# PROVISION FOR TRAFFIC

DIPL Roadworks Master – March 2022

## GENERAL

Comply with the provisions of AS 1742.3:2019 and the Austroads Guide to Temporary Traffic Management (AGTTM).

Minimise obstruction and inconvenience to the public.

Ensure public safety is accommodated at all work sites at all times.

A traffic escort vehicle is required for all resealing works.

Provide Traffic Control for Conformance Testing activities.

Assume responsibility for the safe conduct of traffic through, past, or around the works, 24 hours a day, from possession of the site to completion of all works, defects liability period (if any), and handover.

Comply with the Acts, Regulations, Codes, and Guidelines applicable to the works. Comply with the requirements of Authorities which have jurisdiction over the works or the sites of the works.

Contractor Performance Reports (CPRs) will include an assessment of all aspects of traffic management associated with the works, including, but not limited to, traffic flow and traffic congestion.

### Duty of Care

Comply with the *Work Health and Safety (NUL) Act 2011* and its Regulations 2011.

Any Person Conducting a Business or Undertaking (PCBU) in connection with or pursuant to temporary traffic management or any works on a road, has a 'duty of care', so far as is reasonably practicable, that the health and safety of workers who work for the PCBU or whose activities in carrying out work are influenced or directed by the PCBU, are not exposed to health and safety risks arising from that business or undertaking.

A PCBU shall ensure, so far as reasonably practicable, that other road users are not exposed to health and safety risks arising from any temporary traffic management business or undertaking.

All PCBUs involved in the procurement of the works, and involved in the delivery of the works, must consult on work health and safety issues. The decisions made, or outcomes from, these consultations must be documented and distributed to all relevant PCBUs.

### Risk Management

Refer to the Austroads Guide to Temporary Traffic management (AGTTM).

Management of risk is central to a TMP.

The risk management process for the planning of the works shall be in accordance with AGTTM Part 2: Traffic Management Planning, and AGTTM Part 10: Supporting Guidelines.

The risk management process is applicable at all levels of planning, design, implementation, and operation.

All parties involved in the procurement of the works, and involved in the delivery of the works, must consult on risk management issues. The decisions made, or outcomes from, these consultations must be documented and distributed to all relevant parties.

### Ownership markings on temporary traffic control signs and devices

Ownership markings on the backs of signs and in unobtrusive locations on devices are permitted. Advertising markings are not permitted.

The limitations for ownership markings are:

* The entirety of the markings are to fit within a square of 200mm x 200mm,
* The markings are to be in one colour only,
* The markings are to be located on the backs of signs,
* The markings are to be located in unobtrusive locations on devices and should not be visible to motorists, and
* Only one marking per sign or device is permitted.

These limitations on ownership markings apply to, but are not limited to, the following temporary traffic control devices:

* Signs,
* Bollards,
* Cones,
* Portable traffic signals,
* Temporary traffic signals,
* Vehicle mounted signs,
* Vehicle mounted flashing arrow signs,
* Variable message signs, and
* Any other temporary signs and devices not listed above.

Signs and devices with non-compliant ownership markings, or with advertising markings, must be removed from site and be replaced with compliant signage at no cost to the Principal.

### Clean Up of Tracked Materials

Implement and manage controls to ensure no materials are tracked onto the travelled path. Remove tracked materials such as dirt, mud, and other detritus, from the travelled path safely and immediately.

Failure to comply with this requirement will render the Contractor liable to pay the costs incurred by the Principal to procure any alternate means of having the tracked materials removed.

Refer to the Standard Specification for Environmental Management.

## STANDARDS and Publications

Conform to the following Standards and Publications unless specified otherwise:

AS 1742.2 Manual of uniform traffic control devices - Traffic control devices for general use

AS 1742.3 Manual of uniform traffic control devices - Traffic control devices for works on roads

AS 1742.9 Manual of uniform traffic control devices - Bicycle facilities

AS 1742.10 Manual of uniform traffic control devices - Pedestrian control and protection

AS/NZS 1906.1 Retroreflective materials

AS/NZS 3845.1 Road safety barrier systems

AS 4191 Portable traffic signals

AS 4852.2 Variable message signs - Portable signs

AS/NZS ISO 31000 Risk management

NTTM NT Test Methods.

NTMTM NT Materials Testing Manual accessible via <https://dipl.nt.gov.au/industry/technical-standards-guidelines-and-specifications/materials-testing-manual>

AUSTROADS Guide to Road Design (AGRD)

AUSTROADS Guide to Bridge Technology (AGBT)

AUSTROADS Guide to Road Safety Part 6: Road Safety Audit (AGRS06-22)

AUSTROADS Guide to Temporary Traffic Management (AGTTM)

AUSTROADS Guide to Traffic Management (AGTM)

NT WorkSafe All Relevant Bulletins, Guides, Guidelines, and Codes of Practice, including, but not limited to;

Code of Practice for Construction Work

Code of Practice for Excavation Work

Safe Work Australia All Relevant Bulletins, Guides, Guidelines, and Codes of Practice

## Legislation

Northern Territory of Australia *Control of Roads Act 1953*, and its Regulations

Northern Territory of Australia *Traffic Act 1987*, and its Regulations

Northern Territory of Australia *Work Health and Safety (NUL) Act 2011*, and its Regulations2011

## DEFINITIONS

| **Table - Definitions - Provision for Traffic** | |
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| **TERM** | **DEFINITION** |
| **After Hours Rectification(s)** | Work required to repair, amend, reset, replace, and the like, any item which is damaged or malfunctioning, and which is part of the works, and which is work which is required to be done outside of working hours, and is done to protect the safety of the traveling public. |
| **Appraise1** | Assessment and review of submitted documentation against the relevant standards, policies, and guidelines. |
| **Approved1** | Approved by the Superintendent or an appropriately delegated Department staff member. |
| **Authorised1** | Endorsed by appropriately delegated person. Authorisation is typically granted with regards to permits to work, portable traffic signals, and temporary speed reductions. |
| **Business day** | Means the same as **Day**. |
| **Calendar day** | Means any day of the week including weekends and Public Holidays. |
| **Complex traffic management** | Complex traffic management arrangements are those activities and traffic management arrangements that include, but are not limited to, any of the following:   * Any TMP assessed as having a residual risk-rating of High or greater as a result of a risk assessment undertaken during the TMP preparation planning stage, * Closure of a traffic lane within a 100 m of the approach or departure of an intersection, * All detours, traffic switches, alternate alignments, tie in’s, contraflow or any temporary path where traffic is switched from an existing alignment to a revised or temporary alignment, * Alteration to the function of the traffic signals or signals display, * Traffic management arrangement involving temporary road safety barriers, or * Any other situation deemed to be complex by the Road Authority. |
| **Consent1** | Means consent is given by the Road Authority for the implementation of TMP and TGS/s for the proposed works. |
| **Day(s)** | Means working days, Monday to Friday, excluding Northern Territory wide Public Holidays, and excluding weekends. |
| **DIPL / The Department** | The Department of Infrastructure, Planning and Logistics. |
| **Emergency works** | Works which require immediate rectification for conditions that pose an unacceptable risk. (See **Urgent works**.) |
| **Generic TGS** | A TGS which has been appraised by the department, and has been deemed as suitable for use, and may be suitable for use at sites in addition to the site for which it was created, and relates specifically to the works to be undertaken. |
| **ITC** | Instruction to Contractor. Issued by the Superintendent, or by a Department PTW approval officer. |
| **ITP** | Inspection and testing plan |
| **Long term** | Applies when traffic guidance is required to operate for more than one shift irrespective of whether it is day or night. |
| **Must** | Is indicative of a mandatory requirement. |
| **PTSA** | Portable Traffic Signals Authorisation. |
| **PTW** | Permit to Work in a Road Reserve. A Permit to Work in a Road Reserve does not confer any rights to the entity to which the permit is issued beyond the right to carry out activities for which the permit was issued. Those activities must have been approved before the activities commence. |
| **RSA** | Road safety audit |
| **Shall** | Is indicative of a mandatory requirement, unless the context clearly indicates otherwise. |
| **Short term** | Applies when work is started and completed in one shift and the road is returned to normal conditions by the end of that shift. |
| **Should** | Indicates a recommendation. Any decision to vary or not follow a requirement or recommendation shall be based on sound traffic management judgement by a competent person and be documented. |
| **Superintendent** | As defined in the Contract for NTG procured works. For works not procured by, or on behalf of, the NTG, the term Superintendent means an employee of the Department, including the nominated Departmental Contact Officer, who has authority to make decisions in respect to works in road reserves. |
| **SWMS** | Safe Work Method Statement. |
| **TGS** | Traffic Guidance Scheme. Includes, but is not limited to, plans, drawings, sketches, diagrams, instructions, and after hours arrangements. Formerly referred to as Traffic Control Diagram. |
| **Third Party Audit** | An audit, performed by an independent, external auditor, carried out on behalf of the Principal. |
| **TMP** | Traffic Management Plan. |
| **Traffic control devices** | Refer to AS 1742 (set).  The functions of traffic control devices include, but are not limited to, the following:  (a) To warn, guide and instruct road users, e.g. signs.  (b) To draw attention to the work area, personnel and equipment.  (c) To control the speed or the passage of traffic within and adjacent to the work area, e.g. the stop/slow bat, signals and speed limit signs.  (d) To indicate the direction and width of the available travelled path, e.g. delineators.  (e) To discourage access to the whole or portion of the work area, e.g. barrier boards and mesh fence.  (f) To provide physical protection for the work area and its occupants, e.g. safety barriers. |
| **Traffic Controller** | Person responsible for the control of traffic on public roads utilising a stop-slow bat. |
| **TSLA** | Temporary Speed Limit Authorisation. |
| **Urgent works** | Identified works which need to be undertaken with short notice. (See **Emergency works**) |
| **VMS** | Variable Message Sign(s) |
| **VSL** | Variable Speed Limit |
| **Work place / Workplace** | Means the same as **Work zone** and **Work site**. An area where works are to be carried out and ancillary areas required to be used to enable and/or facilitate the carrying out of the works. It includes all areas where workers are present. It also includes all areas where roads, road reserves, and other areas, are subject to changed conditions due to, or activities associated with, the works. |
| **Work site / Worksite** | Means the same as **Work place** and **Work zone**. |
| **Work zone / Workzone** | Means the same as **Work place** and **Work site**. |
| **Working day** | Means the same as **Day**. |
| **Working hours** | Means the hours, on a working day, from 8am to 4.30pm. |
| **WZTM** | Work Zone Traffic Management |
| Note   1. Appraisal, approval, authorisation, consent – none of these terms imply or indicate a transfer of responsibility or a transfer of a duty of care or a transfer of risk from one party to another party. A party can be a person and/or a PCBU. | |

## WORKZONE TRAFFIC MANAGEMENT

### NT Accreditation in Workzone Traffic Management

NT accreditation is provided by the following process:

* Completion of training course (or courses) as outlined below, and
* Obtain Workzone Traffic Management ID Card from NT Motor Vehicle Registry.

