



VITAL FEW

Mobility Implementation Plan
Recommendation 2.3: Develop an Active Work Zone Management Action Plan



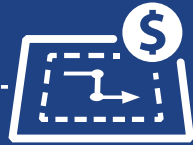


VITAL FEW MOBILITY FINDINGS



VITAL FEW MOBILITY TASK TEAM CHARGE

- *How can FDOT move the needle on mobility?*



METHODS SUB- COMMITTEE FOCUS

- *What approaches are successful and promising?*



OPPORTUNITY IDENTIFIED

- *Work Zone Program*



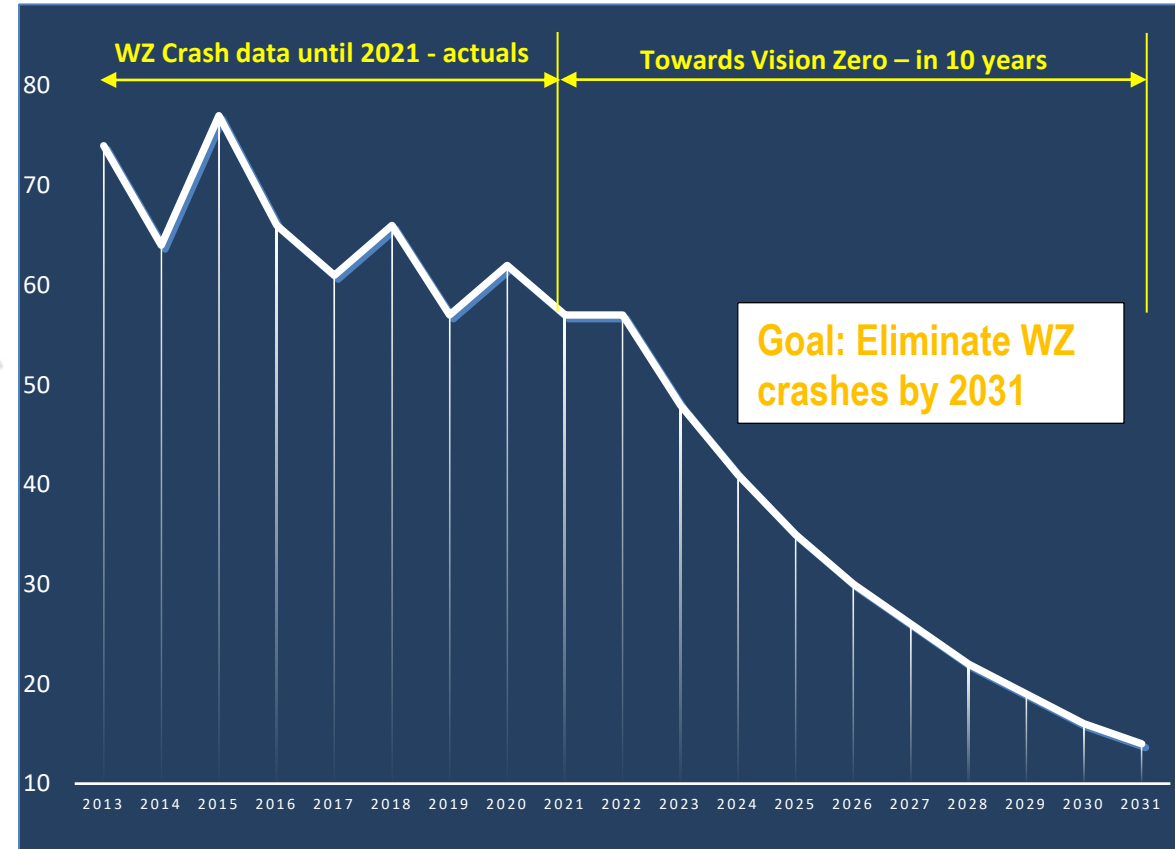
RECOMMENDATION 2.3

- *Develop an Active Work Zone Management Action Plan*

Florida's Statistics and Goals

Florida's State Highway System: Fatalities in Work Zones

	2013	2014	2015	2016	2017	2018	2019	2020
Crashes	74	63	67	66	61	66	57	62



Work Zone Fatalities (2009-2018):
671 (2nd in nation)

