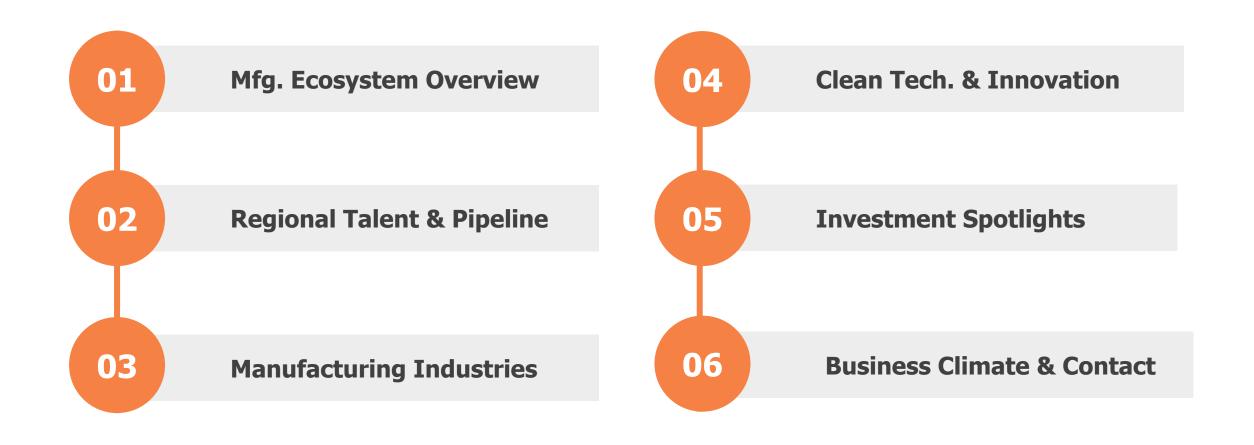




Detroit Region is the Top Advanced Manufacturing Hub

Advanced Manufacturing Industry Cluster: Profile Sections







1) Advanced Manufacturing Ecosystem

Industry Cluster Snapshot and Highlights

The Detroit Region is a Top Advanced Manufacturing Hub



Move Here, Move the World.

Building the Future in the Detroit Region.

The Detroit Region is a world leader in innovating how goods and products are made, leading the integration of new technology into advanced manufacturing. This location is powered by high-skilled talent with institutional knowledge and a vast business network in manufacturing.

As the leading location for auto manufacturing, mobility talent, and a growing aerospace sector, all powered by Industry 4.0 technology, the Detroit Region is the place for cutting-edge advanced manufacturing.





Advanced Manufacturing: Industry Cluster Snapshot





DETROIT REGION INDUSTRY METRICS, 2023:

290,123 Industry Jobs

1.5 Jobs Density / Location Quotient

8,066 Businesses

\$56 Billion Gross Regional Product

\$82,614 Average Wages

Sources: Lightcast. Note: Industry cluster definition is the Manufacturing Two-Digits 31-33









The Detroit Region is a Top Advanced Manufacturing Hub







NOTABLE DETROIT METRO MANUFACTURING TALENT RANKINGS, 2023:

#5 FOR TOTAL MANUFACTURING TALENT

More than 290,000 Manufacturing Talent in the Detroit Region

#1 FOR ASSEMBLERS & FABRICATORS TALENT

More than 72,000 Workers & One of the Lowest Talent Turnover Rates

#1 FOR TOOL & DIE MAKERS TALENT & DENSITY

Nearly Seven-Times More Talent than Average U.S. Region (6.5 Jobs LQ)

#1 FOR MANUFACTURING TECH TALENT

Talent Density Ranking Out of the Top U.S. Technology Markets by CBRE

#1 FOR DEPLOYED INDUSTRIAL ROBOTS

8.5 Robots Per 1,000 Workers, Three Times More than the National Average 2018

Detroit is a Top Location For Manufacturing Talent

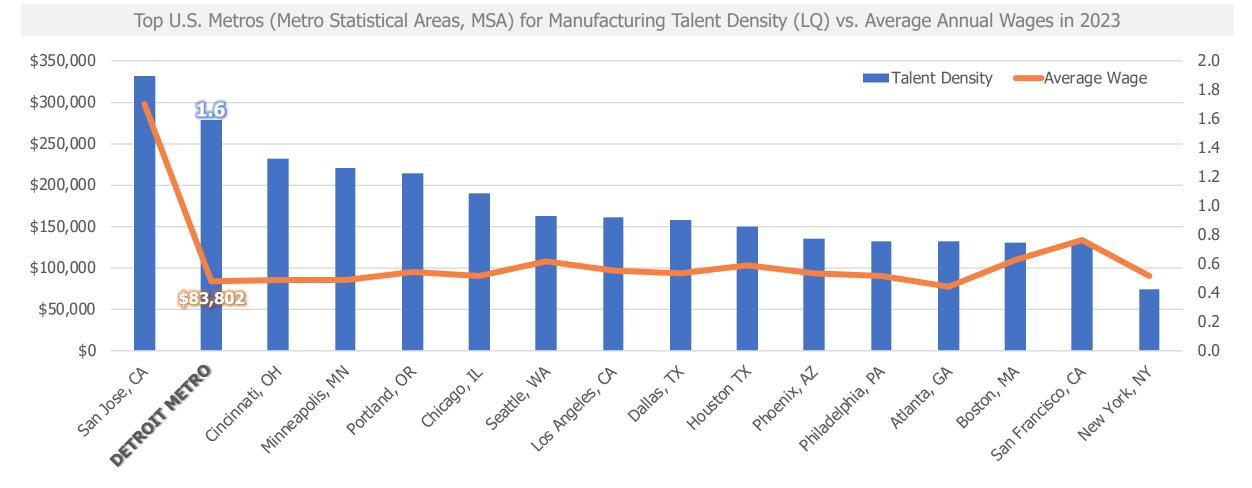


#5 FOR TOTAL MANUFACTURING TALENT

Detroit Metro More than 250,000 Mfg. Workers

#2 FOR MANUFACTURING DENSITY & AFFORDABILITY

Nearly Two-Times More Talent & 72% Less Than Most Expensive MSA



The Region's Manufacturing The Future Of Mobility & Tech





Automotive & Mobility Manufacturing

26 OEM VEHICLE MANUFACTURERS

Original Equipment Manufacturers (OEM) Located in Michigan

96 OF THE TOP 100 SUPPLIERS

60 have their North American Headquarters in Michigan

2,200+ SUPPLIERS & TECH CENTERS

Facility Locations Throughout Michigan

\$13.8 BILLION AUTO R&D ANNUALLY

60.5% of the U.S. Total is Invested in Michigan, 2021

1.7 MILLION VEHICLES ASSEMBLED

#1 Region for Volume with 16 Models (5 EV), 2023



Technology Hub Supports Manufacturing

#1 STATE FOR VC INVESTMENT GROWTH

More Than an 855% Increase from 2016-2021

#6 STATE FOR TOTAL ISSUED PATENTS

More than 7,900 Issued & Registered Annually in Michigan

97,000 REGIONAL TECHNOLOGY TALENT

Top Location for Tech Talent in Manufacturing, Nearly 20% in 2023

#3 FOR TECH TALENT COST VS QUALITY

Detroit Metro Ranking from Top U.S. Tech Markets in 2023

#8 FOR TECH TALENT PIPELINE / DEGREES

Detroit Metro Ranking of Annual Degree Graduates in 2023



2) Advanced Manufacturing Talent

Regional Workforce, Robust Talent Pipeline, and Related Programs

Quality & Robust Production Talent is in the Detroit Region



224,088 PRODUCTION WORKERS, 2023

One of the Largest & Skilled Production Talent Hubs in the U.S.



71,489 ASSEMBLERS & FABRICATORS

#1 for Assemblers & 10% Growth Past Five Years



6.647 ENGINE ASSEMBLERS

Eight Times More Talent Density than U.S. Avg.



4,807 ELECTRICAL ASSEMBLERS

24% Regional Growth in the Past Five Years



11,449 MACHINISTS

Three Times More Talent Density than U.S. Avg.

