



NOTES:

- THIS PLAN IS USED IN CONJUNCTION WITH 2-LANE FREEWAY SINGLE LEFT LANE CLOSURE TRAFFIC CONTROL PLAN (PCMSs REPLACED WITH ONES SHOWN ON THIS PLAN).
- SEE QUEUE WARNING SYSTEM (QWS) SPECIAL PROVISION OR RFP FOR DETAILS.
- MODIFICATIONS TO PCMS MESSAGES SHALL BE ACCEPTED BY THE ENGINEER.
- 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.
- 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.
- IF SYSTEM FAILS, SEE "QUEUE WARNING SYSTEM FAILURE PROTOCOL" PROVISION.
- 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

LEGEND:

- TRAFFIC SAFETY DRUM
- TRAFFIC SENSOR
- SMART SEQUENTIAL ARROW SIGN (CONNECTED)
- 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)	■	(Blank)	■	LEFT LANE CLOSURE 1 MILE AHEAD
0.01 TO 0.9	FF	FF	FF	FF	SL	■	(Blank)	■	(Blank)	■	(Blank)	■	(Blank)	■	LANE CLOSURE 2 MILES TRAFFIC BACKUPS PRESENT SLOW OR STOPPED TRAFFIC NEXT 1 MILE
0.91 TO 1.9	FF	FF	FF	SL	SL	■	(Blank)	■	(Blank)	■	(Blank)	■	(Blank)	■	LANE CLOSURE 3 MILES TRAFFIC BACKUPS PRESENT SLOW OR STOPPED TRAFFIC NEXT 2 MILES ZIPPER MERGE 1 MILE USE LEFT LANE TOO
1.91 TO 2.9	FF	FF	SL	SL	SL	■	(Blank)	■	(Blank)	■	(Blank)	■	(Blank)	■	LANE CLOSURE 4.5 MILES TRAFFIC BACKUPS PRESENT SLOW OR STOPPED TRAFFIC NEXT 3 MILES ZIPPER MERGE 1 MILE USE LEFT LANE TOO
2.91 TO 4.4	FF	SL	SL	SL	SL	■	(Blank)	■	(Blank)	■	(Blank)	■	(Blank)	■	LANE CLOSURE 6 MILES TRAFFIC BACKUPS PRESENT SLOW OR STOPPED TRAFFIC NEXT 4.5 MILES ZIPPER MERGE 1 MILE USE LEFT LANE TOO
4.41+	SL	SL	SL	SL	SL	■	(Blank)	■	(Blank)	■	(Blank)	■	(Blank)	■	SLOW OR STOPPED TRAFFIC NEXT 6 MILES LANE CLOSURE 4.5 MILES USE ALL LANES ZIPPER MERGE 1 MILE USE LEFT LANE TOO

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

FILE NAME: C:\Users\LintzF\OneDrive - Washington State Department of Transportation\Desktop\Work Zone TCPs\151Fwy6MileQWS1Lt.dgn		REGION NO. STATE		FED.AID PROJ.NO.				Plot 1	
TIME: 11:57:27 AM	DATE: 1/5/2024	10	WASH					PLAN REF NO: TC151	
PLOTTED BY: LintzF	DESIGNED BY:	JOB NUMBER				SHEET 1 OF 1 SHEETS			
ENTERED BY:	CHECKED BY:	CONTRACT NO.		LOCATION NO.					
PROJ. ENGR.	REVISION	DATE	BY	DATE					
REGIONAL ADM.				DATE					

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 TC103, TC220, TC240 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**

INFORMATIONAL USE ONLY

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

DESIGNER GUIDANCE

Plot 2

TC151