Work Zone Fatalities (2009-2018):
101 (2nd in nation)

Work Zone Fatalities (2009-2018):
122 (2nd in nation)

Work Zone Fatalities (2009-2018):
135 (3rd in nation)

Source: [National WZ Safety Information Clearinghouse](#)



Objectives and Timeline

Immediate

- Brief the FDOT Executive Leadership

- Develop standards, specifications, and guidelines
- Implement at least one AWZ in each District

Year 1

Year 2

- Assess results and lessons learned
- Modify standards and specifications

Year 3

- Mainstream implementation
- Track safety and mobility improvements

Years 4-10

- Continue to assess results and modify standards and specifications
- Enhance innovation

- Form an AWZM Task team
 - ❑ Lead implementing AWZM objectives
 - ❑ Representatives from key functional areas



Statewide Implementation



Central Office 2019 Request for Information (RFI)

- 11 vendor responses
- Vendor presentations to Districts
- Deployments at the Districts
- Sample Scope of Work template development

◆ Interactive web map to track SWZ project implementation

Interactive Web Map



Smart Work Zone (SWZ) Technology Deployment in Florida

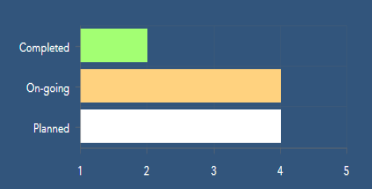
SWZ Project List

- SR-869 / SW 10th Street Connector TSM&O Smart Work Zone Project
Broward County, District 4
- I-4 Ultimate Project
Orange / Seminole County, District 5
- D5 Queue Warning System
Volusia County, District 5
- Smart Work Zone Pilot
Volusia County, District 5
- Performance Evaluation of the Connected Tech Arrow Board (AB) Kit on Incident Response Vehicle (IRV) Fleet
Miami-Dade County, District 6
- Okeechobee Rd (US 27) Smart Work Zone Project
Miami-Dade County, District 6
- SafeTRIP in Tampa Bay Next (I-275 Westshore / Memorial Interchange Reconstruction)
Hillsborough County, District 7
- I-75 from South of CSX / Broadway Ave to EB/WB I-4 Exit Ramp
Hillsborough County, District 7
- Prioritized Safety Consideration by Work Zone Types and Pilot Implementation
Hillsborough / Pasco County, District 7
- Resurface Seminole Expressway
Seminole County, Florida's Turnpike Enterprise

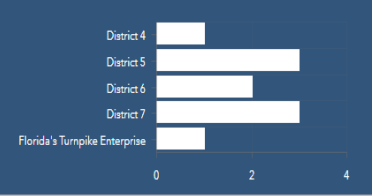
SWZ Project Details

Project ID: 1
 Project Name: SR-869 / SW 10th Street Connector TSM&O Smart Work Zone Project
 Project Corridor: 86012000: MP1.88 - 2.152
 Project Status: Planned
 Years: 2022/2023
 Project Details: CV applications with in-vehicle signing/ in-vehicle driver alerts; Integrated with D4 TMC operations.
 Contract Vendor: N/A
 Cost Estimate: N/A
 SWZ Technologies: Traveler Information Systems; Queue Warning
 Comm. Info to Travelers: PCMS; Smartphone Application ; CV Technologies; Arterial DMS
 Detection Components: Traffic Sensors
 In Field Comm. Components: Optical Fiber

