

A background image of a construction site. In the upper half, a large green truck is dumping material. In the lower half, a yellow construction vehicle is on a road, with several workers in safety vests and hard hats standing around it. Orange traffic cones are visible on the road surface.

WORKZONE INNOVATIONS

Presentation Outline:

Current Efforts/Solutions

Digital Speed Limit Sign (DSL)

Automated Flagger Devices (AFADs)

Smart Arrow Boards

Connecting Innovations

Contacts and Resources



ISSUE

MDOT specifications that reduce a work zone speed limit to 45 MPH when workers are present is subjective. Motorists are left to identify if workers are present to know if the 45 MPH speed limit is in effect.

Often, motorists either do not reduce speed at all or brake last minute when a worker is identified.

This causes excessive speed or speed variability, which leads to slower reaction time, traffic queues and congestion, the highest crash risk factors in work zones.



Current MDOT specification

REDUCED SPEED ZONE AHEAD SIGNS



STATIC SPEED LIMIT SIGNS



WHERE WORKERS PRESENT STATIC SPEED LIMIT SIGNS



Issues with current MDOT specification

ISSUES:

- WHERE WORKERS ARE PRESENT SPEED LIMIT SIGNS IMPLY MOTORISTS ARE TO DETERMINE IF WORKERS ARE PRESENT.
 - ARE WORKERS PRESENT?
 - HOW ARE MOTORISTS TO KNOW?
- CONTRACTORS DO NOT ALWAYS STAND TEMPORARY WHERE WORKERS ARE PRESENT SPEED LIMIT SIGNS WHERE THEIR WORKERS ARE WORKING.
- CONTRACTORS DO NOT ALWAYS COVER PERMANANT SPEED LIMIT SIGNS WHILE THEIR WORKERS ARE PRESENT.



Common solution often used in other states

SIGNS WITH FLASHING BEACONS

BENEFIT:

- FLASHING BEACONS ALERT MOTORISTS THAT WORKERS ARE PRESENT AND THAT THE POSTED SPEED LIMIT IS IN EFFECT.

ISSUES:

- MOST MANUFACTURERS HAVE DISCONTINUED
- MANUAL OPERATION REQUIRED - NOT ABLE TO TURN BEACONS ON OR OFF REMOTELY
- LIGHTS ARE MORE LIKELY TO BE ACCIDENTALLY LEFT ON WHEN WORKERS ARE NOT PRESENT
- LIGHTS ARE MORE LIKELY TO BE ACCIDENTALLY LEFT OFF WHEN WORKERS ARE PRESENT CAUSING HIGHER SPEEDS IN WORK ZONES
- STATIC SPEED LIMIT SIGNS ARE LESS VISIBLE THAN DIGITAL SPEED LIMIT SIGNS



