

TRANSPORT FOR NSW (TfNSW)

QA SPECIFICATION G10

TRAFFIC MANAGEMENT

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REVISION REGISTER

Ed/Rev Number	Clause Number	Description of Revision	Authorised By	Date
Ed 5/Rev 0	Spec Title	Title changed to "Traffic Management".	GM, IC	22.04.10
	Guide Notes	Guide Notes expanded to include: - notes on customisation of G10, - example of project specific traffic management restrictions.		
	1.2.6	New clause on list of acronyms in Annex M2.		
	1.3	List of definitions included.		
	1.4.1	Authority to appoint Traffic Controllers clarified and formalised.		
	1.4.3	Qualifications of traffic control personnel specified.		
	1.4.4	New Hold Point introduced for submission of proposed Traffic Controllers details.		
	1.4.5	Requirements for RTA logo changed.		
	1.4.6	New clause on Traffic Control Site Manager.		
	2.2	Provision for project specific traffic management restrictions introduced.		
	2.4	New clause on Road Occupancy Licence included.		
	2.5	Additional requirements specified for Traffic Management Plan.		
		Qualification of person preparing Traffic Management Plan specified.		
	2.6	New clause on Traffic Staging Plans introduced.		
2.7.1 & 2.7.2	Road design requirements expanded.			

Ed/Rev Number	Clause Number	Description of Revision	Authorised By	Date
Ed 5/Rev 0 (cont'd)	2.7.4	Design standards for pavement design inserted.		
		Requirement for existing pavements and road shoulders used as temporary roadways to be upgraded.		
	2.7.4	Requirement for safety barrier product to have RTA Acceptance.		
	2.8	Traffic Control Plan requirements expanded. Qualification of person modifying standard Traffic Control Plans introduced. New requirements for project specific Traffic Control Plans introduced. New clause on Vehicle Movement Plans introduced.		
	2.9	Requirement for traffic management risk assessment workshop introduced.		
	2.10	Requirement for road safety audit of TCP introduced.		
	3.3	Requirement for inspection by qualified person prior to opening temporary roadways and detours introduced.		
	3.4	Requirement for road safety audit of TCP implementation introduced.		
	4	New clause "Traffic Control Devices".		
	4.1 & 4.2	Requirements for safety barriers, pavement markings and signs expanded.		
	4.3 & 4.3	New clauses introduced for: - portable variable message signs, - radar activated speed signs.		
	4.5	Clause on temporary traffic signals (previously contained within clause on Traffic Control Plan) inserted.		
	5	Requirement for daily inspection of traffic control measures introduced.		
	6	New clause "Construction Work Adjacent To Traffic", grouping together previous clause 3.1 "Construction under or adjacent to traffic", clause 1.7 "Approved clothing for work personnel", and clause 1.8 "Plant and equipment".		
	7 7.1 7.2 7.3	New clause "Maintenance of Roadways" for: - Existing roadways - Temporary roadways - New roadways.		

Ed/Rev Number	Clause Number	Description of Revision	Authorised By	Date
Ed 5/Rev 0 (cont'd)	Annex A1 Annex A2 Annex A4 Annex B Annex C Annex M1 Annex M2	New table of project specific requirements. New Annexure for project specific traffic management restrictions. New Annexure for Road Occupancy Fees. Pay Item P1 modified. New Pay Items P2, P3 and P4 introduced. Suggestions for additional Pay Items introduced. Schedules of Hold Points and Identified Records updated. Reference Documents updated. List of acronyms inserted.		
Ed 5/Rev 1	Annex B	Scope of work covered by Pay item G10P1 clarified.	GM, IC	27.10.10
Ed 5/Rev 2	1.4 1.5.5	Previous clause 1.2.7 moved to clause 1.4. Subsequent clauses renumbered. Details pertaining to RTA logo on safety vest deleted.	GM, IC	04.07.11
Ed 5/Rev 3	Annex B Pay Item P4	Period for routine maintenance of newly constructed sections opened to traffic clarified to be the earlier of Contractual Completion Date or Completion.	GM, IC (M Andrew)	09.11.11
Ed 5/Rev 4	Annex B Pay Item P4	Unit of measurement changed from “per kilometre per week” to “per week”.	GM, CPS (Brian Bestwick)	11.04.14
Ed 6/Rev 0	Guide Notes 1.1 1.3 1.3.1 1.3.2 1.5.5	Guide notes edited. List items rearranged and edited. Heading title changed to include “Acronyms”. Statement added to definition of “Traffic Management Plan” that TMP may incorporate other component plans. Definition of “Pedestrian Movement Plan (PMP)” added; definitions of “long-term temporary work” and “short-term temporary work” deleted. Acronyms moved here from Annex M. “PMP” added to list of acronyms. Requirement to have the letters “RMS” on safety vests of Traffic Controllers deleted.	GM, CPS	09.06.15

Ed/Rev Number	Clause Number	Description of Revision	Authorised By	Date
Ed 6/Rev 0 (cont'd)	2.1	<p>This clause now incorporates previous clause 2.3 (now sub-clause 2.1.1) and clause 2.1 (now sub-clause 2.1.2). Previous clause 2.2 now part of sub-clause 1.2.1.</p> <p>Subsequent clauses renumbered.</p>		
	2.1.3	<p>New sub-clause incorporating the contents of previous clause 3.2.</p>		
	2.2	<p>Previously clause 2.4. Headings added to form new sub-clauses 2.2.1 to 2.2.3. Individual clauses rearranged.</p>		
	2.3	<p>Previously clause 2.5. Headings added to form new sub-clauses 2.3.1 to 2.3.5. Individual clauses rearranged and reworded to improve clarity.</p>		
	2.3.1	<p>“Principal’s approval” changed to “Principal’s acceptance”.</p> <p>Statement added that Principal may waive requirement for submission of TMP for Minor Works Contract.</p> <p>Clarification added that the 20 working days assessment period will again apply from date of submission of requested information.</p>		
	2.3.2	<p>PMP added to list of required elements of TMP.</p> <p>Names and contact details of nominated personnel for attendance at traffic incidents added to required elements of TMP.</p>		
	2.3.3	<p>Requirement added to consult with all relevant stakeholders, including Councils and local bus companies, when preparing the TMP.</p>		
	2.3.5	<p>New sub-clause on no entitlement to EoT or additional payments arising from the Traffic Management Plan, moved here from previous clause 2.6.</p>		
	2.4	<p>Previously clause 2.6. Headings added to form new sub-clauses 2.4.1 to 2.4.2.</p>		
	2.4.2	<p>Bus stop locations added to list of required details.</p>		
	2.5	<p>Previously clause 2.7. Individual sub-clauses rearranged.</p> <p>Design standards changed to Austroads Guide and associated RMS Supplement.</p>		
	2.5.5	<p>Link to list of accepted safety barrier products updated.</p>		

Ed/Rev Number	Clause Number	Description of Revision	Authorised By	Date
Ed 6/Rev 0 (cont'd)	2.5.6	New sub-clause titled "Design Output" incorporating part of previous clause 2.7.2.		
		Requirement added to submit Designer Safety Report with design output.		
	2.6	Previously clause 2.8. Individual sub-clauses rearranged.		
	2.6.1	New sub-clause titled "Plan Submission" incorporating part of previous clause 2.8.3.		
	2.6.4	New sub-clause titled "Required Details" incorporating part of previous clause 2.8.3.		
	2.7	New clause covering Vehicle Movement Plan and Pedestrian Movement Plan.		
	2.7.1	Previously sub-clause 2.8.4, on VMP requirements.		
	2.7.2	New sub-clause, on PMP requirements.		
	2.8	Previously clause 2.10. Road safety audit requirements amended.		
		Centre for Road Safety "Guidelines for Road Safety Audit Practices" included as reference for auditing.		
	2.8, 3.3	Composition of audit team changed.		
		Audit report to be submitted within 5 working days.		
	2.9	Headings added to form new sub-clauses 2.9.1 to 2.9.4.		
	2.9.2	Statement on using additional workshops to train site personnel deleted.		
	3.2	Headings added to form new sub-clauses 3.2.1 to 3.2.4.		
	3.2.2	Statement on inspection of TCP implementation clarified to remove overlap with clause 3.3.		
	3.3	Previously clause 3.4. Road safety audit requirements amended.		
	4.1	Headings added to form new sub-clauses 4.1.1 to 4.1.4.		
	4.2	Headings added to form new sub-clauses 4.2.1 to 4.2.3.		
	4.2.2	Removal of redundant pavement markings changed to be in accordance with R141 or R145		
4.2.3	Requirement added to keep records of times when temporary speed zoning signs are in force.			

