manufacturing industry.

The higher annual average wages paid in both medical device and computer and electronic manufacturing are reflective of the greater composition of jobs requiring higher educational levels.

Each of these industries experienced wage increases of at least \$7,500 over the past five years.

## Employment in manufacturing is highly concentrated in New Jersey's most populous counties and along the Interstate 95 corridor

New Jersey offers unique business advantages including:

- Geographic proximity to roughly 40 percent of the US population, or around 100 million potential consumers.
- Highly educated and diverse workforce.
- Extensive transportation network in place to carry goods by land, air, and sea.

Manufacturing in many of New Jersey's more sparsely populated counties make up a larger percentage of total private sector employment

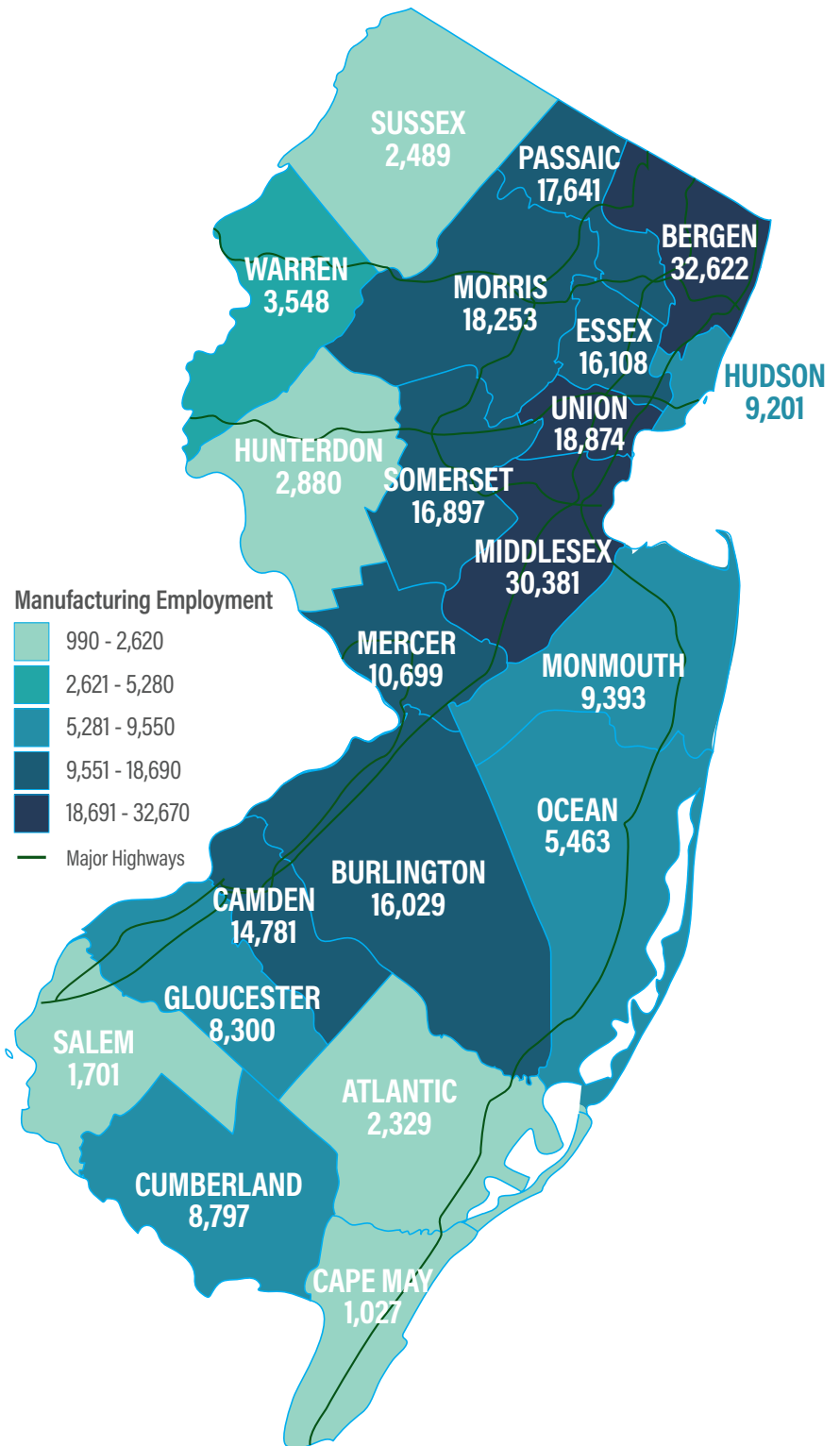
In the four coastal counties of **Monmouth, Ocean, Atlantic, and Cape May**, less than 4 percent of private sector employment is classified as manufacturing

**Cumberland County** has the largest share of manufacturing of total employment, exceeding 18 percent

**Bergen, Morris, Middlesex, and Somerset Counties** have a large a diverse mix of manufacturing industries

*Source: NJLWD, Quarterly Census of Employment and Wages, 2018 Annual Averages Prepared by: New Jersey Department of Labor and Workforce Development December, 2019*

## MANUFACTURING EMPLOYMENT NEW JERSEY, 2019





## NEW JERSEY MANUFACTURERS SUBSECTOR DETAILS - EMPLOYMENT TOTALS BY COUNTY

The **FOOD MANUFACTURING** industry has added more than 6,000 jobs over the past five years, and has large concentrations in **Bergen and Camden Counties**

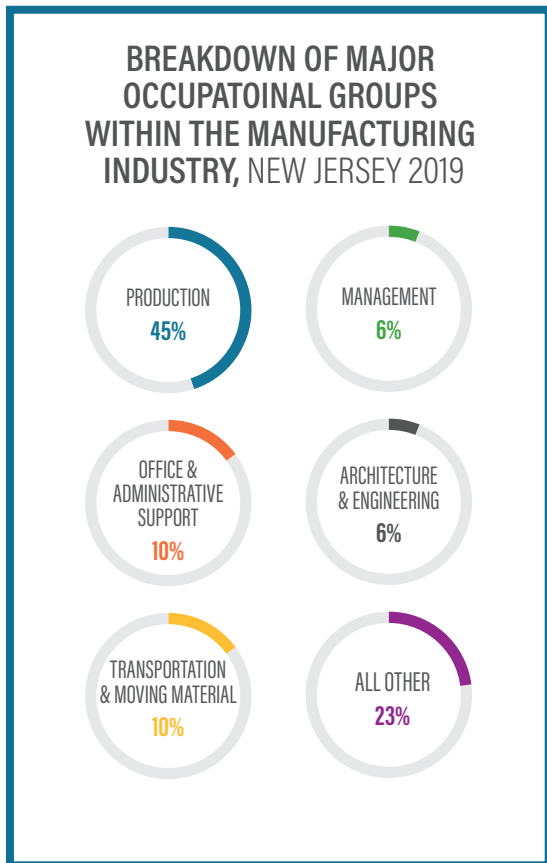
The **CHEMICAL MANUFACTURING** industry has strong concentrations along the Route 1 corridor, particularly in **Middlesex, Somerset, and Union Counties**

The **COMPUTER AND ELECTRONIC PRODUCT MANUFACTURING** industry has maintained steady employment, and is prevalent in **Camden, Burlington, and Bergen Counties**

The **FABRICATED METAL PRODUCT MANUFACTURING** industry has maintained employment levels, and has concentrations nearest Philadelphia and New York City

The **MEDICAL DEVICE MANUFACTURING** industry employed nearly 12,000 jobs from in 2019, and nearly one third of its employment is found in **Bergen County** Data shows a steady and gradual change toward an older workforce

NJ County	Food	Chemical	Computer & Electronic Product	Fabricated Metal Product	Medical Device
Bergen	6,007	3,530	3,481	2,863	5,034
Essex	2,994	2,471	998	2,306	432
Hudson	1,995	628	133	493	623
Morris	970	3,982	2,840	1,782	2,714
Passaic	2,990	1,250		1,844	
Sussex				439	
Warren		773	229	633	101
Hunterdon		431	133		
Mercer	587		926	480	133
Middlesex	3,664	8,973	2,114	2,038	
Monmouth	1,572	1,081	1,333	719	1,211
Somerset	621	6,488	1,329	1,194	1,680
Union	2,794	5,708	323	2,812	
Atlantic	277			102	
Burlington	1,543	780		1,337	414
Camden	4,077		1,382	1,685	1,389
Cape May					
Cumberland	2,871			341	166
Gloucester	1,996	520	688	320	283
Ocean	801	1,124	198	413	332
Salem		732			
<b>State Totals</b>	<b>35,759</b>	<b>38,471</b>	<b>16,107</b>	<b>21,801</b>	<b>14,512</b>

