WASHTO ALASKA

Juneau, AK | June 26, 2017

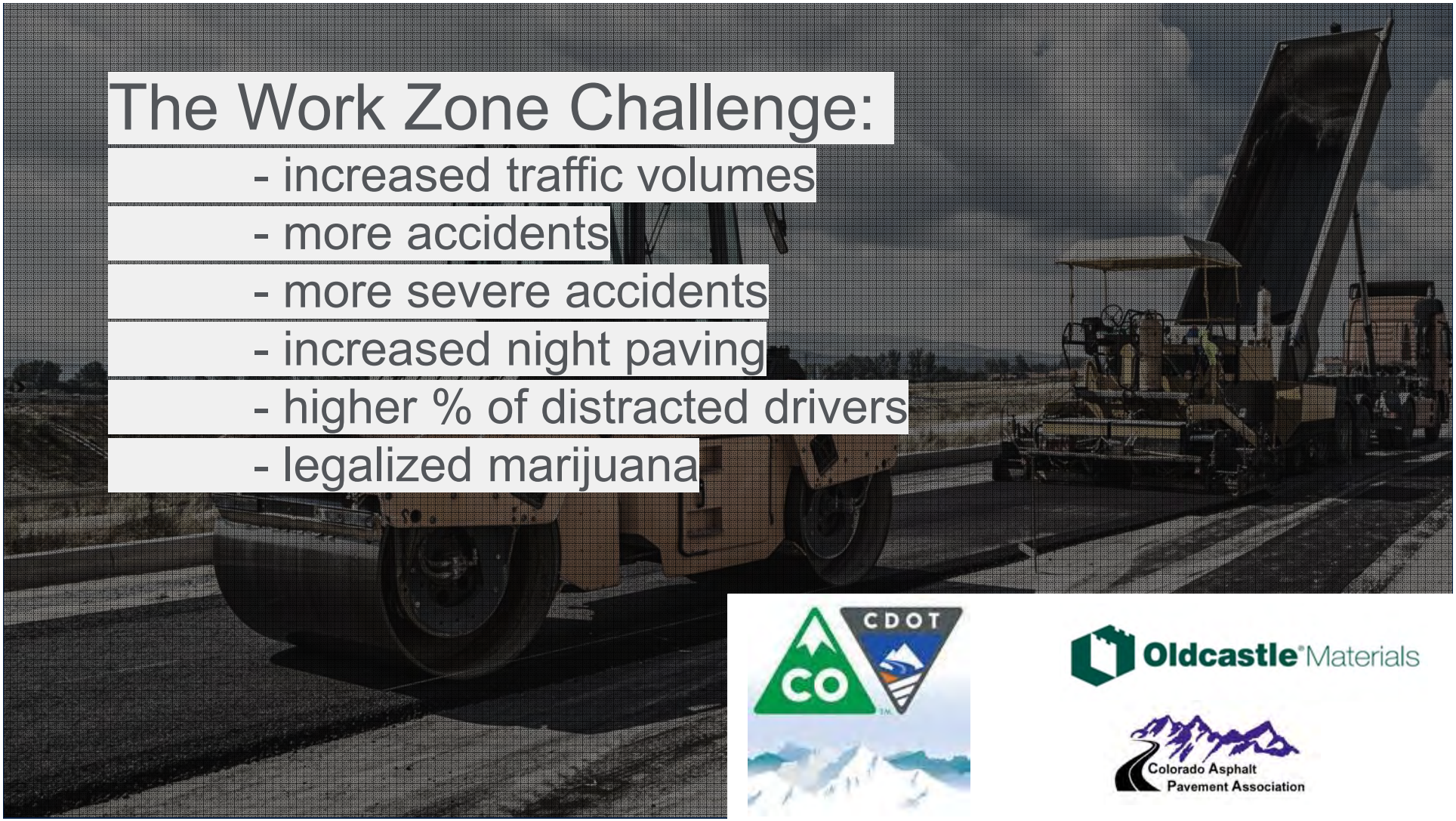
Using Smart Technology to Reduce Accidents & Save Lives

