

MICHIGAN IS AUTOMOBILITY



MICHIGAN'S AUTOMOBILITY ECOSYSTEM: **ASSETS**

The mobility industry
contributes
\$304 BILLION
to Michigan's economy annually

26
Original Equipment
Manufacturers (OEM) have
headquarters or technology
centers in Michigan

96 OF THE TOP 100
automotive suppliers to North American
have a presence in Michigan and
60 are headquartered here

\$15 BILLION
business-funded automotive R&D
occurs in Michigan annually, or
68% of the nation's share

Michigan ranks
6TH IN
THE NATION
for number of inventors, with
6,806 issued patents in 2020

2,200+
FACILITIES
with engineering, design, testing,
and validation capabilities

#1
for operational U.S. Department of
Transportation-funded connected vehicle
deployments with **16** projects

OVER 500 MILES
of roadway equipped for connected
and automated vehicles

1.1 MILLION
automotive or mobility jobs representing
20% of Michigan's employment

9 FACILITIES
producing and developing electric
vehicle batteries in Michigan

16
universities and colleges in Michigan
offer nationally ranked undergraduate
engineering programs and **4** offer
nationally ranked graduate programs

RANKED #1
in the nation
for automotive
manufacturing jobs

**16 VEHICLE
MODELS**

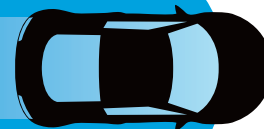
assembled in 11
Michigan plants in 2021

**26 OEMs IN
MICHIGAN**

presence of headquarters,
R&D facility, or technical center

18%

of all U.S. vehicle production
and **12%** of North American
vehicle production occurred
in Michigan in 2020



\$10 BILLION

invested in EV and AV firms
in Michigan, 2010-2020



OEMs IN MICHIGAN

PRESENCE OF HEADQUARTERS, R&D FACILITY, OR TECHNICAL CENTER



BOLLINGER MOTORS



DAIMLER



GAC MOTOR



Great Wall



HINO



HONDA



HYUNDAI

ISUZU



LORDSTOWN



Mahindra



MAZDA



**MITSUBISHI
MOTORS**

NAVISTAR



NISSAN



RIVIAN



SAIC MOTOR



**SHYFT
GROUP™**



SUBARU



TOYOTA



LEADING THE **ELECTRIC** FUTURE

ELECTRIC VEHICLE PRODUCTION IN MICHIGAN

Michigan is paving the way for greater EV advancement through investments in new facilities that will produce all-electric vehicles and their components.

Akasol, Battery Integration Center

\$40 million for a 400-person battery technology integration center in Hazel Park.

Ford Motor Company: Electric Vehicle Center

\$700 million for new EV center at the historic Rouge Complex in Dearborn, which will house production for the all-electric Ford F-150 pickup truck.

General Motors Co.: Factory Zero

\$2.2 billion for Factory ZERO at the Detroit-Hamtramck Assembly Center, GM's first fully dedicated EV assembly plant.

**\$10.6
BILLION**

investment for
EV and AV firms
in Michigan,
2010-2020

10,620

Registered EV in
2020 in Michigan

Magna International: Electric Vehicle Structures

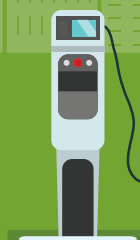
\$70.1 million to construct a new St. Clair facility that will produce battery enclosures for GM's 2022 GMC Hummer EV.

Stellantis: Hybrid Electric Vehicles

\$4.5 billion to build new assembly plant in Detroit and add production at five existing Michigan facilities to expand capacity to grow core brands and electrify Jeep vehicles.

Waymo: Vehicle Integration Center

\$13.6 million of investment for vehicle integration operations in Hamtramck where it will integrate self-driving systems into its OEM partners' vehicle platforms.





1/3
of U.S. battery production
and development is
in Michigan



20 LAWS
and incentives in Michigan
related to alternative fuels
and advanced vehicles



3.2 MILLION
increase in light vehicle EV production
is projected by 2030 with **19.6%** of
production in North America

EV CHARGING INFRASTRUCTURE

720+

publicly accessible
charging stations

1,580+

publicly accessible
charging ports

32nd

ranking in public EV
charging stations per capita

EV CHARGING STATIONS BY REGION

Upper Peninsula:	10+
Traverse City Region:	40+
Grand Rapids Region:	80+
Lansing Region:	45+
Detroit Region:	300+

Source: U.S. Department of Energy
Note: Data accessed 08/20/2021. Includes only public DC Fast and Level 2 chargers. Not a comprehensive list.

EV CHARGING PROGRAMS

Charge Up Michigan: EV charger placement project to build infrastructure for direct-current fast charging stations in the state through the creation of grants to fund installation. The program's goal is to complete the statewide charging network by 2030.

DTE Charging Forward: Two-phase EV pilot program to encourage and facilitate EV adoption through rebates and incentives to develop a statewide charging network as well as maintenance of the existing network and education and outreach on the benefits of electrification.