Recommended solution

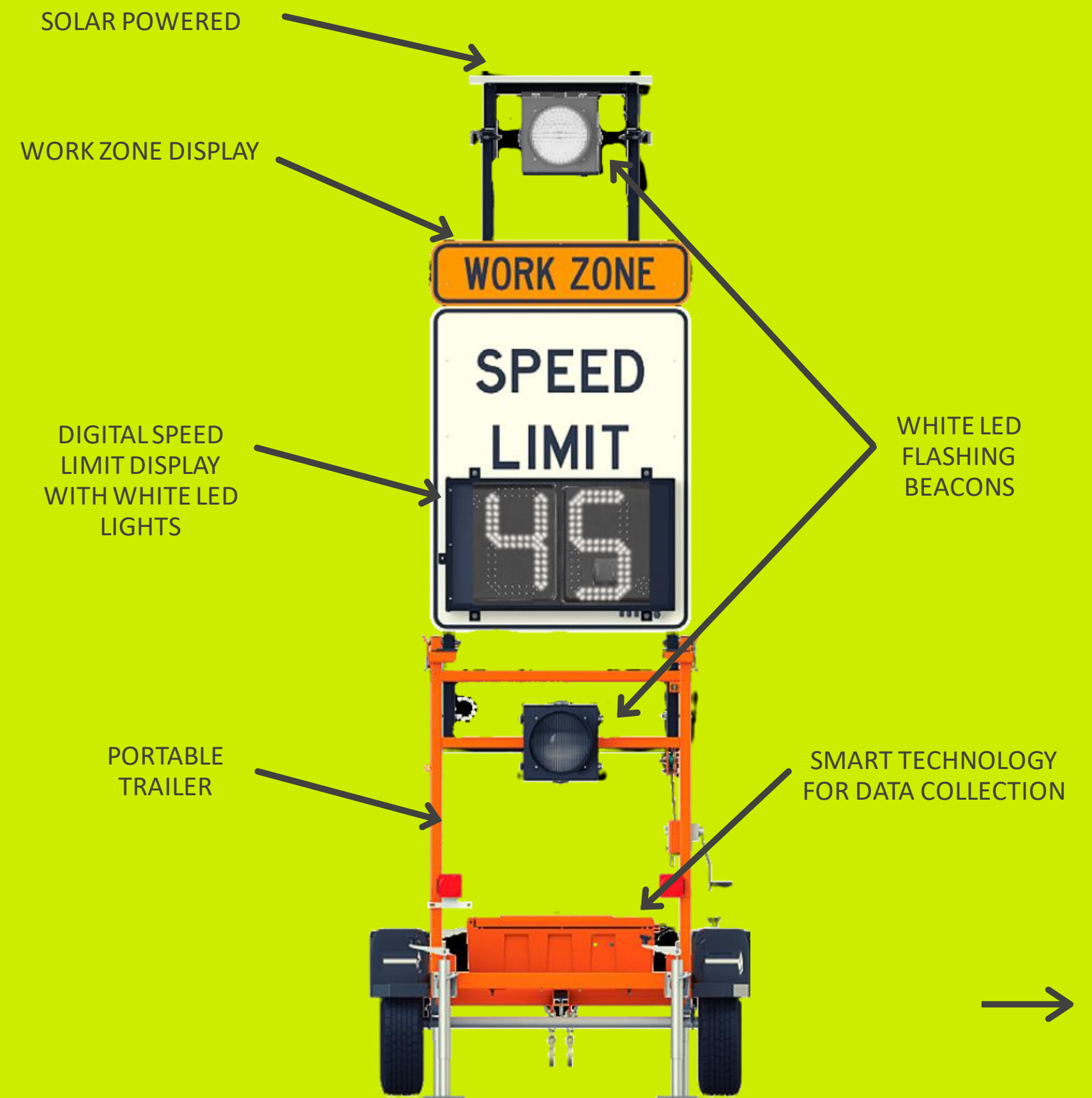
DSL (Digital Speed Limit Sign)

DSL signs are digital speed limit trailers designed to notify motorists of reduced speeds in work zones when workers are not and when they are present.

The DSL sign displays the work zone speed limit when workers are not present, which is 60 MPH.

When workers are present, the DSL sign displays the 45 MPH speed limit and activates the two 12-inch flashing beacons.

DSL signs contain smart technology for remote operation and can be connected to navigation software to notify motorists in their vehicle.



Work Zone DSL Key Benefits

- Studies have shown that digital speed limit signs are more effective at reducing speeds because they are much more visible than static signs.
- Digital display of work zone speed limits and further speed reduction along with flashing beacons when workers are present have shown to reduce speeds 5-7 mph compared to static signs.
- Motorists receive clear alert that workers are present and that the displayed speed is in effect



- Remote or manual operation is possible
- Contractors' may make changes or create a predefined schedule remotely with their device or computer.
- Instant Data Push – Real-Time API for WZDx and WAZE work zone updates (including location and current posted speed)
- Historical Change Log – Date/Time/Location changes are tracked
- eAlerts – Instant Text/email alerts are possible when changes are made



