

- NOTES:**
- THIS PLAN IS USED IN CONJUNCTION WITH APPLICABLE 2-LANE FREEWAY SINGLE LEFT LANE CLOSURE TRAFFIC CONTROL PLAN (WITH PCMSs IN ADVANCE OF LANE CLOSURE TAPER REMOVED).
 - SEE SMART WORK ZONE SYSTEM (SWZS) SPECIAL PROVISION OR RFP FOR DETAILS.
 - MODIFICATIONS TO PCMS MESSAGES SHALL BE ACCEPTED BY THE ENGINEER. "##" ARE CHANGEABLE VALUES BASED ON REAL-TIME TRAVEL DELAY TIMES.
 - ADJUST SWZS COMPONENTS TO AVOID CONFLICTS WITH SEQUENTIAL ARROW SIGNS OR OTHER TRAFFIC CONTROL DEVICES, NARROW SHOULDERS, AND RAMPS.
 - LOCATE PCMSs PER STANDARD SPECIFICATION 1-10.3(3)C. PCMS MAY BE PLACED ON OPPOSITE SHOULDER BUT AVOID RAMP GORES. WHEN LOCATED BEHIND BARRIER/GUARDRAIL OR WITHIN CLOSURE, TRANSVERSE TRAFFIC DRUMS OPTIONAL.
 - MINITURE PCMS (~6" WIDE, 12+ INCH CHARACTERS) ALLOWED FOR PCMS1.
 - IN LIEU OF TRAVEL TIME READERS, ALTERNATIVE METHODS (SUCH AS USING TRAFFIC SENSOR SPEED DATA) IS ACCEPTABLE WHEN ACCURATE WITHIN 5+/- MINUTES.
 - 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 8 MILES, PLACE ADDITIONAL PCMS AT 9.5 MILES. RELOCATE TO REMAIN 0.5+/- MILE 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 8 MILES. PCMS MESSAGE: TRAFFIC BACKUPS PRESENT / WATCH FOR SLOW TRAFFIC

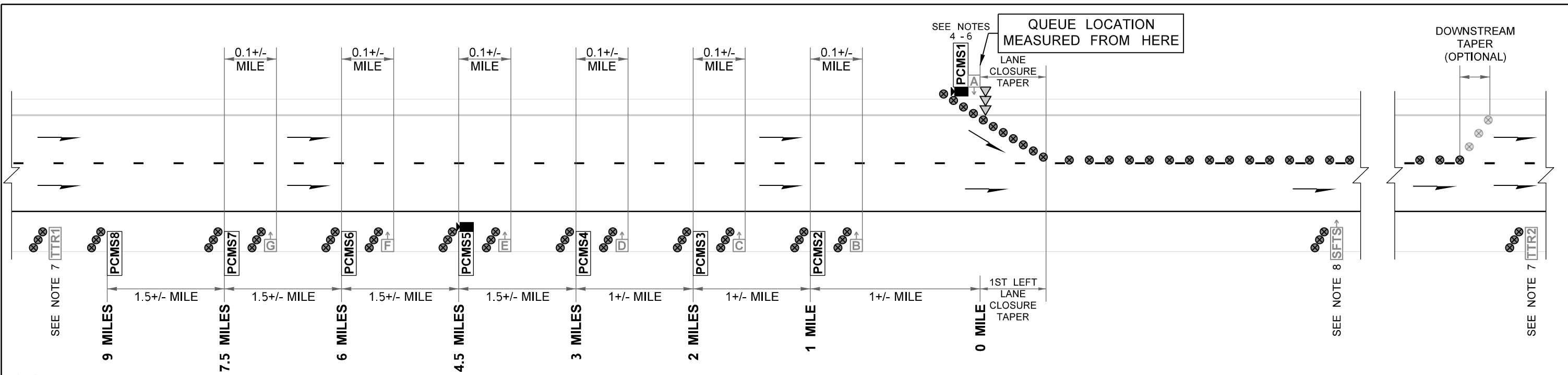
LEGEND

- TRAFFIC SAFETY DRUM
- TRAFFIC SENSOR
- SIDE FIRE TRAFFIC SENSOR
- PORTABLE TRAVEL TIME READER
- SEQUENTIAL ARROW SIGN
- PORTABLE CHANGEABLE MESSAGE SIGN
- PAN-TILT-ZOOM CAMERA

