ARTBA Regional Meeting

Kimberly Avery, P.E.

Michigan Department of Transportation


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Michigan. Where big ideas in mobility are born.

MICHIGAN DEPARTMENT OF TRANSPORTATION

2017 Connected and Automated Vehicle Program Strategic Plan

MDOT
Michigan Department of Transportation

PROGRAM GOALS

Goal 1: Serve as a national model to catalyze CAV deployment

Goal 2: Establish Foundational systems to support wide-scale CAV deployment

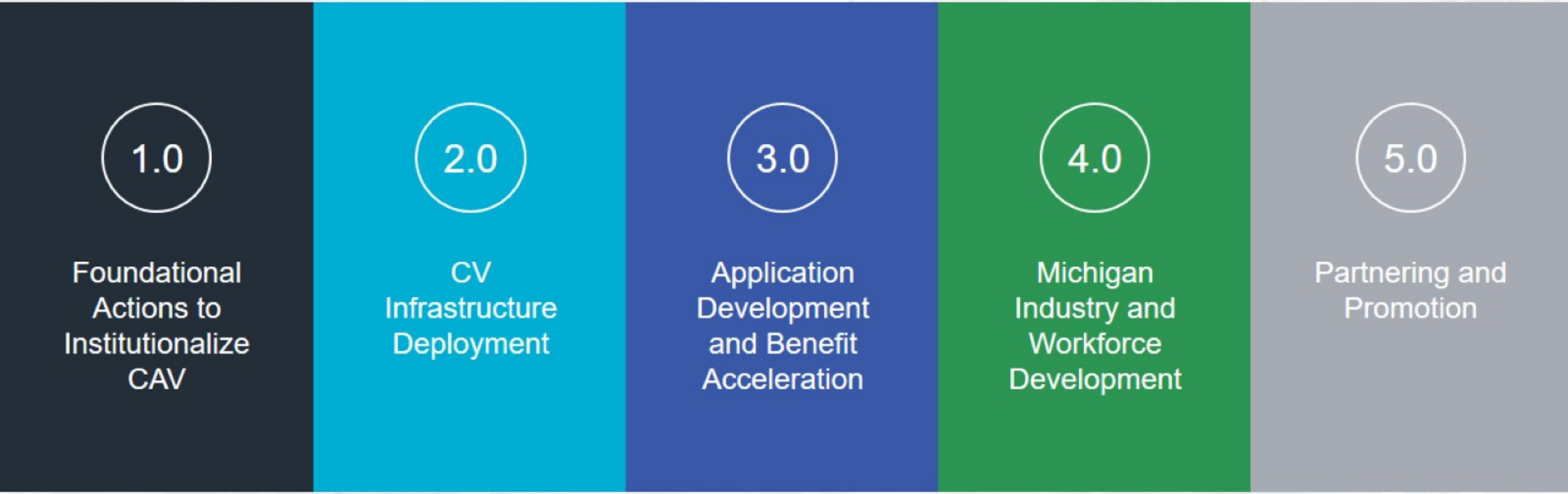
Goal 3: Make Michigan the go-to state for CAV research and development