Washington

DSLs Across America

Oregon

Minnesota

New York

Pennsylvania

Illinois

Indiana

Ohio

Utah

Virginia

California

North Carolina

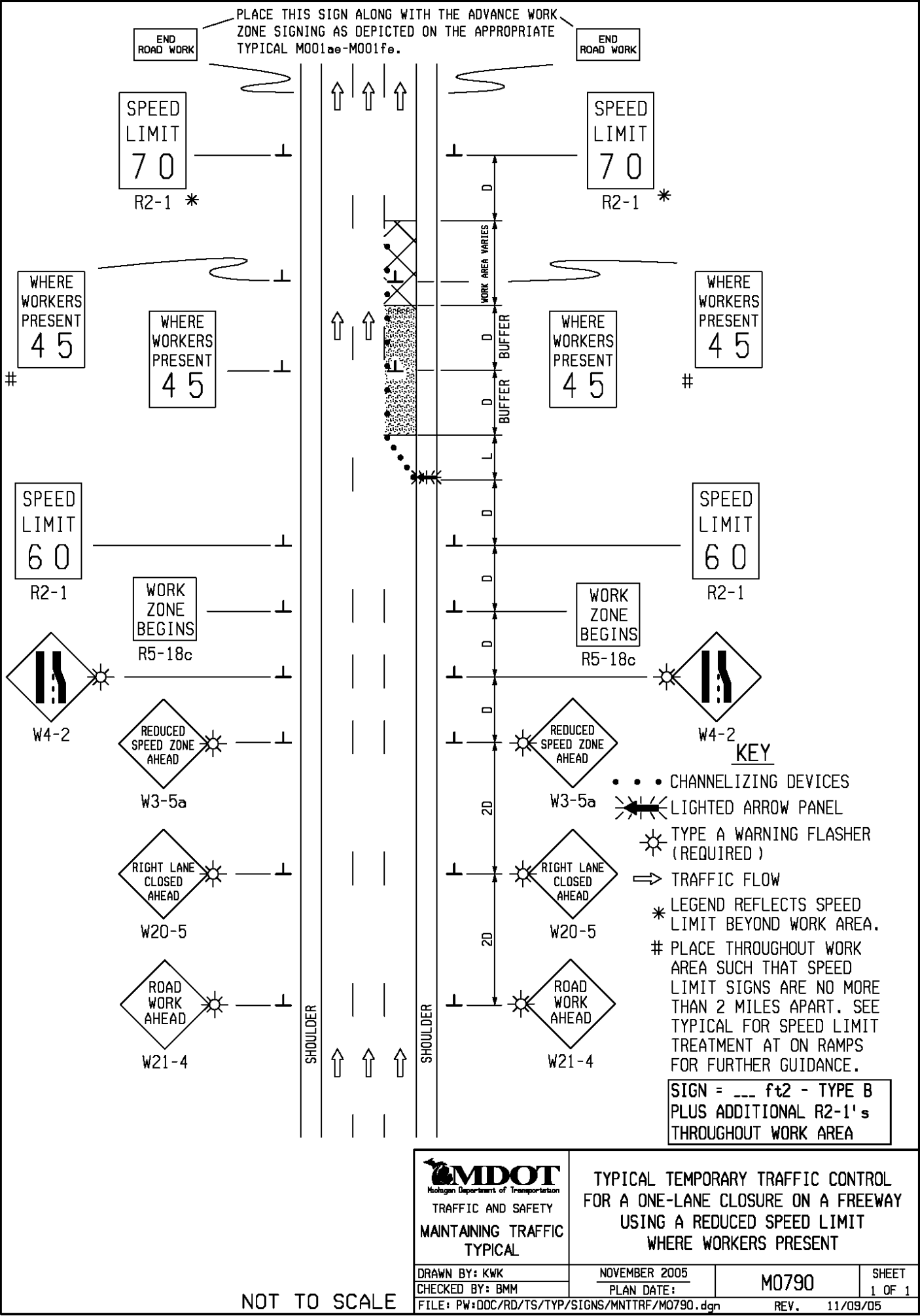
Missouri

Tennessee