A list of NT Workzone Traffic Management Registered Training Organizations is accessible via <https://nt.gov.au/driving/management/work-zone-traffic-management-qualifications> .

### Traffic Management Personnel

All workers on site are to have undertaken and completed **Prepare to work safely in the construction industry** (CPCCWHS1001), or superseding or preceding equivalent qualification recognised by training.gov.au. All workers on site must hold, and have in their possession at all times when on site, their own proof of attainment of this qualification.

All workers on site must hold, and have in their possession at all times when on site, their own current valid Northern Territory Accreditation in Workzone Traffic Management card.

Only persons qualified in nationally accredited units of competency in Workzone Traffic Management can be utilised for traffic management at worksites.

There are four levels of accreditation applicable to the works:

* Workzone Traffic Management Plan Designer (WZ1)
* Workzone Traffic Controller (WZ2)
* Workzone Traffic Supervisor (WZ3)
* Escort mobile works (WZ 4)

The units of competency required are part of the Resources and Infrastructure Industry Training Package (RII).

Workers are required to successfully complete refresher courses for the applicable units of competency at intervals of 3 years or less.

The designations of the units of competency cited below were current at the time of writing this clause.

### Workzone Traffic Management Plan Designer (WZ1)

The designer of a traffic management plan has a duty of care to ensure the scheme is suitable for the operating environment.

The following prerequisites must be met to enable NT accreditation as a Traffic Management Plan Designer (WZ1):

* hold a valid current Australian motor vehicle driver's licence, and either
* successful completion of RII Resources and Infrastructure Industry Training Package unit of competency RIICWD503E Prepare Workzone Traffic Management Plans (or the replacement unit of competency if and when applicable) training course through an Northern Territory Registered Training Organisation, or
* successful completion of the RII Resources and Infrastructure Industry Training Package unit of competency RIICWD503E Prepare Workzone Traffic Management Plans (or the replacement unit of competency if and when applicable) training course through a Registered Training Organisation from another State or Territory AND successfully completed a bridging course through a Northern Territory Registered Training Organisation in the above unit of competency.

### Workzone Traffic Controller (WZ2)

The following prerequisites must be met to enable NT accreditation as a Traffic Controller (WZ2):

* hold a valid current Australian motor vehicle driver's licence, and either
* successful completion of the RII Resources and Infrastructure Industry Training Package unit of competency RIIWHS205E Control Traffic with a STOP/SLOW Bat (or the replacement unit of competency if and when applicable) training course through an Northern Territory Registered Training Organisation, or
* successful completion of the RII Resources and Infrastructure Industry Training Package unit of competency RIIWHS205E Control Traffic with a STOP/SLOW Bat (or the replacement unit of competency if and when applicable) training course through a Registered Training Organisation from another State or Territory AND successfully completed a bridging course through a Northern Territory Registered Training Organisation in the above unit of competency.

### Workzone Traffic Supervisor (WZ3)

The following prerequisites must be met to enable NT accreditation as a Traffic Supervisor (WZ3):

* hold a valid current Australian motor vehicle driver's licence, and either
* successful completion of the RII Resources and Infrastructure Industry Training Package unit of competency RIIWHS302E Implement Traffic Management Plan (or the replacement unit of competency if and when applicable) training course through an Northern Territory Registered Training Organisation, or
* successful completion of the RII Resources and Infrastructure Industry Training Package unit of competency RIIWHS302E Implement Traffic Management Plan (or the replacement unit of competency if and when applicable) training course through a Registered Training Organisation from another State or Territory AND successfully completed a bridging course through a Northern Territory Registered Training Organisation in the above unit of competency.

### Escort Mobile Works (WZ 4)

The following pre requisites must be met to enable Northern Territory accreditation as an Escort mobile works (WZ 4):

* hold a valid current Australian motor vehicle driver's licence, and either
* successful completion of the RII Resources and Infrastructure Industry Training Package unit of competency RIICRM201F Escort mobile works (or the replacement unit of competency if and when applicable) training course through a Northern Territory Registered Training Organisation, or
* successful completion of the RII Resources and Infrastructure Industry Training Package unit of competency RIICRM201F Escort mobile works (or the replacement unit of competency if and when applicable) training course through a Registered Training Organisation from another State or Territory AND successfully completed a bridging course through a Northern Territory Registered Training Organisation in the above unit of competency.

### Trainee Traffic Controller

The Superintendent may grant approval for the use of a Trainee Traffic Controller within the work site. Such approval will only be considered after submission of a written request. A Trainee Traffic Controller cannot commence work until such approval has been granted and received in writing.

A Trainee Traffic Controller must meet all of the following criteria:

* be an employee of the Traffic Control Provider,
* hold a valid current Australian motor vehicle driver's licence,
* be registered with a Northern Territory Registered Training Organisation (NT RTO) to undertake the RII Resources and Infrastructure Industry Training Package unit of competency RIIWHS205E Control Traffic with a STOP/SLOW Bat (or the replacement unit of competency if and when applicable),
* only work under the direct supervision of a Controller (WZ2), and
* have commenced training to become a qualified Controller (WZ2) and complete all assessments of competency within 8 weeks of registration.

The direct supervision of a Trainee Traffic Controller is defined as the constant personal oversight of the work by a Workzone Traffic Controller (WZ2).

### Traffic Escort Vehicle - Resealing Works

Provide a traffic escort vehicle for all work sites where resealing works are undertaken under the contract.

Provide a traffic escort vehicle for all work sites where any of the criteria listed in AS 1742.3, **Roadwork pilot vehicle** clause, are present.

The vehicle must have, as a minimum, one rotating beacon light or LED equivalent, and roadwork pilot vehicle signage to AS 1742.3.

The escort vehicle is to be the lead vehicle for traffic permitted to pass through the work site at the direction of the traffic control personnel.

The escort vehicle is to control the speed of the traffic to ensure safety of road works personnel.

The driver of the escort vehicle is to have adequate skills and knowledge to be able to maintain safety of the public and of the roadworks personnel.

### Signs and Devices Not In Use

Do not leave signs and devices in the Workzone if they are not in use.

Cover or remove signs and traffic control devices associated with reduced speed limits within one hour of completion of the shift if the works will continue in the next shift.

Remove signs and traffic control devices associated with reduced speed limits within one hour of completion of the work requiring the reduced limit.

Cover or remove unused signs and traffic control devices within two hours of completion of any revised traffic arrangement.

Remove unused signs and traffic control devices within two hours of completion of the works.

Keep the Workzone tidy and uncluttered.

Any failure to comply with this clause will render the Contractor liable to pay the costs incurred by the Department to procure any alternate means to have signs and devices not in use removed from site.

### Reinstatement of Signs and Devices

After any severe weather event check all signs and devices and reinstate them in accordance with the applicable TMP and TGSs if they have moved, blown over, or disappeared.

Check, and reinstate signs and devices if required, after becoming aware of any other event which may have caused the signs and/or devices to have moved from the locations shown on the applicable TMP and TGSs.

Record details in the Daily Diary. Include photographs taken before and after reinstatement.

### Traffic Incidents

If an incident occurs within, adjacent to, on approach to or departure from the work site, make a photographic record of the traffic control devices, site conditions, placement of plant and equipment etc. as soon as practical after the event.

Advise the Superintendent of the incident as soon as possible.

Provide, to the Superintendent, as soon as practicable, electronic copies of:

* the site photographs, before and after reinstatement,
* the TGSs implemented at the site at the time of the incident,
* the signed incident report,
* the Daily Diaries,
* any TSLA applicable to the site at the time,
* any PTSA applicable to the site at the time, and
* any other information requested by the Superintendent.

## TRAFFIC MANAGEMENT PLAN – Witness Point

To:

* AS 1742.3 Manual of uniform traffic control devices - Traffic control for works on roads.
* Austroads Guide to Temporary Traffic Management
* Austroads Guide to Road Design, Parts 6, 6A, and 6B

Provide a site and project specific Traffic Management Plan (TMP), and site and project specific Traffic Guidance Schemes (TGSs) of a complex and non-complex nature per activity as required for the scheduled works.

The designer of a traffic management plan has a duty of care to ensure the scheme is suitable for the operating environment.

Supervisory personnel carrying out the works for which the traffic management plan has been prepared have a duty of care to implement the traffic management plan.

**Witness Point** - Any decision to vary or not follow a requirement or recommendation must be based on sound traffic management judgement by a competent person and must be documented. Provide the documentation to the Superintendent.

The Traffic Management for this contract may be subject to audit.

### Document Control

Each TMP and TGS must have a unique identifying number and a revision number shown on it.

Each TMP must have a unique identifying number for each project.