Ed/Rev Number	Clause Number	Description of Revision	Authorised By	Date
Ed 6/Rev 0 (cont'd)	4.3	Headings added to form new sub-clauses 4.3.1 to 4.3.4. Individual sub-clauses rearranged.		
	4.4	Headings added to form new sub-clauses 4.4.1 to 4.4.4.		
	6.3	Headings added to form new sub-clauses 6.3.1 and 6.3.2.		
	7	Scope of routine maintenance of roadways consolidated under new clause 7.1. Subsequent clauses renumbered accordingly.		
	Annex A1	Presentation of tables changed; content edited.		
	Annex A3	Table sub-divided into 3 separate tables.		
	Annex B	Unit of measurement for Pay Items P2, P3 and P4 changed to Lump Sum.		
	Annex C Annex M	Schedules updated. Referenced Documents updated.		
Ed 7/Rev 0	1.1	Scope of spec reworded.	DCS	19.11.18
	1.3	Definitions and acronyms amended. New term "Traffic Guidance Scheme" added.		
	1.4	New clause on Contractor's general responsibilities.		
	1.4.1	Previously sub-clause 2.1.2, incorporating part of previous clause 2.3.4.		
	1.4.2	New sub-clause on community consultation.		
	1.4.3	Previously sub-clause 2.1.3. Requirement added to make arrangements for continuity of provision of services.		
	1.4.4	New sub-clause on requirement to coordinate with adjoining contracts.		
	1.4.5	New sub-clause on complying with directions of authorities, incorporating part of previous clause 2.2.3.		
	1.4.6	New sub-clause on providing assistance to clear roadway and making roadway safe for traffic following traffic accident.		
	1.5	New clause on allowance for installing traffic control measures outside "Limits of Work".		
	1.6	Previously clause 1.4 on Traffic Control at Work Sites Manual. Headings added to form new sub-clauses 1.6.1 and 1.6.2.		

Ed/Rev Number	Clause Number	Description of Revision	Authorised By	Date
Ed 7/Rev 0 (cont'd)	1.7	Previously clause 1.5. Sub-clauses renumbered accordingly. Traffic control qualifications updated.		
	1.8	Previously sub-clause 1.5.6. Headings added to form new sub-clauses 1.8.1 to 1.8.4. Term “Traffic Control Site Manager” changed to “Traffic Manager”.		
	1.8.2	Traffic control qualifications updated.		
	1.8.3	Traffic Manager’s roles and responsibilities amended.		
	2.1	Previously clause 2.2 on road occupancy licence. Sub-clauses renumbered accordingly.		
	2.1.1	Requirement added to allow an additional 20 working days for TMC to assess TMP.		
	2.1.3	Previous sub-clause 2.1.1 on temporary speed zone authorisation, amended.		
	2.1.4	Previously sub-clause 2.2.3 ROL conditions, amended.		
	2.2	Previously clause 2.3 on Traffic Management Plan. Sub-clauses renumbered accordingly. Order of previous sub-clauses 2.2.2 and 2.2.3 interchanged.		
	2.2.1	Process held changed to submission of application for ROL. Statement that Principal may waive requirement for submission of TMP deleted.		
	2.2.2	Previously sub-clause 2.3.3. Traffic management qualifications updated. TMP to be approved by Traffic Manager, Site Safety Representative and Construction Manager prior to submission to Principal.		
	2.2.3	Required elements of TMP amended, including addition of Traffic Incident Management Plan. Item (f): approved traffic signal plans included as part of submission of design drawings for temporary roadways and detours.		
	2.2.4	New sub-clause on carrying out risk assessment.		
	2.2.5	New sub-clause on review of TMP, incorporating part of previous clause 2.3.4.		

Ed/Rev Number	Clause Number	Description of Revision	Authorised By	Date
Ed 7/Rev 0 (cont'd)	2.3	Previously clause 2.4 on Traffic Staging Plans. Sub-clauses renumbered accordingly.		
	2.3.2	Required details expanded.		
	2.4	Previously clause 2.6 on TCP. Sub-clauses renumbered accordingly. Term “standard TCP” changed to “example TCP”.		
	2.4.2, 2.4.3	Previously sub-clauses 2.6.2 and 2.6.3 respectively on traffic control plans. Traffic management qualification updated.		
	2.4.4	Previously sub-clauses 2.6.4. Required details amended. Requirement added to include in TCP dimensions for setting out.		
	2.5	Previously clause 2.7 on VMP and PMP. Sub-clauses renumbered accordingly.		
	2.5.1	Previously sub-clause 2.7.1 on VMP. Requirements on construction traffic entering or leaving road network added. Requirement to minimise use of local roads added.		
	2.5.2	Requirement to provide safe access for pedestrians to bus stops added.		
	2.6	Previously clause 2.5 on temporary roadway design. Sub-clauses renumbered accordingly.		
	2.6.5	Provision of appropriate pavement markings in conjunction with the temporary safety barriers.		
	2.6.6	New sub-clause on temporary fixed traffic signal design.		
	2.7	New clause on Traffic Incident Management Plan.		
	2.8	Previously clause 2.9 on traffic management risk assessment workshop. Sub-clauses renumbered accordingly.		
	2.8.2	Previously sub-clause 2.9.2. Content of workshop amended.		
	2.8.3	Participants in Traffic Management Risk Assessment Workshop expanded.		
	3	Previously clause 4 on traffic control devices. Sub-clauses renumbered accordingly.		
	3.2.2	Removal of redundant pavement markings harmonised with specs R141/R145.		

Ed/Rev Number	Clause Number	Description of Revision	Authorised By	Date
Ed 7/Rev 0 (cont'd)	3.3.2	VMS type requirements reworded to improve clarity.		
	3.3.3	Heading title changed to "Messages".		
	3.3.4	Requirement to replace faulty or damaged VMS within 24 hours added.		
	4	New clause on implementation, incorporating previous clauses 2.8, 3.1 to 3.4, and 5.		
	4.1	New clause on induction of personnel.		
	4.2	Previously clause 2.8 on road safety audit of TMP prior to implementation. Headings added to form new sub-clauses 4.2.1 to 4.2.3.		
	4.3	Previously clause 3.1 on construction of temporary roadways and detours.		
	4.4	Previously clause 3.2 on opening temporary roadways and detours to traffic.		
	4.4.2	Traffic management qualifications updated.		
	4.5	Previously clause 3.3 on road safety audit of temporary roadways and detours after opening.		
	4.6	Previously clause 3.4 on removal of temporary roadways and detours.		
	4.7	New clause on monitoring and reporting of traffic control measures.		
	4.7.1	Previously clause 5 on monitoring of traffic control measures.		
	4.7.2	New sub-clause on monthly reporting of traffic management.		
	4.8	New clause on traffic incident reporting.		
	5	Previously clause 6 on working adjacent to traffic. Sub-clauses renumbered accordingly.		
	6	Previously clause 7 on routine maintenance of roadways. Sub-clauses renumbered accordingly.		
	7	Previously clause 8 on opening to traffic upon completion.		
	Annex A1	Table and Notes amended.		
	Annex A2	Suggestions for project specific additional requirements expanded.		
	Annex A5	New Annexure added with guidance notes moved here from Pay Item.		
Guidance note on insertion of a plan showing or schedule listing areas for routine maintenance added.				
Annex B	Pay Item scope items amended.			

Ed/Rev Number	Clause Number	Description of Revision	Authorised By	Date
Ed 7/Rev 0 (cont'd)	Annex C Annex D Annex M	Schedules updated. Planning documents updated. Referenced documents updated.		
Ed 7/Rev 1	4.4.2, 4.7.1	Qualification for verifying traffic control measures changed.	MCQ	04.12.18
Ed 7/Rev 2	3.5 Annex M	Clause reference to spec SI/TCS/8 (withdrawn) replaced with spec TS101. Referenced documents updated.	MCQ	14.10.19
Ed 7/Rev 3	Global	References to “Roads and Maritime Services” or “RMS” changed to “Transport for NSW” or “TfNSW” respectively.	DCS	22.06.20
Ed 7/Rev 4	3.2.2 Annex B	Redundant pavement markings to be in accordance with spec R145. Pay Item P1 – clarified that payment for permanent traffic control devices and permanent lighting to be made under other specs.	MCQ	10.07.20
Ed 7/Rev 5	2.6.3	ARI for drainage system design clarified.	MCQ	12.08.20

GUIDE NOTES

(Not Part of Contract Document)

USE OF TfNSW TRAFFIC CONTROL AT WORK SITES MANUAL

G10 requires contractors to consult and comply with the Traffic Control at Work Sites Manual.

The Manual contains both mandatory requirements that must be complied with, and guidance which contractors should consider when planning and carrying out traffic control. Some details and terms in the Manual reflect TfNSW usage, and as such contractors will need to adapt them to suit their own organisation.

The Manual contains information which can assist contractors to develop and implement their Traffic Management Plans and the Principal's staff in considering, approving and monitoring the Plans.

ANNEXURE G10/A2 – PROJECT SPECIFIC RESTRICTIONS AND ADDITIONAL REQUIREMENTS

Annexure G10/A2 provides for the Tender Documenter to insert any **restrictions** and **additional requirements** for traffic management which tenderers must allow for when preparing their tenders and which the Contractor has to include in the Traffic Management Plans and Traffic Control Plans.