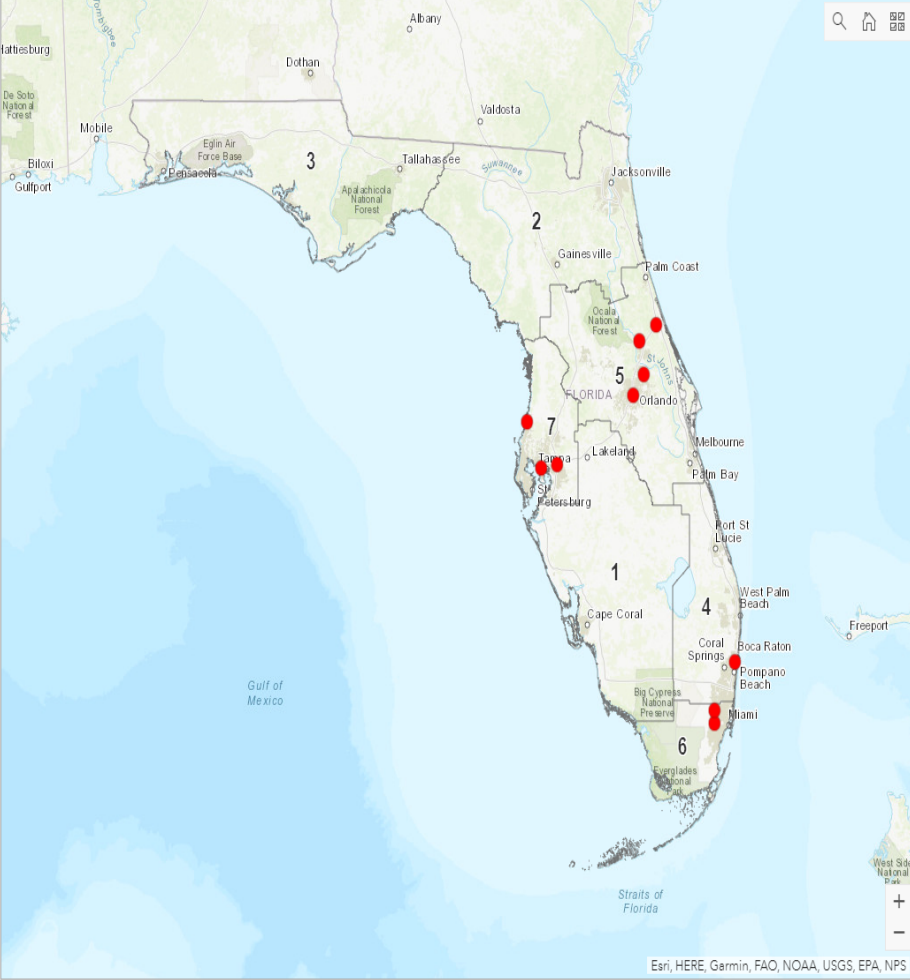
SWZ Project Status



SWZ Projects by District

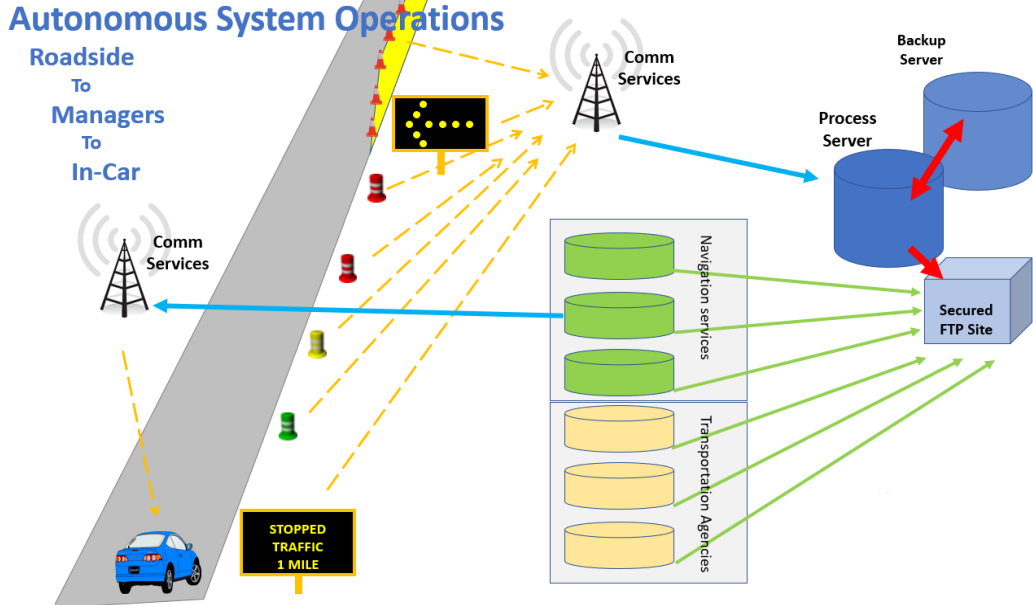