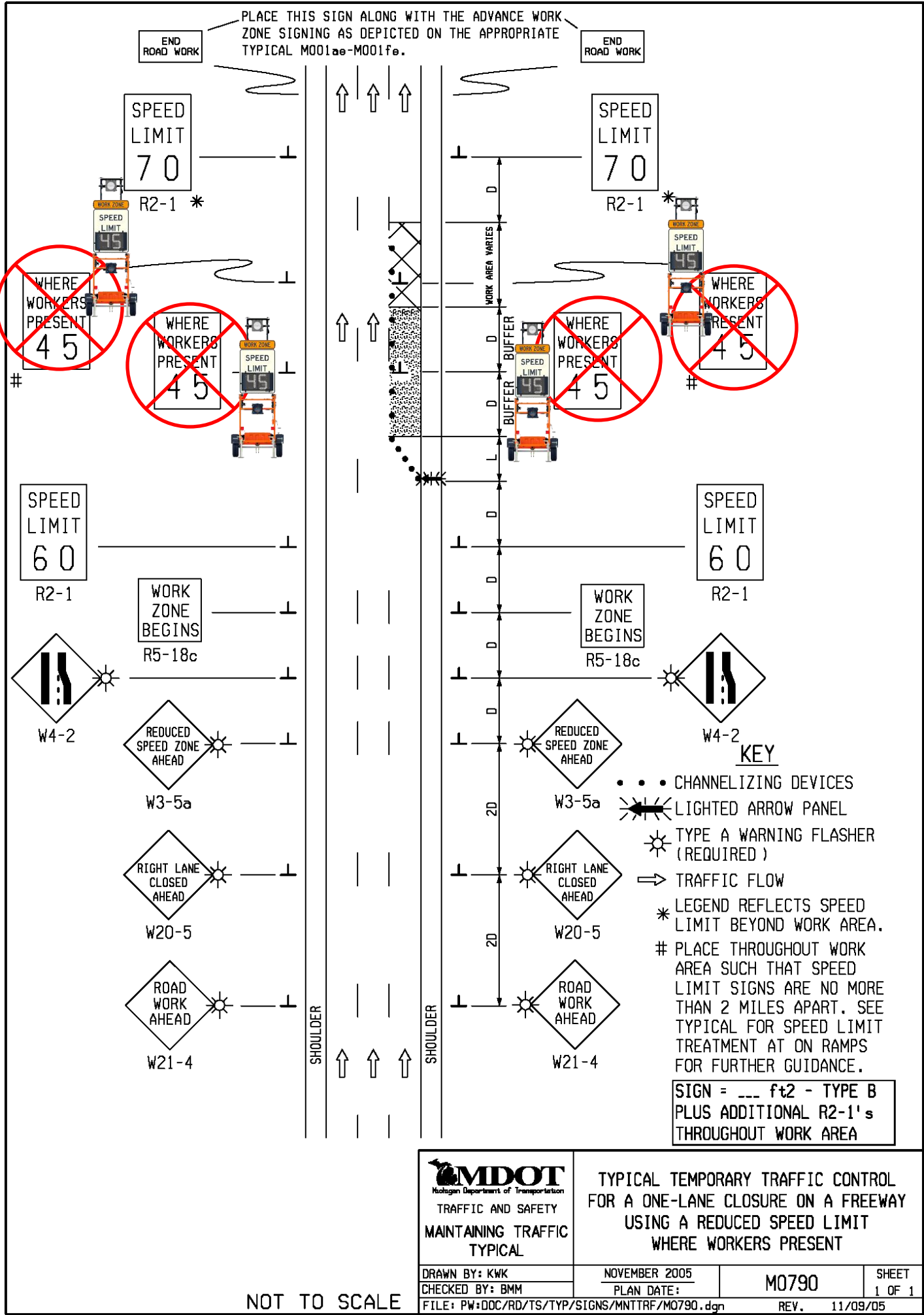
Florida



Specification:
what is currently
being used.



Specification:
what we are
proposing.



Automated Flagger Assistance Devices (AFADS)

What is an automated flagger assistance device?