Each revised/amended TGS is to have the revision number shown on it after the unique identifying number, and after the words “Revision number” or “Rev. No.” or similar.

Each TGS must include a reference stating the unique identifier of the TMP to which the TGS is related.

Provide and keep updated a register showing the TMP and a list of the TGSs to be used for each project managed by the department.

[ Delete reference to a project specific register for simple jobs where it is unlikely that revisions of TGSs will be required during the works.]

The register is to show the names/titles of the TMP and TGSs, the name of the project for which they are to be used, the unique identifying number for each TMP and TGS, the revision number for each revised TGS, and the date and time when each revised TGS was submitted.

The register is to show the status of the document. The status will be one of the following, or another term which the Superintendent allows:

* Submitted for appraisal,
* Appraised as suitable,
* Consent granted,
* Superseded, or
* Withdrawn.

A copy of each page of the register showing the entries for the TMP(s) and/or TGSs issued must be submitted to the Superintendent on request.

[ Delete reference to a register for simple jobs where it is unlikely that revisions of TGSs will be required during the works.]

A revised TGS which has been appraised and for which consent for use has been granted replaces all earlier revisions of it. All earlier revisions of that TGS must be withdrawn from use at the time the new revision is implemented.

Any TMP which is amended must either have a revision number if the changes are minor, or a new unique identifying number if the changes are substantial. The Superintendent will advise which option is to be adopted.

### Submission of Traffic Management Plan - Hold Point

**Hold Point** - Submit the Traffic Management Plan (TMP), with the Traffic Guidance Schemes.

For contracts where audits of traffic control measures are required:

* Do not commence implementing traffic control measures until the TMP has been audited by a Panel Period Audit Consultant and for which consent for use has been granted.
* Do not commence the works until the TMP has been audited by a Panel Period Audit Consultant and for which consent for use has been granted.

For contracts where audits of traffic control measures are not required:

* Do not commence implementing traffic control measures until the TMP has been appraised by DIPL Road Operations and for which consent for use has been granted.
* Do not commence the works until the TMP has been appraised by DIPL Road Operations and for which consent for use has been granted.

The TMP shall be designed by a Northern Territory accredited Workzone Traffic Management Plan Designer.

The TMP Designer should have visited the site, with the Contractor, before documenting the TMP.

Include the details of the TMP Designer's name, accreditation number, and date of expiry of accreditation on the TMP.

Design the TMP in conformance with the requirements of AS 1742.3 Manual of uniform traffic control devices - Traffic control devices for works on roads, and the AGTTM, and the requirements of this work section. Submit the plan, the TGSs, and other supporting documents, to the Superintendent by electronic means.

Include sufficient details on the TMP to explain the potential hazards, the assessed risks and the proposed treatments for the proposed work activities and work site which may include some or all of the following:

#### Project Information

* Purpose and Scope
* Specific Project Location
* Site Constraints/Impacts
* Traffic Management Objectives and Strategies
* Principal for the Works; Principal Contractor/Design Consultant including contact details
* Responsibilities including role responsibility and authority of key personnel, management hierarchy including site representatives and contact details of the responsible personnel
* Prior approvals (if any) granted by the Road Authority with relevant reference number

#### Works on Roads

* Project scope inclusive of works to be undertaken, staging of works, duration of works (work hours)
* Existing Traffic and Speed environment
* Roles and Responsibilities
* Traffic Management Responsibility Hierarchy
* Project Representatives
* Traffic Management Administration

#### Traffic Hauling Impacts

For worksites where machinery or hauling is required, provide the following information:

* details of haul routes,
* details of vehicle types, and configurations,
* hauling movements frequencies,
* proposed days and times of day for haulage movements,
* specific TGS(s) showing site access and site egress points,
* proposed methods to be used to prevent tracking of dirt, mud, and other materials, such as shaker bars or rumble strips,
* proposed methods of maintaining tracking prevention systems, and
* proposed methods to be used for dust suppression.

#### Statutory Requirements

* *Work Health and Safety (NUL) Act 2011* and Regulations 2011
* Provide details, in the TMP, of responsibilities and authorities of all key personnel on the project including project manager, line managers (site engineers, supervisors etc), contractors and workers, safety personnel, and traffic management personnel
* Requirements of personal protective equipment, plant and equipment
* Procedures for incidents or accidents

#### After hours contact details

Provide contact details of personnel who can be contacted outside of working hours. These people must be able to respond to situations which may arise, and must be able to rectify, or to have rectified, any problems which occur, outside of working hours.

Any failure to comply with this clause will render the Contractor liable to pay the costs incurred by the Principal to procure any alternate means to have after hours rectifications made.

#### Monitoring and Measurement

* Site Inspections and Record Keeping
* TMP/WZTM Auditing requirements
* Public Feedback
* References

#### Management Review

* TMP/WZTM Review and Improvement
* Variations to Standards and Plans
* Attention to hazards for non-motorised road users

#### Planning

Risk Identification and Assessment - Critical element to identify and assess foreseeable potential hazards associated with the work activities and work site.

Legal and Other Requirements - Confirmation of use of up-to-date information and legislation.

**Traffic Assessment (Vehicular Traffic)**

* Volume and Composition
* Existing and Proposed Speed Zones
* Intersection Capacity
* Existing Parking Facilities
* High Wide Loads
* Public Transport
* Special Events and Other Works

**Non-motorised Road Users**

* Cyclists and Pedestrians
* People with Disabilities
* School Crossings

**Site Assessment**

* Access to Adjoining Properties
* Environmental Conditions
* Impact on Adjoining Road Network

**Works Programming**

* Work Sequence
* Night Works
* Emergency Planning

**Consultation and Communication**

* Approvals - Road, Utility and Service Authorities
* Public Notification
* Notification to Other Agencies

#### Implementation

* Hazard Identification, Risk Assessment and Control
* Traffic Guidance Schemes
* Traffic Control Devices
* Signs
* Pavement Markings, including temporary pavement markings and proposed removal processes, and permanent pavement markings
* Variable Message Signs
* Delineation
* Temporary Speed Zones
* Emergency Arrangements
* Site Access
* Communicating TMP Requirements

### Submission of Traffic Guidance Schemes

Provide documented specific and/or generic Traffic Guidance Schemes (TGSs) per activity as required and/or as specified. These TGSs will be appraised on their merits.

Generic TGSs must be modified to suit the site of the works before being submitted. The modified TGSs are to be given a unique identifying number as per the Document Control clause in this worksection. Do not issue them as revisions of the generic TGSs.

Include, but do not be limited to, plans, drawings, sketches, diagrams, instructions, and after hours arrangements.

Submit the specific TGS to the Superintendent no later than 5 working days prior to undertaking the required works.

Submitted TGSs will be appraised, or audited, for suitability for use. If the TGS(s) are considered suitable for use they may be appropriate to use for future works at that same location for the same scope of works.

Generic TGSs are only applicable in certain situations such as emergency, urgent, and/or maintenance road works, and where site conditions and identified hazards are of a similar nature. Generic TGSs must provide sufficient detailed information to enable traffic management personnel to implement site controls that comply with AS 1742.3,comply with the AGTTM, comply with the TMP, and which comply with this work section.

For Urgent Works, advise the Superintendent which generic TGS applies, if applicable, or submit for appraisal specific TGSs as soon as practical.

A phone call notification of urgent works is to be given to the Superintendent when urgent works are being scheduled.

For Emergency Works, a phone call notification to the Superintendent is required. Advise the Superintendent which generic TGS applies, or submit the specific TGS as soon as practical.

Provide amended TGSs, which incorporate changes which have been appraised by the Superintendent on site, or audited, within two working days of the appraisal, or completion of audit, of the change.

## Compliance Checks OF WORKSITE TRAFFIC MANAGEMENT

The Principal may perform random compliance checks of traffic management at work sites as part of their daily routine duties.

Checks undertaken will include verification of:

* The Traffic Management Plan (TMP) held on site,
* The Traffic Guidance Scheme(s) (TGSs) held on site,
* Traffic control devices established in accordance with the TGSs,
* The correctness and currency of accreditation of all personnel associated with traffic management at the work site,
* The Permit to Work in a Road Reserve (PTW) for the project if a PTW is required for the project (generally not required for Department procured works),
* Any applicable Safe Work Method Statement,
* Any Temporary Speed Limit Authorisation issued for the project,
* Any Portable Traffic Signal Authorisation issued for the project,
* Any other applicable documents,
* Implementation of the requirements outlined in any document applicable to the project and the effectiveness of the implemented requirements.

Where personnel associated with traffic management at work sites are found not to have current accreditation to an appropriate level in Workzone Traffic Management, the Superintendent may direct the Contractor to cease work, make the site safe, and withdraw plant, equipment and personnel from the road reserve.

Where the Superintendent deems modifications to Traffic Management are required for reasons of public safety or safety on the work site, an Instruction to Contractor (ITC) will be issued requesting that the TMP Designer makes immediate amendments to the TMP to manage the identified hazards. If modifications are deemed necessary but not urgent, corrections are to be made at the earliest practicable opportunity.

Resubmit revised documents for appraisal. Do not recommence work until the submitted revised documents have been appraised and found to be suitable for use and the amended traffic control measures have been implemented on site. This is to be at no cost to the Principal.

[Deparment staff must not tell the TMP Designer what the required changes are, only what the identified hazards are.]

The Superintendent may direct the Contractor to cease work, make the site safe, and withdraw plant, equipment, and personnel from the road reserve if the site is deemed unsafe, and/or if the traffic control measures are not compliant. This is to be at no cost to the Principal.

When revised documents have been appraised and found suitable for use, and rectification works are complete, and the site is deemed to be acceptably safe, and/or the traffic control measures are deemed to be compliant, the Contractor may return the plant, equipment, and personnel to the site, also at no cost to the Principal.

