FREEWAY (2 LANES): SINGLE RIGHT LANE CLOSURE, 9' MAX LEFT SHOULDER SHIFT

NOTES:

1. This plan is used in conjunction with 2-lane freeway single right lane closure, 9' max left shoulder shift traffic control plan (with PCMSs in advance of lane closure taper removed).

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 to avoid conflicts with sequential arrow signs or other traffic control devices, narrow shoulders, and ramps.

5. Locate PCMSs per standard specification 1-10.3(3)c. PCMS may be placed on opposite shoulder but avoid ramp gors when located behind barrier/guardrail or within closure, transverse traffic drums optional.

6. If system fails, see 'queue warning system failure protocol' provision.

7. If traffic queues reach 5 miles, place additional PCMS at 5.5 miles. Relocate to remain 0.5+ miles 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.

ADJUST QWS COMPONENTS TO AVOID CONFLICTS WITH SEQUENTIAL ARROW SIGNS OR OTHER TRAFFIC CONTROL DEVICES, NARROW SHOULDERS, AND RAMPS.

7. IF TRAFFIC QUEUES REACH 5 MILES, PLACE ADDITIONAL PCMS AT 5.5 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.

OPTIONAL. REMOVE PCMS WHEN DISSIPATING QUEUES ARE LESS THAN 5 MILES.

TRANSVERSE TRAFFIC SAFETY DRUMS RELOCATE TO REMAIN 0.5+/- MILE IN ADVANCE OF QUEUE. TRUCK-MOUNTED PCMS BARRIER/GUARDRAIL OR WITHIN CLOSURE, TRANSVERSE TRAFFIC DRUMS OPTIONAL.

NOT TO SCALE

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<table>
<thead>
<tr>
<th>QUEUE LOCATION (miles)</th>
<th>TRAFFIC SENSORS</th>
<th>PCMS 5</th>
<th>PCMS 4</th>
<th>PCMS 3</th>
<th>PCMS 2</th>
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**FREEWAY (2 LANES): SINGLE RIGHT LANE CLOSURE, 9' MAX LEFT SHOULDER SHIFT**
NOTE:

1. IF FEASIBLE, AVOID PLACING LANE CLOSURE OR LANE SHIFT TAPERS WITHIN OR IMMEDIATELY FOLLOWING HORIZONTAL CURVES.
2. DISTANCE INCREASES AS WORK AREA MOVES DOWNSTREAM.
3. RELOCATE RSDS AS WORK AREA MOVES DOWNSTREAM. ENGINEER MAY ORDER ADDITIONAL RSDS (WITH W23-6) AND W23-5 PRIOR TO EACH WORK CREW WITHIN WORK AREA.
4. USE WSDOT COMMERCIAL VEHICLE SERVICES AT LEAST 7 DAYS IN ADVANCE OF ROADWAY WIDTH RESTRICTIONS.
5. WHEN SHOULDER NARROWS, USE LANE SHIFTS (0.1 MIN SHIFT TAPER @ 18 MIN WIDTH) WITH W1-4 SIGNS 500' +/- PRIOR.
6. CONTACT WSDOT COMMERCIAL VEHICLE SERVICES AT LEAST 7 DAYS IN ADVANCE OF ROADWAY WIDTH RESTRICTIONS.
7. TRAFFIC CONSTRUCTION VEHICLES FREQUENTLY EXIT AND ENTER HIGHWAY WITHIN 1500' +/- FOLLOWING THE DOWNSTREAM TAPER.
8. WHEN SHOULDER NARROWS, USE LANE SHIFTS (0.1 MIN SHIFT TAPER @ 18 MIN WIDTH) WITH W1-4 SIGNS 500' +/- PRIOR.
9. CONTACT WSDOT COMMERCIAL VEHICLE SERVICES AT LEAST 7 DAYS IN ADVANCE OF ROADWAY WIDTH RESTRICTIONS.
10. SIGNS OPTIONAL IF EXISTING SPEED LIMIT SIGNS PRESENT WITHIN 1500' +/- FOLLOWING THE DOWNSTREAM TAPER.
11. ADD "TRUCKS LEAVING HIGHWAY" AND "TRUCKS ENTERING HIGHWAY" (W1-35 48"x48" 5' HEIGHT) SIGNS 500' +/- PRIOR TO WHERE CONSTRUCTION VEHICLES FREQUENTLY EXIT AND ENTER INTO THE OPEN LANE(S). ADJUST TO AVOID W1-4R SIGNS.
12. SIGNS ARE BLACK ON GRAY UNLESS OTHERWISE INDICATED.
13. PLAN IS APPLICABLE TO LANE CLOSURES OF 3 DAYS OR LESS.
14. BICYCLES PROHIBITED THROUGH WORK ZONE CONSIDER PROVIDING DETOUR ALTERNATIVE ROUTE OR SHUTTLE IN HIGH-USE LOCATIONS PERMITTING PERMANENT BICYCLE ACCESS.

