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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 e-mail HOCAEHelpDesk@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

PLOT USAGE EXPLANATION:

- Plot 1: Single left freeway lane closure with 50-mph work zone speed limit including a single PCMS in advance for queue mitigation.
- Plot 2: 3-Mile Queue Warning System version of single left freeway lane closure with 50-mph work zone speed limit.
- Plot 3: Right ramp details within single left freeway lane closure with 50-mph work zone speed limit.
- Plot 4: Left ramp details, including parallel on-ramp, within single left freeway lane closure with 50-mph work zone speed limit.
- Plot 5: Left ramp details, including tapered on-ramp, within single left freeway lane closure with 50-mph work zone speed limit.

OTHER QUEUE MITIGATION PLANS: Available in Typical Traffic Control Plan Library

(https://wsdot.wa.gov/engineering-standards/all-manuals-and-standards/plan-sheet-library/work-zone-typical-traffic-control-plans-tcp)

6-Mile Queue Warning System: Plan now separated; see TC151.

6-Mile Smart Work Zone System: See TC161.

9-Mile Smart Work Zone System: See TC171.

DESIGNER NOTES:

- A. Contact Region Transportation Operations to determine if a queuing mitigation system is needed; and if so, which one is appropriate.
- B. Contact Region Transportation Operations to determine if Parallel (Sheet 3A) and/or Tapered (Sheet 3B) temporary left on-ramps are used.
- C. This Typical TCP is not applicable when HOV-restricted or Express Toll Lane(s) are present. Contact Region Transportation Operations for additional guidance.
- D. Per WSDOT Executive Order E1060 (https://wwwi.wsdot.wa.gov/publications/policies/fulltext/1060.pdf); speed limit reductions and advisory speeds must be approved for work zones. Submit speed reduction reductions & advisory speed requests for work zones through WSDOT Region Transportation Operations. See Traffic Manual Section 5-18 for additional information for documentation and notification requirements.
- E. These typical traffic control plans (Typical TCPs) may be modified for project-specific, site-specific situations, and/or WSDOT Region Transportation Operations standard practices. Typical TCPs are not "Standard Plans".
- F. Portable Changeable Message Signs (PCMSs) are optional per MUTCD Section 6F.50 and Section 6H and are used to supplement signage and inform motorists of unexpected situations. Thus, if no work zone congestion or queuing is expected, all PCMSs on Sheet 1A may be deleted (just using the temporary signage in advance of lane closure); it's also acceptable to delete the two PCMS-ALT messages and use the PCMS message if desired.
- G. 48"x48" diamond-shaped work zone signs used on freeway mainlines and ramps. Per MUTCD 6H-33, gating temporary signs on both shoulders is Guidance on divided highways and Optional per MUTCD Section 6F.03 P02. Based on engineering judgement, signs on left shoulders is optional on 2-lane freeways with shoulders less than 6' because it is difficult for work crews to install/remove safely and is less critical to have signs gated than on 3-lane or more freeways. If signs are barrier-mounted separating 2-way traffic or on narrow shoulders, a special rectangular-shaped 24"x48" sign should be used. See MUTCD Table 6F-1 for additional temporary sign size information.
- H. Freeway mainline sign spacing may be reduced down to 1000' +/- based on engineering judgement and down to 500' +/- if near interchanges. Along ramps, 200' +/- sign spacing typical but may be reduced farther.
- I. When positioned behind channelization devices, temporary signs should be mounted at 5' minimum. Per MUTCD 6H-42 Note 4 (Standard), a temporary "EXIT" sign shall be mounted 7' minimum when located in the temporary gore.
- J. Work zone traffic control layout for this Typical TCP is based on 50 mph regulatory work zone speed limit.

