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## Index 102-655 Traffic Pacing

### ORIGINATION

**Date:** May 26, 2020

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### COMMENTARY

Sheet 1: Deleted 'Traffic Pacing Guide' and 'Notice' narratives; Revised 'Traffic Pacing General Notes' and 'Traffic Control Plans or Technical Specification' Notes; Updated Symbols; Deleted 'One Week Prior to Pacing Operation' Message Detail; Revised and Consolidated Detail with Sheet 3 Detail.

Sheet 2: Deleted Sheet.

Sheet 3: Deleted Sheet; Revised 'Traffic Pacing Distances' Table and Formula and Moved to Sheet 1; Consolidated Detail with Sheet 1.

### COMMENTS AND RESPONSES

**BLACK** = Internal Review Comments    **RED** = Standard Plans Response

**Name:** K. C. Jones

**Date:** August 21, 2020

**COMMENT:** The PCMS require channelizing devices at 4 corners per spec. Please consider showing the Channelizing Devices.

**RESPONSE:** *It is difficult to illustrate the Channelizing Devices at each corner of all trailer mounted traffic control devices in the details included in the 102 Series Indexes. The Specification and Index 102-600 require the devices at each corner; therefore, to avoid confusion or redundancy they are not shown on any detail.*

**No Change**

*Date: 8/22/2020*

**Name:** Sharon Harris

**Date:** 8/21/2020

**COMMENT:** The lane direction arrows and location of both traffic control officers seem to be conflicting?

**RESPONSE:** *Agreed.*

**Change Made:** *The directional arrows have been corrected to show travel in one direction.*

*Date: 8/22/2020*

**Name:** Brad Salisbury

**Date:** 8/21/2020

**COMMENT:** The pacing details (staging/ramp closure) that applied to the police operations seemed useful to have in the standard itself. By moving this to the SPI, we seem to be removing a quick reference for law enforcement/field crews that would aid them/provide details on how FDOT expects these operations to run.

**RESPONSE:** *The information included on Sheet 2 of the previous Index was provided as an example of how a pacing operation could be performed. Therefore, the example is being moved to the Standard Plans Instructions (SPI), where this time of information is better suited.*

**No Change**

*Date: 8/23/2020*

**Name:** D5

**Date:** 8/21/2020

**COMMENTS:**

1. Existing Sheet 2: Redlines indicate notes and details were relocated to SPI. No revised or new SPI was provided for review.

**RESPONSE:** *The SPI will be made available for review prior to publishing.*

2. Existing Sheet 3: TCP or Tech. Spec. Note 3: Redlines indicate this note was pushed to Spec 102. However, the particular details within the note are not reflected within the Spec 102.

**RESPONSE:** *Specification 102-3.3.1 Traffic Pacing was clarified to state that that a pacing plan is required.*

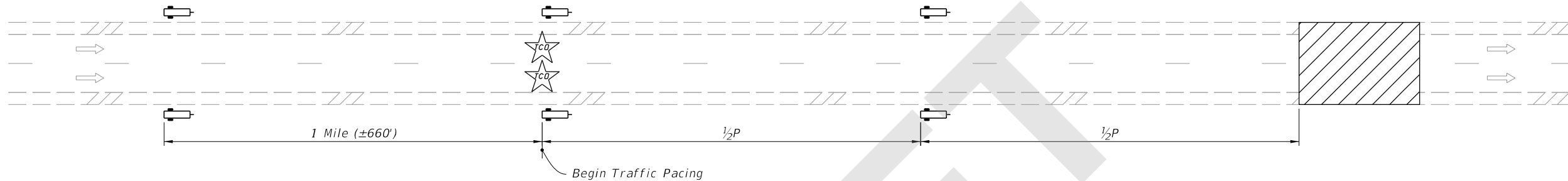
**Change Made:** *Specification 102-3.3.1 was revised to state “In addition to dates and locations, include a pacing plan outlining the expected equipment and number of traffic control officers required, the proposed traffic pacing lengths and durations, the available existing egresses in the event of an emergency, and a contingency plan in the event of an equipment failure.”*

3. Sheet 1, Note 10: Is this note to coincide with Note 6? Presents some confusion if other PCMS are necessary or not. To help clarify (if this is the intent), swap locations with Note 7.

**RESPONSE:** *Yes, Note 10 is intended to coincide with Note 6. The requirements of Note 6 may be omitted for work durations of less than 5 minutes.*

**Change Made:** *Location of Note 10 swapped with Note 7.*

*Date: 8/24/2020*



**TYPICAL PCMS DISPLAY:**

During day of pacing operation:  
 Message 1: ROAD WORK TONIGHT  
 Message 2: EXPECT PERIODIC DELAYS

During pacing operation:  
 Message 1: SLOW TRAFFIC AHEAD  
 Message 2: BE PREPARED TO STOP

**SYMBOLS:**

- Work Area
- Lane Identification and Direction of Traffic
- Portable Changeable Message Sign (PCMS)
- Traffic Control Officer

**NOTES:**

1. P = Traffic Pacing Length  
 For "P" value, see Traffic Pacing Length table or calculate using Formulas.
2. See the Plans for traffic pacing restrictions.
3. Do not exceed work duration of 30 minutes or traffic pacing length of 10 miles.
4. Coordinate with the traffic control officer supervisor to provide the correct number of traffic control officers for each traffic pacing operation.
5. Ensure that the necessary equipment is properly positioned for the work before requesting that the traffic control officer supervisor initiate the traffic pacing operation.
6. If workers or equipment are within the traveled way during the traffic pacing operation, use a truck- or trailer-mounted attenuator with portable changeable message sign to protect the work.
7. For work durations of less than five minutes (e.g. moving large vehicles across the roadway), portable changeable message signs and truck-mounted attenuators are not required. Use traffic pacing length values from the five minute column of the table.
8. Where feasible, do not pace traffic past the last available existing egress until the work has been completed.
9. When more than one traffic pacing operation is required in a calendar day, allow sufficient time between pacing operations to permit traffic to return to normal speed and flow.
10. Maintain communications with all police vehicles throughout the traffic pacing.

TRAFFIC PACING LENGTH "P"						
Pacing Speed = 20 mph						
Work Zone Speed (mph)	Work Duration (minutes)					
	5	10	15	20	25	30
70	2.3	4.7	7.0	9.3	-	-
65	2.4	4.8	7.2	9.6	-	-
60	2.5	5.0	7.5	10.0	-	-
55	2.6	5.2	7.9	-	-	-
50	2.8	5.6	8.3	-	-	-

Notes: (1) All lengths in the above table are in miles.  
 (2) For work durations with no values shown above, calculate length using a reduced pacing speed, but not less than 10 mph.

**FORMULAS:**

$S_w$  = Work Zone Speed (mph)  
 $S_p$  = Pacing Speed (mph)  
 $t_w$  = Work Duration (minutes)  
 P = Traffic Pacing Length (miles)  

$$P = \frac{t_w}{60} S_p \left( \frac{S_p}{S_w - S_p} + 1 \right)$$

$$P = P_c + R_w$$

$P_c$  = distance paced vehicles must travel before the vehicles at regulatory speed have cleared the work zone  

$$P_c = \left( \frac{t_w}{60} \times S_p^2 \right) \frac{1}{S_w - S_p}$$
 $P_w$  = distance paced vehicles travel while work is performed  

$$P_w = \left( \frac{t_w}{60} \times S_p \right)$$

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