An example is given below:

A2 PROJECT SPECIFIC RESTRICTIONS AND ADDITIONAL REQUIREMENTS

A2.1 Traffic on MR920

The following restrictions apply to traffic management on MR920 for this Contract:

- (a) *The traffic capacity of MR920 existing at the Site at the Date of Contract must be maintained, except as provided elsewhere under this clause. Any delays to traffic must be kept to a minimum.*
- (b) *Between the hours 7:00 am and 10:00 am, obstruction of the through or turning lanes on MR920 or the intersecting side streets is not permitted. Unless approved otherwise by the Principal, this requirement applies to all existing lanes, including any additional lanes constructed as part of the Works and have been opened to traffic.*
- (c) *Restriction of traffic to a single lane traffic flow using Traffic Controllers will be permitted only for night time work. For this traffic arrangement, traffic in each direction must not be stopped for more than 5 minutes.*

A2.2 Traffic on Local Roads

The following restrictions apply to traffic management on local roads for this Contract:

- (a) *Current turning movements into and out of local roads must be maintained during construction.*
- (b) *Traffic along MR920 must not be diverted on to local streets unless prior written approval has been obtained from Woop Woop City Council.*
- (c) *Closure of side roads is not permitted unless prior written approval has been obtained from Woop Woop City Council.*

A2.3 Buses

Provide facilities for bus commuters, including the following:

- (a) Temporary bus bays, 15m long, 3.5m wide with tapers 20m long at each end.*
- (b) Bus stop signs.*
- (c) Adequate areas to queue and for pedestrian movement.*
- (d) Pedestrian paths across active roadways and construction zones to the bus stops.*
- (e) Signs directing pedestrians to and from the bus stops.*

Ensure also that all traffic staging can adequately cater for bus turning movements.

Keep the bus companies informed of your construction activities affecting their bus routes.



TRAFFIC MANAGEMENT

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VERSION FOR: DATE:

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FOREWORD

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REVISIONS TO PREVIOUS VERSION

This document has been revised from Specification TfNSW G10 Edition 7 Revision 4.

All revisions to the previous version (other than minor editorial and project specific changes) are indicated by a vertical line in the margin as shown here, except when it is a new edition and the text has been extensively rewritten.

PROJECT SPECIFIC CHANGES

Any project specific changes are indicated in the following manner:

- (a) Text which is additional to the base document and which is included in the Specification is shown in bold italics e.g. ***Additional Text***.
- (b) Text which has been deleted from the base document and which is not included in the Specification is shown struck out e.g. ~~Deleted Text~~.

TfNSW QA SPECIFICATION G10

TRAFFIC MANAGEMENT

1 GENERAL

1.1 SCOPE

This Specification sets out the requirements for managing for the safe movement of traffic, including through traffic, within the Site.

Its scope includes:

- (a) preparation of Traffic Management Plan and its component plans;
- (b) design, construction, upgrading, maintenance and removal of any temporary roadways and detours;
- (c) road safety audits of Traffic Management Plan and temporary roadways or detours;
- (d) use of Traffic Controllers or Portable Traffic Control Devices to direct and control traffic;
- (e) provision of access to local properties and side roads;
- (f) installation and removal of temporary safety barriers, pavement markings, signs and traffic signals;
- (g) safety measures for working adjacent to traffic;
- (h) routine maintenance of existing roadways and new temporary roadways and detours.

1.2 STRUCTURE OF THE SPECIFICATION

This Specification includes a series of annexures that detail additional requirements.

1.2.1 Project Specific Details

Details relating to traffic management that are specific to this Contract are shown in Annexure G10/A.

Restrictions and/or additional traffic management requirements specific to the Contract are stated in Annexure G10/A2.

1.2.2 Measurement and Payment

The method of measurement and payment is detailed in Annexure G10/B.

1.2.3 Schedules of HOLD POINTS and Identified Records

The schedules in Annexure G10/C list the **HOLD POINTS** that must be observed. Refer to Specification TfNSW Q for the definition of **HOLD POINTS**.

The records listed in Annexure G10/C are **Identified Records** for the purposes of TfNSW Q Annexure Q/E.

1.2.4 Planning Documents

The PROJECT QUALITY PLAN must include each of the documents and requirements listed in Annexure G10/D and must be implemented.

1.2.5 Referenced Documents

Unless otherwise specified, the applicable issue of a referenced document, other than a TfNSW Specification, is the issue current at the date one week before the closing date for tenders, or where no issue is current at that date, the most recent issue.

Standards, specifications and test methods are referred to in abbreviated form (e.g. AS 1234). For convenience, the full titles are given in Annexure G10/M.

1.3 DEFINITIONS AND ACRONYMS

1.3.1 Definitions

The terms “you” and “your” mean “the Contractor” and “the Contractor’s” respectively.

The following definitions apply to this Specification:

Road Occupancy Licence	A permit which allows the applicant to use or occupy a specified road space at approved times, provided that certain conditions are met.
Traffic Management Plan	A plan showing how traffic will be managed when construction works are being carried out. A TMP describes the work activities being proposed, their impact on the roadway and on road users, and how these impacts are being addressed. A TMP may incorporate Traffic Staging Plans, Traffic Control Plans, Vehicle Movement Plans and Pedestrian Movement Plans (see below).
Traffic Staging Plan	Road design drawings showing traffic lane configurations to be provided for traffic passing through the Site during the various construction stages, including details of road alignment and geometry, intersection layouts, provision for buses and cyclists, work areas and pedestrian areas, drainage, signs and pavement markings, etc.
Traffic Control Plan or Traffic Guidance Scheme	A diagram showing signs and devices arranged to warn traffic and to guide it around, past or if necessary through a work site or temporary hazard.
Vehicle Movement Plan	A diagram showing the preferred travel paths for vehicles associated with a work site entering, leaving or crossing the through traffic stream. A VMP may be combined with or superimposed on a TCP.
Pedestrian Movement Plan	A diagram showing the allocated travel paths for workers or pedestrians around or through a work site. A PMP may be combined with or superimposed on a TCP.

1.3.2 Acronyms

PMP	Pedestrian Movement Plan(s)
RASS	Radar activated speed sign(s)

RTO	Regional Traffic Operations
ROL	Road Occupancy Licence(s)
SZA	Speed Zone Authorisation
TCP	Traffic Control Plan(s)
TCWS	TfNSW Traffic Control at Work Sites Manual
TMC	Transport Management Centre
TMP	Traffic Management Plan(s)
VMP	Vehicle Movement Plan(s)
VMS	Variable message sign(s)

1.4 CONTRACTOR'S GENERAL RESPONSIBILITIES

1.4.1 General

Plan your work to cause the least possible disruption to the traffic flow.

Liaise with the Principal and other regulatory authorities when planning and implementing your traffic management proposals.

Notwithstanding any acceptance of your Traffic Management Plan by the Principal, it remains your responsibility to implement a safe and effective traffic management scheme.

1.4.2 Community Engagement

Throughout the duration of the Contract, liaise continually and consult with property owners/occupiers and business operators impacted by the construction work, on all traffic and access issues, and resolve any issues raised.

1.4.3 Maintain Access and Continuity of Services

At all times, maintain safe access for vehicles, cyclists, pedestrians and livestock to local properties and side roads affected by the road construction.

Make any necessary arrangements to enable continuity of provision of services, such as garbage or recycling waste collection and mail delivery.

Do not commence any work affecting access to local properties and use of side roads without providing alternative access which is acceptable to the Principal and affected owners/residents and business operators.

1.4.4 Coordinate with Adjoining Contracts

Liaise and coordinate your traffic control measures with those of adjoining contracts undertaken concurrently by others.

1.4.5 Comply with Directions of the Authorities

Comply with the directions of the Principal and other authorities such as Transport Management Centre (TMC) or TfNSW Regional Traffic Operations (RTO), Police, Fire Brigade and State Emergency Services.

Such directions may include requiring you to temporarily cease work and re-open any closed lane or shoulder in the event of a traffic incident within or adjacent to the Site.

Cooperate with TfNSW and other authorities to facilitate traffic flows on the roadway through the Site.

1.4.6 Assist with Clearing Roadway After Accident

Following a traffic accident on a roadway within or adjacent to the Site, the Police or the Principal may request you to assist with the removal of any debris from the accident left on the roadway, removal or repositioning where necessary of traffic control and safety devices and rectification of any damage caused to them, to make the roadway safe and trafficable again.

1.5 WORK OUTSIDE “LIMITS OF WORK”

Make allowance for any necessity to install traffic control measures outside the “Limits of Work” shown on the Drawings, for traffic control zones such as advance warning area, transition area, buffer area, and termination area.

1.6 TfNSW TRAFFIC CONTROL AT WORK SITES MANUAL

1.6.1 Consult and Comply with TCWS

When planning and carrying out traffic management, comply with the TfNSW Traffic Control at Work Sites Manual (TCWS).

1.6.2 Use of TCWS

Where the TCWS states a role and its corresponding responsibilities, nominate a person, who may be either your employee, your subcontractor or your agent, for that role and ensure that the specified duties and responsibilities of such persons are carried out.

1.7 TRAFFIC CONTROL PERSONNEL

1.7.1 Authority to Direct Traffic

You are authorised, under section 6 of the *Roads Regulation 2008 (NSW)*, to appoint Traffic Controllers solely for the purposes of the Contract to provide for the safe movement of traffic around, past or through the work site. Any such appointment will cease upon the completion of traffic control work under the Contract, or the termination of the Contract, whichever is the earlier.

1.7.2 Registration of Traffic Control Organisations

The organisation undertaking the traffic control must be registered under the TfNSW Registration Scheme Category G “Traffic Control”.

1.7.3 Qualifications of Traffic Controllers

Traffic Controllers controlling and directing traffic must hold a current “Traffic Controller” qualification (refer Section 2.4.1 of TCWS).

Traffic Controllers must carry their “Traffic Controller” qualification at all times when controlling traffic.

1.7.4 Proposed Traffic Controllers

Prior to the commencement of any work at the Site involving controlling and directing traffic, submit to the Principal the names of your proposed Traffic Controllers, and evidence of the currency of their qualifications. Submission of these details constitutes a Hold Point.