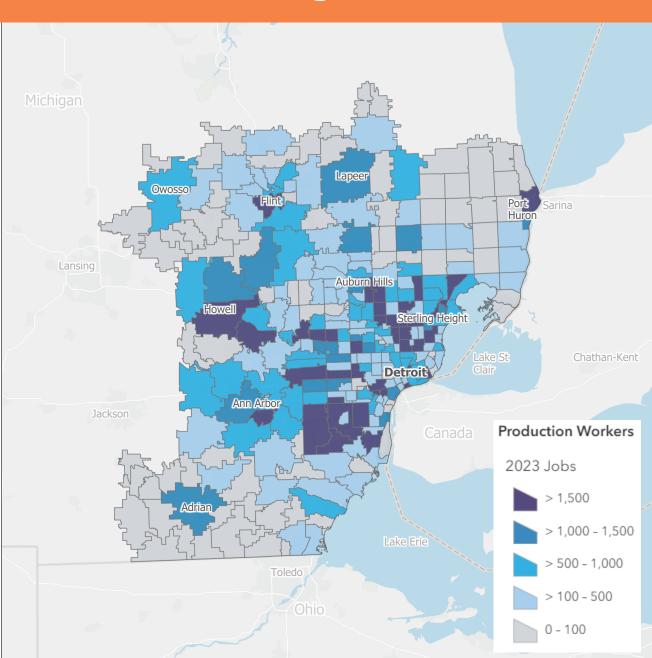


13,154 PRODUCTION SUPERVISORS

Two Times More Talent Density than U.S. Avg.

Source: Lightcast.

Note: Includes 33 occupations related to production and assembler mobility and automotive talent. Note: Location ranking is based MSA, using the 6-County Detroit MSA within the Detroit Region



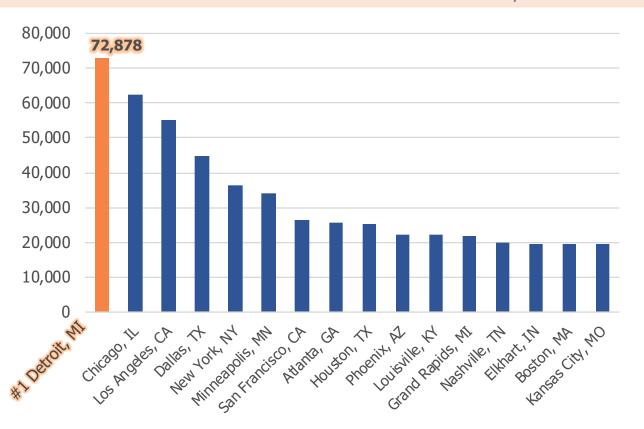
Detroit's Assembler & Auto Manufacturing Talent is Unmatched



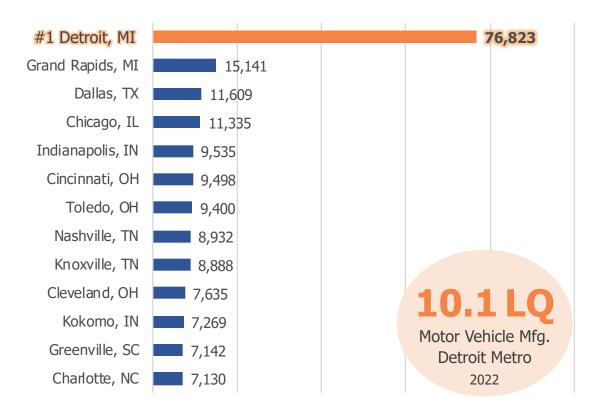
Assembler and Fabricators – Detroit ranks as the #1 U.S. Metro for total workers and has one of the lowest turnover rates.

Motor Vehicle MFG. – Detroit is by far the top U.S. Metro for total workers and has one of the highest talent density.

ASSEMBLER & FABRICATORS OCCUPATION WORKERS, 2023



MOTOR VEHICLE MANUFACTURING. INDUSTRY WORKERS, 2023



Detroit Region's Supreme Engineering Talent



90,048 ENGINEERS IN THE REGION

One of the Densest Engineering Talent Hubs in the U.S., 2023



23,223 MECHANICAL ENGINEERS

#1 Nationally for Mechanical Engineers, 5.4 LQ



16,314 INDUSTRIAL ENGINEERS

#1 Nationally for Industrial Engineers, 3.7 LQ



8,252 CIVIL & OTHER ENGINEERS

Top Location Nationally for Other Engineers



9,284 ENGINEERING MANAGERS

#2 Location Nationally for Engineering Managers



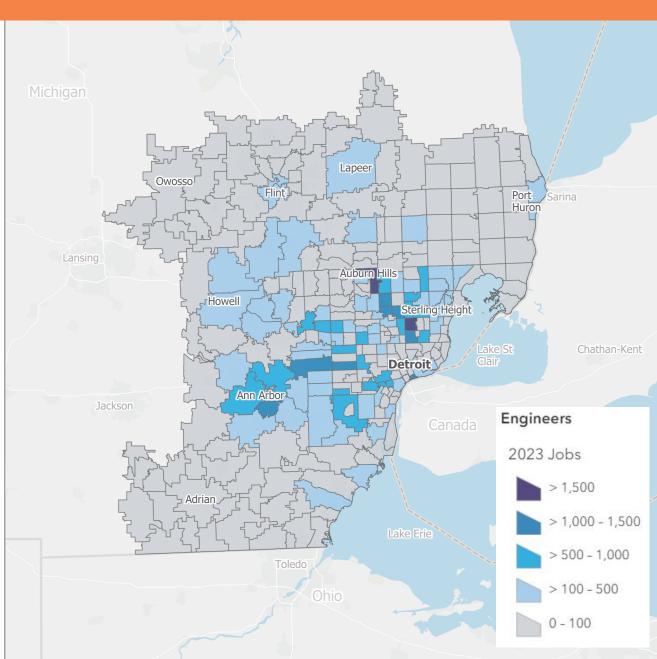
6,916 ELECTRICAL ENGINEERS

#5 Nationally Electrical Engineers, 10% Growth

Source: Lightcast.

Note: Includes all 26 occupations related to engineering under the 17-digit NAICS.

Note: Location ranking is based MSA, using the 6-County Detroit MSA within the Detroit Region



Detroit: One of the Densest & Largest Engineering Hubs





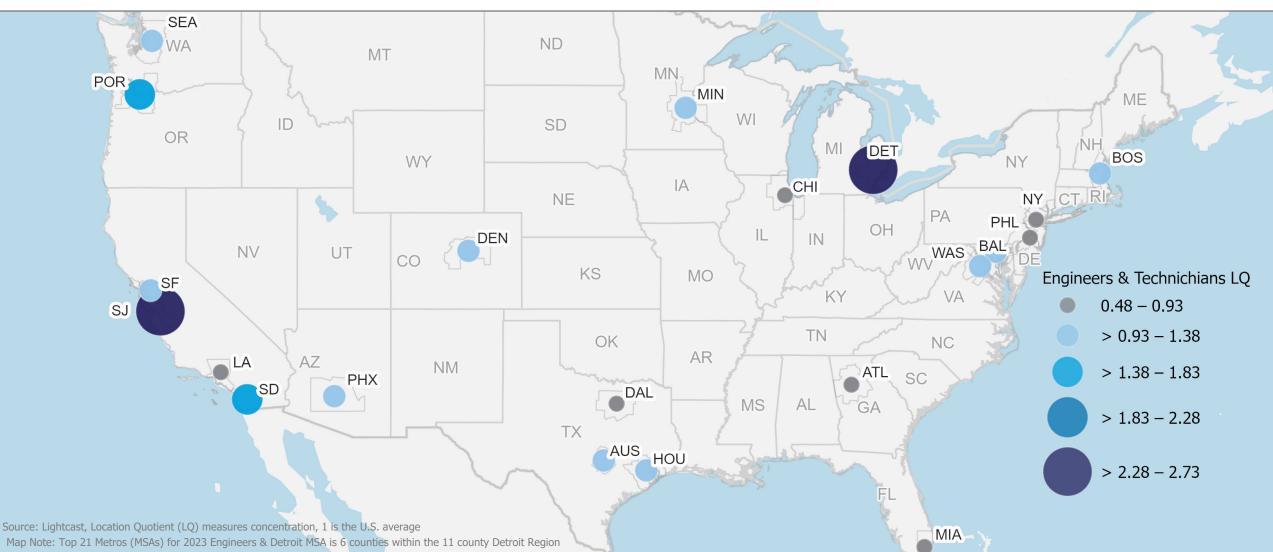
THE DETROIT METRO HAS 79,650 ENGINEERS.

