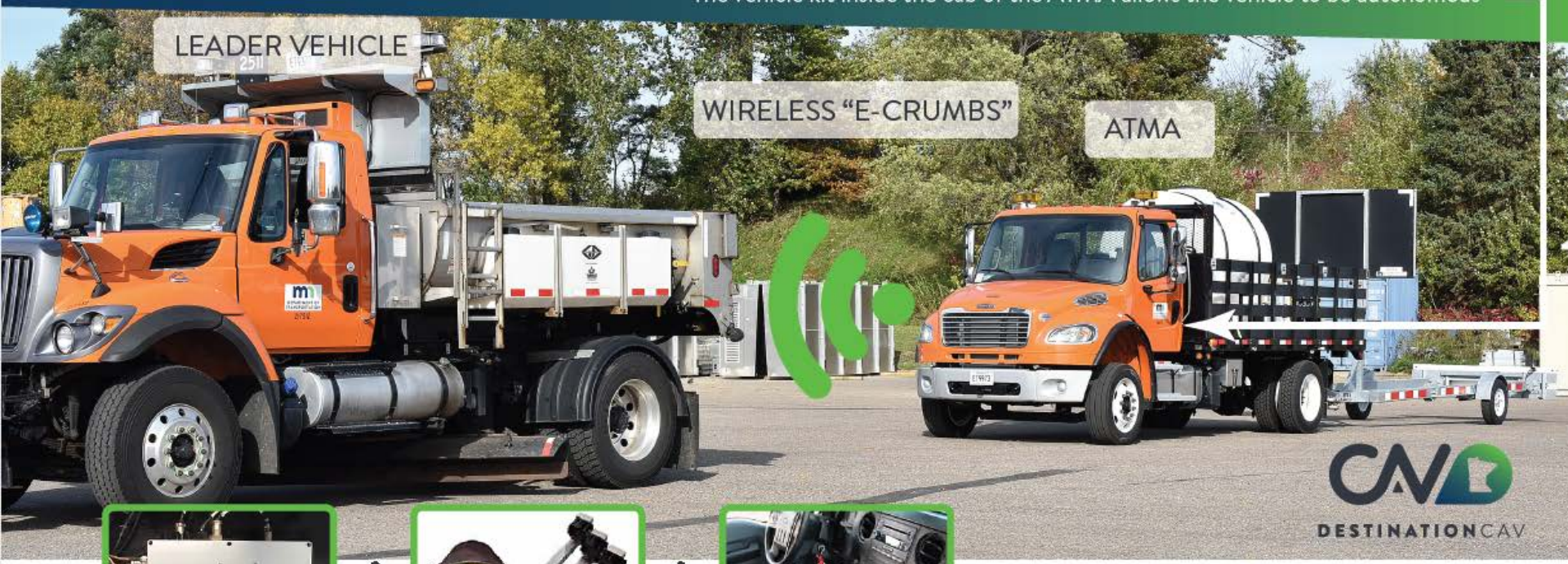
How can we improve operations, maintenance, work zone safety, and efficiency?

ATMA
(Autonomous Truck Mounted Attenuator)

The vehicle kit inside the cab of the ATMA allows the vehicle to be autonomous



Vehicle control module

+

Actuators

+

Safety system

The system precisely and securely transmits the location of the leader to the follower, allowing it to follow the same path.

ATMA – Project Goals

Worker Safety

Increase worker safety with automation

Public Engagement

Demonstrate technology to support policy and educate the public on worker safety technology

Improved Technology

Learn from user feedback to improve technology and work zone safety

Efficiency

Identify how technology can be used to improve operations

Education

Learn how DOTs can use technology and share best practices with other users

ATMA – Procurement Needs

- Summer Maintenance Operations Focus
- Retrofit Existing MnDOT Trucks
- Variable Offset
- Sustainability
  - De-commissioning
  - Re-commissioning
  - Keeping Momentum of Technology Use

ATMA – Delivery

- Delivery → Considerations
  - Transport
  - Insurance
  - Schedule
  - Inspection Upon Delivery
    - Steering Column Actuator
    - AM/FM Radio
    - ATMA Leader Kit Delivery

ATMA – Schedule

Schedule:

- Training and Testing at MnROAD
- Live Maintenance Operations sta

Work Zone Data Implementation (WZDI)

Purpose: Create consistent language for communicating work zone activity data (WZAD)

- Across organizational boundaries and
- Throughout project life cycles

Project Goals and Outcomes

- Support MnDOT's involvement in the FHWA-sponsored WZDI Pilot
- Vision for work zone data collection, processing, and dissemination in Minnesota that supports CAVs
- Develop an implementation roadmap and supporting documentation to make informed decisions on whether and how to proceed with next steps in the WZDI Pilot