HOLD POINT

Process Held:	Any work controlling and directing traffic on the Site.
Submission Details:	The names of your proposed Traffic Controllers, and their qualification details such as registration numbers and expiry dates.
Release of Hold Point:	The Principal will consider your proposed personnel prior to authorising the release of the Hold Point.

Where there is a change of personnel, submit the details specified above of the new Traffic Controllers, and the Hold Point will again apply to these new personnel.

1.7.5 Clothing and Illuminated Wand

When directing traffic, your Traffic Controllers must wear high visibility fluorescent clothing or safety vests complying with AS/NZS 4602, clearly bearing the words “Authorised Traffic Controller”.

During poor light conditions or at night, equip your Traffic Controllers with illuminated wands to supplement the STOP/SLOW bat.

1.8 TRAFFIC MANAGER

1.8.1 General

Where specified in Annexure G10/A1, nominate in your Traffic Management Plan (TMP) a member of your site management team to be dedicated full time as your Traffic Manager.

1.8.2 Qualification and Experience

The Traffic Manager must hold a current “Prepare Work Zone Traffic Management Plan” qualification (refer Section 2.4.1 of TCWS), and have a minimum of 5 years of recent experience in traffic management on road construction sites of equivalent complexity to the current Contract.

1.8.3 Roles and Responsibilities

Detail in the TMP the roles and responsibilities of the Traffic Manager, which include (but not limited to):

- (a) ensuring that the approved traffic management measures are implemented and maintained in accordance with the approved plans;
- (b) carrying out regular inspections of the traffic control measures to ensure that they are effective;
- (c) amending and updating the plans, as required, to ensure that they remain current as the work progresses;
- (d) identifying situations where traffic congestion, or unsafe conditions for vehicles, cyclists, pedestrians and workers, are occurring and providing recommendations for improvement;

- (e) maintaining current copies of the Traffic Management Plan and its various component plans, lane occupancy licences and speed zone authorisations, and their controlled distribution;
- (f) keeping records of the Traffic Controllers' qualifications and ensuring that they are current;
- (g) liaising and facilitating regular meetings with the Principal, other authorities and relevant parties on traffic management matters for the Site, maintaining records of these meetings and making them available to the relevant persons;
- (h) in conjunction with your Community Relations Manager, undertaking consultations with local businesses and residents;
- (i) providing induction on traffic management measures to site personnel;
- (j) recording and reporting on all traffic incidents;
- (k) preparing monthly reports on traffic management matters (refer Clause 4.7.2).

1.8.4 Authority to Stop Work or Comply with Directions

The Traffic Manager must have the authority to stop work on any activity where it is considered to be necessary to prevent traffic accidents, or to comply with the directions of the Principal and other authorities in accordance with Clause 1.4.5.

2 PLANNING AND DESIGN

2.1 ROAD OCCUPANCY LICENCE

2.1.1 Road Occupancy Licence Application

When your planned activity requires an existing road to be used in such a way that affects traffic flow, obtain a Road Occupancy Licence (ROL). This licence applies only to occupation of the road space, and does not grant permission for or approval to the actual/physical work being undertaken.

Information on how to apply for a ROL is contained in the Transport Management Centre (TMC) Road Occupancy Manual, available from:

http://www.rms.nsw.gov.au/documents/about/forms/road_occupancy_manual.pdf.

Submit your application for an ROL to the relevant responsible body stated in the Road Occupancy Manual at least 10 working days prior to the planned commencement of the activity requiring the road occupancy. The activity must not commence until the ROL has been obtained.

Where TMC is the responsible body for issuing the ROL, allow an additional 20 working days for TMC to first assess your Traffic Management Plan (refer Clause 2.2).

2.1.2 Road Occupancy Fees

Road Occupancy Fees for occupancy of TfNSW roads may be payable under the Contract, notwithstanding anything to the contrary stated in the Road Occupancy Manual. Where such fees are applicable, it will be so stated in Annexure G10/A1, with an accompanying schedule of road occupancy fees shown in Annexure G10/A3, and their costs will be borne by you.

2.1.3 Temporary Speed Zone Authorisation

In conjunction with your ROL application, you may apply for a temporary Speed Zone Authorisation (SZA) to alter the speed limit of section(s) of the road.

Temporary speed zoning and speed limit selection must comply with the TCWS.

2.1.4 Licence Conditions

The lane occupancy hours granted in your ROL may be less than, and will override, the working hours stated in the Contract, for work that requires the lane occupancy. Manage your work activities to comply at all times with the lane occupancy hours granted in the ROL.

Notwithstanding any ROL granted by the relevant authority for any lane or shoulder closure, you may be directed to temporarily re-open any closed lane or shoulder in accordance with Clause 1.4.3.

Keep a copy of the ROL, SZA and relevant Traffic Control Plan on site at all times when the licence is in operation.

2.2 TRAFFIC MANAGEMENT PLAN

2.2.1 Plan Submission

At least 20 working days prior to the submission of your application for an ROL (refer Clause 2.1), submit for the Principal's acceptance your Traffic Management Plan (TMP) for the Works.

The Principal may agree to a reduced lead time for submission of the TMP if the proposed traffic management measures do not require construction of temporary roadways and detours involving pavement or drainage works.

HOLD POINT

Process Held:	Submission of application for ROL.
Submission Details:	At least 20 working days prior to the proposed date of submission of application for the ROL, or any shorter period agreed to by the Principal, submit your Traffic Management Plan, comprising the elements stated in Clause 2.2.3.
Release of Hold Point:	The Principal will consider the submitted documents, including resources proposed, prior to authorising the release of the Hold Point.

If the Principal requests additional information or clarification, the 20 working days assessment period will again apply from the date of submission of the requested details.

The TCP and other documents making up the TMP may be submitted in stages, subject to the same conditions stated in TfNSW Q for staged submission of the PROJECT QUALITY PLAN.

2.2.2 Plan Preparation

The TMP and associated documentation must be prepared by person(s) suitably experienced in the design and implementation of traffic management plans of equivalent complexity to those required in the Contract and holding qualifications acceptable to the Principal, including as a minimum, a "Prepare a Work Zone Traffic Management Plan" qualification.

Consult with all relevant stakeholders, including Councils and local bus companies, when preparing the TMP.

The TMP must be approved by your Traffic Manager (if the person preparing the TMP is not your Traffic Manager), your Site Safety Representative, and your Construction Manager prior to submission to the Principal in accordance with Clause 2.2.1. Include any comments made during the review with the submission.

2.2.3 Required Elements

The TMP must include, as a minimum and where appropriate, the following elements:

- (a) Details of any traffic staging arrangements associated with each proposed construction stage, including Traffic Staging Plans (refer Clause 2.3), and the time periods during which each stage will be in operation.
- (b) Traffic Control Plans (refer Clause 2.4), including provision for cyclists and pedestrians, and any specific traffic control arrangements associated with the conditions of approval of the ROL.
- (c) Vehicle Movement Plans (refer Clause 2.5.1) showing the mandated travel paths for vehicles to enter, leave or cross the through traffic stream.
- (d) Pedestrian Movement Plans (refer Clause 2.5.2) showing the allocated travel paths for workers within the Site, and for pedestrians around or through the Site, including safe and unhindered access to bus stops.
- (e) Plans showing access to local properties and side roads affected by the construction (refer Clause 1.4.3), relocated bus stops and any temporary carparking arrangements.
- (f) Design drawings for any temporary roadways and detours, including alignment and surface levels, pavement widths, pavement cross-sections, lane configurations, pavement markings, signage and drainage (refer Clause 2.6), and approved traffic signal plans if applicable.
- (g) Traffic Incident Management Plan, for dealing with unplanned traffic incidents (refer Clause 2.7).

Ensure that the TMP is consistent with this specification, including Annexure G10/A, TCWS and AS1742.3.

2.2.4 Risk Assessment

Undertake a risk assessment and address any risks identified in the TMP in accordance with the Road Occupancy Manual.

Where a Traffic Management Risk Assessment Workshop is required (refer Clause 2.8), the risk assessment may be done as part of the workshop.

2.2.5 Review Effectiveness

Review the effectiveness of the TMP at least once a month, and when new risks which have not been previously identified are encountered.

Revise the TMP or its component plans and implement more appropriate measures if the original measures prove not to be fully effective. Submit a copy of any revised component plan of the TMP to the Principal.

2.2.6 No Entitlement

You are not entitled to any extensions of time, or additional payments, arising from any re-design, time taken to obtain acceptance of your TMP, or additional construction costs associated with your proposed arrangements for traffic staging.

2.3 TRAFFIC STAGING PLANS

2.3.1 General

Where so specified in Annexure G10/A1, provide Traffic Staging Plans showing how traffic will pass safely through the Site during the various construction stages. Traffic Staging Plans may be integrated with any Construction Staging Plans prepared by you.

2.3.2 Required Details

The Traffic Staging Plans must show, for each stage, the following details:

- (a) Lane configurations on existing and new (temporary and permanent) pavements, indicating any departures from existing traffic lanes.
- (b) Intersection layouts and temporary traffic signals arrangements.
- (c) Pedestrian footpaths and cycleways.
- (d) Bus stop locations, where applicable.
- (e) Work areas.
- (f) Access to local properties and side roads.
- (g) Pavement markings and signposting.
- (h) Drainage system, both temporary and permanent, including any pollution control measures.
- (i) Utilities and their impact on the traffic staging.
- (j) Street lighting, including any temporary arrangements where required.
- (k) Temporary retaining structures, where required as part of the traffic staging.

