
SECTION 166 - TRAFFIC MANAGEMENT

166.01 OUTLINE

The management of traffic by the Contractor is a key requirement of the Contract. The objectives are to:

- minimise the impact on traffic;
- provide a safe environment for the travelling public and construction personnel;
- cater for the needs of all traffic, including pedestrians;
- communicate the purpose of the proposed traffic event; and
- communicate the arrangements for and impacts of any event affecting traffic.

166.02 DEFINITIONS

Traffic Guidance Scheme (TGS) - the physical deployment and arrangement of signs and devices, to warn traffic and guide it through, past or around a work area or hazard.

Traffic Management Strategy (TMS) - the Contractor's overview for the management of traffic during various phases of the work under the Contract, and demonstrates the traffic staging methodology. The Traffic Management Strategy is the overarching parent document from which individual Traffic Management Plans are prepared.

Traffic Management Plan (TMP) - the details of proposals for the management of traffic during the conduct of works on roads, whether on the roadway or roadside (RMA 2004, Code of Practice for Worksite Safety – Traffic Management).

Traffic - commercial, commuter and local traffic, public transport, pedestrians, cyclists and wheelchairs.

Traffic Event - any action that causes an impact on any traffic, including all changed conditions such as reduced lane numbers, shoulders or clearances, surface conditions, or alterations to speed limits, signage or alignment.

166.03 GENERAL

Unless otherwise specified, the Contractor shall make or arrange for the provision for traffic, including pedestrians, in accordance with this section and the relevant parts of the Road Management Act 2004, Code of Practice for Worksite Safety – Traffic Management (the Code). The Contractor shall make or arrange such provision for traffic notwithstanding anything contained in the General Conditions of Contract and without derogating in any way from the Contractor's obligations pursuant to the General Conditions of Contract and, in particular, from the Contractor's obligations pursuant to Clause 15 of the General Conditions of Contract.

The Contractor must have a copy of the Code and relevant attachments for use on site during the Contract (a copy of the Code is available via the VicRoads website www.vicroads.vic.gov.au). This copy shall be retained on the site for the use of all staff involved with traffic management. For the purpose of applying the Code a reference to VicRoads shall be taken as a reference to the Contractor subject to such modification as the context may require.

The number, type and location of signs and devices shall be not less than the standards set out in the Code as applicable and shall also meet the requirements of this section.

Work shall not commence or continue at any location until all appropriate signs, devices and traffic control are in place, side tracks have been constructed where required and line marking completed where required.

Where work requires the removal of existing major traffic control signage, those signs shall be immediately re-erected or temporarily located at a location both visible and safe to regulate traffic and in accordance with an approved Memorandum of Authorisation.

At all times when the Contractor's employees are on site, the Contractor shall render immediate assistance without charge to any person whose lawful passage through a work area may be obstructed or made difficult by or as a result of the Contractor's operations.

Unless otherwise approved, when work is not being performed on the site, traffic shall not be carried through that work zone or work area on side tracks, detours or part widths of the existing pavement.

~~166.04 TRAFFIC MANAGEMENT TRAINING / PRE-QUALIFICATION~~

In implementing traffic management, the Contractor shall use the following:

- ~~(a) only organisations pre-qualified with VicRoads at the Traffic Management Plans (TMP) level shall prepare and review Traffic Management Plans (including the risk assessment) for these works;~~
- ~~(b) only organisations pre-qualified with VicRoads at the Traffic Guidance Scheme (TGS) level shall set out, implement and monitor the Traffic Guidance Scheme required by the Traffic Management Plan at each phase of the works.~~

~~166.05 TRAFFIC MANAGEMENT STRATEGY~~

The Contractor's Traffic Management Strategy (TMS) shall include, but not be limited to, the following:

- ~~(a) drawings that demonstrate the proposed traffic staging methodology for the Works, and clearly identify the stages of the Works or particular activities for which individual TMPs will be produced;~~
- ~~(b) a program that outlines the proposed timetable for commencement of the stages of works or particular activities identified above, and the proposed timetable for the submission and implementation of associated TMPs;~~
- ~~(c) a checklist of the relevant standards, specifications, statutory requirements, municipal requirements and other requirements that TMPs will be prepared in accordance with; and~~
- ~~(d) a process for reviewing and updating the TMS during the course of the Works.~~

~~The TMS shall be submitted to the Superintendent for review within fourteen days of award of the Contract or of any change to the TMS.~~

166.06 RISK ASSESSMENTS

The Contractor shall undertake or arrange for the undertaking of a risk assessment of each site to determine the risks and treatments required to eliminate, or significantly reduce as far as is reasonably practicable, those risks. The details of the risk assessment shall be recorded on the applicable checklist (Figure 11 or 14 of the Code) to document the key decisions made when determining the TMP and a copy submitted with the TMP to the Superintendent. The checklist shall be filed on site for the duration of the Works.

166.07 TRAFFIC MANAGEMENT PLANS

~~For all works on roads carried out by the Contractor, a TMP (including the risk assessment) shall be prepared by organisations/persons as required in Clause 166.04 and in accordance with Clause 13 of the Code and this clause.~~

The Contractor shall prepare or arrange for the preparation of a TMP for the management of individual traffic events that impact on traffic in accordance with the TMS (if applicable), the performance requirements included elsewhere in the specification, the requirements of the Code and the following requirements.

All drawings provided in the TMS and TMPs shall be prepared using an appropriate software package.

The TMP for each stage of the Works shall include, but not be limited to:

- (a) the purpose and objectives of the TMP;
- (b) the extent of the site works affected by the TMP and the extent of traffic routes (including routes beyond the limit of works) affected as a consequence;
- (c) arrangements for traffic analysis to verify the adequacy of any proposed traffic plan. The analysis shall include a check of hourly volumes (not just peak hour) and make provision for any planned major public events in the vicinity of the site that may impact on the traffic management proposals;
- (d) drawings showing all proposed staging, and changes to signing and pavement markings, traffic control devices and street lighting that are required to control traffic and provide warning for users;
- (e) ameliorative works proposed for traffic routes beyond the site that are affected by work under this Contract;
- (f) arrangements including on site signing and other publicity, for advising road users of the pending disruptions, alternative arrangements and time frames;
- (g) alterations to the relevant VicRoads Incident Management Plans (if applicable);
- (h) requirements of all relevant municipal councils and including the in-principle agreements of the municipal councils;
- (i) procedures and responsibilities for the development, implementation and verification of any traffic plans, and for monitoring and adjusting the traffic plans;
- (j) a site induction and training plan to ensure that the relevant site personnel including subcontractors are aware of the requirements of the TMP. The TMP shall include personnel to be trained, training objectives, induction procedures;
- (k) emergency contacts including emergency services and other relevant authorities, and procedures to ensure after hours attendance at the site in the event of an emergency; and
- (l) a process for the review and updating of the TMP.

In preparing the TMP, the Contractor shall include the requirements of the relevant parts of the Code. The Contractor shall incorporate regular monitoring of all aspects of the TMP and the expeditious remedying of any deficiencies identified.

166.08 SUBMISSION OF TMP TO SUPERINTENDENT

Unless specified elsewhere, the Contractor shall submit its proposed TMP to the Superintendent at least 21 days in advance of the proposed traffic event. The Superintendent shall respond to the Contractor within 14 days and advise the Contractor whether the proposed TMP is suitable. Where the proposed TMP is not suitable, the Contractor shall re-schedule works at the Contractor's expense and re-submit its proposed TMP at least 21 days prior to the commencement of the proposed traffic event.

HP The Traffic Management Plan shall not be implemented as a Traffic Guidance Scheme until the Superintendent has completed the review of the final Traffic Management Plan and released this Hold Point.