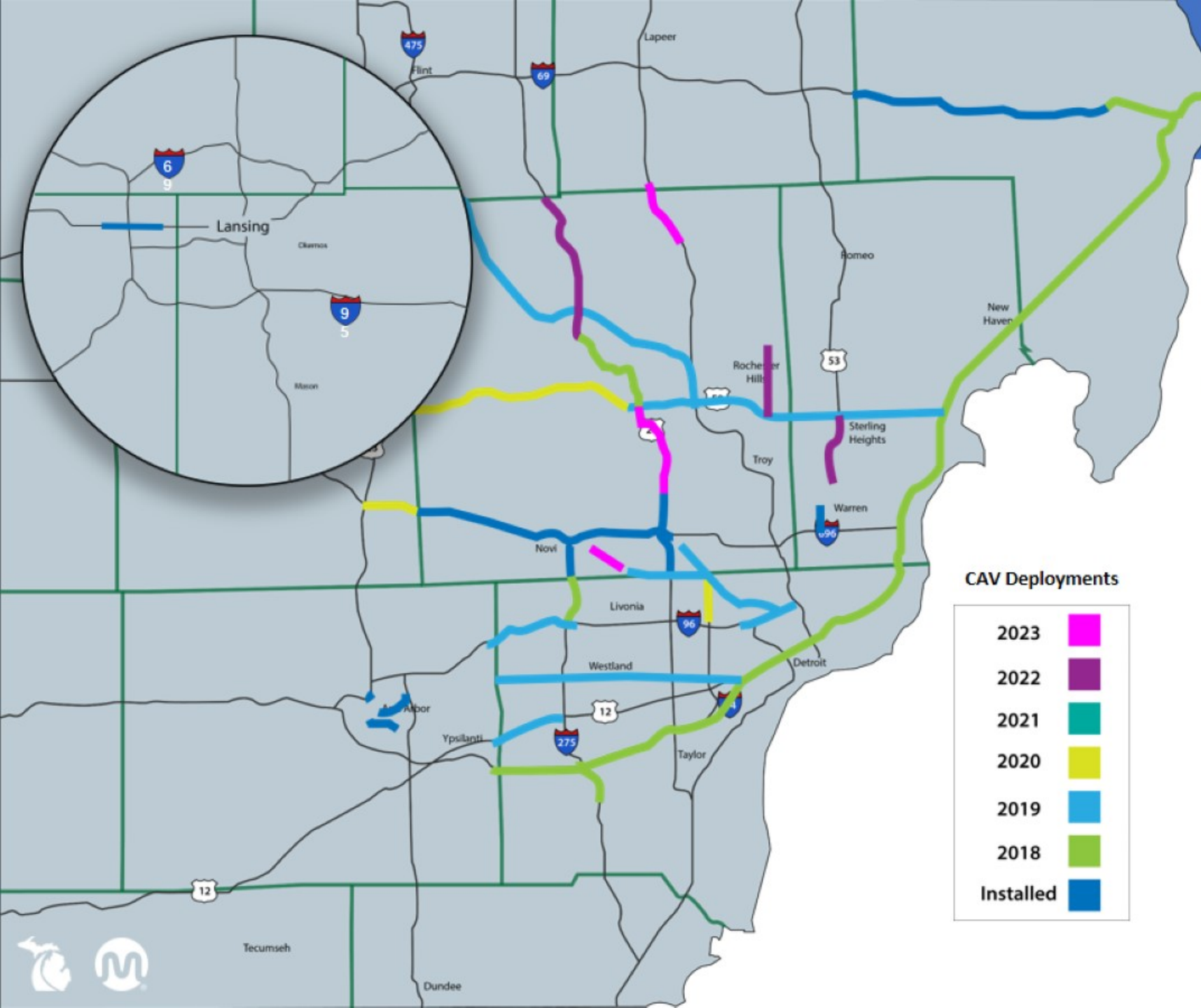
Goal 4: Accelerate CAV benefits to users

Goal 5: Exploit mutual benefit opportunities between CAV tech and other department business processes/objectives

