|  |
| --- |
| TRAFFIC MANAGEMENT PLAN  TEMPLATE |

# Traffic Management Plan

|  |  |  |
| --- | --- | --- |
| Project Details |  |  |
| Principle contractor | Laing O’Rourke Construction Australia (LORAC)  [Insert Address]  Ph:  A.B.N. |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Project Title |  | Project address |  |
| Client |  | Reference number |  |
| Planned commencement date |  | Planned completion date |  |
| Controlled copy number |  | | |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| TMP Management Reviews and Authorisations | | | | | | | |
| Reviews | | | | | Revision Numbers and main amendments are summarised below: | | |
| Date Reviewed | | | Revision No. | | Description | | |
| [Insert Date] | | | [Insert Review No.] | | Initial Review Of TMP Template Pre-commencement of Project. | | |
| [Insert Date] | | | [Insert Review No.] | | [Insert Description of Changes] | | |
| [Insert Date] | | | [Insert Review No.] | | [Insert Description of Changes] | | |
| [Insert Date] | | | [Insert Review No.] | | [Insert Description of Changes] | | |
| [Insert Date] | | | [Insert Review No.] | | [Insert Description of Changes] | | |
| Authorised By | | | | | |
| Date | Revision No. | | Project Manager’s Name | | Signature |
| [Insert Date] | [Insert Review No.] | | [Insert Name] | |  |
| [Insert Date] | [Insert Review No.] | | [Insert Name] | |  |
| [Insert Date] | [Insert Review No.] | | [Insert Name] | |  |
| [Insert Date] | [Insert Review No.] | | [Insert Name] | |  |
| [Insert Date] | [Insert Review No.] | | [Insert Name] | |  |

**All LORAC Site Management Team members and Traffic Controllers are to undergo a documented tool box induction on the content, requirements, and obligations of this TMP in line with their position and responsibilities on the Project.**

|  |  |  |  |
| --- | --- | --- | --- |
| 1st (Initial) LORAC TMP REVIEW TEAM (Prior to Project Commencement) | | | |
| The following persons formed part of the TMP Review Team: | | | |
| Position: | Name: | Position: | Name: |
| Project Manager | [Insert Name or N/A] | Project Safety Advisor | [Insert Name or N/A] |
| Site Manager | [Insert Name or N/A] | Area HSE Manager | [Insert Name or N/A] |
| Foreman | [Insert Name or N/A] | Group HSE Manager | [Insert Name or N/A] |
| (Others - Insert details) | [Insert Name or N/A] | (Others - Insert details) | [Insert Name or N/A] |

**Table of Contents**

[1. Traffic Management Plan 1](#_Toc50458408)

[1. Purpose 4](#_Toc50458409)

[1.1 Purpose 4](#_Toc50458410)

[1.2 Scope 5](#_Toc50458411)

[1.3 General Requirements 5](#_Toc50458412)

[1.4 Responsibilities 5](#_Toc50458413)

[1.4.1 LORAC Foremen 5](#_Toc50458414)

[1.4.2 All Other Persons 6](#_Toc50458415)

[2. Traffic Management 7](#_Toc50458416)

[2.1 Traffic Management 7](#_Toc50458417)

[2.1.1 Traffic Demand 7](#_Toc50458418)

[2.1.2 Traffic Routing 7](#_Toc50458419)

[2.1.3 Traffic Control (LORAC Works on Carriageways) 7](#_Toc50458420)

[2.1.4 Non Vehicular Traffic 8](#_Toc50458421)

[2.2 LORAC Works on the Roadway 8](#_Toc50458422)

[2.2.1 LORAC Controlled Work 8](#_Toc50458423)

[2.2.2 Vehicular Traffic Safety and Convenience 8](#_Toc50458424)

[2.3 Typical Road Works Control Layout 8](#_Toc50458425)

[2.4 Work Site Signage 9](#_Toc50458426)

[3. Traffic Signage and Control 10](#_Toc50458427)

[3.1 Appropriate Signing 10](#_Toc50458428)

[3.1.1 Principles of Signing 10](#_Toc50458429)

[3.1.2 Erection and Location of Signs 10](#_Toc50458430)

[3.1.3 Advance and Intermediate Advance Warning Signs 11](#_Toc50458431)

[3.2 Traffic Control 11](#_Toc50458432)

[3.2.1 Approach Taper Partially Closed Lane 11](#_Toc50458433)

