



NOTES:

- THIS PLAN IS USED IN CONJUNCTION WITH AN INTERMEDIATE-TERM 3-LANE FREEWAY DOUBLE RIGHT LANE CLOSURE TRAFFIC CONTROL PLAN.
- SEE SMART WORK ZONE SYSTEM (SWZS) SPECIAL PROVISION/RFP FOR DETAILS.
- MODIFICATIONS TO PCMS MESSAGES SHALL BE ACCEPTED BY THE ENGINEER. "##" ARE CHANGEABLE VALUES BASED ON REAL-TIME TRAVEL DELAY TIMES IN MINUTES.
- ADJUST SWZS COMPONENTS LOCATION TO AVOID CONFLICTS WITH TRAFFIC CONTROL DEVICES, NARROW SHOULDERS, AND RAMPS. SWZS COMPONENTS MAY BE POLE-MOUNTED. 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 PCMS (~6" WIDE, 12+ INCH CHARACTERS) ALLOWED FOR PCMS1 ONLY UNLESS ACCEPTED BY ENGINEER.
- ESTIMATED TRAVEL DELAY TIMES SHALL BE ACCURATE WITHIN 5 MINUTES.
- WHEN FEASIBLE, LOCATE SIDE FIRE TRAFFIC SENSOR PRIOR TO ANY OPEN RAMPS.
- IF SYSTEM FAILS SEE "SMART WORK ZONE SYSTEM FAILURE PROTOCOL" PROVISION.
- IF TRAFFIC QUEUES REACH 6 MILES, PLACE ADDITIONAL PCMS AT 8.5± 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 5.5 MILES. ADDED PCMS MESSAGE: TRAFFIC BACKUPS PRESENT / SLOW TRAFFIC AHEAD

LEGEND:

- TRAFFIC SAFETY DRUM
- TRAFFIC SENSOR
- PORTABLE TRAVEL TIME SENSOR (SEE NOTE 6)
- SIDE FIRE TRAFFIC SENSOR (SEE NOTE 7)
- SMART SEQUENTIAL ARROW SIGN (CONNECTED)
- PORTABLE CHANGEABLE MESSAGE SIGN (SEE NOTE 5)
- PAN-TILT-ZOOM (PTZ) CAMERA
- TEMPORARY BARRIER
- TEMPORARY IMPACT ATTENUATOR (TL-3)