166.09 TRAFFIC GUIDANCE SCHEME REQUIREMENTS

~~(a) Implementation~~

~~— In implementing the TGS, the Contractor shall only use organisations/persons as defined in Clause 166.04(b).~~

~~(b) Reviews~~

~~— After the TGS has been implemented and prior to the commencement of construction works, it shall be reviewed by the Contractor to ensure it is operating as expected.~~

~~Any minor changes required to the TGS, as identified by the Contractor as a result of a review, must be implemented and recorded on the TMP by an organisation/person defined in Clause 166.04.~~

~~— Any major changes required to the TGS, as identified by the Contractor as a result of a review, must be approved by an organisation/person defined in Clause 166.04 and the Superintendent, and the TMP and TGS must be updated accordingly.~~

~~(c) Audits~~

~~For TGSs that are in operation for longer than a week, an audit of the Scheme to verify compliance with the TMP shall be carried out by a suitably qualified auditor.~~

~~When required, a Road Safety Audit shall be carried out in accordance with Clause 166.10.~~

~~(d) Traffic Management Committee~~

~~A Traffic Management Committee may be convened by the Superintendent to meet on a regular basis and shall be attended by representatives of the Superintendent, the Contractor and other relevant authorities. The Superintendent may require the Contractor's organisation/person that provided the TMPs and implemented the TGSs respectively and the Contractor's Senior Road Safety Auditor to attend meetings.~~

~~The Traffic Management Committee may review the TMS, TMPs and associated Road Safety Audits. Any agreed improvements shall be incorporated into the Contractor's current and / or future TMPs.~~

(e) Worksite Traffic Management Speed Zones

The Contractor must determine whether reduced speed limits are required at each worksite. The Code provides guidance on this matter. Where it is proposed to alter the posted regulated speed limit to undertake the works, the Contractor shall prepare a Memorandum of Authorisation and submit it with the corresponding TMP for approval by VicRoads – no works shall be undertaken until such written approval is given.

For long term works, the requirements of Section 4.3: Maintaining a Safe Workplace and Table 4.2: Guide to the Selection of Speed Limit at Roadworks of AS 1742.3-2009 shall be adopted.

When workers are not present at the worksite, the worksite speed limit signs shall be removed or covered up so that the prevailing speed limit is reinstated. Alternatively, the appropriate worksite speed limit signs shall be displayed if deemed necessary for traffic safety purposes as provided in Section 4.3: Maintaining a Safe Workplace or Table 4.2: Guide to the Selection of Speed Limit at Roadworks of AS 1742.3-2009.

Where the worksite speed limit determined from the Guide to the Selection of Speed Limits at Roadworks, is higher than the prevailing speed limit on the road, the prevailing speed limit shall remain. The worksite speed limit shall never be higher than the prevailing speed limit on the road.

Clearance to worksite is measured to the edge of the nearest running traffic lane.

(f) Temporary Pavement Marking

The Contractor shall delineate all temporary traffic arrangements with clear and unambiguous pavement marking at all times throughout the Works. The Contractor shall ensure that all line marking is consistent with the VicRoads Traffic Engineering Manual Volume 2 – Signs and Markings and is clearly visible at all times and under all conditions. The Contractor shall also ensure that obsolete line marking is adequately removed / covered so as not to be visible or cause confusion to drivers and shall use means other than painting.

Temporary line marking shall not be applied to the final wearing course of any new or existing pavement.

(g) Provision for Pedestrians

All pre-existing pedestrian movements through the worksite are to be maintained at all times, unless otherwise approved by the Superintendent.

The Contractor shall ensure that the Works do not compromise pedestrian movements in terms of safety or inconvenience. The Contractor shall provide and maintain temporary pathways as necessary to achieve these requirements.

Pedestrian movements adjacent to the Works shall be physically separated from the worksite at all times throughout the Contract by parawebbing, or to the requirements of WorkSafe, whichever is the more stringent requirement.