If removal of pavement markings is required (refer Clause 3.2), the Traffic Staging Plans must provide details of the proposed methods for removal, the estimated durations to carry out the removal, and if necessary any proposed measures to restore the road surface.

2.4 TRAFFIC CONTROL PLANS

2.4.1 Plan Submission

If not previously submitted as part of the TMP or where a TMP is not required, at least 3 working days prior to its proposed use, submit for the Principal's acceptance your Traffic Control Plan (TCP) for the particular section of the Site.

If traffic staging is applicable, submit individual TCP for each traffic stage.

If lane occupancy is required, comply with the requirements of Clause 2.1 for obtaining the ROL.

HOLD POINT

Process Held:	Any activity which will affect traffic conditions for a particular section of the Site.
Submission Details:	If not previously submitted as part of the TMP or where a TMP is not required, at least 3 working days prior to its proposed use, submit your Traffic Control Plan comprising the details listed in Clause 2.4.4 (where applicable). Include the Vehicle Movement Plan and Pedestrian Movement Plan, and copies of any associated ROL and SZA obtained.
Release of Hold Point:	The Principal will consider the submitted documents prior to authorising the release of the Hold Point.

If the Principal requests additional information or clarification, the 3 working days assessment period will again apply from the date of submission of the additional information.

2.4.2 Example Traffic Control Plan Selection

You may select for use an example TCP contained in the TCWS, modified to suit a specific work location. Follow the procedures set out in the TCWS for the selection, approval and implementation of an example TCP and keep records of the steps performed.

The selection and modification of an example TCP to suit a specific work location must only be carried out by a person holding a “Prepare Work Zone Traffic Management Plan” qualification.

2.4.3 Project Specific Traffic Control Plan Preparation

Where so specified in Annexure G10/A1 or where an example TCP is not suitable for the work being planned, prepare a TCP which is specially custom designed for the project. This work must only be carried out by a person holding a “Prepare a Work Zone Traffic Management Plan” qualification.

These project specific TCP must be drawn using computer aided drafting software and not by hand, unless approved otherwise by the Principal.

The chainages shown in the TCP must match those shown on the Drawings.

2.4.4 Required Details

TCP must show, where applicable, the following details in relation to the work area(s) and any intersecting streets, including any dimensions necessary for setting out:

- (a) Types and locations of permanent regulatory (R series) and warning (W series) signs.
- (b) Types and locations of temporary signs (T series) including advance warning signs, variable message signs (VMS) and radar activated speed signs (RASS).
- (c) Locations of permanent and temporary traffic signals.
- (d) Locations of any required Traffic Controllers.
- (e) Locations and lengths of advance warning areas, transition areas, safety buffer areas and termination areas.
- (f) Locations of safety barrier systems including end terminals.
- (g) Pedestrian footpaths and cycleways.

- (h) Locations of entry and exit gates to work areas, individually numbered and signposted.
- (i) Details of access to local properties, car parking areas, and side roads.
- (j) Pavement marking details, including types of delineation required, turning arrows, stop/holding lines and other road markings, types and positions of raised pavement markers and other delineation devices.
- (k) Locations of temporary street lighting
- (l) Locations of emergency or breakdown lanes, if applicable.

Include a statement with each TCP describing the circumstances for which the TCP is applicable.

2.5 VEHICLE MOVEMENT PLANS AND PEDESTRIAN MOVEMENT PLANS

2.5.1 Vehicle Movement Plans

Where applicable, submit together with your TCP, Vehicle Movement Plans (VMP) showing the preferred travel paths for construction, workers/visitors and delivery vehicles entering, leaving or crossing the through traffic stream.

Such traffic must only enter and leave the road network in the direction of the traffic flow. Alternatively, where this is not practicable, implement additional controls such as installing temporary traffic signals or using Traffic Controllers.

Show on the VMP the vehicle entry and exit points into the work areas, and indicate clearly that these are the only points where interface with the through traffic is permitted.

Locate the entry and exit points at such locations which will facilitate the safe movement of construction vehicles, and minimise any impact to the through traffic flow.

A VMP may be combined with or superimposed on a TCP.

Minimise any use of local roads by heavy construction or delivery vehicles to access the work area.

2.5.2 Pedestrian Movement Plans

Where applicable, submit together with your TCP, Pedestrian Movement Plans (PMP) showing the allocated travel paths for workers or pedestrians around or through the Site, including all signs and devices used to guide the workers or pedestrians.

Provide safe and unhindered access for pedestrians to bus stops.

2.6 TEMPORARY ROADWAYS DESIGN AND DRAWINGS

2.6.1 General

If temporary new roadways and detours, or adjustments to existing lane configurations and road geometry, are required as part of your traffic staging, they must be designed in accordance with the relevant design standards. These design standards also apply where existing or previously unused roadways, including road shoulders, are proposed as temporary roadways.

Engage a road designer, approved by the Principal, with at least 5 years of recent experience in designing roads to TfNSW standards, to prepare the temporary roadway design drawings.

Apply design control procedures in accordance with TfNSW Q.

2.6.2 Road Geometry Design

Design the road geometry in accordance with AGRD “Austroads Guide to Road Design (several Parts)” and associated TfNSW Supplements.

The minimum design travel speed, and traffic lane and shoulder widths are stated in Annexure G10/A4. If no minimum design travel speed is stated in Annexure G10/A4, the minimum design travel speed will be the temporary speed zoning speed limit of the road, unless otherwise approved by the Principal.

2.6.3 Stormwater Drainage Design

Design the drainage system for the temporary roadways in accordance with AGRD05 “Austroads Guide to Road Design Part 5: Drainage (including Parts 5A and 5B)” and associated TfNSW Supplement for a storm of 5 year average recurrence interval (ARI).

The drainage system and road surface levels must not result in water ponding at any location on the pavement surface.

2.6.4 Pavement Design

Design the wearing surface of temporary roadways and detours to be stable and skid resistant under all weather conditions and remain structurally sound during use. This includes any pavement produced by widening of through carriageways for traffic staging purposes. The wearing surface must be carried onto any connecting roadway to finish flush with the existing road surface.

The types and thickness of each individual layer of pavement for temporary roadways and detours are stated in Annexure G10/A4.

Where the pavement type is not specified in Annexure G10/A4, design the pavement in accordance with AGPT02 “Austroads Guide to Pavement Technology Part 2: Pavement Structural Design” and associated TfNSW Supplement.

Where existing pavements and road shoulders areas are proposed for use as temporary roadways and detours, and such existing pavements and road shoulders are not designed to carry the new traffic loadings which will be imposed, or are unlikely to be able to support the new traffic loadings, they must be upgraded for the new traffic conditions and must be designed accordingly.

If sealing of shoulders is required, this will be stated in Annexure G10/A4.

2.6.5 Safety Barrier Selection

Select safety barrier types and their end treatments in accordance with AGRD06 “Austroads Guide to Road Design Part 6: Roadside Design, Safety and Barriers” and associated TfNSW Supplement, giving due consideration to design traffic speed, angle of departure from the road, separation between work areas, pedestrians and through traffic plus dynamic clearance requirements.

Safety barriers selected must comply with Clause 3.1.2.

Include a statement of the basis for the selection and locations of safety barrier systems and their end treatments.

Provide safety barriers along the top edge of batters, including part-width construction of permanent embankments and adjacent to excavations.

Provide appropriate pavement markings in conjunction with the temporary safety barriers.

2.6.6 Temporary Fixed Traffic Signal Design

If temporary fixed traffic signals are required as part of your traffic staging arrangements, carry out the design in accordance with the TfNSW Traffic Signal Design Manual and AGTM10 “Austroads Guide to Traffic Management Part 10: Traffic Control and Communication Devices”.

The temporary traffic signals may be incorporated as part of the final traffic signal arrangement, reconfigured as required.

Engage a traffic signal designer, approved by the Principal, with at least 5 years recent experience in design of traffic signals for TfNSW, to undertake the design of these temporary fixed traffic signals.

Comply with TfNSW Traffic Signal Design Manual, Section 3 “Design Process”, in obtaining approval for your temporary traffic signal design.

2.6.7 Design Output

The design output drawings must show, as a minimum, the following details:

- (a) Plans showing road alignment, and longitudinal section showing gradients, at a horizontal scale of 1:2000 for rural roads or 1:500 (for urban roads), extending to 100 m beyond the limits of the temporary roadway or detour.
- (b) Full width cross-sections, showing levels, at 20 m intervals. Provide sufficient cross-sections at tie-ins and intersections to indicate the feasibility of making connections between various parts of the Works.
- (c) Plans of intersections and any other locations where traffic may be required to make turning, merging or diverging movements, at the scales stated in item (a) above.
- (d) Sight distance diagrams, where appropriate.
- (e) Pavement type, including wearing surface, base and subbase details.
- (f) Stormwater drainage details.
- (g) Pavement marking and signposting.
- (h) Traffic signal design details.
- (i) Roadside furniture, including details of safety barrier and traffic control devices, at a scale of 1:500.
- (j) Street lighting details, if applicable.
- (k) Temporary retaining structures, where required as part of the traffic staging.

Provide a certification by the road designer that the road design drawings comply with the relevant standards.

Include a Safety in Design Report together with the design output.