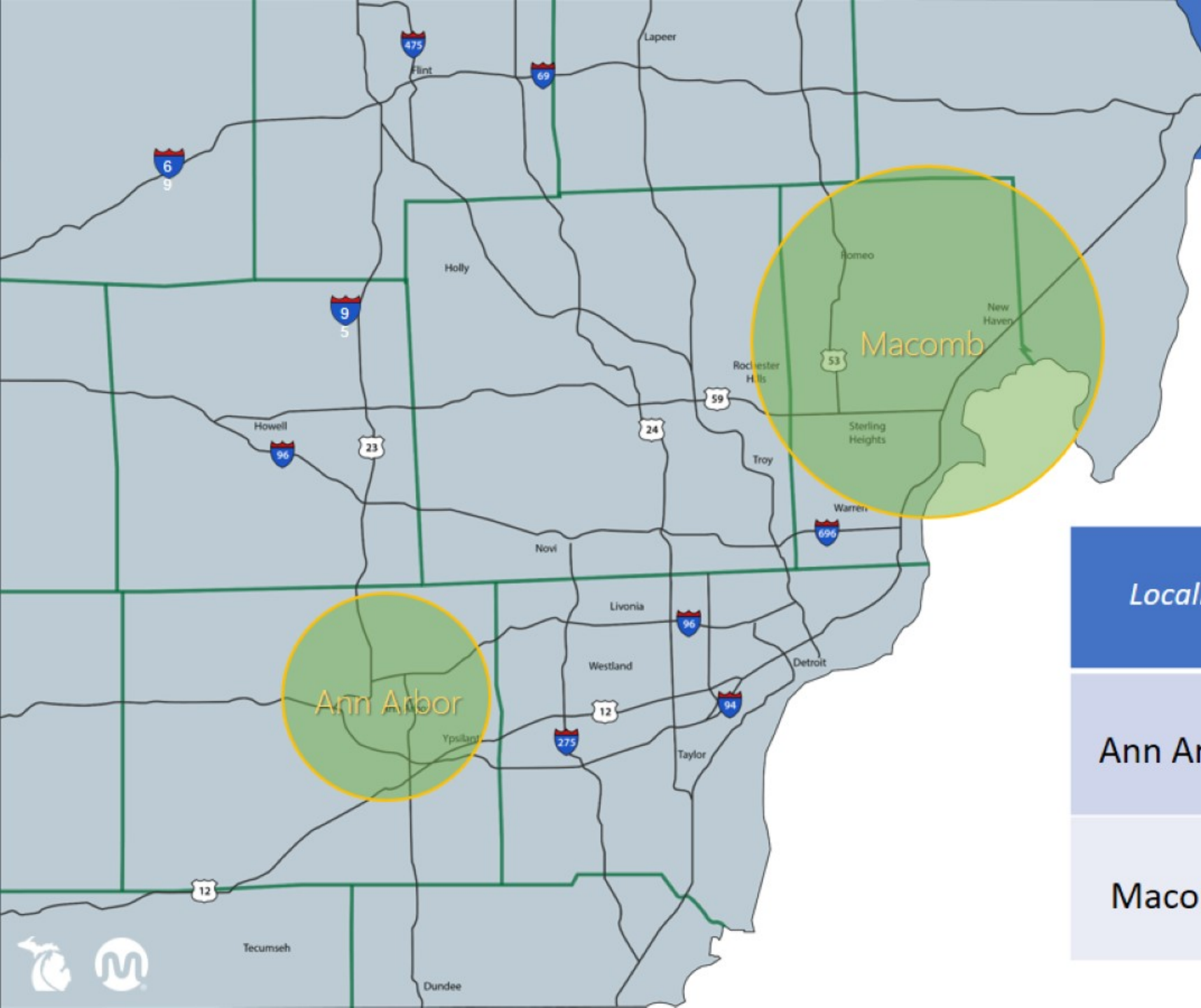
Goal 6: Use Michigan experience to lead dialogue on national standards and best practices

