





**NOTES:**

1. THIS PLAN IS USED IN CONJUNCTION WITH 2-LANE FREEWAY LEFT LANE CLOSURE, RIGHT SHOULDER SHIFT TRAFFIC CONTROL PLAN (PCMSs REPLACED WITH ONES SHOWN ON THIS PLAN).
2. SEE QUEUE WARNING SYSTEM (QWS) SPECIAL PROVISION OR RFP FOR DETAILS.
3. MODIFICATIONS TO PCMS MESSAGES SHALL BE ACCEPTED BY THE ENGINEER.
4. ADJUST QWS COMPONENTS LOCATION TO AVOID CONFLICTS WITH TRAFFIC CONTROL DEVICES, NARROW SHOULDERS, AND RAMP GORES. WHEN LOCATED BEHIND BARRIER/GUARDRAIL OR WITHIN LANE CLOSURE, TRANSVERSE TRAFFIC DRUMS OPTIONAL.
5. LOCATE PCMSs PER STANDARD SPECIFICATION 1-10.3(3)C. PCMS MAY BE PLACED ON OPPOSITE SHOULDER BUT AVOID RAMP GORES. MINIATURE PCMSs (~6' WIDE, 12+ INCH CHARACTERS) ALLOWED FOR ALL PCMSs.
6. IF SYSTEM FAILS, SEE "QUEUE WARNING SYSTEM FAILURE PROTOCOL" PROVISION.
7. IF TRAFFIC QUEUES REACH 5.5 MILES, PLACE ADDITIONAL PCMS AT 8± MILES. RELOCATE FARTHER BACK AS NEEDED TO REMAIN IN ADVANCE OF QUEUE. TRUCK-MOUNTED PCMS WITH 10+ INCH CHARACTERS ACCEPTABLE. TRANSVERSE TRAFFIC SAFETY DRUMS OPTIONAL. REMOVE PCMS WHEN DISSIPATING QUEUES ARE LESS THAN 5 MILES. ADDED PCMS MESSAGE: TRAFFIC BACKUPS PRESENT / SLOW TRAFFIC AHEAD
8. "ROADWAY NARROWS 12' WIDE" PCMS MESSAGE MODIFIED TO MATCH THE ACTUAL MINIMUM TRAVEL WIDTH AVAILABLE THROUGH WORK ZONE MEASURED FROM FACE OF DEVICE TO FACE OF OPPOSITE DEVICE TRANSVERSELY.

**LEGEND:**

- 28" TRAFFIC CONE
- ⊗ TRAFFIC SAFETY DRUM
- ⬆️ TRAFFIC SENSOR
- ⬆️➡️➡️ SMART SEQUENTIAL ARROW SIGN (CONNECTED)
- PCMS PORTABLE CHANGEABLE MESSAGE SIGN (SEE NOTE 5)

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

| QUEUE LOCATION (miles) | TRAFFIC SENSORS   |    |    |    |    | PCMS 5                  |                         | PCMS 4                  |                         | PCMS 3                  |                         | PCMS 2                   |                          | PCMS 1                   |                          |
|------------------------|-------------------|----|----|----|----|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|                        | E                 | D  | C  | B  | A  | 1                       | 2                       | 1                       | 2                       | 1                       | 2                       | 1                        | 2                        | 1                        | 2                        |
|                        | TRAFFIC CONDITION |    |    |    |    | 2.0 SEC                 | 2.0 SEC                 | 2.0 SEC                 | 2.0 SEC                 | 2.0 SEC                 | 2.0 SEC                 | 2.0 SEC                  | 2.0 SEC                  | 2.0 SEC                  | 2.0 SEC                  |
| None                   | FF                | FF | FF | FF | FF | ■                       | (Blank)                 | ■                       | (Blank)                 | ■                       | (Blank)                 | LEFT LANE CLOSURE        | 2 MILES AHEAD            | ROADWAY NARROWS 12' WIDE | SHOULDER DRIVING AHEAD   |
| 0.01 TO 0.9            | FF                | FF | FF | FF | SL | ■                       | (Blank)                 | ■                       | (Blank)                 | LANE CLOSURE 3 MILES    | TRAFFIC BACKUPS PRESENT | ROADWAY NARROWS 12' WIDE | SHOULDER DRIVING 2 MILES | SLOW OR STOPPED TRAFFIC  | NEXT 1 MILE              |
| 0.91 TO 1.9            | FF                | FF | FF | SL | SL | ■                       | (Blank)                 | ■                       | (Blank)                 | LANE CLOSURE 3 MILES    | TRAFFIC BACKUPS PRESENT | SLOW OR STOPPED TRAFFIC  | NEXT 2 MILES             | ZIPPER MERGE 1 MILE      | ROADWAY NARROWS 12' WIDE |
| 1.91 TO 2.9            | FF                | FF | SL | SL | SL | ■                       | (Blank)                 | LANE CLOSURE 4.5 MILES  | TRAFFIC BACKUPS PRESENT | SLOW OR STOPPED TRAFFIC | NEXT 3 MILES            | 2 MILES TO MERGE POINT   | USE ALL LANES            | ZIPPER MERGE 1 MILE      | ROADWAY NARROWS 12' WIDE |
| 2.91 TO 4.4            | FF                | SL | SL | SL | SL | LANE CLOSURE 6 MILES    | TRAFFIC BACKUPS PRESENT | SLOW OR STOPPED TRAFFIC | NEXT 4.5 MILES          | 3 MILES TO MERGE POINT  | USE ALL LANES           | 2 MILES TO MERGE POINT   | USE ALL LANES            | ZIPPER MERGE 1 MILE      | ROADWAY NARROWS 12' WIDE |
| 4.41+                  | SL                | SL | SL | SL | SL | SLOW OR STOPPED TRAFFIC | NEXT 6 MILES            | LANE CLOSURE 4.5 MILES  | USE ALL LANES           | 3 MILES TO MERGE POINT  | USE ALL LANES           | 2 MILES TO MERGE POINT   | USE ALL LANES            | ZIPPER MERGE 1 MILE      | ROADWAY NARROWS 12' WIDE |