QUEUE LOCATION (miles)	TRAFFIC CONDITION							PCMS 8		PCMS 7		PCMS 6		PCMS 5		PCMS 4		PCMS 3		PCMS 2		PCMS 1		
	G	F	E	D	C	B	A	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	
	FF	FF	FF	FF	FF	FF	SL	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		(Blank)		(Blank)		(Blank)		(Blank)		(Blank)		(Blank)		(Blank)	LEFT LANE CLOSED	1 MILE AHEAD	(Blank)
< 0.9	FF	FF	FF	FF	FF	FF	SL		(Blank)		(Blank)		(Blank)		(Blank)	SINGLE LANE CLOSURE	3 MILES AHEAD	TRAFFIC BACKUPS PRESENT	## MINUTE DELAY	SLOW OR STOPPED TRAFFIC	NEXT 1 MILE	ZIPPER MERGE AHEAD	USE LEFT LANE TOO	(Blank)
0.91 TO 1.9	FF	FF	FF	FF	FF	SL	SL		(Blank)		(Blank)		(Blank)	SINGLE LANE CLOSURE	4.5 MILES AHEAD	TRAFFIC BACKUPS PRESENT	## MINUTE DELAY	SLOW OR STOPPED TRAFFIC	NEXT 2 MILES	ZIPPER MERGE AHEAD	USE LEFT LANE TOO	TAKE TURNS		
1.91 TO 2.9	FF	FF	FF	FF	SL	SL	SL		(Blank)		(Blank)	SINGLE LANE CLOSURE	6 MILES AHEAD	TRAFFIC BACKUPS PRESENT	## MINUTE DELAY	SLOW OR STOPPED TRAFFIC	NEXT 3 MILES	ZIPPER MERGE AHEAD	USE LEFT LANE TOO	TAKE TURNS				
2.91 TO 4.4	FF	FF	FF	SL	SL	SL	SL		(Blank)	SINGLE LANE CLOSURE	7.5 MILES AHEAD	TRAFFIC BACKUPS PRESENT	## MINUTE DELAY	SLOW OR STOPPED TRAFFIC	NEXT 4.5 MILES	ZIPPER MERGE AHEAD	USE LEFT LANE TOO	TAKE TURNS						
4.41 TO 5.9	FF	FF	SL	SL	SL	SL	SL	SINGLE LANE CLOSURE	9 MILES AHEAD	TRAFFIC BACKUPS PRESENT	## MINUTE DELAY	SLOW OR STOPPED TRAFFIC	NEXT 6 MILES	ZIPPER MERGE AHEAD	USE LEFT LANE TOO	TAKE TURNS								
5.91 TO 7.4	FF	SL	SL	SL	SL	SL	SL	1 LANE CLOSURE	9 MILES	SLOW OR STOPPED TRAFFIC	NEXT 7.5 MILES	6 MILES TO MERGE POINT	USE BOTH LANES	3 MILES TO MERGE POINT	USE BOTH LANES	2 MILES TO MERGE POINT	USE BOTH LANES	ZIPPER MERGE AHEAD	USE LEFT LANE TOO	TAKE TURNS				
7.41+	SL	SL	SL	SL	SL	SL	SL	SLOW OR STOPPED TRAFFIC	NEXT 9 MILES	1 LANE CLOSED	7.5 MILES	6 MILES TO MERGE POINT	USE BOTH LANES	4.5 MILES TO MERGE POINT	USE BOTH LANES	3 MILES TO MERGE POINT	USE BOTH LANES	2 MILES TO MERGE POINT	USE BOTH LANES	ZIPPER MERGE AHEAD	USE LEFT LANE TOO	TAKE TURNS		

**9-MILE SMART WORK ZONE SYSTEM
FREEWAY (2 LANES): SINGLE LEFT LANE CLOSURE**
NOT TO SCALE

FILE NAME	C:\Users\Lintz\FIOneDrive - Washington State Department of Transportation\Desktop\Work Zone TCPs\171Fwy9MileSWZS1Lt.dgn										FED.AID PROJ.NO.	DATE	DATE	P.E. STAMP BOX	P.E. STAMP BOX	<p>Washington State Department of Transportation</p>	Plot 1
TIME	9:27:58 AM																PLAN REF NO
DATE	1/10/2022										10	WASH	TYPICAL TRAFFIC CONTROL PLANS		SHEET 1 OF 1 SHEETS		
PLOTTED BY	LintzF										JOB NUMBER	CONTRACT NO.	LOCATION NO.	REVISION	DATE	BY	
DESIGNED BY	HAAPALA & LINTZ																
ENTERED BY	F. LINTZ																
CHECKED BY	S. HAAPALA																
PROJ. ENGR.																	
REGIONAL ADM.																	