FREEWAY (2 LANES): SINGLE RIGHT LANE CLOSURE, 9' MAX LEFT SHOULDER SHIFT (55 MPH WORK ZONE SPEED LIMIT, 40 MPH ADVISORY SPEED)

NOT TO SCALE

NOTE: 3-MILE QUEUE WARNING SYSTEM MESSAGES

TRAFFIC SENSORS

PCMS 2

PCMS 1

SLOW OR STOPPED TRAFFIC

3 MILES AHEAD

ROADWAY NARROWS

12' WIDE

SHOULDER DRIVING LANE

SHOULDER CLOSURE

3 MILES AHEAD

RIGHT LANE CLOSURE

NOT TO SCALE

LEGEND:

8. COVER ALL CONFLICTING SIGNAGE PER STANDARD SPEC 8-21.3(3).
9. REMOTE CONTROL SYSTEM SPECIAL PROVISIONS OR RFP FOR DETAILS.

REGIONAL ADM. REVISION DATE 07
NOTES:

1. IF FEASIBLE, AVOID PLACING LANE CLOSURE OR LANE SHIFT TAPERS WITHIN OR IMMEDIATELY FOLLOWING HORIZONTAL CURVES.

2. DISTANCE INCREASES AS WORK AREA MOVES DOWNSTREAM.

3. RELOCATE RSDS AS WORK AREA MOVES DOWNSTREAM.

4. IF USED, PLACE DEVICES TRANSVERSELY ACROSS CLOSED LANES.

5. WHEN SHOULDER NARROWS, USE LANE SHIFTS (40:1 MIN SHIFT TAPER @ 10 MIN WIDTH) WITH W1-4 SIGNS 500' +/- PRIOR.

6. CONTACT WSDOT COMMERCIAL VEHICLE SERVICES AT LEAST 7 DAYS IN ADVANCE OF ROADWAY WIDTH RESTRICTIONS.

7. 28" TRAFFIC CONES MAY REMAIN IN PLACE THROUGHOUT THE PROJECT (THEY DO NOT HAVE TO BE REMOVED DAILY/NIGHTLY).

8. COVER ALL CONFLICTING SIGNAGE PER STANDARD SPEC 8-21.3(3).

9. DOWNSTREAM TAPER OPTIONAL ACROSS RIGHT LANE, BUT FIRST 80' REQUIRED. DOWNSTREAM TAPER DEVICE SPACING IS 20'.

10. SIGNS OPTIONAL IF EXISTING SPEED LIMIT SIGNS PRESENT WITHIN 1500' FOLLOWING THE DOWNSTREAM TAPER.

11. TRUCKS LEAVING HIGHWAY AND TRUCKS ENTERING HIGHWAY (W21-3L, 48"(H)) SIGNS 500' +/- PRIOR TO WHERE CONSTRUCTION VEHICLES FREQUENTLY EXIT AND ENTER INTO THE OPEN LANE(S). ADJUST TO AVOID W1-4R SIGN.

12. SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE INDICATED.

13. PLAN IS APPLICABLE TO LANE CLOSURES OF 3 DAYS OR LESS.

14. BICYCLES PROHIBITED THROUGH WORK ZONE CONSIDER PROVIDING DETOUR ALTERNATIVE ROUTE OR SHUTTLE IN HIGH-USE LOCATIONS PERMITTING PERMANENT BICYCLE ACCESS.

FREEWAY (2 LANES): SINGLE RIGHT LANE CLOSURE, 9' MAX LEFT SHOULDER SHIFT
(55 MPH WORK ZONE SPEED LIMIT, 40 MPH ADVISORY SPEED)
NOTES:
1. FOR LEGEND, TABLES, AND ADDITIONAL NOTES SEE TC238, SHEET 0B, 1A, OR 1B.
2. FOR RIGHT LANE DETAILS FOR A SINGLE RIGHT LANE CLOSURE, WITHOUT SHOULDER
   SHIFT SEE TC107, SHEET 2A. ADD R2-1 (55) SIGN AFTER ON-RAMP MERGES NEAR COVERED
   EXISTING SPEED LIMIT SIGN.
3. SEE DETOUR PLAN FOR ADDITIONAL RAMP CLOSURE DETOUR SIGNAGE.

