



## **Frequently Asked Questions for the *Oregon Temporary Traffic Control Handbook, 2011 Edition***

ODOT's Traffic Control Plans Unit receives frequent questions about a wide variety of issues involving temporary traffic control and the OTTCH. To assist users, we have compiled a variety of the most frequently asked questions about the OTTCH along with answers to those questions.

### **1. Where can I get printed copies of the 2011 OTTCH?**

By cooperative agreement with ODOT, the Center for Business & Industry of Chemeketa Community College in Salem provides printed copies of the 2011 OTTCH. Orders for printed copies can be placed by calling Chemeketa CC at 503-399-5181.

### **2. What do I do if I can't find a diagram that exactly fits my needs?**

The OTTCH is not designed to cover every possible situation. In those cases, temporary traffic control is usually site-specific or involves a unique work task. Your TCP should draw from the principles discussed in both the OTTCH and [Part 6 of the MUTCD](#). Therefore, to develop a TCP specific to your project, you may need to combine devices, practices, and layouts shown in multiple diagrams.

Regularly review the OTTCH and Part 6 of the MUTCD to make sure the traffic control strategy used is guided by the principles discussed in both publications. When encountering situations where the principles are vague or conflicting, document your decisions in choosing a single traffic control strategy. Including written explanations or details in your Temporary Traffic Control Plan is highly recommended – this aids in documenting the strategy you choose and why.

### **3. Where can I find Average Daily Traffic (ADT) volumes?**

ADT for all state highways is available in the Oregon State Highway Transportation Volume Tables (TVT's). The TVT's are available online at [http://www.oregon.gov/ODOT/TD/TDATA/Pages/tsm/tvt.aspx#Traffic\\_Volume\\_Tables](http://www.oregon.gov/ODOT/TD/TDATA/Pages/tsm/tvt.aspx#Traffic_Volume_Tables).

Some cities and counties publish traffic volume information for roads in their jurisdiction. A list of city and county traffic counting websites in Oregon is available at [http://www.oregon.gov/ODOT/TD/TDATA/Pages/tsm/tvt.aspx#Traffic\\_Counting\\_Websites](http://www.oregon.gov/ODOT/TD/TDATA/Pages/tsm/tvt.aspx#Traffic_Counting_Websites).

If there is no published traffic data for the segment of roadway you're working on, contact the road authority for ADT estimates.

**4. How are pedestrians supposed to be accommodated when a traffic signal is in flash mode? When the signal is dark?**

If a signal is flashing all red, or if it is dark, it is supposed to be treated as an all-way stop. Pedestrians have the right of way in a legal crossing – either marked or unmarked – and drivers must stop and remain stopped.<sup>1</sup> Although motorists should stop, pedestrians must be equally careful. Pedestrians should not leave the curb or other safe place and walk into the path of a vehicle.

When a signal is in flash mode, or if the signal is dark, pedestrian signal indications are not displayed.<sup>2</sup> This should raise the pedestrian’s level of awareness that conditions at the intersection have changed. Additional traffic control devices are not necessary. If the signal is expected to be out of service for extended periods of time, additional warning signing may be developed and installed.

**5. Are shoulder tapers required on a freeway for a lane closure? Both in the median and outside shoulders?**

The function of a shoulder taper is much like a lane closure taper: we are attempting to keep motorists and other road users out of the work area. Therefore, if conducting a lane closure (on any facility), a shoulder closure taper should also be included, where practical, for any shoulder (interior or exterior). If the shoulder is narrow (2 feet or less), it is acceptable to simply extend the lane closure taper 1 to 3 more devices across the shoulder.

**6. Shoulder tapers in Table 2-3 (page 15) are for shoulders 10 feet wide. There are several places where the shoulder is narrower. In these locations, how long does the shoulder taper need to be?**

For a shoulder taper, use the formula given in Table 2-1 (page 15) to calculate the taper length “L” – where “W” is the width of the shoulder being closed. Then, divide “L” by 3 to determine the minimum shoulder taper length.

(Note in Table 2-3, Shoulder Tapers shown are calculated using a 10 ft width rounded up to the nearest 5 feet.)

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<sup>1</sup> ORS 811.028, ORS 811.260, ORS 811.275, ORS 811.277, ORS 811.280

<sup>2</sup> 2009 MUTCD Section 4E.06, Paragraph 01

**7. Using Diagram 5-4 ([page 48](#)), if traffic is backing up beyond the initial warning sign (ROAD WORK AHEAD), how many more BE PREPARED TO STOP signs can be added, and at what spacing?**

The intention of Diagram 5-4 is to install an “*additional* BE PREPARED TO STOP sign” in the signing sequence, implying one additional sign only. Adding more than one sign should be avoided since drivers may begin to ignore or dismiss the sign messages after seeing multiple identical messages.

