

Beginning V2X at MCDOT

Maricopa County, AZ Quick Facts

4th

largest County by
population

4.2 million

population

Super Bowl

2023 host

27

cities and towns

9,224 sq. miles

of land

Larger

than some states



Regional Infrastructure Readiness

4,128

Traffic Signals

14

TMC & TOC

2,655

Shared CCTV
Cameras

3,956

Traffic Signal
Operated from TMCs

230

Dynamic Message Signs

754

Travel Time
Readers

AZTech Partnership



24 Public Agency Members

- 15 Cities and Towns
- FHWA
- MAG (Local MPO)
- State DOT
- County DOT
- Public Safety
- Phoenix International Airport
- Public Transit
- State Universities

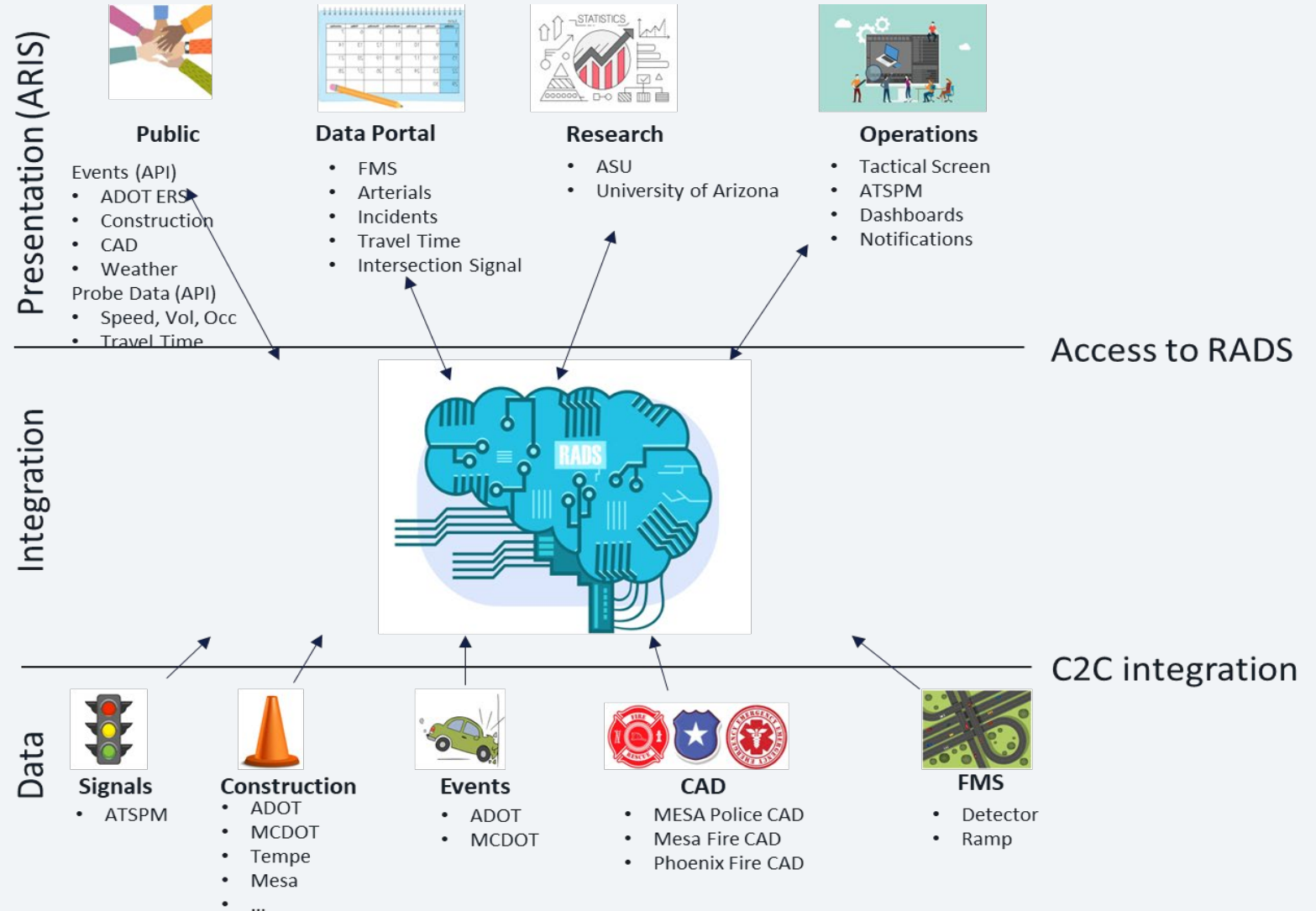
Key Function: Traffic Management and Operations