FREEWAY (2 LANES): SINGLE RIGHT LANE CLOSURE, 9' MAX LEFT SHOULDER SHIFT (55 MPH WORK ZONE SPEED LIMIT, 40 MPH ADVISORY SPEED)

SEE DETOUR PLAN FOR ADDITIONAL RAMP CLOSURE DETOUR SIGNAGE.
NOTES:
1. FOR LEGEND, TABLES AND ADDITIONAL NOTES SEE TC238 SHEET 0A, 1A, OR 1B.
2. FOR RIGHT RAMP DETAILS FOR A SINGLE RIGHT LANE CLOSURE WITHOUT SHOULDER SHIFT SEE TC107 SHEET 1B. ADD R2-1 (55) SIGN AFTER ON-RAMP MERGES NEAR COVERED EXISTING SPEED LIMIT SIGN.
3. SEE DETOUR PLAN FOR ADDITIONAL RAMP CLOSURE DETOUR SIGNAGE.

FREEWAY (2 LANES): SINGLE RIGHT LANE CLOSURE, 9' MAX LEFT SHOULDER SHIFT (55 MPH WORK ZONE SPEED LIMIT, 40 MPH ADVISORY SPEED)

OPEN RIGHT EXIT-RAMP DETAIL

CLOSED RIGHT EXIT-RAMP DETAIL

TYPICAL TRAFFIC CONTROL PLANS

HAAPALA & LINTZ
F. LINTZ
S. HAAPALA
NOTES:
1. FOR LEGEND, TABLES AND ADDITIONAL NOTES SEE TC238, SHEET 0B, 1A, OR 1B.
2. FOR RIGHT RAMP DETAILS FOR A SINGLE RIGHT LANE CLOSURE WITHOUT SHOULDER SHIFT SEE TC107, SHEET 3. ADD R2-1 (55) SIGN AFTER ON-RAMP MERGES NEAR COVERED EXISTING SPEED LIMIT SIGN.
3. SEE DETOUR PLAN FOR ADDITIONAL RAMP CLOSURE DETOUR SIGNAGE.

OPEN LEFT EXIT-RAMP DETAIL

CLOSED LEFT EXIT-RAMP DETAIL
LEFT EXIT-RAMPS ARE TO REMAIN OPEN

FREEWAY (2 LANES): SINGLE RIGHT LANE CLOSURE, 9' MAX LEFT SHOULDER SHIFT (55 MPH WORK ZONE SPEED LIMIT, 40 MPH ADVISORY SPEED) NOT TO SCALE
NOTES:
1. THIS PLAN IS USED IN CONJUNCTION WITH 2-LANE FREEWAY SINGLE RIGHT LANE CLOSURE: 9' MAX LEFT SHOULDER SHIFT TRAFFIC CONTROL PLAN (WITH PCMS IN ADVANCE OF LANE CLOSURE TAPER REMOVED).
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 TO AVOID CONFLICTS WITH SEQUENTIAL ARROW SIGNS OR OTHER TRAFFIC CONTROL DEVICES: NARROW SHOULDERS, AND RAMPS.
5. LOCATE PCMSs PER STANDARD SPECIFICATION 1-10.3(3)C. PCMS MAY BE PLACED ON OPPOSITE SHOULDER BUT AVOID RAMPS WHEN LOCATED BEHIND BARRIER/GUARDRAIL OR WITHIN CLOSURE, TRANSVERSE TRAFFIC DRUMS OPTIONAL.
6. IF SYSTEM FAILS, SEE 'QUEUE WARNING SYSTEM FAILURE PROTOCOL' PROVISION.
7. IF TRAFFIC QUEUES REACH 5 MILES, PLACE ADDITIONAL PCMS AT 6.5 MILES.

ADDITIONAL PCMS MESSAGE: TRAFFIC BACKUPS PRESENT / WATCH FOR SLOW TRAFFIC

OPTIONAL. REMOVE PCMS WHEN DISSIPATING QUEUES ARE LESS THAN 5 MILES.