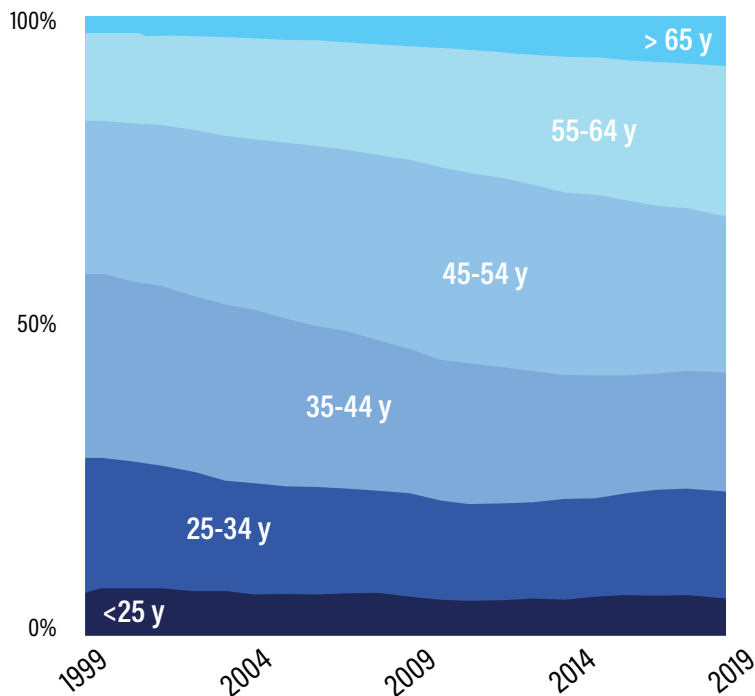


Source: NJLWD, Occupational Employment Statistics Survey, May 2019. Prepared by: New Jersey Department of Labor and Workforce Development December, 2019

Source: NJLWD, Quarterly Census of Employment and Wages, Annual Average Prepared by: New Jersey Department of Labor and Workforce Development December, 2019



## BREAKDOWN OF WORKFORCE BY AGE NEW JERSEY 1999-2019



### Data shows a steady and gradual change toward an older workforce

The workforce aged 65 and older has nearly tripled its share of total employment from 3 percent to almost 9 percent from 1999 to 2019.

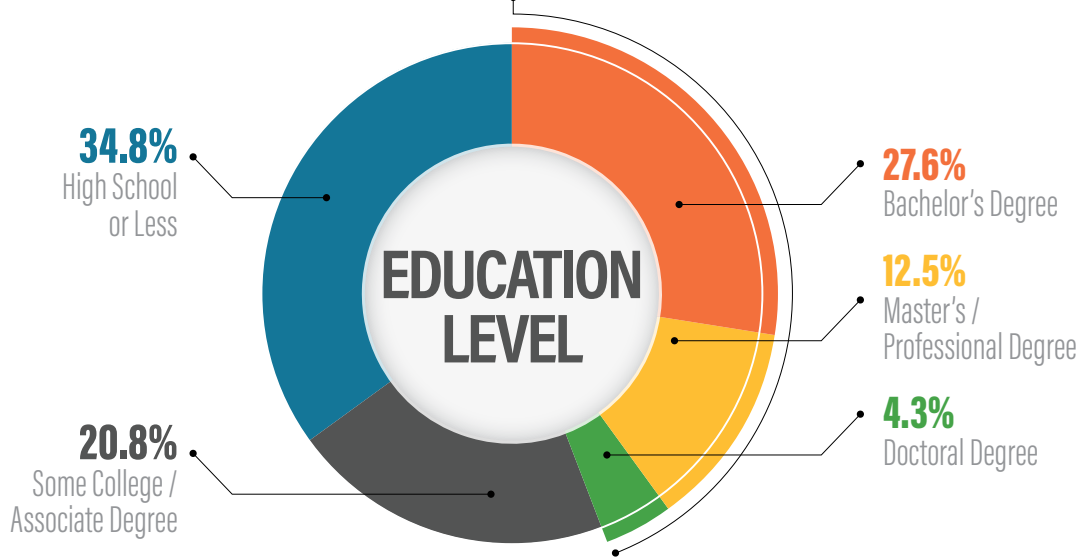
Over the past 20 years, the fastest growing age cohort has been 55-64 years old, while the group aged 35-44 has declined the most.

The share of the manufacturing workforce under the age of 35 has decreased over the last 20 years from 27 percent to 23 percent.

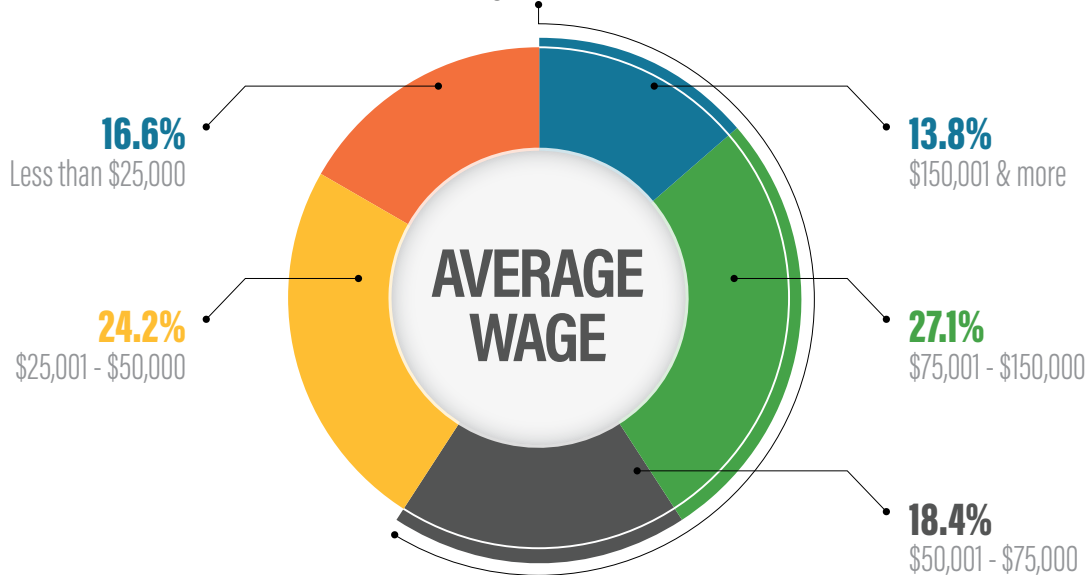
Source: United States Census Bureau. Quarterly Workforce Indicators  
Prepared by: NJ Department of Labor & Workforce Development December, 2019

## Self-reported educational attainment and average wage of NJ residents in the manufacturing workforce

More than **45%** of the workforce reported that they have earned at least a bachelor's degree.



Nearly **60%** of the workforce claimed to have earned wages above \$50,000.



Source: United States Census Bureau, 2017 American Community Survey  
Prepared by: NJ Department of Labor & Workforce Development



## BIOPHARMACEUTICAL LIFE SCIENCES

The biopharmaceutical industry in New Jersey is evolving rapidly. Scientific innovation is leading to step-changes in the standard of care for diseases with high unmet needs (e.g., Oncology, Hepatitis C). Technology and automation are impacting manufacturing processes, as well as other parts of the value chain.

Quality and patient safety are keys to the success of these emerging technologies and the FDA is moving toward adopting ISO Standards [ISO 13485:2016] which allow companies to compete in the global marketplace.