[3.2.2 Traffic Controller’s Check 12](#_Toc50458434)

[3.2.3 Termination Taper 12](#_Toc50458435)

[4. Delineation at Work Site - Travel Paths 12](#_Toc50458436)

[4.1 Delineation of the Travel Path 12](#_Toc50458437)

[4.1.1 Through the work area 12](#_Toc50458438)

[4.1.2 Past the Work Area 12](#_Toc50458439)

[4.1.3 Around the work area 13](#_Toc50458440)

[4.2 Excavations 13](#_Toc50458441)

[5. Traffic Controllers 14](#_Toc50458442)

[5.1 Traffic Controllers 14](#_Toc50458443)

[5.1.1 Use of Traffic Controllers 14](#_Toc50458444)

[5.1.2 Number of Traffic Controllers 14](#_Toc50458445)

[5.1.3 Traffic Controller(s) shall: 14](#_Toc50458446)

[6. Work on Footpaths 16](#_Toc50458447)

[6.1 Pedestrian Considerations 16](#_Toc50458448)

[6.1.1 Width of Travel Path 16](#_Toc50458449)

[6.1.2 Pedestrian Safety Points 16](#_Toc50458450)

[6.1.3 All pedestrians 16](#_Toc50458451)

[6.1.4 Elderly Pedestrians 16](#_Toc50458452)

[6.1.5 Young Pedestrians 16](#_Toc50458453)

[6.1.6 Intoxicated Pedestrians 16](#_Toc50458454)

[6.1.7 People with Disabilities or Prams 17](#_Toc50458455)

[6.1.8 Construction Traffic and Vehicles 17](#_Toc50458456)

# Purpose

## Purpose

This document has been prepared to assist LORAC staff to implement traffic and pedestrian management control measures when carrying out construction and related works located at**[Insert Project Name]** site.

The term ‘traffic’, wherever used in this TMP, encompasses both vehicles and pedestrians movement.

Traffic management shall be undertaken in a manner that shall provide for the safety of all LORAC staff, subcontractors and the public and ensure that road and footpath users are not exposed to foreseeable risks.

This document is based on Australian Standard AS 1742.3 “Manual of Uniform Traffic Control Devices”.

## Scope

This document addresses the systems and procedures that should be followed to warn, inform and guide Traffic past, through or around all works related to project site.

All workers, employees, subcontractors, employers and the management team, involved in the construction of the project shall adhere to this Traffic Management Plan.

To ensure minimal disruption to the general public and work on site the control and management of traffic should involve the co-ordination and control of the following:

* All delivery trucks and their loading and unloading.
* Concrete pumping including Pump and Delivery Trucks.
* Vehicular and pedestrian traffic past the work area.

It is not practicable for this TMP to cover all situations that could arise, it may therefore be necessary for the relevant person in control of the traffic management for a specific activity on site to modify the control measures to address the particular circumstances based on the hazard(s) identified.

**Note:** The TMP shall be amended to include all significant changes to traffic management requirement.

## General Requirements

* Where possible, all deliveries should be planned to avoid peak hour traffic (morning and afternoon).
* Delivery vans and trucks entering/exiting site shall use the driveway on [Insert details]
* When a crane is working overhead, warning signs and a rotating light shall be placed on a boom gate in the street to notify all vehicles and pedestrians.
* All traffic controllers shall be licensed and wear the required PPE at all times e.g. helmets, safety boots and high visibility vests etc.
* During the excavation work on site, the following precautions shall be taken:
* A traffic controller shall direct traffic and excavation trucks using a **“STOP/SLOW”** sign.
* All trucks involved in the excavation work shall follow a set route to minimise traffic disruption
* Prior to any concrete pour or any other work taking place that affects pedestrians and traffic safety (e.g. awning work, work to footpath and driveway, work above footpath, etc.), all required notification are to be given to the relevant authorities (e.g. Police, Councils, State Transport Department) and/or permits obtained and the work is to be adequately supervised to ensure the required conditions of any applicable permits are met at all times.
* During all concrete pours, the following precautions shall be taken:
  + Safe and unobstructed access for the general public is to be ensured where a ‘pump-line’ is set up from the street.
  + Control measures are to be implemented for all trip/slip/fall hazards associated with the pour and a traffic controller is to be on hand at all times to ensure unauthorised persons are kept away from the immediate area of the pump.
  + An access ramp is to be provided where any pump line passes over a footpath.