PowerMIFleet: Consumers Energy program offering rebates of up to \$50,000 to companies that install EV charging stations.

Source: IHS Markit, Michigan Department of Labor and Economic Opportunity, Michigan Economic Development Corp., U.S. Department of Energy Alternative Fuels Data Center

LEGISLATIVE COMMITMENT



2021 POLICY PRIORITIES



Robust Talent Pipeline

Develop a strong, diverse, and inclusive talent pipeline for both the current and emerging automotive and mobility industry.



Connected, Automated, Shared, and Electric Future

Support automotive innovation.



Global Mobility Leader

Market Michigan's one-of-a-kind automotive and mobility assets.



Fair Trade and Global Supply Chains

Promote fair trade through the pursuit of high-standard trade agreements.



COVID-19 Response

Advocate for responsible and effective COVID-19 policies that protect residents and employees while maintaining a robust industry.



MICHIGAN OFFICE OF FUTURE MOBILITY & ELECTRIFICATION

At the 2020 MICHauto Summit, Gov. Gretchen Whitmer signed Executive Directive 2020-01 and Executive Order 2020-02 to create the Office of Future Mobility and Electrification and the Council on Future Mobility and Electrification respectively to:

- Increase mobility investment in Michigan.
- Engage more mobility startups.
- Accelerate EV adoption in Michigan.
- Expand Michigan's smart infrastructure.
- Further enable Michigan's mobility workforce.
- Bolster Michigan's mobility manufacturing core.



Cavnu, a spin-off of Alphabet's Sidewalk Labs, is developing the 40-mile connected corridor between Detroit and Ann Arbor dedicated to autonomous vehicles. First phase of the project will include a feasibility and design study with the OFME and MDOT.

FUEL TRANSFORMATION PROGRAM



The Michigan Department of Environment, Great Lakes, and Energy announced in 2021 a \$30 million funding opportunity for the replacement of commercial, mass transit, and transportation support vehicles that move products with new models, including electric, alternative fuel, and diesel vehicles.

TALENT PROGRAMS



Provides awards to employers to assist in training, developing, and retaining current and newly hired employees. \$39.5 million awarded in FY2021 to 1,021 employers. Helped provide new skills to 11,751 new hires and upskilled 18,430 incumbent workers.



Program affiliated with the Detroit Regional Chamber's Detroit Drives Degrees adult education initiative supporting adults ages 25-64 interested in furthering their education. In collaboration with postsecondary institutions, it provides adults with free institution-neutral college and career navigation and wrap-around supports to create a personalized pathway to and through college.



Last-dollar state scholarship program that provides Michigan's adult learners with the opportunity to pursue an associate degree or skill certificate at any of Michigan's public community colleges and receive free in-district tuition, mandatory fees, and contact hours.



\$24 million investment funded by the Governor's Education Emergency Relief Fund, part of the CARES Act, that provides Michigan's frontline workers who worked in essential industries during the state's COVID-19 shutdown in spring 2020 with the opportunity to pursue an associate degree or skill certificate at any of Michigan's public community colleges and receive free in-district tuition, mandatory fees, and contact hours.



Michigan's position with a shared international border with Canada allows the state to have one of the largest export markets and remain one of the most globally connected regions.

\$44 BILLION

exported in goods in 2020,
down 21.1% year-over-year

8th

state in the nation
for exports in 2020

#1

exporter of
transportation
equipment
in the U.S.

\$4 BILLION

automotive and mobility
foreign direct investments

Creating more than

15,000 JOBS

in the Detroit region from 2017-2020

#2

exporter to Canada and #3 exporter
to Mexico with a combined
\$26.4 billion in goods

44.6%

of Michigan's exports in 2020
were transportation equipment
worth \$19.8 billion in value

Source: FDI Intelligence,
Detroit Regional Partnership,
International Trade Administration



CROSS-BORDER TESTBED WITH STATE OF MICHIGAN AND ONTARIO, CANADA

In 2021, MDOT, the Office of Future Mobility and Electrification (OFME) and Ontario's Autonomous Vehicle Innovation Network created a partnership to explore implementation of a cross-border multimodal testbed for advanced automotive and mobility solutions.

TALENT ADVANTAGE

MICHIGAN RANKS #1

in number and concentration of:

40,340

Mechanical Engineers

600

Model Makers
(metal and plastics)

RANKS #2

in number of:

25,380

Industrial Engineers

5,060

Commercial and
Industrial Designers

3,980

Mechanical Engineering
Technologists and Technicians

RANKED #3

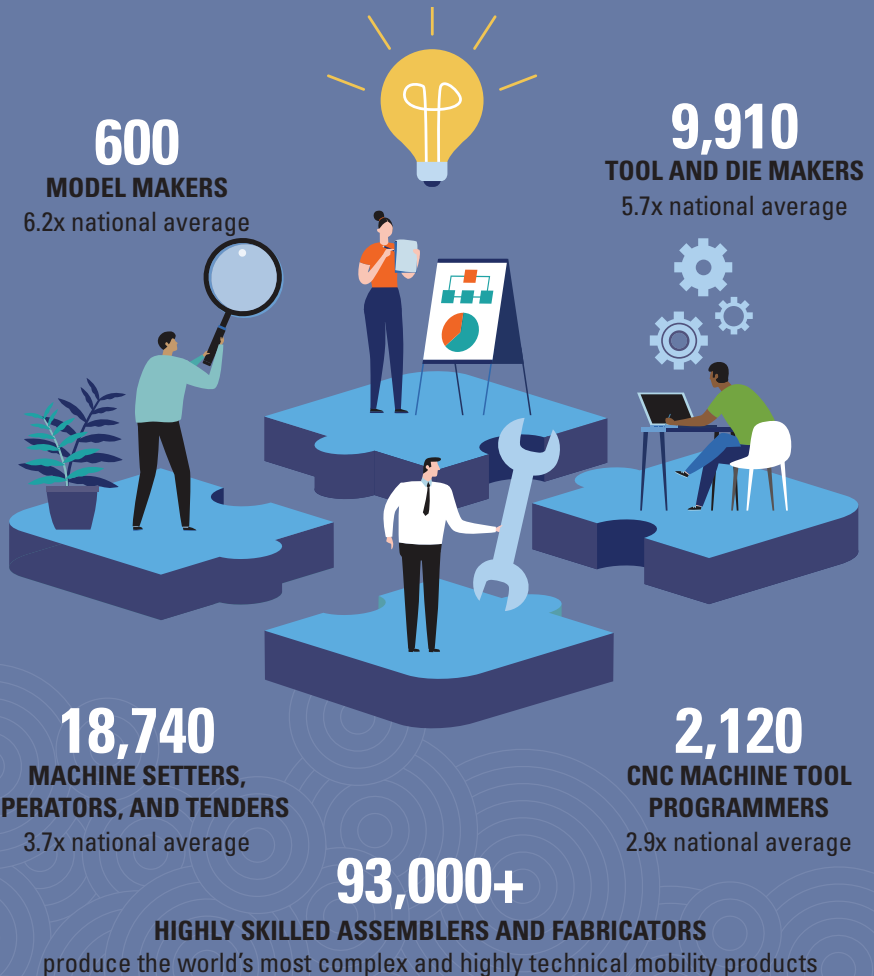
in the number of engineers
in the nation

104,870

Engineers in Michigan

SKILLED TRADES

Skilled trades workers comprise 1.2 million people across the state. Michigan's national competitive advantage includes high concentrations of numerous skilled trade occupations, including:



Source: EMSI and U.S. Bureau of Labor Statistics

JOB POSTINGS

2,102

average monthly hires in engineering in Michigan

8,194

unique engineering job postings were available in the first six months of 2021 in Michigan, 1.5x more than six months prior

MICHIGAN IS RANKED 5TH

for active engineering job postings after California, Texas, New York, and Massachusetts

Top Counties Postings Automotive Engineering Jobs

Macomb, Oakland, Wayne

Top Cities Posting Automotive Engineering Jobs

Auburn Hills, Detroit, Warren

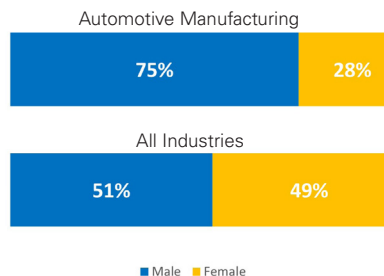
Top High-Tech Job Postings in Michigan

- Software Engineers **1,679**
- Controls Engineers **1,088**
- Manufacturing Engineers **824**
- Software Developers **809**
- Quality Engineers **761**

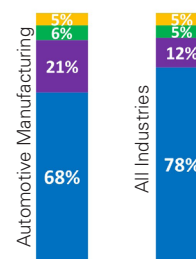
Source: EMSI, January-June 2021

DIVERSITY IN THE AUTOMOTIVE MANUFACTURING INDUSTRY IN MICHIGAN

Industry Gender Breakdown



Industry Race/Ethnicity Breakdown



■ White ■ Black or African American ■ Asian ■ Hispanic or Latino

Source: EMSI, Michigan, NAICS: 3361-3, 2020

WOMEN MAKE UP

28%

of automotive manufacturing jobs, compared to 49% of all industries

32%

of automotive manufacturing jobs in Michigan are fulfilled by racially diverse workers, compared to 22% of jobs across all industries



Source: EMSI, MICHauto analysis



The Center for Automotive Diversity, Inclusion, and Advancement is a nonprofit organization focused on promoting diversity and inclusion in the automotive industry by providing DEI tools, networks, insights, and practical advice to companies in the automotive and mobility space.



A group of automotive CEOs, formed by MICHauto and CADIA in 2020, committed to taking action to make meaningful strides in diversity, equity, and inclusion in order to become a more inclusive industry, leverage diverse talent, and better engage the workforce.

EDUCATION PIPELINE

The automotive and mobility industry depends on top engineering graduates to power Michigan's workforce. This highly skilled talent pipeline is propelling the industry forward into the next generation and growing the state's economy.