STRATEGIC AREAS



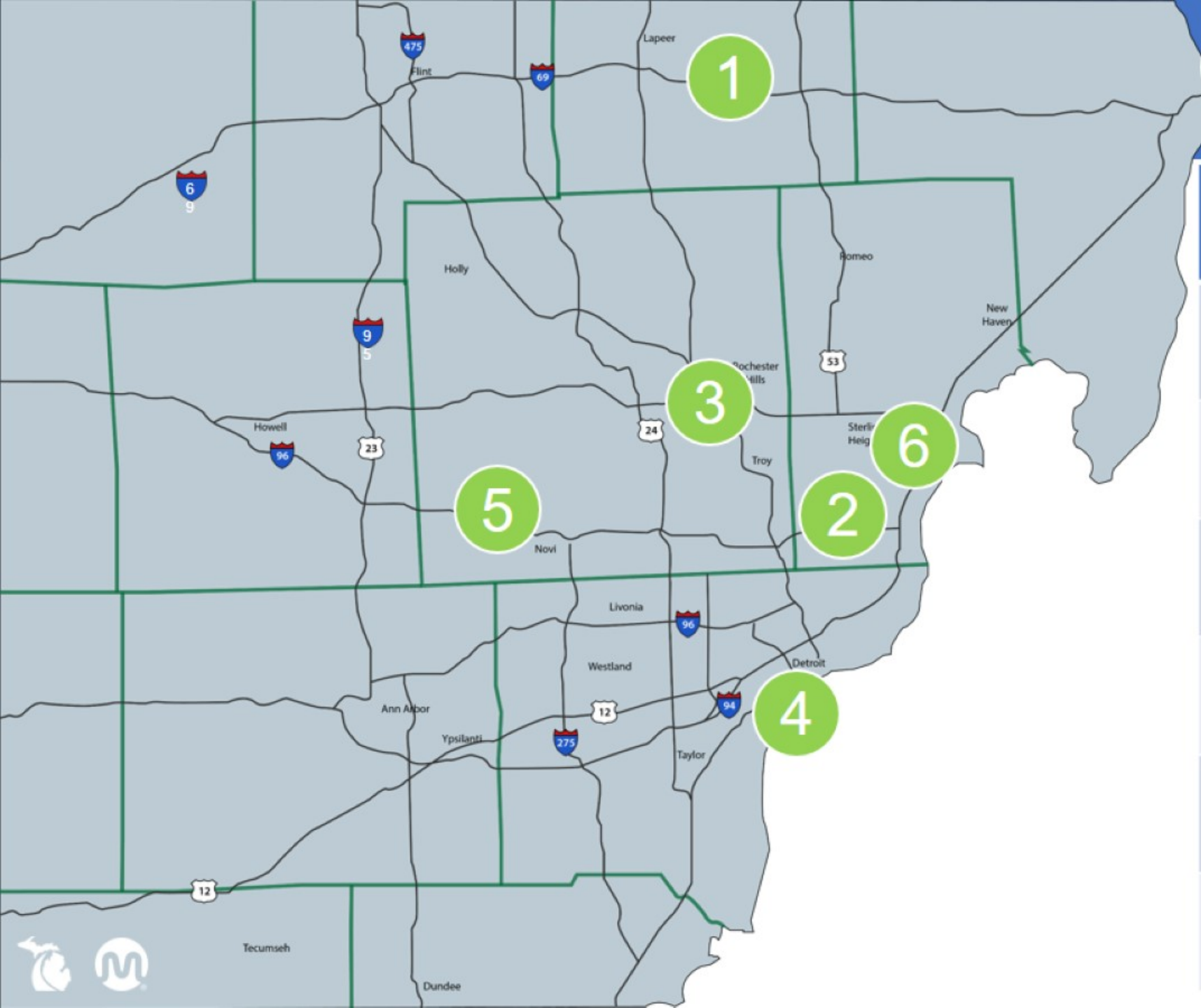


Corridor	Application
Signalized Corridors	SPaT & MAP
275	Curve Warning
94	Road Weather
696	Backup Queue
96	Pavement Condition



LOCAL DEPLOYMENTS

Locality	*Miles Deployed*
Ann Arbor	55
Macomb	300+



	Project
1	TARDEC Platoon (St. Clair and Lapeer Counties)
2	GM Collaborated SPaT Testing (Macomb County)
3	3M Collaborated Connected Work Zone (Oakland County)
4	Bi- National Autonomous Drive (Detroit Windsor Tunnel, USA - CA)
5	Peloton Platoon (Novi)
6	Signal Priority and Pre-Emption