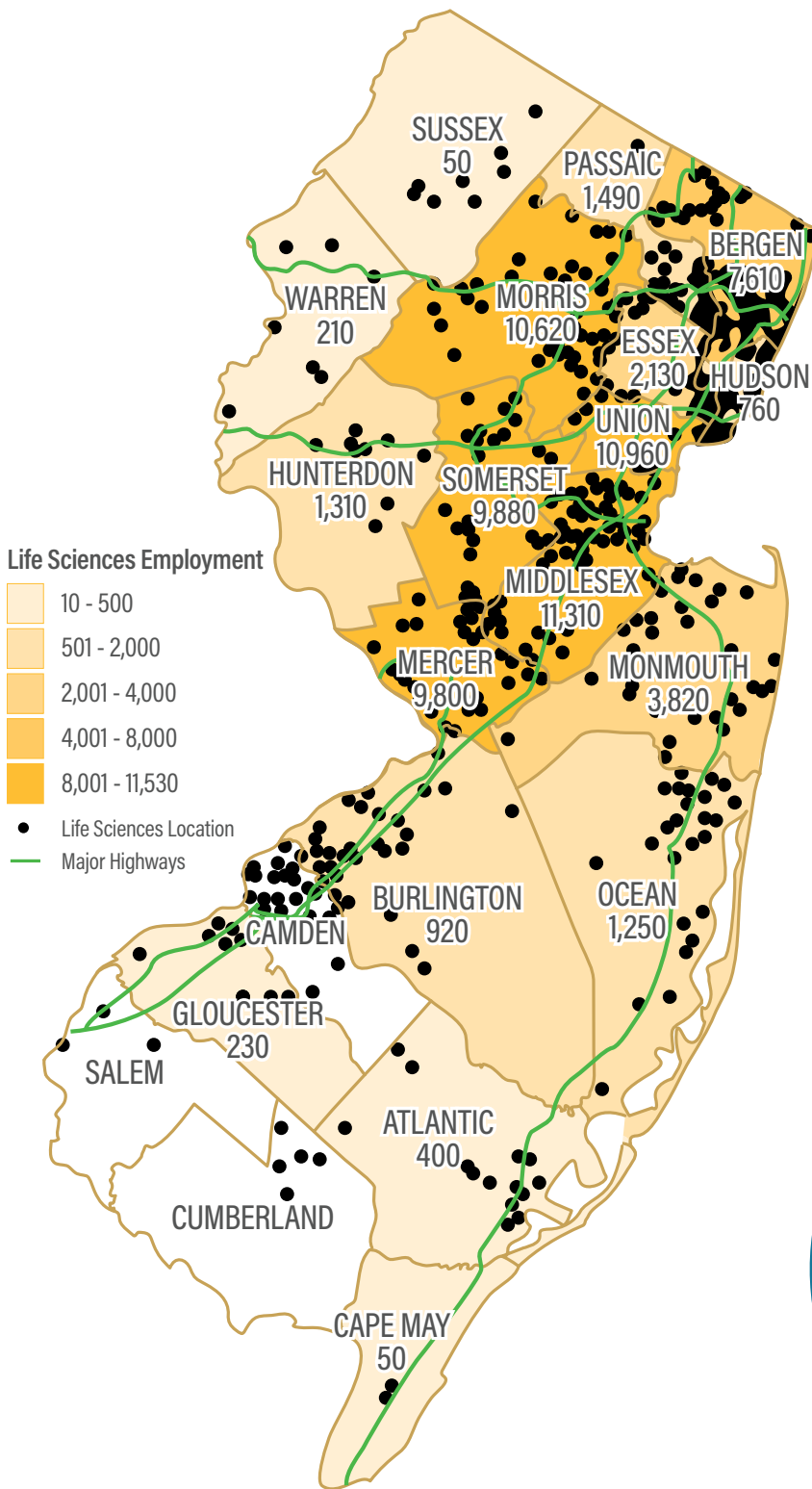
New Jersey's life sciences community — composed of biopharmaceutical, biomaterials, medical technology, medical device, and diagnostics companies — has contributed greatly to New Jersey's economy and to advancing human and animal health.

According to HealthCare Institute of New Jersey (HINJ):

- New list of top states for medical devices: New Jersey is #9 nationally, according to a new report in Medical Design & Outsourcing. New Jersey was #10 on that list last year.
- New Jersey leads the nation with 139 FDA-registered biopharmaceutical manufacturing facilities. California is #2 with 135 facilities. Pennsylvania is #3 with 89 operations.
- New Jersey had 792 active clinical trials at last count, and nearly 17,000 patients participated. The total economic impact of those clinical trials was estimated at nearly \$880 million, which ranks New Jersey #15 nationally.
- 49 new medications for heart disease and stroke currently are being developed by New Jersey companies.

No other state has produced as many of the 200 new heart disease and stroke medications now in development nationwide.

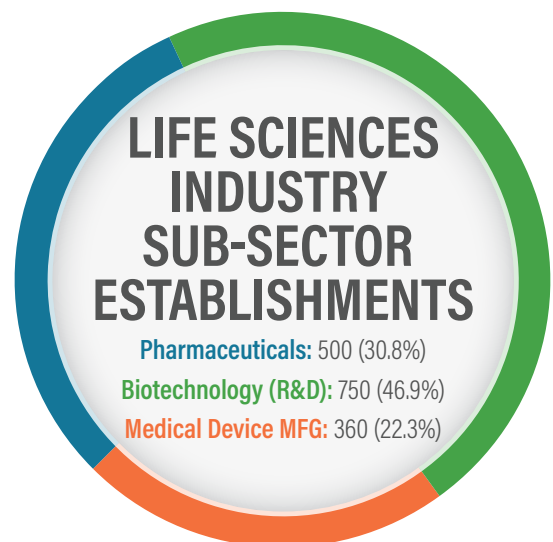
# LIFE SCIENCES EMPLOYMENT AND ESTABLISHMENT LOCATIONS BY COUNTY, 2019



The Life Sciences Cluster has an enormous impact on providing high quality jobs and adding significant value to the State's economic activities.

Recent New Jersey highlights included:

- **EMPLOYMENT TOTAL:**  
Averaged 76,430 or 2.2 percent of all private sector workers in the state for 2019. Nationally, the proportion was just 1.2 percent.
- **WELL PAYING JOBS:**  
Paid over \$12.4 billion in 2019 annual payrolls; 5.3 percent of the state's total wages.
- **ESTABLISHMENTS TOTAL:**  
Nearly 1,600 in 2019. Over a five-year period (2014-2019) even with numerous industry related reorganizations New Jersey's pharmaceutical component still grew (by +15.1%).



Source: Quarterly Census of Employment and Wages, 2019 Annual Average  
Prepared by: NJ Department of Labor & Workforce Development, Office of Research and Information  
September, 2020

## Pharmaceuticals

- Pharmaceutical and medicine manufacturing
- Soap, cleaning compound, and toiletry manufacturing
- Establishments that are primarily engaged in manufacturing or distribution of drug related products
- Pharmaceutical & medicine manufacturing (-17.7%) and toiletry preparation manufacturing (-3.6%) encountered a decline from 2014 to 2019, while cleaning compound and other detergent manufacturing recorded an increase of 3.8%.

## BioTechnology (R&D)

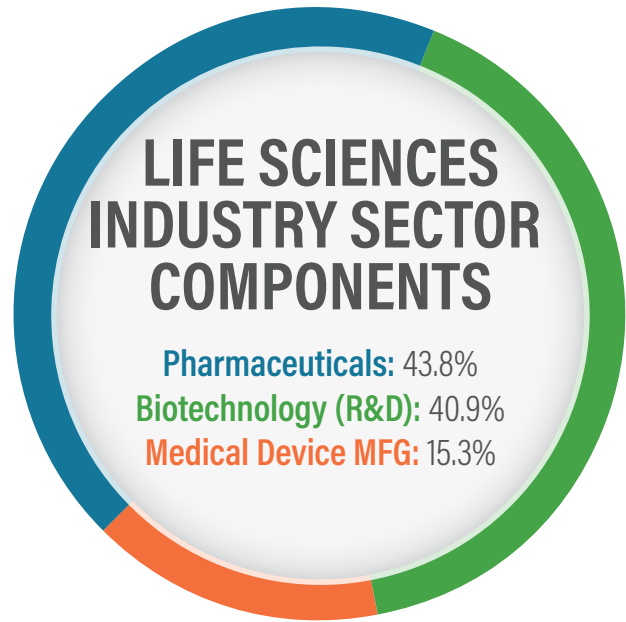
- Scientific research and development services
- Consists of service-related establishments primarily engaged scientific research, development and/or analytic.
- Research & development in biotechnology (87.9%) and social science & humanities research (11.71%) both experienced a significant growth over the 5 year period from 2014 to 2019.

## Medical Devices

- Medical equipment and supplies manufacturing
- Establishments primarily engaged in manufacturing medical equipment and supplies.
- Surgical appliance and supplies manufacturing grew (+12.4%) over the 5 year period from 2014 to 2019, while dental laboratories (-7.2%) and surgical and medical instrument manufacturing (-13.4%) both declined during the same period

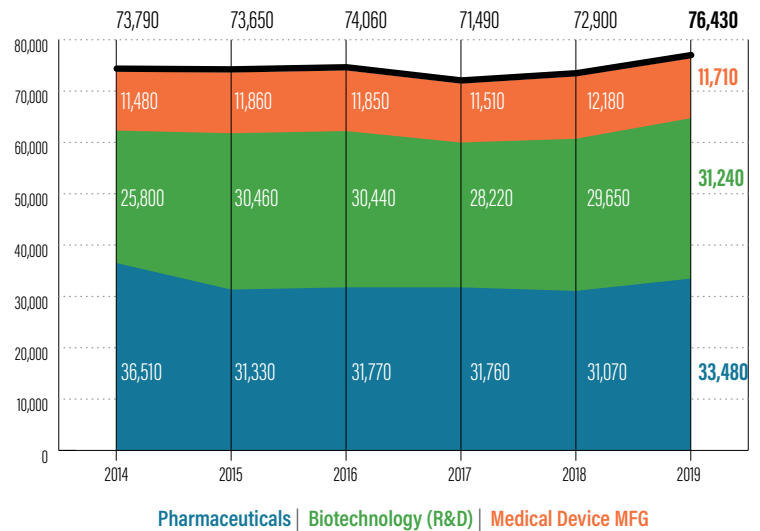
With an average of 76,400 workers employed in this NJ cluster in 2019, the employment over the 5 year period experienced an increase of 3.6 percent.