Tom Peterson – Colorado Asphalt Pavement Association

Curt Davison – Oldcastle Materials

Dave Eller – Colorado Department of Transportation

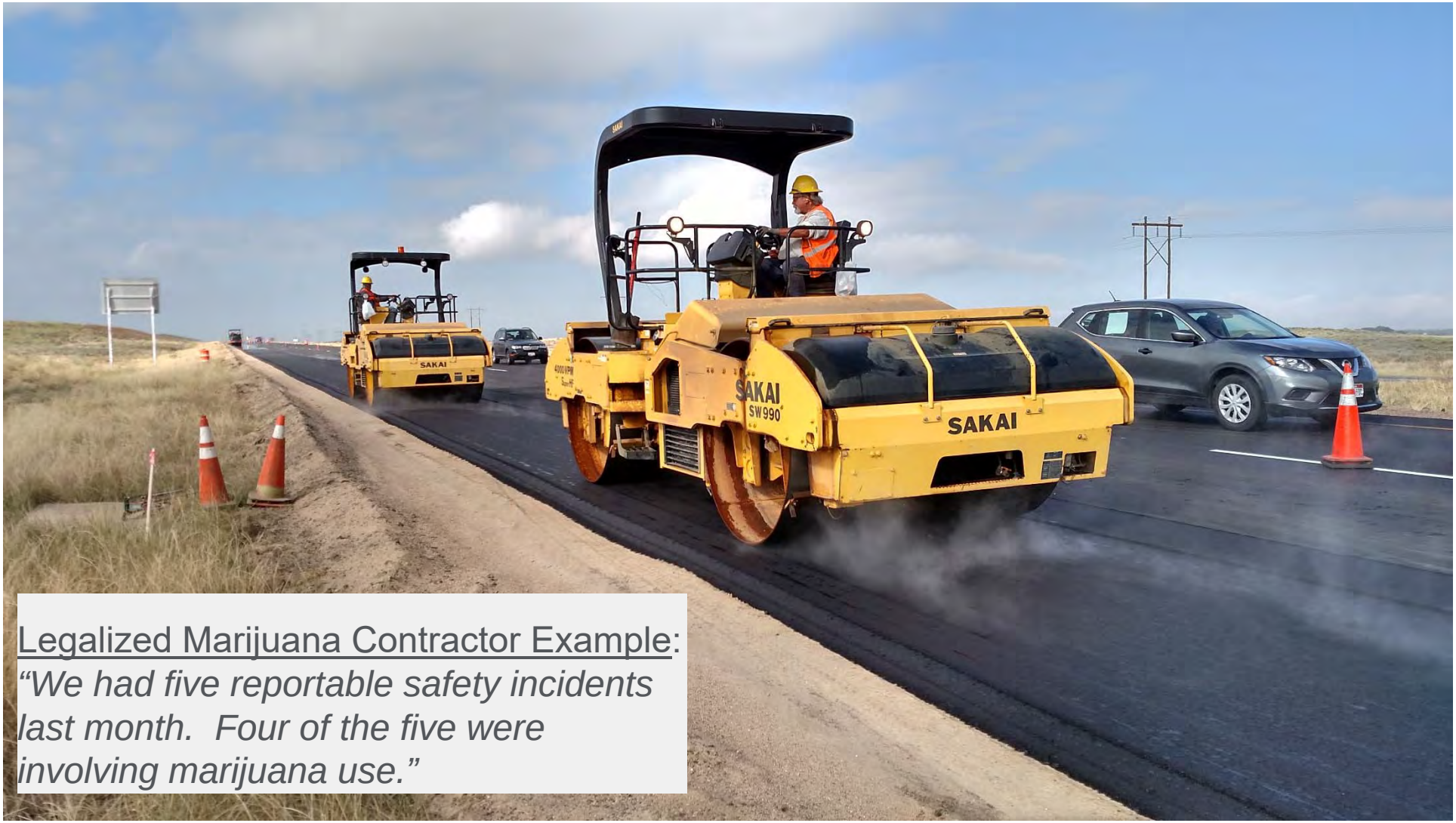
Contractors Perspective on Work Zone Safety:
- Safety is Job #1 - Culture
- Safety is Success
- Goal is ZERO Accidents
- Safe – Efficient – Quality
Higher Production
CDOT
CO
Oldcastle Materials
Colorado Asphalt Pavement Association


The Work Zone Challenge:
- increased traffic volumes
- more accidents
- more severe accidents
- increased night paving
- higher % of distracted drivers
- legalized marijuana
CDOT
CO
Oldcastle Materials
Colorado Asphalt
Pavement Association

In Colorado, traffic fatalities have risen by 24 percent since 2014. In 2016, there were 605 traffic fatalities, compared to 547 fatalities in 2015.

