

- 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 5 MILES, PLACE ADDITIONAL PCMS AT 6.5 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 5 MILES. PCMS MESSAGE: TRAFFIC BACKUPS PRESENT / WATCH FOR SLOW TRAFFIC

LEGEND

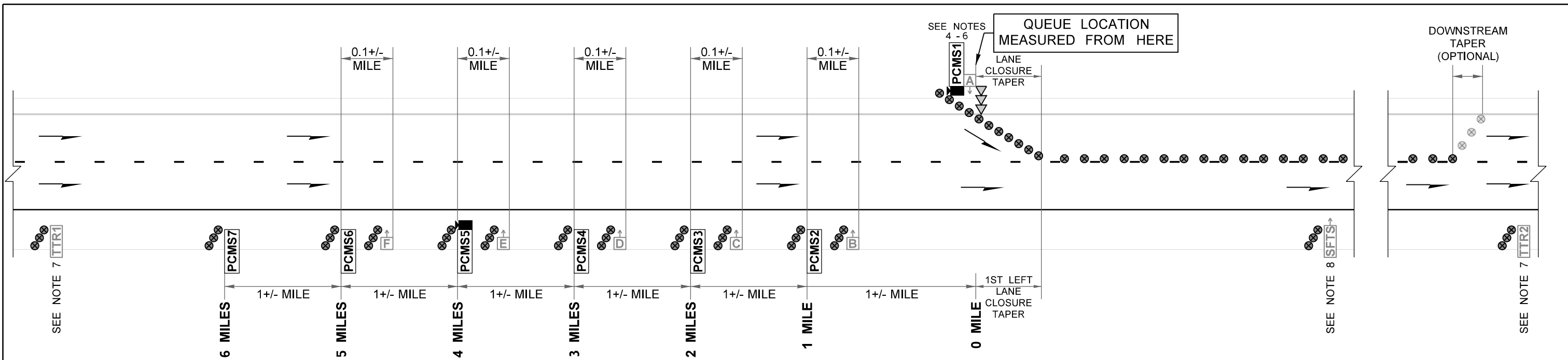
- TRAFFIC SAFETY DRUM
- TRAFFIC SENSOR
- SIDE FIRE TRAFFIC SENSOR
- PORTABLE TRAVEL TIME READER
- SEQUENTIAL ARROW SIGN
- PORTABLE CHANGEABLE MESSAGE SIGN
- PAN-TILT-ZOOM CAMERA

QUEUE LOCATION (miles)	TRAFFIC SENSORS						PCMS 7		PCMS 6		PCMS 5		PCMS 4		PCMS 3		PCMS 2		PCMS 1						
	F	E	D	C	B	A	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					
None	FF	FF	FF	FF	FF	FF	■	■	(Blank)	(Blank)	■	■	(Blank)	(Blank)	■	■	(Blank)	(Blank)	■	■	LEFT LANE CLOSED	1 MILE AHEAD	■	■	(Blank)
0.01 TO 0.9	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	■	■	(Blank)		
0.91 TO 1.9	FF	FF	FF	FF	SL	SL	■	■	(Blank)	(Blank)	■	■	(Blank)	(Blank)	SINGLE LANE CLOSURE	4 MILES AHEAD	TRAFFIC BACKUPS PRESENT	## MINUTE DELAY	SLOW OR STOPPED TRAFFIC	NEXT 2 MILES	ZIPPER MERGE AHEAD	USE RIGHT LANE TOO	ZIPPER MERGE HERE	TAKE TURNS	
1.91 TO 2.9	FF	FF	FF	SL	SL	SL	■	■	(Blank)	SINGLE LANE CLOSURE	5 MILES AHEAD	TRAFFIC BACKUPS PRESENT	## MINUTE DELAY	SLOW OR STOPPED TRAFFIC	NEXT 3 MILES	USE BOTH LANES	2 MILES TO MERGE POINT	USE BOTH LANES	ZIPPER MERGE AHEAD	USE RIGHT LANE TOO	ZIPPER MERGE HERE	TAKE TURNS			
2.91 TO 3.9	FF	FF	SL	SL	SL	SL	■	■	SINGLE LANE CLOSURE	6 MILES AHEAD	TRAFFIC BACKUPS PRESENT	## MINUTE DELAY	SLOW OR STOPPED TRAFFIC	NEXT 4 MILES	USE BOTH LANES	3 MILES TO MERGE POINT	USE BOTH LANES	2 MILES TO MERGE POINT	ZIPPER MERGE AHEAD	USE RIGHT LANE TOO	ZIPPER MERGE HERE	TAKE TURNS			
3.91 TO 4.9	FF	SL	SL	SL	SL	SL	■	■	1 LANE CLOSURE	## MINUTE DELAY	SLOW OR STOPPED TRAFFIC	NEXT 5 MILES	4 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 RIGHT LANE TOO	ZIPPER MERGE HERE	TAKE TURNS			
4.91+	SL	SL	SL	SL	SL	SL	■	■	SLOW OR STOPPED TRAFFIC	NEXT 6 MILES	5 MILES TO MERGE POINT	USE BOTH LANES	4 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 RIGHT LANE TOO	ZIPPER MERGE HERE	TAKE TURNS			