TOTAL DEGREES



were awarded by state educational institutions in 2020

ENGINEERING DEGREES



were awarded by Michigan educational institutions in 2020, with 34% masters degree or higher

RANKED ENGINEERING PROGRAMS



universities and colleges nationally ranked undergraduate engineering programs and 4 have nationally ranked graduate programs

Source: EMSI, U.S. News and World Report, and University Research Corridor

TOP 10 ENGINEERING GRADUATES

Institution	City	Degrees Conferred (2020)	IPEDS Tuition and Fees (2020)
University of Michigan	Ann Arbor	2,567	\$16,948
Michigan State University	East Lansing	1,066	\$15,555
Michigan Technological University	Houghton	998	\$17,645
University of Michigan	Dearborn	604	\$13,552
Wayne State University	Detroit	575	\$14,629
Oakland University	Rochester	552	\$14,520
Western Michigan University	Kalamazoo	473	\$13,017
Kettering University	Flint	453	\$42,906
Lawrence Technological University	Southfield	274	\$36,630
Grand Valley State University	Allendale	169	\$13,576



\$19 BILLION
net economic impact with
141,235 enrolled students and
\$2.56 billion in R&D spending

1.3 MILLION
URC alumni worldwide with
690,000 graduates residing in Michigan

Community College Mobility Centers



K-12



Talent attraction program led by MICHauto, in partnership with Square One Education Network and Project Lead the Way, to connect Michigan high school students with automotive and mobility companies to learn from industry experts about the diverse job opportunities in the field. 750+ students have been engaged in the program since 2018.



Michigan ranks 1st in the number of high school and elementary school teams in the country.



Provides STEM learning opportunities for the teachers and students of the "Square One Nation" and builds the high-tech talent supply chain for postsecondary and industry partners, boasting 85 schools involved and 743 completed challenges.

HIGHER EDUCATION



At the CyberTruck Challenge, students from 20 universities, government, industry, and security researchers from all over the world join annually to address challenges in heavy vehicle cybersecurity and talent development.



At the Formula SAE Michigan Competition at Michigan International Speedway, university students construct a single-seat race car with the best overall design, construction, performance, and cost.



The annual competition at Oakland University between students encompasses the latest technologies, from electrical engineering and computer science to intelligent vehicle systems. Lawrence Technology University Placed 1st in the self-drive challenge.



Focused on boosting the mobility talent pipeline and closing the mobility education and skill gap by offering upskilling programs, postsecondary degrees, and certificates. The Michigan Mobility Institute, together with select universities, will offer the first-of-its-kind Master of Mobility starting in 2021.

CONTINUING EDUCATION



Developer Academy

Launched in collaboration with Michigan State University, Apple Developer Academy expects to reach close to 1,000 students each year with a curriculum that covers coding, design, marketing, and professional skills and is open to all learners.



WAYNE STATE UNIVERSITY

The university is offering six-week online certification courses in AV technologies in partnership with Armesite Inc., a Detroit-based software company. Course subjects include autonomous vehicle technologies, data science, electric vehicle technologies, mobility as a service, and programming for autonomous systems.



This autonomous vehicle certification program offers credentials, certification, and continuing education courses specializing in intelligent transportation, autonomous technologies, and new mobility systems.



Through this certificate in current and emerging technologies (CCET) in partnership with Nexus, University of Michigan offers non-credit, remote, and online certification programs in current and emerging technologies and trends including electric vehicles, connected and automated vehicles, and smart manufacturing.

TALENT ATTRACTION AND RETENTION



Let's Detroit is a Detroit Regional Chamber program that connects young talent with resources to learn about living, playing, and working in the Detroit region through ambassadors who share their real and unique insights and perspectives.



MICHauto's first-of-its-kind industrywide talent attraction campaign was created to raise awareness about and improve the perception of careers in the automotive and mobility industry among emerging talent through authentic testimonials from young professionals.

**HIGHER EDUCATION
RESEARCH LEADERSHIP**

**8TH IN THE
NATION**
for higher education R&D

**\$2.7
BILLION**
in higher education R&D

\$461 MILLION
or 17% of Michigan's higher education
R&D is dedicated to engineering

ENTREPRENEURIAL NETWORK

MOBILITY TECHNOLOGY INVESTMENTS

Through its vast network of accelerators and venture capital firms, Michigan's well-developed startup community ensures the technologies solving the world's mobility-related challenges are being created and developed in the state.

22 venture capital firms funded mobility technology startups

73 organizations provided entrepreneurial support

6% of angel investments funded mobility startups in the state

\$558 million in venture capital investments in 2020, up 46% from 2018

7% of venture capital investments were dedicated to the mobility sector in 2020

8 angel investors helped fund mobility startups



INNOVATION COLLABORATION

Automation Alley™

industry 4.0 Accelerator

Automation Alley Industry 4.0 Accelerator

Led by Automation Alley, with Lean Rocket Lab and Lawrence Technological University's Centrepolis Accelerator, this program helps early-stage and established companies with digitization to grow innovation and commercialization.