DATE:
TIME:
FILE NAME:
ADDED PCMS MESSAGE: TRAFFIC BACKUPS PRESENT / WATCH FOR SLOW TRAFFIC

NOT TO SCALE

FREEWAY (2 LANES): SINGLE RIGHT LANE CLOSURE, 9' MAX LEFT SHOULDER SHIFT
6-MILE QUEUE WARNING SYSTEM

NOTES:
NOTES:

1. IF FEASIBLE, AVOID PLACING LANE CLOSURE OR LANE SHIFT TAPERS WITHIN OR IMMEDIATELY FOLLOWING HORIZONTAL CURVES.
2. DISTANCE INCREASES AS WORK AREA MOVES DOWNSTREAM.
3. RELOCATE RSDS AS WORK AREA MOVES DOWNSTREAM. ENGINEER MAY ORDER ADDITIONAL RSDS (WITH W23.6) AND W23.5 PRIOR TO EACH WORK CREW WITHIN WORK AREA.
4. IF USED, PLACE DEVICES TRANSVERSELY ACROSS CLOSED LANES.
5. WHEN SHOULDER NARROWS, USE LANE SHIFTS (40' MIN SHIFT TAPER @ 15 MIN WIDTH) WITH W1-4 SIGNS 500' +/- PRIOR.
6. CONTACT WSDOT COMMERCIAL VEHICLE SERVICES AT LEAST 5 DAYS IN ADVANCE OF ROADWAY WIDTH RESTRICTIONS.
7. 28" TRAFFIC CONES MAY REMAIN IN PLACE THROUGHOUT THE PROJECT (THEY DO NOT HAVE TO BE REMOVED DAILY/NIGHTLY). WHERE CONSTRUCTION VEHICLES FREQUENTLY EXIT AND ENTER INTO THE OPEN LANE(S), ADJUST TO AVOID W1-4R SIGN.
8. SIGNS OPTIONAL IF EXISTING SPEED LIMIT SIGNS PRESENT WITHIN 1500' +/- FOLLOWING THE DOWNSTREAM TAPER.
9. DOWNSTREAM TAPER OPTIONAL ACROSS RIGHT LANE, BUT FIRST 100' TANGENT TAPER (SEE NOTE 1) PRIOR TO EXIT. TAPER DEVICE SPACING IS 2'.
10. SIGNS OPTIONAL IF EXISTING SPEED LIMIT SIGNS PRESENT WITHIN 1500' +/- FOLLOWING THE DOWNSTREAM TAPER.
11. ADD "TRUCKS LEAVING HIGHWAY" AND "TRUCKS ENTERING HIGHWAY" (W21-30, 48"x48", 5' HEIGHT) SIGNS 500' +/- PRIOR TO WHERE CONSTRUCTION VEHICLES FREQUENTLY EXIT AND ENTER INTO THE OPEN LANE(S), ADJUST TO AVOID W1-4R SIGN.
12. SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE Indicated.
13. PLAN IS APPLICABLE TO LANE CLOSURES OF 3 DAYS OR LESS.
14. BICYCLES PROHIBITED THROUGH WORK ZONE CONSIDER PROVIDING DETOUR ALTERNATIVE ROUTE OR SHUTTLE IN HIGH-USE LOCATIONS PERMITTING PERMANENT BICYCLE ACCESS.
15. PLAN IS APPLICABLE TO LANE CLOSURES OF 3 DAYS OR LESS.
16. BICYCLES PROHIBITED THROUGH WORK ZONE CONSIDER PROVIDING DETOUR ALTERNATIVE ROUTE OR SHUTTLE IN HIGH USE LOCATIONS PERMITTING PERMANENT BICYCLE ACCESS.

TYPICAL TRAFFIC CONTROL PLANS
3-MILE QUEUE WARNING SYSTEM MESSAGES

TRAFFIC SENSORS
PCMS 1
PCMS 2
PCMS 3

TRIGGER SPEED 2.0 SEC 2.0 SEC 2.0 SEC 2.0 SEC
35+ MPH 35+ MPH 35+ MPH < 35 MPH 35+ MPH
RIGHT LANE CLOSURE 3 MILES AHEAD ROADWAY NARROWS 12' WIDE SUCCESSFUL 1.5 MI LANE SHIFTS
3 MILES AHEAD ROADWAY NARROWS 12' WIDE SLOW OR STOPPED TRAFFIC TAKE FULL SPEED 1.5 MI LANE SHIFTS
SHOULDER DRIVING AHEAD SLOW OR STOPPED TRAFFIC TAKE FULL SPEED 1.5 MI LANE SHIFTS
MAY REMAIN IN PLACE (SEE NOTE 7)