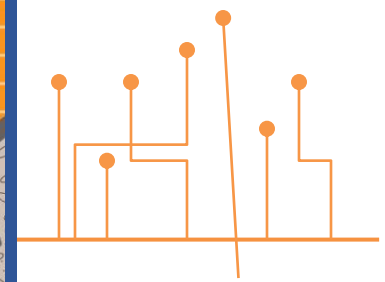
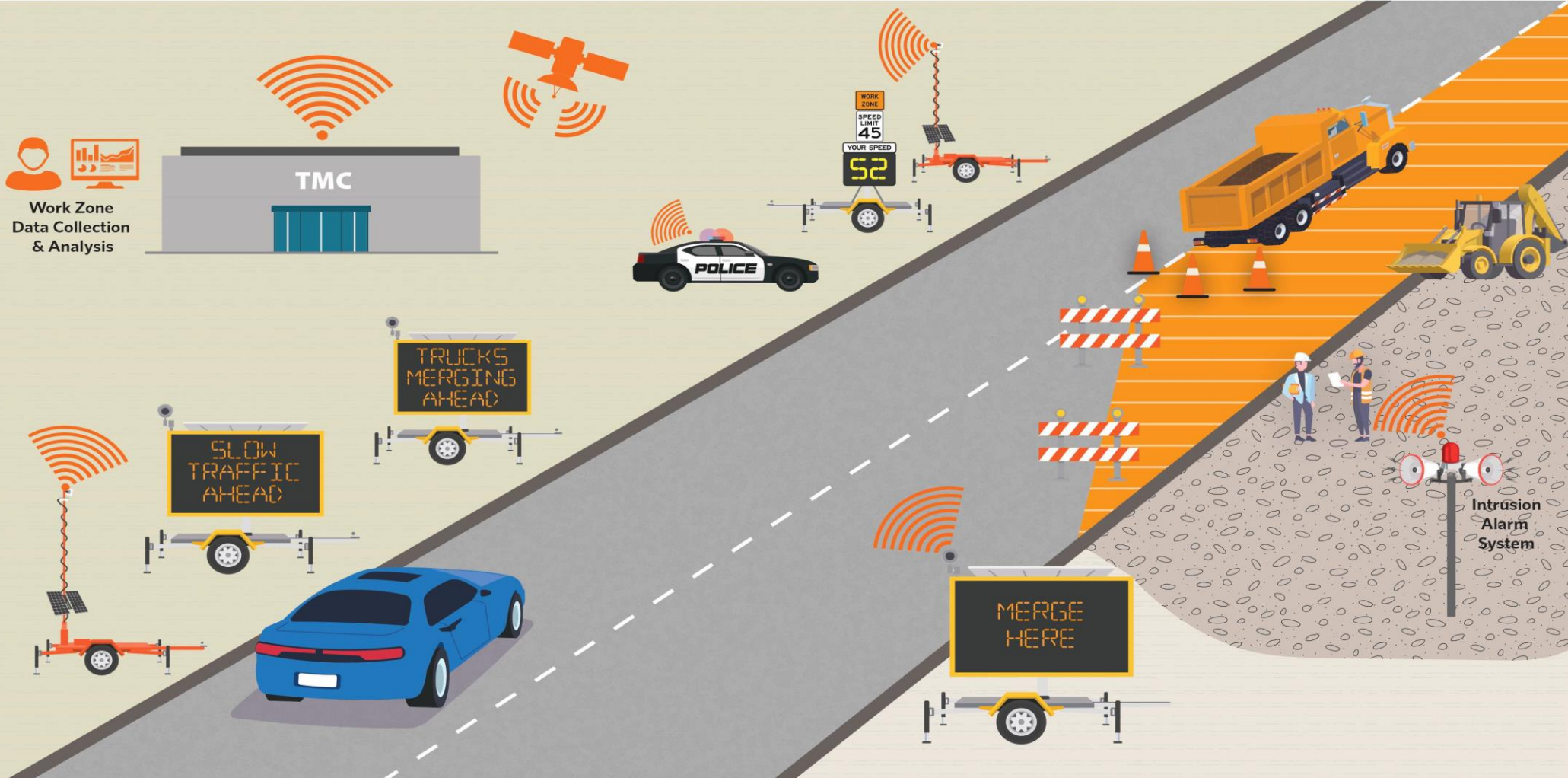
SWZ Projects Map



