

## Introduction

This advice manual outlines the expectations of Transport Infrastructure Ireland (TII). It has a series of illustrations showing good practices and not so good practices across the industry. It is designed to be clear and simple and to help drive improvement across all TII sites.

These advice notes have been put together based on situations which have been encountered while carrying out the Site Safety Inspections and Temporary Safety Measure Inspections.

Safety performance is generally improving across the industry, however, that does not mean we should take our eye off the ball. There needs to be a pre-planning process in place for all tasks, no matter how great or small the risk. Pre-planning will ensure that there is a process in place to prevent accidents from happening and to keep the standard of safety management at a high level.

These advice notes are an excellent communication tool for sharing learnings and good practices that are being utilised on projects across the industry.

It is important to note also that by issuing these advice notes, we are not saying that this is the correct and safest way forward but merely an advice that this is the best way we have seen it done during inspections.

### **What you can do:**

- Ensure that your key personnel have access to, read and understand the manual.
- Use the manual in Tool Box Talks and daily briefings to alert your workforce to the standards required.
- Conduct safety, quality and environmental tours looking for examples of good and bad, and take action.
- If you find examples of good/bad practices, report them using the site safety procedure, for example, safety observation reports.
- Use this manual to have positive conversations on site.

## Contents

- Access to Structures
- Protection at Attenuation Ponds
- Speed Control on site
- Local Road Crossings
- Edge Protection - Excavations
- Access Walkways
- Manhole Protection
- Washout Areas
- Washout Areas
- Site Security - Access Control
- Side Netting - Falling Debris
- Welfare facilities
- Stockpiling
- Edge Protection of Structures
- Personnel & Plant Segregation
- Housekeeping
- Personal Protective Equipment
- \* Overhead Lines Protection
- \* Working at Height Ladders
- Temporary Traffic Management - High Speed Roads
- Temporary Traffic Management – Exiting Vehicles
- Temporary Traffic Management – Block Vehicle
- Temporary Traffic Management – Road Markings
- Temporary Traffic Management – Lighting
- Temporary Traffic Management – Temporary Safety Barriers
- Temporary Traffic Management – End of No overtaking
- Temporary Traffic Management – Vegetation Works on the MMarC Network
- Temporary Traffic Management – Flagman
- Temporary Traffic Management – Use of Quads
- Temporary Traffic Management – Use of Warning Vehicles
- Temporary Traffic Management – VMS
  - Temporary Traffic Management – TSM not Installed as per the TM Plan
  - Temporary Traffic Management – Works Vehicle Outside TM Setup
  - Temporary Traffic Management – Warning Signage
  - Temporary Traffic Management – Cone Spacing
  - Temporary Traffic Management – Vulnerable Road Users
  - Temporary Traffic Management – Sandbags
  - Temporary Traffic Management – Condition of Traffic Management Equipment

### COVID-19

These Advice Notes have been prepared to share current good practice with respect to various construction activities.

**Wash** your hands well and often with soap and warm water for a minimum of 20 seconds.

**Distance** - Ensure persons maintain distance (2m/6.6ft) separation from each other insofar as possible while working and when using welfare facilities etc. Make occupancy limits for indoor spaces clear such as in canteens, offices and meeting rooms. Promote social distancing when travelling to and from work (public transport, vehicles etc.) and when outside the work of the workplace. Only essential workers who must attend site to carry out their duties should attend work sites. Workers who can do their work from home should be encouraged to do so.

**Cover** - Ensure good cough etiquette/respiratory hygiene. Cover mouth and nose with a tissue or sleeve when coughing or sneezing and dispose of the used tissue in a designated bin.

**Avoid** touching the eyes, nose and mouth with unwashed hands. Avoid sharing items with others where possible (e.g. stationary, vehicles, IT, tools and equipment). If sharing items is unavoidable, clean and sanitise them before passing them to others.

**Clean** - Ensure that all frequently touched objects and surfaces are regularly cleaned and disinfected. Wiping/cleaning down of contact points should be done using antibacterial wipes, disinfectant or a wet cloth with soap application, or equivalent. Used wipes/cleaning materials are to be disposed of in a designated bin. Wash hands before and after cleaning.

**Stop** shaking hands when saying hello or greeting other people.

**Wear** a suitable face covering properly i.e. fitted snugly over your nose and mouth and secured under your chin. Only handle the loops of the face covering when putting it on, taking it off or to make adjustments. Wash hands before putting on a face covering and after removing or touching a face covering. Store reusable masks in a sealed plastic bag until they can be washed. Wash face coverings regularly with soap and warm water.

**Symptoms** – Ensure no person who feels unwell attends work. Unwell persons must self-isolate and contact their G.P. or a doctor. Any person who is a close contact or is living with someone who is self-isolating or is waiting for a COVID-19 test must restrict their movements.

Refer to the CIF's COVID-19 Standard Operating Procedures.

Refer to the CIF, HSE and Irish Government advice/guidance.

**Travel** - Persons travelling from abroad should refer to national advice issued by the HSE or the Department of Foreign Affairs.

**Vehicles** - Single vehicle occupancy is preferred. Workers should travel to site in a vehicle alone where possible. If in a vehicle with others, sit as far apart as the vehicle allows, wear face coverings and partially open all the windows (or windows opposite each occupant).



When entering and leaving vehicles, the driver should clean all common areas that are liable to be touched.

**Ventilation** - Open windows and doors to allow fresh air indoors and to allow the air to exchange and circulate.

**Meetings** - Control access to meeting rooms. All meetings, where possible to be conducted virtually using on-line systems for remote meetings unless it is necessary to meet face-to-face. If face-to-face meetings are necessary; limit number of attendees, keep a contact list of the attendees, maintain 2m distance, keep the meeting as brief as possible and ensure good ventilation.

