The Mcity Test Facility sits on a 32-acre site on U-M’s North Campus Research Complex, with more than 16 acres of roads and traffic infrastructure. The full-scale outdoor laboratory simulates the broad range of complexities vehicles encounter in urban and suburban environments.

- State-of-the-art instrumentation throughout the facility includes control network to collect data about traffic activity.
- Augmented reality testing technology allows physical test vehicles to interact with virtual connected vehicles in real time.
- Open-source API controls testing conditions throughout the facility.
- Infrastructure can be controlled with software.
- The facility uses vehicle-to-everything (V2X) communication and 5G connectivity.

Link to interactive map: go.um.city/map

- **Straight gravel roadway** with a rural railroad crossing
- **Traffic circle**, a smaller version of a roundabout that is common in Europe and some older cities in the U.S.
- **Construction and work zones** with flagging, manhole, lane closure
- **Software-controlled traffic signals** within intersections in different configurations, with mast arms, wood and metal poles, and pedestrian crossings
- **Pavilion** with network access and safety equipment
- **Active railroad crossing** with software-controlled gates and signals
- **Trunk line road**, a rural roadway with a fully equipped railroad crossing, guard rail, and temporary and permanent pavement markings
- **Brick paver road** simulated with stamped concrete
- **Underpass**, simulated by a tunnel that blocks wireless and satellite signals from reaching vehicles
- **Roundabout**, an increasingly common approach to intersection design intended to improve safety

- **Open test area** configurable for a wide range of scenarios, including parking lots and novel intersection geometries
- **4-way stop intersection**, with straight as well as tight and sweepingly curved approaching roadways
- **Overhead highway signs**
- **Tree canopy**, a simulated tree cover that reproduces the attenuation of signals that pass through trees
- **Metal bridge deck**, a bridge surface that poses special challenges for radar and image processing sensors
- **Electrical panel** for events and vehicle charging
- **Building facades** up to two stories high allow researchers to test the effects of various materials and geometries on sensor performance
- **Meandering gravel roadway**
- **Sensors for data collection**
- **Limited access freeway** with access ramps, highway signage, guardrails, crash attenuators, and a concrete Jersey barrier
- **Ramp metering**
- **Calibration mound** to calibrate inertial measurement sensors on vehicles
- **Open test area**
- **Robotic platforms** include deer and pedestrian mount
- **Outdoor seating** with table, chairs, and bike racks

Adjacent to Test Facility: Michigan Traffic Laboratory, the traffic control center for Mcity