The pharmaceutical component experienced the largest total percent loss over the 5 year period (-8.3%).



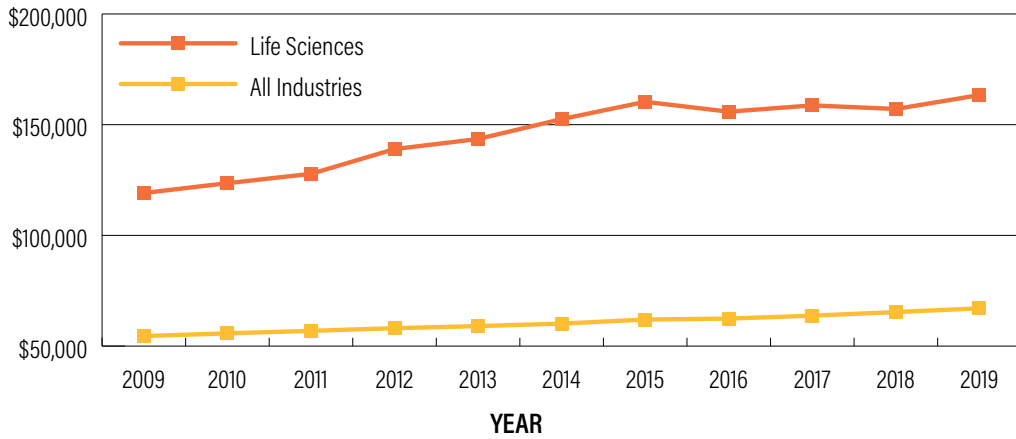
Source: NJ Department of Labor & Workforce Development, Quarterly Census of Employment and Wages, 2019 Annual Averages  
Prepared by: New Jersey Department of Labor and Workforce Development, November 2020

## EMPLOYMENT TRENDS 2014-2019



Source: NJ Department of Labor & Workforce Development, Quarterly Census of Employment and Wages, 2014-2019 Annual Averages  
Prepared by: New Jersey Department of Labor and Workforce Development, November 2020

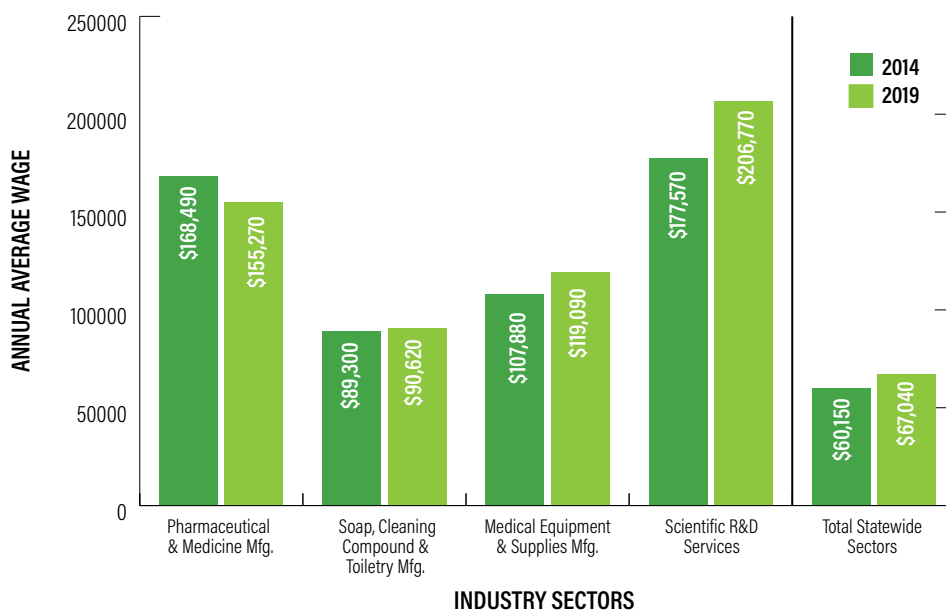
## NEW JERSEY LIFE SCIENCES INDUSTRY CLUSTER ALL PRIVATE SECTOR VS. LIFE SCIENCES ANNUAL AVERAGE WAGE



Source: NJ Department of Labor & Workforce Development, Quarterly Census of Employment and Wages, 2009-2019 Annual Averages  
Prepared by: New Jersey Department of Labor and Workforce Development, November 2020

- Wages in the life sciences sector have averaged 240% of the statewide annual average wage since 2009.
- Annual average wages for the sector have risen +37.1% over the ten year period from 2009 to 2019.
- This sector's average annual wage was \$163,370 in 2019, which was 143.7 percent higher than the state's total private sector's average annual wage of \$67,040.
- All three of this sector's components had 2019 wages that were significantly higher than the state's total average annual wage.

## NEW JERSEY LIFE SCIENCES INDUSTRY CLUSTER 5-YEAR AVERAGE ANNUAL WAGE TREND



Source: NJ Department of Labor & Workforce Development, Quarterly Census of Employment and Wages, 2014-2019 Annual Averages  
Prepared by: New Jersey Department of Labor and Workforce Development, November 2020

## NORTHERN REGION

- Bergen, Essex, Hudson, Hunterdon, Morris, Passaic, Somerset, Sussex, Union, and Warren Counties
- Annual average wage for this region increased 2.9 percent from 2014 - 2019.
- A majority of the Life Sciences industry related establishments can be found along major highways in New Jersey within a close proximity to New York, NY.
- Represent more than half of the life sciences employment in New Jersey in 2019.

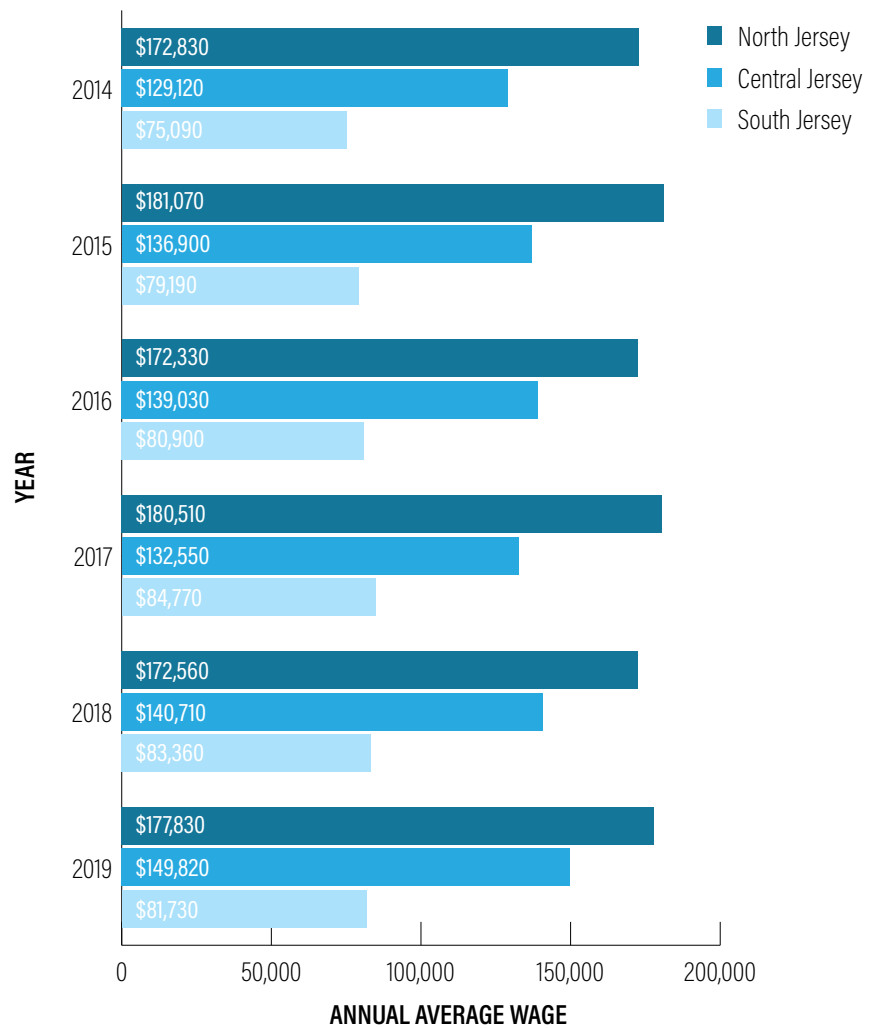
## CENTRAL REGION

- Mercer, Middlesex, Monmouth, and Ocean Counties
- Annual average wage for this region increased 16 percent from 2014 - 2019.
- These counties account for more than a quarter of all establishments in the life sciences industry sector in New Jersey.
- Employment for these four counties makes up nearly one third of employment in the life sciences industry sector.

