Advancing traffic management in a pedestrian-intense environment

Michigan State University’s East Lansing campus is an environment with limited vehicle traffic, but heavy pedestrian and cyclist activity. It offers an excellent opportunity for developing and testing advanced safety and mobility management systems.

In collaboration with state and university partners, MSU will collect data, develop simulations, and test smart and connected systems for improving traffic flow and pedestrian safety.

CAMPUS MOBILITY GOALS

- Networked smart signals, including vehicle and pedestrian sensors.
- Optimizing class schedules and locations versus vehicle activity.
- Dynamic, predictive signal and routing optimization incorporating personal mobile devices and destinations.
- Collection of data for decision support, research on new optimization methods, and virtual testing before implementation.
- Sensor-driven parking mapping app.
- System sync to MSU Police and East Lansing emergency services to facilitate rapid and safe response throughout campus, rerouting for incidents, etc.
- Signal control to optimize inbound/outbound traffic flow management during football games and other major campus events.
- Study redesign of parking locations — for example to an outer core, with electric vans or autonomous lightweight vehicles (golf carts), which are inherently safer at low speeds due to lower mass — to facilitate a park-once model.
- Study high-frequency van service between the Shaw complex and the Life Sciences sector (MSU Sector Loop).
- Study rerouting roadways, improving campus ingress-egress efficiency and safety in collaboration with the City of East Lansing.
CAMPUS FACTS

- Founded in 1855
- Nation's Pioneer Land-Grant University
- Contiguous 5,200 acres (21 km²)
- Developed 2,000 acres (8.1 km²)
- 545 buildings, 103 for instruction
- 39,000 undergraduate students
- 11,400 graduate students

TRAFFIC DATA

- 113 miles of pedestrian walkways and sidewalks
- 57 lane miles of road
- 20 miles of bike paths
- Over 100 route miles of underground, dedicated communication duct bank with available capacity
- 37 traffic lights
- 9,228 employee parking permits
- 2,020 student parking permits
- 1,629 commercial parking permits
- 62,759 visitor day parking permits
- 7,850 bicycle permits
- 1,060 licensed motorized vehicles (170 with GPS tracking locators)
- 85 members of MSU Police force - provides flexibility in managing traffic

Website: www.adminsv.msu.edu/mobility