Changes to Portable Traffic Control Devices

The Department of Transport and Main Roads (the department) is committed to improving the safety of road users and all road workers at our roadwork sites. As part of this commitment the department has worked with industry to investigate and implement options to improve safety for traffic controllers. Portable traffic control devices (PTCD) were identified and adopted as a means of allowing traffic controllers to perform their roles at a safe distance from traffic in high risk environments. These devices include Types 1 and 2 Portable Traffic Signal Systems (PTSS) and manually controlled boom barriers.

From 1 July 2018, there will be an incremental change to the requirements for the use of PTCD, to further ensure that traffic controllers using STOP/SLOW bats are rarely deployed in high risk situations.

Feedback on PTCD Implementation

The department recently completed a 12 month review of the use and effectiveness of PTCD. Experience with the use of these devices was provided by industry (Traffic Management Association of Australia members) and RoadTek.

It was concluded that while PTCD are effective in controlling traffic, they also significantly reduce the traffic controller’s exposure to risk by enabling traffic control from a safe location. A key finding was that traffic controllers were operating PTCD from unsafe locations. A recommendation was made to provide guidance about the safe location of the traffic controller while operating the PTCD, which is addressed in this fact sheet.

Workplace Safety Benefits

The workplace safety benefits of using PTCD were realised at an incident north of Portland, Victoria on March 15 2018, in which an occupant of a vehicle was killed and four others were airlifted to Melbourne hospitals after a fully-loaded log truck crashed into queued traffic.

A PTSS being used at the site was destroyed, while the traffic controller was uninjured. The damaged equipment has been erected at the traffic management company’s office, as both a graphic reminder of the risks workers encounter and a testament to the safety value provided by the device.

What is Changing?

Currently, PTCD should be used in lieu of traffic controllers on all roads with an annual average daily traffic of over 1000 vehicles per day and a speed limit of 90 km/h or greater.

From 1 July 2018, this requirement will be broadened to encompass roads with an annual average daily traffic of over 1000 vehicles per day and a speed limit of 80 km/h or greater.

(Annual average daily traffic is the total vehicle count in both directions of travel per day).
Safe location for Traffic Controllers operating PTCD

Traffic controllers (TCs) must operate PTCD from a safe location, and as such, the department encourages practitioners to adopt the following recommendations.

The key considerations in determining a safe location for TCs include site geometry, traffic control device position, sight distance, roadside terrain/vegetation, the type of PTCD used, vehicle mix and their approach speeds. Environmental factors (for example fog, rain, dust or smoke) and time of day/night also need to be considered.

TCs should occupy a position which:

- Is clear of the travel path (the risk of being struck by passing vehicles is significantly reduced as the offset distance is increased).
- Has an escape path.
- Has sight distance of approaching traffic of at least 2D (where the value of D is the greater value of the range nominated in Table 4.2 of Manual of uniform traffic control devices (MUTCD) Part 3).
- Aims to ensure that drivers focus on the PTCD, and not take cues from the TC.
- Enables effective communication to both site workers and other TC (if applicable). If a single TC is operating two PTCD, an added consideration is to ensure the operating range of the hand-held remote controller is not exceeded.
- Enables the TC to identify the last vehicle before changing to STOP.
- Is close enough to the PTCD to allow the TC to commence STOP/SLOW bat duties in the event of a system failure. In the case of a single TC operating two PTCDs, the TC should be located at the end which is on approach to the closed section of road (as this is the critical approach to control in the event of a failure).
- Has visibility of the PTCD (either the front face or rear indicator light) and traffic queues. In the case of a single TC operating two PTCD's, the TC should be located to have visibility of both devices and traffic queues for each approach.

In addition to these recommendations, other considerations include:

- Planning the site arrangements so that, where possible, one hand-held remote controller can be used to operate the PTCD.
- Utilising an elevated location (to maximise sight distance) or position TC behind safety barrier, where possible.
- Parking vehicles clear of the traffic control station.
- Utilising shade to reduce sun exposure and heat stress wherever appropriate.
- Permitting the TC to be seated, to reduce fatigue, if a suitable position is available.

Example of TC operating PTCD from an appropriate location
PTCD Location and Visibility

Visibility of the PTCD was identified as a key consideration when designing traffic guidance schemes. The Traffic Management Designer should consider the following during the development of the traffic guidance scheme:

- Managing the impact of work vehicles and plants on the visibility of the PTCD, especially when they are located in the background.
- When using PTCD at night:
  - Consider the potential for driver distraction from reflective stripes on the TC uniform, lights from the TC wand and the indicator lights on the hand-held remote controller.
  - Recognise that vehicle-mounted warning devices can significantly diminish the visibility of the PTCD, especially when the vehicle is parked in the background.
  - The PTCD location should be illuminated (as nominated in MUTCD Part 3).
- Vehicle actuated or fixed time operation PTSS should be visible to motorists at a minimum distance of 150m (as nominated in MUTCD Part 3).
- PTCD under manual operation by a TC should be visible to motorists at a minimum distance of 2D (where the value of D is the greater value of the range nominated in Table 4.2 of MUTCD Part 3).
- Located no further than 1m from the travelled path.
- Mast is vertical, footing is stable and weighted down.
- Site signed to 60km/hr maximum on approach to the PTCD (as nominated in MUTCD Part 3).

Multi Message Signs

Based on user feedback, the following multi-message signs have been adopted for use in advance of PTCD.

For more information about these changes, please email trafficengineering.support@tmr.qld.gov.au