



NOTES:

1. THIS SMART WORK ZONE SYSTEM USED IN CONJUNCTION WITH A 3-LANE FREEWAY DOUBLE LEFT LANE CLOSURE TRAFFIC CONTROL PLAN, DELETE ANY PCMS SHOWN PRIOR TO LANE CLOSURE TAPERS SHOWN ON THAT PLAN.
2. SYSTEM TO BE OPERATED AND CONTROLLED BY A SMART WORK ZONE SYSTEM TECHNICIAN INDEPENDENTLY BUT IN COLLABORATION WITH THE TRAFFIC CONTROL SUPERVISOR.
3. PLACE SYSTEM COMPONENTS AND PROGRAM ALL PCMS MESSAGES AS SHOWN UNLESS MODIFICATIONS ARE ACCEPTED BY THE ENGINEER.
4. TRANSVERSE DRUMS NOT REQUIRED PRIOR TO SMART WORK ZONE SYSTEM COMPONENTS WHEN PLACED BEHIND BARRIER, BEHIND GUARDRAIL, OR WITHIN A CLOSED LANE.
5. LOCATE PCMS PER WSDOT STANDARD SPECIFICATION 1-10.3(3)C.
6. ALL COMPONENTS MAY NOT BE NEEDED DEPENDING ON ACTUAL TRAFFIC QUEUES. MODIFICATIONS TO BE ACCEPTED BY ENGINEER.
7. QUEUE LENGTH IS CALCULATED FROM THE BEGINNING OF THE SECOND LANE CLOSURE TAPER.
8. IN THE EVENT OF A SYSTEM FAILURE, SEE SPECIAL PROVISIONS "SMART WORK ZONE SYSTEM FAILURE PROTOCOL".

| SYMBOL | TRIGGER SPEED (mph) | TRAFFIC CONDITION |
|--------|---------------------|-------------------|
| FF | 35+ | Free Flow |
| SL | <35 | Slowed |

| QUEUE LENGTH (miles) | TRAFFIC SENSORS | | | | PCMS 5 | | PCMS 4 | | PCMS 3 | | PCMS 2 | | PCMS 1 | |
|----------------------|-----------------|----|----|----|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|---------------------|-------------------------|---------------------|
| | D | C | B | A | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 |
| | | | | | 2.0 SEC | 2.0 SEC | 2.0 SEC | 2.0 SEC |
| None | FF | FF | FF | FF | (Blank) | (Blank) | (Blank) | (Blank) | 2 LEFT LANES CLOSED | 1 MILE AHEAD | (Blank) | (Blank) | (Blank) | (Blank) |
| < 0.4 +/- | FF | FF | FF | SL | (Blank) | (Blank) | (Blank) | (Blank) | 2 LANES CLOSED AHEAD | TRAFFIC BACKUPS PRESENT | SLOW OR STOPPED TRAFFIC | NEXT 0.5 MILE | (Blank) | (Blank) |
| 0.41 - 1.4 | FF | FF | SL | SL | (Blank) | (Blank) | 2 LANES CLOSED AHEAD | TRAFFIC BACKUPS PRESENT | SLOW OR STOPPED TRAFFIC | NEXT 1.5 MILES | LEFT 2 LANES | TAKE TURNS AT MERGE | MINIMIZE DELAYS FOR ALL | TAKE TURNS AT MERGE |
| 1.41 to 2.4 | FF | SL | SL | SL | 2 LANES CLOSED AHEAD | TRAFFIC BACKUPS PRESENT | SLOW OR STOPPED TRAFFIC | NEXT 2.5 MILES | ZIPPER MERGES AHEAD | USE ALL OPEN LANES | LEFT 2 LANES | TAKE TURNS AT MERGE | MINIMIZE DELAYS FOR ALL | TAKE TURNS AT MERGE |
| > 2.41 | SL | SL | SL | SL | SLOW OR STOPPED TRAFFIC | NEXT 3.5 MILES | 2.5 MILE BACKUP | ## MINUTE DELAY | ZIPPER MERGES AHEAD | USE ALL OPEN LANES | LEFT 2 LANES | TAKE TURNS AT MERGE | MINIMIZE DELAYS FOR ALL | TAKE TURNS AT MERGE |

| LEGEND | |
|--------|----------------------------------|
| ⊠ | TEMPORARY SIGN LOCATION |
| ⊗ | TRAFFIC SAFETY DRUM |
| Ⓜ | TRAFFIC SENSOR |
| TTR# | PORTABLE TRAVEL TIME READER |
| ⇨⇨ | SEQUENTIAL ARROW SIGN |
| PCMS | PORTABLE CHANGEABLE MESSAGE SIGN |

FREEWAY (3 LANES): SMART WORK ZONE SYSTEM FOR DOUBLE LEFT LANE CLOSURE (QUEUES UP TO 3 MILES) NOT TO SCALE

| | | | | | | | | | | | | |
|---------------|---|------|----|------------|-------|------------------|--|--------------|--------------|----------------|--|---------------------------------|
| FILE NAME | C:\Users\LintzF\Desktop\Work Zone TCPs1152Fwy3MileSWZS2Lt.dgn | | | | | | | | | | Plot 2 | |
| TIME | 2:58:56 PM | | | | | | | | | | PLAN REF NO | |
| DATE | 6/20/2019 | | | | | | | | | | TC152 | |
| PLOTTED BY | LintzF | | | | | | | | | | Washington State Department of Transportation | |
| DESIGNED BY | HAAPALA & LINTZ | | | | | | | | | | | |
| ENTERED BY | F. LINTZ | | | | | | | | | | | |
| CHECKED BY | S. HAAPALA | | | | | | | | | | | |
| PROJ. ENGR. | | | | | | | | | | | | |
| REGIONAL ADM. | REVISION | DATE | BY | REGION NO. | STATE | FED.AID PROJ.NO. | | CONTRACT NO. | LOCATION NO. | DATE | DATE | SHEET 2 OF 2 SHEETS |
| | | | | 10 | WASH | | | | | P.E. STAMP BOX | P.E. STAMP BOX | SMART WORK ZONE SYSTEM |

