
Workplace Health and Safety Queensland

Compliance audit tool: *Traffic Management for Construction or Maintenance Work Code of Practice 2008*

Queensland
March – April 2009

AUDIT TOOL FOR TRAFFIC MANAGEMENT COP AUDIT

Company details

| | |
|----------------------|--|
| Company legal name | |
| | |
| Company trading name | |
| | |
| Site location | |
| | |

CIS Details

| | | | |
|---------------------|--|--|--|
| Assessment number/s | | | |
| Inspector number | | | |
| Date | | | |

Company performance

In your opinion was the company performing above, below or equal to industry standard?

| |
|---------------|
| Above average |
| Average |
| Below average |

CIS Descriptor 70809

DESKTOP AUDIT

Complete only if a construction work

| Construction Workplace | Yes | No | |
|---|-----|----|-----|
| 1 Written construction safety plan? | Yes | No | N/A |
| 2 Work method statements? | Yes | No | N/A |
| 3 Control of pedestrian access to where machinery is operating? (Work method statement) | Yes | No | N/A |
| 4 Is there a permit for the works on the road reserve issued by Main Roads or local government? | Yes | No | N/A |
| 5 Are the stipulations on the permit being complied with? | Yes | No | N/A |

Complete for all work (Maintenance and Construction)

| Traffic Plan compliant with MUTCD Pt 3 | | | |
|--|-----|----|-----|
| Is there an approved traffic plan available for the following types of work? | | | |
| 6 Section 4.3 static sites | Yes | No | N/A |
| 7 Section 4.8 low impact works | Yes | No | N/A |
| 8 Section 4.9 mobile works | Yes | No | N/A |
| Do the following elements of the traffic plan comply with the requirements of the MUTCD for this work site? | | | |
| 9 Correct class of road (traffic demand)? | Yes | No | N/A |
| 10 Barricading for worker protection? | Yes | No | N/A |
| 11 Is traffic routing OK? (Traffic flow) 4.3, 4.8.5, 4.9.2 | Yes | No | N/A |
| 12 Are other road users considered? | Yes | No | N/A |
| 13 Needs of special vehicles? | Yes | No | N/A |
| 14 Are traffic signs being checked and maintained? | Yes | No | N/A |
| Traffic controllers | | | |
| 15 Is there evidence of informing traffic controllers of traffic control plan? (Is the traffic controller compliant with the approved procedure?) | Yes | No | N/A |
| 16 Is traffic controllers licence appropriate? | Yes | No | N/A |
| 17 Are traffic controllers positioned to minimise risk of injury from traffic? (escape path- 3.2.8) | Yes | No | N/A |
| 18 Employer management of fatigue: Does the employer know how many hours a worker is on the job in a 5 (working week) day period (including other employers)? | Yes | No | |
| Record keeping | | | |
| 19 Is a record keeping system in place? | Yes | No | N/A |
| 20 Does the system meet the requirements of the traffic control plan? | Yes | No | N/A |
| 21 Is it used and maintained? | Yes | No | N/A |

WALK THROUGH AUDIT

Complete for all workplaces

| | | | |
|---|------------------|----|-----|
| Traffic controllers- sections referred to are from the Traffic Controller Accreditation Scheme Approved Procedure (TCASAP) | | | |
| 22 Section 3.1.2- <i>Traffic Controller Ahead & Prepare To Stop Signs</i> Minimum of 120m in advance of Traffic Controller Position unless risk assessment carried out. Are these signs positioned in accordance with the traffic control plan? <i>Verifying Item 14</i> | Yes | No | N/A |
| 23 Section 2.2.2- Carrying out duties in no more than a 60kmph zone. (The maximum allowable speed where a traffic controller can work is 60Kph, MUTCD requirement). <i>Verifying Item 9</i> | Yes | No | N/A |
| 24 Section 3.2.3- Traffic Controller has visual site distance of at least 150m to approaching traffic. (MUTCD requirement) <i>Verifying Item 11</i> | Yes | No | N/A |
| 25 Section 2.2.2- Are the Traffic Controller Ahead & Prepare To Stop Signs removed when work is suspended or the shift is finished. <i>Verifying Item 14</i> | Yes | No | N/A |
| 26 Section 3.2.14- Traffic Controller's should have had a 15 minute break every 2hrs and must have a 15 minute break every 3hrs. (MUTCD requirement) <i>Verifying Item 15</i> | Yes | No | N/A |
| Fatigue management | | | |
| fatigue issues (<i>Managing Fatigue – a Guide for the Workplace 2008</i>) http://www.deir.qld.gov.au/pdf/whs/fatigue_management.pdf | | | |
| 27 How long is their shift (include travelling time to workplace)? | Hours | | |
| 28 How many hours between finishing last shift & starting present shift? | Hours | | |
| 29 Does the person work for more than one employer? | No. of employers | | |
| 30 Has your employer informed you of their fatigue management strategy? | Yes | No | N/A |
| General hazards | | | |
| 31 Risks from low light (visibility of traffic controller on rainy days and night work). | Yes | No | N/A |
| 32 Risks from sun and heat. (Heat exposure, sunburn, hydration) | Yes | No | N/A |
| 33 Risks from slips trips and falls. (Does the work area of the traffic controller have slips, trips and falls risks) | Yes | No | N/A |
| 34 Risks from noise. (Does the traffic controller use hearing protection in noisy areas) | Yes | No | N/A |
| 35 Risks from recycled water. (Is recycled water in use) | Yes | No | N/A |
| 36 Risks from inclement weather. (Adequate rain protection on wet days) | Yes | No | N/A |
| 37 Risks from manual tasks. (Is the traffic controller required to carry out heavy lifting?) | Yes | No | N/A |