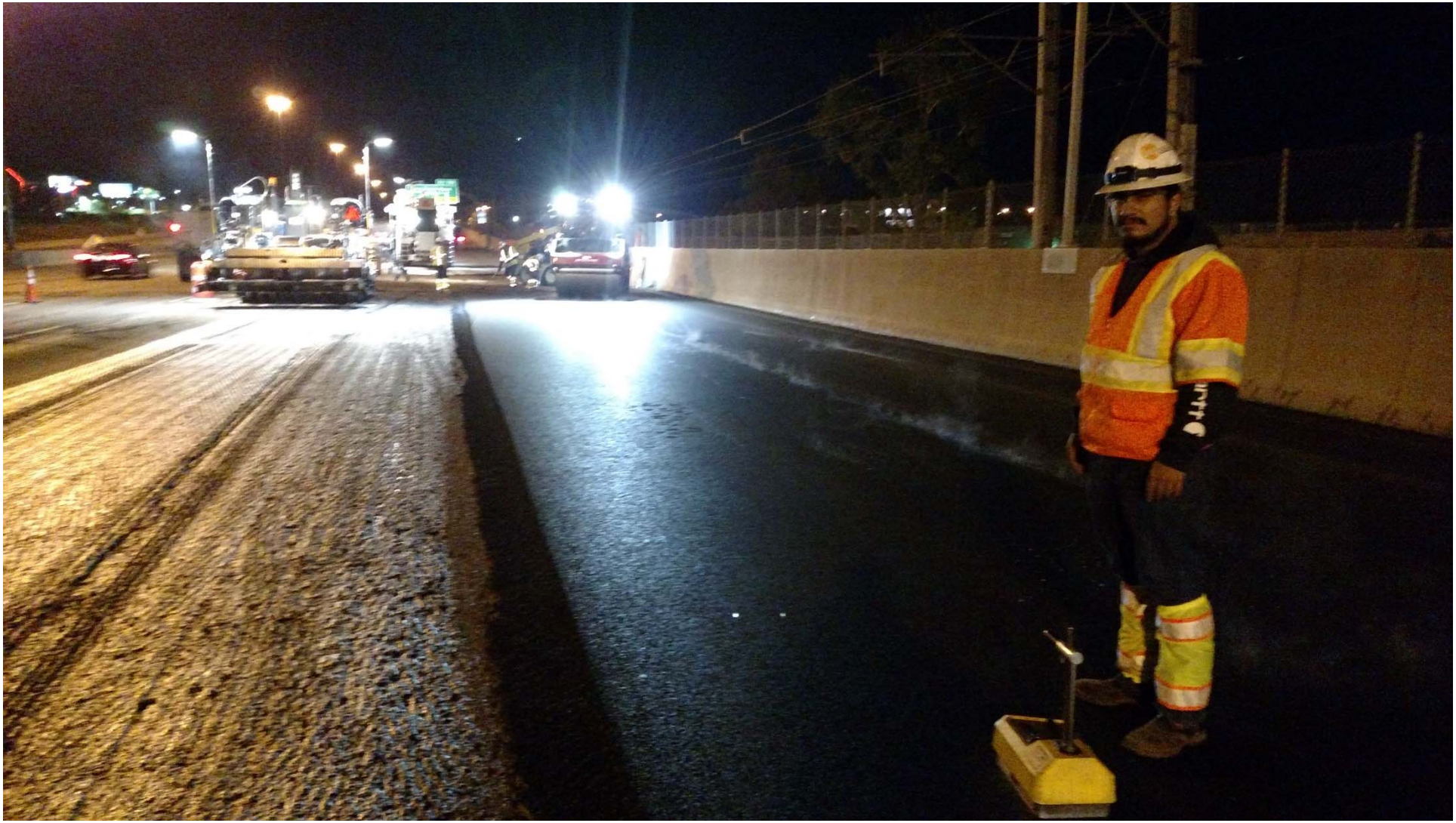
Worker killed in construction zone on
Highway 9 near Silverthorne, June 15, 2017
FOX 31
KDVR.COM