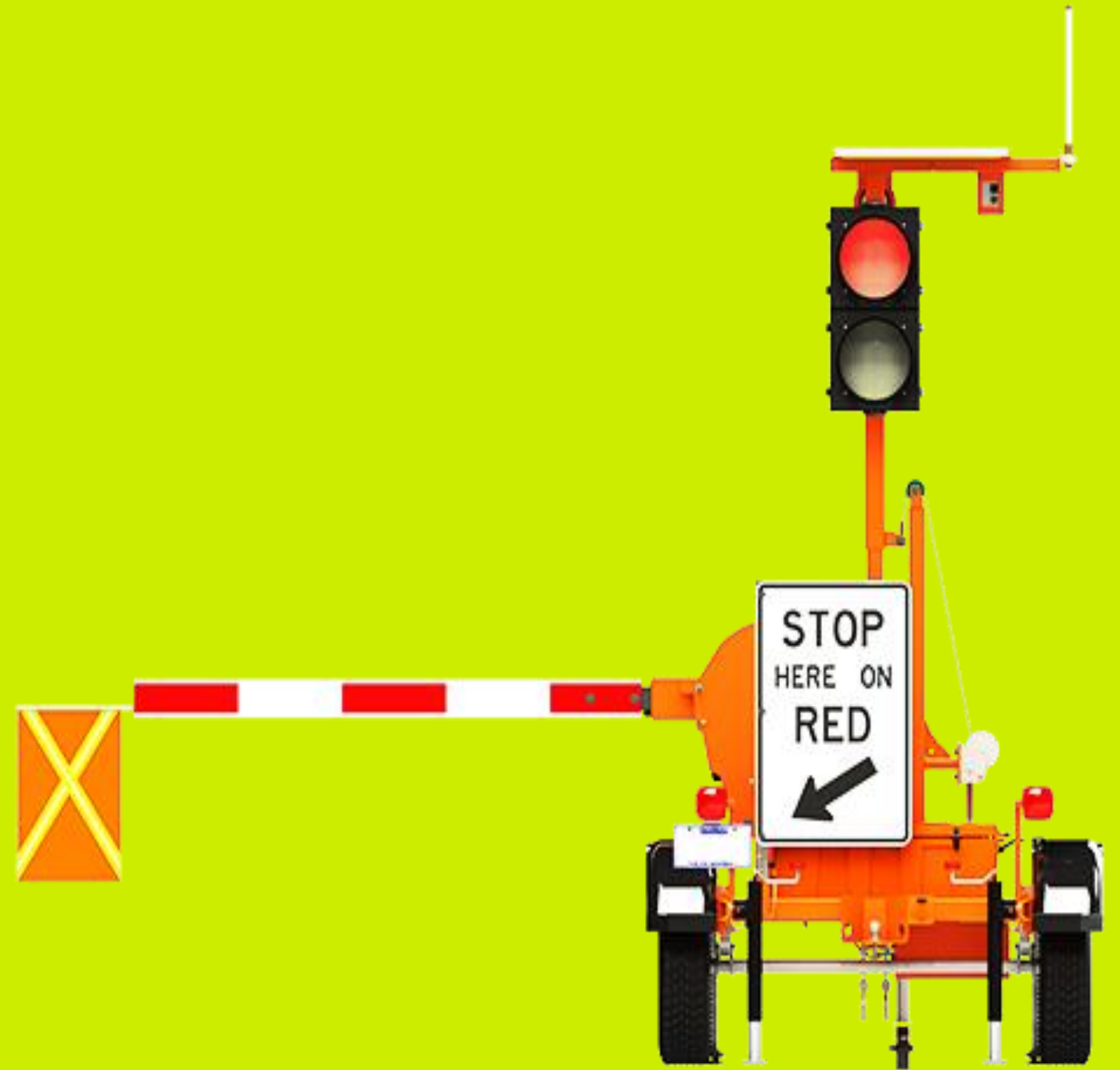
Automated Flagger Assistance Devices (AFADs) are remotely operated temporary traffic control equipment with high visibility signage, 12 inch red signal heads, and automated flags. These devices are intended to direct and control traffic using only one person.



Automated Flagger Assistance Devices (AFADS)

Benefits:

- Provides “positive”, visual vehicle control
- Flagger is safe during control of traffic
- Operator training takes less than 5 minutes
- One flagger can control one or two units with a clear line of sight
- Quick set up time, can be repositioned by hand as opposed to by truck



Smart Arrow Boards

MAKE YOUR ARROW BOARDS SMARTER

The new work zone is becoming more automated and intelligent, helping lessen the difficulty construction creates for drivers.

For example, traveler information systems can make use of data from the road to help drivers get accurate traffic data on navigation systems so that they can determine the fastest way through or around work zones.

Above all, these systems need reliable and real-time information to operate correctly.



Smart Arrow Boards

These features help make your construction projects easier to manage and help drivers better navigate through road construction faster. Save time, money, and make your work zones smarter with the Smart Arrow Board™.

- GPS breadcrumb tracking system
- Archived event information
- Arrow status (On, Off, Left, Right), Arrow heading (North, South, etc...), Arrow orientation (Up, Down, Tilted)
- Embedded systems enabling 24/7 arrow board monitoring and communications through a web browser
- Event-triggered notifications via SMS, email, and the web interface
- Export your arrow board data to external business partners through the external XML feed and IRIS compatible incident feed
- View and export reports on message events, location history and more

HARDWARE MONITORING

Real-Time Operation Status

GPS ENABLED

Sign Location History

TIS INTEGRATION

Real-Time Updates to
Traveler Info System





Contacts and Resources

CONTACTS

Give 'Em A Brake Safety

Andy Dauksts – Business Development /
Outside Sales

Email: adauksts#gebsafety.com

PH: 616-531-8705

MDOT

Chris Brookes - Work Zone Delivery
Engineer

Email: Brookesc@michigan.gov

PH: 517-242-6486

RESOURCES

Street Smart -

<https://www.streetsmartrental.com/>

Ver-Mac –

<https://www.ver-mac.com/en>

AFADS -

https://www.workzonesafety.org/training-resources/fhwa_wz_grant/atssa_afad/

Smart Arrow Boards -

<https://www.iconeproducts.com/connected-tech-arrow-board-kit>



HAD ENOUGH?