MUTCD Part 3 Works on Roads

4.3 MAINTAINING A SAFE WORKPLACE

As indicated in Clause 1.5, both organisations and contractors carrying out works on roads, together with supervisory personnel at all levels, are obliged to maintain a safe workplace. This entails the prevention of injury to workers due to hazards within the works site, the protection of workers from oncoming or passing traffic, and the protection of road users from hazards within the work site.

Requirements and recommendations for protecting workers from oncoming or passing traffic and road users from hazards within works site are as shown below. Intermittent and low-impact works permitted under Clause 4.8, and mobile works permitted under Clause 4.9 are exempted from these requirements and recommendations provided that the requirements of those clauses are observed.

(a) Work area 3 m or more clear of traffic (Option 1).

If no part of the road shoulder, parking or auxiliary lane has been closed and the entire work area including all vehicles and plant is located a minimum of 3 m from the nearest edge of a lane carrying traffic, no signing or traffic delineation of the work area will be required other than a Workers (symbolic) (T1-5) sign in advance of the work area when workers or plant are present on site. This situation is illustrated as Option 1 on Figure 4.3.

If there is closure or partial closure of the roadway, shoulder, parking lane or auxiliary lane but the work area is located a minimum of 3 m from the nearest edge of a lane carrying traffic, all of the signs and delineation specified in Item (b)(ii) are required except that there will be no requirement to reduce traffic speeds for the protection of workers. A temporary speed zone may be needed for the safety of traffic negotiating the site.

In each of the above cases a containment fence (see Clause 3.10.1) should be used to delineate the clearance line for workers if the work area clearance is close to the 3m minimum.

(b) Work area closer than 3 m to traffic

If the clearance between the work area and the nearest edge of a lane carrying traffic is less than 3 m one or other of the following options shall be used:

(i) Protection by safety barrier (Option 2)

If the work area is protected by a safety barrier (see Clause 3.10.2) there will be no requirement for temporary speed zoning for the protection of workers. Advance signing and delineation are required including Workers (symbolic) (T1-5) signs when workers are on site, and temporary speed zoning may be required for the safety of traffic negotiating the site outside the barrier. Steps should be taken to ensure that workers and plant will remain within the protection of the barrier. A containment fence behind the barrier as recommended in Clause 3.10.1(c) and temporary crash cushions as recommended in Clause 3.10.3 should also be used. This situation is illustrated as Option 2 on Figure 4.3.

(ii) Clearance to traffic 1.2 to 3 m (Option 3)

If there is no physical barrier between the edge of the work area and the nearest edge of a lane carrying traffic, but the clearance between the two is from 1.2 m to less than 3 m, the following are required when workers are on site, in addition to the requirements for other works site management devices specified in Part 3 of the MUTCD:

- a) A Workers (symbolic) (T1-5) sign in advance of the work area.
- b) Delineation of the edge of the traffic lane by cones, bollards or similar means.
- c) Separate delineation of the edge of the work area by means of a containment fence. (See Clause 3.10.1).
- d) A temporary 60 km/h speed zone if the road does not already have a speed limit of 60 km/h or less.

This situation is illustrated as Option 3 on Figure 4.3.

(iii) Clearance to traffic less than 1.2 m (Option 4)

If the clearance requirement of 1.2 m in Item (ii) above cannot be achieved or where workers or plant, or both are working within the trafficked area, all of the requirements of Item (ii) shall apply except that-

- a) A temporary speed zone of 40 km/h shall be used; and
- b) Use of a containment fence may be omitted if its use would not be practicable.