Overview of National Work Zone Data Management Efforts

Work Zone Activity Data (WZAD)

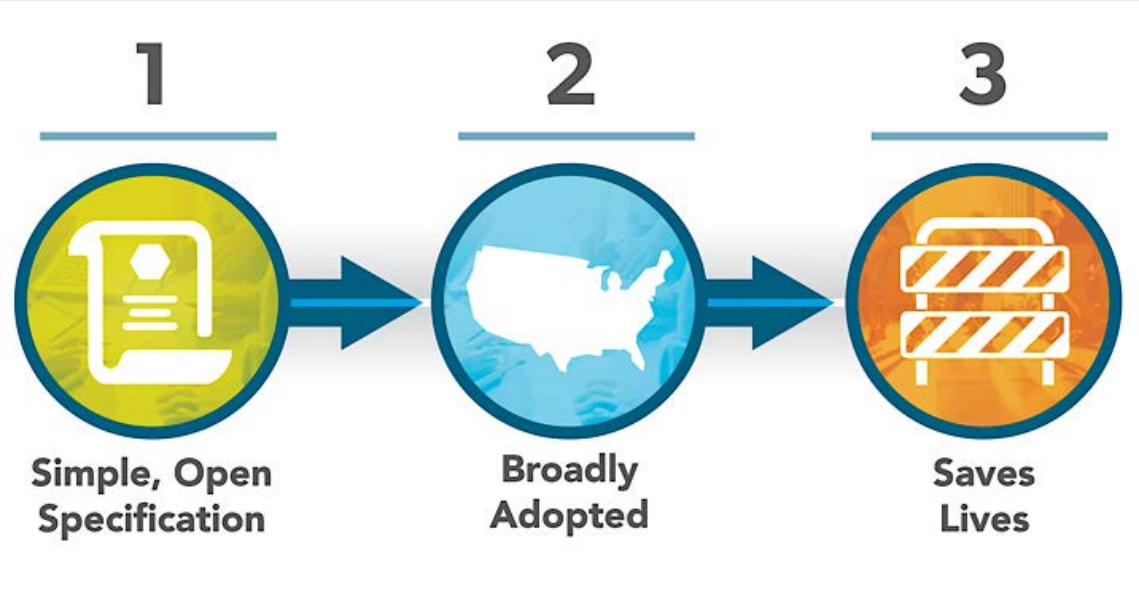
Digital data on ***when, where,*** and ***how*** work deployed

FHWA's Work Zone Data Initiative (WZDI)

Creating a ***framework for agencies*** to utilize a consistent language for communicating WZAD across jurisdictional boundaries

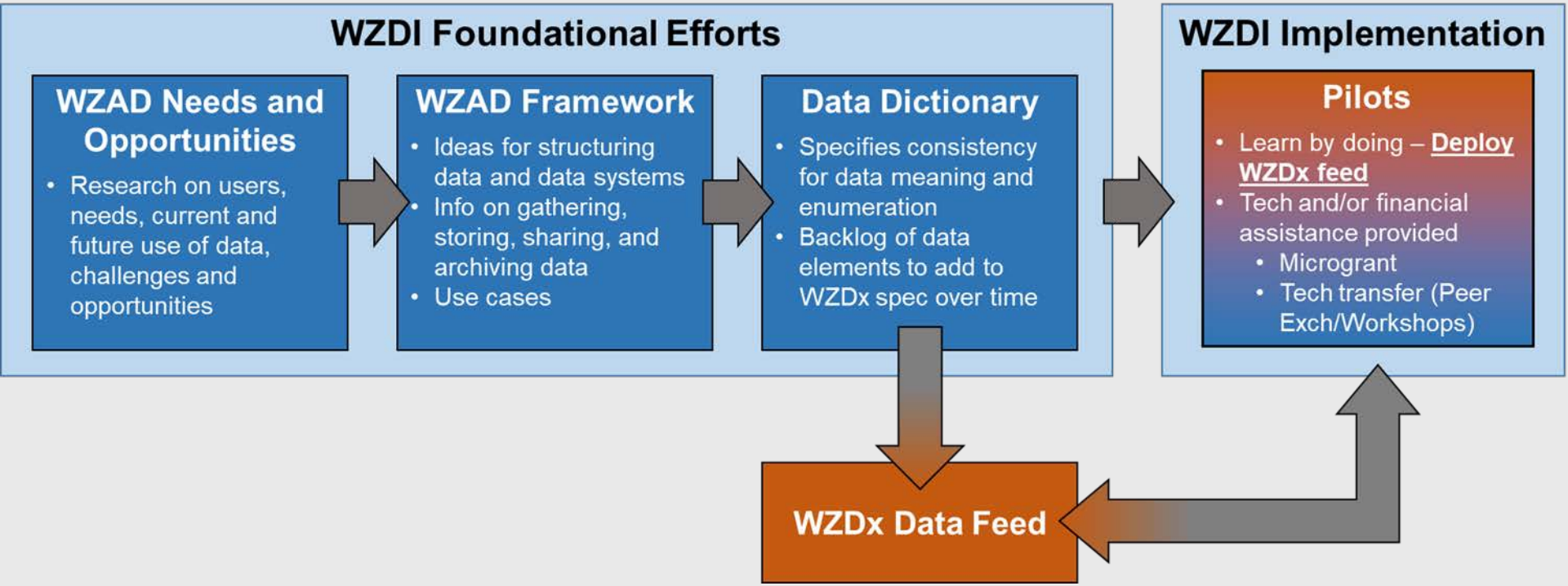
USDOT's Work Zone Data Exchange (WZDx)

