Overview of changes included in the Virginia Work Area Protection Manual, Revision 1

Overview of 2013 Work Zone Crashes

Overview of Short Term Reduced Work Zone Speed Limit Request Process
Key Dates

- Revision Effective Date(s):
  - April 1, 2015 – Daily Operations
  - July 1, 2015 – Projects bid on or after July 1, 2015
  - Any project bid before July 1, 2015 will continue under the 2011 VA Work Area Protection Manual, without revision 1.
Portable Sign Supports

- Stands should be flush to the ground or roadway surface as possible
- Legs fully extended

Legs are flush but must be extended

Unstable

Section 6F.03
Portable Sign Supports

Weight may be added to stabilize portable sign supports:

- Two drum collars on center of sign stand
- A sandbag per leg weighing approximately 25 lbs
Vehicle Mounted Signs

Figure 6F-4, Vehicle-Mounted Signs for Temporary Traffic Control

- WORK VEHICLE DO NOT FOLLOW
  - G20-V1
  - (OPTIONAL UNTIL JUNE 30, 2017)

- WORK VEHICLE FREQUENT TURNS
  - G20-V1a
  - (REQUIRED AS OF JULY 1, 2017)

Section 6F.64
Appendix D was revised to provide uniformity across the Commonwealth by standardizing PCMS messages for temporary traffic control applications as shown in Chapter 6H. The new Tables are:

- PCMS Message for TTC Applications
- Unacceptable Portable Changeable Messages
### Appendix D

Portable Changeable Message Signs

Standard Displays

**Table D-1, PCMS Message for TTC Applications**

<table>
<thead>
<tr>
<th>TTC Number</th>
<th>PHASE 1</th>
<th>PHASE 2</th>
<th>PHASE 3 or Additional PCMS may be used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example</td>
<td>Line 1 / Line 2 / Line 3</td>
<td>Line 1 / Line 2 / Line 3</td>
<td>Line 1 / Line 2 / Line 3</td>
</tr>
<tr>
<td>TTC-17</td>
<td>LEFT / LANE / CLOSED</td>
<td>MERGE / INTO / RT LANE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>*LFT LANE / CLOSED / MM123</td>
<td>MERGE / INTO / RT LANE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>*HEAVY / TRAFFIC / AHEAD</td>
<td>EXPECT / DELAYS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>*HEAVY / TRAFFIC / AHEAD</td>
<td>PREPARE / TO / STOP</td>
<td></td>
</tr>
<tr>
<td>TTC-18</td>
<td>2 LEFT / LANES / CLOSED</td>
<td>MERGE / INTO / RT LANE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>*2 LFT LANE / CLOSED / MM 123</td>
<td>MERGE / INTO / RT LANE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>*HEAVY / TRAFFIC / AHEAD</td>
<td>EXPECT / DELAYS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>*HEAVY / TRAFFIC / AHEAD</td>
<td>PREPARE / TO / STOP</td>
<td></td>
</tr>
</tbody>
</table>
### Appendix D
Portable Changeable Message Signs Displays

Table D-3,
Unacceptable Portable Changeable Messages

<table>
<thead>
<tr>
<th>BEAWARE, BEWARE</th>
</tr>
</thead>
<tbody>
<tr>
<td>BE ALERT (any form or combination of BE ALERT messages)</td>
</tr>
<tr>
<td>CARE (any form or combination of CARE messages)</td>
</tr>
<tr>
<td>USE CARE</td>
</tr>
<tr>
<td>CAUTION (any form or combination of CAUTION messages)</td>
</tr>
<tr>
<td>USE CAUTION</td>
</tr>
<tr>
<td>NOTICE (messages)</td>
</tr>
<tr>
<td>WARNING, WARN (any form or combination of WARN messages)</td>
</tr>
<tr>
<td>-----</td>
</tr>
<tr>
<td>-----</td>
</tr>
</tbody>
</table>
2013 Work Zone Crash Statistics

The following information helps explain what occurred in 2013 with work zone crashes statewide.
2013 Work Zone Crash Statistics

WZ Crashes and Injuries

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>WZ Crashes</td>
<td>3405</td>
<td>3465</td>
</tr>
<tr>
<td>WZ Injuries</td>
<td>1679</td>
<td>1781</td>
</tr>
</tbody>
</table>
2013 Work Zone Crash Statistics

* Includes a consultant inspector and a pavement marking contractor employee.
Of the 3405 crashes last year, 469 were single vehicle crashes while 2935 were multi-vehicle crashes.

Included in these numbers were 63 motorcycle crashes resulting in 67 injuries and 3 fatalities.