Ranking the third largest for engineering talent in 2023.



THE DETROIT METRO #2 FOR ENGINEERS PER CAPITA.

With an employment concentration of 2.3 (LQ) in 2023.



The Detroit Region Offers Affordable Technology Talent



87,000 TECH WORKERS, 2023

One of the Fastest Growing & Affordable Talent Hubs



27,774 SOFTWARE DEVELOPERS

Wages 25% More Affordable than U.S. Avg.



12,384 COMPUTER SPECIALISTS

Talent Increased 10% in the Past Five-Years



9,977 COMPUTER ANALYSTS

Two Times More Talent & More Affordable Wages



9,425 COMPUTER & IT MANAGERS

Workers Have Increased 28% in the Past Five-Years



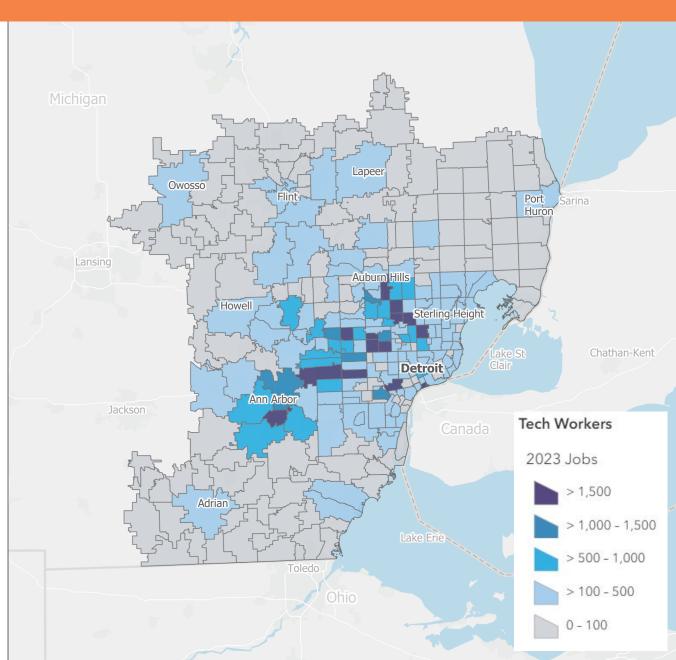
4,676 OTHER COMPUTER OCCUPATIONS

Two Times More Talent & More Affordable Wages

Source: Lightcast.

Note: Technology definition defined under the U.S. Bureau of Labor Statistics CyberState

Note: Location ranking is based MSA, using the 6-County Detroit MSA within the Detroit Region



Advanced Mfg. Operations Supported by Robust Talent



There are more than 700,000 manufacturing related occupation workers in the Detroit Region in 2023 that are in core roles to support for manufacturing facilities, including talent in the broad groupings of production, technical, engineers, research, logistics, safety, administration, and management.

- The manufacturing occupation talent has increased by nearly 25,000 workers in the past five years in the region, outpacing the national growth rate.
- There is 20% more talent density (1.2 jobs LQ) here than the avg. U.S. region along with more affordable wages.

OCCUPATION GROUPS:	Talent / Workers	Talent / Worker Density (LQ)	Average Hourly Wages	Median Hourly Wages	Pct. 25 Hourly Wages	Pct. 75 Hourly Wages
Management & Admin	187,452	0.92	\$50.93	\$42.29	\$27.46	\$65.26
Production & Operations	164,197	2.17	\$24.82	\$22.22	\$18.16	\$31.07
Research & Safety	42,667	1.09	\$32.76	\$28.14	\$20.40	\$40.92
Engineers & Technical	128,023	1.59	\$47.36	\$45.25	\$35.10	\$58.55
Logistics & Maintenance	183,424	0.99	\$23.36	\$19.90	\$16.88	\$25.82

Source: Lightcast. Note: All metrics are for 2023.

The Regional Workforce Has the Needed Manufacturing Skills



There were more than 1.8 million profiles / resumes throughout the 11-County Detroit Region that were updated in 2023-2024.

Advanced Mfg. Skills Total Regional Profiles:

- Lean Manufacturing = 52,000
- Six Sigma = 46,000
- CNC = 4,500
- Robotics = 8,000
- Welding = 8,800
- AWS = 2,700
- Industrial = 43,000
- Technology = 70,000
- Manufacturing = 80,000
- Engineering = 180,000





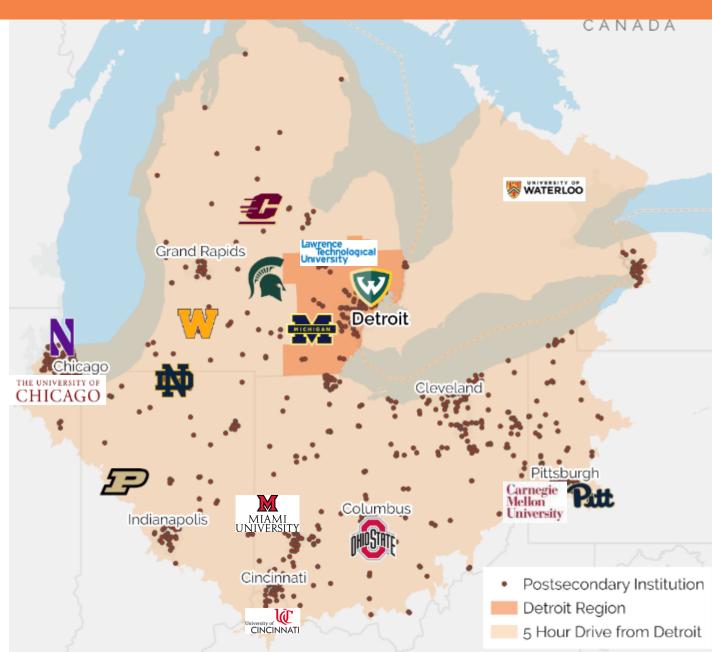




The Region and Talent Pipeline Radius Mfg. Program Completions



DEGREE COMPLETIONS: 2023	DETROIT REGION	5-HOUR DRIVE TIME
Computer and Information Sciences, General	2,059	13,686
Mechanical Engineering	1,198	6,316
Electrical, Electronics, and Comm. Engineering	608	4,032
Vehicle Maintenance and Repair Technologies	591	4,744
Electrical and Computer Engineering	539	544
Computer/IT Administration and Management	476	5,751
Industrial Engineering	464	1,551
Computer Programming	434	1,975
Computer Engineering	433	2,804
Computer Systems Networking	348	3,076
Architectural Sciences and Technology	325	911
Aerospace and Aeronautical Engineering	279	1,387
Computer Science	228	6,744
Electromechanical Technologies/Technicians	213	920
Chemical Engineering	207	1,983
Heavy/Industrial Equipment Maintenance	198	597
Electrical Engineering Technologies	196	1,584
Civil Engineering	180	2,199
Engineering-Related Fields	173	1,629
Mechatronics/Robotics and Automation Engineering	167	397
Industrial Production Technologies/Technicians	156	1,256
Completions from Targeted Programs	10,202	69,519
Total Completions from All Programs	64,679	593,203



Detroit Region's Key Mfg. Talent Pipeline & Programs







Lawrence Technical University – Offers 17 engineering undergraduate programs and 14 graduate that including bachelor's degrees in mechanical, industrial, and robotics engineering, along with graduate and doctoral degrees in manufacturing engineering and systems. The campus has an Automotive Engineering Institute (AEI) and hosts Robofest, an autonomous robotics competition in 2019 there were 2,500 students from over 27 countries involved.

Wayne State University - Located in Detroit, the university offers nearly 15 undergraduate and graduate programs in engineering that include an Artificial Intelligence Program & Lab, Robotics, Alternative Energy Lab. The Master of Science in Robotics has three concentration tracks; industrial automation (engineering technology), intelligent control (electrical and computer engineering), and smart mobility (computer science).

Oakland University - The Department of Electrical and Computer Engineering (ECE) has been leading engineering disciplines in technological innovation. The Center for Robotics and Advanced Automation (CRAA) at ECE has been at the forefront of research and development in the areas of controls, robotics, automation and machine vision. The Chrysler Controls and Robotics Laboratory at ECE serves as an active research center in various areas of controls and robotics.