Active Work Zone Management Applications

- ✓ Traveler Information Systems: **real-time travel conditions**
- ✓ Queue Warning Systems: **slowed or stopped traffic warning**
- ✓ Dynamic Lane Merge Systems: **advance lane merge**
- ✓ Dynamic/Variable **Speed Limit Systems**
- ✓ Work Zone **Data Collection Technologies**
- ✓ Location Technologies: **location of the work zones**
- ✓ Intrusion Detection/Alarms: **alerts workers**

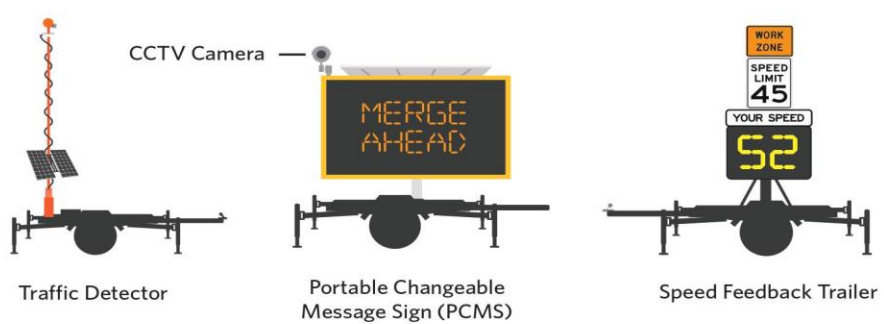




Active Work Zone Management

Concept Layout

LEGEND



ACTIVE WORK ZONE MANAGEMENT SYSTEM AND COMPONENTS

- Dynamic Lane Merge System**
 - Traffic Detector
 - Portable Changeable Message Signs
- Dynamic Speed Limit System**
 - Traffic Detector
 - Speed Feedback Trailer
- Construction Equipment Entering/Exiting System**
 - Traffic Detector
 - Portable Changeable Message Signs
 - Optional Signage (with Flashing Beacons)
- Travel Information System**
 - Traffic Detector
 - Portable Changeable Message Signs
- Queue Warning System**
 - CCTV Camera
 - Traffic Detector
 - Portable Changeable Message Signs
- Work Zone Intrusion Alarms**
 - Traffic Detector
 - Portable Changeable Message Signs
 - Barriers
 - Sirens or Horns