This situation is illustrated as Option 4 on Figure 4.3.

A temporary 40 km/h speed zone should be no longer than 500 m.

c) Protection of traffic controller

Traffic controllers are not subject to the requirements of Clause 4.3(b), but shall be allowed to operate only in an area where a 60 km/h maximum speed limit applies. If such a speed limit does not already exist at the site a temporary speed zone shall be established.

4.8 INTERMITTENT AND LOW IMPACT WORKS

4.8.1 General

The following treatments are permitted in recognition of the need to allow certain short-term and low impact works to be carried out without the use of fully protected work sites or mobile works convoys which could otherwise lead to significant work inefficiencies. Since they could be seen as a partial relaxation of safety standards, it is vital that a risk assessment (See Clause 2.2.3) be made of the proposed adoption of these treatments taking particular account of factors such as traffic volume and speed, road geometry and width, and the general behaviour of road users.

4.8.2 Work between gaps in traffic

Work which is of such short duration that it could be carried out within gaps in traffic may be done without signs or delineation provided that:

- (a) a lookout person is posted, who can see approaching traffic for a distance of at least 200 m in time to warn workers to vacate the work area before its arrival; and
- (b) work vehicles and equipment are parked clear of the moving traffic lanes.
- (c) a vehicle mounted warning device is displayed on the work vehicle.

4.8.3 Work taking 5 minutes maximum

When the roadway is, or is expected to be, occupied for less than 5 min for other than a frequently changing work area (see Clause 4.8.4) by workers with a vehicle, or item of plant equipped with a vehicle-mounted warning device, the work may proceed without the use of advance signs under the following conditions provided that the sight distance to the vehicle-mounted warning device for approaching drivers is:

- (a) greater than 150 m in a 60 km/h or lower speed zone; or
- (b) greater than 250 m elsewhere; and
- (c) the vehicle-mounted device shall not be obscured either by overhanging vegetation or a raised truck body, and the work shall not reduce-
 - (i) the overall width to less than that required for safe passage for two-way traffic; or
 - (ii) the traffic lane width adjacent to a barrier line or a single unbroken separation line, to less than that needed to allow vehicles to proceed without crossing the line.

A lookout person shall be posted to warn workers on foot of the approach of any vehicles whose speed or size might constitute a safety threat. If two or more locations within a space of 2 km or less are to be worked as above, the site shall be treated as a frequently changing work area (see Clause 4.8.4).

4.8.4 Frequently changing work area

For activities such as shoulder grading or maintenance, pedestrian type linemarking or pavement marker laying (excluding work on separation lines on 2-way roadways), minor pavement maintenance and longitudinal survey work at successive locations less than 2 km apart, the frequently changing work area treatment may be applied, and if so shall be subject to the following requirements:

- (a) In all cases the requirements of Clause 4.8.3 regarding work vehicle positioning and display of the vehicle mounted warning device, sight distance to the work vehicle for approaching traffic and the need for a lookout person to warn workers on foot on the roadway, of approaching traffic, shall be observed.
- (b) Advance signs up to 2 km ahead of each work position or item of moving plant shall be displayed. The distance between advance signs for opposing directions of travel shall not exceed 2 km at any time and the location of such signs shall be progressively changed to ensure the maximum separation is not exceeded as the work progresses along the road.
- (c) At each advance sign location the following signs shall be used-
 - a. Workers (symbolic) (T1-5) where there are workers on foot; or
 - b. GRADER AHEAD (T1-4) where a grader only will be encountered; or
 - c. ROAD PLANT AHEAD (T1-3-1) where another kind of road plant item will be encountered. The sign NEXT 2 km (T1-28) shall be placed beside whichever of the above signs is used.

- (d) If any of the requirements of Item (a) cannot be met at a particular location, e.g. sight distance is substandard, that site shall be set up as a fully protected work site with advance signs at the standard distances.
- (e) On very low-volume roads, where sight distance to the vehicle mounted warning device is greater than 250 m in both directions, the distance between the signs at the limits of the works may be increased to 5 km. In this case, where this sight distance is not available, an additional sign, e.g. GRADER AHEAD, must be placed in advance of the work to warn motorists.

4.8.5 Work area off the travelled path

For activities involving a vehicle or item of plant running off the road such as grass mowing and shoulder grading or activities such as sign/road edge guide post maintenance where the vehicle is parked clear of the road so that traffic does not have to deviate from the normal travelled path, the work may proceed without the use of advance signs under the following conditions. Sight distance to the vehicle-mounted warning device for approaching drivers shall be-

- (a) greater than 150 m in a 60 km/h or lower speed zone; or
- (b) greater than 250 m elsewhere; and
- (c) the vehicle-mounted device is displayed and not be obscured either by overhanging vegetation or a raised truck body.