## SOUTHERN REGION

- Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, and Salem Counties
- Annual average wage for this region increased 8.8 percent from 2014 - 2019.
- Having a close proximity to Philadelphia, PA these three counties account for 7 percent of all life sciences industry establishments in New Jersey.
- The three counties have slightly more than 3,200 employment.

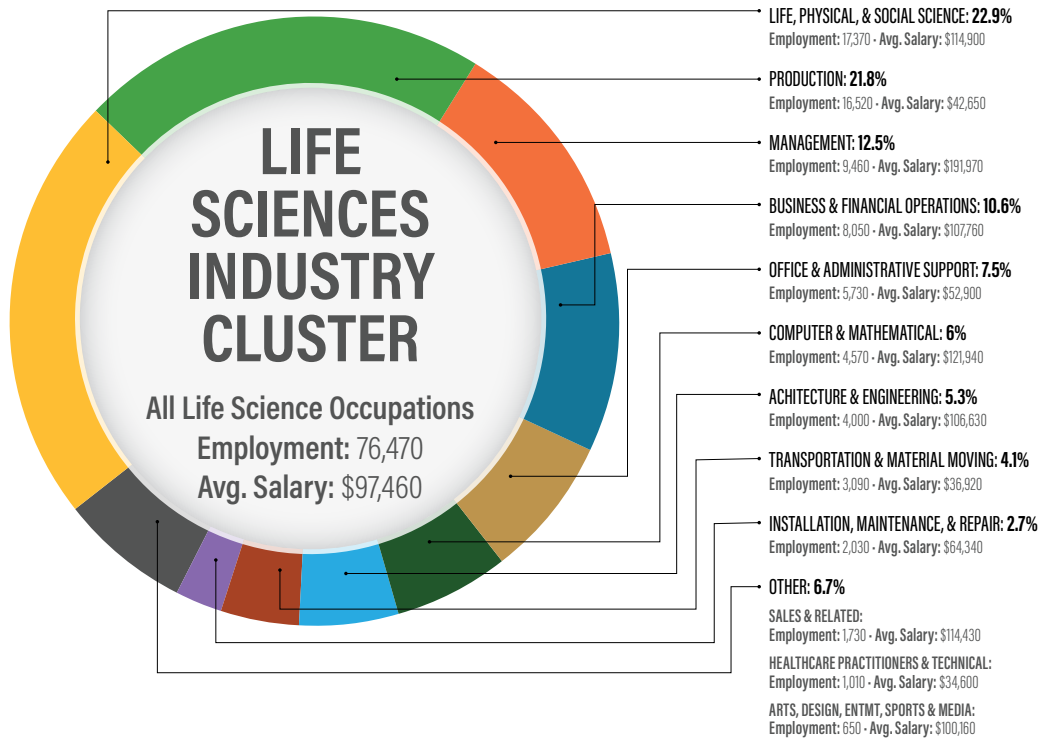
## NEW JERSEY LIFE SCIENCES INDUSTRY CLUSTER ANNUAL AVERAGE WAGE BY REGION 5-YEAR TREND



Source: NJ Department of Labor & Workforce Development, Quarterly Census of Employment and Wages, 2014-2019 Annual Averages  
Prepared by: NJ Department of Labor & Workforce Development



## NEW JERSEY LIFE SCIENCES INDUSTRY CLUSTER TOP OCCUPATIONAL GROUPS, 2019



## LIFE SCIENCES INDUSTRY SECTOR COMPONENTS, 2019

Occupational Group	Pharmaceutical	Biotechnology (R&D)	Medical Devices
Life, Physical, and Social Science	18.8 %	<b>35.2%</b>	
Production	<b>33.2%</b>		<b>44.2%</b>
Management	12.1%	14.9%	6.9%
Business and Financial Operations	7.4%	14.0%	10.7%
Office and Administrative Support	8.1%	6.1%	10.0%
Computer and Mathematical	3.2%	10.4%	
Architecture and Engineering		6.4%	9.2%
Transportation and Material Moving	6.1%		8.7%
Installation, Maintenance, & Repair	3.8%		
Sales and Related		1.8%	
Healthcare Support		3.2%	
Other	7.4%	8.1%	10.4%

Source: NJ Department of Labor & Workforce Development, Occupational Employment Statistics, May 2019  
Prepared by: NJ Department of Labor & Workforce Development, November 2020



## TRANSPORTATION, LOGISTICS, AND DISTRIBUTION

Whether by land, air or sea, New Jersey offers an impressive array of logistical and distribution channels to move goods around the country and the world. A distribution center in central New Jersey can reach more than 38 million consumers within a 2-hour drive. It's possible to reach 33% of the US population within a day's drive from any location in the Garden State, which makes it an ideal base for companies that need distribution of their products on the East Coast.

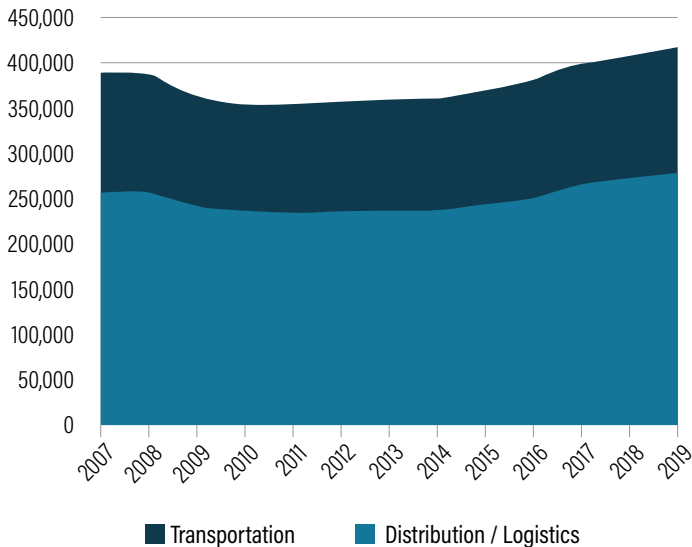
### According to ChooseNJ:

- New Jersey has the #1 largest maritime cargo center on the East Coast
- New Jersey is the #2 busiest seaport in North America
- There are 2,970 miles of interstates and highways
- There are 13 commuter rail lines
- There are 1,000 miles of freight line
- New Jersey has 5 Foreign Trade Zones (FTZs) strategically located throughout the State, including Port Newark/Elizabeth Marine Terminal's FTZ #49. Spanning nearly 4,500 acres, FTZ #49 is one of the largest contiguous foreign trade zones in the U.S.
- Newark Liberty International Airport, JFK International Airport, LaGuardia Airport and Philadelphia International Airport represent the #1 airport system in the U.S. with ~600 nonstop destinations.

## The Transportation, Logistics & Distribution (TLD) cluster consists of two major components

The transportation, distribution and logistics industry cluster consists of industries within the wholesale trade, transportation and warehousing sectors. For the sake of analysis, these industries can be further grouped by those related to **transportation** and those related to **logistics and distribution**.

### NEW JERSEY'S TLD (PRIVATE) SECTOR EMPLOYMENT: 2007-2019



Source: NJ Department of Labor & Workforce Development, Quarterly Census of Employment and Wages Annual Averages. Prepared by: NJ Department of Labor & Workforce Development, October 2020

DISTRIBUTION / LOGISTICS SEGMENT		
NAICS	Industry	Employment
4931	Warehousing and storage	61,456
4244	Grocery and related product wholesalers	33,010
4234	Commercial equipment merchant wholesalers	29,763
4236	Electric goods merchant wholesalers	16,395
4242	Druggists' goods merchant wholesalers	15,382
4238	Machinery and supply merchant wholesalers	15,028

TRANSPORTATION SEGMENT		
NAICS	Industry	Employment
4841	General freight trucking	28,493
4921	Couriers	26,654
4854	School and employee bus transportation	11,623
4885	Freight transportation arrangement	11,457
4842	Specialized freight trucking	9,427
4881	Support activities for air transportation	6,419



**414,613**  
**TLD WORKERS**

TLD employed 11.8 percent of the state's private sector workers.