Detroit Center for Innovation

In partnership with the University of Michigan, the innovation center is designed to stimulate entrepreneurial activity and enable further diversification of the regional economy. Initial academic areas are likely to include artificial intelligence, mobility, sustainability, data science, cybersecurity, entrepreneurship, and financial technology.

DETROIT MOBILITY COALITION

Powered By:



Detroit Mobility Coalition powered by MICHauto

A collaborative effort between stakeholders to provide plans and updates on the mobility ecosystem. The group, which was initially formed in December 2016, meets to share plans, events, and actions to advance technology and solutions in the mobility space. It includes 150 members from 68 companies and organizations.



Ford's Corktown Campus

Ford Motor Company's Mobility Innovation District in downtown Detroit is a hub for innovators, startups, entrepreneurs, and other partners from around the world to develop, test, and launch new mobility solutions that will shape the future of the mobility industry.

PLUGANDPLAY DETROIT

Powered by



Plug and Play Detroit powered by AmplifyD

In partnership with Stellantis, the Michigan Minority Supplier Development Council, Michigan Economic Development Corp., and BorgWarner, the innovation hub involves business units directly with startup technologies, ultimately achieving more pilot projects, proofs of concept, and strategic partnerships to advance automotive mobility.

TESTING AND DEPLOYMENT LANDSCAPE

DEPARTMENT OF TRANSPORTATION

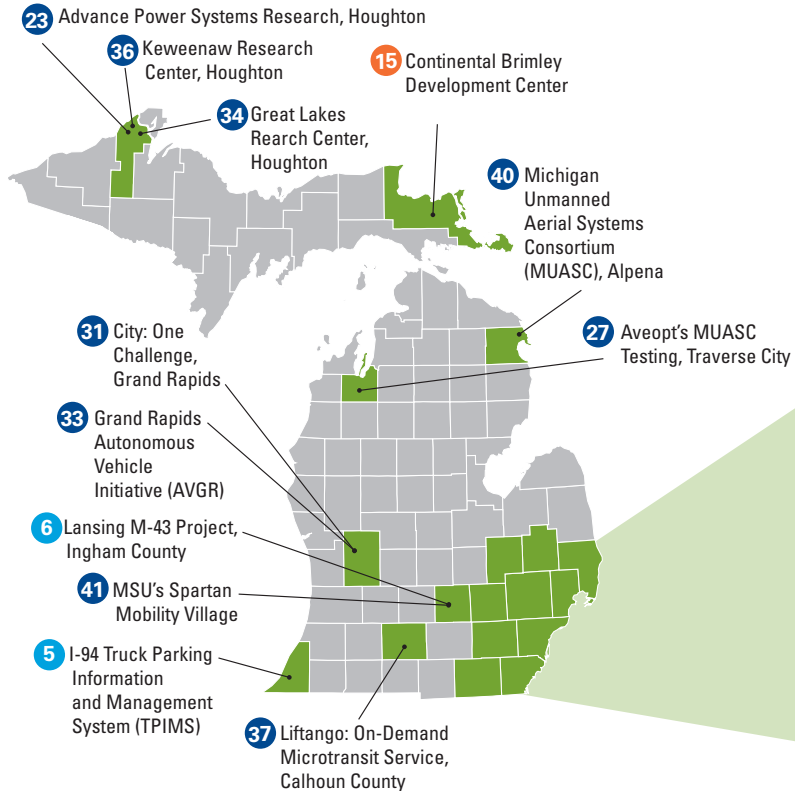
1. Auburn Hills Test Bed Deployment
2. I-275 Curve Speed Warning Deployment
3. I-69 Truck Platooning Test Support - TARDEC and MDOT
4. I-75 Modernization Test Bed Deployment - MDOT and 3M
5. I-94 Truck Parking Information and Management System (TPIMS)
6. Lansing M-43 Project, Ingham County
7. M-53 SPaT/Transit Signal Priority Deployment - MDOT and SMART
8. Macomb County Department of Roads 300+ Miles Deployment
9. MDOT Intelligent Woodward Corridor Project
10. Semi-Autonomous Vehicle International Border Crossing - MDOT, Province of Ontario, Continental, and Magna International
11. Southeast Michigan Test Bed
12. US-12 Test Bed Deployment
13. US-23 Flex Route - Active Traffic Management

PROVING GROUNDS

14. Chelsea Proving Grounds - Stellantis
15. Continental Brimley Development Center
16. Ford Automatic Transmission New Product Center
17. Ford Dearborn Development Center
18. Ford Michigan Proving Grounds
19. FT Techno of America, Fowlerville Proving Ground
20. General Motors Co. Proving Grounds
21. Robert Bosch LLC - Automotive Proving Ground
22. Toyota Research Institute Automated Vehicle Test Facility