“

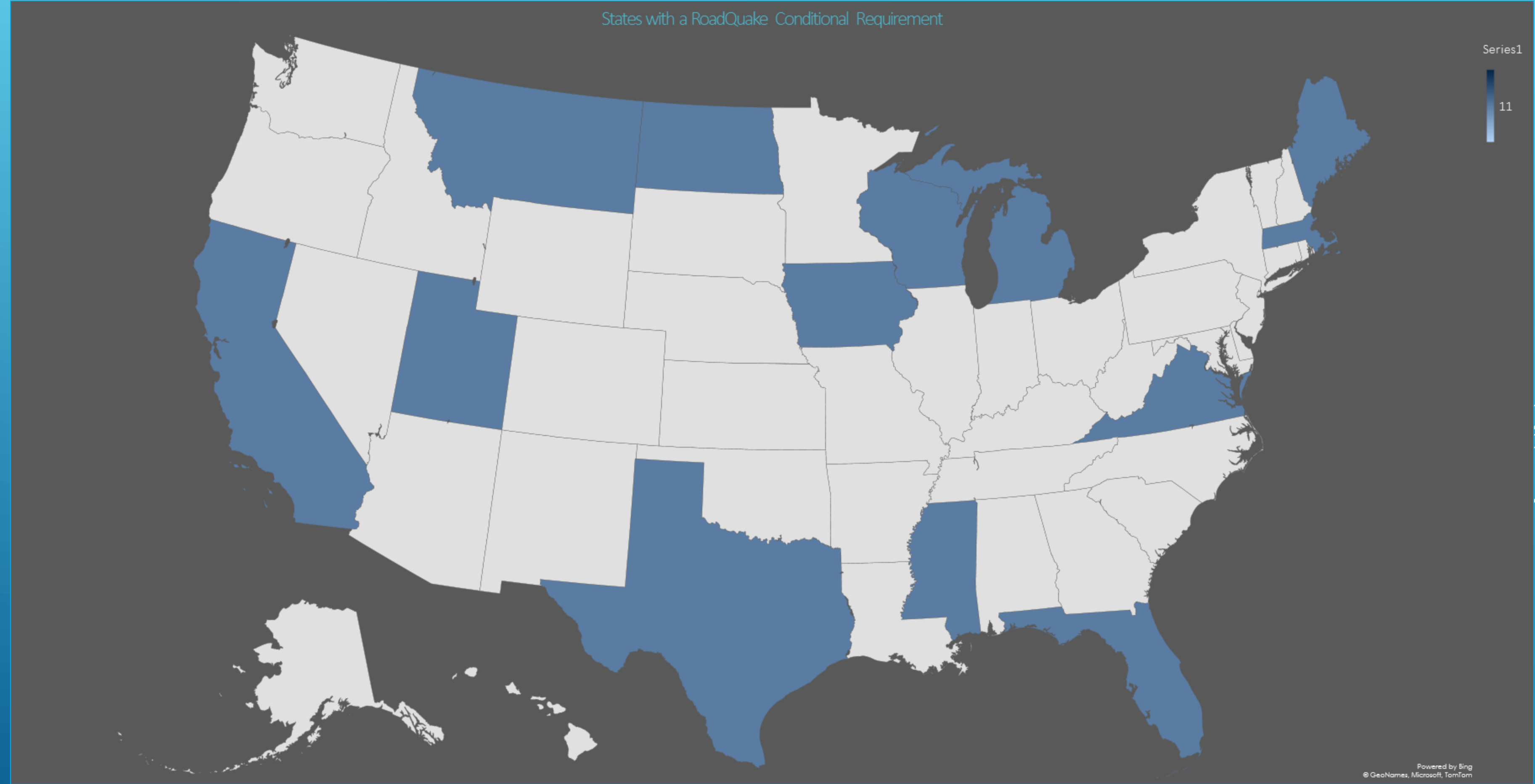
ROADQUAKE **CONDITIONAL** **REQUIREMENTS** IN THE U. S.