(h) Avoiding end-of-queue collisions

At an active traffic control position, under conditions of heavy traffic or lengthy delays, or a combination of the two, long queues may form. Depending on speed of traffic and sight distance to the end of a queue, additional advance warning may be required to avoid end-of-queue collisions.

The Contractor shall provide end-of-queue protection in accordance with the requirements of AS 1742.3-2009.

~~166.10~~ — ROAD SAFETY AUDITS

~~The Contractor shall undertake Road Safety Audits at the following times:~~

- ~~(a) at the final design stage for each proposed TMP not specifically covered by arrangements shown in AS 1742.3 and its various user guides;~~
- ~~(b) immediately upon implementing each TGS from the approved TMP;~~
- ~~(c) during the first day and night a.m. and p.m. peak hours following the implementation of each TGS; and~~
- ~~(d) at any other time nominated in the Code.~~

~~Audits and auditors shall be in accordance with the requirements of Section 160.~~

~~Within 2 days of a Road Safety Audit being carried out, the Contractor shall forward an initial Road Safety Audit report and the Contractor's response to the report to the Superintendent.~~

~~The initial Road Safety Audit Report should be discussed with the Contractor's representative who developed the TMP and any necessary corrective actions shall be implemented as soon as possible after identification.~~

~~A detailed Road Safety Audit report and the Contractor's response to the report shall be submitted to the Superintendent within seven days of the Road Safety Audit being carried out.~~

~~Any minor changes required to the TGS, as identified by the detailed Road Safety Audit Report and agreed to by the Contractor, must be implemented and recorded on the TMP by an organisation/person defined in Clause 166.04.~~

~~Any major changes required to the TGS, as identified by the detailed Road Safety Audit Report and agreed to by the Contractor and the Superintendent, must be implemented by an organisation/person defined in Clause 166.04, and the TMP and TGS must be updated accordingly.~~

166.11 SIGNS AND DEVICES

Unless otherwise specified, the Contractor shall supply all signs and devices required to complete the work covered by this section.

Signs and devices shall comply with the relevant requirements of the Code together with the following additional requirements:

(a) Pavement Markers

Pavement markers shall comply with the requirements of AS 1906, Retroreflective Materials and Devices for Road Traffic Control Purposes, Part 3 - Raised Pavement Markers (Retroreflective and Non Retroreflective). The adhesive used to fasten them to the pavement shall comply with the requirements of Section 853.

(b) Retroreflective Sheeting

Retroreflective sheeting used on any sign or device shall comply with the requirements of AS 1906, Retroreflective Materials and Devices for Road Traffic Control Purposes, Part 1 - Retroreflective Materials, for Class 1 material, except that the coefficient of luminous intensity shall be not less than 50% of the values given in Table 2.2 of AS 1906, Part 1, for each designated colour when tested in the cleaned condition.

(c) Signs

Dirty, illegible, damaged or faded signs shall not be used if there is any doubt that the message or intent of the sign is unclear or confusing to road users. The Contractor shall clean, replace or renew all signs as required to ensure legibility and luminous intensity.

(d) Variable Message Signs

Variable Message Signs shall be installed in accordance with the Code.

166.12 STORAGE OF PLANT AND EQUIPMENT

When not in use, the Contractor shall be responsible for the safe storage of plant and equipment clear of the travelled path. Wherever possible, plant and equipment shall be stored not less than 3 metres from the edge of the traffic path in urban areas and not less than 5 metres in rural areas. If it is not possible to provide such clearance, the plant and equipment shall be moved from the Works area to a suitable storage site or be protected by suitable signs, lights and devices.

166.13 CARE OF AREAS USED BY TRAFFIC

The Contractor shall be responsible for ensuring that the pavement and shoulders being used by traffic within the Works area are in a safe and trafficable condition.