AWZM Strategies

Traveler Information Systems Queue Warning Systems

Dynamic Lane Merge Systems Variable Speed Limit Systems

Work Zone Data Collection Technologies Work Zone Location Technologies

Work Zone Intrusion Alarms Entering/Exiting Vehicle Notification

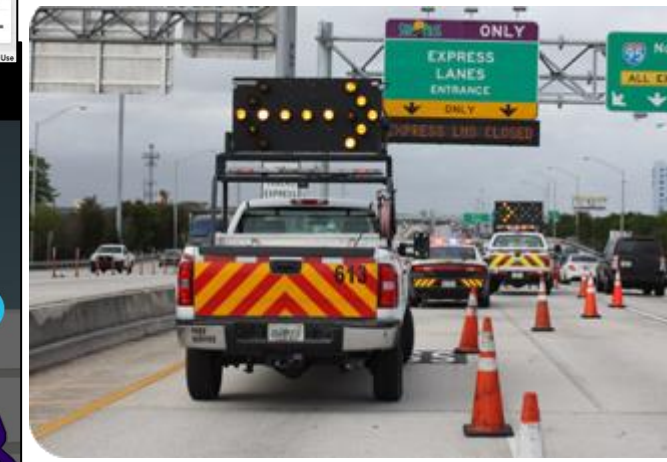
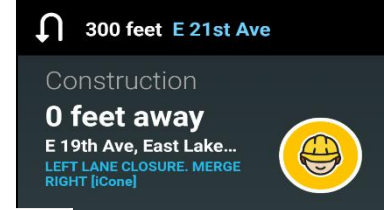
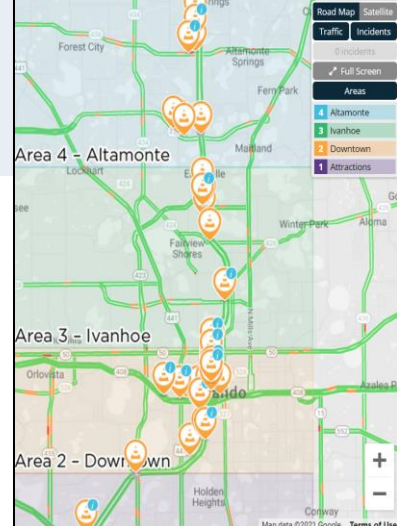
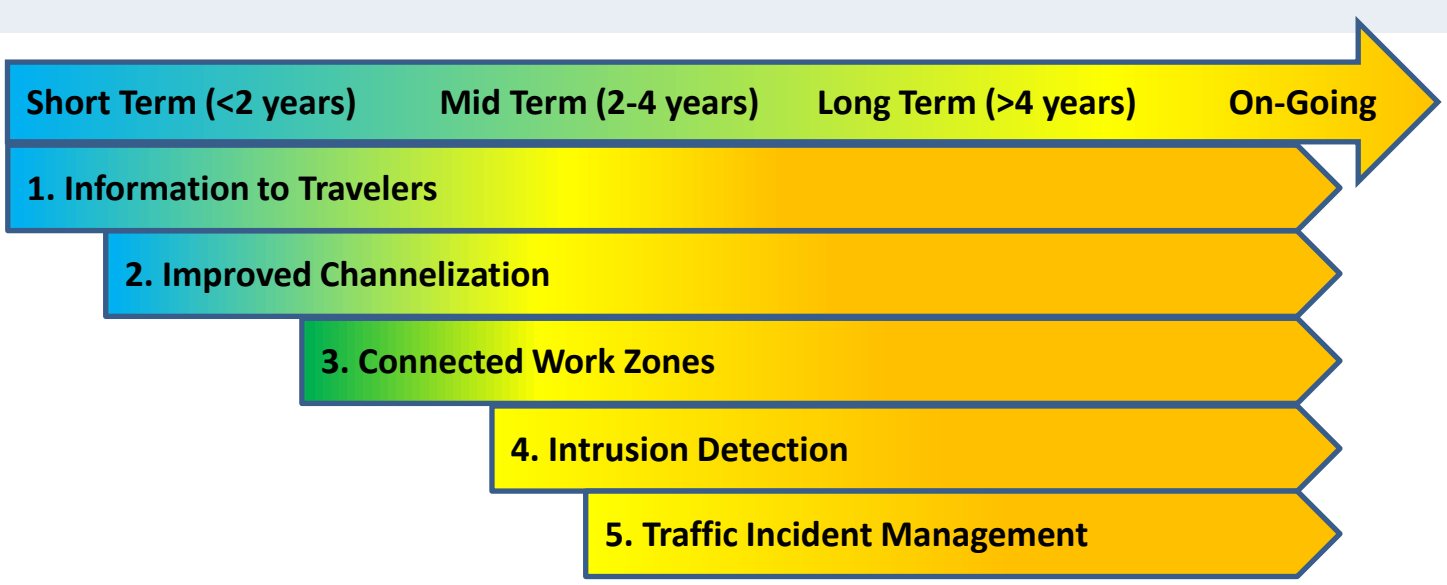
Incident Management