University of Detroit Mercy - The new William L. Koyzra Center for Automotive Systems Engineering Education Center is designed to foster student teamwork on collaborative projects in vehicle design, robotics and autonomous vehicle development. The center has industry partners including; Ford Motor Company, General Motors, DENSO North America, and many others that were awarded \$1.1 million to lead the Metro-Detroit Regional Vehicle Cybersecurity Institute.

Kettering University – Converted a gym into the FIRST new robotics center on campus with eight high school robotics teams. Teams can build robots, utilize practice space, and collaborate with other teams while receiving mentoring from nearby professors and students. Roughly 25 percent of incoming Kettering students were on a FIRST team in high school.

Macomb Robotics Collaboration Center - Located in Sterling Heights, is a year-round collaboration space for robotics and STEM learning for the K-12 community and a place for students to engage with industry mentors and corporate sponsors to boost student interest and develop a strong talent pipeline in robotics.

Regional Community College Manufacturing Highlights







Michigan Technical Education Centers (M-TECs): With an investment of \$60 million dollars, 18 state-of-the-art Michigan Technical Education have been constructed within the Michigan community college system. The M-TEC network provides statewide educational, training and workforce development infrastructure for Michigan's businesses, offering customized training on demand on state-of-the-art equipment. 6 M-TECs are in the region (Macomb, St. Clair, Henry Ford, Mott (2), Oakland)

Rocket2Work (Wayne County Community College): Wayne County Community College District (WCCCD) today launched its Rocket2Work™ initiative, which provides tuition-free training for skilled trades programs, connecting students and hiring employers/jobs with a minimum starting wage of \$15/hour or more. Programs included in the Rocket2Work initiative involve careers in CDL licensed professional truck driving, skilled construction, advanced manufacturing and mechatronics, and technology and technical careers, and more.

Macomb Community College Building Renovations: \$40 million renovation is underway of the Skilled Trades and Technology building, including CNC machining, electronics, land surveying, robotics, welding, and more. The building's new infrastructure is not only designed for current equipment and IT networking needs to connect classrooms and labs, but also provides flexibility to accommodate future advances in cyber-physical systems. Upgrades in the building's environment also replicate modern industrial settings, with bright, inviting spaces featuring windows and natural light, and correcting the imbalance in restrooms that were primarily designated for men.,

Regional Manufacturing Talent Pipeline Engagement







Detroit High School District, Advanced Manufacturing Career Academy – Stellantis donated \$4 million to build a new Advanced Manufacturing Career Academy for Detroit school district students and adults with the training program Detroit at Work, that will be able to take classes in welding, machinery, robotics. The first phase of the academy opened in 2021 and had more than 200 enrolled with expansion plans rapidly underway. Fox2

<u>Detroit & Detroit News</u>

Manufacturing Day in Michigan – Recognized across the country on the first Friday in October, it provides "hands-on" experiences through tours of manufacturing facilities for middle and high school students. In Southeast Michigan, more than 6,000 students in Southeast Michigan toured 150 manufacturing facilities participate annually. <u>Link</u>

MiCareerQuest Southeast Michigan – The Region's largest interactive career exploration event for high school students that exposes them to a broad range of successful working professionals in a variety of fields with opportunities to work with the equipment, tools and technology, along with experiences such as internships, job shadowing and more. The event has annually 10,000+ high school students from 160+ school districts throughout six-counties with 1,000 exhibitors presenting more than 200 occupations. There is a whole section of the floorplan devoted to Manufacturing.

SquareOne – Connects students to STEM careers with a focus on robotics and automation, through school and employer partnerships, project-based learning, and robotics or design challenges. As part of the V2X program, students work alongside their teachers to equip model vehicles with connected vehicle technology. The teams use 3-D printed vehicle platforms they modify themselves with hardware from Arduino microcontroller hardware, sensors and other detecting electronics to conduct their research.



3) Manufacturing Industries

Subcluster Highlights and Local Industry Resources

The Detroit Region's Advanced Manufacturing Companies



ROBOTICS AND AUTOMATION MANUFACTURING





























CLEAN TECHNOLOGY MANUFACTURING

















3D AND ADDITIVE MANUFACTURING

































AUTOMOTIVE AND MOBILITY MANUFACTURING

















THE ARSENAL OF DEMOCRACY – Defense Mfg. in Detroit





The Region provides defense companies an immense competitive advantage.

During World War II, it was Detroit that accepted President Franklin D. Roosevelt's call to become the "Arsenal of Democracy" providing the weapons and vehicles necessary for victory. Today, the Detroit Region is one of the few locations with demonstrated expertise in taking new ideas fully from concept to production. Companies that partner with the Detroit Region have full access to the capability, talent and assets of our ecosystem.

REGIONAL DEFENSE COMPANIES































Note: Not a Comprehensive List

REGIONAL DEFENSE ASSETS



The Detroit Arsenal (DTA) - TACOM: Army Contracting Command responsible for the acquisition support many of the Army's major weapon systems and ensures warfighting readiness.

CCDC: The U.S Army Combat Capabilities Development Command- Ground Vehicle Systems Center operates the United States Armed Forces research and development facility for advanced technology in defensive ground systems.





Selfridge Air National Guard Base — Home to the Michigan Air National Guard, Air Force Reserve, Navy Reserve, Marine Corps Reserve, Army Reserve, Army National Guard and active-duty Coast Guard units and is one of the largest joint Reserves Forces in the U.S.

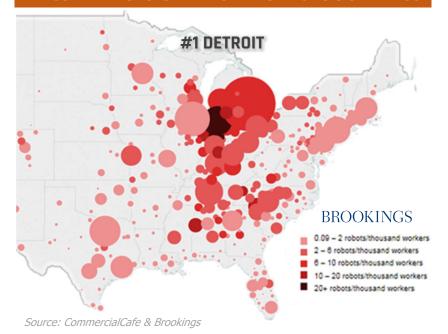
Detroit and Michigan Ranks the Top Spots for Industrial Robots





The Detroit Region's robotics ecosystem is made up of globally known companies, innovative start-ups and world-class integrators. Making it a national leader for intelligence and innovation.

INDUSTRIAL ROBOTS PER WORKERS AMONG U.S. METROS





DETROIT IS A TOP LOCATION FOR INNOVATION

Ranked in the top ten metros (MSAs) for artificial intelligence and machine learning patents issued at more than 1,000 patents in 2023.



DETROIT'S #1 METRO FOR INDUSTRIAL ROBOTS

More than 15,000 robots deployed, which at 8.5 per 1,000 worker is three times more than the national average density in 2018.



28,000+ INDUSTRIAL ROBOTS THROUGHOUT MICHIGAN

The state leads the nation for deployed robots and is national hub, making up 12% of the nations total industrial robots in 2018.

Regional DEI Manufacturing Talent and Initiatives



DIVERSE TALENT HIGHLIGHTS:

- The Detroit Metro ranks as a top U.S. location for all occupation diversity, higher than the national average by nearly double for engineering and production occupations.
- In the Region, nearly 30% of the production related occupation talent is diverse (identifies as non-white) and for specific occupations has an equal gender representation.
 - Assemblers & Fabricators occupation talent is 45% diverse.
 - Machine Feeders and Offbearers occupation talent is 40% diverse and 48% identify female.

ORGANIZATIONS & RESOURCES:

- **Automation Workz Institute** Located in Detroit is the nation's only Black tech diversity consulting and upskilling institution and in 2021, closed \$10 million growth financing to drive the expansion of their cybersecurity, network engineer and development certification courses to people of color across America. <u>Website</u>
- **Women Who Weld** A local grad from the University of Michigan created Women Who Weld in 2014 to lead intensive welding training programs to prepare women for full-time jobs, apprenticeships, or continuing education in the welding industry, as well as introductory workshops for women who are exploring a career change.
- **OneTen** OneTen's mission is to hire, promote and advance one million Black individuals who do not have a four-year degree into family-sustaining careers over the next 10 years. GM is the anchor employer in the Detroit region for the initiative, in partnership with YearUp as the community sponsor.
- **Detroit Black Tech-** A local organization with over 1600 members, focused on building a community of Black individuals in the Detroit Tech Community that are highly valued.