AZTech Regional Information System

Data Source Examples:

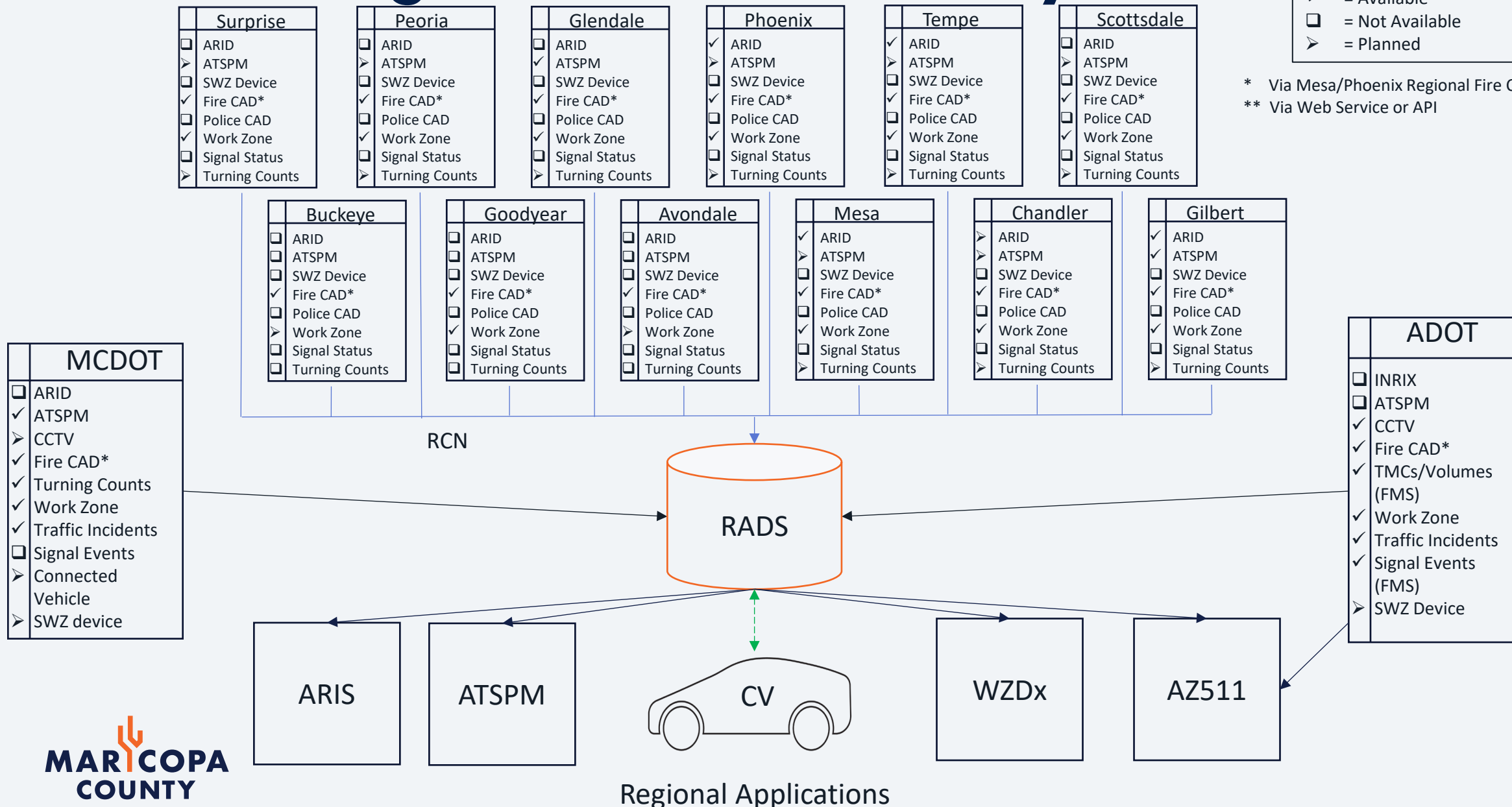
- Detection Systems
- Construction Reporting Systems
- Signal Controllers
- CAD Systems
- Connected Vehicles
- Crowdsourced Data
- Smart Devices
- Public Transit Systems