QUEUE LOCATION (miles)	TRAFFIC SENSORS								PCMS 9		PCMS 8		PCMS 7		PCMS 6		PCMS 5		PCMS 4		PCMS 3		PCMS 2		PCMS 1			
	H	G	F	E	D	C	B	A	1	2	1	2	1	2	1	2	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	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	FF	FF	FF		(Blank)		(Blank)		(Blank)		(Blank)		(Blank)		(Blank)		(Blank)		(Blank)		(Blank)		(Blank)
< 0.5	FF	FF	FF	FF	FF	FF	FF	SL		(Blank)		(Blank)		(Blank)		(Blank)		(Blank)		(Blank)	DOUBLE LANE CLOSURE	2 MILES AHEAD	TRAFFIC BACKUPS PRESENT	## MINUTE DELAY	SLOW OR STOPPED TRAFFIC	NEXT 0.5 MILE		(Blank)
0.5 TO 1.4	FF	FF	FF	FF	FF	FF	SL	SL		(Blank)		(Blank)		(Blank)		(Blank)	DOUBLE LANE CLOSURE	3 MILES AHEAD	TRAFFIC BACKUPS PRESENT	## MINUTE DELAY	SLOW OR STOPPED TRAFFIC	NEXT 1.5 MILES	ZIPPER MERGE HERE	TAKE TURNS	ZIPPER MERGE HERE	TAKE TURNS		
1.41 TO 2.4	FF	FF	FF	FF	FF	SL	SL	SL		(Blank)		(Blank)		(Blank)	DOUBLE LANE CLOSURE	4.5 MILES AHEAD	TRAFFIC BACKUPS PRESENT	## MINUTE DELAY	SLOW OR STOPPED TRAFFIC	NEXT 2.5 MILES	ZIPPER MERGES AHEAD	USE LEFT LANE TOO	ZIPPER MERGE HERE	TAKE TURNS	ZIPPER MERGE HERE	TAKE TURNS		
2.41 TO 3.4	FF	FF	FF	FF	SL	SL	SL	SL		(Blank)		(Blank)	DOUBLE LANE CLOSURE	6 MILES AHEAD	TRAFFIC BACKUPS PRESENT	## MINUTE DELAY	SLOW OR STOPPED TRAFFIC	NEXT 3.5 MILES	2 MILES TO MERGE POINTS	USE ALL 3 LANES	ZIPPER MERGES AHEAD	USE LEFT LANE TOO	ZIPPER MERGE HERE	TAKE TURNS	ZIPPER MERGE HERE	TAKE TURNS		
3.41 TO 4.9	FF	FF	FF	SL	SL	SL	SL	SL		(Blank)	DOUBLE LANE CLOSURE	7.5 MILES AHEAD	TRAFFIC BACKUPS PRESENT	## MINUTE DELAY	SLOW OR STOPPED TRAFFIC	NEXT 5 MILES	3 MILES TO MERGE POINTS	USE ALL 3 LANES	2 MILES TO MERGE POINTS	USE ALL 3 LANES	ZIPPER MERGES AHEAD	USE LEFT LANE TOO	ZIPPER MERGE HERE	TAKE TURNS	ZIPPER MERGE HERE	TAKE TURNS		
4.91 TO 6.4	FF	FF	SL	SL	SL	SL	SL	SL	DOUBLE LANE CLOSURE	9 MILES AHEAD	TRAFFIC BACKUPS PRESENT	## MINUTE DELAY	SLOW OR STOPPED TRAFFIC	NEXT 6.5 MILES	4.5 MILES TO MERGE POINTS	USE ALL 3 LANES	3 MILES TO MERGE POINTS	USE ALL 3 LANES	2 MILES TO MERGE POINTS	USE ALL 3 LANES	ZIPPER MERGES AHEAD	USE LEFT LANE TOO	ZIPPER MERGE HERE	TAKE TURNS	ZIPPER MERGE HERE	TAKE TURNS		
6.41 TO 7.9	FF	SL	SL	SL	SL	SL	SL	SL	2 LANE CLOSURE	9 MILES	## MINUTE DELAY	SLOW OR STOPPED TRAFFIC	NEXT 8 MILES	6 MILES TO MERGE POINTS	4.5 MILES TO MERGE POINTS	USE ALL 3 LANES	3 MILES TO MERGE POINTS	USE ALL 3 LANES	2 MILES TO MERGE POINTS	USE ALL 3 LANES	ZIPPER MERGES AHEAD	USE LEFT LANE TOO	ZIPPER MERGE HERE	TAKE TURNS	ZIPPER MERGE HERE	TAKE TURNS		
7.91+	SL	SL	SL	SL	SL	SL	SL	SL	SLOW OR STOPPED TRAFFIC	NEXT 9.5 MILES	2 LANE CLOSURE	7.5 MILES	## MINUTE DELAY	6 MILES TO MERGE POINTS	4.5 MILES TO MERGE POINTS	USE ALL 3 LANES	3 MILES TO MERGE POINTS	USE ALL 3 LANES	2 MILES TO MERGE POINTS	USE ALL 3 LANES	ZIPPER MERGES AHEAD	USE LEFT LANE TOO	ZIPPER MERGE HERE	TAKE TURNS	ZIPPER MERGE HERE	TAKE TURNS		

**9-MILE SMART WORK ZONE SYSTEM
FREEWAY (3 LANES): DOUBLE RIGHT LANE CLOSURE
NOT TO SCALE**

FILE NAME	C:\Users\LintzF\OneDrive - Washington State Department of Transportation\Desktop\Work Zone TCPs\176Fwy9MileSWZS2Rt.dgn										REGION NO.	STATE	FED.AID PROJ.NO.	Washington State Department of Transportation	Plot 2
TIME	1:54:33 PM										10	WASH			PLAN REF NO
DATE	1/5/2024													TC176	
PLOTTED BY	LintzF													SHEET 2 OF 2 SHEETS	
DESIGNED BY															
ENTERED BY														TYPICAL TRAFFIC CONTROL PLANS	
CHECKED BY															
PROJ. ENGR.															
REGIONAL ADM.	REVISION	DATE	BY								CONTRACT NO.	LOCATION NO.	DATE	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 long-term single right lane closure on 3-lane freeways.

Plot 2: Supplements long-term single right lane closure on 3-lane freeways with a intermediate-term double right lane closure in place.

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. If the long-term staged traffic control plan does not use temporary barriers, this Typical TCP can be modified to reflect channelization devices instead.
- D. When used, include 3 of the following **Smart Work Zone System General Special Provisions** listed below:
 - 1-10.3(3).OPT3.FR1 Specifications
 - 1-10.4(2).OPT5.GR1 Measurement (Traffic Control as Bid Items)
 - 1-10.5(2).OPT3.GR1 Payment
- E. Except for projects requiring them in the Provisions, Pan-Tilt-Cameras (PTZ Cameras) are optional and may be mounted on different PCMSs as desired or deleted. PTZ Cameras are used remotely by Agency to monitor incidents and queues.
- F. The side-fire traffic sensor is used to obtain traffic volume and speed data per General Special Provision requirements.
- G. These Smart Work Zone Systems are very adaptable for a variety of situations, including being used on multiple roadways concurrently leading into a queued work zone. Contact State Work Zone Engineers for guidance at HQWorkZone@wsdot.wa.gov.

**9-MILE QUEUE WARNING SYSTEM
FREEWAY (3 LANES): SINGLE & DOUBLE RIGHT LANE CLOSURE**

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

DESIGNER GUIDANCE

Plot 3

TC176