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	G	F	E	D	C	B	A	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		
None	FF	FF	FF	FF	FF	FF	FF	■	■	(Blank)	(Blank)	■	■	■	■	■	■	■	■	■	■	■	■	■	■
< 0.9	FF	FF	FF	FF	FF	FF	SL	■	■	(Blank)	(Blank)	■	■	■	■	■	■	SINGLE LANE CLOSURE	4.5 MILES AHEAD	TRAFFIC BACKUPS PRESENT	## MINUTE DELAY	SLOW OR STOPPED TRAFFIC	NEXT 2 MILES	ZIPPER MERGE AHEAD	1 MILE
0.91 TO 1.9	FF	FF	FF	FF	FF	SL	SL	■	■	(Blank)	(Blank)	■	■	■	■	SINGLE LANE CLOSURE	6 MILES AHEAD	TRAFFIC BACKUPS PRESENT	## MINUTE DELAY	SLOW OR STOPPED TRAFFIC	NEXT 3 MILES	ZIPPER MERGE AHEAD	1 MILE		
1.91 TO 2.9	FF	FF	FF	FF	SL	SL	SL	■	■	(Blank)	(Blank)	■	■	■	■	SINGLE LANE CLOSURE	7.5 MILES AHEAD	TRAFFIC BACKUPS PRESENT	## MINUTE DELAY	SLOW OR STOPPED TRAFFIC	NEXT 4.5 MILES	ZIPPER MERGE AHEAD	1 MILE		
2.91 TO 4.4	FF	FF	FF	SL	SL	SL	SL	■	■	(Blank)	(Blank)	■	■	■	■	SINGLE LANE CLOSURE	9 MILES AHEAD	TRAFFIC BACKUPS PRESENT	## MINUTE DELAY	SLOW OR STOPPED TRAFFIC	NEXT 9 MILES	ZIPPER MERGE AHEAD	1 MILE		
4.41 TO 5.9	FF	FF	SL	SL	SL	SL	SL	■	■	SINGLE LANE CLOSURE	9 MILES AHEAD	■	■	■	■	SINGLE LANE CLOSURE	## MINUTE DELAY	TRAFFIC BACKUPS PRESENT	## MINUTE DELAY	SLOW OR STOPPED TRAFFIC	NEXT 7.5 MILES	ZIPPER MERGE AHEAD	1 MILE		
5.91 TO 7.4	FF	SL	SL	SL	SL	SL	SL	■	■	SINGLE LANE CLOSURE	9 MILES AHEAD	■	■	■	■	SINGLE LANE CLOSURE	## MINUTE DELAY	TRAFFIC BACKUPS PRESENT	## MINUTE DELAY	SLOW OR STOPPED TRAFFIC	NEXT 9 MILES	ZIPPER MERGE AHEAD	1 MILE		
7.41+	SL	SL	SL	SL	SL	SL	SL	■	■	SLOW OR STOPPED TRAFFIC	NEXT 9 MILES	■	■	■	■	SINGLE LANE CLOSURE	## MINUTE DELAY	TRAFFIC BACKUPS PRESENT	## MINUTE DELAY	SLOW OR STOPPED TRAFFIC	NEXT 9 MILES	ZIPPER MERGE AHEAD	1 MILE		

**9-MILE SMART WORK ZONE SYSTEM
FREEWAY (2 LANES): SINGLE LEFT LANE CLOSURE**
NOT TO SCALE

FILE NAME	C:\Users\Lintz\FOneDrive - Washington State Department of Transportation\Desktop\Work Zone TCPs\171Fwy9MileSWZS1Lt.dgn										Plot 1
TIME	9:27:59 AM										PLAN REF NO
DATE	1/10/2022										TC171
PLOTTED BY	LintzF										SHEET 1 OF 1 SHEETS
DESIGNED BY	HAAPALA & LINTZ										
ENTERED BY	F. LINTZ										TYPICAL TRAFFIC CONTROL PLANS
CHECKED BY	S. HAAPALA										
PROJ. ENGR.											
REGIONAL ADM.	REVISION										
	DATE BY										
	FED.AID PROJ.NO.										Washington State Department of Transportation
	REGION NO. STATE										
	JOB NUMBER										DATE
	CONTRACT NO. LOCATION NO.										
	DATE										DATE
	P.E. STAMP BOX										