AZTech Regional Information System

Legend	
✓	= Available
☐	= Not Available
➤	= Planned

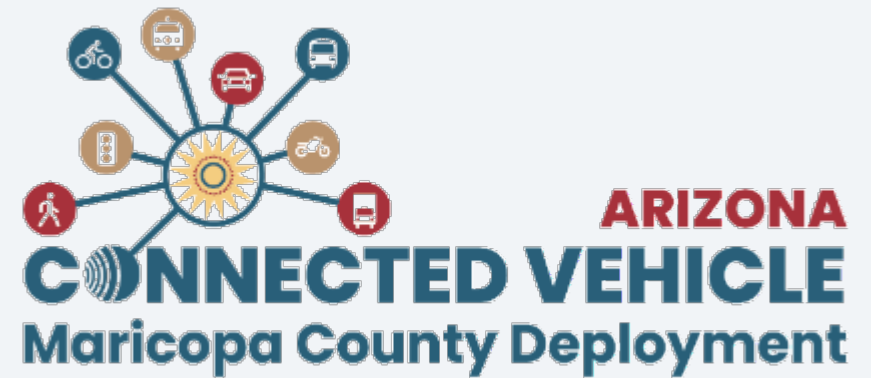
* Via Mesa/Phoenix Regional Fire CAD
 ** Via Web Service or API



MCDOT SMART*Drive* ProgramSM

Since 2008

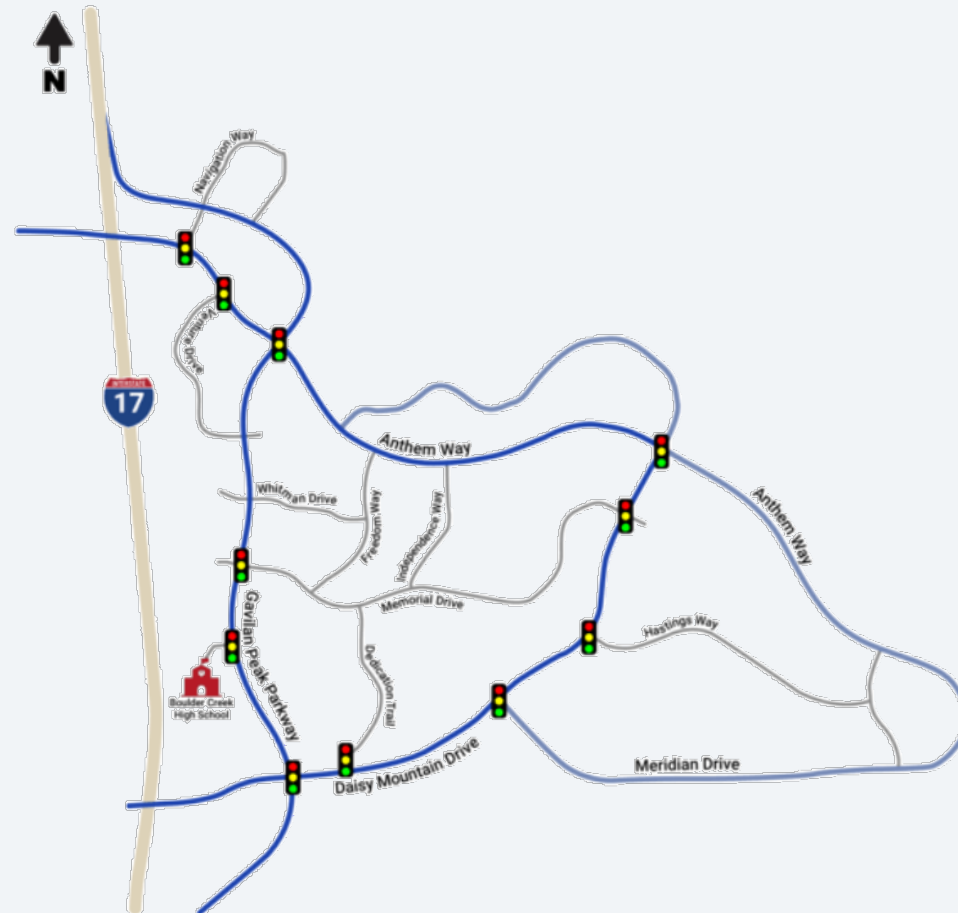
- Began as a research project
- Addressing a nationwide issue of emergency vehicles crashing at intersections when multiple units were responding to calls at the same time