35+ MPH
35+ MPH < 35 MPH
35+ MPH < 35 MPH

PORTABLE CHANGEABLE MESSAGE SIGN

DEEREK
IDEFIO
W23-6

DOE O
NLC 2.0 SEC

VARIABLE

P.E. STAMP BOX

USEリフォーム

SOPZ APIE2 2D

REGIONAL ADM.
PROJ. ENGR.
CHECKED BY
DESIGNED BY
PLOTTED BY
DATE
TIME

TRAFFIC SENSORS
PCMS 1
PCMS 2
PCMS 3

STATIONARY TRANSPORTABLE ATTENUATOR
ROLL AHEAD DISTANCE = R

PACKET WEIGHT 9,900 TO 22,000 lbs. 12'

MAXIMUM CHANNELIZATION DEVICE SPACINGS

TAPER TANGENT
40' 80'

FREEWAY (2 LANES): SINGLE RIGHT LANE CLOSURE, 9' MAX LEFT SHOULDER SHIFT (55 MPH WORK ZONE SPEED LIMIT, 40 MPH ADVISORY SPEED) NOT TO SCALE

NOTE:
5. WHEN SHOULDER NARROWS, USE LANE SHIFTS (40.1 MIN SHIFT TAPER @ 16 MIN WIDTH) WITH W1-4 SIGNS 500' +/- PRIOR.
6. CONTACT WSDOT COMMERCIAL VEHICLE SERVICES AT LEAST 7 DAYS IN ADVANCE OF ROADWAY WIDTH RESTRICTIONS.
7. 28" TRAFFIC CONES MAY REMAIN IN PLACE THROUGHOUT THE PROJECT (THEY DO NOT HAVE TO BE REMOVED DAILY/NIGHTLY).
8. COVER ALL CONFLICTING SIGNAGE PER STANDARD SPEC 8-21.3.
9. DOWNSTREAM TAPER OPTIONAL ACROSS RIGHT LANE, BUT FIRST TAPER @ 16' MIN WIDTH) WITH W1-4 SIGNS 500' +/- PRIOR.
10. SIGNS OPTIONAL IF EXISTING SPEED LIMIT SIGNS PRESENT WITHIN 1500' +/- FOLLOWING THE DOWNSTREAM TAPER.
11. USE "TRUCKS LEAVING HIGHWAY" AND "TRUCKS ENTERING HIGHWAY" (W21-30, 48"x48", 5' HEIGHT) SIGNS 500' +/- PRIOR TO WITHIN 1500' +/- FOLLOWING THE DOWNSTREAM TAPER.
12. SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE INDICATED.
13. PLAN IS APPLICABLE TO LANE CLOSURES OF 3 DAYS OR LESS.
14. BICYCLES PROHIBITED THROUGH WORK ZONE: CONSIDER PROVIDING CYCLIST ALTERNATIVE ROUTE OR SHUTTLE IN HIGH-USE LOCATIONS PERMITTING PERMANENT BICYCLE ACCESS.

NOTES:
1. IF FEASIBLE, AVOID PLACING LANE CLOSURE OR LANE SHIFT TAPERS WITHIN OR IMMEDIATELY FOLLOWING HORIZONTAL CURVES.
2. DISTANCE INCREASES AS WORK AREA MOVES DOWNSTREAM.
3. IF FEASIBLE, AVOID PLACING LANE CLOSURE OR LANE SHIFT TAPERS WITHIN OR IMMEDIATELY FOLLOWING HORIZONTAL CURVES.
4. USE TEMPORARY SIGN LOCATION (5 MIN. HEIGHT) BETWEEN MOVING LANES.
5. TEMPORARY SIGN LOCATION (5 MIN. HEIGHT) BETWEEN MOVING LANES.
6. TEMPORARY SIGN LOCATION (5 MIN. HEIGHT) BETWEEN MOVING LANES.
7. TEMPORARY SIGN LOCATION (5 MIN. HEIGHT) BETWEEN MOVING LANES.
NOTES:

1. IF FEASIBLE, AVOID PLACING LANE CLOSURE OR LANE SHIFT TAPERS WITHIN OR IMMEDIATELY FOLLOWING HORIZONTAL CURVATURE.

2. DISTANCE INCREASES AS WORK AREA MOVES DOWNSTREAM.

3. IF USED, PLACE DEVICES TRANSVERSELY ACROSS CLOSED LANES.

4. USE LED DISPLAYS WHEN APPLICABLE.

5. WHEN SHOULDER NARROWS, USE LANE SHIFTS (40:1 MIN SHIFT TAPER @ 16' MIN WIDTH) WITH W1-4 SIGNS 500' +/- PRIOR.

6. CONTACT WSDOT COMMERCIAL VEHICLE SERVICES AT LEAST 5. WHEN SHOULDER NARROWS, USE LANE SHIFTS (40:1 MIN SHIFT TAPER @ 16' MIN WIDTH) WITH W1-4 SIGNS 500' +/- PRIOR.