2.7 TRAFFIC INCIDENT MANAGEMENT PLAN

Where so specified in Annexure G10/A1, submit a Traffic Incident Management Plan containing as a minimum the following details:

- (a) Names and contact details of nominated personnel (including the Traffic Manager if applicable) who will be responsible for dealing with traffic incidents occurring at the work site.
- (b) Contact details of the Principal, TMC Transport Operation Rooms, Police, emergency services, etc.
- (c) Procedure to be followed in the event of a traffic incident within the Site.
- (d) List of plant that will be available at all times for moving portable concrete safety barriers.
- (e) Inventory of safety barriers, signs etc. and their storage location(s) that will be available to replace damaged barriers in event of a traffic accident.
- (f) Procedure for carrying out investigations of traffic incidents involving members of the public or workers. This should include:
 - (i) checking that the traffic control measures in place are in accordance with the TMP and its component plans, and ROL conditions;
 - (ii) carrying out a “drive through” and video recording of the roadway, including the location where the incident has taken place;as soon as possible after the incident.
- (g) Information required for initial notification to the Principal, and where necessary, other relevant authorities.
- (h) Format for reporting and communication of the results of traffic incident investigations, and lessons learned.

Develop the procedure under item (c) above in consultation with TfNSW, TMC or RTO, Councils, and Police, Ambulance, Fire and other emergency services.

2.8 TRAFFIC MANAGEMENT RISK ASSESSMENT WORKSHOP

2.8.1 General

If specified in Annexure G10/A1, undertake Traffic Management Risk Assessment Workshop to identify and address the risks associated with traffic management, road safety and other road network issues specific to the Site.

2.8.2 Content of Workshop

The content of the workshop will be specific for each Contract. Suggested areas for examination include:

- (a) Contract requirements relating to traffic management.
- (b) Traffic Management Plan.
- (c) Planning for traffic switches for construction staging.
- (d) Safety barriers systems, including their installation, maintenance and removal.

- (e) Delineation, signage and guidance to motorists, including their installation, maintenance and removal.
- (f) Street lighting arrangements for each construction stage, including any additional temporary lighting at intersections as construction proceeds.
- (g) Road safety auditing.
- (h) Traffic incident response.
- (i) Transport of oversize or over-mass items such as precast bridge girders.
- (j) Incorporating management of Chain of Responsibility requirements (refer Specification TfNSW G2 Clause 22.3) within the overall traffic management measures.
- (k) Knowledge requirements, and training required to rectify any deficiencies.
- (l) Routine maintenance of roadways (refer Clause 6).
- (m) Community communication and engagement on temporary traffic arrangements.

2.8.3 Participants

Participants must include your site management staff, your road designer (for temporary new roadways and detours – refer Clause 2.6.1), personnel involved in preparing your TMP (refer Clause 2.2), any other personnel involved in reviewing or road safety auditing of the TMP, traffic control organisation, Police and local Council representatives.

Include also, where appropriate, representatives of nearby schools, emergency services, affected bus companies, local businesses, and utility owners.

Invite the Principal to attend the Workshop.

2.8.4 Close Out Identified Risk Issues

Record the risk issues identified at the Workshop, and close them out when finalising your Traffic Management Plan and Traffic Staging Plans.

3 TRAFFIC CONTROL DEVICES

3.1 SAFETY BARRIERS

3.1.1 General

Where identified in your TCP for the work, provide safety barriers to protect the work areas and pedestrian areas from the traffic.

Do not use safety barriers or safety barrier systems for delineation as a substitute for linemarking.

3.1.2 Accepted Safety Barrier Products

Safety barriers must be selected from the products on the “Safety Barrier Products (Workzone – Temporary)” page, which lists all road safety barrier products accepted by Transport for NSW for use on the New South Wales classified road network:

<http://www.rms.nsw.gov.au/business-industry/partners-suppliers/approved-products-materials/safety-barriers/temporary.html>

Erect the safety barriers in accordance with Specification TfNSW R132 Safety Barrier Systems and the Acceptance conditions for that safety barrier product.

3.1.3 Water Filled Plastic Barriers

Water filled plastic barriers may be used at those locations that preclude the use of rigid barriers, such as at corners or intersections and any other locations approved by the Principal, provided that their use complies with the TCWS and the Acceptance conditions for the safety barrier product.

Provide the manufacturer's recommended buffer zones on the approach side of water filled barriers.

3.1.4 Exclusion Zone

Establish an exclusion zone behind barriers as required and do not permit construction work or pedestrian movement within the deflection or impact zone of safety barriers.

3.2 PAVEMENT MARKINGS AND SIGNS

3.2.1 Relevant Standards

Install all pavement markings, retroreflective raised pavement markers and signposting proposed for use in the temporary works in accordance with the requirements of the TCWS, Specifications TfNSW R145, TfNSW R142 and TfNSW R143 respectively, to the same standard as for permanent works.

Unless specified otherwise, use waterborne paint for pavement markings for temporary works.

3.2.2 Redundant Pavement Markings

Remove or otherwise deal with redundant pavement markings in accordance with TfNSW R145.

3.2.3 Temporary Speed Zoning Signs

Supply and erect temporary speed zoning signs at the locations indicated in your TCP. Keep the signs covered when the speed zone is not in use. Remove the signs when the temporary speed zoning is no longer in force.

Keep records of the times when the temporary speed zoning signs are in force.

3.3 PORTABLE VARIABLE MESSAGE SIGNS

3.3.1 General

If specified in Annexure G10/A1 or if required by your TCP, place portable variable message signs (VMS) at prominent locations initially at each end of all roads, including local side roads, approaching the Site, to keep road users informed of changes to road conditions and of possible delays as a result of construction work.

Place additional VMS at other locations as necessary to reinforce the messages to the road users.

Move the VMS to other locations as necessary as the work progresses.

The locations of the VMS must be approved by the Principal.

3.3.2 Type of VMS

VMS must comply fully with Specification TfNSW TSI-SP-008 and AS 4852.2 (i.e. portable, solar powered, with both insitu and remote control) and of Type C size.

3.3.3 Messages

Consult with and obtain the approval of the Principal for the messages displayed on the VMS.

Keep the messages that are displayed on the VMS current over the duration of the Contract.

3.3.4 Secure and Maintain VMS

Make secure the VMS.

Maintain the VMS including cleaning its perspex face and solar panels, and checking the battery distilled water levels at least once a month.

Replace faulty or damaged VMS within 24 hours.

3.4 RADAR ACTIVATED SPEED SIGNS

3.4.1 General

If specified in Annexure G10/A1, or if required by your TCP, provide trailer mounted radar activated speed signs (RASS) for use during the construction period.

3.4.2 Locations

Locate the RASS in positions suitable for influencing the speed of motorists entering the reduced speed zone, taking into consideration the effect of any existing signage.

The locations of the RASS and the message displayed must be as agreed with the Principal.

3.4.3 Calibration

Obtain calibration details from the RASS supplier(s) to confirm that each RASS is accurately calibrated within the manufacturer's specified tolerances. Periodically check each RASS for accuracy and carry out recalibration to within the manufacturer's specified tolerances promptly as needed.

3.4.4 Monitor Effectiveness

Monitor the effectiveness of the speed limit reductions, and provide a detailed log of the speeds each week to the Principal.

Include in the report the effectiveness or otherwise of the RASS, and provide details of any proposed changes to the RASS locations to improve their effectiveness.

3.5 TEMPORARY TRAFFIC SIGNALS

If specified in Annexure G10/A1 or if required by your TCP, install portable traffic signals complying with the TCWS or temporary fixed traffic signals complying with Specification TfNSW TS101 and associated Drawings. Refer Clause 2.6.6 for obtaining approval for temporary fixed traffic signal design.

4 IMPLEMENTATION

4.1 INDUCTION

Provide induction to all your personnel on the TMP and ROL conditions, prior to its initial implementation.

Provide similar induction to your personnel when the TMP is updated.

4.2 ROAD SAFETY AUDIT OF TMPs

4.2.1 Guides

If specified in Annexure G10/A1, prior to its initial implementation and whenever significant changes are made to the TMP, carry out a road safety audit of the TMP (including any temporary roadway design drawings – refer Clauses 2.3 and 2.6) in accordance with the requirements in the NSW Centre for Road Safety publication “Guidelines for Road Safety Audit Practices” and AGRS06 “Austroads Guide to Road Safety Part 6: Road Safety Audit”.

The “Guidelines for Road Safety Audit Practices” is available from the Transport for NSW website at: <http://roadsafety.transport.nsw.gov.au/downloads/audit-practices.pdf>

4.2.2 Audit Team

The audit team carrying out the audit must comprise, as a minimum, a lead auditor registered at Level 3 certification and a second team member registered at Level 2 certification or higher, both of whom must be listed on the NSW Centre for Road Safety’s Register of Road Safety Auditors.

4.2.3 Audit Report

Submit to the Principal, within 5 working days of the audit, a copy of the road safety audit report, including details of any corrective actions arising from the audit findings, and any subsequent correspondence between you and the road safety audit team.

Revise your TMP as required and resubmit in accordance with Clause 2.2.5.

4.3 CONSTRUCTION OF TEMPORARY ROADWAYS AND DETOURS

Construct the temporary roadways and detours in accordance with your approved temporary roadway design drawings (refer Clause 2.6), and the relevant TfNSW Specifications for the particular roadworks element.

This includes modification and strengthening of existing pavement and road shoulders, where they are unlikely to be able to support the new traffic loadings.