EurekAlert!
The Global Source for Science News
Marijuana use involved in more fatal accidents in Colorado, May 15, 2014
denverpost.com
More Colorado drivers in fatal crashes positive for pot, study says, October 2, 2016
AAA
Fatal Road Crashes Involving Marijuana Double After State Legalizes Drug, WA



Legalized Marijuana Contractor Example:
"We had five reportable safety incidents last month. Four of the five were involving marijuana use."

More Night Paving



SLOW

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AWARE

Advanced Warning and Risk Evasion

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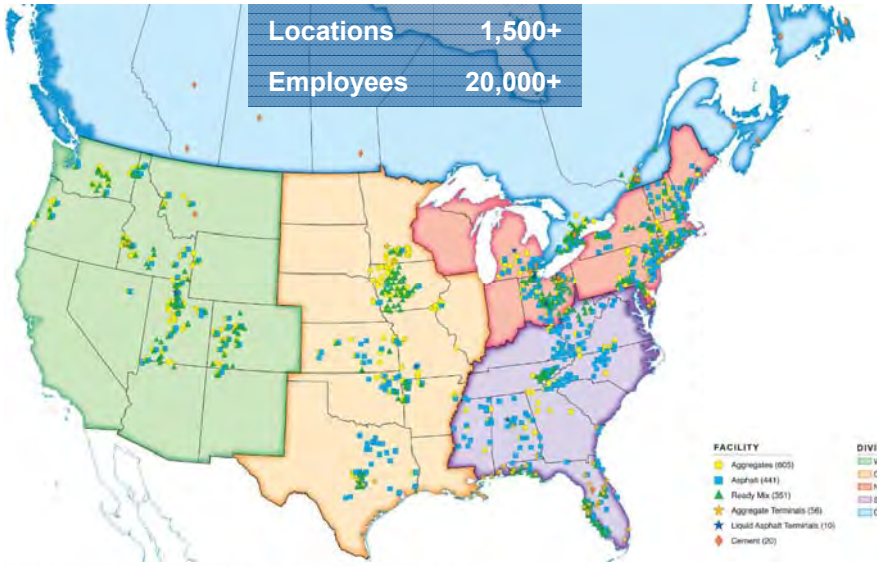
How you know Us……



Product	Position
Asphalt	No. 1
RMC	No. 3
Aggregates	No.3

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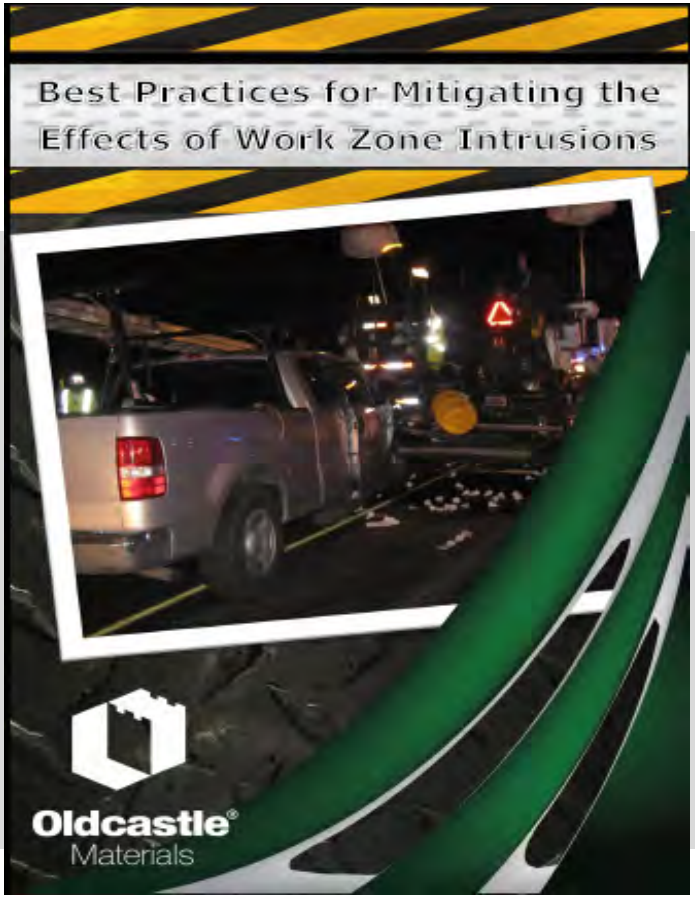
CRH

