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# Improving the Safety of Mobile Lane Closures

Presented by:
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NATIONAL SECURITY | ENERGY & ENVIRONMENT | INFRASTRUCTURE | HEALTH SOLUTIONS

# Improving the Safety of Mobile Lane Closures

## Need for Research

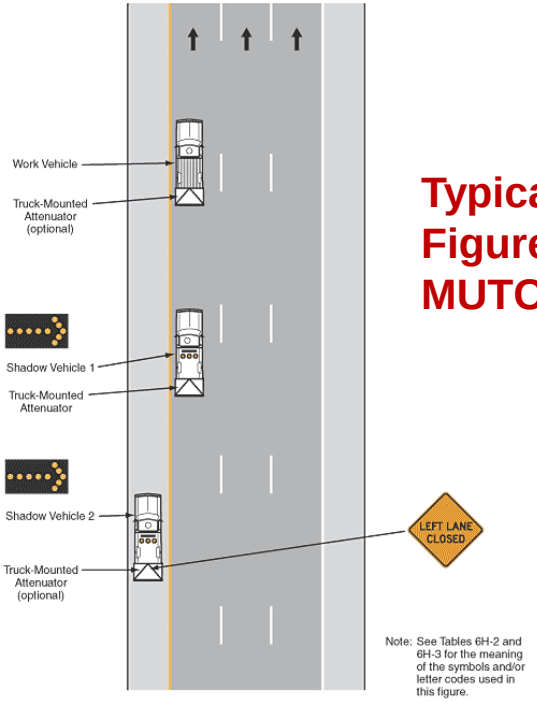
## Experimental Setup

## Observations

## Implementation of Findings

# Mobile Lane Closures

- Utilizes trucks with lights, signs, and arrowboards
- Primarily for maintenance and slow moving operations
- Multilane roads, urban and rural, day and night

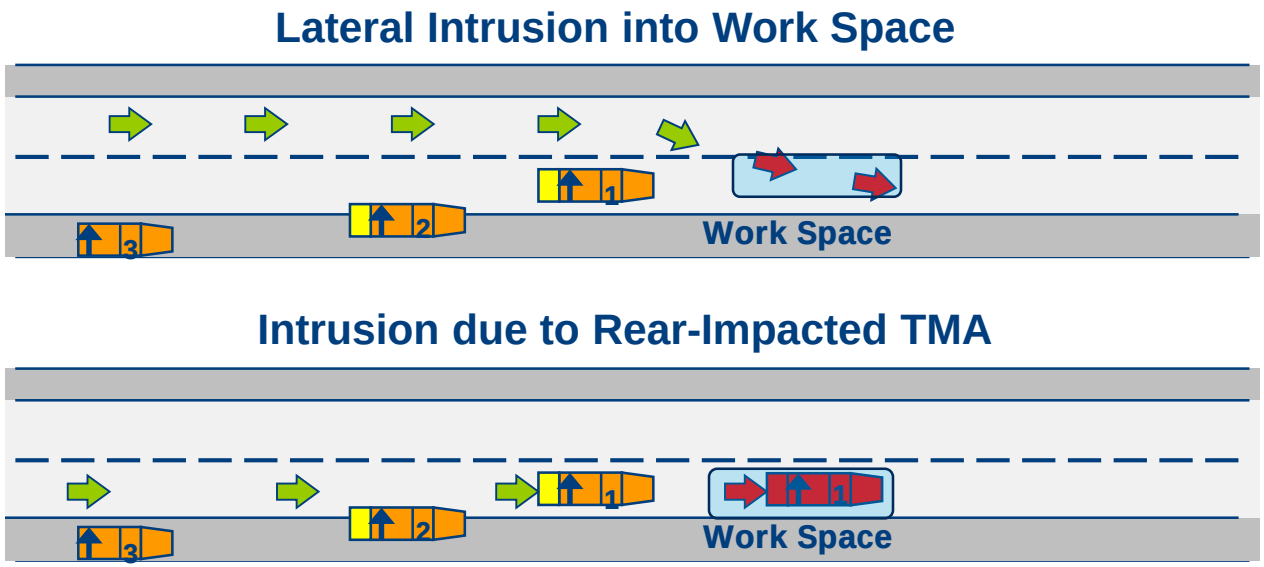

**Typical Application 35**
**Figure 6H-35**
**MUTCD, 2009 Edition**

# Why Mobile Lane Closures?

## Inherently challenging, commonly used technique

- Trying to accomplish a lot with little
- Dynamic, constantly changing environment