V2I Application Concept of Operations

Red Light Violation Warning

Work Zone Warning/ Management

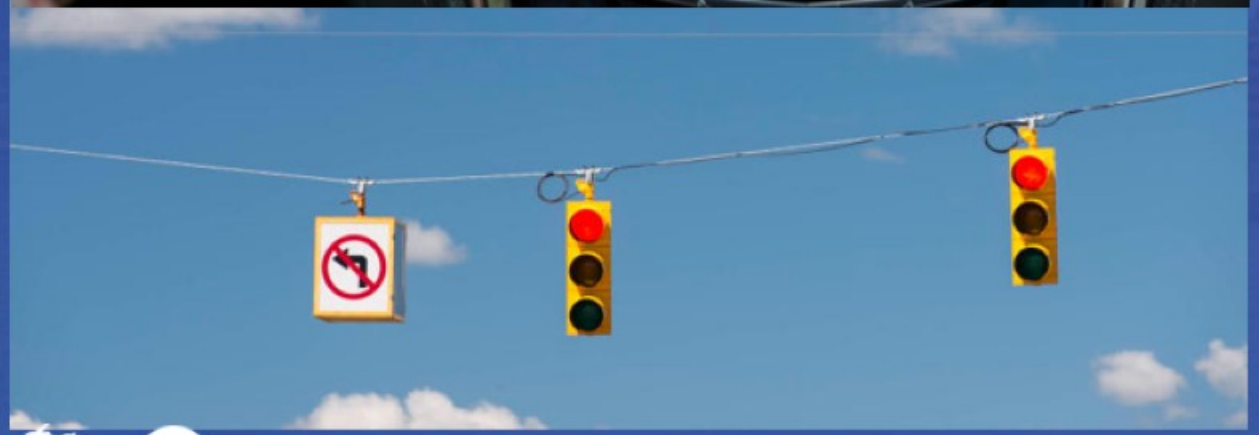
Road Weather Management

Pavement Condition

PUBLIC ACT NO. 332

OPEN FOR TRANSPORT

- I-69, Blue Water Bridge
- Platooning of military vehicles
- Supporting the military, large shipping, or logistics companies



MDOT ITS SIGNALS CV INITIATIVE

- CV Enabled Signals Policy
- Signal Controller Spec Update
- All new or upgraded traffic signals on the MDOT system will be CV-enabled going forward

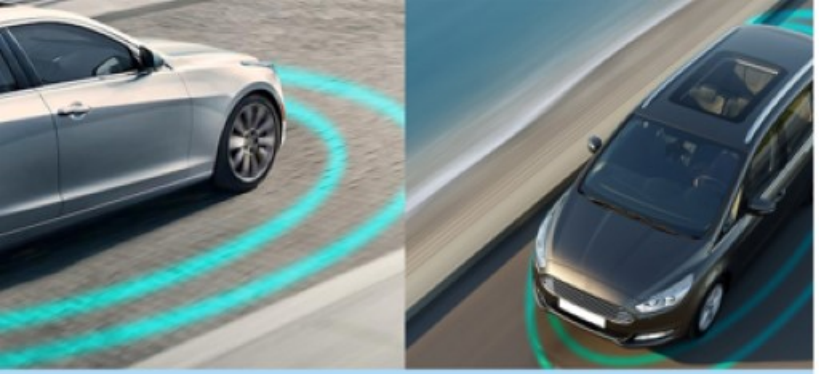
PHASE ONE

Nation's first connected work zone

PHASE TWO

Permanent deployment of technology

- Planet M provides an Open Invitation for Innovation
- Collaboration with 3M
- Inclusion of Local Agencies
- All weather testing 24/7



Continental and Magna plan first international border crossing in autonomous vehicles

INDUSTRY

by Autocar Pro News Desk Aug 02, 2017


Peloton
NOT FOR HIRE
CA 445149
DOT 2439702
Mountain View, CA
MDOT
Michigan Department of Transportation
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Peloton
H4
H3
Peloton
9E72591
9E72590


Peloton

SIGNAL PRIORITY

- Improving the mobility of transit and first responders
- Real world testing in Macomb County
- Debuted demonstration at the ITS America 2018 Conference

US-23 FLEX ROUTE SYSTEM

- Dynamic Lane Control
- Dynamic Shoulder Use
- Variable Speed Advisories
- Queue Warning