7. 28" TRAFFIC CONES MAY REMAIN IN PLACE THROUGHOUT THE 7 DAYS IN ADVANCE OF ROADWAY WIDTH RESTRICTIONS.

8. SIGNS OPTIONAL IF EXISTING SPEED LIMIT SIGNS PRESENT.

9. DOWNSTREAM TAPER OPTIONAL ACROSS RIGHT LANE BUT FIRST 80' REQUIRED. DOWNSTREAM TAPER DEVICE SPACING IS 2'.

10. SIGNS OPTIONAL IF EXISTING SPEED LIMIT SIGNS PRESENT WITHIN 1500' FOLLOWING THE DOWNSTREAM TAPER.

11. 320' TAPER @ 16' MIN WIDTH (WITH W1-3 SIGNS 500' +/- PRIOR)

12. SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE INDICATED.

13. PLAN IS APPLICABLE TO LANE CLOSURES OF 3 DAYS OR LESS.

14. BICYCLES PROHIBITED THROUGH WORK ZONE (Amber/Black); CONSIDER PROVIDING BICYCLE ALTERNATIVE ROUTE OR SHUTTLE IN HIGH-USE LOCATIONS PERMITTING PERMANENT BICYCLE ACCESS.

FREEWAY (2 LANES): SINGLE RIGHT LANE CLOSURE, 9' MAX LEFT SHOULDER SHIFT

(55 MPH WORK ZONE SPEED LIMIT, 40 MPH ADVISORY SPEED)

NOT TO SCALE
NOTES:
1. FOR LEGEND, TABLES, AND ADDITIONAL NOTES SEE TC238, SHEET 0B, 1A, OR 1B.
2. FOR RIGHT RAMP DETAILS FOR A SINGLE RIGHT LANE CLOSURE WITHOUT SHOULDER SHIFT SEE TC107, SHEET 2A. ADD R2-1 (55) SIGN AFTER ON-RAMP MERGES NEAR COVERED EXISTING SPEED LIMIT SIGN.
3. SEE DETOUR PLAN FOR ADDITIONAL RAMP CLOSURE DETOUR SIGNAGE.

CLOSED RIGHT EXIT-RAMP DETAIL

OPEN RIGHT EXIT-RAMP DETAIL

FREEWAY (2 LANES): SINGLE RIGHT LANE CLOSURE, 9' MAX LEFT SHOULDER SHIFT (55 MPH WORK ZONE SPEED LIMIT, 40 MPH ADVISORY SPEED)

NOT TO SCALE
NOTES:

1. FOR LEGEND, TABLES AND ADDITIONAL NOTES SEE TC238, SHEET 0B, 1A, OR 1B.

2. FOR RIGHT RAMP DETAILS FOR A SINGLE RIGHT LANE CLOSURE WITHOUT SHOULDER SHIFT SEE TC107, SHEET 3. ADD R2-1 (55) SIGN AFTER ON-RAMP MERGES NEAR COVERED EXISTING SPEED LIMIT SIGN.

3. SEE DETOUR PLAN FOR ADDITIONAL RAMP CLOSURE DETOUR SIGNAGE.

OPEN LEFT EXIT-RAMP DETAIL

CLOSED LEFT EXIT-RAMP DETAIL

LEFT EXIT-RAMPS ARE TO REMAIN OPEN

FREEWAY (2 LANES): SINGLE RIGHT LANE CLOSURE, 9' MAX LEFT SHOULDER SHIFT (55 MPH WORK ZONE SPEED LIMIT, 40 MPH ADVISORY SPEED)

NOT TO SCALE

Washington State
Department of Transportation
TYPICAL TRAFFIC CONTROL PLANS
E. See MUTCD Table 6F-1 for additional temporary sign size information. Work zone signs are usually smaller than those used permanently.

A. Contact Region Traffic Operations to determine if a queuing mitigation system is needed, and which one is appropriate.

For this to function properly (otherwise it will print out as a solid black glob); DESIGNERS MUST FIRST UPDATE THEIR COLOR TABLE AND THEN PRINTING IN FULL COLOR OR GRAYSCALE (BLACK/WHITE):

WSDOT Staff

For technical support and guidance see https://wsdot.wa.gov/engineering-standards/design-topics/software-resource-updates

External Folks

For technical support and guidance see https://wsdot.wa.gov/engineering-standards/design-topics/engineering-applications/software-resource-updates

PRINTING IN FULL COLOR OR GRAYSCALE (BLACK/WHITE):

Even though the work zone signs are full color, CAE has programmed Color 226-228 (used for the work zone cells and the left edge line) to print in grayscale automatically when designers print in black/white.