Any material which has fallen on any travelled path as a result of the Contractor's transportation or other operations and any material stored near the travelled path which could constitute a hazard to traffic shall be removed by the Contractor immediately.

166.14 ACCESS TO SIDE ROADS AND ABUTTING PROPERTY

Construction operations shall be conducted in such a manner as to minimise inconvenience to abutting property owners. Unless otherwise specified, access to properties and side roads shall be maintained at all times wherever practicable other than when the Works present a traffic hazard or the Work would suffer damage as a result of the passage of traffic.

Where the Contractor proposes to restrict access to abutting properties as a result of the Contractor's operations, the Contractor shall provide a minimum of 24 hours notice to the affected property owner/occupier.

Access shall not be denied to any abutting property outside the customary working hours.

166.15 OPERATIONS AFFECTING TRAFFIC**(a) General**

Unless otherwise specified, In conjunction with conditions set out in the Contract Document, Part 4 – Specifications, Section 2, item 2.14, the Contractor shall so conduct the operations as to minimise obstruction and inconvenience to the public, and shall not have under construction any greater length or amount of work than can be managed properly with due regard to the convenience of the public.

If the intermingling of construction plant with traffic is unavoidable, the intermingling shall be minimised at all times.

Unless otherwise specified, the Contractor shall:

- (i) provide a minimum safe working width for the Contractor's construction plant plus an absolute minimum clearance to the edge of the traffic path of 1.2 metres;
- (ii) provide a minimum one way clear travel path width for traffic of not less than 3.5 metres for one-way operation and 7 metres for two-way operation;
- (iii) not work on any part of a carriageway during peak traffic flows unless such work is so conducted that it does not cause any additional delays to traffic than if the work was not done;
- (iv) locate the longitudinal joint(s) for pavement construction and/or cold planing works at either the traffic lane line(s) or at the centre of the traffic lane(s) or as specified in Clause 407.17(c) for asphalt paving.

The shoulder (sealed or unsealed) may be used as part of the travelled path subject to the agreement of the Superintendent.

(b) Earthworks and Pavement Construction

Unless otherwise approved by the Superintendent, earthworks and pavement construction shall proceed only in areas clear of travelled paths and footpaths.

Where construction is being carried out over part of the carriageway width, the following conditions shall apply:

- (i) Steps or batters within 1.5 metres of the travelled path of the carriageway shall be delineated as specified in the Code. Where the step or batter forms a drop in level of more than 200 mm at a slope steeper than 1 in 6, barricades shall be used in addition to delineation.
- (ii) Where the level difference is in the form of a step or batter of less than 80 mm and is between the travelled paths, such step or batter shall be removed before the close of work each day and the full width of carriageway made available to traffic overnight. The removal of such step or batter shall be effected by shaping to a crossfall not steeper than 1 in 10.
- (iii) Unless otherwise specified, prior to the close of work each day all steps between layers of unbound pavement material being placed shall be tapered to a slope not steeper than 1 in 10.

(c) Footpaths and Pedestrian Walkways

Unless otherwise specified, temporary footpaths or pedestrian walkways within the work zone shall be not less than 1.5 metres wide, shall have a firm, even and free draining surface and shall be free from steps and obstructions.

166.16 USE OF SAFETY BARRIERS AT WORKSITES

The Contractor shall comply with the Code which sets out various requirements for the design, construction and testing of safety barriers and their use at worksites.

166.17 DETOURS AND SIDE TRACKS

(a) Side Tracks

HP Traffic shall not be diverted on to any side track until permission to use such side track has been given by the Superintendent.

(b) Detours

Unless otherwise specified, traffic shall not be detoured on to roads outside the works zone.

Prior to the issue of the Final Certificate, unless otherwise specified, detours and side tracks used or constructed during the Contract shall be restored to the condition existing at the time of commencement of the work under the Contract. Where the Contractor is responsible for the restoration of detours and side tracks the Contractor shall produce from the local authorities or landowners concerned clearances in writing stating that such detours and side tracks have been restored to their satisfaction.