## Traffic Management Audit REQUIREMENTS

[Refer to the Traffic Management Plan clause in this worksection to see if audits are required for this contract. If audits are not required this clause can be deleted.]

### Work Zone Traffic Management (WZTM) – Independent Third Party Audits

The Principal has in place Panel Period Audit Consultants with WZ1, WZ2 and WZ3 accreditation and Road Safety Auditor accreditations.

The Superintendent will select and order the Panel Period Audit Consultant for each traffic management audit task.

All communication with the Panel Period Audit Consultant shall be forwarded through the Superintendent, except that on site communications are permitted for coordination of work and site safety.

The Panel Period Audit Consultant will provide an Audit Report to the Superintendent.

Refer to the clause **Time Allowed for Assessment of Submitted Documents** in MISCELLANEOUS PROVISIONS.

Audits will evaluate compliance with reference to AS 1742.3, AGRD (Parts 6, 6A, & 6B), AGRS06, AGTTM, NT legislation, and the contract, including the technical specifications, for the project.

The Contractor shall provide access and co-operation and all necessary documentation to allow the audit team to conduct the audit.

The Contractor shall have no claim against the Principal for costs incurred in providing staff or interruption of works for any audit activity.

The Audit Report will classify items using 4 risk classes. Refer to the ***Table – WZTM Audit Classes.***

|  |  |  |
| --- | --- | --- |
| **Table – WZTM Audit Classes.** | | |
| **Class No.** | **Class designation** | **Action(s) required** |
| 1 | Low | Should be corrected or the risk reduced |
| 2 | Medium | Should be corrected or the risk significantly reduced |
| 3 | High | Must be corrected or the risk significantly reduced |
| 4 | Intolerable | Must be corrected. |
| Corrective actions to be implemented immediately and documents revised and submitted to the Superintendent to reflect corrective actions | | |

#### Low/Medium risks identified

The Superintendent will provide the audit report from the Panel Period Audit Consultant to the contractor.

The Contractor is to review the identified low/medium risks identified in the Panel Period Audit. The contractor is to amend the TMP/TGS’s as required to address the risks. Low/medium risks to be reviewed, actioned and submitted by the contractor to the Superintendent within 24hours of receiving the audit report.

#### High/Intolerable risks identified

Superintendent will notify the contractor of any high/intolerable risks identified by the panel period auditor. Contractor to rectify all high/intolerable risks immediately and safely when advised by the Superintendent.

The Contractor is to advise the Superintendent immediately in writing when the high/intolerable risks are rectified.

#### Assessment of amended documentation

The Contractor is to amend the traffic management documentation to reflect the corrective measures implemented if they differ from what was documented, and submit the amended documentation to the Superintendent.

The amended traffic management documentation/traffic control implementation may be re-audited by the Panel Period Audit Consultant.

Refer to the clause **Time Allowed for Assessment of Submitted Documents** in MISCELLANEOUS PROVISIONS.

### Independent Third Party WZTM Suitability Audit Requirements – Hold Point

All contracts, other than routine or specific maintenance on long term works projects, may require a suitability audit of all elements of the Traffic Management Plan to be carried out.

The Panel Period Audit Consultant will conduct a desktop audit of the Contractor’s traffic management documentation.

The Panel Period Audit Consultant will provide a Draft Audit Report to the Superintendent and, concurrently, to the Contractor.

If the Draft Audit Report indicates corrective measures are required the Contractor is to amend the traffic management documentation and submit the amended documentation to the Superintendent at no cost to the Principal.

The amended documentation will be audited by the Panel Period Audit Consultant.

Any audit of amended traffic management documentation will be at the Contractor’s expense.

**Hold Point** - The Traffic Management Plan must not be implemented before it is audited for suitability and found to be suitable.

**Hold Point** - Works must not commence before the Traffic Management Plan is audited for suitability and found to be suitable.

Refer to the clause **Time Allowed for Assessment of Submitted Documents** in MISCELLANEOUS PROVISIONS.

### Independent Third Party WZTM Compliance Audit Requirements

Compliance Audits must be undertaken within 24 hours of any Traffic Management Plan being implemented and shall reoccur at intervals no longer than 3 months.

Contractor to give the Superintendent at least five working days’ notice for the required audit date.

The Superintendent will order the audits.

The Panel Period Audit Consultant will conduct day time and night time on site compliance audits of the Contractor’s traffic management measures.

The Panel Period Audit Consultant will provide a Draft Audit Report to the Superintendent.

## Workzone Traffic Management Auditing Results

[Refer to the Traffic Management Plan clause in this worksection to see if audits are required for this contract. If audits are not required this clause can be deleted.]

The Panel Period Audit Consultant will provide an accredited report to the Superintendent within the scheduled times allowed listed in ***Table - Auditing and Reporting Completion Times*** from the time of the audit/s.

For work in remote areas the Superintendent will increase the auditing and reporting completion times by a minimum of 2 days.

|  |  |
| --- | --- |
| **Table - Auditing and Reporting Completion Times** | |
| **Attribute Being Tested** | **Time Allowed for Accredited Auditor Report in Working Days (Monday to Friday)** |
| **Work Zone Traffic Management** | |
| Suitability audit | 2 |
| Revised suitability audit | 2 |
| WZTM compliance audit | 1 |
| WZTM compliance re-audit | 1 |
| Road safety audit | 3 |
| Road safety re-audit | 3 |

## Contractor WZTM Road Compliance Audit

The Contractor is responsible for developing their own compliance auditing schedule, which is to be included in the submitted TMP. Consent to implement will not be provided if the supplied TMP does not contain a contractors auditing schedule. The ordering up of, and payment for, all Contractor WZTM road compliance audits as per the TMP is the Contractor’s responsibility.

## Amendments to Traffic Management Plans - Hold Point

This clause does not refer to amendments to TMPs arising as consequence of audits.

Modify the Traffic Management Plan during the works to suit site conditions if required or requested by the nominated Departmental Contact Officer. Modify the Risk Assessment to ensure it is relevant to the modified TMP.

Changes made to the TMP must be clearly marked in the amended TMP.

In situations where immediate hazard mitigation is necessary the changes may be implemented and the Superintendent advised of the changes as soon as practicable thereafter.

**Hold Point** – Modified TMPs must be audited for suitability by a Panel Period Audit Consultant, and consent to use granted, or appraised by the Superintendent, and consent to use granted, if Traffic Management audits are not required under the contract, before implementation of the modified TMP.

**Hold Point** – Modified traffic management control measures must be audited for compliance by a Panel Period Audit Consultant, and consent to use granted, or appraised by the Superintendent, and consent to use granted, if Traffic Management audits are not required under the contract, before works resume.

Refer to the **Traffic Management Audit Requirements** clause, and to the **Workzone Traffic Management Auditing Results** clause, in this work section.

Refer to the clause **Time Allowed for Assessment of Submitted Documents** in MISCELLANEOUS PROVISIONS.

## WORK IN RURAL AREAS - HOLD POINT

**Hold Point** - Undertake work during daylight hours only unless approval is given by the Superintendent. Approval will only be granted in exceptional circumstances.

## WORK IN URBAN/Built-up AREAS

### Working Times – Hold Point

Program work, provide and install traffic management devices/controllers, equipment, materials etc accordingly so that traffic flows are not impeded during the following hours, from Monday to Friday, excluding Territory wide Public Holidays:

|  |  |
| --- | --- |
| **Table - Restricted work hours in built up areas** | |
| **From** | **To** |
| 0700 hours | 0900 hours. |
| 1530 hours | 1730 hours. |

This table is only an example of peak traffic periods in urban areas.

Additional historical generic traffic data is available from the Department’s annual Traffic Report, which can be accessed via <https://dipl.nt.gov.au/industry/technical-standards-guidelines-and-specifications/traffic-data> . This data does not provide accurate up-to-date information on traffic volumes or traffic flows.

**Hold Point** - Obtain Superintendent approval if proposing to work during the restricted work hours.

Remove or cover existing signs or devices as appropriate to stop confusion during these hours. Further restrictions may apply should the Department deem it appropriate to do so. Concessions to work within these hours may be approved by the Superintendent, should the need arise and the officer deems it necessary.

[Modify the times to suit the conditions and after consultation with the client. Delete the clause if the work is not in an urban area. Include a cross-reference to the Restricted Working Hours clause in the Preliminaries if appropriate.]

Do not operate construction vehicles used in conjunction with the proposed works, either SV plated or vehicles in excess of 19 metres on public roads during peak traffic times (see above, working times) or in any way impede peak traffic flow during these times. Vehicles in excess of 19 metres in length are only permitted to travel on roads designated for road trains unless an appropriate permit from the Motor Vehicle Registry has been obtained in advance of using such routes.

### Traffic Lanes - Hold Point

Maintain at least 2 lanes (one in each direction) open to traffic at all times unless permitted otherwise on duplicated roads and maintain at least one lane open on two lane roads with appropriate traffic control in place accordingly. Obtain the written permission of the Superintendent if it is necessary to fully close a road.

Only permit single lane operation of two way traffic when traffic is directed by accredited WZTM controllers and signs or portable traffic signals etc. are employed, dependant on the site conditions and obtaining the appropriate approvals.

Program works so that the closure of turning lanes is minimised.

Obtain prior written approval from the relevant Local Government or Council if traffic is to be detoured onto their road network or the proposed works affects their network/assets accordingly.

**Hold Point -** Provide a copy of all relevant approvals with the Traffic Management Plan.

[Discuss the method of traffic control with the Client and Council as necessary. If required, insert a method of traffic control.]

### Lane closures - Hold Point

**Hold point -** Do not use bullnose or V type barriers unless no other option is available. Obtain permission from the Superintendent to use bullnose or V type barriers before placing them on site.