DESIGNER NOTES:

REGION TRAFFIC OFFICES WILL DETERMINE IF SMART WORK ZONE SYSTEMS ARE NEEDED FOR EACH PROJECT USING WORK ZONE TRAFFIC ANALYSIS. FOR MORE INFORMATION, SEE TRAFFIC MANUAL SECTION 5-17.A "Work Zone Queueing Mitigation" AND SECTION 5-9 "Work Zone Traffic Analysis".

A. FOR DESIGN-BID-BUILD PROJECTS: INCLUDE 3 OF THE "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)
- 1-10.4(3).OPT2.GR1 Measurement (Traffic Control as Lump Sum)
- 1-10.5(2).OPT3.GR1 Payment

B. FOR DESIGN-BUILD PROJECTS: EMAIL STATE WORK ZONE ENGINEERS (HQWORKZONE@WSDOT.WA.GOV) FOR RFP SPECIFICATIONS UNTIL THEY ARE INCLUDED IN THE STATE-WIDE RFP TEMPLATE (ESTIMATED 2023).

C. IF ACTUAL QUEUES REGULARLY EXCEED 9 MILES, THIS SMART WORK ZONE SYSTEM SHOULD BE MODIFIED. CONTACT STATE WORK ZONE ENGINEERS (HQWORKZONE@WSDOT.WA.GOV) FOR GUIDANCE.

D. TO MATCH THE GENERAL SPECIAL PROVISIONS, TRAFFIC SAFETY DRUMS SHOULD BE USED AS SHOWN IN THE TRAFFIC CONTROL PLAN. HOWEVER, THE GSP AND TYPICAL TRAFFIC CONTROL PLAN CAN BE MODIFIED TO REFLECT REGION'S STANDARD PRACTICE REGARDING CHANNELIZATION DEVICES.

E. EXCEPT FOR DESIGN-BUILD PROJECTS WHEN THE RFP REQUIRES THEM, PAN-TILT-ZOOM CAMERAS (PTZ CAMERAS) ARE OPTIONAL AND MAY BE DELETED OR RELOCATED TO DIFFERENT PCMSs AS DESIRED. THE PTZ CAMERAS ARE INTENDED TO BE USED REMOTELY BY THE REGION TRAFFIC MANAGEMENT CENTER TO MONITOR INCIDENTS AND QUEUEING IN REAL TIME.

F. THE SIDE-FIRE RADAR IS USED TO OBTAIN VOLUME AND SPEED DATA PER GSP/RFP REQUIREMENTS. THE TRAFFIC SENSORS ARE TYPICALLY DOPPLER RADAR AND USED TO CONTROL THE PCMS MESSAGE DISPLAYS.

MODIFYING SMART WORK ZONE SYSTEM TRAFFIC CONTROL PLANS

THESE TRAFFIC CONTROL PLANS ARE TYPICAL AND MAY BE MODIFIED FOR SITE SPECIFIC SITUATIONS AND/OR WSDOT REGION TRAFFIC PRACTICES. CONTACT STATE WORK ZONE ENGINEERS (HQWORKZONE@WSDOT.WA.GOV) FOR ADDITIONAL GUIDANCE IF NEEDED.

THESE SMART WORK ZONE SYSTEMS ARE VERY ADAPTABLE TO A VARIETY OF SITUATIONS, INCLUDING BEING USED ON MULTIPLE ROADWAYS CONCURRENTLY LEADING INTO A QUEUED WORK ZONE.

**9-MILE SMART WORK ZONE 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\171Fwy9MileSWZS1Lt.dgn				REGION NO. STATE		FED.AID PROJ.NO.		Plot 2	
TIME	9:28:00 AM			10	WASH			PLAN REF NO	
DATE	1/10/2022							TC171	
PLOTTED BY	LintzF			JOB NUMBER				SHEET	
DESIGNED BY	HAAPALA & LINTZ			CONTRACT NO.		LOCATION NO.		OF	
ENTERED BY	F. LINTZ							SHEETS	
CHECKED BY	S. HAAPALA								
PROJ. ENGR.									
REGIONAL ADM.		REVISION	DATE	BY					



DESIGNER NOTES