23

planetM MDOT

https://www.michigan.gov/documents/snyder/MCF_Mobility_report_3_619285_7.pdf

Michigan Council on Future Mobility



Continental
Ford
FCA
FIAT CHRYSLER AUTOMOBILES
STATE OF MICHIGAN
SECRETARY OF STATE
DISABILITY ADVOCATES of Kent County
GM
Washtenaw Community College
MICHIGAN STATE POLICE
The Hanover Insurance Group
DTMB
Technology, Management & Budget
DIFS
DEPARTMENT OF INSURANCE AND FINANCIAL SERVICES
TOYOTA RESEARCH INSTITUTE
MDOT
Michigan Department of Transportation
CITY OF GRAND RAPIDS
Deloitte.
MICHIGAN STATE UNIVERSITY

VEHICLE CODE LAW REVIEW


M LAW
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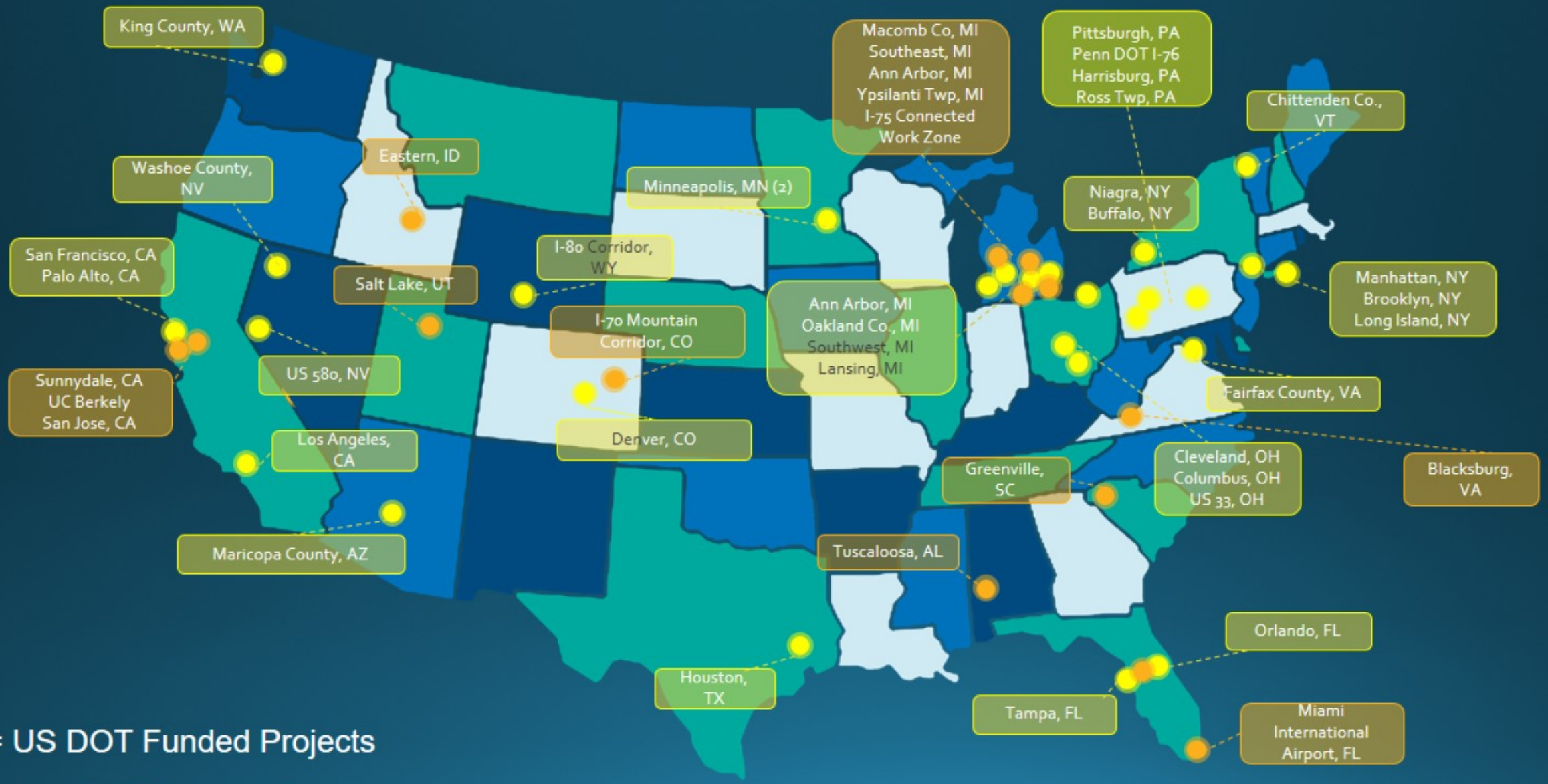
Connected Vehicle Deployment Location