Detroit Region's Advanced Manufacturing Resources



IACMI / LIFT, SCALE-UP RESEARCH FACILITY (SURF) - LIFT, operated by the American Lightweight Materials Manufacturing Innovation Institute (ALMMII), is nonprofit 501(c)3 public-private partnership between the U.S. Department of Defense, industry and academia, part of the national network of manufacturing innovation institutes, driving the U.S. manufacturing revolution. LIFT's mission is to advance technology and talent development – driving rapid implementation of smarter manufacturing. Website

SOCIETY OF MANUFACTURING ENGINEERS (SME) - Headquarters located in Southfield, Michigan - SME a non-profit student and professional association for educating and advancing the manufacturing industry in North America. Helps manufacturers innovate, grow and prosper by promoting manufacturing technology, developing a skilled workforce and connecting the manufacturing industry.

AUTOMATE CONFERENCE - Automate is the largest solutions-based showcase of automation technologies in North America that gathers leaders in robotics, vision and imaging, motion control, artificial intelligence and smart automation technologies, hosting 500 exhibitors and 20,000 attendees. The show is planned to be in downtown Detroit's TCF Center from 2022-2025, previously being held in Detroit in the 90s and was selected over Chicago. Website

MICHIGAN MANUFACTURING TECHNOLOGY CENTER - Personalized consulting services that enable Michigan manufacturers to work smarter, compete and prosper. We develop more effective business leaders, drive product and process innovation, promote company-wide operational excellence and foster creative strategies for business growth and greater profitability.





Detroit Region Advanced Manufacturing Accelerator







- **AUTOMATION ALLEY** World Economic Forum Advanced Manufacturing Hub (AMHUB), is a nonprofit Industry 4.0 knowledge center headquartered in Troy, Michigan, with satellite offices across the Detroit Region.
- The organization connects industry, academia and government to fuel Michigan's economy and accelerate innovation.
 - Offering programs and services in business growth, entrepreneurship, talent development, digital transformation and implementing disruptive technologies like artificial intelligence (AI), the Internet of Things (IoT) and automation.
- Automation Alley and Oakland County are running Project Diamond, that gives small and medium-sized manufacturers access to state-of-the-art 3d printing technology access, comprehensive training programs, and connections to their network of industry leaders..
 - There are robust openings in 2024 available for manufacturers located in Oakland County to join.
- The Industry 4.0 Accelerator is led by Automation Alley with Lean Rocket Lab, and Lawrence Technological University's Centrepolis Accelerator to help early-stage and established companies with digitization.



4) Clean Tech & Mobility Innovation

Clean Technology Energy Manufacturing and Future Technologies

Michigan is Paving the Way for Alternative Energy

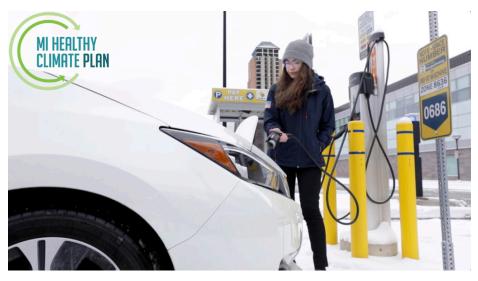


Michigan is working hard to be a leader in the clean energy jobs of the future, while also reducing energy costs and improving the reliability of our electric grid.

The Michigan Department of Environment, Great Lakes, and Energy's (EGLE) Office of Climate and Energy has developed the progressive MI Healthy Climate Plan to pursue carbon neutrality, ensure economic competitiveness, and improve quality of life.

HIGHLIGHTS INCLUDE:

- Building infrastructure to support 2 million electric vehicles on Michigan roads by 2030 and increase access to clean transportation options by 15% each year.
 - Includes funding for Great Lakes EV circuit, which is a collaboration with three other states to build chargers along 1,100+ mile drivable shoreline of Lake Michigan.
- Deploy new, cleaner manufacturing technologies and conduct R&D to reduce emissions from hard-to-decarbonize industries.
- Encourage clean innovation hubs where private enterprises strategically co-locate and collaborate to develop and deploy new, cleaner manufacturing technologies and conduct R&D to reduce emissions from hard to decarbonize industries.





Michigan and Regional Clean Tech. Resources / Assets





NextCycle Michigan – Designed to connect entrepreneurs, companies, organizations, and communities to technical support, financial resources, and capacity building for recycling, recovery, and reuse initiatives.



Next Energy – Based in Detroit's growing innovation district with access to a microgrid, smart home, EV charging infrastructure and an alternative fuels platform, working with innovators to accelerate smarter, cleaner, more accessible solutions for communities and cities.



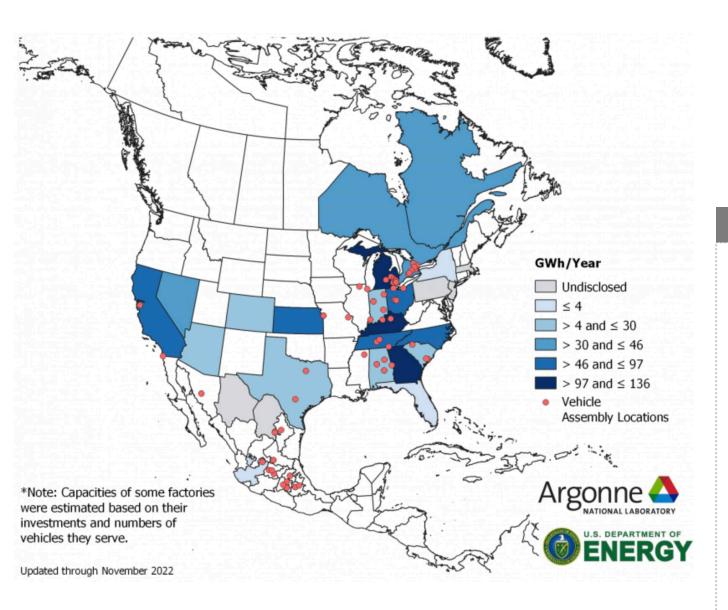
<u>SustainabiliD</u> – A woman-owned, service-disabled veteran operated, Detroit based diverse small business working with gamechangers to equitably solve the climate crisis. Partnered with global corporations, think tanks and major universities, national laboratories and philanthropy, global manufacturers, funds, DEI leaders, climate tech and accelerators.



<u>Centrepolis Accelerator</u> – The Michigan CleanTech Hardware Scaling for Success program supports Michigan-based entrepreneurs and small businesses developing cleantech hardware products or processes that provide an energy efficiency or energy waste reduction benefit.

Michigan is Leading The Way For Battery Capacity & Manufacturing







LEADER FOR BATTERY CAPACITY

Michigan will have 97-136 GWh of EV Battery Capacity to Support More 10 Million EV's Per Year by 2030



40 EV BATTERY SUPPLY CHAIN

Related Companies Located in the State

MAJOR MICHIGAN BATTERY FACILITIES

XALT Energy

Battery Cell & Pack Production - Midland

Clarios

Battery Cell Production & Dev. - Holland

LG Chem

Battery Cell Production - Holland

Magna International

Battery Enclosure Production - St Clair

Samsung SDI

Battery Cell Development - Auburn Hills

A123 Systems

Battery Development - Novi

AKASOL

Battery Pack Production - Hazel Park

Ford Motor Company

Battery Pack Production - Rawsonville Battery Production - Marshall

General Motors

Battery Pack Production -Brownstown Battery Production - Lansing

Our Next Energy

Battery Production – Van Buren Battery Cell Development - Novi

Gotion

Battery Production – Big Rapids

Clean / Alternative Energy is Powering the Future of Mobility





#1 STATE FOR ENERGY JOB GROWTH

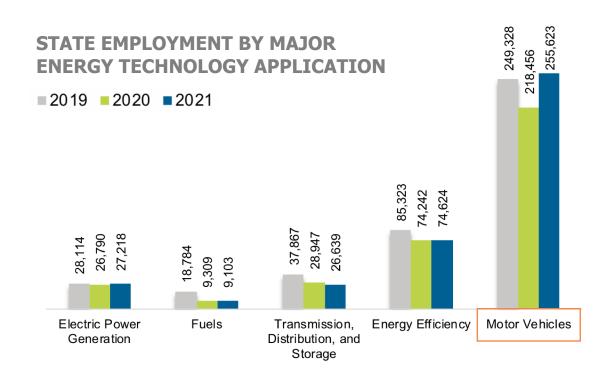
More than 35,000 Job Growth in One Year with 90% of the Growth in Motor Vehicle Technology in 2021

\$9.1 BILLION INVESTMENT IN CLEAN TECH

Michigan Ranked #3 for Announced Projects at 18 in 2022, which Created nearly 10,100 New Jobs.