Combined, there were a total of 7192 motorists involved in a work zone crash in 2013.
Two thirds of the 2013 crashes were by drivers 30 years old or older.
Average of 9.3 crashes per day for the year.

Nearly 11 crashes per day from June to December.
2013 Work Zone Crash Statistics

Roadway Type

- Interstate: 2003
- Primary: 954
- Secondary: 371
- Urban: 78
2013 Work Zone Crash Statistics

Driver Action

- Following Too Close: 1587
- Fail to Maintain Control: 543
- Improper Lane Change: 426
- Did not have ROW: 181
- Hit and Run: 138
- Avoiding Other Vehicle: 83
### 2013 Work Zone Crash Statistics

**Collision Type**

- Rear End: 1924
- Sideswipe - Same Direction: 458
- Angle: 416
- Fixed Object - Off Road: 338
- Head on: 43

VDOT
2013 Work Zone Crash Statistics

- 70 crashes in the TERMINATION AREA
- 2237 crashes in the WORK AREA
- 422 crashes in the BUFFER AREA
- 672 crashes in the TRANSITION AREA
- 672 crashes in the ADVANCED WARNING AREA

Location in the Work Zone
How’s it looking in 2014?

Road worker killed while picking up construction cones

BRIAN ETHRIDGE | JULY 25, 2014

Highway worker killed when driver veers off road

BRIAN ETHRIDGE | AUGUST 8, 2014

Construction worker killed while laying asphalt

BRIAN ETHRIDGE | AUGUST 19, 2014

3 workers hit, 1 killed in highway construction zone crash

BRIAN ETHRIDGE | SEPTEMBER 23, 2014
2014 Work Zone Reviews

The following were positive findings during our review this year:

1. Proper signage for lane closures and shoulder operations
2. Effective use of PCMS and Arrow Boards
3. Adequate taper lengths and placement of tapers
4. Use of High Visibility Class 3 garments by workers
5. Positive flow of traffic through the work zones
The following were deficiencies related to paving operations found during our review this year:

• Missing “End of Day” signage (Bump, Uneven Lanes, Rough Road) on some operations and entrance ramps.
• Mixture of drums with improper sheeting.
• Nighttime glare from work lights.
• Maintenance of channelizing devices near exit ramps.
• Workers wearing high visibility garments improperly.
The following are some additional areas of concern expressed by VDOT staff:

• Channelizing devices placed into open travel lanes for the entire length of the lane closure versus moving out then back in along with the operation.
• Lane closures excessively longer than needed.
• Closing ramps too soon.
• Running ramp traffic across grass areas.
• Leaving out advanced STOP AHEAD or YIELD AHEAD signs on entrance ramps.
Short Term Reduced Work Zone Speed Limit Request Process

- Process finalized and published in December 2014
- Active upon initiation
- Is a result of direct inquiry from industry for streamlined process
- Available on VDOT website:
  
  http://www.virginiadot.org/business/trafficeng-default.asp
Short Term Reduced Work Zone Speed Limit Request Process

• Where does this apply?
  
  • Work Zone duration is 72 hours or less
  • Interstate routes
  • Limited access, multi-lane divided highways
  • Posted speed limits of 55 MPH or greater

• Other locations follow TE 350-1 process
Short Term Reduced Work Zone Speed Limit Request Process

Recommendations for work zone speed limits:

- Maximum reduction is 10 MPH
- Minimum work zone speed limit is 50 MPH (exceptions by RTE)
- Signs posted in accordance with VA WAPM
- Assistance from VSP for enforcement is encouraged
Conditions where reduction may be warranted:

- Lane closure results in congestion that is expected to reduce operating speeds by at least 10 MPH
- Pavement surface conditions induce vehicle instability (uneven, broken, ridged, etc.)
- Workers within 2 feet of travel lane for majority of work zone
- Lane width reductions resulting in travel widths less than 11’
- Work activity reduces available sight distance
Additional items for consideration:

- Reduction only in effect during time of day when work zone is active
- Contractor will bear responsibility for covering uncovering existing posted speed limit signage
- Contractor will bear responsibility for maintenance of records (date, time and termini) for reduced speed zone
- All traffic control devices will be installed based on the original posted speed limit
Process steps for requests:

• Contractor completes fill it form (available on VDOT website) and submits to VDOT staff overseeing work
• VDOT construction staff reviews and solicits concurrence/approvals from Traffic Engineering staff
• Review times will be dependent on region specific practices – it is recommended to allow for at least one work week to process/review requests
• Once accepted by VDOT, contractor can install as part of work zone set up (see TTC-52.1)
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