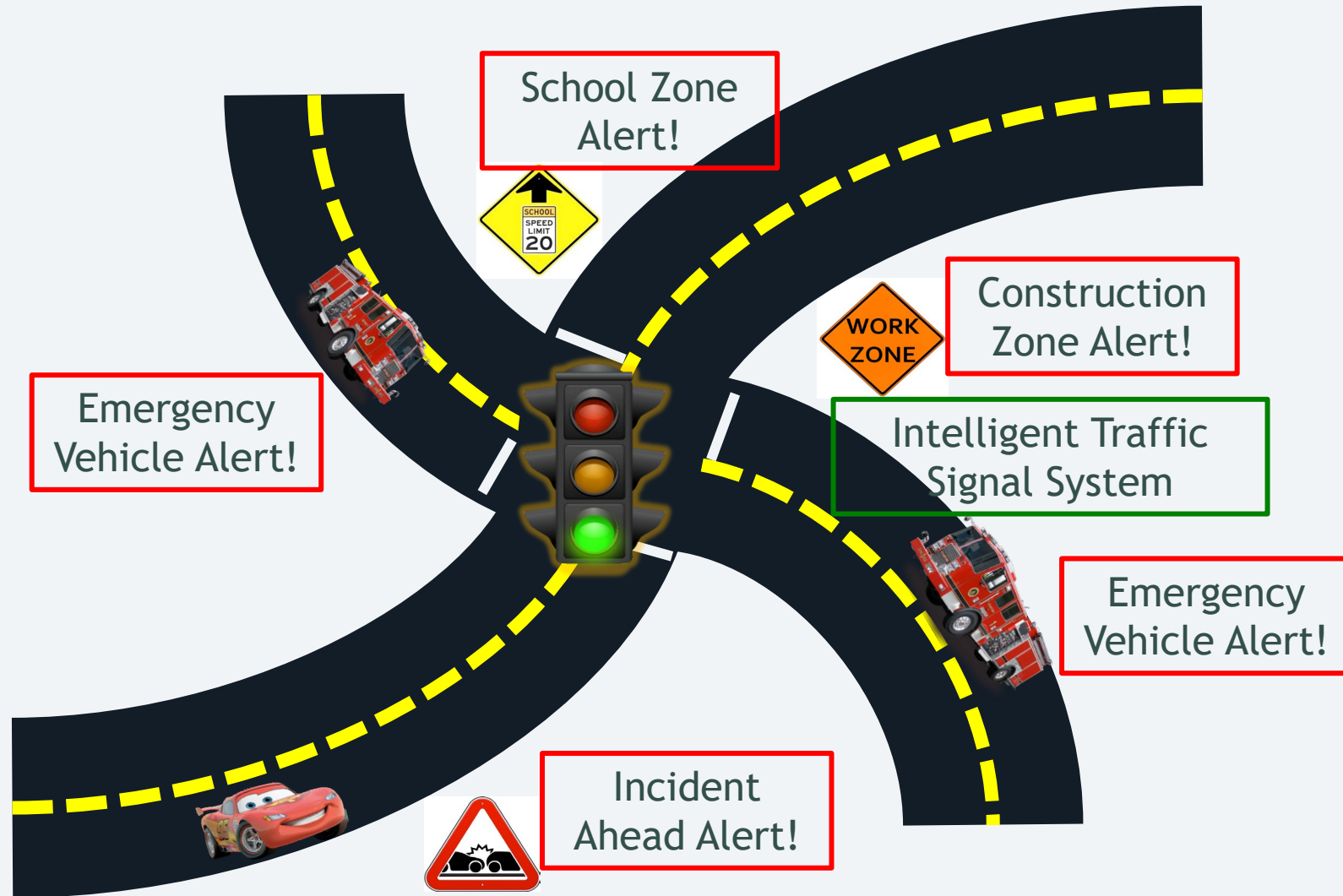
MCDOT SMARTDrive ProgramSM

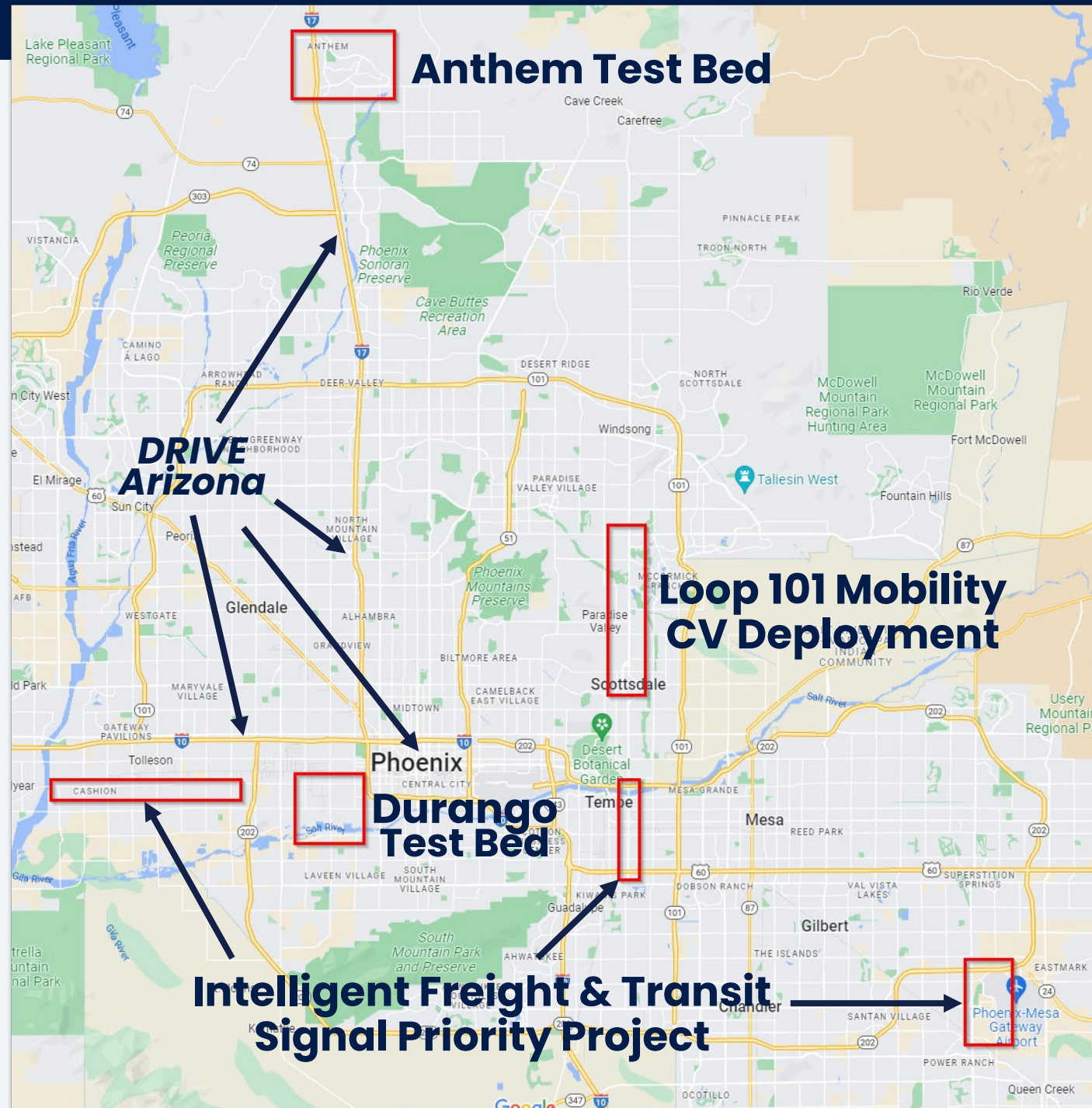
Anthem, AZ Testbed Established in 2014

- **Anthem, AZ Community**
Approx. 25,000 Residents
Approx. 10,000 Vehicles
- **Multi-Modal Intelligent Traffic Signal System (MMITSS)**
V2X application for Emergency Vehicle Prioritization
- **5.3-Mile Test Bed**
- **11 Signalized Intersections**
Equipped with DSRC