HYDROGEN IS KEY PART OF MICHIGAN'S ENERGY ROADMAP

- In December 2022, the University of Michigan launched MI Hydrogen, to foster collaboration among U-M researchers, community groups, government and industry partners.
- The State of Michigan committed support to two clean hydrogen hub proposals- the Midwest Alliance for Clean Energy (MachH2) and the Great Lakes Clean Hydrogen Hub.
- The State of Michigan is working with MachH2 to build the Hydrogen Truck Stop of the Future—an advanced mobility project that will establish Michigan as the ideal location for building and testing hydrogen-powered heavy-duty vehicles.





DTE and Consumers Energy Clean Technology Infrastructure



DTE and Consumers Energy both are leading companies in the region with large user electric rates that are increasing electrification competitiveness in Michigan.

- DTE Michigan's Clean Energy
 Future, plans to be net zero plan
 to reduce emissions by six million
 metric tons per year by 2050.
- Consumers Energy Leading the nation with plans to be zero coal by 2050. The clean energy plan includes more than 8,000 mw of solar power and more than 550 mw of battery storage by 2040.









DTE and Ford - Largest Renewable Energy Purchase in the U.S.



HIGHLIGHTS:

650 MW ENERGY RENEWABLE

+6,000 ACRES, SOLAR & WIND

\$120 MILLION INVESTMENT Annually

OVERVIEW:

- The largest renewable energy purchase ever made in the U.S. from a utility, DTE will add 650 megawatts of new solar energy capacity apart of its MIGreenPower Program for Ford.
- By 2025 this will increase the amount new solar energy in Michigan by 70% and every Ford vehicle manufactured here will be assembled with 100% carbon-free electricity.
- Ford's purchase of carbon-free electricity will avoid as much as 600,000 tons of carbon dioxide emissions, a step toward its goal to become carbon neutral by 2050.
- DTE plans to build out 6,000 acres of wind and solar farms across the state, with support of Ford at nearly \$120 million annually.
- While advancing Ford's progress towards carbon neutrality, the purchase will also create jobs and tax revenue in Michigan.
- "Ford was the first large industrial customer to enroll in our MIGreenPower program in 2019 and we thank Ford for its continued commitment to using MIGreenPower to help decarbonize its operations and meet its sustainability goals." – Chairman & CEO of DTE Energy, Jerry Norcia





Consumers Energy and GM – Clean Energy Auto. Plants



HIGHLIGHTS:

70 MW EMISSION-FREE RENEWABLE ENERGY

THREE AUTO MFG. FACILITIES IN MICHIGAN

OVERVIEW:

- Consumers Energy and General Motors (GM) created a 20-year pledge in 2018 to power Michigan automotive plants in three Michigan locations Flint, Burton, and Wyoming with clean energy.
- Through Consumers Energy's Renewable Energy Program, GM will offset 235,000 tons of carbon dioxide annually, equivalent to greenhouse gas emissions produced by 51,000 cars (U.S. Environmental Protection Agency, EPA).
- "GM promised that Michigan will be the nation's hub for electric vehicle manufacturing. Now, we know the next generation of Michigan-made vehicles also will be made with clean energy." - Consumers Energy President & CEO, Garrick Rochow
- "Procuring renewable energy is key to accomplishing these goals. Our collaboration with Consumers Energy brings us closer to our target of sourcing 100% renewable energy in the U.S. by 2025 and will advance our local Michigan communities' transition to a clean grid." - Senior Manager of Energy Strategy & Grid Decarbonization at GM, Rob Threlkeld





Detroit is the Global Epicenter for Mobility (GEM)





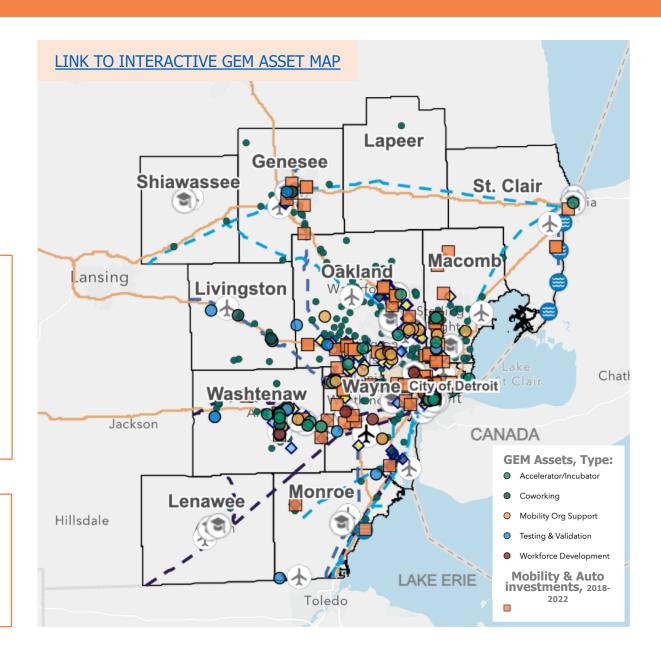
\$52.2 MILLION MOBILITY GRANT

Awarded to DRP's Signature Initiative GEM

Economic Development Administration (EDA) Build Back Better Regional Challenge in 2020

1,000+ ASSETS

In the Detroit Region's GEM Ecosystem



The Global Epicenter of Mobility (GEM) Six Pillars

















GEM CENTRAL - Serves as the unified body responsible for helping the region's existing mobility ecosystem become better connected, smarter, more inclusive, and more adaptive to change.

START-UP SUPPORT - Accelerating the growth of mobility startups that drive innovation and fill gaps in the mobility value chain.

TESTING & PROVING - GEM is helping small companies and entrepreneurs access the state's world-class testing proving assets.

SUPPLY CHAIN TRANSFORMATION - Supporting the transition of small to medium-sized manufacturers and suppliers to modern mobility, including electrification, autonomy, and pivoting to supply the new industry.

SITE READINESS - Verifying and cataloging development-ready sites to help expand and attract major mobility business investments and jobs across the Detroit Region.

TALENT TRANSFORMATION - GEM assists in meeting the region's advanced mobility talent needs, offsetting retirement and transition losses, and supporting career pathway advancement.

Federal Funding Highlights from GEM Research





- The Biden Administration passed legislation with significant clean energy and manufacturing investments.
- The Inflation Reduction Act (IRA) and Infrastructure
 Investment and Jobs Act (IIJA) have many sections that will
 drive opportunities for manufacturing and community
 investment.
 - The programs come in the form of grants, tax credits, rebates, and funding competitions available for manufacturers, developers, local government, and consumers.
- These help manufacturers invest in future mobility and clean energy applications that have become integral to many industries preparing for the future.
- GEM at the DRP can support the initial interpretation and specific use cases of federal incentives / programs.
 - Can then make connections with consultants who have deep experience, contacts, and info. with grant writing or federal applications that are best suited for the program.





IRA - CLEAN TECH. VEHICLES, AND HYDROGEN

- Production Tax Credit for Electricity from Renewables
- Advanced Manufacturing Production Credit
- Advanced Manufacturing Production Credit
- Clean Hydrogen Production Tax Credit
- Clean Vehicle Credit
- Advanced Technology Vehicle Manufacturing Loan Program
- <u>Domestic Manufacturing Conversion Grants</u>
- Clean Hydrogen Production Tax Credit

Note: Not a comprehensive list of the Inflation Reduction Act (IRA).



5) Investment Spotlights

Advanced Manufacturing Investment Announcements in the Region

FORTESCUE – U.S. Advanced Manufacturing Center



SUCCESS METRICS: 2024

\$232 Million Investment

600 Jobs Created **\$12 Million**Incentives

410,000 Sq. Ft. Facility

PROJECT OVERVIEW:

- Fortescue, a global provider of zero emission resources renewable energy, plans to establish its U.S. Advanced Manufacturing Center on Piquette Avenue in the city of Detroit.
- Plans to rehabilitate the existing facility where it will manufacture EV battery systems and anticipated to be installed the first half of 2025.