DESIGNER NOTES:

- A. INCLUDE THE "SMART WORK ZONE SYSTEM" GENERAL SPECIAL PROVISION THAT IS NOW AVAILBLE IN THE CONTRACT SPECIAL PROVISIONS.
- B. IF EXPECTED QUEUES EXCEED 3 MILES, SEE MORE COMPLEX SYSTEM ON TC162.
- C. THESE TRAFFIC CONTROL PLANS ARE TYPICAL AND MAY BE MODIFIED FOR SITE SPECIFIC SITUATIONS AND/OR WSDOT REGION TRAFFIC PRACTICES.
- D. TO MATCH THE GENERAL SPECIAL PROVISIONS, TRAFFIC SAFETY DRUMS SHOULD BE USED AS SHOWN IN THE TRAFFIC CONTROL PLAN.
- E. WARNING LIGHTS ON CHANNELIZATION DEVICES ARE OPTIONAL; CONTACT REGION TRAFFIC OFFICES FOR THEIR POLICY.
- F. VERTICAL PANEL CHANNELIZATION DEVICES SHALL NOT BE USED.

MODIFYING SMART WORK ZONE SYSTEM TRAFFIC CONTROL PLANS

IF ACTUAL QUEUES ARE LESS THAN EXPECTED, THIS SMART WORK ZONE SYSTEM CAN BE SIMPLIFIED:

IF QUEUES ARE LESS THAN 2 MILES:

- * DELETE PCMS 5
- * DELETE TRAFFIC SENSOR D

IF QUEUES ARE LESS THAN 1 MILE:

- * SIMPLY USE PCMS 1 & PCMS 2 MESSAGES AS SHOWN IN TYPICAL FREEWAY LANE CLOSURE TRAFFIC CONTROL PLANS (SEE BELOW).

| PCMS 1 | |
|--------------------|--------------|
| 1 | 2 |
| SLOW TRAFFIC AHEAD | NEXT # MILES |
| 2.0 SEC | 2.0 SEC |

| PCMS 2 | |
|------------------|--------------|
| 1 | 2 |
| LEFT LANE CLOSED | 1 MILE AHEAD |
| 2.0 SEC | 2.0 SEC |

| PCMS 2 | |
|---------------------|--------------|
| 1 | 2 |
| 2 LEFT LANES CLOSED | 1 MILE AHEAD |
| 2.0 SEC | 2.0 SEC |

FIELD LOCATE AT LEAST 1/2 +/- MILE IN ADVANCE OF PCMS 2.

RELOCATE AS NEEDED TO REMAIN 1 +/- MILE IN ADVANCE OF QUEUE.

PCMS MAY BE TRUCK MOUNTED; IF SO, THE THREE TRANSVERSE DRUMS ARE OPTIONAL.

REMOVE WHEN QUEUE NO LONGER PRESENT.

= APPROXIMATE QUEUE LENGTH ROUNDED UP TO NEAREST MILE

LOCATE PCMS PER WSDOT STANDARD SPECIFICATION 1-10.3(3)C.

FIELD LOCATE 1/4 +/- MILE IN ADVANCE OF W20-1 SIGN.

LOCATE PCMS PER WSDOT STANDARD SPECIFICATION 1-10.3(3)C.

FIELD LOCATE 1/4 +/- MILE IN ADVANCE OF W20-1 SIGN.

LOCATE PCMS PER WSDOT STANDARD SPECIFICATION 1-10.3(3)C.

**FREEWAY (3 LANES): SMART WORK ZONE SYSTEM FOR DOUBLE LEFT LANE CLOSURE
(QUEUES UP TO 3 MILES)
NOT TO SCALE**

| | | | | | | | | | |
|---------------|---|----------|------|----|--------------|--------------|------------------|--|----------------------|
| FILE NAME | C:\Users\LintzF\Desktop\Work Zone TCPs\152Fwy3MileSWZS2Lt.dgn | | | | REGION NO. | STATE | FED.AID PROJ.NO. | Washington State Department of Transportation | Plot 3 |
| TIME | 2:58:56 PM | | | | 10 | WASH | | | PLAN REF NO TC152 |
| DATE | 6/20/2019 | | | | JOB NUMBER | | | DESIGNER GUIDANCE | SHEET |
| PLOTTED BY | LintzF | | | | CONTRACT NO. | LOCATION NO. | | | OF |
| DESIGNED BY | HAAPALA & LINTZ | | | | | | | DESIGNER GUIDANCE | SHEETS |
| ENTERED BY | F. LINTZ | | | | | | | | |
| CHECKED BY | S. HAAPALA | | | | | | | | |
| PROJ. ENGR. | | | | | | | | | |
| REGIONAL ADM. | | REVISION | DATE | BY | | | | | |