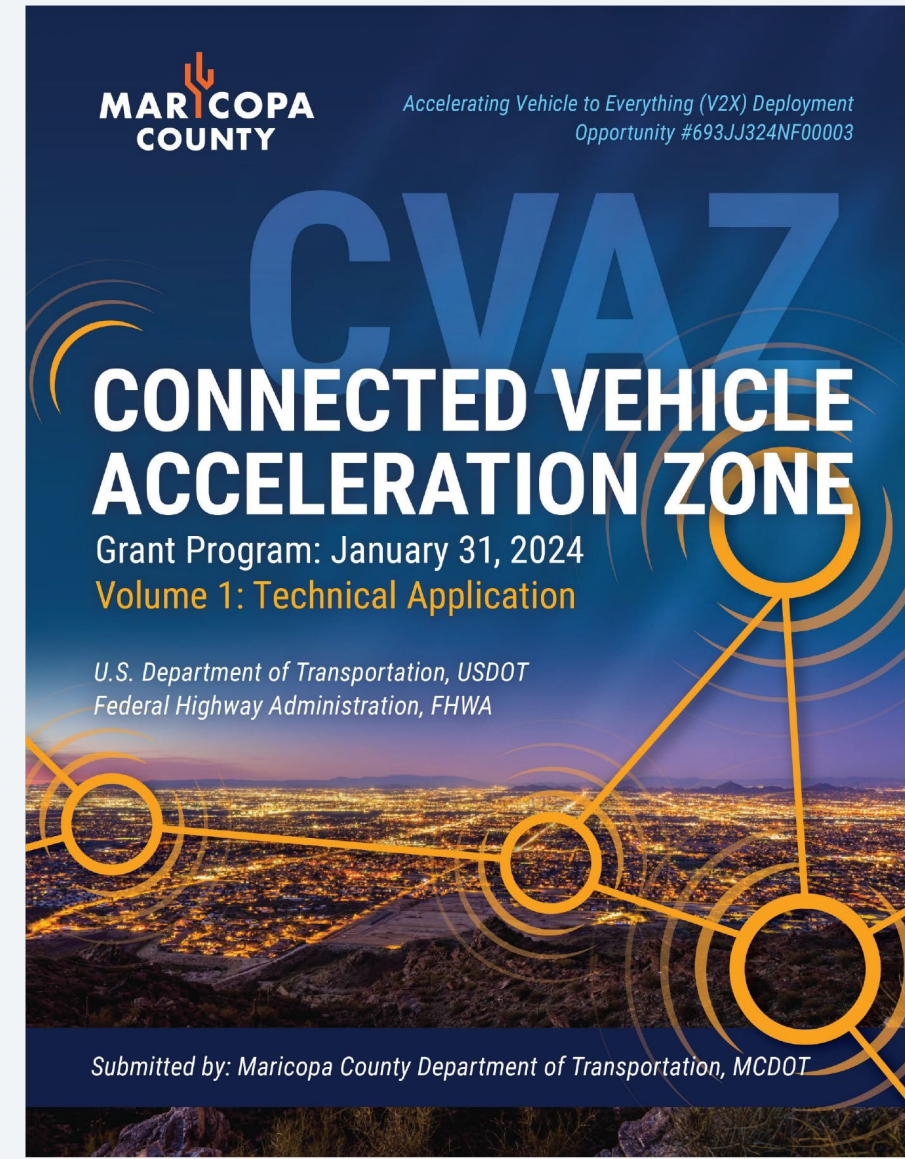
V2X Applications





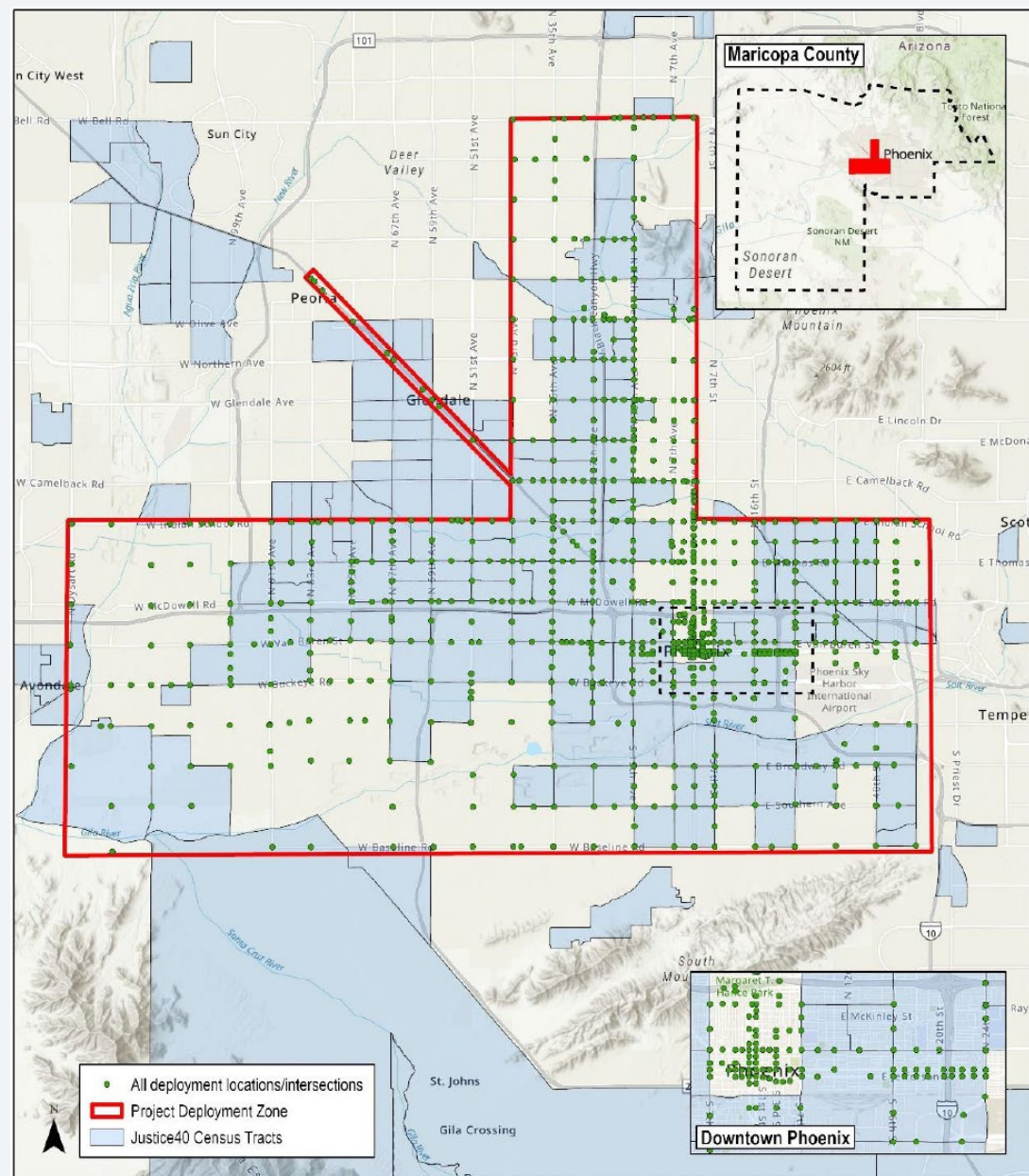
Connected Vehicle Acceleration Zone (CVAZ)

- \$19.6M Saving Lives with Connectivity: Accelerating V2X Deployment USDOT Grant
- Deployment of Direct and Network V2X at scale to address unmet regional needs and demonstrate safety benefits of the technology
- Focus is on interoperability at all levels

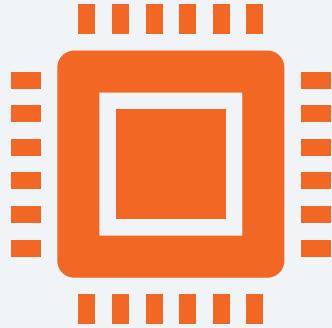


25% of signalized intersections

CVAZ Deployment Zone



CVAZ Project Objectives

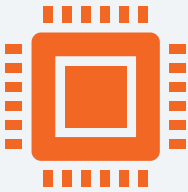


Demonstrate **interoperability** between awardees, deployment sites and between technologies



Deployment of 5.9GHz V2X technology, **at scale**

Project Elements



Deploy CV Technology at scale:

750 (650 Physical RSUs/100 Virtual RSUs)
400 On Board Units (OBU)
Piloting Mobile Devices



In support of the following applications:

Emergency Vehicle Priority (750)
Transit Signal Priority (200)
Freight Signal Priority (75)
Vulnerable Road User Detection/Alerts (75)