## NIGHT ILLUMINATION – HOLD POINT

**Hold Point** – Sections of the roadway, including detours and side tracks, affected by Work Zone Traffic Management, must be illuminated at night to AS 1742.3, if:

* night works are in progress, and/or
* if signage left on site overnight is not illuminated by the headlights of vehicles approaching the signs.

Illumination to be 10 lux minimum at ground level.

## WARNING DEVICES

Take care when placing warning signs, work signs, traffic management devices, or plant and equipment within the road reserve to ensure that these do not interfere with or restrict sight lines, particularly at intersections and ensure that the devices are not obscured by trees or other objects.

Ensure that road work signs reflect the current conditions of the site. Remove or cover signs such as T1-5 (worker symbolic), temporary speed reductions and the like, when the signs are not in use, such as when no persons are on site. Refer to AS 1742 and to the AGTTM for guidance on the appropriate use of these signs.

Any failure to comply with this clause will render the Contractor liable to pay the costs incurred by the Principal to procure any alternate means to have the rectifications made.

### Works in Progress Signs

For proposed works which are expected to be in progress for longer than 14 calendar days, display signs, sized 1200 x 900mm with 100mm high black Helvetica medium lettering on a white background displaying the following details:

* The Contractor's business name.
* The Contractor's business phone number.
* The Contractor's after hours phone number.

Display these signs prominently at the extremities of all works in progress and in addition to the work signs requirement. The signs remain the property of the Contractor.

[Adjust the text as necessary, to suit the specific project.]

### Multi Panel Signs

The use of multi panel sign configuration for "Traffic Controller Symbolic" & "Prepare to Stop" being mounted on one multi sign frame shall conform to AS 1742.3.

The use of the "Prepare to Stop" sign is mandatory in conjunction with the symbolic traffic controller sign where traffic are required to stop at the controllers position, therefore the Department approves making this the exception to the "No multi sign rule".

These signs must be on the one frame either side by side or one above the other. The individual signs are to be 900 mm x 600 mm minimum each when used stand alone, but may be reduced in size on a multi panel sign frame provided that the legend and / or symbol size are not reduced.

The Department will allow a multi panel sign frame for this use only in accordance with the directions herein and those contained within AS 1742.3.

### Multi message signs

Do not use multi message signs. Stand-alone signs must be used.

## NT SPECIFIC DIRECTIONS FOR ROAD WORK SIGNS

### Sign erection

Refer to the **Definitions** clause in this worksection.

|  |  |
| --- | --- |
| **Table - Sign erection requirements** | |
| **Long term rural areas:** | Place all signs a minimum 1m lateral clearance from the travelled path and a minimum of 1.5m from the lower edge of the sign to the ground. |
| **Long term urban areas:** | Place all signs a minimum of 2.2m from the lower edge of the sign to the ground in locations where they could be obscured by parked vehicles, vegetation or trees or may interfere with pedestrian routes. On traffic islands or medians the heights for signs shall conform to the “short term all areas” where it is deemed appropriate and only if they are not obscured by parked vehicles and if they do not interfere with pedestrian routes. |
| **Short term all areas:** | Display all signs prominently and place a minimum of 200mm from the lower edge of the sign to the ground, except regulatory signs such as speed, no parking signs etc, which shall be mounted a minimum of 1.5m from the lower edge of the sign to the ground. Place all signs a minimum of 2.2m from the lower edge of the sign to the ground where they could be obscured by parked vehicles, vegetation or trees or may interfere with pedestrian routes. |

Mount signs on Oz Spike posts or similar, or set in concrete in accordance with the requirement for permanent speed sign installations. Ensure signs remain secure, stable, and frangible. If an Oz Spike does not have a sign in it, and no sign is required to be mounted in it, that Oz Spike is to be removed from site.

Ensure that signs are clean, free of damage and comprise of a minimum of Class 1 retroreflective material in accordance with AS/NZS 1906.1.

Duplicate all temporary work signs (place on both sides of roads within the work site) on all multilane work sites, irrespective of the duration of the works, unless there is insufficient room available to do so, such as the median width being not sufficient to accommodate the signs. Where necessary, seek direction from the Superintendent where this condition cannot be complied with.

### Advance warning signs

Use T1-1 (road work ahead) signs and T2-16/17 (end road work) signs at all long term works sites and at all rural works sites.

In urban areas T1-1 (road work ahead) signs and T2-16/17 (end road work) signs at short term work sites are not mandatory, however, they may be used if deemed appropriate.

### Star pickets & fence droppers

Do not use star pickets for support of road work signs, bunting, flagging, fencing, etc within 9 metres of the trafficked path.

Do not use star pickets or any other non-frangible items such as steel drums, for delineation or any other purposes within 9 metres of the edge of the trafficked lanes. Bollards, cones and flagging are appropriate alternatives.

Fence droppers may be used as sign supports or legs and bunting or flagging supports on the condition that that the droppers are securely embedded into the ground and the sign, bunting or flagging is sufficiently secured to the droppers. Maintain a prudent use of end caps to ensure the minimisation of any hazards to workers and the public and the specified sign heights can be achieved.

Star pickets may be used for fencing support within the work site, provided appropriate action is taken to reduce any associated hazard for workers within the site and they are not within 9 metres of the travelled path of motorists.

### Non-standard signs - Hold Point

**Hold Point** - Obtain specific approval from the Superintendent before using signs not included in AS 1742.3.

### Portable Variable Message Signs (VMS) - Hold Point

[Include this clause where major disruptions or changes to the traffic path are likely to occur.]

Provide electronic variable message signs (VMSs) which comply with AS 1742.3 and with AS 4852.2 where major disruptions or delays to traffic or changes to the travelled path are likely to occur.

Provide the VMSs a minimum of 5 working days before any changes occur, or as directed by the Superintendent.

Provide the VMSs:

* at all approaches to intersections affected by, or likely to be affected by, the works,
* at approaches to detours associated with the works, and
* at approaches to major alterations to the existing travelled path.

Use electronic variable message signs capable of displaying a minimum text size as specified in AS 1742.3 and/or in AS 4852.2 and capable of displaying at least 3 lines, and capable of displaying at least 8 characters per line, and capable of displaying a maximum of 10 characters per line.

Colours for text, symbols, and backgrounds must conform to **Table - Permitted VMS colours**.

|  |  |
| --- | --- |
| **Table - Permitted VMS colours** | |
| **Application** | **Permitted colours** |
| General message | White |
| Warning message | Yellow |
| Lane open (symbolic) | Yellow (Green only if approved) |
| Lane closed (symbolic) | Yellow (Red only if approved) |
| Regulatory | As required for static sign of same type |
| Other | As approved |
| Regulatory VMS displays must be a single screen, and permanently visible. | |

**Hold point:**

* Provide details of the messages to be displayed and the locations of the variable message signs. This information is to be included in TGSs for the project
* Provide wording for advance warning message(s) and wording for message(s) to be displayed during the works. This information is to be included in TGSs for the project.
* Do not use any VMS until the messages to be displayed have been approved.
* Do not use any VMS until the proposed location and orientation of the VMS has been approved.
* Provide this information not less than 5 working days before the VMSs are to be put in to service for the project.

Ensure the displayed messages are updated to reflect the actual on-site conditions and/or requirements.

VMSs are to be placed in position, and display an advance warning regarding the works, on all approaches, 5 working days before any major disruptions, delays to traffic or changes to the travelled path are likely to occur or before new traffic signals are put in to operation. The VMSs are to remain in situ, operating properly, displaying the approved during works message, for a minimum of 2 working days working days after the works are complete or after the new traffic signals are put in to operation. These time frames may be varied by the Superintendent.

VMSs are to be placed in position, and display an advance warning regarding the works, on all approaches, 5 working days before any major disruptions or delays to traffic or changes to the travelled path are likely to occur. The VMSs are to remain in situ, operating properly, displaying the approved during works message, for a minimum of 2 working days after the works are complete. These time frames may be varied by the Superintendent.

Ensure any VMS used on site:

* is oriented so that the message is clearly visible to motorists on the approach side.
* has adequate separation from the travelled path.
* does not obstruct any path of travel of cyclists or pedestrians.
* does not obstruct any crossover.
* has adequate separation from any other infrastructure, particularly overhead power lines.
* does not obstruct motorists’ sight lines.
* is level, and that the screen and display elements are not damaged.

Do not have any on site VMS visible to motorists if it is not in use. Pre-positioning a VMS on site without a message being shown is only permitted if approved by the Superintendent.

Ensure the VMS does not cause any light pollution to nearby residences.

Take full responsibility for the VMSs used for the works, including prevention of theft and prevention of vandalism,

Do not, under any circumstances, use variable message signs for private advertising, within the NT Government road reserve, or visible from the NT Government road reserve, without the written approval of the Superintendent.

Any failure to comply with this clause will render the Contractor liable to pay the costs incurred by the Principal to procure any alternate means to have any non-compliant VMSs removed from site.

### Work Zone Speed Limits - Mandatory

Where work zone speed limits are being proposed to be changed, the proposed temporary speed limits must be approved by the Superintendent prior to implementation of the proposed speed limits.

Erect speed limit signs in accordance with sub-clause ***Sign Erection*** in this clause.

All Traffic Management Practitioners must record in their Daily Diaries time, date and location of each approach, of speed limit installations and removals for legal purposes. Retain these diaries for a minimum of 12 months from completion of the works if there were no reportable incidents at the site of the works. If there was an incident, retain the logs until informed that they can be destroyed. Provide copies of the diaries on request.

If an incident occurs within, adjacent to, on approach to or departure from the work site, make a photographic record of the traffic control devices, site conditions, placement of plant and equipment etc, as soon as practical after the event.

Advise the Superintendent of the incident as soon as possible.

Provide, to the Superintendent, as soon as practicable, electronic copies of:

* the site photographs,
* the TGSs implemented at the site at the time of the incident,
* the signed incident report,
* the Daily Diaries,
* any TSLA applicable to the site at the time,
* any PTSA applicable to the site at the time, and
* any other information requested by the Superintendent.