● = US DOT Funded Projects

● = Non-DOT Funded Projects

Source: Volpe – The National Transportation Systems Center (USDOT)

Coalition for Safety Sooner

COALITION FOR SAFETY SOONER

January 23, 2018

The Honorable Elaine L. Chao
Secretary
United States Department of Transportation
1200 New Jersey Avenue, S.E.
Washington, D.C. 20590

The Honorable Mick Mulvaney
Director
Office of Management and Budget
723 17th Street, N.W.
Washington, D.C. 20503

The Honorable Ajit Pai
Chairman
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Dear Secretary Chao, Director Mulvaney, and Chairman Pai:

The Transportation Infrastructure Owner and/or Operator (IOO) signatories of this letter strongly support the protection, and accelerated utilization of the 5.9 Gigahertz (GHz) Dedicated Short Range Communications (DSRC) Spectrum for safety critical, life-saving transportation applications. DSRC is uniquely configured to enable continuous, low latency, and secure data exchanges between vehicles and the roadway infrastructure to support safety-critical applications. Connected Vehicle technologies based on DSRC have the potential to provide benefits, including increasing mobility, reducing crashes, and most importantly saving lives. DSRC communications technology is ready to deploy now.

IOOs throughout the country are actively deploying infrastructure, and developing Vehicle-to-Infrastructure (V2I) applications that are designed to utilize DSRC infrastructure to enhance road safety, reducing crashes and fatalities. These deployments include the implementation of a number of safety critical applications, including Red Light Violation Warnings, Reduced Speed Zone Warnings, Curve Speed Warnings, and Spot Weather Impact Warnings. These deployments include expansions of the Safety Pilot Model Deployment in Ann Arbor, large Pilot Deployments in New York City, Tampa, and Wyoming, the Smart City Challenge in Columbus, and smaller, but significant efforts in 26 states and cities in response to the American Association of State Highway Transportation Officials "SPaT Deployment Challenge." Enclosed are detailed descriptions of IOO deployed DSRC infrastructure and applications.

The active deployment and investment in DSRC infrastructure by IOOs has created a diverse industry that has responded aggressively in support of these technologies. Examples include: the inclusion of DSRC technology in traffic signal controller hardware, standardized DSRC Roadside Units, aftermarket DSRC On-board Units and a wide range of Connected Vehicle service providers supporting infrastructure deployment, application development, and integration services.

- Letter Signed by 22 Infrastructure Owner Operators (IOO) Directors/Commissioners
- Message: DSRC is available today to save lives
- Waiting for the next technology is a missed opportunity
- Addressed to relevant Federal Decision makers