**6-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\161Fwy6MileSWZS1Lt.dgn										Plot 1
TIME	8:14:09 AM										PLAN REF NO
DATE	1/10/2022										TC161
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											
REGION NO.	10										
STATE	WASH										
JOB NUMBER											
CONTRACT NO.											
LOCATION NO.											
DATE											
P.E. STAMP BOX											
DATE											
P.E. STAMP BOX											





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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

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

QUEUE LOCATION (miles)	TRAFFIC SENSORS						PCMS 7		PCMS 6		PCMS 5		PCMS 4		PCMS 3		PCMS 2		PCMS 1									
	F	E	D	C	B	A	1	2	1	2	1	2	1	2	1	2	1	2	1	2								
None	FF	FF	FF	FF	FF	FF	■	■	(Blank)	(Blank)	■	■	(Blank)	(Blank)	■	■	(Blank)	(Blank)	■	■	LEFT LANE CLOSED	1 MILE AHEAD	■	■	(Blank)			
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0.91 TO 1.9	FF	FF	FF	FF	SL	SL	■	■	(Blank)	(Blank)	■	■	(Blank)	(Blank)	SINGLE LANE CLOSURE	4 MILES AHEAD	TRAFFIC BACKUPS PRESENT	## MINUTE DELAY	SLOW OR STOPPED TRAFFIC	NEXT 2 MILES	ZIPPER MERGE AHEAD	USE RIGHT LANE TOO	ZIPPER MERGE HERE	TAKE TURNS				
1.91 TO 2.9	FF	FF	FF	SL	SL	SL	■	■	(Blank)	(Blank)	■	■	(Blank)	(Blank)	SINGLE LANE CLOSURE	5 MILES AHEAD	TRAFFIC BACKUPS PRESENT	## MINUTE DELAY	SLOW OR STOPPED TRAFFIC	NEXT 3 MILES	ZIPPER MERGE AHEAD	USE RIGHT LANE TOO	ZIPPER MERGE HERE	TAKE TURNS				
2.91 TO 3.9	FF	FF	SL	SL	SL	SL	■	■	(Blank)	(Blank)	■	■	(Blank)	(Blank)	SINGLE LANE CLOSURE	6 MILES AHEAD	TRAFFIC BACKUPS PRESENT	## MINUTE DELAY	SLOW OR STOPPED TRAFFIC	NEXT 4 MILES	ZIPPER MERGE AHEAD	USE RIGHT LANE TOO	ZIPPER MERGE HERE	TAKE TURNS				
3.91 TO 4.9	FF	SL	SL	SL	SL	SL	■	■	(Blank)	(Blank)	■	■	(Blank)	(Blank)	1 LANE CLOSURE 6 MILES	## MINUTE DELAY	SLOW OR STOPPED TRAFFIC	NEXT 5 MILES	ZIPPER MERGE AHEAD	USE RIGHT LANE TOO	ZIPPER MERGE HERE	TAKE TURNS						
4.91+	SL	SL	SL	SL	SL	SL	■	■	(Blank)	(Blank)	■	■	(Blank)	(Blank)	SLOW OR STOPPED TRAFFIC	NEXT 6 MILES	5 MILES TO MERGE POINT	USE BOTH LANES	4 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 RIGHT LANE TOO	ZIPPER MERGE HERE	TAKE TURNS

**6-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\161Fwy6MileSWZS1Lt.dgn										Plot 1
TIME	8:14:10 AM										PLAN REF NO
DATE	1/10/2022										TC161
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.											Washington State Department of Transportation
REGIONAL ADM.											
REVISION											FED.AID PROJ.NO.
DATE											
BY											JOB NUMBER
											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 6 MILES, USE THE 9-MILE SMART WORK ZONE SYSTEM (TC171). 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.

**6-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\161Fwy6MileSWZS1Lt.dgn				REGION NO. STATE		FED.AID PROJ.NO.		Plot 2	
TIME	8:14:11 AM			10	WASH			PLAN REF NO	
DATE	1/10/2022							TC161	
PLOTTED BY	LintzF			JOB NUMBER				SHEET	
DESIGNED BY	HAAPALA & LINTZ			CONTRACT NO.		LOCATION NO.		OF	
ENTERED BY	F. LINTZ							DESIGNER NOTES	
CHECKED BY	S. HAAPALA							SHEETS	
PROJ. ENGR.									
REGIONAL ADM.		REVISION	DATE	BY		P.E. STAMP BOX	DATE	P.E. STAMP BOX	DATE