PUBLIC/PRIVATE DEPLOYMENT PARTNERSHIPS

23. Advance Power System Research, Houghton
24. Airspace Link: Southeast Michigan Pilot Expansion
25. American Center for Mobility
26. Ann Arbor Connected Vehicle Test Environment 50+ miles
27. Aveopt's MUASC Testing, Traverse City
28. Binational Autonomous Drive - Detroit Windsor Tunnel
29. CAVNUE: Detroit-Ann Arbor Corridor
30. City: One Challenge Corktown, Detroit
31. City: One Challenge, Grand Rapids
32. Detroit Smart Parking Lab
33. Grand Rapids Autonomous Vehicle Initiative
34. Great Lakes Research Center, Houghton
35. Kettering University General Motors Mobility Research Center
36. Keweenaw Research Center, Houghton
37. Liftango: On-Demand Microtransit Service, Calhoun County
38. May Mobility Ann Arbor AV Shuttle Deployment
39. Mcity Test Bed at University of Michigan's Mobility Transformation Center
40. Michigan Unmanned Aerial Systems Consortium, Alpena
41. Michigan State University's Spartan Mobility Village
42. Mobileye and MDOT Deployment in Southeast Michigan
43. MUVE: WAVE MaaS Pilot
44. NAVYA and University of Michigan Campus Shuttles



Full MICHauto Automobility Asset Map can be viewed at

MICHAUTO.ORG

#1
for operational
U.S. Department of
Transportation-funded
connected vehicle
deployments with 16 projects

500 MILES
of connected and automated
equipped roadways
120 MILES
of technology-enabled
smart corridors statewide

Michigan Department of Transportation
(MDOT) maintains and operates
NEARLY 6,000
Intelligent Transport System
devices statewide



Source: Michigan Economic Development Corp.
and U.S. Department of Transportation

MOBILITY FUNDING PROGRAMS

\$8 Million Michigan Mobility Challenge

Grant initiative seeded with legislative appropriation to address core mobility gaps for seniors, people with disabilities, and veterans. An MDOT-led collaborative effort, the Challenge has funded a total of 13 projects in communities of varying sizes throughout Michigan.

City Collaborations

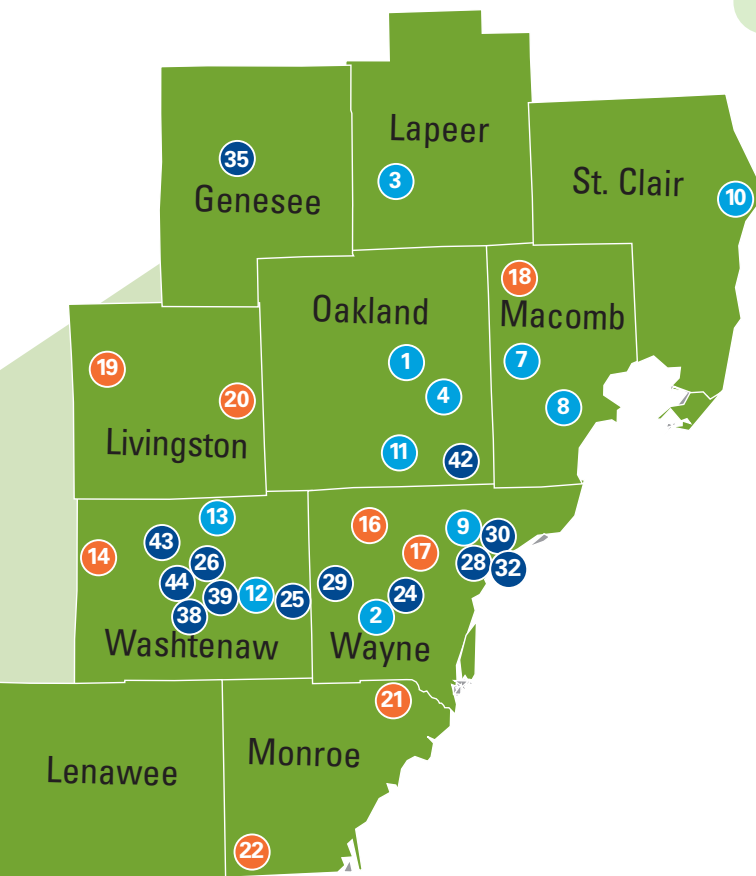
Public-private partnerships include Project Kinetic and the Grand Rapids Autonomous Vehicle Initiative (AVGR). Project Kinetic was a collaboration between the City of Detroit and partnering organizations, which yielded more than 120 innovative mobility pilots and solutions. AVGR is a collaboration between May Mobility and the City of Grand Rapids to launch an on-demand autonomous route to help connect local businesses, entertainment, and education institutions.

City: One Challenge, Corktown and Grand Rapids

Collaboration between the state, Ford Motor Company, and local partners to modernize and streamline access to transportation as well as solve mobility problems to help improve the quality of life for communities.

Michigan Mobility Funding Platform

Building upon the success of the PlanetM Mobility Grants, the Office of Future Mobility and Electrification (OFME) and MDOT launched the Michigan Mobility Funding Platform to provide grants to mobility and electrification companies looking to deploy their technology solutions in the state of Michigan. The platform is designed to accelerate investment in solutions that create safer, more equitable and environmentally conscious transportation for all Michigan residents and companies who anticipate long-term growth in Michigan.



