

DRIVING TOWARD AN AUTONOMOUS FUTURE



VIA THE MICHIGAN-OHIO INNOVATIVE CORRIDOR

Testing the Automotive Midwest Market



Without question, growth in the autonomous vehicle market has skyrocketed, and analysts are projecting no signs of slowdown. Hundreds of millions of dollars continue pouring into research, testing and development within this segment as innovators look to capitalize on this game-changing technology. If there were still any questions, the long-discussed future of the automotive industry has arrived.

With that, it's no surprise Michigan and Ohio stand at the forefront of the autonomous vehicle industry, having recognized, adopted and implemented the advancements of this flourishing segment. The two states, ranked Nos. 1 and 2 nationally for employment in the automotive sector, have long been tied together in the industry, both because of their proximity to one another and their location on the I-75 corridor.

Michigan, the birthplace of all things automotive, employs nearly 1 million people in the industry. There are more than 2,200 automotive facilities calling Michigan home which conduct operations tied to research, design, engineering, testing and validation.

Ohio, meanwhile, has been recognized as one of the leading automotive suppliers in the western hemisphere. Located within 600 miles of 77% of North American OEMs, Ohio is the No. 1 manufacturer of engines and transmissions.

These two states offer an exceptional combination of nationally ranked educational institutions, industry-specific resources and a highly talented workforce – all geared toward supporting the advancements with autonomous vehicles. And for good reason.

Experts say the driverless market will be worth \$77 billion by 2035. It's expected to comprise 25% of the global market between 2035-2040. And the adoption of driverless cars could save thousands of lives.

Growing with this industry, find out how Michigan and Ohio have positioned themselves at the forefront of testing, research and development – from Detroit, down I-75 through Toledo, across the Ohio Turnpike and south to Columbus. Learn about the latest innovations related to autonomous vehicles taking place at three sites:

- **The American Center for Mobility at Willow Run, Ypsilanti Township, Michigan**
- **Ohio Turnpike and Infrastructure Commission, Northern Ohio East-West Thoroughfare**
- **Automotive Technology Coalition, Toledo, Ohio**
- **Transportation Research Center, East Liberty, Ohio**



The American Center for Mobility

Ypsilanti Township, Mich.



"AUTONOMOUS VEHICLES NEED TO BE TESTED AND VALIDATED BEFORE THEY ARE PROVEN SAFE FOR PUBLIC DEPLOYMENT ... AND ACM'S PROFESSIONAL STAFF HAS THE COMBINED AUTOMOTIVE INDUSTRY EXPERIENCE, TECHNICAL KNOWLEDGE AND SKILLS TO SOLVE THE MOST COMPLEX TESTING CHALLENGES."

- Soraya Kim, Chief Innovation Officer, ACM



Opened in 2017, the American Center for Mobility (ACM) is a state-of-the-art proving grounds for the testing of connected and automated vehicle technology. Located at the historic Willow Run site in Ypsilanti Township, Mich., the ACM is a global center for testing and validation, product development, education and standards work.

The 500-acre site is equipped to enable a combination of simulation, track testing and on-road testing. It offers the opportunity to test during all four seasons, day and night, and under virtually any driving condition. These elements help to create the perfect environment for testing and setting national standards for mobility technologies before vehicles and other products are deployed.

Real-life driving features at the site include a 2.5 mile highway speed loop, triple decker overpasses, railroad tracks, tunnels and roundabouts. Alongside the testing grounds is a technology park with multi-tenant, shared office space offering additional services including simulation, wireless, EMC and a cyber security lab.

For more information visit: www.acmwillowrun.org



AUTONOMOUS VEHICLES ARE PREDICTED TO FREE UP TO 50 MINUTES A DAY FOR DRIVERS

Ohio Turnpike & Infrastructure Commission

Northern Ohio East-West Thoroughfare



"OUR GOAL IS TO MONITOR SYSTEMS AND ANALYZE DATA TO ACT BEFORE SOMETHING TRAGIC HAPPENS. THERE ARE BENEFITS IN EFFICIENCY AND SAFETY WE CAN GAIN TODAY, AND WE WANT TO HELP MAKE THAT HAPPEN"

- Randy Cole, Executive Director, Ohio Turnpike



A 241-mile stretch of road running east-west in Northern Ohio has been described as an ideal location for the testing of autonomous vehicles. With six lanes of well-maintained roadway, the Ohio Turnpike offers a continuous, uninterrupted course, aiding in the state's efforts to play a prominent role in the testing and research of autonomous vehicles.

Already equipped with fiber optics along the entire Turnpike stretch, Ohio has allotted itself greater opportunities into connected vehicle testing and technology. Just last year, the Turnpike Commission announced plans to install Dedicated Short Range Communications (DSRC) along a 61-mile stretch. This two-way wireless communications allows for communication between vehicles and with roadway sensors. Alerts about traffic, weather and road conditions will appear on the dashboards of those digitally connected vehicles.

This project includes outfitting roughly 40 turnpike vehicles, including snow plows, to collect road data to improve efficiency. Communications between the snow plows will help better gauge where salt and liquid de-icers are needed, providing cost savings on snow and ice materials. In addition, communications with connected vehicles will help reduce traffic crashes.

Plans are to ultimately expand DSRC across the entire stretch of the Ohio Turnpike.