## Desire to expand on and clarify existing standards



# Improving the Safety of Mobile Lane Closures

## Need for Research

## Experimental Setup

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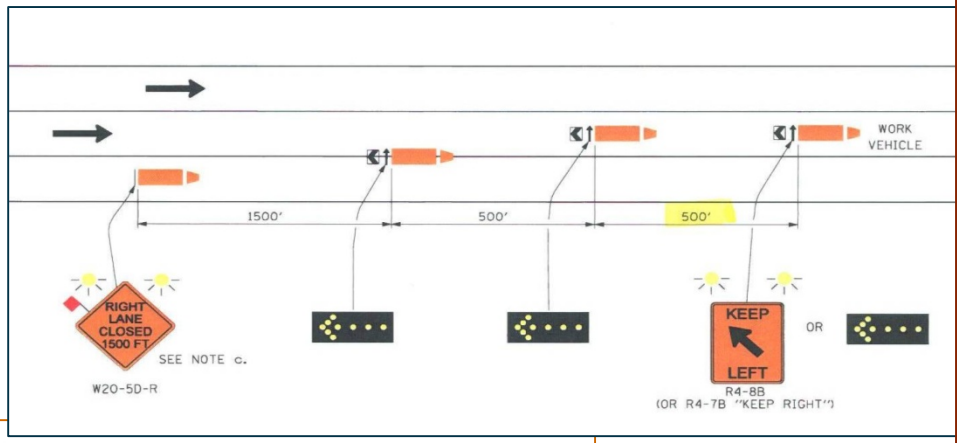
# Research Approach – Driver Behavior-Based

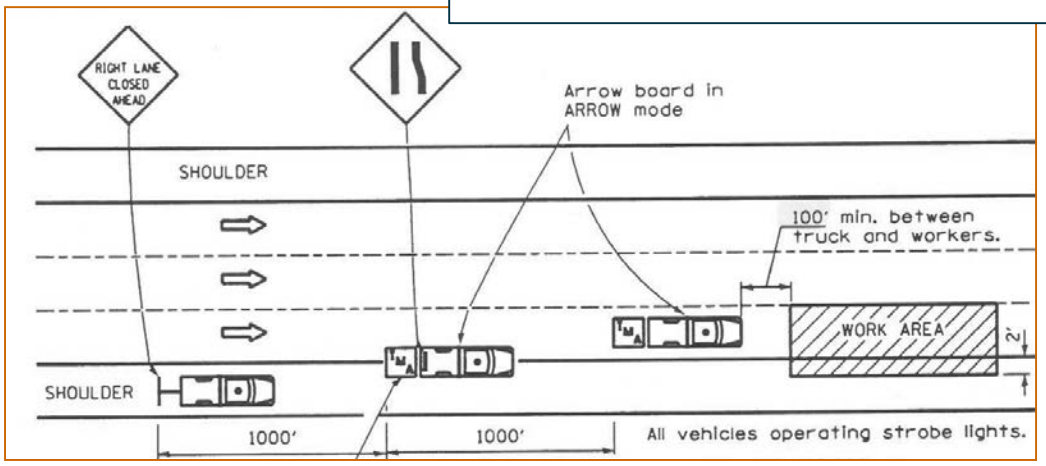
Study the effect of typical traffic control components and procedures on driver behavior through videotaping and speed monitoring of field tests