Mitigating Risks

http://www.workzonesafety.org/data-resources/wz-intrusion-prevention/

- National Efforts
  - Legislation
  - Public Education
  - Trade Associations
- Local Efforts
  - Compliance
  - Training
  - Innovation
  - State associations and DOT's
  - Best Practices



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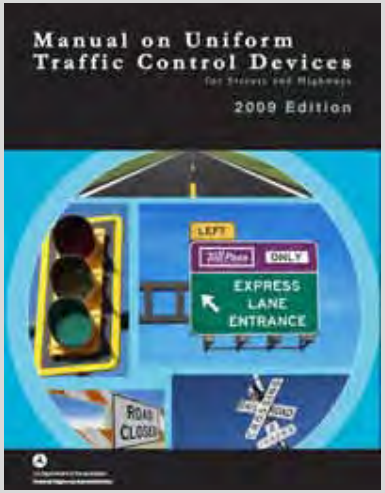
Unfortunately…



Our Why!

The **STATS**:

- According to the National Highway Traffic Safety Administration (NHTSA), 80% of accidents and 60% of highway deaths are the result of distracted drivers.
- Vehicle Intrusions are the leading cause of worker fatalities with the road construction industry. In 2013, there were 67,523 crashes in work zones. In 2014, there were 669 fatalities from crashes in work zones

Frank

Bubba

Marshall

Ronaldo

Chet

AWARE

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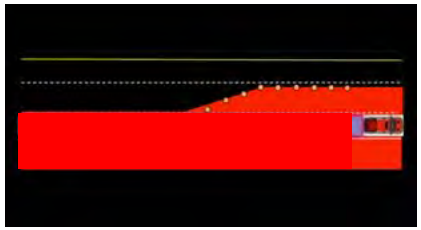
CRH

Insert Aware Video

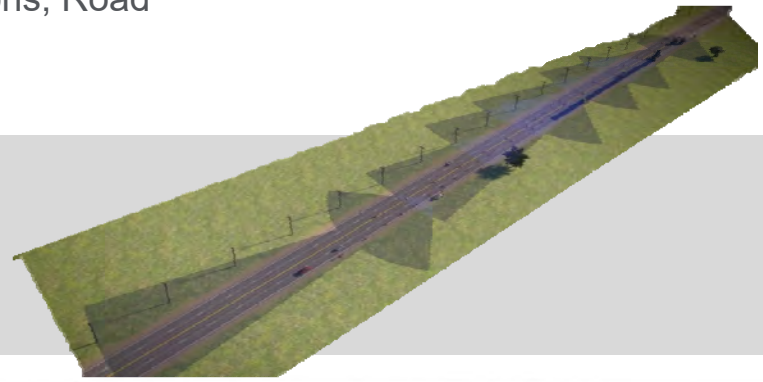
3 Basic Applications

- **Stationary Situation –** Flagging Station, Maintenance Crews, Lone Worker



- **Merge** – MOT (cone) Trucks, Striping Operations, Sweeping Operations, Road Rangers, School Buses

- **Active Work Zones** – Paving, Milling, or Construction Operations within (non-protected) lane closure