Creating a ***basic work zone data specification*** to jump-starting voluntary adoption by data producers and users across the country

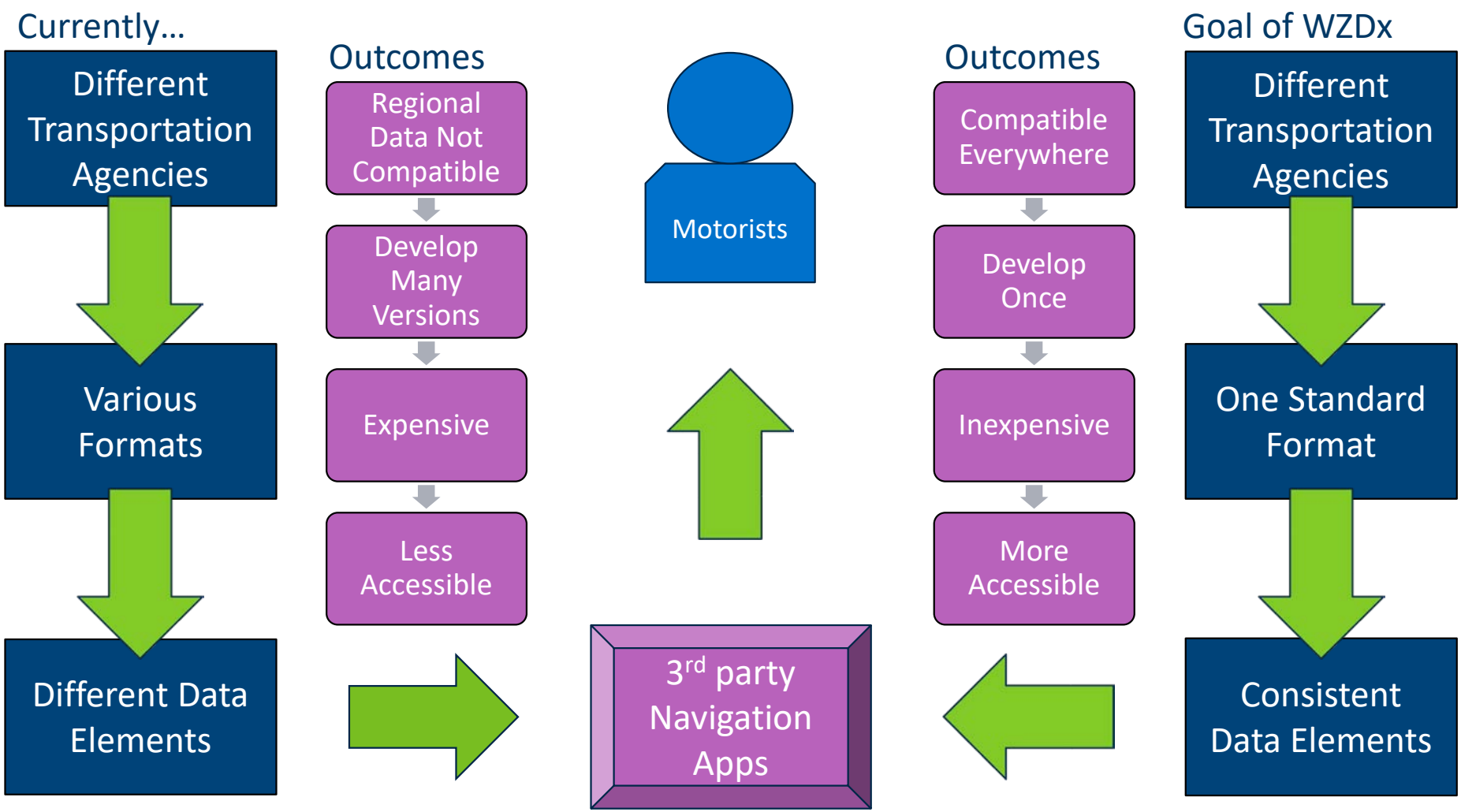


WZDI Implementation → WZDx Data Feed

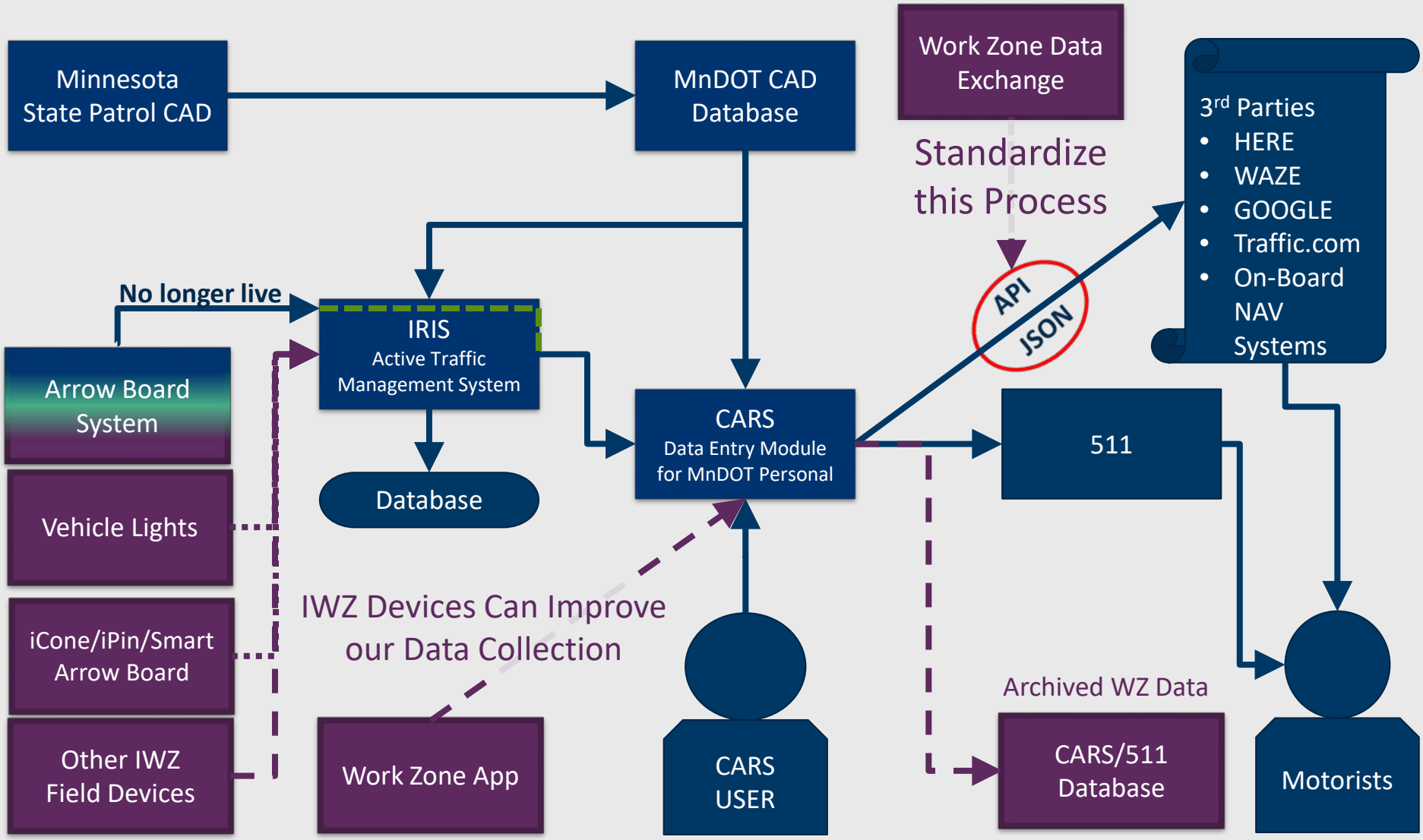
How it all fits together…



Is Work Zone Data Easily Useable?



Can Work Zone Data Be More Accessible?



WZDI – Next Steps

Stakeholder Visioning Workshop Goals

- Work zone data assembly, processing and dissemination
- Target operational concepts for work zone data to support CAV technology

Considerations

- Create an archive database to include WZAD, within CARS and 511
- Identify gaps in current work zone data including lack of precision in location information or generic time range of lane closures
- Evaluate other intelligent field devices that would allow for automation of work zone data
- Explore feasibility of mobile applications for staff to enter work zone information