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.
- Vehicle-to-everything (V2X) and 5G wireless can be used for communication throughout the facility.

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

**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 sensor performance on various materials and geometries.

**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

**Adjaceny to Test Facility: Michigan Traffic Laboratory**, the traffic control center for Mcity.

**Entrance**

**Garage** for test vehicle storage

**Bike lanes**, bike racks, and bicycles

**Variety of pedestrian crossings**