* [Insert any other site specific requirement]

## Responsibilities

### LORAC Foremen

LORAC Foremen have responsibilities for two areas of traffic management, the **Work Area** and **Employees** under their control. LORAC Foreman shall ensure the following for each area of responsibility:

**Work Area**

* A documented traffic management risk assessment is completed by  and the procedures and control measures implemented on site.
* Written permission is obtained from the relevant authority before any work in a road reserve is commenced by LORAC or a person working on the LORAC’s behalf.
* Road users, pedestrians and LORAC staff can continue with their respective undertakings in relative safety and with the minimum of inconvenience.
* All site related works are correctly barricaded and sign-posted using the relevant approved signs.
* All signs and devices used are in good condition and are removed at the completion of the work.
* All site related works do not commence until all signage is in place, even in an emergency it is essential that safety is observed for both staff and road/footpath users.
* All lamps are:
  + Switched off during daylight hours.
  + Checked at night time to confirm they are working and correctly aligned.
* The traffic management plan is reviewed regularly to ensure it is still suitable.
* If any person is injured the incident is reported to the Project Manager and the relevant authorities.
* In the event of an incident/accident, the following information is recorded using E-T-8-0918 Incident Investigation:
  + Names and addresses of those involved.
  + Names and addresses of any witnesses.
  + Actual types of signs and devices at the site.
  + Photographs of signs and devices at the site at the time of the incident.
  + Details of the surface and the width dimension of the travelled path.
  + Details of any hazard at the site.
  + Details of the prevailing weather.

**Employees**

* Workers are competent to work on or near the roadways.
* Workers have a general awareness of traffic safety issues.
* Workers are informed of the public relations aspect of their work and instructed they should not allow themselves to be provoked by members of the public.
* Where required, all workers have access to and use the following safety equipment and PPE:
  + High visibility vest or shirt.
  + UV protection eyewear and sunscreen (SPF 30 standard or better).
  + Wide brimmed hat/safety helmet.
  + Steel cap safety footwear.
  + Appropriate clothing to protect against UV radiation.
  + Hearing protection (where appropriate).
  + Eye protection (where appropriate).

### All Other Persons

All other persons carrying out work activities on or immediately adjacent to the site shall:

* Always take reasonable care for their safety and that of those around them.
* Follow the applicable requirements of this traffic management plan.
* **Prior** to proceeding with any work, contact their supervisor or a LORAC Site Management Team member for clarification of any requirement applicable under this traffic management plan, if they are uncertain of what is required or how it is implemented.
* Wear high visibility vest or shirt where required under this TMP.
* Always obey the applicable road rules for pedestrians and drivers.
* Always follow safe driving practices, including using the correct thoroughfare in accordance with any posted speed limits and safety requirements in a manner that does not put at risk their safety or that of any other persons (e.g. passengers, fellow workers or members of the public).
* Park as per any applicable parking signs and rules and avoid creating any form of safety hazard when parking or parked.

# Traffic Management

## Traffic Management

When an LORAC Site Management Team members, subcontractors or their workers conducts work on the road or footpath it creates an abnormal situation that requires the provision of suitable signage, barricading, guarding, etc for users including vehicular and pedestrian traffic.

Regardless of the nature of the works, the complexity or how long it shall take, the purpose of this TMP is to ensure the safety of the Site Management Team, subcontractors, their workers and the users of the road and to minimise the inconvenience to all parties.

The basic communication requirements of the traffic management plan are to provide:

* Advance warning of a change in traffic conditions in time for the users to adjust.
* Information and Guidance as to where to go to safely negotiate the work site. That is delineation of travel path and its separation from the work site and any necessary barricading.

### Traffic Demand

The relevant person for LORAC/subcontractor shall determine the most suitable time of the day to conduct any work this TMP is applicable to and ensure that sufficient road reserve space remains open to provide an acceptable level of service and convenience to all users taking into account normal and peak hour traffic.

### Traffic Routing

The LORAC Site Manager/Relevant Foreman and PSA shall determine the most effective means of routing general and specific traffic through, past or around site as required by on-site and offsite work activities.

### Traffic Control (LORAC Works on Carriageways)

Traffic control shall be provided by the relevant LORAC Site Management Team member or subcontractor, as applicable, where required under this TMP or the SWMS for the activity undertaken.