4.4 OPENING TEMPORARY ROADWAYS AND DETOURS TO TRAFFIC

4.4.1 Complete All Ancillary Work Before Opening

Complete all required installation of pavement markings, retroreflective raised pavement markers, signposting, safety barriers and portable or temporary traffic signals, before opening the temporary roadways to traffic.

4.4.2 Inspection of TCP Implementation

Prior to opening the temporary roadways to traffic, carry out an inspection to verify that the pavement markings, road signs and other traffic control devices have been installed in accordance with the TCP. The person carrying out the inspection must hold either the “Implement Traffic Management Plan” or “Prepare a Work Zone Traffic Management Plan” qualification.

HOLD POINT

Process Held:	Implementation of traffic switch or opening of temporary roadway and detour to traffic.
Submission Details:	At least one day prior to the intended date of opening the temporary roadways to traffic, notify the Principal in writing that the traffic control measures is conforming and ready for inspection by the Principal.
Release of Hold Point:	The Principal will undertake a joint inspection with you of the temporary roadway and detour, prior to authorising the release of the Hold Point.

If either your inspection or the Principal’s inspection identifies a need for adjustments to any signs or traffic control devices, or the provision of additional signs or traffic control devices, amend the applicable TCP as needed, and implement the agreed changes. The Hold Point above will again apply.

4.4.3 Condition for Traffic Switches

Unless approved otherwise by the Principal, traffic may only be switched to a temporary roadway or detour where your usual workforce will be on site for a minimum of two successive days thereafter.

4.4.4 Disturbance of Existing Roadway After Traffic Switch

Unless approved otherwise by the Principal, do not disturb sections of existing roadway being replaced for at least two days after opening a temporary roadway or detour to traffic, to allow for the situation where failure of the temporary roadway or detour occurs and there is a need to redirect traffic back onto the existing roadway.

The need to redirect traffic back onto the existing roadway will be determined by the Principal, and any costs associated with the redirection of traffic back will be borne by you.

4.5 ROAD SAFETY AUDIT OF TEMPORARY ROADWAYS OR DETOURS

If a road safety audit of the TMP has been undertaken (refer Clause 4.2), then within 24 hours of the traffic switch on to the temporary roadways or detours, carry out a road safety audit of the implemented traffic control measures at both daytime and night time.

Comply with the requirements stated in Clause 4.2 for the carrying out of the road safety audit and the composition of the audit team.

If the measures implemented are found to be deficient, then based on the initial report submitted and in consultation with the audit team and the Principal, develop corrective actions and implement the revised measures without delay.

Submit a copy of the road safety audit report to the Principal within 5 working days of the audit. The report must include details of any corrective actions developed and implemented.

4.6 REMOVAL OF TEMPORARY ROADWAYS AND DETOURS

Upon completion of the Works, remove the temporary roadways and/or detour arrangements and restore the area to a condition equivalent to that which existed prior to the commencement of the work.

4.7 MONITORING AND REPORTING OF TRAFFIC CONTROL MEASURES

4.7.1 Monitoring

As a minimum, check at the commencement and conclusion of each day's work that all required traffic control measures and signs are in place as shown on the TCP for each stage.

The person conducting this check must hold either the "Implement Traffic Management Plan" or "Prepare a Work Zone Traffic Management Plan" qualification.

Keep records of the results of the inspection checks and make them available to the Principal upon request.

4.7.2 Reporting

Provide to the Principal a monthly report on the performance of your traffic management. The report must include, as a minimum, the following:

- (a) summary of daily inspections of traffic control measures;
- (b) compliance with the TMP and its component plans, and ROL conditions;
- (c) compliance with specified travel times, and delays to traffic or queue lengths exceeding allowable limits;
- (d) where applicable, analysis of trends as applied to traffic management and safety measures.

4.8 TRAFFIC INCIDENT REPORTING

Following a traffic incident, carry out an investigation in accordance with your Traffic Incident Management Plan, and submit a report to the Principal detailing the results of the investigation.

If necessary, liaise with emergency services to obtain further information.

The report must, as a minimum, include the following details:

- (a) names of the persons and registration number(s) of the vehicle(s) involved;
- (b) location where the incident took place;
- (c) date and time of the incident, and prevailing environmental conditions;
- (d) sketch map and photos of the incident location;
- (e) sight distance details;
- (f) potential contributing factors, and likely or confirmed root cause for the incident;
- (g) corrective actions.

5 WORKING ADJACENT TO TRAFFIC

5.1 GENERAL

Where a temporary roadway or a detour is not provided or available, then subject to the approval of the Principal, construction under or adjacent to traffic may be permitted provided that at least one 3.7 m lane remains open to traffic on a two lane roadway and at least one 3.7 m lane remains open in each direction on divided multi-lane roads.

Alternatively, subject to the approval of the Principal, the lanes may be linemarked to a reduced width.

Prior to cessation of work each day, restore the carriageway(s) to a safe and trafficable state for through traffic, unless shown otherwise in the approved TCP.

5.2 APPROVED CLOTHING FOR WORKERS WORKING ADJACENT TO TRAFFIC

All personnel working in close proximity to traffic must wear high visibility fluorescent safety clothing complying with AS/NZS 4602 which are suitable for day time, night time and/or wet weather conditions, as applicable.

5.3 PLANT AND EQUIPMENT WORKING ADJACENT TO TRAFFIC

5.3.1 Traffic Control Operations Vehicles

Equip all vehicles used in traffic control operations with the appropriate vehicle mounted warning devices in accordance with the TCWS.

5.3.2 Construction Plant

Where traffic is permitted to use the whole, or part, of the existing road and where there is no safety barrier to separate the traffic from the work areas, provide a lateral clearance in accordance with Section 3.6 of TCWS.

During daytime, such plant and equipment working adjacent to traffic and having a projection beyond the normal width of the item, for example, a grader blade, must have a fluorescent red flag attached to the outer end of the projection.

During night time, illuminate any plant and equipment which are not separated from traffic by a safety barrier and within 6 m of the normal path of vehicles with at least two yellow steady lamps suspended vertically from the point of the obstruction nearest to a traffic lane, and one yellow steady lamp at each end of the obstruction on the side furthest away from the traffic lane.

6 ROUTINE MAINTENANCE OF ROADWAYS

6.1 SCOPE

Routine maintenance of roadways include repairing potholes, cleaning kerbs and gutters, clearing blockages of stormwater drains, reinstating pavement markings, removing debris including animal carcasses from roadway, cleaning roadside furniture, grass mowing and trimming of vegetation.

Monitor regularly the condition of the roadways. Repair potholes, clear blockages of stormwater drains, and remove debris of any type from the roadway, without delay.

6.2 EXISTING ROADWAYS

If specified in Annexure G10/A1, carry out routine maintenance of the pavement and drainage on existing roads (including shoulders and kerb and gutter) within the Site. Your obligations under this Clause will start when you commence any work, other than site establishment, at the Site.

Payment for this maintenance work will be made under Pay Item G10P3.

Maintenance of existing roads outside the Site will be undertaken by others. Co-operate with TfNSW, local Councils or their agents in carrying out their maintenance responsibilities.

6.3 TEMPORARY ROADWAYS AND DETOURS

Carry out routine maintenance of any temporary roadways and detours in use during construction, including former road shoulders areas that have been upgraded to temporary roadway pavements.

Maintain also any local roads used by construction traffic generated by your construction activities.

Re-apply linemarking as needed to clearly delineate traffic lanes for the duration of the temporary traffic arrangements.

Payment for this maintenance work will be made under Pay Item G10P1.

6.4 NEW ROADWAYS OPENED TO TRAFFIC

If specified in Annexure G10/A1, carry out routine maintenance of newly constructed sections of road, after opening to traffic in accordance with Clause 7 of this Specification, until Completion or as directed otherwise by the Principal.

Payment for this maintenance work will be made under Pay Item G10P4.

Where you are not responsible for such routine maintenance, cooperate with TfNSW, local Councils or their contractors when carrying out their maintenance work.

7 OPENING TO TRAFFIC UPON COMPLETION

Complete all relevant permanent signposting, pavement markings, safety barriers and traffic signals required under the Contract, prior to opening of the whole of the Works or any part of the Works to traffic.

Remove all temporary traffic control devices no longer required for the safety of traffic, when the whole of the Works or part of the Works are opened to traffic.

Give the Principal at least 10 working days written notice of the date of opening the whole of the Works or part of the Works to traffic. Determine the procedure for opening through consultation between you, the Principal and the Police.

ANNEXURE G10/A – PROJECT DETAILS

NOTES TO TENDER DOCUMENTER: (Delete this boxed text after customising Annexure G10/A)

Complete the tables under Annexures A1 and A4 below by filling in the required details. Where “Yes / No” options are shown, delete whichever is not applicable.