TECHNOLOGY ASSETS

INDUSTRY 4.0

13,600

workers employed in industries related to Industry 4.0 and automation in Michigan, the most in the nation

28,000+

industrial robots in use in Michigan, the most out of any U.S. state, and a 12% share of the U.S. total

FIRST-IN-THE-NATION

Industry 4.0 accelerator program, launched by Automation Alley, Lean Rocket Lab, and Lawrence Technological University's Centrepolis Accelerator

50%

of all Michigan manufacturers — 6,200 businesses — will be prepared for adoption of Industry 4.0 technologies by 2025 through partnerships with Automation Alley and Michigan Manufacturing Technology Center

Source: Automation Alley, Brookings Institution, EMSI, Michigan Economic Development Corp.

MAJOR PUBLIC RESEARCH UNIVERSITIES



MSU Mobility focuses on a multimodal approach to R&D, studying the interaction between people and mobility with the campus transformed into a live, connected ecosystem. Research from multiple disciplines creates integrated systems of communication and controls for autonomous and connected vehicles, as well as human engagement with autonomous technology.

The Connected and Autonomous Networked Vehicles for Active Safety (CANVAS) initiative and Spartan Mobility Village, include mobility labs and a live, connected ecosystem to drive mobility R&D to advance smart-vehicle technology and better understand the human element.



Mcity, the advanced mobility research center, has the goal to realize the potential of mobility technologies. Mcity includes Mcity Labs, a wide range of CAV research, and a commitment to education and outreach.

- 25 industry partners
- 25 active funded research projects
- \$28.2 million invested in R&D and deployment projects
- 9,000 hours of testing and engagement since 2017

Battery Lab is a space developed in cooperation with Michigan Economic Development Corp. and Ford Motor Company to work with industrial and academic energy storage user communities to prototype, test, and analyze batteries.

Transportation Research Institute (UMTRI), in existence for 55 years, has become the world's foremost organization focusing on multidisciplinary transportation safety and mobility.



Wayne Mobility Initiative formed in 2020 with the goal of addressing mobility challenges at all levels. The Mobility for All Competition, a three-phase event, focuses on challenges related to public transit, walkability, CAVs, and access to food, health care, and education.

Along with extensive labs, the university's Connected and Autonomous Driving Lab (CAR Lab) aims to design and implement enabling technologies, including edge computing, communication systems, data analytics and applications, secure trusted execution environment, privacy preserving models, and tools to realize the vision of connected and autonomous driving.

RESEARCH AND TECHNOLOGY CENTERS



American Center for Mobility
CONNECTED. AUTOMATED. VALIDATED.



United States
Environmental Protection
Agency



LIGHTWEIGHT
INNOVATIONS

DEFENSE AND AEROSPACE

U.S. Army's Ground Vehicle Systems Center (GVSC)

Located at the Detroit Arsenal in Warren, it is home to 1,000 researchers and engineers developing and maintaining vehicles for all U.S. Army Forces. GVSC engages with industry and academic institutions to develop, integrate, and sustain technology solutions for all manned and unmanned DoD ground vehicle systems and combat service support equipment.

Next-Generation Combat Vehicle Cross Functional Team

Located in Michigan, it leads in the development and modernization of next-generation combat vehicles, military equipment, and communications.

Michigan Launch Initiative

Public-private entity providing a platform for academia, industry and governmental agencies to provide low earth orbit and hypersonic launch technology for commercial and defense applications. Plans include organizing industry partners to establish and operate satellite launch facilities and a command center in Northern Michigan.

CYBERSECURITY

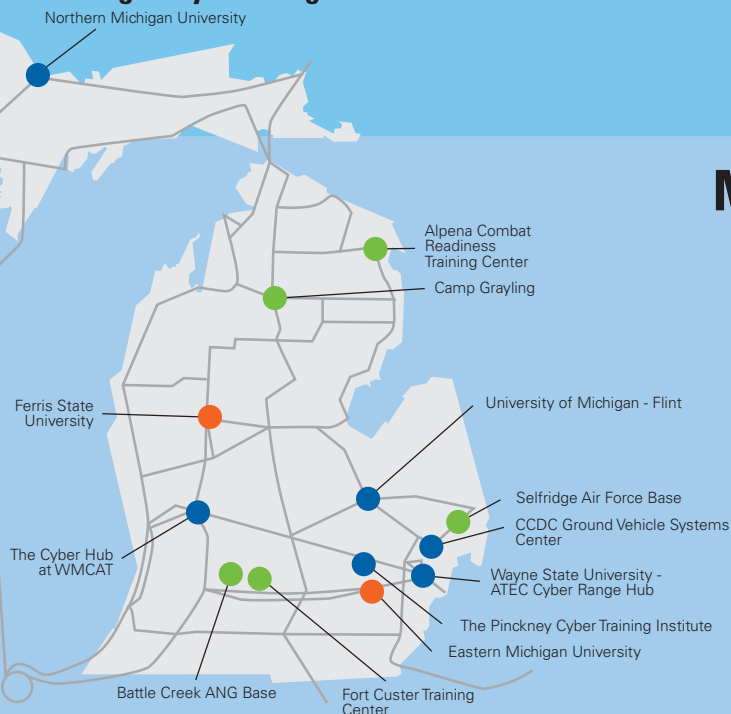
Metro Detroit Regional Vehicle Cybersecurity Institute