MDOT
Michigan Department of Transportation

pennsylvania
DEPARTMENT OF TRANSPORTATION

STATE OF OHIO DEPARTMENT OF TRANSPORTATION

OHIO TURNPIKE

PENNA TURN-PIKE

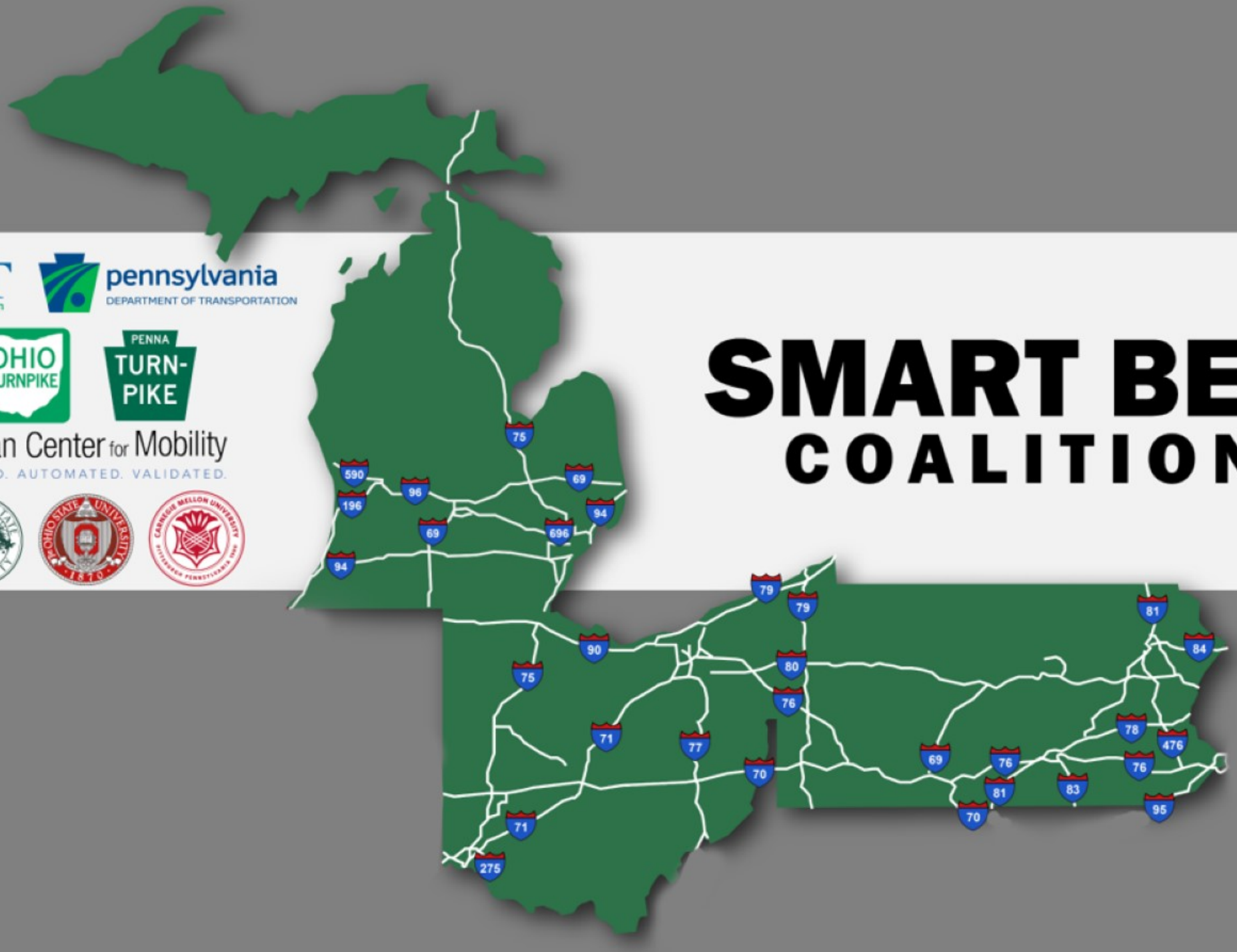
American Center for Mobility
CONNECTED. AUTOMATED. VALIDATED.

THE UNIVERSITY OF MICHIGAN 1817

MICHIGAN STATE UNIVERSITY Founded 1855

THE OHIO STATE UNIVERSITY 1870

CARNEGIE MELLON UNIVERSITY



SMART BELT
COALITION

Cooperative Research

AASHTO

SUBCOMMITTEE ON TRANSPORTATION SYSTEMS MANAGEMENT AND OPERATIONS

VEHICLE TO INFRASTRUCTURE DEPLOYMENT COALITION

AASHTO THE VOICE OF TRANSPORTATION | ITS AMERICA | ite

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Questions?

planetM

MICHIGAN

GLOBAL LEADER IN AUTOMATED TECH

7 GLOBAL OR NORTH AMERICAN R&D HQ's

8 ORIGINAL EQUIPMENT MANUFACTURERS

#1 CONCENTRATION IN ENGINEERING TALENT

UNRIVALED

AUTOMOTIVE MANUFACTURING RESEARCH & DEVELOPMENT