”

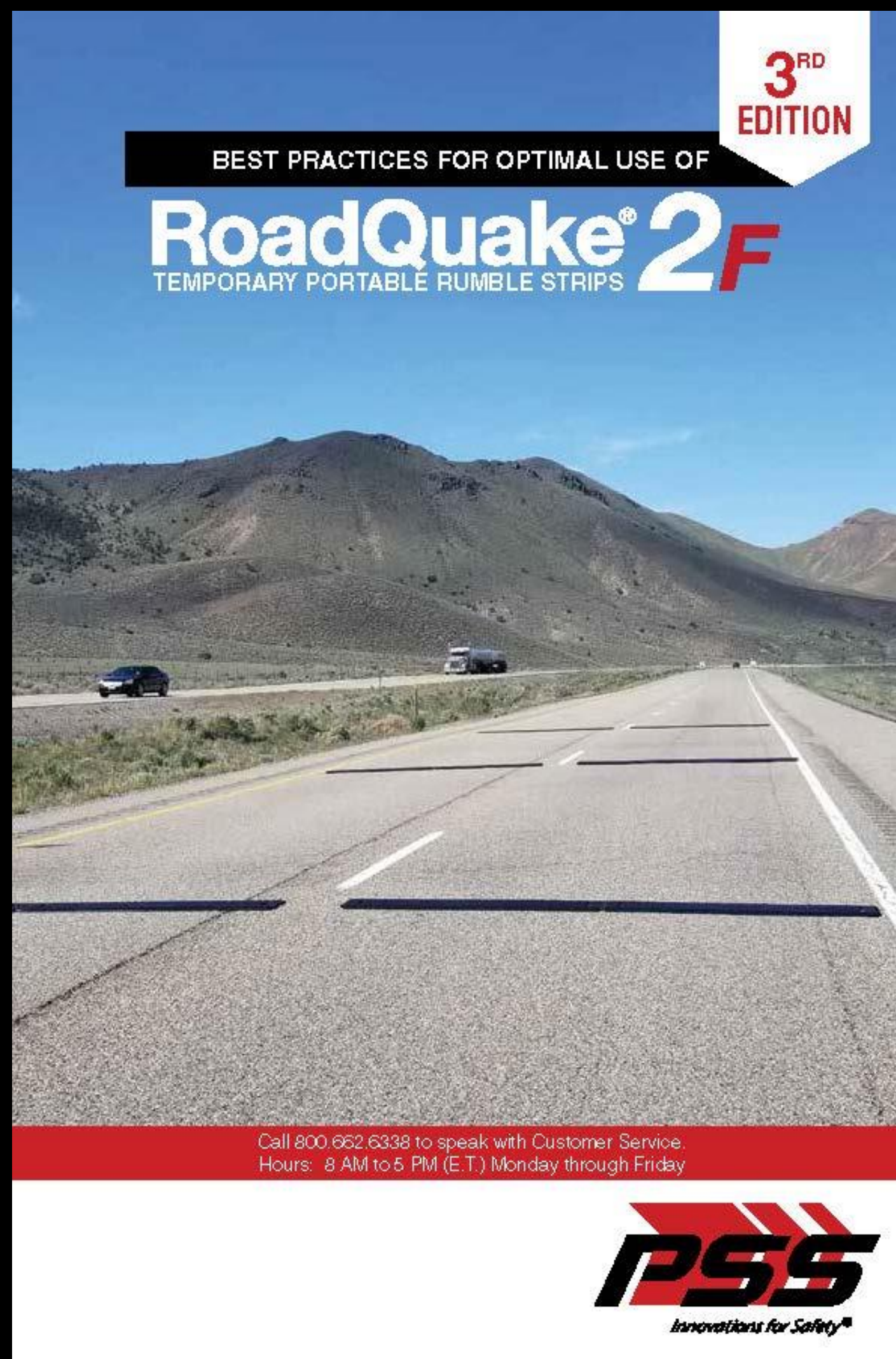
Focus on adoption acceleration!

- Twelve States and One Toll Road
- Lane Closures in MA, UT, TX & ME
- Flagging Operations in VA, TX, FL, WI, MI, CA, MT, ND, MS & IA

States with a RoadQuake Conditional Requirement



ROADQUAKE BEST PRACTICES GUIDE 3RD EDITION





Partners for Safety!!



PSS & ICONE SYSTEMS

THANK YOU!