### Temporary Speed Limits - Hold Point

**Hold point** - Submit temporary speed limit authorisation applications to alter speed limits to the Superintendent, no later than 5 working days prior to the implementation of temporary speed limits, for approval under the Control of Roads Act.

Place repeater speed limit signs along the road, which has a temporary speed limit imposed, after all intersections with other roads within the speed limited area.

Design the Traffic Management Plans so that speed limits lower than the following absolute minimums are not required;

|  |  |
| --- | --- |
| **Table - Target lowest speed limits** | |
| **Application** | **Target speed limit not lower than** |
| Urban or built up areas. | 40 km/h |
| Bridge works, when restricting traffic to one lane and only in conjunction with a stop-traffic situation. A safety barrier complying with the relevant Test Level in accordance with AS/NZS 3845 shall also be used. | 40 km/h |
| All other rural works. | 60 km/h unless site conditions warrant a lower speed limit. |

[These are the lowest allowable speeds. Increase these minimums where required, eg. In a high traffic volume situation where lower speeds are not desirable.]

Implement permitted controls and monitor the site for compliance.

Do not allow dangerous conditions to remain for any time before adjusting control measures to make travel through the section of road subject to the controls as safe as possible.

If there is non-compliance make adjustments to control measures and check for compliance.

Assess the options available to mitigate risk if there is non-compliance.

Assess the risks, and assess if compliance is unlikely to be achieved, before calling Police to assist.

Temporary speed limit signs may only be displayed within the times and dates stipulated in the approved TSLA, and only when they are necessary. Failure to comply with this clause will render the Contractor liable to pay for the costs incurred by the Department to have the installation made compliant.

### Road Safety Barriers - Hold Point

Design, install and maintain all road safety barriers, including longitudinal channelizing devices, used within the NT Government's road reserve in accordance with AS 1742.3, AS/NZS 3845.1, AS/NZS 3845.2 and any other relevant and current Australian Standard associated with the works being proposed.

Refer to the Workzone Temporary Safety Barriers section at <https://dipl.nt.gov.au/industry/technical-standards-guidelines-and-specifications/road-safety-barriers> .

Use only MASH tested barriers.

**Hold Point:** Provide a statement, signed by your engineer, and signed by the author of the Traffic Management Plan, which states that the Road Safety Barriers proposal complies with AS 1742.3, and with AS/NZS 3845.1, and with AS/NZS 3845.2, and with the specifications and installation manuals from the manufacturers of the components proposed to be used in the Road Safety Barriers system. Provide the Traffic Management Plan with this statement.

The Traffic Management Plan must have information about the proposed Road Safety Barrier system(s), including, but not limited to:

* the barrier type(s),
* the end treatment type(s),
* the deflection zone(s),
* containment fence(s),
* offset(s) from traffic lane(s),
* width(s) and length(s) of work site(s),
* barrier(s) length(s) of need,
* barrier(s) requirements for night time,
* design layout drawing(s),
* installation methodologies, and
* a risk assessment of the use of the proposed Road Safety Barrier system(s).

Failure to meet the requirements of this clause may result in the project being suspended by the Department or other relevant authorities, such as NT WorkSafe, without cost to the Department, and without cost to that authority, until the project meets the requirements of this clause.

### Covering of Signs

Do not cause damage to signs by covering them with incompatible materials.

Do not use plastics to cover signs.

Do not use adhesive tapes on the faces of signs.

Remove covers immediately if directed to do so by the Superintendent or another officer of the Department.

Ensure moisture does not become trapped between a sign cover and the face of the sign.

Replace any signs which are damaged by incompatible coverings at no cost to the Principal.

Any failure to comply with this clause will render the Contractor liable to pay the costs incurred by the Principal to have rectifications made.

## EXCAVATIONS, STOCKPILES AND GRADIENTS WITHIN WORK ZONES AND CLEAR ZONES

Comply with the NT Work Safe Codes of Practice and Safe Work Australia Codes of Practice applicable to the works.

Comply with the guidance provided in the Austroads Guide to Temporary Traffic Management (AGTTM).

### NT WorkSafe Guideline in Relation to Excavations

Provide shoring, or bench, to all trenching or excavations which are deeper than 1.5 metres and where a person is required to enter unless an engineer certifies that shoring, or benching, is not required. Provide a copy of the Engineer's certification on request.

Comply with the provisions of the NT Code of Practice for Excavation Work, and the NT Code of Practice for Construction Work.

### Requirements for excavations, stockpiles or other gradients

Provide protection and delineation measures to excavations, stockpiles, or other gradients, to AS 1742.3, and to the **Road Safety Barriers** sub-clause in the **NT Specific Directions for Roadwork Signs** clause in this work section.

Measures to be implemented must take in to account the clearances between the hazards and traffic, and the posted traffic speed limits, and the nature of the hazard. Refer to the AGTTM. Requirements based on depths of excavations are to be applied to stockpiles, with the cited depths of excavations to be regarded as the heights of the stockpiles.

Where possible the site should be left without hazards outside working hours by backfilling, covering, or removing the hazards.

### Containment fencing

Containment fencing must comply with AS 1742.3, **Containment fences and road safety barrier systems** clause, **Containment fences** sub-clause.

Containment fencing is not a substitute for safety barriers.

The required clearance between containment fencing and the travelled path is to be determined from AS 1742.3 and AGTTM Part 3.

Fix retroreflective markers on the trafficked side of steel panels which are used as containment fencing, if they are within 9m of the travelled path, or adjacent to pedestrian or cyclist access, and if they are to be in place at night.

### Stockpiles close to travelled path

Do not dump or stockpile material within 6 m of a travelled path open to traffic.

If dumping or stockpiling material within 6 m of a travelled path open to traffic is unavoidable the material is to be delineated by appropriate means.

Refer to the Austroads Guide to Temporary Traffic Management (AGTTM) Part 3, and to AS 1742.3. AGTTM Part 3, Section 6, Clause 6.8, is particularly relevant

AGTTM Clause 6.8 relates to excavations. Where that clause states a depth of excavation, that depth is to be taken as a height of stockpiles or dumped material, and the conditions stated in the clause for that depth are to be applied to stockpiles or dumped material of that height.

Delineation devices are to be spaced as stipulated in the AGTTM.

Delineation devices must be at least 1m from the nearest edge of any path of travel open to traffic.

Traffic management documentation, including TMPs and TGSs, must show what protection actions, and what devices, are proposed to be used, and where they are to be positioned.

## TEMPORARY PAVEMENT MARKING

Where temporary pavement marking is to be used, all existing pavement markings must be removed in a manner that leaves the pavement surface with the temporary pavement markings such that there is no confusion caused to road users by the pavement marking and/or any marks of any nature on the surface of the pavement.

Refer to the **Removal of Pavement Markings** clause in PAVEMENT MARKING.

Where new pavement surfacing or existing pavement resurfacing is being undertaken, install temporary raised reflective pavement markers at the end of each day and prior to the loss of daylight at 24 metres maximum spacing.

If so instructed by the Superintendent, temporary line marking at the end of each day may also be required until completion of the works when the permanent line marking is reinstated.

Only use temporary raised reflective pavement markers that comply with AS 1742.3, **Function, description and use of standard signs and devices** section, **Devices for delineating and indicating the travelled path** clause.

For long term road construction works where sealed detours merge into existing sealed pavements or where sealed side roads merge into sealed detours, line mark transition areas in accordance with the standard drawing for Line Marking, CS 3400 and in accordance with AS 1742 including the setting out of arrows, letters, numerals and chevrons.

### Removal of Temporary Pavement Marking

Refer to the **Removal of Pavement Markings** clause in PAVEMENT MARKING.

Refer to the Department’s Removal of Line Marking Policy at <https://dipl.nt.gov.au/policies> .

All line removal works must be carried out in such a manner as to not endanger the health, safety or amenity of employees, road users or the general public.

Do not paint over temporary line marking as a means of removing it.

Carry out removal of marking is such a manner as to minimise damage to pavement surfaces.

Obliterate markings so as they are no longer recognisable as marking. When arrows, letters or figures are to be removed, the removal pattern must be in the shape of a rectangle or square to minimise confusion to the motorist, particularly in wet weather and poor lighting conditions.

The removed marking and the material used to remove the marking must be contained, collected and disposed of in an environmentally acceptable manner.

## DETOURS, SIDE TRACKS, AND CROSSOVERS - HOLD POINT

**Hold Point**- Obtain written approval from the Superintendent before commencing any works.

Side Track required or not required; ***[enter data]***.

[Determine with the Regional Project Officer whether construction requires a detour or will be done under traffic. Delete as appropriate.]

### Construction - Witness Point

**Witness Point -** Obtain advice from the Superintendent that all requirements for the construction of the detours, side tracks, and/or crossovers have been met on completion.

**Witness Point -** Provide not less than 5 days notice before opening any side track, detour, or crossover, to traffic.

Provide side tracks for detours when it is impractical to provide for traffic on the existing road system.

Side Track Type; ***[enter data]***

[Specify either sealed or gravelled. Specify sealed side tracks when the detour will be in operation for longer than 4 weeks. Discuss the side track type and requirements with the Regional Project Officer. Delete if side track not required.]

Construct side tracks with a finished surface level crown height 250 mm above the natural surface.

[Delete this requirement for short duration projects on local roads which are unlikely to be affected by rain.]

[Ensure that primer sealing is included in the SPRAY SEALING Section. Note here that the paragraph "Sealed side tracks to be primer sealed with 7 mm aggregate as specified in the SPRAY SEALING Section." is deleted if it is not applicable.]