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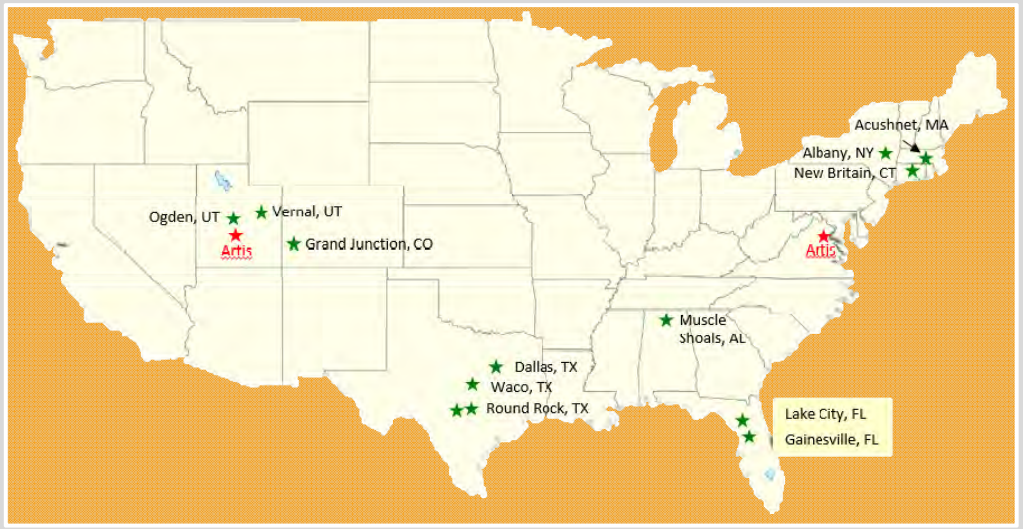
AWARE Road Map

Concept → **Possibility** → **Usability** → **Marketability**

2016 Pilots - 8 States / 15 Crews

- System Works
- Lessons Learned
- Needs to be easy to use/install
- Needs to provide feedback



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AWARE 3rd Testing

Texas A&M Transportation Institute

- Several passes to test alarm and false alarm rate
- Test Flagger and Paving Modes
- Several Scenarios

ALL PASSED !

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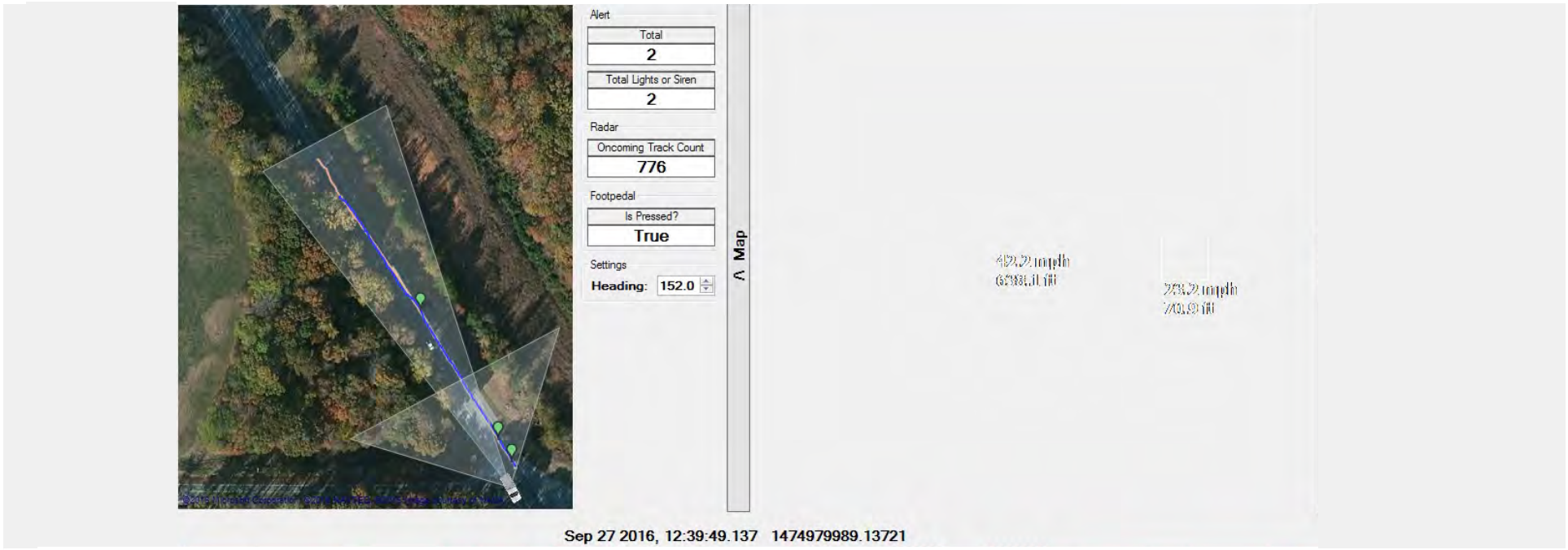
Lane Intrusion Detection