HUMAN ERROR ACCOUNTS FOR ROUGHLY 90% OF ACCIDENTS ON ROADWAYS. THE CREATION OF DRIVERLESS CARS IS EXPECTED TO HAVE A SIGNIFICANT IMPACT IN REDUCING SUCH ACCIDENTS.

Transportation Research Center

East Liberty, Ohio



"THE ADDITION OF THE SMARTCENTER TO TRC INC.'S ALREADY ROBUST PORTFOLIO OF OFFERINGS CAN ONLY SERVE TO BENEFIT THE DEDICATED GROUP OF STAKEHOLDERS WHO ARE PIONEERING THE NEXT INNOVATIONS IN THE CONNECTED AND AUTOMATED SPACE."

- Brett Roubinek, President and CEO, TRC Inc.

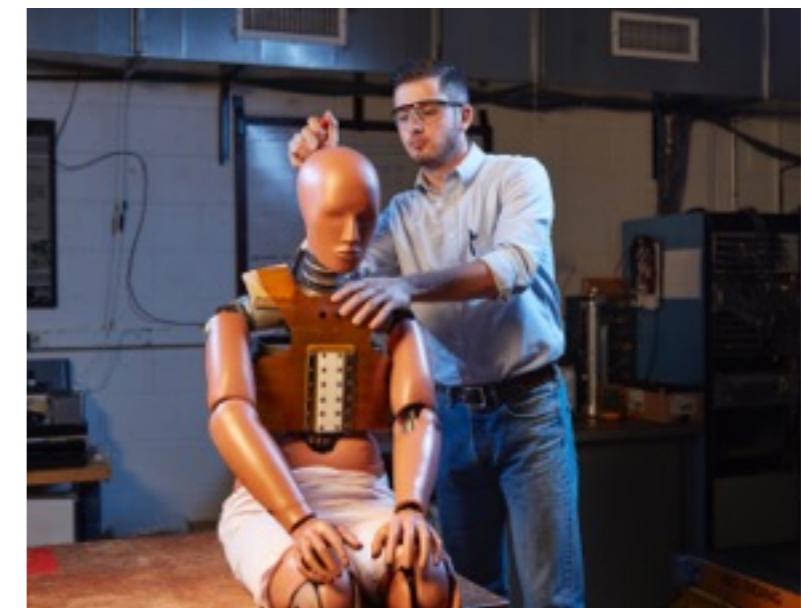
The Transportation Research Center in central Ohio is recognized as the largest independent vehicle test facility. The 4,500-acre site, located 45 miles northwest of Columbus, allows testing for safety, fuel economy, performance and crash simulation. Its newest venture is a state-of-the-art automated and connected vehicle testing facility.

With a ground breaking this past summer, **SMARTCenter** is designed to test advanced automotive and mobility technologies in a safe, secure and repeatable real-world environment before vehicles are deployed on public roads. It will allow researchers to set up and replicate real-world driving scenarios to test the vehicles as well as infrastructure technology. The facility can be used in a self-contained area or in conjunction with TRC's existing test facilities. Once completed, SMARTCenter will be the largest most comprehensive contained testing site for advanced vehicle technologies.

The \$45 million project will feature the longest and widest connected, signalized intersection in the industry. Eventually the Center will include more than 1.1 million square feet of pavement, equivalent to 18.5 lane miles.

SMARTCenter is expected to be completed by the end of 2019.

For more information visit: www.trcpg.com



OHIO HAS INVESTED \$16 BILLION IN TRANSPORTATION INFRASTRUCTURE IN PREPARATION FOR AUTONOMOUS TECHNOLOGIES

Automotive Technology Coalition

Toledo, Ohio

"A LOT OF COMPANIES COMING UP WITH NEW TECHNOLOGIES NEED PLACES TO DEPLOY THESE TECHNOLOGIES, TO DO TESTING, AND I THINK TOLEDO IS WELL POSITIONED FOR THAT."

- Kim Hill, President,
HWA Analytics

Located in the heart of the North American automotive marketplace, Northwest Ohio provides immediate access to manufacturers and suppliers across the industry. Home to the world-famous Jeep Wrangler, the most productive transmission plant in the country, and a nationally recognized workforce, the Toledo/Northwest Ohio region has rightly earned designation as the No. 1 automotive supplier in North America.

Throughout Northwest Ohio, the region offers an innovative ecosystem offering next-generation resources and collaborative partners investing in ongoing connected and autonomous vehicle research, development and testing.

The Automotive Technology Coalition will take advantage of Toledo's proximity to Detroit and Ann Arbor by engaging dynamic technology companies in the auto industry to deploy their systems in the Toledo area. The mission of the coalition will be to foster innovation, development and deployment of new technologies which will lead to company creation, high tech employment, and enhancing Northwest Ohio's brand as an innovative business location.

For more information, visit: whynorthwestohio.org/automotive-industry



A RECENT STUDY UNCOVERED MORE THAN 1,700 START-UP COMPANIES WORLDWIDE IN THE AUTOMOTIVE INDUSTRY



A history backed by discovery and innovation has elevated Ohio and Michigan to the forefront of the North American automotive industry. Those advancements have continued as both states have taken center stage in the research, testing and development of autonomous and connected vehicles. Contact the Regional Growth Partnership Northwest Ohio to learn more about opportunities for your business.



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