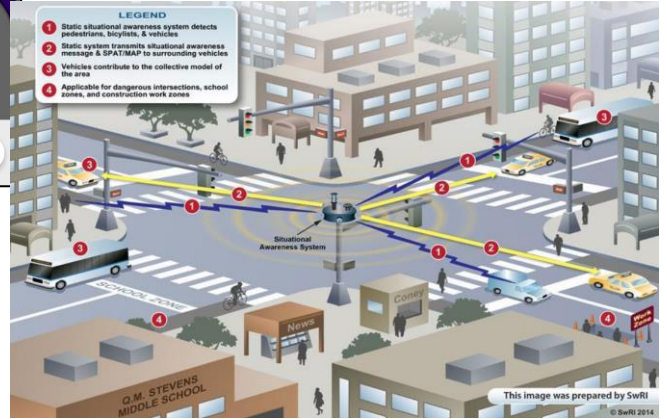
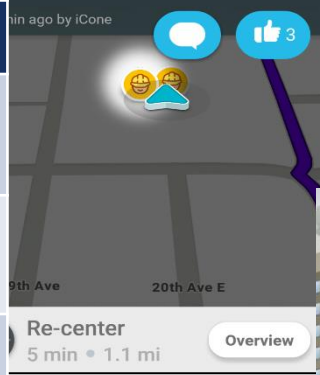
SWZ Technologies on D6 Incident Response Vehicles



AWZM Implementation Priorities



Application Categories	Discussion	Goals, AWZ Applications
1. Information to Travelers	<ul style="list-style-type: none"> • Information out to road users • FL511, Waze, Google, navigation apps • Information ahead of work zones 	<ul style="list-style-type: none"> • Integrate data ~ traveler information systems • Information of immediate relevance • Aid driver decision-making
2. Improved Channelization	<ul style="list-style-type: none"> • Guidance on merging ahead • Design guidance on WZ devices and setup • Mainstream AWZ 	<ul style="list-style-type: none"> • Dynamic lane merge systems • Channelize traffic for safe merging/operations • Build from 'information out' systems
3. Connected Work Zones	<ul style="list-style-type: none"> • Real-time information • Emerging Technologies • Applications and data with direct impact 	<ul style="list-style-type: none"> • Queue warning systems • Dynamic speed limit systems • Deploy systems with direct impacts
4. Intrusion Detection	<ul style="list-style-type: none"> • Interdisciplinary team • Technology maturity to be assessed • Worker training for quick response 	<ul style="list-style-type: none"> • Work zone intrusion alarm systems • Train workers to respond quickly to warnings • Technology-contractor collaboration
5. Traffic Incident Management	<ul style="list-style-type: none"> • ITS Systems, SunGuide, TMCs, FL511, Waze • Incident data and quick clearance • TIM Strategic Plan, RRSP, RISC 	<ul style="list-style-type: none"> • Leverage ITS systems on freeways and arterials • Evaluate performance of deployed systems • Synergize TIM and AWZM approaches



Action Items

- **Develop Active Work Zone Management Action Plan - Complete**
- **Form a SMART AWZM Task Team**
 - **Develop Developmental Design Criteria (FDM)**
 - **Develop Developmental Specification (Standard Plans and Specifications)**
- **Implement the AWZM Action Plan**
- **Deploy SWZ Applications**
- **Track the Performance of SWZ Applications**
- **Conduct Public Education Campaigns**
- **Industry Outreach and Collaboration**
- **Finalize FDM Update for SWZ Applications**
- **Finalize Standard Specification Updates for SWZ Applications**
- **Finalize Standard Plans Updates for Inclusion of SWZ Equipment**
- **SMART Task Team Brief the FDOT Leadership Periodically**



Asks from the Leadership

1. Approve formation of an **Active Work Zone Management Task Team**
2. Plan (FY 2022) and Implement (FY 2023, FY 2024) **at least 1 Active Work Zone project** in each District; from the **CAV** funding source (not new money):
 - **Allocate \$1 Million per District** (1-7) for implementation;
 - Evaluate District/CO needs and add support as necessary.