**14.2% 5-YEAR**  
**JOB GROWTH**

Over the past 5 years (2015-2019) employment in this cluster has seen strong annual job growth rates ranging between 2.0% to 4.3%.



**\$73,253**  
**AVG WAGE**

The annual average New Jersey private sector wage for TLD in 2019 was \$73,252. Total wages for the TLD cluster accounted for 12.9 percent of private sector wages statewide.



**\$66.9 BILLION**  
**GDP (STATE)**

In 2019, the sixth highest dollar amount per state nationwide. NJ accounted for almost four percent (3.94) of the nation's GDP generated from TLD.

## Infrastructure: Sea



### Port of New York & New Jersey

The Port of NY/NJ is an economic power house for NJ. One-third of the nation's GDP is produced within 250 miles.

For the State of New Jersey, the Port of NY/NJ supported

- Nearly 205,000 direct jobs
- Over 428,300 total jobs in the State
- More than \$29.3 billion in personnel income
- Nearly \$80.4 billion in business activity
- Nearly \$9.8 billion in federal, state, and local tax revenues

*(Source: North Jersey Transportation Planning Authority Impact Study)*

It is the largest port on the East Coast (2018).

*(Source: Global Trade)*

2nd largest container port in the U.S handling 4,238,107 cargo containers, valued at nearly \$206 billion.

*(Source: New York Shipping Association Port Authority of NY/NJ Journal of Commerce)*

### Port of Camden, Paulsboro & Salem

Cargo off loaded at these terminals are within the industrial/commercial epicenter of 100 million Americans and the industrial heartland of America and eastern Canada.

The SJPC is a pillar of the Delaware River maritime complex, a \$776 billion economic dynamo supporting 191,000 jobs across three states. The SJPC and the 40+ port related businesses are among Camden's largest employers and taxpayers 3,400 family sustaining jobs.

SJPC specializes in labor intensive bulk and break bulk cargo. It has become a leading port for plywood, cocoa beans, and recycled metals.

*(Source: South Jersey Port Corporation, 2019)*

## Infrastructure: Land



New Jersey's excellent land transportation network includes approximately 39,000 miles of public roadways, which trucks carry 75 percent of the more than 600 million tons of goods moved through the state each year.

New Jersey's 952 miles of freight railroads serves as an alternative to move cargo more efficiently and timely through the region and across the nation.

*Source: NJ Transit 2019 Annual Report & Bureau of Transportation Statistics*

## Infrastructure: Air



### Newark Liberty International Airport

Newark Liberty serves approximately 50 carriers. It includes United Airlines, which is considered a major employer in the industry. The airport is also a major cargo hub. In 2019 the airport handled nearly 825,000 tons of air cargo. It ranked 14<sup>th</sup> among the top U.S. airports 2018 by landed weight of all cargo operations. This does not include aircraft carrying passengers that also may be carrying cargo.

A recent 2019 report revealed that about 23,000 people are employed at Newark Airport. It also found that the airport contributes \$33.6 billion in annual economic activity to the New York New Jersey metropolitan region, generating 180,000 total jobs and more than 11 billion in annual wages.

### Teterboro Airport

The airport supports more than 5,000 jobs paying \$362 million in annual wages, and generates nearly \$1.2 billion in annual sales activity.

### Atlantic City International Airport,

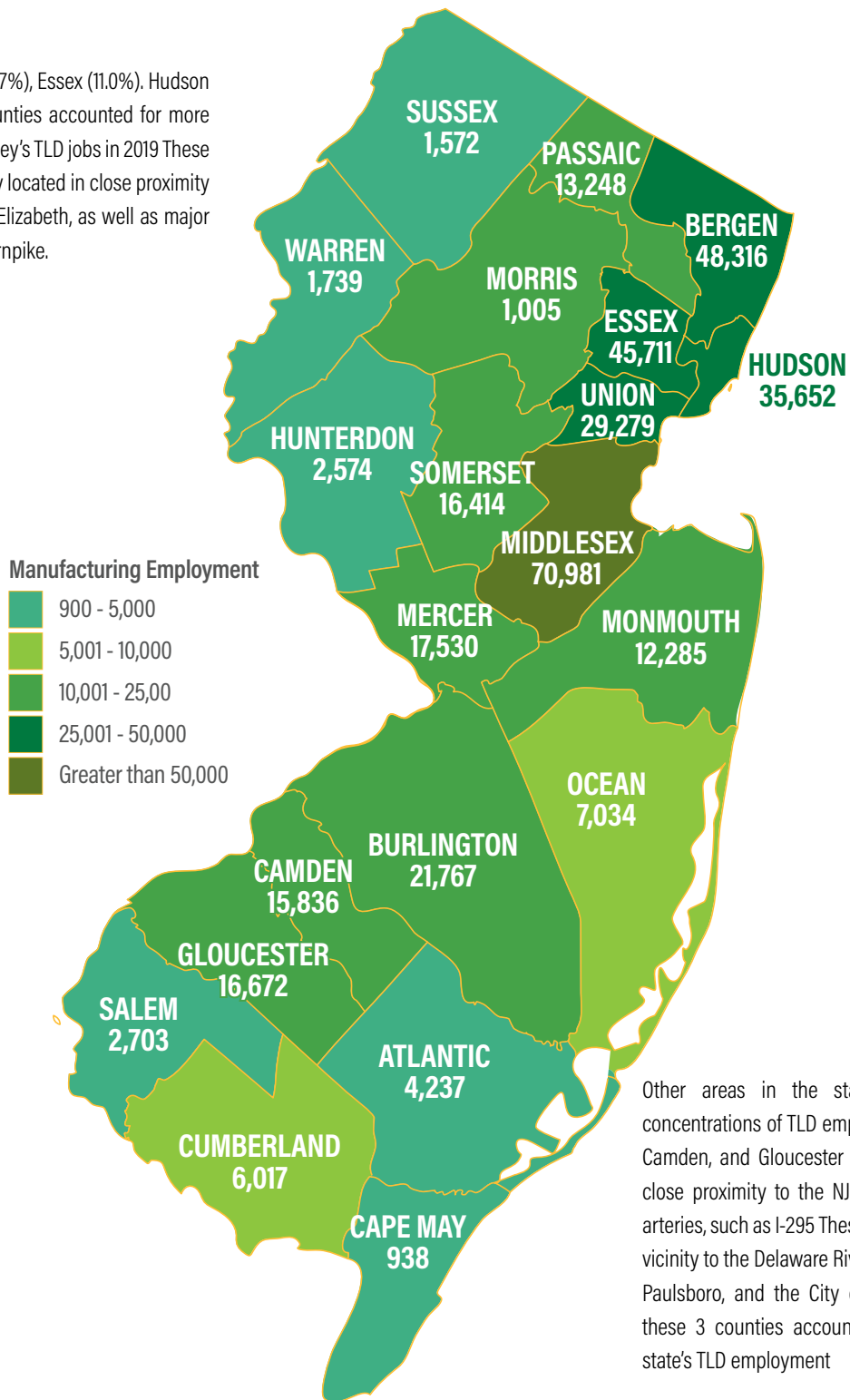
The airport contributed \$678 million in economic activity to the New Jersey region, employs over 2,700 people, and provided over 7,700 jobs to the region. Commercial and general aviation activities at Atlantic City International Airport provides over 700 jobs.

**WILLIAM J HUGHES TECHNICAL CENTER**, home to the Federal Aviation Administration and located at the Atlantic City International Airport, is a vital part of the nation's air transit system. The Technical Center, which is a premier aviation research, development, test and evaluation center, is at the forefront of development for NextGen, the Federal Aviation Administration's new National Airspace System.

*(Source: Port of NY/NJ Airport Traffic Report, 2019 Bureau of Transportation Statistics)*

## TLD EMPLOYMENT BY COUNTY, 2019

Middlesex (17.1%), Bergen (11.7%), Essex (11.0%). Hudson (8.6%) and Union (7.1%) counties accounted for more than half (55.5%) of New Jersey's TLD jobs in 2019. These counties are advantageously located in close proximity to the ports of Newark and Elizabeth, as well as major highways, such as the NJ Turnpike.