For this to function properly (otherwise it will print out as a solid black glob); DESIGNERS MUST FIRST UPDATE THEIR COLOR TABLE AND THEN PRINTING IN FULL COLOR OR GRAYSCALE (BLACK/WHITE):

Minimal Traffic Queuing Expected

(1) Manually install updated WSDOT cell libraries into Microstation. For download and installation instructions see https://wsdot.wa.gov/engineering-standards/design-topics/engineering-applications/software-resource-updates

(2) Manually update or replace Microstation cells at least annually. For technical support and guidance see https://wsdot.wa.gov/engineering-standards/design-topics/engineering-applications/software-resource-updates

Minimal Traffic Queuing Expected

(1) Manually install updated WSDOT cell libraries into Microstation. For download and installation instructions see https://wsdot.wa.gov/engineering-standards/design-topics/engineering-applications/software-resource-updates

(2) Manually update or replace Microstation cells at least annually. For technical support and guidance see https://wsdot.wa.gov/engineering-standards/design-topics/engineering-applications/software-resource-updates

PLOT USAGE EXPLANATION:

Which plots to use will be determined from work zone traffic analysis performed by the Region Traffic Operations (see WSDOT Traffic Manual Sections 5-9 thru 6-5, https://wsdot.wa.gov/publications/manuals/Refrhet/WM5-12/Chapter5.pdf)

Minimal Traffic Queuing Expected

Use Plot 5 and/or Plot 6 (depending on rather Region uses Parallel and/or Tapered on-ramps)

Use Plot 7 (if ramps on left side are present only)

Intermittent Queuing Expected up to 3 Miles:

Use Plot 3 (3-Mile QWS)

Use Plot 5 and/or Plot 6 (depending on rather Region uses Parallel and/or Tapered on-ramps)

Use Plot 7 (if ramps on left side are present only)

Recurring/Interruption Queuing Expected up to 6 Miles (Closures in Place Less Than 7 Days Typically):

Use Plot 5 and/or Plot 6 (depending on rather Region uses Parallel and/or Tapered on-ramps)

Use Plot 7 (if ramps on left side are present only)

Recurring/Interruption Queuing Expected up to 9 Miles (Closures in Place up to 10 Days Typically):

Use Plot 5 and/or Plot 6 (depending on rather Region uses Parallel and/or Tapered on-ramps)

Use Plot 7 (if ramps on left side are present only)

RECURSIOUS NOTE:

Contact Region Traffic Operations to determine if a queuing mitigation system is needed, and which one is appropriate.

B. Contact Region Traffic Operations to determine rather Parallel (Sheet 2A) and/or Tapered (Sheet 2B) temporary on ramps is used.

C. Sheet 3 needed only when ramps are present on the left side of freeway.

D. These typical traffic control plans may be modified for site specific situations and/or WSDOT Region Traffic Operations standard practices.

E. See MUTCD Table 6F-1 for additional temporary sign size information. Work zone signs are usually smaller than those used permanently.

F. WAC 468-95-303 modifies MUTCD Table 6-1 "Recommended Advance Warning Sign Minimum Spacing". Sign spacing may be adjusted for field conditions based on engineering judgement. Desirable spacing on freeway mainline is 1500 +/- for a 3 sign series and 1000 +/- for a 5 sign series used with reduced work zone speed limits. In freeway mainline sign spacing may be reduced even to 500 +/- based on engineering judgement. See next note regarding sign spacing along freeway ramps.

G. Per WAC 468-95-330, all sign spacing may be adjusted to accommodate interchange ramps. Among interchange ramps, sign spacing is typically 2000 +/- for 5 sign series, but can be further modified as needed to fit site conditions.

H. When positioned behind channelization devices, temporary signs should be mounted at 90' minimum. Per MUTCD H4-42 Note 4 (Temporary), a "temporary" EXIT sign shall be mounted 7' minimum when located in the temporary zone.

J. The typical TCP is calculated based on the posted speed limit (work zone speed limits in effect) when in use. For speeds limits in Table 6C-2, use the lower speed limit when determining the work zone speed limit. The posted speed limit is the speed limit in effect immediately prior to lowering the work zone speed limit.

K. Longitudinal buffer spaces are optional. Using longitudinal buffer spaces listed in MUTCD Table 6C-2 is recommended as best practice when feasible, but may be adjusted based on engineering judgement.