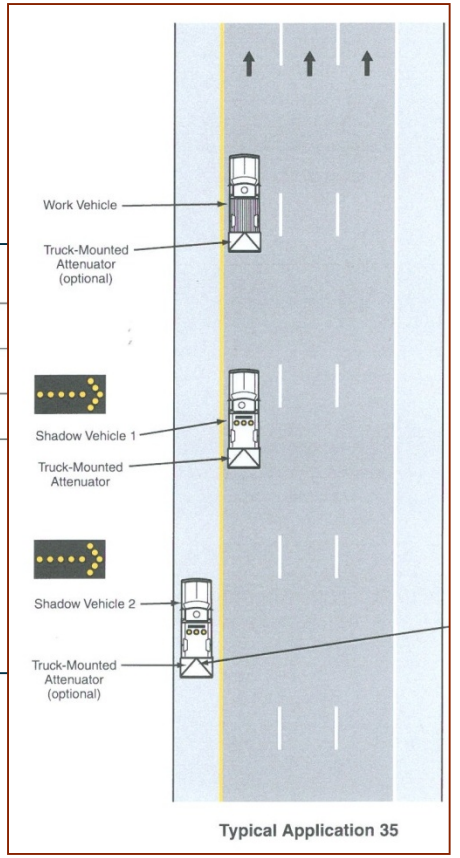
# Goal

## Revised agency standards

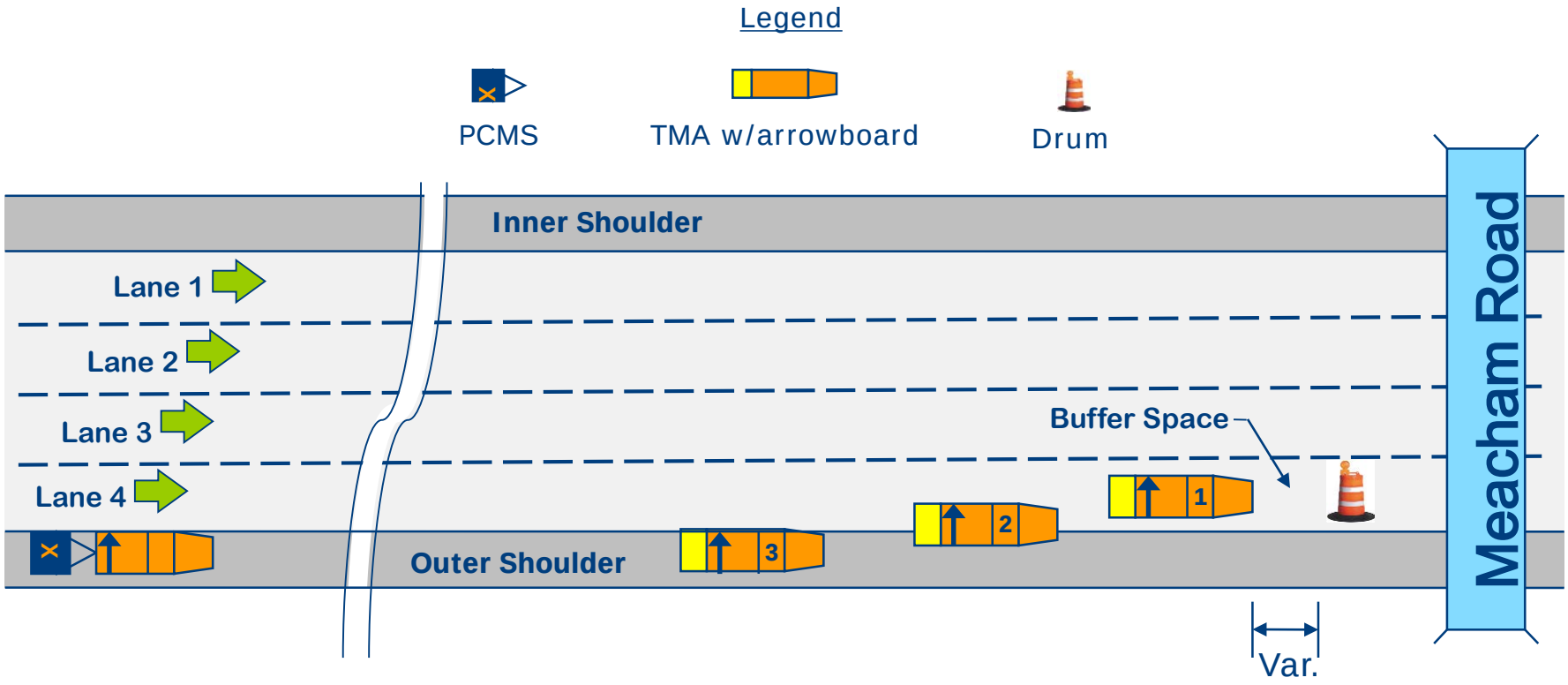
## Focus on truck configurations and spacings