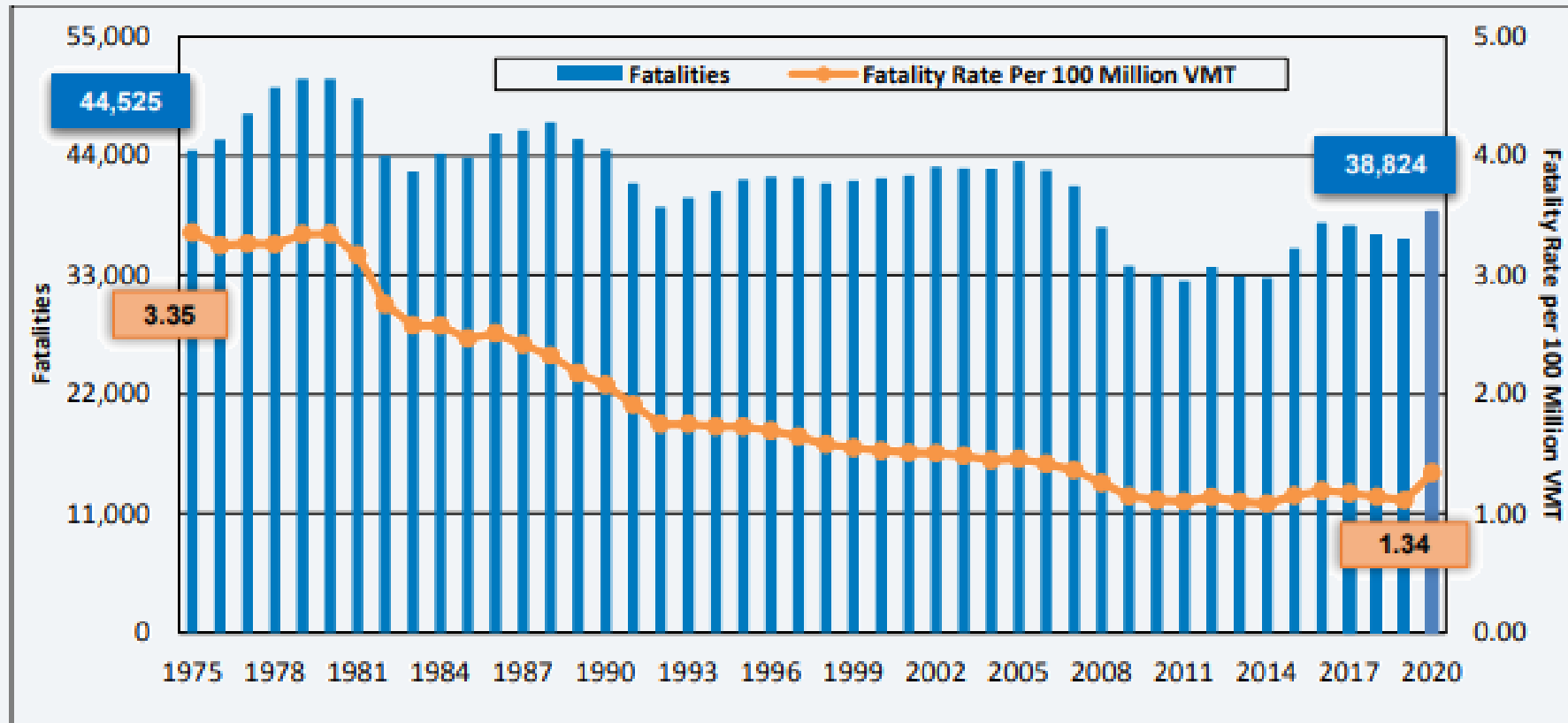


Communication functionality over multiple networks – 5.9 GHz, UNII bands and cellular spectrum



Educate Your Organizations

Fatalities Continue to Rise



Sources: FARS 1975-2019 Final File, 2020 ARF; VMT – FHWA's Annual Highway Statistics

Figure 2. Fatalities and Fatality Rate per 100 Million VMT, 1975-2020

An aerial view of a multi-lane highway with several cars. Overlaid on the image are futuristic, semi-transparent digital graphics. These include concentric circles around each car, representing sensor ranges or communication fields. A network of thin lines connects various points across the road, suggesting a data or communication mesh. The overall aesthetic is high-tech and futuristic, emphasizing the transition from traditional infrastructure to smart infrastructure.

Moving Beyond Traditional Infrastructure

Promote Emerging Technologies





**BEGIN
AUTOMATED
VEHICLE
TESTING AREA**

Participate in Research



CAPITAL

Support Funding

Analysis ● Business ● Change ● Computer ● Cyberspace ● Digital ● Evolution ● Future ● Industry ● Innovation ● Management ● Manager ● Modernisation ● New ● People ● Reality ● Strategy ● Success ● Technology ● Transformation ● Virtual ● Web ● Work ● Assurance ● Certified ● Client ● Control ● Cyberspace ● Excellence ● Improvement ● Performance ● Product ● Production ● Quality ● Satisfaction ● Service ● System



Thank You

April Wire, PE, PTOE

MCDOT TSMO Division Manager

april.wire@maricopa.gov