HP Where VicRoads as well as the Contractor has some responsibility for the restoration of any detours or sidetracks, the Contractor shall not commence any restoration work until the Contractor has submitted details of the work to be undertaken to the Superintendent for review.

166.18 VERTICAL CLEARANCE FOR BRIDGEWORKS OVER ROADWAYS

(a) General

The Contractor shall provide a minimum vertical clearance for all structures over roadways in accordance with Part 2 of the VicRoads Road Design Guidelines. Notwithstanding the above, a temporary minimum clearance of 4.5 metres may be provided over roads during construction subject to the approval of the Superintendent.

Where the vertical clearance during construction is less than the specified design clearance in the VicRoads Roads Design Guidelines and approved by the Superintendent, the Contractor shall design, supply, erect and maintain temporary low clearance warning gauges in advance of the bridgeworks. The location, type and details of all low clearance warning gauges shall comply with the requirements of AS1742.3 and this specification taking into account the safety of bridge workers and other traffic, traffic volume and types of vehicles using the road, and suitable detours for high vehicles. In addition, the Contractor shall provide bridge clearance signs in accordance with AS 1742.3.

(b) Protection Level

The following defines the various protection levels that will apply to each specific structure as specified in Table 166.181.

(i) Protection Level 1

Three low clearance warning gauges shall be erected in advance of bridgeworks. The first low clearance warning gauge approached by traffic shall be an electronic infra-red warning system (or similar) linked to flashing lights, flashing message signs and an audible alarm which is activated when the over dimensional vehicle exceeds the available clearance. The second low clearance warning gauge shall be a non-rigid physical barrier designed to impact with over dimensional vehicles but not restrain the passage of the vehicle. The third low clearance warning gauge shall be a semi-rigid physical barrier designed to impact more severely and partially restrain over dimensional vehicles. Low clearance warning gauges shall be designed to withstand the anticipated impact loads and not endanger the travelling public as a result of impact.

(ii) Protection Level 2

Two low clearance warning gauges shall be erected in advance of bridgeworks. The first gauge approached by traffic shall be a non-rigid physical barrier designed to impact with over dimensional vehicles but not restrain the passage of the vehicle. The second low clearance warning gauge shall be a semi-rigid physical barrier designed to impact more severely and partially restrain over dimensional vehicles. Low clearance warning gauges shall be designed to withstand the anticipated impact loads and not endanger the travelling public as a result of impact.

(iii) Protection Level 3

One low clearance warning gauge shall be erected in advance of bridgeworks. This low clearance warning gauge shall be a non-rigid physical barrier designed to impact with over dimensional vehicles but not restrain the passage of the vehicle. Low clearance warning gauges shall be designed to withstand the anticipated impact loads and not endanger the travelling public as a result of impact.

(c) Warning Gauges

The location of low clearance warning gauges shall be in accordance with the requirements of AS 1742.3 and also take account of traffic speeds and the geometric constraints of the site.

All low clearance warning gauge installations shall include protection of the columns by means of safety barriers complying with the Code. Safety barriers shall incorporate an approach taper of 10 to 1 commencing outside the clear zone for the road.

Means of regulated access for high vehicles beyond the low clearance warning gauges shall be provided if practicable and required by local traffic.

Vertical clearance below low clearance warning gauges shall be 0.1 metres less than the clearance below the structure.

HP Details of the low clearance warning gauge proposal shall be submitted to the Superintendent for review at least 2 weeks, or the period specified herein, prior to the commencement of installation.

The Contractor shall remove low clearance warning gauges and bridge clearance signs at the earliest possible time after the completion of the works. The Contractor shall arrange and provide traffic management during erection and removal of the low clearance warning gauges.

~~(d) Schedule of Details~~

~~Table 166.181~~

Structure Location	Minimum Protection Level Required	Time for Review by Superintendent