NY Thruway

AWARE SENTRY *(Flagger Cart)*



Muscle Shoals, Alabama

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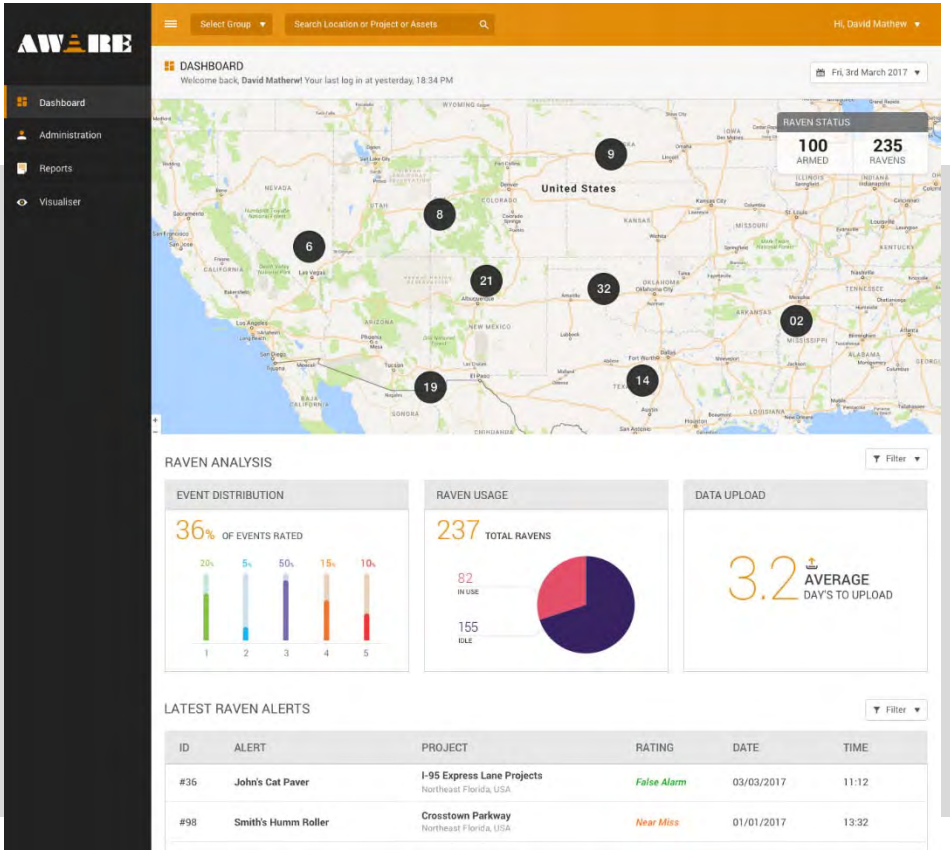
AWARE BASE STATION
Mobile, Web App & Database

- Easy log in and UI on iOS or Android phone or tablet
- Select /Assign Project – Map or list View
- Real Time Event Data and Alerts
- Near time visualizations tools
- Inventory Control & Management
- Scalable Hierarchy (customizable)
- Full Admin functionality
- Performance Metrics and Protected Zone Overview
- Clickable User Feedback during Development