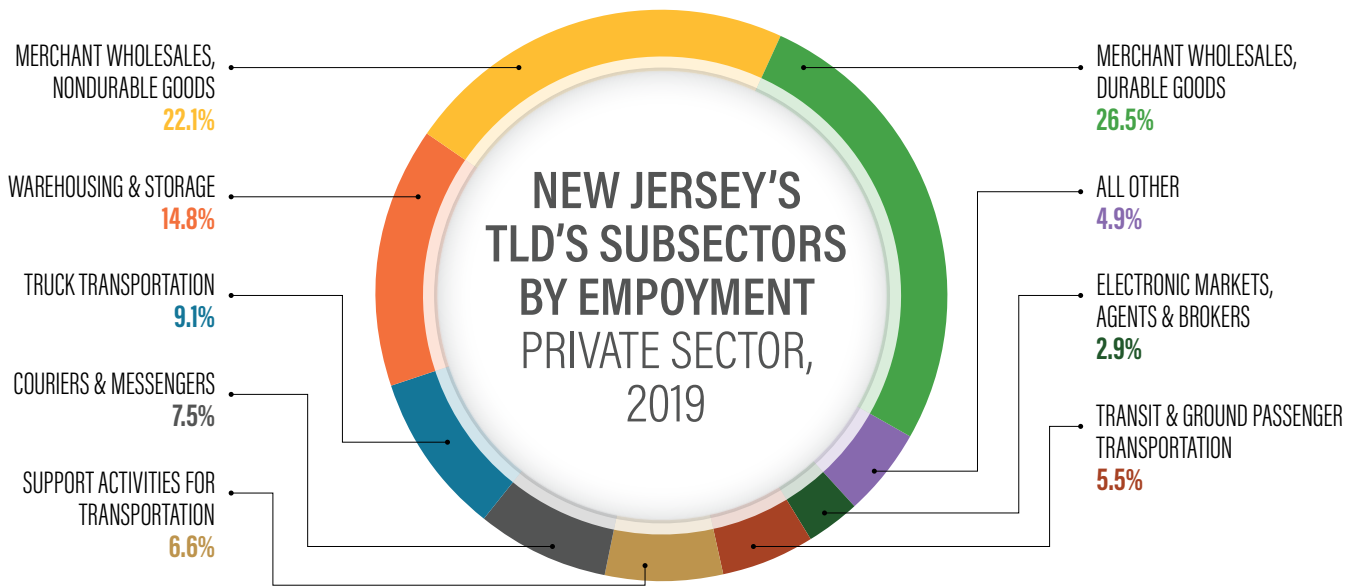


Other areas in the state that have substantial concentrations of TLD employment include Burlington, Camden, and Gloucester counties, which are also in close proximity to the NJ Turnpike, as well as major arteries, such as I-295. These three counties are in close vicinity to the Delaware River, the Ports of Camden and Paulsboro, and the City of Philadelphia. Collectively, these 3 counties accounted for 13.0 percent of the state's TLD employment.

Mercer County is becoming more prominent as a center of TLD employment. Jobholding has almost doubled in the county since the end of the 'Great Recession' from 8,531 in 2009 to 17,527 in 2019.

Source: NJ Department of Labor & Workforce Development, Quarterly Census of Employment and Wages 2019 Annual Averages. Prepared by: NJ Department of Labor & Workforce Development, November 2020

## In 2019, TLD's three top-ranking industry subsectors accounted for 63.4 percent of total jobs



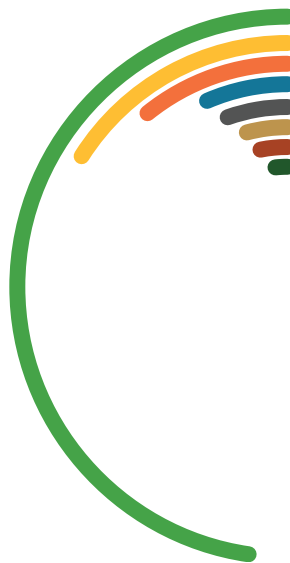
Source: NJ Department of Labor & Workforce Development, Quarterly Census of Employment and Wages Annual Averages. Prepared by: NJ Department of Labor & Workforce Development, October 2020

Wholesalers of Durable Goods and Wholesalers of Nondurable Goods were TLD's largest industry employers. Combined, they accounted for 48.6 percent of TLD employment.

Due to significant growth in ecommerce, New Jersey's Warehousing and Storage subsector has placed it as the State's third largest TLD industry employer, accounting for 14.8 percent of New Jersey's TLD jobs.

The transportation and material moving occupational group accounted for the greatest proportion of jobs in the TLD industry cluster attributing towards nearly half of TLD's total employment.

More than half (55.9%) of the jobholding in the transportation and material moving occupation were employed in the 'Warehousing and Storage,' 'Merchant Wholesales, Nondurable Goods,' or 'Truck Transportation' industry

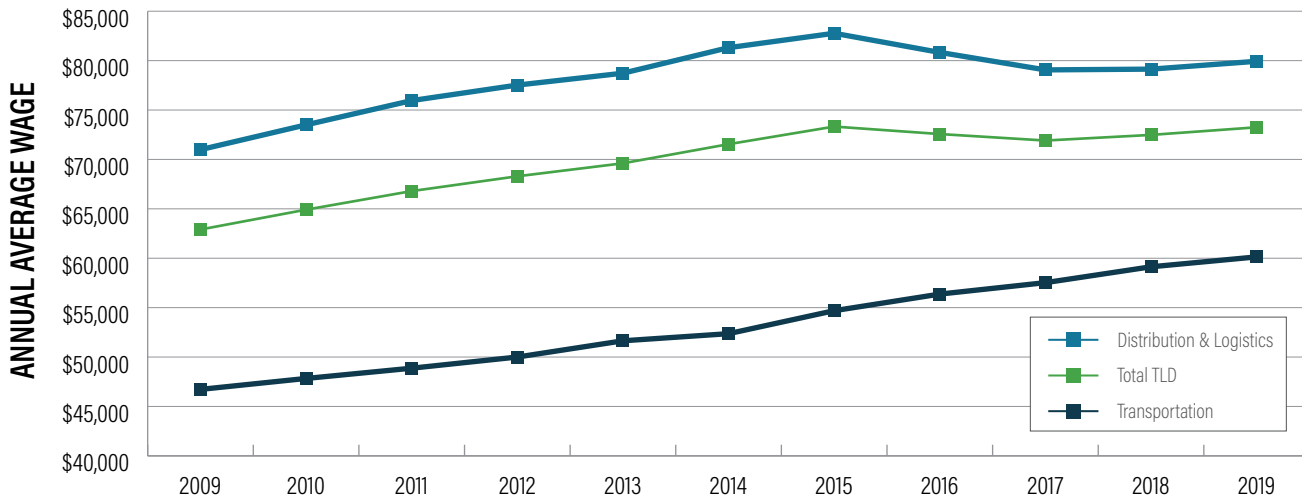


## TLD EMPLOYMENT BY MAJOR OCCUPATIONAL GROUP 2019

TRANSPORTATION AND MATERIAL MOVING:	190,350 (47%)
OFFICE AND ADMIN SUPPORT:	63,900 (16.0%)
SALES AND RELATED:	42,980 (10.8%)
MANAGEMENT:	26,090 (6.5%)
BUSINESS AND FINANCIAL OPERATIONS:	21,630 (5.4%)
INSTALLATION, MAINTENANCE, REPAIR:	16,230 (4.1%)
PRODUCTION:	12,310 (3.1%)
COMPUTER & MATHEMATICAL:	6,290 (1.6%)

Source: NJ Department of Labor & Workforce Development, Occupational Employment Statistics Wage Survey, 2018 data. Prepared by: NJ Department of Labor & Workforce Development, October 2020

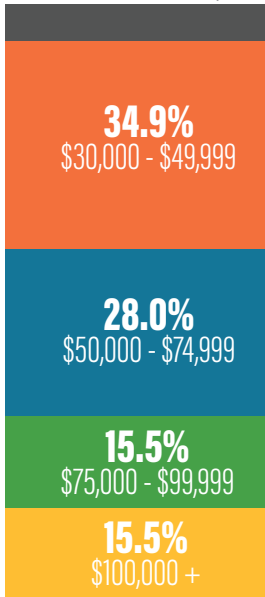
## DISTRIBUTION/LOGISTICS VS TRANSPORTATION WAGES, 2009-2019



Source: NJ Department of Labor & Workforce Development, Quarterly Census of Employment and Wages Annual Averages. Prepared by: NJ Department of Labor & Workforce Development, November 2020

## OCCUPATIONAL EMPLOYMENT SALARY RANGE

6.1% Less than \$29,999



Average annual wages for workers in the distribution/logistics component ranged anywhere from 32.9 percent to 55.4 percent higher than those for transportation segment workers over the 10-year (2009–2019) period. Overall, total TLD wages increased at an average of 1.7 percent year to year during the same period

### The vast majority of New Jersey's TLD workers earn a salary between \$30,000 - \$49,999

Analysis of work related occupations by salary range shows that most workers are employed within one third of the occupations that earn an average salary between \$30,000 to \$49,999. These occupations account for nearly two thirds of TLD's employment

A little over a quarter of the occupations in the cluster have an average salary of \$50,000 - \$74,999 with approximately 11.1 percent of all TLD workers employed in those occupations

Source: NJ Department of Labor & Workforce Development, Occupational Employment Statistics Wage Survey, 2019 data. Prepared by: NJ Department of Labor & Workforce Development, October 2020

# THE ONLY SAFE WAY TO REVISIT 2020 NJMEP REVIEWS A TURBULENT YEAR

2020 is not going to have a conventional recap. The year was far from traditional. 2020 tested the resolve of every industry in New Jersey, the United States, and around the globe. Agility and adaptability were both essential to get businesses through the confusing and uncertain environment COVID-19 presented.