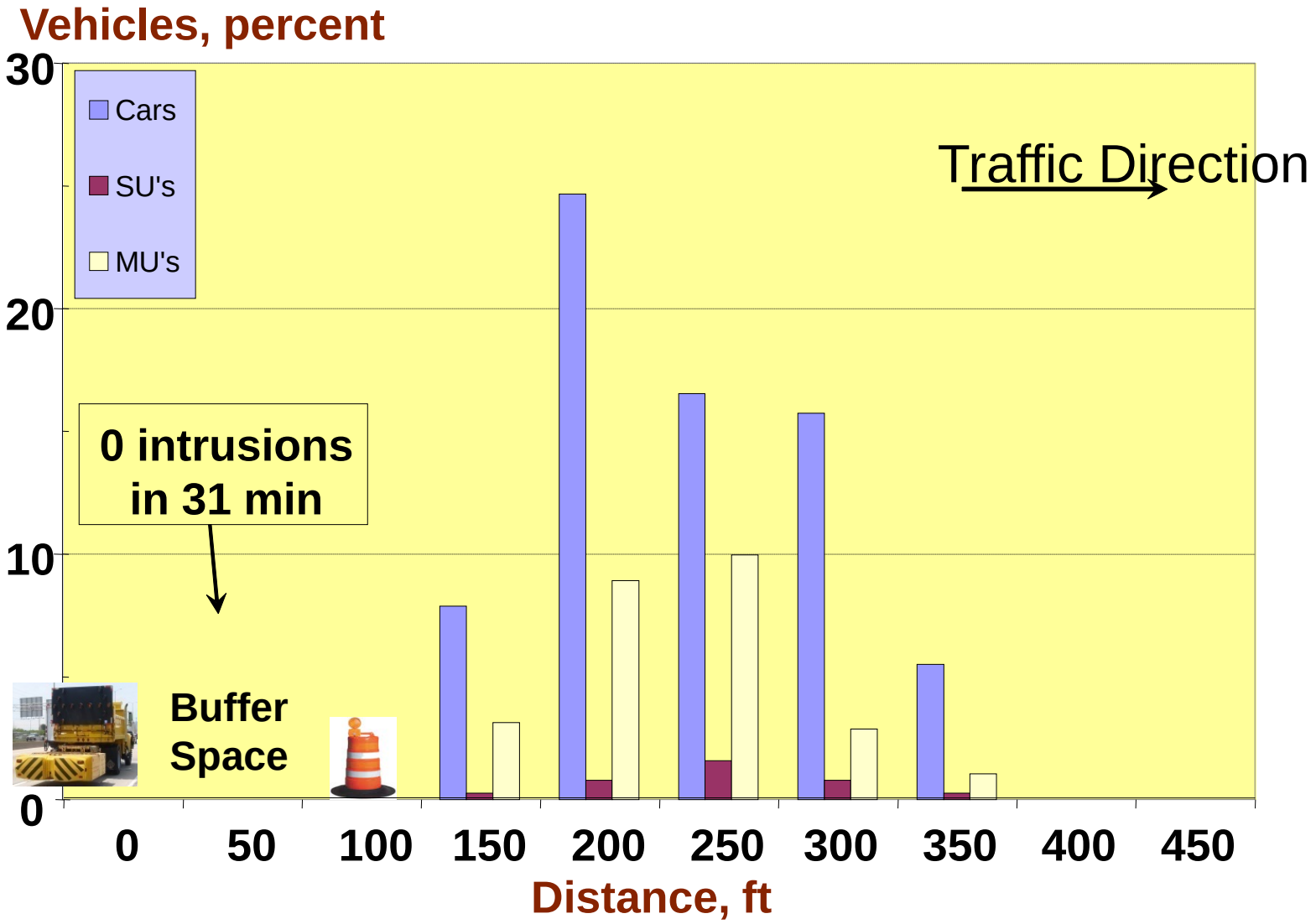



# Example Test - Buffer Space

