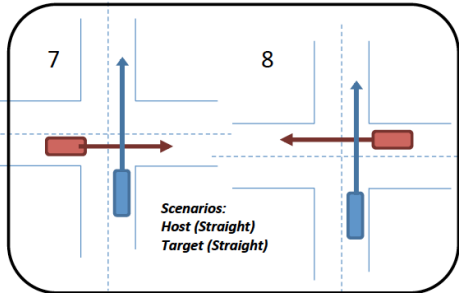
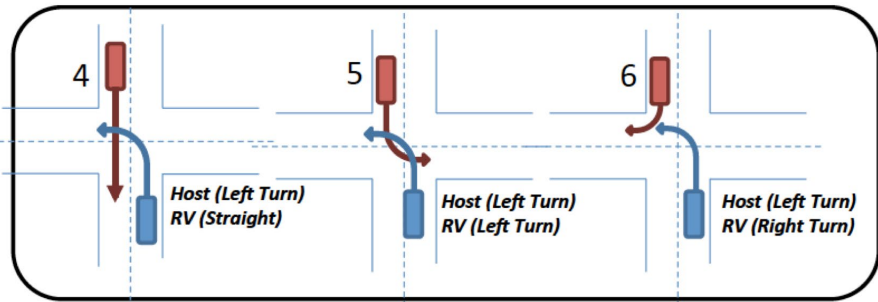




CENTER FOR CONNECTED AND AUTOMATED TRANSPORTATION

Project Title	Targeted Real-World Heat Map	
PI (Up to 2)	Robert Hampshire	
Telephone #	734-615-6975	
E-mail:	hamp@umich.edu	
Institution:	University of Michigan	
Department:	UMTRI	
Industry or Government Principal, organization, and contact information	Mcity Huei Peng hpeng@umich.edu 734-936-0352	
Most relevant CCAT research thrusts (choose all applicable)	<input checked="" type="checkbox"/> Enabling Technology <input type="checkbox"/> Planning and Policy <input type="checkbox"/> Human Factors <input type="checkbox"/> Infrastructure Design and Management <input type="checkbox"/> Control and Operations <input type="checkbox"/> Models and Implementation	
Funding Request		
Matching Funds and Source (if any)	Mcity \$328,883	
Total Project Cost	\$328,883	
Contract Number	69A3551747105	
Project start/end dates	12/1/2017 - 5/31/2019	
Project Abstract	<p>For the Ann Arbor Connected Vehicle Test Environment (AACVTE), simulation results indicated that there are very few interactions for V2V applications such as intersection movement assist (IMA) and left turn across path (LTAP) at the currently planned levels of deployment. Ten hours of testing may only produce one valid interaction for these applications. Adding additional non-fleet vehicles does not provide linear benefits. In order to guarantee enough interactions while using AACVTE for testing, we propose creating a critical mass of DSRC-equipped vehicles by strategically driving vehicles on set routes in Ann Arbor.</p> <p>IMA</p>  <p>Scenarios: Host (Straight) Target (Straight)</p>	

LTAP



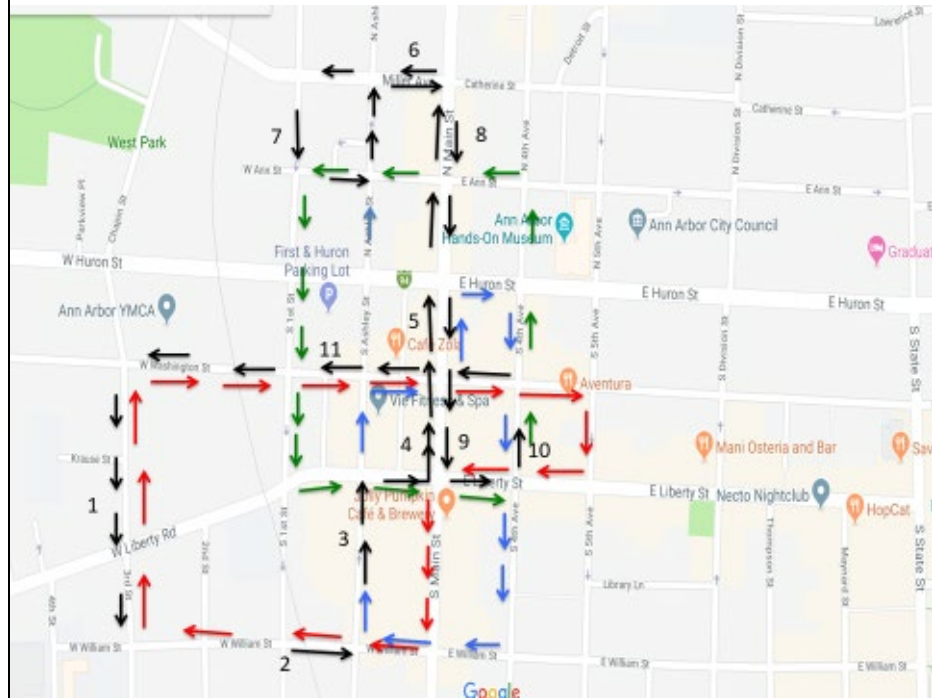
Phase 1: Develop the experimental design and determine the routes to be driven by the test vehicles. The objective is to maximize the number of interactions for V2V applications such as IMA and LTAP in a variety of roadway settings. Demonstrate the feasibility of conducting on-road testing of LTAP/IMA connected vehicle applications.