4.8.6 Mobile inspections

Mobile road inspections are carried out according to one of the following requirements or recommendations:

- (a) If the inspection vehicle maintains a speed which is less than 20 km/h below the speed limit, it may travel in the traffic stream and no protection is required.
- (b) If the inspection vehicle can operate by travelling along a shoulder or verge clear of moving traffic, using gaps in traffic to pass any obstructions in the shoulder or verge, it may operate as a single vehicle but shall display a pair of yellow beacon lamps.
- (c) If the inspection vehicle is required to block or partially block a traffic lane continuously at speeds lower than in Item (a) it shall operate within a mobile works convoy.

4.8.7 Work protected by specialist vehicles

This work involves the use of a vehicle fitted with a truck-mounted attenuator. The vehicle shall be fitted with an illuminated flashing arrow sign. The activities may include:

- (a) placement and recovery of temporary signing and barriers;
- (b) mobile lane closures; and
- (c) slow moving or stationary vehicles operating on the roadway e.g. maintenance of traffic signals, street lighting and emergency phones.

A temporary speed zone may be created by the use of a vehicle-mounted speed restriction sign. If determined acceptable by a risk assessment, the specialist vehicle may be replaced by a shadow vehicle fitted with an illuminated flashing arrow.

4.8.8 Survey work

The occupation of the roadway for survey work may be in accordance with one of the previous treatments. A risk assessment will determine the treatment adopted in a particular environment.

4.8.9 Traffic investigations

For activities associated with traffic engineering investigations or inspecting, viewing or measuring a section of roadway or road feature (e.g. for maintenance or planning purposes), no controls are needed where:

- (a) the activity is clear of the roadway. The exception to this would be where the activity is carried out while crossing the road, e.g. measuring the lane width;
- (b) the vehicle used for the investigation is parked well clear of the traffic lanes;
- (c) personnel utilize existing footpaths or verges;
- (d) inspecting personnel may cross the road safely within gaps in traffic. In this case, sight distance to personnel for approaching drivers is:
 - (i) greater than 150 m in a 60 km/h or lower speed zone;
 - (ii) greater than 250 m elsewhere.
 - (iii) Personnel carrying out investigations shall wear high visibility clothing at all times when they are not in their vehicle.

4.9 MOBILE WORKS

4.9.1 General

Mobile works are works which entail vehicles moving along the roadway continually at a speed significantly lower than other traffic and obstructing or partially obstructing traffic lanes. Mobile works include the following:

- (a) Linemarking activities.
- (b) Pedestrian type linemarking and pavement marker laying or removal where a shadow vehicle (see Clause 4.9.2(c)) is used.
- (c) Operation of pavement test vehicles.

Activities such as shoulder grading, short-run linemarking, pavement and edge patching, and other works involving workers on foot without a shadow vehicle shall be regarded as frequently changing work areas and dealt with in accordance with Clause 4.8.4.

4.9.2 Work convoy arrangements

A mobile works convoy should be made up of the following vehicles selected as necessary for the relevant road situation:

- (a) *Lead vehicle* - A lead vehicle is required on two-way roadways when marking the separation line.
- (b) *Work vehicle* - This is the vehicle or item of plant which is undertaking the work (e.g. a linemarking machine) or supporting workers on foot operating immediately behind it.
- (c) *Shadow vehicle* - A shadow vehicle is required to provide close-up protection to the rear of workers on foot (e.g. laying pavement markers, operating a pedestrian type line marker). The shadow vehicle should travel a clear distance of 20 m to 40 m behind the work vehicle.
- (d) *Tail vehicle* - A tail vehicle is required to provide advance warning of the works for following traffic, to divert traffic around the works and to enable the driver to alert workers ahead of any impending hazard.