L. Per MUTCD Section 6C.06, separate sequential arrow boards shall be used for each freeway lane closure. Sequential arrow boards shall NOT be used for lane shifts, ramp shifts, or at on-ramp merges.

M. Per MUTCD Figure 6C-2, the downstream taper is optional across the reopened right lane (install the taper to shift traffic back into the left lane through the work zone). Tapered on-ramp uses a single 50:1 taper (for that may be extended when space allows, and L ramp merge taper based on MUTCD Guidance Figure 6H-44. However, a L/2 ramp merge taper is also acceptable. Consult Region Traffic Operations for their standard practice.

N. Per MUTCD Figure 6C-2, the downstream taper is optional across the reopened right lane (install the taper to shift traffic back into the left lane through the work zone). Tapered on-ramp uses a single 50:1 taper (for that may be extended when space allows, and L ramp merge taper based on MUTCD Guidance Figure 6H-44. However, a L/2 ramp merge taper is also acceptable. Consult Region Traffic Operations for their standard practice.

O. Per MUTCD Section 6C.06, separate sequential arrow boards shall be used for each freeway lane closure. Sequential arrow boards shall NOT be used for lane shifts, ramp shifts, or at on-ramp merges.

P. The lateral buffer (transverse distance between open travel lanes and work area) is recommended as 2 feet on stationary freeway lane closures, but may be adjusted based on engineering judgement. Actual work area limits may be modified.

Q. Per MUTCD best practice is to place a temporary attenuator (TA) in the closed lane adjacent to traffic in advance of the work area (in advance of the closed lane) to provide the 6-Mile Queue Warning System. This TA may be added to all closed lane areas to guide work crew in and around the work area within a work area. Additional TA(s) should be added prior to work areas following open temporary ext-rials or throughs the use of temporary attenuators. Consult Region Traffic Operations for their standard practice.

R. Place channelization devices transversely (at 45º and 5 foot spacing) is an effective strategy to move errant drives back out of closed lanes.

S. Per MUTCD Figure 6C-2, the downstream taper is optional across the reopened right lane (install the taper to shift traffic back into the left lane through the work zone). Tapered on-ramp uses a single 50:1 taper (for that may be extended when space allows, and L ramp merge taper based on MUTCD Guidance Figure 6H-44. However, a L/2 ramp merge taper is also acceptable. Consult Region Traffic Operations for their standard practice.

T. A 20:1 tapered exit-ramp is typical, but 15:1 is acceptable. The exit-ramp travel way width may range from 12 to 16 feet.

U. The on-ramp shift may occur over the paved on-ramp gore at 1/2", but verify the gore's cross-slope is transversely, pavement thickness adequate, catch basin & ITS boxes are traffic bearing types. This Typical TCP begins the ramp shift at the end of the marked gore for simplicity.

V. Two types of temporary on-ramp configurations, parallel and tapered. Parallel on-ramps uses a L2 per lane amp shift, L12 MN acceleration pocket that may be extended when space allows, and L12 merge taper based on MUTCD Guidance Figure 6H-44.5. A L2/2 merge taper is also acceptable. Consult Region Traffic Operations for their standard practice. Consult Region Traffic Operations for their standard practice.

W. To discourage zone intrusion, device spacing is reduced by one-half approaching and at closed ext-rials.

X. Ramp diverter skycrane is recommended by MUTCD 9C.09, but using alternative routes is acceptable. Contact Region Traffic Operations for their standard practice when obstruction of view of device or freeway variable regulatory work zone speed limits and advisory speeds may be required. Consult Region Traffic Operations for their standard practice when obstruction of view of device or freeway variable regulatory work zone speed limits and advisory speeds may be required. Consult Region Traffic Operations for their standard practice when obstruction of view of device or freeway variable regulatory work zone speed limits and advisory speeds may be required.

Y. This TCP is not applicable when HOV-restricted or Express Toll Lane(s) are present. Contact Region Traffic Operations for additional guidance.

Z. This TCP uses a 12' MN temporary travel way (measured between face of channelization device(s) shifted 90' onto the left shoulder in order to maximize the available work area. Contact Region Traffic Operations if the project may desire up to 16' travel way to accommodate Overlaid Right Lanes.

**FREEWAY (2 LANES): SINGLE RIGHT LANE CLOSURE, 9' MAX LEFT ZONE SPEED LIMIT, 50 MPH ADVISORY SPEED**

**USE ALTERNATIVE ROUTE** sign is in the pink box above the applicable ramp plots.

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