The relevant person for LORAC/subcontractor shall ensure:

* The level of control implemented is suitable for all traffic conditions occurring during the work activity e.g. traffic controller, police, other means of traffic control.
* Traffic control measures take into consideration emergency vehicles and vehicles with special requirements such as buses, their stops and terminals.

### Non Vehicular Traffic

LORAC’s Site Manager/Relevant Foreman and PSA shall ensure traffic management includes provisions for the following where applicable:

* Pedestrians, including those with disabilities.
* School children, bicycles and toy vehicles.

## LORAC Works on the Roadway

### LORAC Controlled Work

This section applies to LORAC controlled work that requires part or total closure of the adjacent road to allow pedestrians to past the work site. The Site Manager/Relevant Foreman and PSA shall ensure the following:

* Work involving a simple part road closure:
  + A sketch is completed showing all protective devices, their delineation.
  + A written list is prepared of all devices required for the task.
* Works involving complex road closure e.g. long-term work in vicinity of an urban intersection –
  + All traffic and pedestrian control measures are to be fully document.
  + All temporary traffic paths, their delineation and position of warning devices are to be shown.
  + Any after-hours traffic arrangements are to be documented.

All the above documents are to be filed on site with this TMP.

### Vehicular Traffic Safety and Convenience

To achieve the least disruption and inconvenience to vehicular traffic, LORAC’s Site Manager/Relevant Foreman shall ensure:

* Only the minimum practicable length and width of road is closed off at any given time.
* The control measures used provide sufficient width within the work area for the safety of the workers i.e. at least 1.2m clearance between edge of work area and edge of adjacent traffic lane.

## Typical Road Works Control Layout

The figure below illustrates a typical road works control layout plan for a work site.

LORAC’s Site Manager/Relevant Foreman and PSA shall ensure that those components that are relevant to their work site are identified and the appropriate traffic management scheme applied in each particular case.



## Work Site Signage

LORAC’s Site Manager/Relevant Foreman and PSA shall ensure the requirements and recommendations for signs and devices in each of the areas identified above are as follows:

**Advance Warning Area** - General Requirements for the display of advance warning signs and devices will vary according to factors such as the speed of approaching traffic, the degree to which the hazard requires modification of speed or diversion of travel path, or extra vigilance for other reasons, and the sight distance available to the hazard, including sight obstruction caused by other traffic.

**Transition (Taper) Area** - If a roadway has to be partially closed, an appropriate taper should be marked in the transition (taper) area (see Clause 4.1) and, wherever possible, should be located so that its full length is visible to approaching traffic.

**Work Area/Clearance Area**

* The work area is where the work is physically being carried out and is preceded by a clearance area that provides a safety barrier.
* The clearance area should be large enough to accommodate any work trucks or plant etc, however, if the work is hidden from approaching traffic (e.g. by a crest or curve) the clearance area should extend back to a point where it can be adequately seen by approaching traffic.

**Termination Area -** Signs indicating the end of the works and where appropriate, terminating a roadworks speed limit zone, are placed at the end of the termination.

**Note:** For further details see Section 3 - Traffic Signage and Control.

# Traffic Signage and Control

## Appropriate Signing

### Principles of Signing

LORAC’s Site Manager/Relevant Foreman shall ensure no matter how brief the work site is occupied careful consideration is given to signing of the site to:

* Provide advance warnings to drivers of changes in the surface of the roadway and/or in the changed traffic conditions and that personnel and/or plant are engaged in work.
* Adequately instruct and guide traffic safely through, past or around the work site.
* Provide separation of the travel path and the works area.

LORAC’s Site Manager/Relevant Foreman and the PSA shall ensure the following important principles are observed regarding traffic management signage:

* Signs and devices comply with those listed in AS 1742.3
* Signs and devices are be erected and displayed before work commences.
* On approaches to the work area signs are erected in the following sequence and then removed in the reverse order.
  + Advance warning signs.
  + Other warning signs.
  + Instruction signs
* Signs are placed within the driver’s line of sight and at the same time not obscure other traffic devices from the driver’s line of sight.
* All signs and devices are placed in the most advantageous positions having regard for the location and nature of the hazard, and the warning being conveyed, to provide the maximum visual impact for approaching traffic. Such signs and devices shall have an adequate clear view in advance of them (minimum 50m for 60 km/h, minimum 100m for 100 km/h).
* Signs and devices are placed in a manner and position so they are not obscured from view by vegetation or parked vehicles.
* Signs and devices are placed in a manner and position so as not to become a possible hazard to workers, pedestrians or vehicles (e.g. divert traffic into an undesirable path).
* Signs and devices shall be regularly checked for effectiveness and maintained in a satisfactory condition.
* Signs and devices are selected and placed in a manner so as not to require a driver to disobey a law unless so directed by an authorised officer such as a police officer.
* Permanent signs which conflict with the signs required for the temporary work situation are covered or removed.
* Signs and devices are removed from the site when practical once the hazard ceases to exist. This not only restores the road/footpath to normal but is also an essential part of maintaining the credibility of the signs.

### Erection and Location of Signs

LORAC’s Site Manager/Relevant Foreman and the PSA shall ensure:

* All road signs are used with approved stands or erected on posts set into the ground, where permitted by the relevant authorities.
* All signs are placed in the most advantageous position, having regard for the nature of the hazard and the warning being conveyed, to provide the maximum visual impact for approaching drivers.
* Where signs are erected on posts set into the ground the following applies:
  + On un-kerbed roads in rural areas the sign should be at least 600 mm clear of the outer edge of the road shoulder, line of guide posts or face of the guard measured towards the property boundary. The clearance should not be less than 1m nor more than 5m from the edge of the travelled way and the height of the sign should be 1.5m above the nearest edge of the travelled path.
  + On kerbed roads signs should be located back from the face of the kerb not less than 300 mm no more than 1.0m. On urban roads that are not kerbed the distances given for rural areas above should apply. The height of the sign should be about 2.2m above the kerb or footpath to reduce the interference from parked cars.
  + Where the signs are erected on temporary stands for short term work they should be erected on the road shoulder in un-kerbed areas no closer than 600 mm to the running lane. In kerbed areas the provisions outlined above for post-mounted signs shall be followed

### Advance and Intermediate Advance Warning Signs

Advance and Intermediate Advance Warning Signs alert approaching vehicles of changed road conditions so road users may negotiate any travel path at an acceptable level of risk.

* For LORAC purposes the Advance Warning Signs are limited to:
  + Workers Ahead
  + Roadwork Ahead
* Intermediate Advance Warning Signs are used where, in addition to a general warning of the onset of the roadworks, a warning is needed either of a specific action of a driver or of the condition of the road. The intermediate advance warning signs for LORAC purposes are:
  + Detour Ahead
  + Prepare to Stop
* The minimum distance for positioning of the advance warning signs shall be 2 x D metres where D is the speed limit in km/h or the approach speed where it is significantly different from the speed limit, e.g. if the approach speed is about 60 km/h then the sign is placed at about 120m.
* The distance shall be measured from the sign position to the beginning of the taper area or the beginning of the diversion associated with the work site.
* Where there is more than one advance sign position, such as for Detours, etc then the advance sign nearest the work area shall be placed 2 x D m from the transition area, and the other advance sign positions at spacing of x D further in advance of work area, e.g. “Detour Ahead” sign would be at the 2 x D spacing with the “Roadwork Ahead” sign at the x D spacing
* Advance warning signs for vehicular traffic are not required in the following situations:
  + Where work is sufficiently remote from the roadway that no action or extra vigilance is required of a driver other than would be normally required on that section of road.
  + Where approach speeds are so low that no devices are needed to give advance warning i.e. signs and devices can be seen in plenty of time for drivers to take necessary action.

## Traffic Control

### Approach Taper Partially Closed Lane

If a roadway has to be partially closed, an appropriate taper should be marked in the transition (taper) area and, wherever possible, should be located so that its full length is visible to approaching traffic.

Traffic cones or bollards are used after the appropriate advance signs on the approach side of the hazard, forming a taper from the kerb to the outer limits of the clearance area. Table 1 below provides a guide to the recommended taper length for two-lane, two-way roads to be closed for various approach speeds based on a lane width of 3.5m.

The distances in the columns in the Table 1 are applied as follows:

**Traffic control at beginning of taper**

Applicable at a location where there is a traffic controller just prior to a diverge e.g. into a single lane that is being controlled by a controller.

**Diverge taper**

Applicable where traffic is simply required to shift laterally without conflict with another stream of traffic.

**Merge taper**

Applicable where one lane of traffic is required to merge onto another lane of traffic.