Design and construct side tracks to comply with AUSTROADS Guide to the Geometric Design of Rural Roads and the following minimum standards:

|  |  |  |  |
| --- | --- | --- | --- |
| **Table – Minimum Standards for Side Tracks - Part 1 of 2** | | | |
| **Side track characteristic** | **Roadway Type** | | |
| **National Highway** | **Secondary Highway** | **Local Road** |
| Carriageway Width | 10 m | 8 m | 6 m |
| Design Speed | 80 km/h | 60 km/h | 40 km/h |
| Design Vehicle | Triple road train | Triple road train | Semi trailer |
| Horizontal Curve radius with 3% superelevation | 250 m | 150 m | 50 m |
| Vertical Curve radius (crest) | 2,500 m | 1,000 m | 400 m |
| Vertical Curve radius (sag) | 1,000 m | 600 m | 400 m |
| Pavement Width | 8 m | 6 m | 4 m |
| Trafficable Surface Type (over pavement width)” | Sealed | Gravelled | Gravelled |
| Gravel Pavement Thickness (when specified) | 150 mm | 100 mm | 50 mm |
| Lateral Clearance to Obstruction (from edge of carriageway) | 2.5 m | 1.2 m | 1.0 m |

|  |  |
| --- | --- |
| **Table – Side Track Minimum Requirements - Part 2 of 2** | |
| **Item** | **Requirement** |
| Signs/Warning devices: | As in Traffic Management Plan. |
| Guideposts: | At all fills, curves and crests. |
| Flood gauge posts: | At all floodways. |
| Total length at any  one time: | 5 km max. |
| Side track type: | **[enter information]** |

[Specify either sealed or gravelled. Specify sealed side tracks when the detour will be in operation for longer than 4 weeks. Discuss the side track type and requirements with the Regional Project Officer.]

Compact top 150 mm to 95% relative compaction.

Match side tracks neatly to the existing road system.

Provide sufficient resources to direct and assist traffic, when side tracks become restricted.

Carry out immediate remedial works when traffic is delayed by poor side track conditions or surface condition is dangerous.

Provide and maintain adequate drainage. Ensure drainage measures do not cause or accelerate erosion.

### Maintenance

Provide contact details of personnel who can be contacted outside of working hours. These people must be able to respond to situations which may arise, and must be able to rectify, or to have rectified, any problems which occur, outside of working hours.

Any failure to comply with this clause will render the Contractor liable to pay the costs incurred by the Principal to procure any alternate means to have after hours rectifications made.

Maintain the existing road network, and all side tracks, in use by the public.

|  |  |
| --- | --- |
| **Table – Side track maintenance requirements** | |
| **Surface type** | **Maintenance required** |
| Sealed Surfaces: | Patch and repair all surfaces. Grade and roll shoulders. |
| Unsealed Surfaces: | Regrade and roll to maintain a comfortable riding quality at design speed. |

Prevent dust nuisance by water spraying at regular intervals to keep surface moist.

Do not use waste oil as a dust suppressant.

Remove debris and rubbish.

Maintain road signs and guide posts in a clean state.

Inspect the site regularly, even at times when there is no on-site works activity, particularly when there is rainfall which will affect the site, whether directly or by run-off from rain fall in upstream and/or uphill areas.

## ACCESS TO ADJACENT PROPERTIES AND SIDE ROADS

Maintain access to adjacent properties and side roads at all times to a level appropriate for the type and frequency of traffic.

Provide and erect proposed and approved signs detailing alternative access, only after approval from the Superintendent is obtained.

Ensure adequate access is maintained for pedestrians and cyclists as required, including delineated access if existing paths are being closed as part of the works.

[Consider specifying access requirements for commercial properties. Negotiate with the owners for their access requirements during design. Identify the access requirements on the plans, if necessary.]

## TEMPORARY PEDESTRIAN ACCESS

Conform to: AS 1742.9, AS 1742.10.

Maintain access for pedestrians, cyclists and persons with disabilities passing through and around the work site. Where existing paths have been, or are to be, demolished or are, or will be, inaccessible or modified due to construction works, provide temporary access to a standard not less than the pre-existing or preconstruction standard.

Temporary access must;

* be clearly delineated and have adequate width and height clearance,
* be smooth, free draining and free of obstructions and loose material,
* provide clear guidance where paths change direction,
* be illuminated by temporary lighting in urban areas to assist path users where existing street lighting has been removed or affected by the works,
* be arranged so that path users are clearly visible to vehicle drivers and plant operators at road crossing points.

[In situations where a temporary path is required, include an item in the Schedule of Rates outlining the standard required, e.g. "a temporary primer sealed and lit path".]

## TEMPORARY BRIDGING - HOLD POINT

Design and construct any temporary bridging in accordance with the AUSTROADS Guide to Bridge Technology.

**Hold Point** - Obtain written approval from the Regional Manager, Road Projects prior to commencement of any such works.

Ensure all environmental approvals have been obtained prior to the commencement of the works.

**Hold Point** - Provide copies of approvals obtained by Contractor to the Superintendent prior to the commencement of the works.

Provide and erect signage, fencing, road safety barriers and or guard railing etc. to prevent accidental access to the feature being bridged.

## CONTRACTOR'S PLANT AND EQUIPMENT - HOLD POINT

Provide public traffic right of way at all times unless traffic control is in use.

Keep parking and materials storage clear of trafficked areas and clear zones in accordance with applicable AUSTROADS guides.

Do not park any vehicles, or mobile plant, machines, or equipment in the Road Reserve when it is not in use for the execution of the works without prior written approval, or explicit approval in the Request for Tender/Quotation.

Any request for approval must include, as a minimum:

* the reasons for the need to park in the Road Reserve,
* the locations affected,
* the durations anticipated,
* site conditions,
* lighting conditions,
* traffic paths of travel and anticipated volumes,
* access and egress points,
* site security measures,
* pedestrian and cyclist activity and safety, and
* effects on nearby residential properties, including the occupants of them.

Do not leave equipment or tools unattended. Do not leave any item in a location where it could be a hazard to the public.

Responsibility for maintaining the security of Contractor’s plant, vehicles, machines, equipment and other items used for the execution of the works remains with the Contractor.

**Hold Point** - On roads carrying significant traffic, floodlight the road and area within 50 m of the site when working at night, if approved by the Superintendent, to a ground level luminance of 10 lux minimum.

[Include only for roads carrying significant traffic.]

### Vehicles, plant, machines, and equipment

All vehicles, and mobile plant, machines, and equipment, used on the road must be legally registered, or otherwise permitted, to travel on Northern Territory roads, and must have compulsory third party insurance valid in the Northern Territory if that is required under Northern Territory legislation.

Comply with the Northern Territory *Traffic Act 1987*, and its Regulations.

Do not permit tracked mobile plant, equipment, machines, or vehicles, to cross public roads.

Any failure to comply with this clause will render the Contractor liable to pay the costs incurred by the Department to procure any rectifications or repairs which become necessary.

### Mobile Plant - Broadband Alarm

**Standards**

AS 4742: Machine-mounted forward and reverse audible warning alarm (withdrawn but available)

ISO 9533: Earth-moving machinery - Machine-mounted audible travel alarms and forward horns - Test methods and performance criteria

**Definition**

Broadband alarm: Pulsed acoustic signal that comprises a range of frequencies and sometimes referred to as quacker, woosher, non-tonal reversing beepers or white sound.

**Broadband/White-Sound Alarm Requirement:**

Provide Broadband Alarms (White Sound) fitted to all construction vehicles and mobile plant before commencement of works.

Ensure that installation and proper operations of the alarm/warning system is sufficient before commencement of works, including but not limited to:

* All alarms clearly audible above the noise level of the machinery or vehicle.
* Automatically activated when reverse gear is selected.
* Directional nature of the broadband alarm is appropriate for works.

### Warning devices mounted on vehicles, plant, and equipment

Provide beacons, or other vehicle, or plant, or equipment, mounted visual illuminated warning devices on the highest point of the cabin roof or superstructure of all vehicles, mobile plant, mobile machinery, and mobile equipment in accordance with the **Vehicle-Mounted Signs And Devices** clause in the **Description and Use of Signs and Devices** section of AS 1742.3 where these are being used within the road reserve.

Fit beacons with globes rated at a minimum of 55 watts, or the LED equivalent.

Do not use strobe lights.

Ensure that the light is operational whenever the plant or equipment is working on or within 9 m of the roadway.

Ensure that the light is visible from all approaches and not obscured by exhaust stacks, back hoe arms etc, and that the beacons or warning devices are not covered in dust.

Non-compliance with this clause may result in the Contractor being directed to cease work, which will be at no cost to the Principal, and which will not be grounds for an extension of time claim.

## ROAD WORK ZONE LENGTH

Comply with the requirements of AS 1742.3 and with the requirements of the AGTTM.

Comply with the requirements of the **Portable Traffic Signals** clause in this work section.

Maximum road work zone length when using portable traffic signals is 1050-1150 m.

For short term work, work sites are not to exceed 2 km in length.

## TRAFFIC SIGNALS, INTELLIGENT TRANSPORT SYSTEMS (ITS), Variable Speed Limit Zones, AND Traffic COUNT STATIONS

### Traffic Signals - Hold Point

**Hold Point** - Obtain clearances from the Department’s Traffic Section, ph. 8999 4402, prior to commencement of the works.

Co-ordinate your works activities with the Department's Traffic Section for the duration of the works.

This includes all works;

* 150 m prior to the stop line (within trafficked lanes),
* 50 m past the stop line (within trafficked lanes),
* that affect normal daily traffic flow at any signalised intersection,
* for road reserve or median excavations greater than 150 mm,
* within 10m of an area defined by the traffic signal or ITS pedestals and associated pits, including detector loops and pits, traffic signal controller cabinet, and UPS cabinet,
* within 10m of a Department CCTV camera,
* where a Red Light Speed Camera (RLSC) is, or will be, impacted by traffic management, and
* between the traffic signal poles and associated traffic signal control cabinet.

Approvals and clearances may be varied or withdrawn at any time in response to changing circumstances.