Statewide Implementation - Summary



Dashboard Link: <https://devgis.fdot.gov/arcgisportal/apps/opsdashboard/index.html#/d40ad4f3f1b04681b4786f8ea46fdb5d>

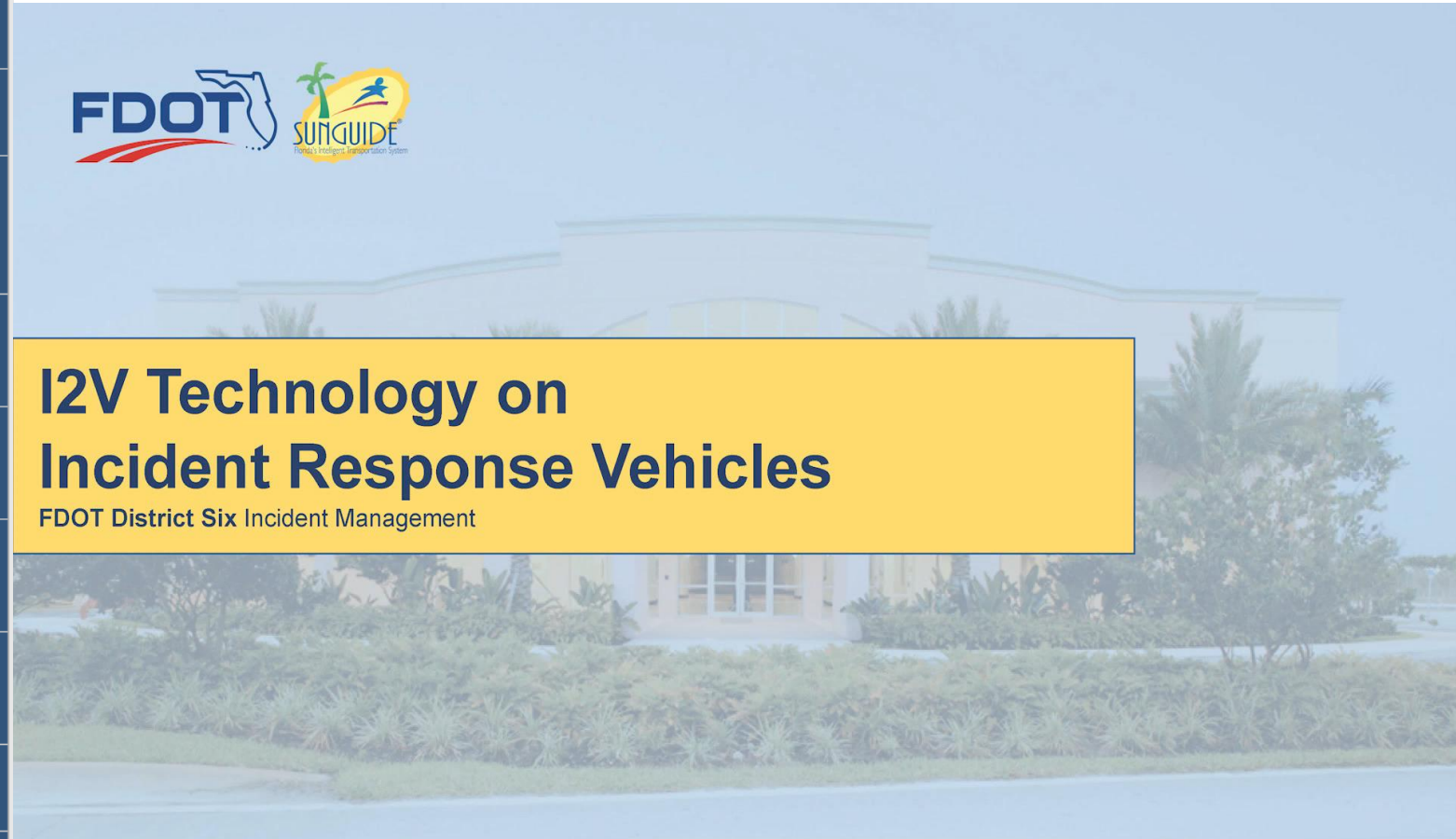
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SWZ
Projects
Statewide

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Dashboard Contains Information:

- Project Limit
- Project Summary
- Smart Work Zone Technologies
- Communication Method to Travelers
- Detection Method Implemented
- In-field Communication Method

D6 – IRV Fleet **Video**



I2V Technology on Incident Response Vehicles

FDOT District Six Incident Management

Thank You!

WORK ZONE SAFETY It's Everyone's Job

BE AWARE of workers
while driving through
an active work zone.