4.9.3 Operating principles

The following are requirements and recommendations for the operation of a mobile works convoy:

- (a) All signs and warning or delineation devices shall be displayed.
- (b) Advance warning of the works vehicle shall be provided by a tail vehicle and, if required, a lead vehicle (see Clause 4.9.2(a)) except in the following cases:
 - (i) Very low-volume rural roads where sight distance is adequate and speeds are relatively low, typically roads with less than 400 vehicles per day, traffic speeds generally 80 km/h or less, and sight distance at least $2D$ m (where $D = 60$ to 80 m).
 - (ii) Urban residential, collector or commercial streets where speeds are generally less than 60 km/h.
- (c) Vehicles providing advance warning shall travel in the same lane or shall straddle the same line as the work vehicle, with the following exceptions:
 - (i) For linemarking the separation line on a two-way road, the tail vehicle should travel within its lane if following traffic can pass it to the left, otherwise it should straddle the separation line.
 - (ii) For other than linemarking the separation line on a two-way road, the tail vehicle should always travel in its lane.
 - (iii) On a multilane road, if the work vehicle is straddling the left or right hand lane line, the tail vehicle should travel within the corresponding left or right hand lane.
- (d) Vehicles providing advance warning should travel at the following convoy spacings:
 - (i) In locations where sight distance is good:
 - A. Lead vehicle - 200 m to 400 m rural, or 30 m to 100 m urban in advance of the work vehicle.
 - B. Tail vehicle - 500 m to 700 m rural, or 200 m to 300 m urban behind the work vehicle or behind the shadow vehicle if one is being used.
 - (ii) In locations where sight distance is poor:
 - A. The lead vehicle shall move as necessary beyond the distances given in Item (i) to a point where good sight distance is regained, and remain there until the work vehicle catches up.
 - B. The tail vehicle shall hold at a position of good sight distance until the work vehicle has progressed to a point where the tail vehicle can move through the section with restricted sight to a point where good sight distance is regained.
- (e) A shadow vehicle is required wherever the operation involves workers on foot.
- (f) A second tail vehicle shall be provided for works on freeways. The two vehicles should be
- (g) arranged to form a 'mobile taper'.
- (h) Traffic controllers shall not direct traffic from a moving vehicle during mobile works. If a situation necessitates the use of a traffic controller, a fully protected work site should be established.
- (i) All vehicle-mounted warning signs and devices shall be removed from display or deactivated when the vehicle is no longer working and becomes part of the normal traffic stream.

4.9.4 Signs

All vehicles and items of plant in the mobile works convoy, other than minor items of plant protected by a works vehicle and a shadow vehicle should carry an illuminated flashing arrow sign (see Clause 3.12.2). Requirements for flashing the arrow or other displays (i.e. four corner lights) are specified in Clause 3.12.2. Supplementary vehicle-mounted signs as specified in Clause 3.12.3, mounted either with the flashing arrow sign or panel of chevrons, or elsewhere in a permanent position on the body of

the vehicle, shall be used where necessary to indicate the type of work being done, or to provide essential additional warnings of the presence of workers on foot or driving instructions.

Traffic Controller Accreditation Scheme- Approved Procedure

2.2 Responsibilities of a traffic controller

2.2.2 A traffic controller must:

- maintain a zero percent blood/alcohol concentration while performing traffic control functions
- not perform traffic control functions while adversely affected by a drug or other medication causing functional impairment
- not direct traffic through a worksite unless the worksite has an approach speed of 60 km/hr or less as required in the manner specified in the *Manual of Uniform Traffic Control Devices – part 3 (Works on Roads)*
- ensure that the *Traffic Controller Ahead/PREPARE TO STOP* sign is erected correctly and shall direct traffic at and/or through a worksite or other event in a manner specified in the approved operating procedure for traffic outlined in *Section 3.0* of this document.
- only use equipment specified in the *Manual of Uniform Traffic Control Devices – Part 3 (Works on Road)*, to direct or divert traffic through a designated worksite
- ensure that the *Traffic Controller Ahead/PREPARE TO STOP* sign is erected at the beginning of the shift
- ensure that the *Traffic Controller/PREPARE TO STOP* sign is removed when work is suspended throughout a shift or completed for the day.

NOTE: A traffic controller should be familiar with the Workplace Health and Safety Act 1995. The Act sets out the laws about the health and safety requirements affecting some work activities and specified high risk plant. Everyone has a responsibility to care for their own and other's health and safety at workplaces, while carrying out work activities or using specified high risk plant.

3.1.2 A Traffic Controller Ahead/PREPARE TO STOP sign (T1-Q05) shall be placed a minimum of 120 metres in advance of the traffic control station or at a distance deemed suitable following an assessment of risk factors (that is, line of sight, poor light/visibility, poor weather conditions).

3.2.3 Traffic controllers must be able to see approaching vehicles at a distance of at least 150 metres.

3.2.8 Traffic controllers must ensure that they have a clear escape path to a non-traffic (closed) Section of the roadway, shoulder, footpath or median.

3.2.14 Traffic controllers should have a 15 minute break every two hours. However traffic controllers must have a 15 minute break after three hours if they have not had a break previously in that three hour period.