#### Works undertaken DURING working hours - Hold Point

**Hold Point -** Provide copies of the TGSs once consent for their use has been granted, and contact the Traffic Section, by phone on 8999 4402, not less than one working day prior to the commencement of work.

**Hold Point -** If the traffic signals need to be re-mapped, or other traffic controls implemented, advise the Traffic Section not less than one working day prior to the commencement of work.

Contact must be made by email to [traffic.NTG@nt.gov.au](mailto:traffic.NTG@nt.gov.au) or by phone.

**Hold Point -** Advise the Traffic Section about the planned lane closures, by phone, immediately before installing traffic control, on the day the works are to be carried out.

Contact the Traffic Section immediately if unacceptable traffic congestion occurs during the works so that the Traffic Section can assist by adjusting traffic signal timings. If traffic congestion cannot be relieved by adjusting traffic signal timings it may be necessary to remove lane closures.

**Hold Point -** Advise the Traffic Section immediately before traffic control is removed.

Any failure to comply with this clause will render the Contractor liable to pay the costs incurred by the Department to procure any rectifications or repairs which become necessary.

#### Works undertaken OUTSIDE working hours - Hold Point

**Hold Point -** Provide copies of the TGSs once consent for use has been granted, and contact the Traffic Section, not less than one working day prior to the commencement of work.

**Hold Point -** If the traffic signals need to be re-mapped, or other traffic controls implemented, co-ordinate directly with the Traffic Section not less than one working day prior to the commencement of work.

The name and phone number of an after-hours contact officer will be provided by the Traffic Section.

**Hold Point -** Advise the Traffic Section after-hours contact officer about the planned lane closures, using the after-hours phone number provided, immediately before installing traffic control, on the day the works are to be carried out.

Contact the Traffic Section after-hours contact officer, on the after-hours phone number provided, immediately if unacceptable traffic congestion occurs during the works so that the Traffic Section after-hours contact officer can assist by adjusting traffic signal timings. If traffic congestion cannot be relieved by adjusting traffic signal timings it may be necessary to remove lane closures.

**Hold Point -** Advise the Traffic Section after-hours contact officer, on the after-hours phone number provided, immediately before traffic control is removed.

Any failure to comply with this clause will render the Contractor liable to pay the costs incurred by the Department to procure any rectifications or repairs which become necessary.

### Variable Speed Limit Zones – Hold Point

**Hold Point** – Obtain clearances from the Department’s Traffic Section, ph. 8999 4402, not less than five working days prior to commencing works.

Co–ordinate the work activities with the Department’s Traffic Section for the duration of the works.

This includes all works:

* + - * + In the close proximity of the area defined by the VSL poles and associated pits.
        + Within the VSL zone.
        + On any immediate approach to the VSL zone that may require the installation of temporary speed reductions.

Provide copies of the TGSs to traffic.NTG@nt.gov.au once consent for use has been granted, and/or contact the Traffic Section, by phone on 8999 4402, not less than five working days prior to commencement of work.

VSL control keys may be available from the Traffic Section for use.

### Traffic Count Stations and Culweigh Stations- Hold Point

The majority of the permanent count stations have in-pavement detection systems installed and cutting off or closing traffic lanes can have an impact on their operation.

In addition to the permanent count stations, there may be other count stations which are identified by the installed tubes laid across the surface of the pavement.

**Hold Point -** Prior to the commencement of work within the trafficked lanes and within 50 m of traffic counters, or Culweigh stations, or within 20 m, in any direction, of any component of the traffic count or Culweigh equipment, whether located in or on the trafficked lanes, shoulders, nature strips, and/or medians, or located in another type of area, obtain a clearance to commence the works from Department's Maintenance Section for the region in which the works are located, and with either the Superintendent or with the Maintenance Manager (phone (08) 8999 4660).

Co-ordinate works activities, with the Department's Maintenance Section for the region in which the works are located, for the duration of the works.

Maps showing count station locations are available from Department's Transport Infrastructure Planning Division, contact: (08) 8924 7531, or from the Annual Traffic Reports at: <https://dipl.nt.gov.au/industry/technical-standards-guidelines-and-specifications/traffic-data> .

Any failure to comply with this clause, and any damage caused to Northern Territory Government infrastructure, will render the Contractor liable to rectify the breach, and / or repair any damage, and / or pay the costs incurred by the Department to procure any rectifications or repairs which become necessary.

## PORTABLE TRAFFIC SIGNALS - Hold Point

Use portable traffic signals (PTS) complying with AS 4191. Use portable traffic signals in a manner complying with the requirements of AS 1742.3.

Portable traffic signals are for short-term traffic control applications only. Where traffic signal control is being proposed for periods greater than 2 months in a single location, consider the installation of temporary traffic signals.

Each portable traffic signal unit must be fitted with a sign which has on it the Contractor’s name and contact information, including phone numbers for contact during working hours and for contact outside of working hours.

**Hold Point -** Complete and provide the Portable Traffic Signal Authorisation (PTSA) form, included in the application for a Permit to Work in the Road Reserve document, to seek formal approval from the Superintendent to use the proposed portable traffic signals and the proposed time settings, not less than 5 working days prior to the intended use of the portable traffic signals. Do not use any PTSs on site until an authorised Departmental Officer has signed off the PTSA form.

Refer to ***Table - General Time Settings***, and ***Table - Yellow Times***, and ***Table - Red and Green Times***.

Consider the reduction of Green Times to reduce delays to traffic.

Limit the spacing between PTSs controlling each section of road to the minimum practical distance. For the area under the control of portable traffic signals, limit the spacing between PTSs controlling each section of road to no more than 1150 m.

Use the time settings in the tables in the Time Settings sub-clause in this clause as a guide for red time clearance and maximum green times.

Monitor the prevailing traffic conditions and vehicle speeds and amend the times for the site to suit traffic conditions and to minimise delays to traffic. Submit details of the changes to the Superintendent as soon as practicable thereafter.

Preference should be given for the use of approved vehicle activated systems.

The use of PTSs at T-intersections will be considered on a case by case basis. Overall delay times are critical at these types of locations.

Inaccurate or incorrect information provided with a PTSA submission may cause delays in processing the application, and therefore may delay the start of the project.

Provide contact details of personnel who can be contacted outside of working hours. These people must be able to respond to situations which may arise, and must be able to rectify, or to have rectified, any problems which occur, outside of working hours.

Any failure to comply with this clause will render the Contractor liable to pay the costs incurred by Department staff to procure any alternate means to have after hours rectifications made.

### Temporary Speed Limits - Hold Point

Impose a controlled area speed limit not exceeding 60 km/h if the portable traffic signals would otherwise be in a higher speed limit zone.

**Hold Point** - Work zone speed limits require approval from to the Superintendent prior to implementation.

Maximum road work zone length when using portable traffic signals is 1050-1150 m.

### Sight Distance

Maintain a sight distance on the approach to portable traffic signals of not less than 150 m. If this cannot be achieved, use appropriate advance warning signage to advise road users in advance of the sight line obstruction of the impending traffic signals ahead.

In cases where queuing traffic is extending past the advance warning signage, install further advance warning signs and speed zone signs further in advance, to prevent collisions at the end of the queue awaiting a green light. Avoid excessive traffic queuing by use of and adjustment of, appropriate time settings on the portable traffic signals whenever possible.

### Time Settings

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Table – General Time Settings** | | | | |
| **Mode** | **All red** | **Minimum Green** | **Maximum Green** | **Yellow** |
| Manual | M | F | M | S |
| Fixed time | S | F | S | S |
| Vehicle Actuated | S | F | S | S |
| F Fixed at 15 seconds  M Set the manual control switch each cycle  S Needs to be selected and pre-set by operator for each site | | | | |

|  |  |
| --- | --- |
| **Table – Yellow Times** | |
| **Approach Speed** | **Yellow Time** |
| 60 km/h | 4 seconds |

|  |  |  |  |
| --- | --- | --- | --- |
| **Table - Red and Green Times** | | | |
| Determine green period timings based on anticipated traffic conditions, and modify them to suit actual traffic conditions experienced when the works are undertaken, as green times indicated in this table are maximum times for green signals. | | | |
| All Red Period (Seconds) | **Max Green Period (Seconds)** | **Distance Between Stop Lines at traffic Signals (m) – Clearance speed 20 km/h** | **Distance Between Stop Lines at traffic Signals (m) – Clearance speed 40 km/h** |
| 2 | 30 | 0-30 | 0-50 |
| 5 | 35 | 34-45 | 50-90 |
| 10 | 35 | 45-75 | 90-150 |
| 15 | 40 | 75-105 | 150-210 |
| 20 | 40 | 105-135 | 210-270 |
| 25 | 45 | 135-165 | 270-330 |
| 30 | 45 | 165-195 | 330-390 |
| 40 | 50 | 195-250 | 390-500 |
| 50 | 50 | 250-310 | 500-620 |
| 60 | 60 | 310-365 | 620-730 |
| 70 | 70 | 365-415 | 730-830 |
| 80 | 80 | 415-465 | 830-930 |
| 90 | 90 | 465-525 | 930-1050 |
| 100 | 100 | 525-575 | 1050-1150 |

## RESTORATION

Upon completion of works:

* Remove all temporary warning signage and other traffic control devices.
* Remove all temporary works and reinstate the areas to their original state, including the removal and disposal of seal and dragging windrows and debris back across the side track carriageway.
* Stabilize all areas impacted by the works to prevent erosion.
* Where applicable reseed with local native grasses and trees and shrubs.

[Consider seeding with local native grasses and trees and shrubs, where applicable.]

* Comply with the requirements of the Environmental Approvals and Clearances issued by the Department, and by DENR, Environment Heritage and the Arts Division, Environmental Assessment and Policy Section, for the project.
* Reinstate permanent traffic control devices temporarily removed during the works.