### Traffic Controller’s Check

Traffic Controllers shall record that all the appropriate signs and traffic control requirements have been implemented according to the traffic control plan in place.

|  |  |  |  |
| --- | --- | --- | --- |
| Table 1 - Taper Lengths | | | |
| RECOMMENDED TAPER LENGTH | | | |
| Approx. Approach Speed | Traffic Control at Beginning of Taper | Diverge Taper | Merge Taper |
| less than 60 km/h \*\* | 15 m | 15 m | 30 m |
| 60 to 80 km/h | 30 m | 70 m | 140 m |
| 81 to 100 km/h | 30 m | 90 m | 180 m |
| More than 100 km/h | 30 m | 100 m | 200 m |
| \*\* - Typically a low speed residential or commercial street. | | | |

### Termination Taper

This is the area indicating the end of the works. The use of three traffic cones or bollards should be sufficient in a taper. The typical spacing would be 5.0 to 15.0m.

# Delineation at Work Site - Travel Paths

## Delineation of the Travel Path

Suitable, adequate and appropriate delineation of the travel path is perhaps the greatest need of road users. To give satisfactory guidance for road users, traffic control measures shall provide for both short and long range delineation for the travel path and must be continuous and unambiguous.

Long range delineation provides drivers with an advance view of the site indicating the general direction of the trafficable path and short range delineation guides the driver through the works once they have entered.

Depending on the circumstances, movement of traffic in connection with a work site shall be achieved in one of the following ways:

* Through the work area.
* Past the work the area.
* Around the work area by a detour which may be via a side track or an existing road.

### Through the work area

Unless there is no practicable alternative, passage through a work area shall only be considered on lightly trafficked roads and where traffic and the work can be satisfactorily controlled so that the risk any person on site and traffic is kept as low as possible.

### Past the Work Area

Where the traffic is conducted past the work area there needs to be a minimum distance of 1.2m clearance between the edge of the work area and the edge of the travel path as a no-go buffer zone. This clearance shall be defined on both sides of the travel path to avoid inadvertent intrusion by any persons and shall be provided by the use of containment fences such as barrier tapes, mesh fences, interconnected lightweight units or bollard fences.

### Around the work area

When it is not practical to allow traffic through or past the work area it may be catered for by means of either a detour using existing roads or a specially constructed side-track. This practice, in general, would require the advice from the relevant road authority.

## Excavations

If workers are present at the excavation work site at all times then the bollard and tape type barriers may be sufficient.

Under certain circumstances such as for a major excavation, it may be necessary to provide a more formidable barrier such as the use of rails etc in lieu of the bollards and tape.

If it becomes necessary to divert the pedestrian traffic around the work site, trucks and/or major plant then barrier posts and rails together with appropriate road warning signs must be installed.

Where excavations leave insufficient footpath width to allow for a reasonable path for pedestrians to pass the work site in safety some form of containment fence, together with appropriate road warning signs, shall be installed from the footpath to the road and then back again onto the footpath.

# Traffic Controllers

## Traffic Controllers

Where LORAC works require vehicles to be stopped or slowed down to navigate through or past the work site then it shall be necessary to use Traffic Controllers.

A Traffic Controller is a person who has graduated from an accredited course to Traffic Controller. Traffic controllers are also required to maintain a log book of traffic control related information.

### Use of Traffic Controllers

Some typical situations where traffic controllers can be used are shown in Table 2 below.

|  |  |
| --- | --- |
| Table 2 - Traffic Controllers | |
| SITUATION | PURPOSE |
| One lane of a two-lane/two-way road is closed. | Restrict traffic flow to a single direction and alternate direction of flow over available width of carriageway. |
| Conditions at the work site are such that low speed operations are essential. | Warn or slow down the traffic. |
| Blasting works are being carried out on or adjacent to trafficked roads. | Stop traffic, inform motorists of delays, deny entry to blasting area until All Clear given and safe to proceed. |
| Construction machinery regularly crosses or enters an existing road. | Avoid conflict between construction and road traffic. |
| Sight distance to the work site is limited. | Control and warn motorists of the presence of works machinery and/or personnel. |

### Number of Traffic Controllers

**One (1) Traffic Controller** may be used operating alone with a STOP/SLOW bat and any other relevant signs provided that all of the following conditions are met:

* Road is very lightly trafficked roads. That is less than 400 vehicles/day or 50 vehicles/hour.
* Line of sight distance exceeds 200 m from the site in both directions or, for residential area with approach speeds of less than 60 km/h, is about one and half times the speed limit in metres.
* Visibility to the drivers approaching from both directions is maintained and not obscured by machines or equipment during such operations.
* The work area is less than 30 m in length

**Two (2) Traffic controllers** equipped with two-way radios should be used for all other conditions.

### Traffic Controller(s) shall:

* Check the existing speed limit is 60 km/h or less. If the speed limit is in excess of 60 km/h reduce in steps of 20 km/h with approximately 500 m intervals between successive signs.
* Ensure that all relevant signs and devices are in place before commencing traffic control.
* Prohibit parking on both sides of the carriageway between the “Prepare to Stop” sign and the start of the work zone. This parking prohibition should also apply to LORAC vehicles.
* Ensure an adequate escape path is available at the control position before commencing.
* Stand clear of other workers.
* Stand facing the traffic but just outside the path of vehicles.
* Is possible, stand in a position that allows them to see both the end of the work nearest to them and the other controller, if applicable.
* Ensure they are visible at dawn, dusk, against low morning, evening sun and when in shadow on a sunny day and if traffic control is required at nighttimes ensure the control site is illuminated.
* Stand so that they can see and be seen by approaching vehicles from at least one and a half times the speed limit in metres.
* Where possible, limit the delay to traffic to a desirable maximum of about 15 minutes.
* Wear high visibility clothing and carry their traffic control identification.
* Maintain an approved logbook to record experience gained as a trainee Traffic Controller.
* Not obstruct drivers’ view of or be partially hidden by other road signs and devices.
* Give definite and clear signals.
* When two traffic controllers are used, be visible to one another or have radio communication so that the flow of traffic from each direction can be co-ordinated.

# Work on Footpaths

## Pedestrian Considerations

Due consideration to pedestrians shall be given before proceeding with LORAC works on or adjacent to footpaths. By definition catering for pedestrians means catering for the different modes of travel used by pedestrians such as walking or cycling and for people with different characteristics such as disabilities. It also means that LORAC shall take into account the fact that pedestrians are often distracted or in a hurry.

Some of the considerations that may need to be taken in any design for a travel path are listed below.

### Width of Travel Path

* People with ambulant disabilities (i.e. using a walking aid) require a clear width of 1,000 mm.
* People who use wheel chairs require a clear width of 1,200 mm.
* If it is not practical to provide the above widths on the footpath it may be necessary to consider part closure of the road together with appropriate barriers, etc.

### Pedestrian Safety Points

The following pedestrian safety points should be included in the final control measures by the LORAC supervisor. These points should be observed before the work is commenced. This is not an exhaustive list and should be updated by the supervisor according to the circumstances at the work site.

### All pedestrians

* Always look at the pedestrian's routes. For example can pedestrians safely negotiate the work site? Can they negotiate any “squeeze” points in and around the work site?
* Check that the pedestrians’ routes are continuous through/adjacent to the work site
* Determine the most applicable time of the day to conduct the works taking into account both normal and peak hour times.
* Determine what is the most appropriate means for pedestrians to negotiate the site? That is either through, past or around the site?
* Where applicable ensure that any barriers erected do not force pedestrians to cross at an inappropriate location.
* Can parking of the LORAC vehicles be managed to maximise the sight lines?

### Elderly Pedestrians

* Is the travel path relatively smooth and clear of overhanging foliage?
* Is the work site adequately illuminated?

### Young Pedestrians

* Are barriers erected to guide children past or through the work site?
* Are travel paths continuous through the scheme?
* Shall any road signs/devices obstruct the vision of or visibility to, the young pedestrian?
* Can parking of the LORAC vehicles be managed to maximise the sight lines?

### Intoxicated Pedestrians

* Is the area one in which intoxicated pedestrians can be expected?
* Where appropriate are barriers in place to guide them past or through the work site?
* Are drivers given every chance of seeing the pedestrian?
* Can parking of the LORAC vehicles be managed to maximise the sight lines?

### People with Disabilities or Prams

* Can the work site be identified by visually impaired people?
* Is the width of the travel path sufficient to cater for wheelchairs, prams, etc?

### Construction Traffic and Vehicles

* When considering the traffic control measures it should be noted that construction traffic and vehicles needs to be taken into account as this can affect the traffic control measures adopted.