**6-MILE QUEUE WARNING SYSTEM  
FREEWAY (2 LANES): SINGLE LEFT LANE CLOSURE, RIGHT SHOULDER SHIFT  
NOT TO SCALE**

|               |   |    |            |       |                  |  |                |                |  |  |  |
|---------------|---|----|------------|-------|------------------|--|----------------|----------------|--|--|--|
| FILE NAME     | C:\Users\LintzF\OneDrive - Washington State Department of Transportation\Desktop\Work Zone TCPs\153Fwy6MileQWS1LtRghtShldrShift.dgn |    |            |       |                  |  |                |                |  |  | Plot 1   |
| TIME          | 1:10:38 PM  |    |            |       |                  |  |                |                |  |  | PLAN REF NO                                      |
| DATE          | 1/5/2024  |    |            |       |                  |  |                |                |  |  | TC153  |
| PLOTTED BY    | LintzF  |    |            |       |                  |  |                |                |  |  | SHEET<br>1<br>OF<br>1<br>SHEETS                  |
| DESIGNED BY   |   |    |            |       |                  |  |                |                |  |  |  |
| ENTERED BY    |   |    |            |       |                  |  |                |                |  |  | TYPICAL TRAFFIC CONTROL PLANS                    |
| CHECKED BY    |   |    |            |       |                  |  |                |                |  |  |  |
| PROJ. ENGR.   |   |    |            |       |                  |  |                |                |  |  | Washington State<br>Department of Transportation |
| REGIONAL ADM. |   |    |            |       |                  |  |                |                |  |  |  |
| REVISION      | DATE  | BY | REGION NO. | STATE | FED.AID PROJ.NO. |  | DATE           | DATE           |  |  |  |
|               |   |    | 10         | WASH  |                  |  | P.E. STAMP BOX | P.E. STAMP BOX |  |  |  |
|               |   |    |            |       | LOCATION NO.     |  |                |                |  |  |  |

**WORK ZONE MICROSTATION CELLS: Updated work zone cells incorporated (January 2024).**

WSDOT CAE automatically updates cell libraries on WSDOT and on-site consultant staff computers (no action needed); however, external users or off-site consultants must manually install them. For additional information email HQCAEHelpDesk@wsdot.wa.gov.

Division 4 in WSDOT Plans Preparation Manual, Section 400.06(29), provides updated work zone cell library policy and information for PS&Es. See <https://wsdot.wa.gov/engineering-standards/all-manuals-and-standards/manuals/plans-preparation-manual>

**TYPICAL TCP USAGE EXPLANATION:**

**Plot 1:** Supplements Typical Traffic Control Plans TC234 and TC254 when 6-mile Queue Warning System utilized on 2-Lane Freeways.

**DESIGNER NOTES:**

- A. **Region Transportation Operations will determine if and what queue mitigation system is needed** using work zone traffic analysis (Traffic Manual 5-9). For additional information, see Traffic Manual 5-17 or *Work Zone Traffic Control Fundamentals* presentation.
- B. These typical traffic control plans may be modified for site-specific situations and/or WSDOT Region Transportation Operations standard practices. **Typical Traffic Control Plans are not "Standard Plans"**.
- C. When used, include the following **Queue Warning System General Special Provisions** listed below:
  - 1-10.3(3).OPT4.FR1 Specifications
  - 1-10.4(2).OPT7.GR1 Measurement (Traffic Control as Bid Items)
  - 1-10.5(2).OPT4.GR1 Payment
- D. If traffic queues regularly exceed 6 miles, this plan can be modified into a 8-mile or 9-mile queue warning system without needing additional PCMSs or traffic sensors. Contact State Work Zone Engineers for guidance at HQWorkZone@wsdot.wa.gov.
- E. Except for projects requiring them in the Provisions, Pan-Tilt-Cameras (PTZ Cameras) are optional and may be mounted on various PCMSs as desired. PTZ Cameras are used remotely by Agency to monitor incidents and queues.

**6-MILE QUEUE WARNING SYSTEM  
FREEWAY (2 LANES): SINGLE LEFT LANE CLOSURE, RIGHT SHOULDER SHIFT**

**INFORMATIONAL USE ONLY**

**DO NOT INCLUDE THIS SHEET IN  
CONTRACT PS&Es or TCP SUBMITTALS.**

**DESIGNER GUIDANCE**

Plot 2

**TC153**