DESIGNER NOTES (continued):

- K. Traffic safety drums required on freeway lane closure and lane shift tapers and recommended on tangents per Design Manual 1010.07. On tangents 42" tall channelization devices, 36" traffic cones, & 28" traffic cones allowable (vertical panel channelization devices prohibited). Warning lights on channelization devices being phased out in Washington. Contact Region Transportation Operations for information regarding their standard practices.
- L. Maximum channelization device spacing table for tangents is based on WAC 468-95-301 and may ALWAYS be reduced.
- M. Sequential arrow signs (arrow boards) are required at each freeway lane closure taper per MUTCD Standard Note 6 on TA-33.
- N. Smart sequential arrow signs ("smart arrow boards") are now required on freeways in Washington on new Construction projects
 (existing projects can still use the conventional sequential arrow sign). Smart sequential arrow signs have communication capabilities--old arrow boards can be retrofitted--to broadcast the status of the arrow display with third-party vendors like Google Maps/Waze and Traffic Management Centers.
 Include the following General Special Provisions for Materials, Specification, Measurement, and Payment.

 https://wsdot.wa.gov/publications/fulltext/projectdev/gspspdf/egsp1.pdf
 - * 1-10.3(3)B(9-35.4).GR1 (Smart Sequential Arrow Sign Materials GSP)
 - * 1-10.3(3)B(9-35.4).OPT1.2025.GR1 (Smart Sequential Arrow Sign Specifications GSP)
 - * Measurement and Payment are still hourly per "SEQUENTIAL ARROW SIGN". No new bid item developed.
- O. Radar speed display signs are typical practice for freeway lane closures with speed limit reductions. When used, include the following General Special Provisions for Materials, Specification, Measurement, and Payment. https://wsdot.wa.gov/publications/fulltext/projectdev/gspspdf/egsp1.pdf
 - * 1-10.3(3).OPT2.GR1 (Radar Speed Display Sign Specification GSP)
 - * 1-10.3(3)(9-35.8).GR1 (Radar Speed Display Sign Materials GSP)
 - * 1-10.3(3)(9-35.8).OPT1.2025.GR1 (Radar Speed Display Sign Specifications GSP, will be placed in 2025 Standard Specifications)
 - * 1-10.4(2).OPT3.GR1 (Radar Speed Display Sign Measurement GSP, if not Lump Sum) "HOUR"
 - * 1-10.5(2).OPT2.GR1 (Radar Speed Display Sign Payment GSP, if not Lump Sum) "HOUR"
- P. Longitudinal buffer spaces (B) are optional per MUTCD Section 6C.06 but is desired when practical. Longitudinal buffers are the most adjustable component that may be increased/decreased to move lane closure tapers away from horizontal/vertical curves and from on-ramp merges.
- Q. The lateral buffer (transverse distance between open travel lanes and work area) is typically 2 feet on freeways. Actual work area limits may be modified.
- R. Per MUTCD Figure 6C-2, the downstream taper is optional. Eliminating it allows construction vehicles to accelerate out of work area into reopened lane to minimize traffic impacts and increase safety.
- S. A 20:1 tapered temporary exit-ramp is typical, but 15:1 is acceptable. The exit-ramp travel way width may range from 12 to 16 feet.
- T. The on-ramp shift may occur across the paved on-ramp gore at "L/2", but verify the gore's cross-slope is traversable, pavement thickness adequate, and catch basin & ITS boxes are traffic bearing types. This Typical TCP begins the ramp shift at the end of the marked gore for simplicity.
- U. Two types of temporary on-ramp configurations, parallel and tapered. Parallel on-ramp uses a L/2 per lane ramp shift, L/2 MIN acceleration pocket 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 allowable based on engineering judgment, see WSDOT Design Manual Exhibit 1360-17 for guidance. Tapered on-ramp uses a single 50:1 taper (for all speeds) from the end of the marked gore to the end of the merge, see WSDOT Design Manual Exhibit 1360-16 for guidance.
- V. Ramp detour signage is recommended by MUTCD 6C.09, but using alternative routes is acceptable. Contact Region Transportation Operations for their standard practice. Recommended to use route-specific detour signage for significant ramp closures.

FREEWAY (2+ LANES): SINGLE LEFT LANE CLOSURE (50 MPH WORK ZONE SPEED LIMIT)

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

DESIGNER GUIDANCE

Plot 6 TC240