WHY THE REGION:

"Detroit is an extremely attractive place to manufacture, given the skilled workforce, existing EV and green energy supply chains, and strong support from state and local governments." - Judith Judson, Fortescue WAE CEO

- A \$9 million State of Michigan Business Development Program performancebased grant.
- The City of Detroit Brownfield Redevelopment Authority local portion of the brownfield work plan valued at \$4,246,411 and offered an Industrial Facilities Tax abatement valued at up to \$7,684,208.
- State tax capture valued at \$2,374,413 for the reimbursement of brownfield activities at the site.





GESTAMP – New EV Components Factory in Chesterfield Twp.



SUCCESS METRICS: 2024

\$139 Million Investment

390 Jobs Created \$5+ Million Incentives

460,000 Sq. Ft. Facility

PROJECT OVERVIEW:

- Gestamp has their North American headquarters in Troy and is set to expand all Michigan manufacturing operations which are in Chelsea, Mason, and Lapeer, making Chesterfield their fourth factory in the state.
- Across the four locations, the project involves the creation of up to 580 qualified new jobs and a capital investment of up to \$390.2 million.
- This will add new production machinery and equipment for OEM business, allowing the production of components for electric vehicles.

WHY THE REGION:

Local community partners including; DRP, Michigan Economic Development Corporation, Macomb County Department of Planning and Economic Development, Ann Arbor SPARK, Lansing Economic Area Partnership, Lapeer Development Corporation, City of Mason, and City of Chelsea.

- \$5 million Michigan Business Development Program grant.
- Michigan Strategic Fund two 15-year, 100% State Essential Services
 Assessment exemptions with an estimated value of up to about \$4.5 million.





NEL HYDROGEN – Largest U.S. Electrolyser Production Facility



SUCCESS METRICS: 2023

\$400 Million Investment

517 Jobs Created

\$40+ Million Incentives

625,000 Sq. Ft. Facility

PROJECT OVERVIEW:

- Nel is headquartered in Oslo, Norway and announced plans for what will be among the world's largest electrode facilities in the Region.
- The facility when completed (estimated 2028) will produce, store, and distribute hydrogen along with having an automated manufacturing production capacity of up to 4GW of Alkaline and PEM technologies.

WHY THE REGION:

 "The choice of Michigan is based on an overall assessment of what the state can offer in terms of financial incentives, access to a highly skilled workforce, and cooperation with universities, research institutions, and strategic partners." - Nel CEO, Håkon Volldal

INCENTIVES:

- Received support through the Inflation Reduction Act (IRA), U.S.
 Department of Energy and International Revenue Service.
- \$10 Million grant from Michigan Business Development Program.
- \$25 Million grant from Make It in Michigan Competitiveness Fund.





Nel Press Release. | State of Michigan Press Release

FANUC – Top Robotics Supplier Success Here Fuels Expansion



SUCCESS METRICS: 2023

\$110 Million Investment

400 Jobs Created 2 Million Sq. Ft. Expansion

67 Acres
Developed

PROJECT OVERVIEW:

• The world's leading supplier of robotics and has been consistently named a top workplace in Michigan, with their North American headquarters campus expands in Auburn Hills and making an impact in the Region.

FACILITY CAPABILITIES:

- Opened a 461,000 sq. ft. engineering, production and storage facility in Auburn Hills in October 2019.
- The new 788,000 sq. ft. facility was completed in 2024 and houses more than 6,000 robots and tens of thousands of parts along with the manufacturing, engineering, R&D, logistics and Industrial IoT solutions.

WHY THE REGION:

- FANUC Certified Automation Training program for students is offered at two Detroit high schools.
 - The FANUC Academy will become the largest corporate robotics and industrial automation training facility in the U.S.





Fanuc Press Release | Area Development Article

PLASTIC OMNIUM – Largest North America Hydrogen Mfg. Plant



SUCCESS METRICS: 2023

\$170 Million Investment

175 Jobs Created **\$7 Million**Incentives

200,000 Sq. Ft. Facility

PROJECT OVERVIEW:

- Plastic Omnium plans to build North America's largest hydrogen storage manufacturing plant in the Region to supply a major American automaker that'll produce 40,000 vehicles annually by 2027.
- The facility will have the capacity up to 100,000 high-pressure hydrogen vessels all with the ambition to be 100% carbon neutral, along with a state-of-the-art validation and prototyping lab for safety and customer support.

WHY THE REGION:

- Michigan was selected over competing sites in Indiana, Ohio and Canada due to proximity to Tier 1 suppliers / other ops. and strong community support.
- Plastic Omnium donated \$1 million to Focus: HOPE, sponsored a leading First Robotics team here, and is working with programs like Greening of Detroit.

INCENTIVES / SUPPORT:

- \$5 million performance-based grant from the MEDC, Michigan Economic Development Corporation / State of Michigan.
- 15-year 100% SESA Exemption valued at \$2.4 million.
- Michigan Strategic Fund board grant for land acquisition and infrastructure.





MichAuto Press Release. | City of Flint & Genessee County Press Release

LUX WALL – Glass Manufacturing, Two Manufacturing Facilities



SUCCESS METRICS: 2022

\$165 Million Investment

450 Jobs Created **Support & Incentives**

300,000 Sq. Ft. Facility

PROJECT OVERVIEW:

- LuxWall designs and develops vacuum insulated glass, opened a manufacturing facility in Ypsilanti and another in Detroit.
- The company's Enthermal glass products are very thin, yet have superior insulative properties, thus having better performance of 45 percent greater heat retention in the winter and 60 percent greater cooling retention in the summer as compared to conventional building glass.

WHY THE REGION:

- Michigan was selected over competing locations in Ohio and Indiana.
- "Today is a huge step for LuxWall as we ready our company for the commercialization phase by meaningfully expanding our footprint in Michigan to now include major manufacturing plants in Litchfield and our future Detroit site. We are grateful for the strong business and economic support we have received from the State of Michigan, MEDC, DRP, City of Ypsilanti, Washtenaw County, Hillsdale County, and the City of Detroit as we expand the company." - CEO and Co-Founder of LuxWall, Scott Thomsen





NIAGARA BOTTLING - Advanced Mfg. Facility in Shelby Twp.



SUCCESS METRICS: 2022

\$120 Million Investment

60 Jobs Created **\$786,000**Incentives

500,000 Sq. Ft. Facility

PROJECT OVERVIEW:

• Niagara Bottling, a national and variety beverage manufacturer's new facility in Shelby Township (first location in Michigan) opened in 2023.

WHY THE REGION:

- After an extensive search process, Niagara Bottling, based in Diamond Bar, Calif., chose Shelby Township to build a new facility and expand its operations into the Midwest.
- "We appreciate the Detroit Region's strong legacy of manufacturing, and highly attractive combination of location, infrastructure, logistics, and workforce. Niagara looks forward to having a positive and lasting impact in the region." - Brian Hess, Executive Vice President at Niagara Bottling.

- \$350,000 Michigan Business Development Program grant.
- Michigan Works offered incentives to assist in recruiting new staff.
- Macomb Community College provided incentives for training new staff.





OUR NEXT ENERGY (ONE) – First U.S. Battery Cell Gigafactory



SUCCESS METRICS: 2022

\$1.6 Billion Investment

2,112 Jobs Created \$236 Million Incentives

659,589 Sq. Ft. Facility

PROJECT OVERVIEW:

- ONE, a Novi based start-up, will build ONE Circle, a new battery manufacturing campus in Van Buren Twp. in Wayne County.
- The campus plans to scale to 20 GWh capacity, equates to 200,000 EV battery packs, within five years, along with including raw material refinement and cathode materials production.

WHY THE REGION:

- ONE conducted a competitive site selection process, evaluating 12 states and a Canadian province.
- Selected Michigan because of the commitment by the state and partners to making Michigan a key part in the electric vehicle future.

- \$3 Million awarded through the Michigan Strategic Fund and \$2 million in talent services / training support through Oakland County Michigan Works!
- Partnered with Focus: HOPE and Walker-Miller Energy Services, to re-train residents for high-skilled green manufacturing opportunities.