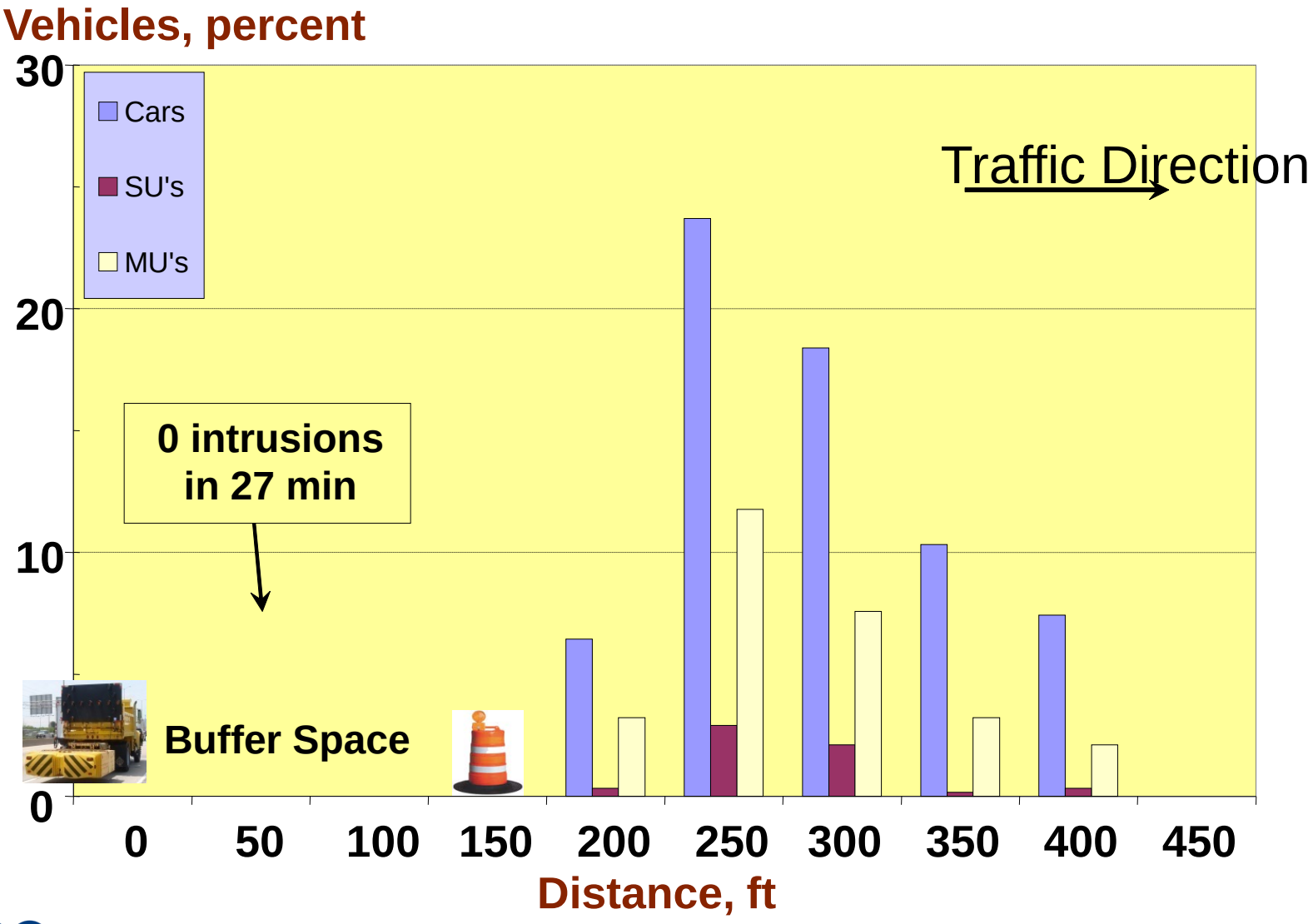



What is the maximum buffer distance before lateral intrusions begin?