A \$1.1 million U.S. Department of Defense grant established a regional cybersecurity consortium with a focus on enhancing cybersecurity for Michigan's engineering workforce through applied curriculum. Led by University of Detroit Mercy, along with Macomb Community College, Oakland Community College, University of Arizona, and Washtenaw Community College, the consortium supports upskilling and reskilling for vehicle cybersecurity by prioritizing underrepresented populations, military personnel, and veterans.

Michigan Cyber Range

Through 4,000 miles of fiber optic infrastructure, the Michigan Cyber Range, powered by Merit Network, is the nation's largest unclassified network-accessible cybersecurity training platform. Through teaching, testing, and training, the network assists higher education, K-12, and government sectors in strengthening Michigan's cyber defense by mitigating the growing number of cyber threats and providing a more secure environment that promotes economic development.

Michigan Cyber Range Sites



MICHIGAN RANKS #11

for net tech employment

Source: CompTIA's 2021 CyberState report

7,129

cybersecurity job openings in Michigan

Source: Cyberseek U.S., April 2020 - March 2021

- Merit Backbone
- Cyber Range Sites
- MiNG Cyber Hubs
- Local Cyber Hubs

MICHIGAN'S AUTOMOBILITY

MICHIGAN RESPONDS AND LEADS IN 2020

2020 proved to be a significant year that challenged society, including the automotive manufacturing industry in Michigan, which decreased by 92,000 jobs in one month. While the automotive manufacturing sector was heavily impacted by pandemic-related layoffs, the industry quickly responded by pivoting production to Personal Protective Equipment for essential workers.

During times of crisis Michigan's automotive industry has continued to prove its relevance and commitment to innovation. It served the nation's engineering and manufacturing operations – for the Arsenal of Democracy in WWII to the Great Recession, and most recently, the COVID-19 pandemic. As the manufacturing industry reopened in mid-2020, the automotive industry set the standard for reopening through leading safety protocols, processes, and equipment.

MICHIGAN'S CENTURY OF AUTOMOTIVE CULTURE

Michigan has a long history of creation, innovation, and celebration of automotive culture. While the industry has changed over the past century, the state continues to lead in reflecting on the past and revolutionizing the future of mobility.

AUTOMOTIVE
HALL of FAME



CHEVROLET
DETROIT
GRAND PRIX
LEAR



the
Henry
Ford



MICHIGAN
INTERNATIONAL SPEEDWAY



NORTH AMERICAN
INTERNATIONAL
AUTO SHOW



WOODWARD
DREAM CRUISE





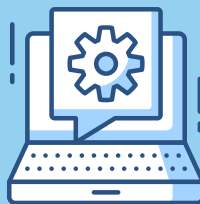
EDUCATION PIPELINE

8,500+

engineering degrees conferred annually

16

undergraduate and 4 graduate nationally ranked engineering programs



DEPLOYMENTS, TESTING, AND VALIDATION CENTERS

89

technology activations across the state since 2019, through deployments, pilots, or testing grants

14

Proving Grounds

#1

for U.S. DOT-funded operational connected vehicle deployments with **16** projects



TALENT ADVANTAGE

104,800+

engineers in Michigan, ranking **3rd** in the nation

Ranking nationally:

#1

Mechanical Engineers (40,340)

#2

Industrial Engineers (25,380)

#2

Commercial and Industrial Designers (5,060)

17%

of U.S. automotive manufacturing jobs are in Michigan

ENTREPRENEUR COMMITMENT



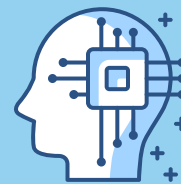
22

venture capital firms and 8 angel investors in the mobility space with **73** organizations providing entrepreneurial support

TECHNOLOGY ADVANTAGE

\$5 BILLION

defense contracts, **155,000+** employed, and **4,000** defense suppliers in Michigan



13,600+

workers employed in industries related to Industry 4.0 and automation, the most in the nation

28,000+

industrial robots, more than any other state

TRANSPORTATION, DISTRIBUTION, AND LOGISTICS LEADER



#1

Northern international border crossing

Michigan State University undergraduate and graduate programs in Supply Chain Management

RANKED #1



MICHauto.org

Promote. Retain. Grow.

As Michigan's only automotive and mobility cluster association, MICHauto provides a platform for industry leaders and stakeholders to engage in advocacy, build awareness, increase access to talent, and foster next-generation mobility.



The artwork featured on the cover of this publication was created by student illustrator, Lena Soulas, in partnership with Northern Michigan University.



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