BAYOTECH – First of Its Kind, New Hydrogen Production Hub



SUCCESS METRICS: 2022

\$12 MillionInvestment

12 Jobs Created 500 Acre Site **350-Tonnes of H2 Produced / Year**

PROJECT OVERVIEW:

- Bayotech has developed a new hydrogen hub named the Midwest BayoGaaS in Ypsilanti Township at the American Center for Mobility (ACM), which is fully operational in 2024.
- The new hydrogen hub at ACM is able to produce 350-tonnes of low-carbon hydrogen each year, and also will include on-site dispensing.
 - With prefab hydrogen units capable of pumping out 1,000 kilograms of hydrogen per day, or enough to fill up 200 hydrogen vehicles.

WHY THE REGION:

- Bayotech was driven to the ACM given their existing and potential industrial clients in Michigan, as well as commitment to fuel cell vehicles.
- "We congratulate ACM for being innovators in seeking out the infrastructure to support automotive OEMs' fuel cell vehicle commercialization activities.
 We're proud to partner with ACM to launch our latest hydrogen hub location." - BayoTech SVP of Hydrogen Hubs, Adam Penque





YANFENG – New Automotive Interiors Manufacturing Plant



SUCCESS METRICS: 2021

\$30 Million Investment

675+ Jobs Created **Talent Incentives**

220,000 Sq. Ft. Facility

PROJECT OVERVIEW:

- Global automotive supplier, Yanfeng, retooled its state-of-the-art manufacturing plant in Highland Park (Wayne County).
- The facility assembles automotive interior components, including; cockpits, floor consoles, and door panels.

WHY THE REGION:

- Yanfeng has eight technical centers and plants, including its North American headquarters in Novi and in total, the company employs more than 3,700 people in Michigan.
- "This plant represents a significant investment for our company in the region and is a benchmark facility in our network. Michigan is essential for us and offers top-tier talent as we send just-in time parts deliveries to our customer." VP and General Manager for Yanfeng, Tony Elenbaas

- With DRP support, Yanfeng hired diverse and non-traditional groups of workforce from initiatives like the MAT2 apprenticeship program.
- Connected with partners such as the Autism Alliance, Michigan Economic Development Corporation and Southwest Solutions.





PACE INDUSTRIES – Engineering and Manufacturing HQ



SUCCESS METRICS: 2021

\$1.9 Million Investment

64 Jobs Add/Move **\$250.000**Incentives

12,000 Sq. Ft. HQ

PROJECT OVERVIEW:

- Pace Industries provides die casting, manufacturing and engineering solutions around the world in the automotive, lighting, appliance and powersport industries.
- At the new Novi office, there are executives, engineering, sales and marketing functions.

WHY THE REGION:

- Pace Industries relocated its global headquarters to Novi in Oakland County, MI due to its proximity to customers advantage, supply-chain assets, and top-tier talent.
- The site out competed other locations in Chicago, IL; Atlanta, GA; Philadelphia, PA; and the former Fayetteville, AR headquarters.

- \$250,000 Michigan Business Development Program grant.
- DRP and the city of Novi will assist the project by providing videography, marketing assistance and recruitment support.







6) BUSINESS CLIMATE & CONTACT

Tax Environment, Verified Industrial Properties (VIP), & DRP Contact

Detroit Regional Partnership (DRP) – Services and Principles



The Detroit Regional Partnership (DRP) is the guide to the 11-county Detroit Region. DRP offers confidential, no-cost assistance to site location decision-makers around the world.

DRP provides timely and targeted analysis on local markets for talent, site, and supply chain. The goal is to align the right opportunities for the most successful outcome for prospects and communities.

SERVICES:

- Single Point of Contact
- Regional Data
- Connections to Key Partners
- Incentives and Talent Assistance
- Building and Site Analysis

GUIDING PRINCIPLES:

- Robust Growth
- Jobs for All
- Deep Prosperity
- Regional Impact
- Collaborative Ecosystem



348

COMMUNITIES

5.4M

2.6M

POPULATION

WORKFORCE



Michigan and the Detroit Region - A Top State for Business



The Detroit Region and Michigan provide a highly-competitive business case for any investment project.

#9 TOP STATE FOR BUSINESS

Overall Ranking, Along with Top for Technology / Innovation and Business Friendliness by CNBC in 2024

#5 LOWEST MARGINAL TAX RATE

Lowest Rates at 4.25% (CA is 13.3% & NY is 10.3%).

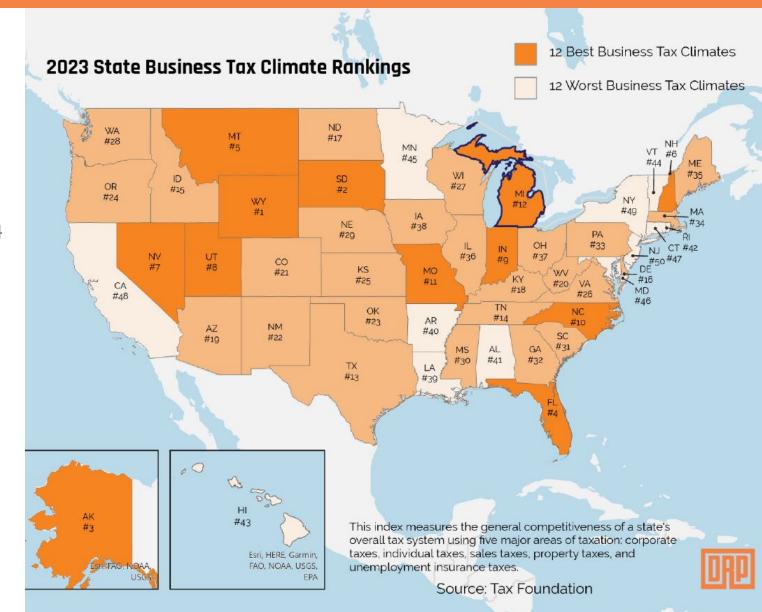
#7 LOWEST UI TAX LIABILITY

Unemployment Insurance (UI) Tax Component.

MICHIGAN TAX RATES

Michigan's tax rates are highly competitive and made significant corporate tax reform that eliminated modified gross receipts tax with a standard corporate income tax.

- 6% Corporate Income Tax
- 6% Flat Sales Tax/Use Tax
- 4.25% Individual Income Tax



Verified Industrial Properties (VIP): Program Overview



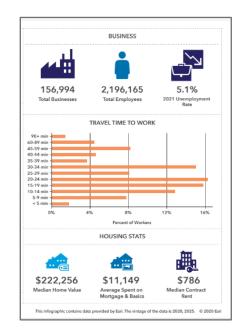


VIP RESOURCES:

- ✓ Online and interactive portal
- ✓ Desktop due diligence report
- ✓ Comprehensive map package
- ✓ Labor and demographic data
- ✓ Drone video and images
- √ Key data easily accessible

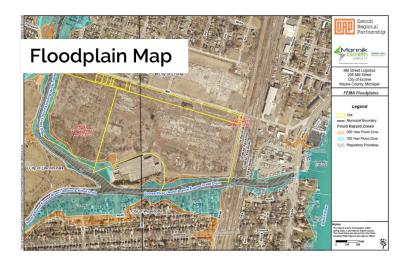












Detroit Region's Key Industry Clusters



DRP has seven targeted industry clusters that was identified to support and diversify the economy, while creating jobs for all in the 11-county Detroit Region.

The story maps contain regional data trends, local expertise insights, case studies, and has a complimentary downloadable business case PDF.





MOBILITY & AUTOMOTIVE



ADVANCED MANUFACTURING



CORPORATE & PROFESSIONAL SERVICES



RESEARCH, ENGINEERING, & DESIGN



DIGITAL TECHNOLOGY



LOGISTICS



FINANCIAL SERVICES





DRP is an economic development 501(C)(3) nonprofit that offers confidential, no-cost assistance to domestic and international companies seeking to explore and invest in the 11-county Detroit Region.

DRP SERVICES

- A Single Point of Contact
- Regional Data
- Connections to Key Partners
- **Incentives and Talent Assistance**
- **Building and Site Analysis**

DRP CONTACT

- **Email**: info@DetroitRegionalPartnership.com
- Website: DetroitRegionalPartnership.com
- Phone: 313.518.5600
- Office: 1001 Woodward Ave. Suite #800 Detroit, MI











9 @detroitregional