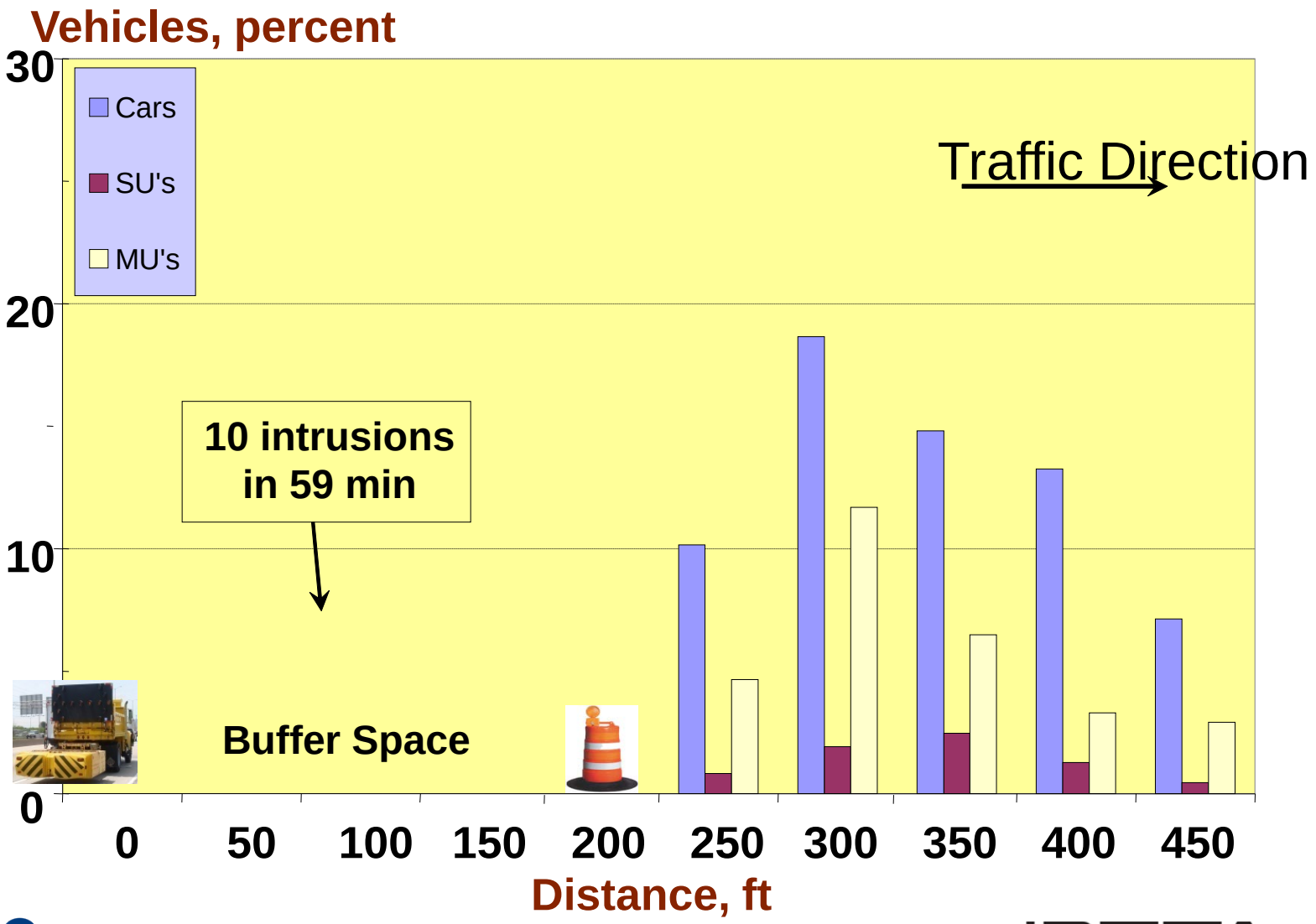
# Drum @ 100 ft



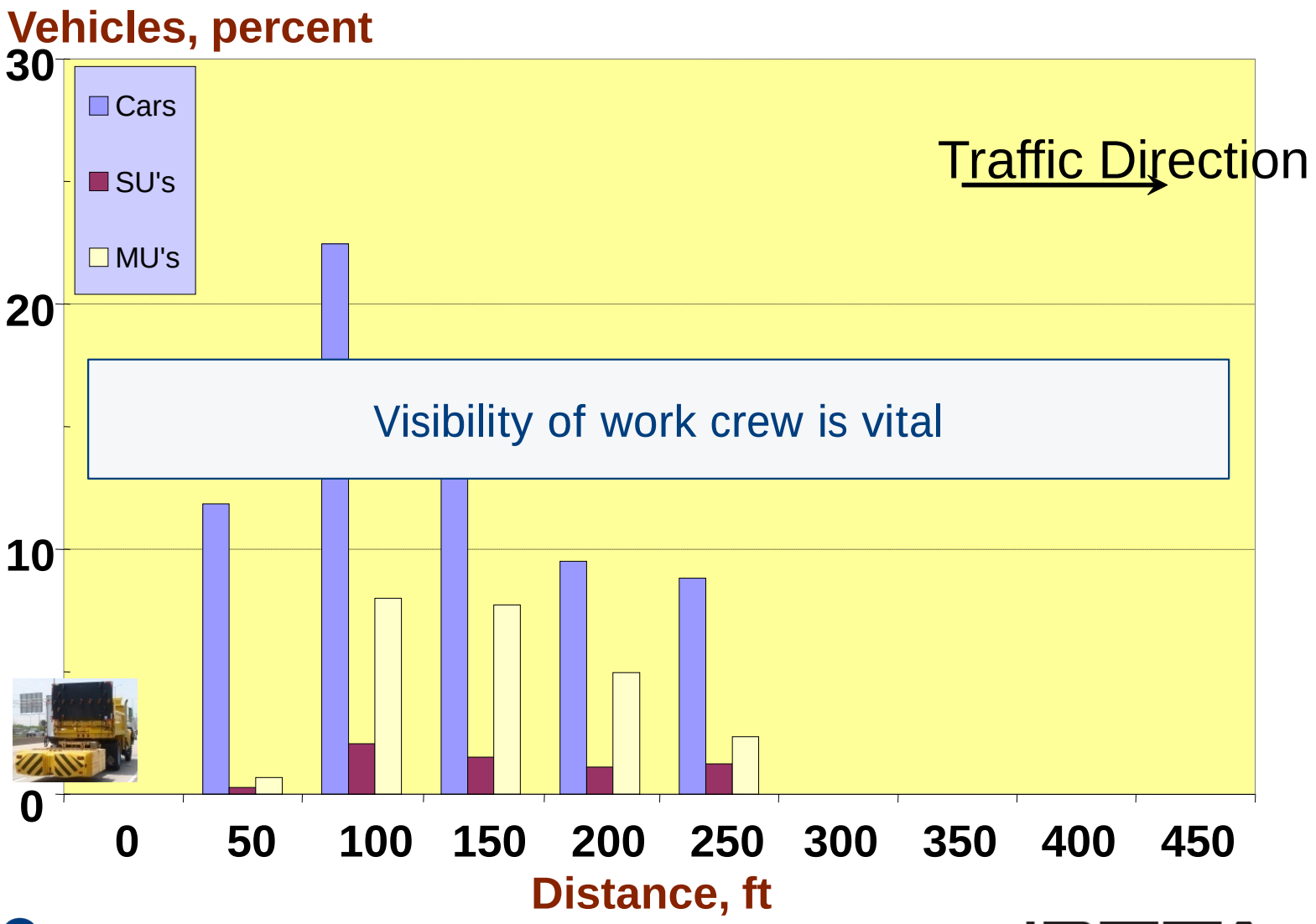
# Drum @ 150 ft



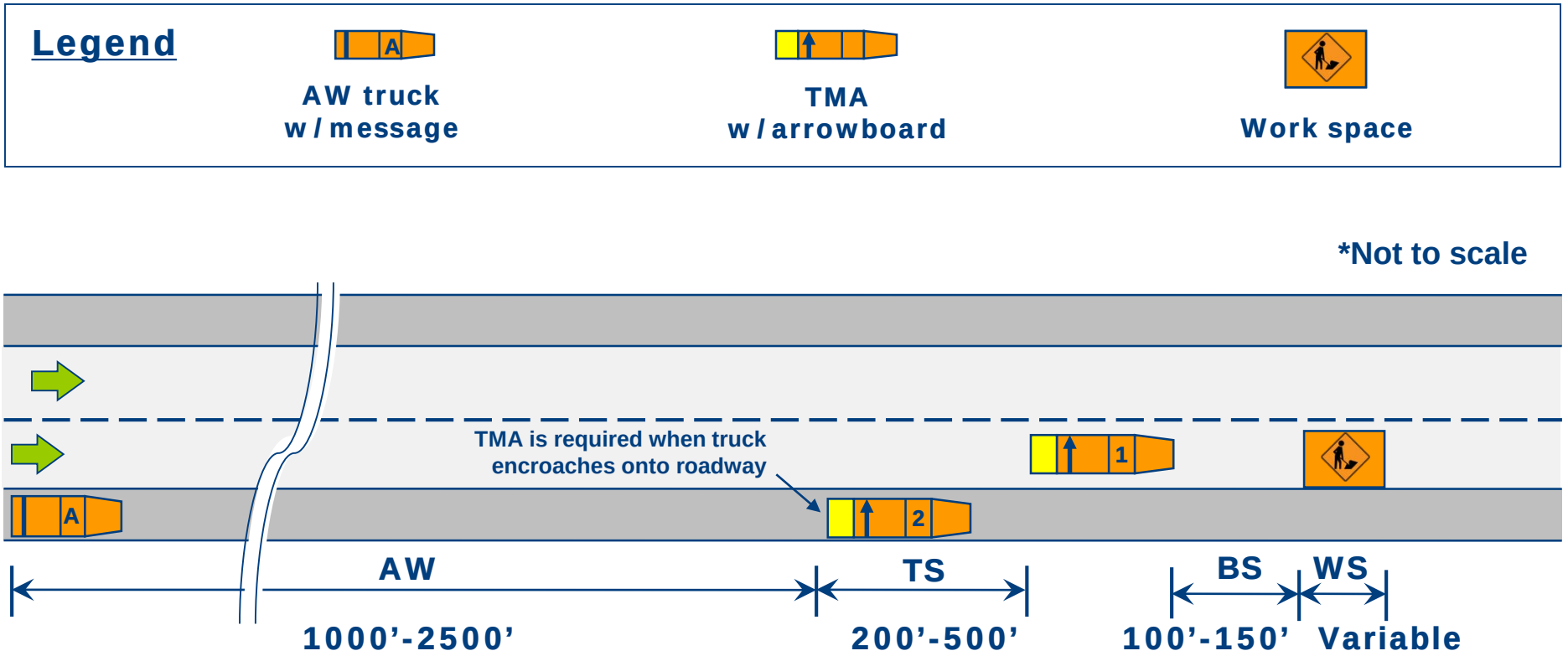
# Drum @ 200 ft



# No Drum



# Proposed Standard - Right Lane Closure



# Summary – Mobile Lane Closures

- Recommended standards have been developed based on field study of driver behavior
- Phase I, data collection – TRR 2169 (2010)
- Phase II, standards – TRB Poster Session 666 (2011)
- Future studies – extend to two-lane highways? Other?

# FDOT Mobile Operations Safety

- **Standard Index 619**
- **Multilane, Mobile Operations Work Within Travel Way**
- **Based on MUTCD**