Manufacturing stepped up in a big way. Global supply chains fractured, and local manufacturers were tasked with picking up the slack. Events were postponed, rescheduled, and eventually transformed into entirely virtual experiences. Local manufacturers not only went above and beyond to fill supply chain voids but also showed their unwavering support for the local community. 2020 was challenging but it is also riddled with triumphs and successes.

Before reflecting on the past year, use the right perspective. With all the tragedies that took place, incredible people and organizations stood strong in the face of uncertainty. Amazing successes were realized in the face of chaos. Let's remember all those that were horrendously impacted by this terrible disease, but the industry and New Jersey must understand the progress that was made in such a trying time and plan to continuously improve.



## Essential Manufacturing

Shut down orders caused panic throughout the manufacturing community. At the start, available information was unclear and often inaccurate. NJMEP wasted no time ensuring manufacturers had a trusted resource they could turn to and find answers to questions that would impact their business, every single employee, and their families.



A revision of the MADE in New Jersey program coupled with a dramatic outreach effort to state government gave form to the Essential Manufacturing logo. NJMEP leadership spent their days and nights working with state and federal decision-makers to get answers to the questions manufacturers were asking. NJMEP spearheaded a collaborative effort to highlight the importance of declaring all New

Jersey manufacturing as essential. The essential manufacturing logo became a symbol of the industry and its resilience in 2020. Manufacturers displayed the logo on their buildings and websites. New Jersey's manufacturers are continuing to help pull the nation forward and have been doing so throughout the past year.

## CARES ACT and New Support Programs

To stem the fallout from the initial wave of COVID-19, the CARES Act was introduced. Part of the CARES ACT funds were distributed to NIST and the National Network of MEP centers. Each center was to use the funds to aid their state manufacturers and the workforce. Two unique programs were born in New Jersey, Project 160, and Tri50.

### PROJECT 160

The goal of Project 160 is to train and upskill 160 individuals to bolster the workforce during such an uncertain time. Manufacturing was already struggling with a talent pool issue. COVID-19 exacerbated this workforce challenge. Project 160 allows manufacturers to train their employees at no cost in four (4) fundamental Manufacturing Skills Standard Council (MSSC) modules. Additionally, manufacturers can sign up to interview newly trained potential hires. Workforce is still the primary concern for the industry. Project 160 is the solution.



### TRI50

In a time where no one truly knows what the next month will hold, costs

need to be kept low. Manufacturers can now take part in Tri50 programs. Tri50 includes a plethora of consulting and training services and includes 20 hours of complimentary offerings. NJMEP developed these programs to be completely customizable so nearly any challenge can be addressed at a dramatically reduced cost.

## COVID Virtual Response

2020 was the year when telecommunication was pushed to its absolute limit. A digital screen may never replace a handshake or an in-person meeting, but business needed to continue. The only option was to learn how to communicate effectively and naturally through a plethora of digital platforms.

COVID-19 created challenges when it came to hosting the variety of in-person training opportunities and industry-critical annual events hosted by NJMEP. Workshops, open enrollment training courses, Jersey Guys Golf Outing, and Manufacturing Day we all quickly switched over to virtual counterparts.



### VIRTUAL TRAINING AND CONSULTING

NJMEP offers over 300 unique training courses specifically for manufacturing professionals. Administrative, line workers, production managers, the c-suite, every aspect of a manufacturing operation can find valuable courses to upskill themselves and their workforce. Once COVID-19 created the need to stop all in-person training, virtual options were developed. It took the entire team and close collaboration with industry experts to develop effective virtual training opportunities. After a few short weeks, and the entire in-person training catalog was switched to virtual options. Now NJMEP can effectively offer nearly the entire course catalog in a virtual environment.

### JERSEY GUYS VIRTUAL

A golf outing isn't the same without the open air and beautiful fairways of the Minebrook Golf Club. Without knowing if golf courses were going to be open in July, and with normal attendance exceeding 100 individuals, a digital celebration was created instead.



Jersey Guys Golf Outing raises money for foodbank and NJMEP/Team Eagle Foundation-sponsored scholarships. These scholarships help veterans and families of active duty military to pursue higher education opportunities or vocational schooling. This event was too important to let pass by.

An online trivia game was developed to bring the community together and raise money for these incredible initiatives. The fifth annual Jersey Guys Golf Outing was not what anyone expected. Even though no one could have imagined an online trivia game would take the place of a golf outing, it brought smiles to people's faces during an impossibly challenging time. Not only did attendees have fun; over \$17,000 was raised for the Community FoodBank of New Jersey, Fulfill NJ, The Anthony DeSantis 'Service to America' scholarship, as well as the Bob Beaman 'B-Involved' scholarship.

### MANUFACTURING DAY VIRTUAL

'MADE in New Jersey' Manufacturing Day is New Jersey's largest manufacturing networking event of the year. Average attendance exceeds 600 manufacturing professionals and that audience grows year over year. COVID-19 restrictions made it impossible to host the event at the Marigold in Somerset, New Jersey in 2020. Manufacturing Day 2020 needed to be redesigned and reimaged.

Manufacturing is playing and has played a massive role in the state's ability to push through this natural disaster. All manufacturing is deemed essential and has been allowed to remain open throughout the pandemic. The frontline workers in the industry put themselves at risk to create safer working practices and at the same time produce the critical components, products, and equipment the world depends on, needed to be honored in some way. These efforts needed to be recognized.



The awards component of Manufacturing Day was removed. Instead of the normal process where manufacturers in six distinct categories; Manufacturer of the Year in Large, Medium, Small, Start Up, Innovator, and "Manufacturing Cares" for charitable contributions. Every manufacturer deserved recognition this past year. Each one stepped up tremendously. It would have been unjust to only call out a select few. Virtual 'MADE in New Jersey' Manufacturing Day was developed to celebrate the industry, its companies, and the workers.

A song, "Unsung Heroes" was produced by Andrew White, a professional musician that showcased the work these incredible New Jersey companies did during the pandemic. This became the Manufacturing Anthem. The song was debuted at Manufacturing Day, live in front of the over 800 virtual attendees. It was played over a video produced by NJMEP staff which featured New Jersey manufacturers at work and the Lower Trenton Bridge with the words "Trenton Makes, the World Takes" illuminated in NJMEP colors.

## Manufacturing Cares

Local food banks were stretched to their absolute limit in 2020. In some areas, the need for food increased by over 60%. Organizations like the Community FoodBank of New Jersey and Fulfill NJ do an unbelievable job helping supply hungry New Jersey families with food on a normal year. In 2020 they were facing a staggering increase in demand but were also forced to wrestle with the added challenge of not being able to accept volunteers.

Every year NJMEP, CIANJ, and Employment Horizons collaborate on a food drive. No one was sure if support would continue at the start of the pandemic. With the economy losing its footing, it wasn't clear if people would have extra food or money to donate to these amazing operations. That was far from the reality.

The entire manufacturing industry stepped up and gave back to their local communities in the most incredible way imaginable. 'Manufacturing Cares' Food drive raised over \$100,000 in cash in 2020 alone. Every \$1 donated equals 3 meals for a hungry New Jersey resident in need. This food drive raised over 312,000 meals for our family, friends, and neighbors. NJMEP, Madison Rotary, Employment Horizons, CIANJ, and the manufacturing industry as a whole each contributed to this incredible effort.

## 2020 Year in Review

2020 was an unforgettable year. COVID-19 disrupted business and home life. There is no denying the fact that there were new challenges presented to both businesses and individuals. However, the world is overcoming these challenges and continues to move forward. Manufacturing is remaining agile to fill newly created voids in the market. NJMEP is remaining flexible to continue providing critical support to the industry. Disruptions are nothing new for manufacturing. No matter what 2021 holds, the industry can look back at 2020 and know that there are ways to remain competitive, even in a turbulent economic landscape.

Visit [NJMEP.org](http://NJMEP.org) to stay up-to-date with the latest programs, initiatives, and community-centric events that drive manufacturing forward.



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