Web App Dashboard

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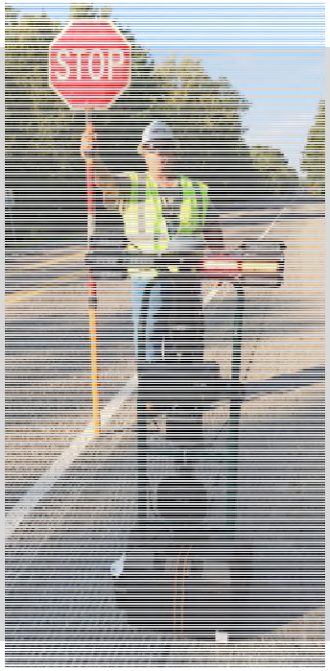
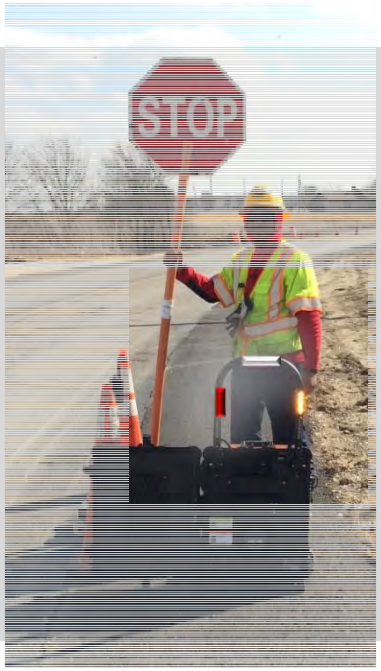
AWARE SENTRY

- Lighten the Weight (>50lbs)
- Increase light height and visibility
- Smaller more portable case
- Quick easy Set Up
- 15 Hours Battery Life



Proof of Concept



Prototype

New SENTRY

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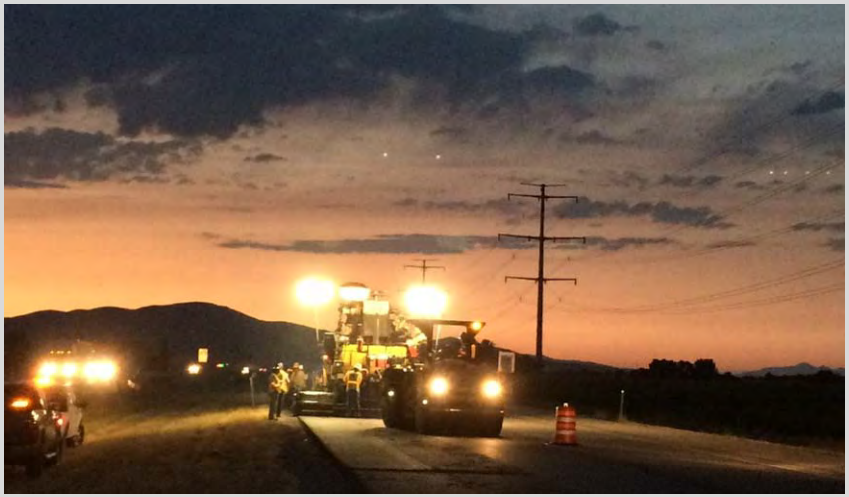
2017 Pilots

- Began in May – 16 Sentry Units to date
- Goal 50 Sentry Units (25 crews)
- Goal 150 Intrusion Alert Systems (35 crews)
- Sentry Unit Crash Testing
- MnDOT Lane Intrusion Pilot
- Aug/Sept Transition from Pilot to Production



Brigham City, UT I-15

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Opportunity for Agencies

- Safety Benefit both for Employees and the Traveling Public is obvious

-There is an initial cost, but when compared to other Traffic Control Devices this technology has potential of long term project savings.

-Technology should not only be pursued for Contracted Projects, but agency managed maintenance programs.

Agency Challenges

-For standard usage on all projects, specifications need developed

-End Result specifications vs. Method Specifications

-Non-proprietary specifications, yet proven technology is the balance

-Recognizing the Cost/Benefit, and justifying the added project cost that the agencies should share

-Concerns over liability when technology doesn't meet expectations

-Training project teams to recognize new methods for traffic management and accepting that cultural change.

How can an Agency help lead the change

-This is only one of many new technologies – Agencies need to be proactive to help accelerate the implementation.

-Agencies need to recognize that there is a cost in development of innovative solutions, and we need to be willing to invest in those that have promise.

-Colorado has implemented a program called **Road X**

ROADX
RoadX VISION: Crash-free, Injury-free, Delay-free and Technologically-transformed travel in Colorado.
RoadX MISSION: Team with public and industry partners to make Colorado one of the most technologically advanced transportation systems in the nation, and a leader in safety and reliability.
Colorado Is Open For Business – Colorado invites partners to join us in accelerating the adoption and deployment of technological solutions.
2016
2017
2018
2019

Questions??

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