A1 PROJECT SPECIFIC REQUIREMENTS

Clause	Description	Requirement
1.8.1	Nomination of Traffic Manager required	Yes / No
2.1.2	Road Occupancy Fee payable ⁽¹⁾	Yes / No
2.3.1	Traffic Staging Plans required	Yes / No
2.4.3	Traffic Control Plans to be specially custom designed for project	Yes / No
2.7	Traffic Incident Management Plans required	Yes / No
2.8.1	Traffic Management Risk Assessment Workshop required	Yes / No
3	Traffic control devices:	
3.3.1	Portable variable message signs required	Yes / No
3.4.1	Radar activated speed signs required	Yes / No
3.5	Temporary traffic signals required	Yes / No
4.2.1	Road safety audit of Traffic Management Plans required ⁽²⁾	Yes / No
6	Maintenance of roadway by Contractor required:	
6.2	Existing roadway ⁽³⁾	Yes / No
6.3	Temporary roadway and detour ⁽⁴⁾	Yes
6.4	Newly completed roadway after opening until Completion	Yes / No

Notes:

- ⁽¹⁾ If “Yes”, refer to Annexure G10/A3 for schedule of road occupancy fees.
- ⁽²⁾ If “Yes”, then road safety audit of implemented traffic control measures on temporary roadways or detours after traffic switch is also required (refer Clause 4.2).
- ⁽³⁾ If “Yes”, refer to Annexure G10/A5.
- ⁽⁴⁾ Maintenance of temporary roadway and detour by Contractor is always required.

A2 PROJECT SPECIFIC RESTRICTIONS AND ADDITIONAL REQUIREMENTS

NOTES TO TENDER DOCUMENTER: (Delete this boxed text after customising Annexure G10/A)

List here any restrictions and/or additional requirements on traffic management specific to the project that the Contractor must provide for (see GUIDE NOTES). This may include the following:

- *changed traffic management measures during holiday seasons or special events;*

- provision of a certain number of car parking spaces;
- where the front of business premises are obscured by the traffic control measures, provision of signs indicating to customers that the businesses are still open and directions on how to access the premises.

If no restrictions or additional requirements are applicable, insert "Not Applicable" in this section.

A3 ROAD OCCUPANCY FEES

NOTES TO TENDER DOCUMENTER: (Delete this boxed text after customising Annexure G10/A)

If Road Occupancy Fees are payable, attach a Schedule of Road Occupancy Fees here. If Road Occupancy Fees are not payable, insert "Not Applicable" in this section.

A4 TEMPORARY ROADWAY REQUIREMENTS

A4.1 Road Design Standards (refer Clause 2.6.2)

Item	Description	Requirement⁽¹⁾
A4.1.1	Design travel speed km/hr
A4.1.2	Traffic lane widths m
A4.1.3	Shoulder widths m

A4.2 Pavement Design (refer Clause 2.6.4)

Item	Description	Requirement	
		Type	Thickness⁽¹⁾
A4.2.1	Wearing surface mm
A4.2.2	Base mm
A4.2.3	Subbase mm

A4.3 Sealing of Road Shoulders (refer Clause 2.6.4)

Item	Description	Requirement
A4.3.1	Sealing of shoulders required	Yes / No

Note:

⁽¹⁾ Values stated in tables are minimum requirements.

A5 MAINTENANCE OF EXISTING ROADWAY

NOTES TO TENDER DOCUMENTER: (Delete this boxed text after customising Annexure G10/A)

Insert here a plan showing or a schedule listing the sections of the existing roadways to be maintained by the Contractor throughout the duration of the Contract.

ANNEXURE G10/B – MEASUREMENT AND PAYMENT

Refer to Clause 1.2.2.

Payment will be made for all costs associated with completing the work detailed in this Specification in accordance with the following Pay Items.

Where no specific pay items are provided for a particular item of work, the costs associated with that item of work are deemed to be included in the rates and prices generally for the Work Under the Contract.

Unless specified otherwise, a lump sum price for any of these items will not be accepted.

Measurement and Payment for items defined in other specifications exclude works that are carried out solely to comply with TfNSW G10.

Pay Item G10P1 - Traffic Management

This is a Lump Sum item.

The Lump Sum covers all costs associated with the following:

- (a) preparation of **Traffic Management Plan** and its component plans;
- (b) design, construction, upgrading, maintenance and removal of **temporary roadways and detours**;
- (c) **road safety audits** of Traffic Management Plan and temporary roadways or detours;
- (d) provision of **Traffic Controllers**;
- (e) provision of **access to local properties and side roads**;
- (f) provision of **temporary** traffic control devices including **safety barriers, pavement markings and signs, variable message signs, radar activated speed signs** and **traffic signals**, and temporary **lighting** where required;
- (g) all activities associated with **opening to traffic**;
- (h) any other work required for the safe movement of traffic and protection of persons and property in accordance with this Specification and the TCWS, except where specific pay items are provided below.

Payment for permanent traffic control devices, including traffic signals, and permanent lighting will be made under the relevant Pay Items in other specifications.

Payment will be made on a pro-rata basis of the work done under this pay item, having due regard to the duration of the Works under the Contract.

Pay Item G10P2 - Maintenance of Traffic Control Measures

This is a Lump Sum item.

The Lump Sum covers all costs associated with the maintenance of the traffic control measures constructed or installed, including signs, lighting including floodlights, pavement markings, safety

barriers, and any other traffic control measures required for the safe movement of traffic and the protection of persons and property in accordance with this Specification and the TCWS.

Payment will be made on a pro-rata basis of the work done under this pay item, having due regard to the duration of the Works under the Contract.

Pay Item G10P3 - Routine Maintenance of Existing Roadways

(when specified in Annexure G10/A1)

This is a Lump Sum item.

The Lump Sum covers all costs associated with the routine maintenance of existing roadways within the Site in accordance with the scope stated in Clause 6.1.

Payment will be made on a pro-rata basis of the work done under this pay item, having due regard to the duration of the Works under the Contract.

Pay Item G10P4 - Routine Maintenance of New Roadways Opened to Traffic

(when specified in Annexure G10/A1)

This is a Lump Sum item.

The Lump Sum covers all costs associated with the routine maintenance of new roadways opened to traffic in accordance with the scope stated in Clause 6.1.

Payment will be made on a pro-rata basis of the work done under this pay item, having due regard to the duration of the Works under the Contract.

Additional Pay Items

NOTES TO TENDER DOCUMENTER: (Delete this boxed text after customising TfNSW G10)

The DOCUMENTER may insert additional Pay Items (as Provisional Sum or Provisional Quantity) to be ordered at the discretion of the Principal. Inclusion of these additional Pay Items can only be made after consultation with Director Contracts Administration or Contracts Quality Manager, Commercial Services Branch.

Examples of such work include:

- additional signage not part of traffic control;*
- variable message signs;*
- radar activated speed signs;*
- reinstatement or maintenance of pavement markings and raised pavement markers.*

ANNEXURE G10/C – SCHEDULES OF HOLD POINTS AND IDENTIFIED RECORDS

Refer to Clause 1.2.3.

C1 SCHEDULE OF HOLD POINTS

Clause	Description
1.7.4	Submission of traffic control personnel details
2.2.1	Submission of Traffic Management Plan (TMP) and associated documents
2.4.1	Submission of Traffic Control Plan (TCP), where submitted separately from TMP
4.4.2	Opening of temporary roadway or detour to traffic

C2 SCHEDULE OF IDENTIFIED RECORDS

The records listed below are Identified Records for the purposes of TfNSW Q Annexure Q/E.

Clause	Description of the Identified Record
2.8	Risk issues identified in Traffic Management Risk Assessment Workshop
3.2.3	Records of times when temporary speed zoning signs are in place
4.2	Road safety audit report and associated documentation
4.4.2	Inspection reports on traffic control measures, prior to opening of temporary roadways and detours
4.5	Road safety audit report of traffic control measures implementation
4.7	Inspection reports of traffic control measures in place

ANNEXURE G10/D – PLANNING DOCUMENTS

Refer to Clause 1.2.4. The following documents are a summary of documents that must be included in the PROJECT QUALITY PLAN. Review the requirements of this Specification and other contract documents to determine any additional documentation requirements.

Clause	Description of Document
2.2	Traffic Management Plan (TMP)
2.3, 2.6	Traffic Staging Plans, including temporary roadways and detours design drawings (if not part of TMP)
2.4, 2.5	Traffic Control Plans (TCP), Vehicle Movement Plans (VMP) and Pedestrian Movement Plans (if not part of TMP)
2.7	Traffic Incident Management Plan

ANNEXURES G10/E TO G10/L – (NOT USED)

ANNEXURE G10/M – REFERENCED DOCUMENTS

Refer to Clause 1.2.5.

TfNSW Specifications

TfNSW G2	General Requirements
TfNSW Q	Quality Management System
TfNSW R132	Safety Barrier Systems
TfNSW R142	Retroreflective Raised Pavement Markers
TfNSW R143	Signposting
TfNSW R145	Pavement Marking (Performance Based)
TfNSW TS101	Traffic Control Signals – New Installation and Reconstruction
TSI-SP-008	Variable Message Signs

TfNSW Publications

TfNSW Supplements to Austroads Guide to Road Design (several Parts)
TfNSW Supplement to Austroads Guide to Pavement Technology Part 2:
Pavement Structural Design
Traffic Control at Work Sites Manual
Traffic Signal Design Manual

Transport for NSW Publications

Guidelines for Road Safety Audit Practices
Road Occupancy Manual

Australian Standards

AS/NZS 4602	High visibility safety garments
AS 1742.3	Manual of uniform traffic control devices - Traffic control for works on roads
AS 4852.2	Variable Message Signs – Portable Signs

Austroads Publications

AGRD	Guide to Road Design (several Parts)
AGPT02	Guide to Pavement Technology Part 2: Pavement Structural Design
AGRS06	Guide to Road Safety Part 6: Road Safety Audit
AGTM10	Guide to Traffic Management Part 10: Traffic Control and Communication Devices

NSW Legislation

Road Transport Act 2013

Roads Regulation 2008