If traffic volumes are high enough so the queue extends beyond the initial advance warning sign, despite additional BE PREPARED TO STOP signing, consider using the following strategies:

1. Shorten the stopping time at the affected flagger station. Only allow traffic to be stopped at the station for 5 to 10 minutes, or for a duration that avoids the accumulation of vehicles.
2. Increase sign spacing. Sign spacing is based on posted speed (Table 2-4, [page 20](#)); however, bullet 5 below Table 2-4 allows sign spacing on non-freeways to extend up to 2 times the dimensions shown in the table. Extend sign spacing only to a distance needed to address the issue. Avoid defaulting to 2 times the sign spacing if not necessary.
3. If the queue still extends beyond the initial advance warning sign, consider using Diagram 5-5 ([page 50](#), “Advance Flagger for Extended Queues”). This detail extends signing even further and also enhances the advance warning for approaching drivers by placing an Advance Flagger who can actively slow traffic before reaching the back of the queue.

**8. Should the arrow board shown on Diagram 400 ([page 101](#)) say “Optional”?**

Yes. See Errata #2 in the official *Errata for the 2011 OTTCH* for the official content correction.

**9. [Chapter 5](#) has a lot of diagrams with “optional” arrow boards. When *should* an arrow board be used?**

Section 6F.61 paragraph 02 of the [2009 MUTCD](#) tells us when an arrow board should be used:

*“An arrow board in the arrow or chevron mode should be used to advise approaching traffic of a lane closure along major multi-lane roadways in situations involving heavy traffic volumes, high speeds, and/or limited sight distances, or at other locations and under other conditions where road users are less likely to expect such lane closures.”*

The [OTTCH Glossary of Terms](#) defines “heavy traffic volumes” as typically an average daily traffic (ADT) of greater than 2000 vehicles per day, though this can be defined by each agency. The Glossary also defines “high speeds roadways” as a road with a posted speed of 45 mph or more.

Therefore, when implementing a Diagram from the OTTCH where the arrow board is labeled as “optional,” the arrow board should be included in the traffic control plan on multi-lane roadways meeting the conditions described in Section 6F.61 of the 2009 MUTCD.

**10. Diagram 710 ([page 128](#)) shows a ROAD WORK AHEAD sign on the left and right shoulders. Can just one ROAD WORK AHEAD sign be used on the side where the work is taking place?**

The installation of ROAD WORK AHEAD signs on both sides of a multi-lane freeway or roadway is strongly recommended. The ROAD WORK AHEAD sign is the legal advance indicator for the beginning of a work zone. Additionally, higher volumes on freeways and high-speed roadways can often create blind spots for approaching drivers caused by adjacent vehicles. The placement of these two signs helps mitigate this and alerts drivers of the approaching work zone. The subsequent signs are needed only on the side where the work is taking place.

**11. The 2009 MUTCD allows Alternating Diamond (“Dancing Diamond”) mode for arrow board displays ([6F.61, paragraph 16](#)). OTTCH Section 4.3 ([page 39](#)) does not include Alternating Diamonds – instead, one of the caution modes can be two, full-height diamonds flashing simultaneously. Why is the MUTCD Alternating Diamond version not included?**

The Alternating Diamond mode, while allowed by the 2009 MUTCD, has the potential to confuse drivers into thinking they need to merge or move over in one direction or the other due to the perception of lateral movement of the alternating pattern.<sup>3,4</sup> Depending on visibility, eye sight, and maintenance condition of the bulbs, the diamonds could look like arrow heads or chevrons, particularly with the alternating pattern.

The 2011 OTTCH Rewrite Committee felt that flashing two diamonds simultaneously provided two advantages:

1. A higher target value and visual acuity for approaching drivers; and
2. It removes the effect of lateral movement, and thus potential confusion by drivers of needing to merge or move over.

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<sup>3</sup> Griffith, Andrew, P.E. and McGregor Lynde. *Evaluation of Arrow Panel Displays for Temporary Work Zones*. FHWA-OR-RD-02-02. Salem, Oregon: Oregon Department of Transportation, 2001. [http://www.oregon.gov/ODOT/TD/TP\\_RES/docs/Reports/EvalArrowPanelDisplays.pdf?ga=t](http://www.oregon.gov/ODOT/TD/TP_RES/docs/Reports/EvalArrowPanelDisplays.pdf?ga=t) (accessed May 29, 2012).

<sup>4</sup> Turley, Brent M., Mitsuru Saito, and Samuel E. Sherman. "Dancing Diamonds in Highway Work Zones: Evaluation of Arrow-Panel Caution Displays." *Transportation Research Record: Journal of the Transportation Research Board Online* 1844 (2003): 1-10. <http://trb.metapress.com/content/032426q2068310gg/fulltext.pdf> (accessed May 29, 2012).