National Work Zone Management Conference

Narrow and No Shoulder Sign Placement

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Narrow and No Shoulder Sign Placement

Scenario Description

- Installing, maintaining and removing signs
- Problematic for workers, drivers and engineers
- PA: Large maintenance organization and fleet
- Technology has helped with TMAs and temporary and permanent message boards
Problematic Situation

- Exposure in narrow medians with little or no shoulders = potential catastrophic accidents
- Maintaining and removal = Increased exposure
- Long-term median signs tend to be hit
Inter-Connected Issues

- Culture Clash – Old School* vs. Distracted Era
- Sign Placement – Alternate Applications
- TMA Operator Safety – Autonomous TMAs
- Determining Lateral Clearance Thresholds
- Worker and Motorist Safety
Old School* - Past Methods

• Workers would wait for breaks in traffic to run across the roadway

• NOT an acceptable method - OSHA citable offense – Situation not addressed in the MUTCD

• Union-based issues and PA is not an OSHA state
Narrow and No Shoulder Sign Placement
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- 1980’s Video Game – released in June 1981
Current Solutions

• Mobile patterns using a TMA or multiple TMAs

• Still having frequent impacts, Vehicles vs. TMA

• ATSSA’s newly developed TMA Driver Training

• Narrower signs and eliminating the signs
Consideration

- MUTCD allows for the elimination of TTC signs when space restricts their placement
- Unclear on the alternate solution guidance for supplementing the right shoulder signage
- Develop standards for narrow signs for when median signs are placed
Challenges Ahead

• Culture change for workers and motorists

• Expanded TMA Driver Training – Operational

• Policy Development / Objective Guidance
Supplemental Safety Toolbox

- Expand message board deployment
- Develop new messages to be displayed
- Eliminate median signs when shoulder is under X feet in width – FHWA Concurrence
- Enhance right shoulder signage
- Implement new technologies
- Enhance media outreach
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Benefits:
- Reduced Exposure
- Reduced Time
- Eliminates the Narrow Median Issues

Challenges:
- Outside Lane Line of Sight Blocked
- Weaving Traffic

NOTES:
1. On Freeways and Expressways, advance warning signs should be placed along both sides of the highway. Signs along the left side may be eliminated if an obstruction such as barrier or guardrail exists and placement of those signs would result in a lateral clearance less than the minimum shown in the Lateral Clearance Chart.
2. Lateral Clearance is defined as the distance from the roadway adjacent to the nearest edge of the sign.
3. This Pilot PATA shows the minimum number of temporary traffic control signs (including Portable Changeable Message Signs (PCMS)) and desired spacing where advance warning signs will be placed only along the right side of the highway. Sign spacing may be increased if adjustments are required, however distances shown on signs must be accurate.
4. This Pilot PATA shows signs indicating a right-lane closure. Channelizing devices and other temporary traffic control devices are to be installed in accordance with the PATA that will be utilized for the operation and reflect actual conditions.
5. Refer to Pub 213 General Notes Section E and the MUTCD Section 2L for additional guidance regarding PCMS messages.

PILOT PATA 097C
ELIMINATION OF LEFT-SIDE SIGNS ALONG FREEWAYS & EXPRESSWAYS WHERE LATERAL CLEARANCE IS INADEQUATE
DISTRICT 3-0
COUNTY
STATE ROUTE & DIRECTION
SEGMENT/MILE MARKER
RECOMMENDED 20

DISTRICT TRAFFIC ENGINEER
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Benefits:

- Worker Safety
- Motorist Safety
- Quicker Set-ups and Tear Downs (15 Min.)
- More Work Time = Less Closures
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Challenges:

- Communication
- Queue
- Traffic Volumes
- On-Ramp Traffic
- Potential Bottleneck
- Secondary Impacts
- Distracted Drivers
Narrow and No Shoulder Sign Placement

PATA 007D - Stage Descriptions
Rolling Slow Down To Install/Change/Remove Advance Warning Signs On Freeways And Expressways

Stage 1
- Prepare by staging SV1, SV2, FWT, LUV along the highway and workers along entrance ramps (if ramp exists).
- Activate PMS message "ROLLING SLOW DOWN AHEAD, "WATCH 4 STOPPED TRAFFIC".

Stage 2
- SV1, SV2 and FWT enter roadway when a sufficient gap in traffic is observed.
- FWT follows the last vehicle in line to the site where the arrow panel will be placed.

Stage 3
- Frontman radius to create a curve on the ramp panel and approach the interchange.
- Do not allow vehicles to enter between SV1 & SV2 and the LUV.

Stage 4
- Set up and work on the right side of the roadway. Install signs and panels.

Stage 5
- LUV driver follows the location of the first set of temporary warning signs.
- Workers exit the vehicle and install signs as required by the applicable PATA. Workers quickly re-enter the LUV and proceed downstream.

Stage 6
- Ramp access may be reopened if the frontman notes any dropped temporary warning devices.
- SV1 & SV2 continue side-by-side at low speed.

Stage 7
- LUV driver pulls off the roadway after the final signs have been installed and immediately notifies SV1 & SV2 that the roadway is clear.
- LUV proceeds downstream to the frontman's location.

Stage 8
- Modify the PMS message to reflect actual conditions or, if conditions warrant, the PMS may be deactivated. See Note 3.
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- Culture Change from the ‘80’s Arcade Game Decade to the Current State of Distracted Driving
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![Graph showing fatal work zone crashes and fatalities from 2006 to 2015. The graph indicates a decrease in both fatal crashes and fatalities over the years.](image-url)
PennDOT Specifics

• P3 – Rapid Bridge Replacement project (558)

• Nov. 2013 – State Transportation Bill

• Improving WZ Safety is a top priority (ASE)

• “Doing Nothing is NOT an Option” – 02/05/15
Next Steps...

- Identify national “Best Practices”
- Multi-DOT and trade association collaboration
- Develop a national standard recommendation
- NCUTCD TTC submission for MUTCD inclusion
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TOWARD ZERO DEATHS
Narrow and No Shoulder Sign Placement

Thank You!

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