- **Following distances by FDOT at min 500’ Rural, 300’ Urban**
- **Some Districts STRICTLY enforced min distances**


## Case Study

- Mobile Testing Vehicle (FWD)
- Operated by ARA personnel
- Multiple stops per mile
- Stops < 2 mins
- Rural State Highway
- First TMA 500’ behind FWD
- Est. 4 incursions/hour

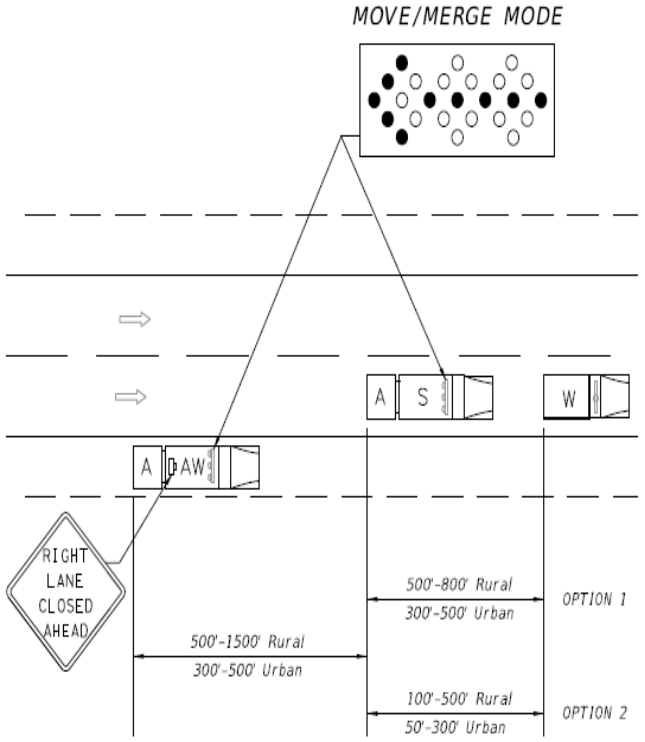
# April 1, 2015 Revision, FDOT Standard 619

**Decrease in Rural distance from 500’ to 100’**

**Decrease in Urban distance from 300’ to 50’**

**Adjustable for current traffic**

**Increases intensity of lights near work vehicle**




OPTION 1: Advance Warning Vehicle may be operated in the lane behind the Shadow Vehicle where adequate shoulder width is not available. Approved Truck Mounted Attenuators are required on both the Advance Warning Vehicle and the Shadow Vehicle.

OPTION 2: Advance Warning Vehicle must be operated in the lane behind the Shadow Vehicle. Approved Truck Mounted Attenuators are required on both the Advance Warning Vehicle and the Shadow Vehicle.

WORK WITHIN TRAVEL LANE
(Option 1 Shown, Option 2 Similar)

# Questions?

## Acknowledgements

- Illinois Center for Transportation
- Illinois Tollway
- Florida Department of Transportation
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- Joseph Reiter, PE (ARA)