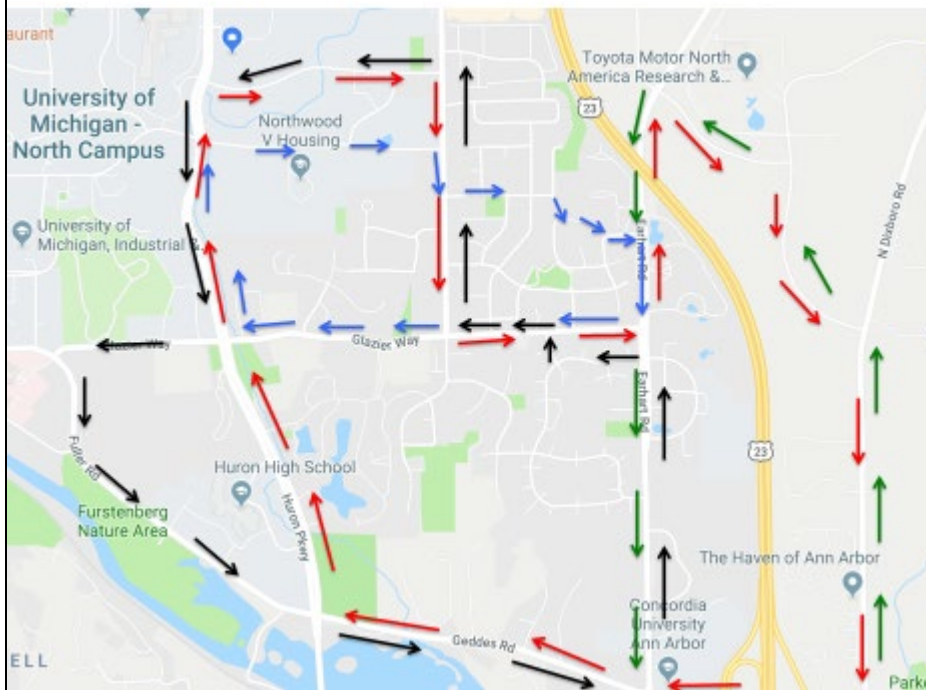
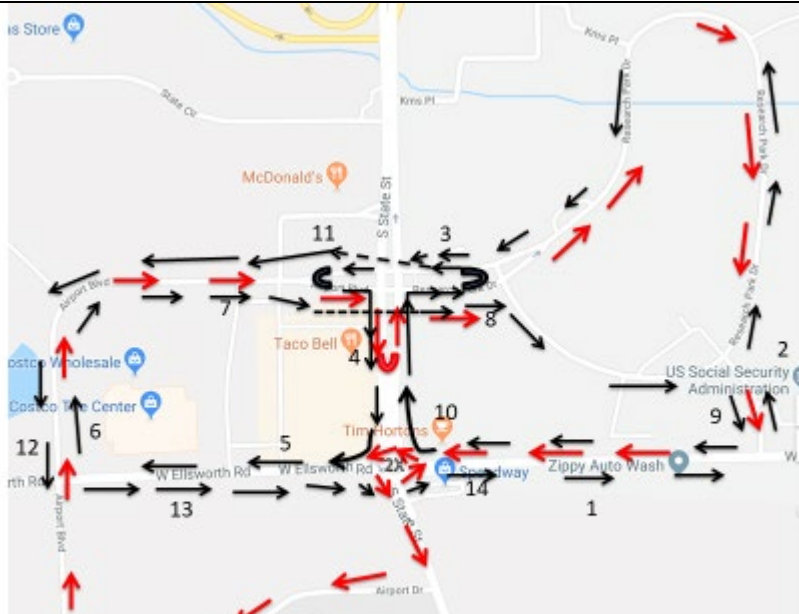
Phase 2: Conduct road testing with Mcity leadership circle member companies Ford, GM, and Aptiv. The routes developed in phase 1 will be used for the testing. The testing will be conducted three times during the period of performance. Additionally, all vehicles will be tested for compliance by SwRI for compliance with SAE J2735 and J2945/1.

The final report will not be publicly available.

High-level implementation plan

Five routes in Ann Arbor were developed to facilitate testing. The routes consist of “background” and “test” routes. The routes are orchestrated so that the vehicles driving the “test routes” will interact with the “background” vehicles in such a way to test all of the IMA and LTAP scenarios. Twenty five “background” vehicles from the University of Michigan rental fleet were equipped with dedicated short-range communication on-board units. The vehicles under test were from Ford, GM, and Aptiv.





Project Metrics

Web Links:
[leave blank until
project approval]

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