All persons **returning to work** on a site must complete a COVID-19 Questionnaire / Self Declaration.

Use the COVID Tracker app: [www.covidtracker.ie](http://www.covidtracker.ie).

Other **good practice** examples include:

- Use hand sanitiser (at least 60% alcohol) sparingly and regularly. Keep sanitiser out of sunlight and heat (in vehicles store in the glove box/covered compartment).
- Establish and maintain a roster, contact list and a check in and check out system for canteens.
- Stagger breaks.
- Air drying rooms regularly.
- Check the temperature of workers using a contactless thermometer.
- Test the workforce using e.g. rapid antigen tests.
- Provide Wash/Sanitisation stations.
- Measures which help people to maintain social distancing (at welfare facilities and at access/egress points from/to site) at locations where queues are likely such as: markers/stickers on the floor/ground, signage, timber post and rail systems and crowd barriers.
- Passing screens in corridors.
- Perspex screens at office desks.
- Appropriate eye protection (goggles) which eliminates issues with safety glasses fogging up when wearing face coverings.
- Outdoor eating areas.
- Isolation room(s) where a worker may go on the onset of symptoms.

# Health and Safety Advice Note



# Health and Safety Advice Note



## Access to Structures



These Advice Notes have been prepared in order to share current good practice with respect to various construction activities

- Safe access may be provided by either a stairway or ramp system
  - A stairway system must be secure and have handrails on both sides
  - A ramp system must be at a gradual incline, be surfaced with a granular material for grip and must also have handrails on either side
  - Barriers should be installed at the top and bottom of access systems, to encourage workers to stop and look, preventing them from walking out directly in front of traffic



- Access system should be subject to weekly inspections
- Handrails should not stop short at top of ramp or stairway
- System should be installed and maintained by competent personnel only
- Construction work should be prohibited on structures without safe means of access

*For further information refer to Regulations 51 (1)(a)(b)(g) and 34 of the Safety, Health and Welfare at Work (Construction) Regulations 2013*

See overleaf for examples...

# Access to Structures

## Unsafe Practices



## Good Practices



This document contains examples on good practice which are not compulsory but which you may find helpful in considering what you need to do.

For further information on Health and Safety related issues go to [www.hsa.ie](http://www.hsa.ie)

## Protection at Attenuation Ponds



**These Advice Notes have been prepared in order to share current good practice with respect to various construction activities**

- Ensure edge perimeters of all attenuation ponds are fenced off
- Fencing should be secure and capable of withstanding the force of an individual falling against it
- Appropriate safety signage should be clearly visible
- All attenuation ponds must have adequate provision of rescue equipment / life-buoys, that are easily accessible
  - Depending on the size of the pond, the number of life-buoys required may vary

- Rescue equipment provided should be kept in an efficient state and ready for use in the event of an emergency
- A safe means of egress should also be provided at ponds in the event that someone falls into the pond
  - Arrangements / an emergency plan should be in place for the prompt rescue of any such person who is in danger of drowning

*For further information refer to Regulations 55 and 86 of the Safety, Health and Welfare at Work (Construction) Regulations 2013)*

See overleaf for examples...

# Protection at Attenuation Ponds

## Unsafe Practices



## Good Practices



**This document contains examples on good practice which are not compulsory but which you may find helpful in considering what you need to do.**

For further information on Health and Safety related issues go to [www.hsa.ie](http://www.hsa.ie)

## Speed Control on site



These Advice Notes have been prepared in order to share current good practice with respect to various construction activities

- Safe speed limits must be implemented and adhered to throughout the site
  - However, speed limit signs on their own do not provide adequate speed control
  - Control measures should be implemented in order to encourage speed reduction
  - For example, the Chicane / Speed Ramp system uses a road narrowing system together with a speed ramp, offering perception speed control, while also providing physical restraint

- System should be positioned at intervals throughout the scheme to prevent vehicles building-up speed
- A Checkpoint system is designed to control vehicle and plant movements on site and to restrict unauthorised access. In order for this system to work there must be clear lines of communication between operators
- Ensure that traffic calming measures do not introduce new hazards

For further information refer to Section 2.3 of the “Guidance for the Control and Management of Traffic at Road Works”, (2010).

See overleaf for examples...

# Speed Control on site

## Unsafe Practices



## Good Practices



This document contains examples on good practice which are not compulsory but which you may find helpful in considering what you need to do.

For further information on Health and Safety related issues go to [www.hsa.ie](http://www.hsa.ie)

## Local Road Crossings



These Advice Notes have been prepared in order to share current good practice with respect to various construction activities

- In the event that the construction site disrupts access to intersecting roads or lands, provisions should be made to allow safe access across the site
- Local roadway access should be given priority over construction traffic
- Moveable barriers should also be in place at all local road intersections
- Where required Local Road Crossings should be manned by

trained and qualified flagmen

- Scheme accesses at intersections need to be secured during periods when intersection is unmanned
- Ensure local roads are maintained regularly

*For further information refer to Section 4.6.8 of the “Guidance for the Control and Management of Traffic at Road Works”, (2010).*

See overleaf for examples...

# Local Road Crossings

## Unsafe Practices



## Good Practices



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For further information on Health and Safety related issues go to [www.hsa.ie](http://www.hsa.ie)

## Edge Protection - Excavations



These Advice Notes have been prepared in order to share current good practice with respect to various construction activities

- Ensure all accessible edges of excavations are appropriately protected
- Edge protection should be secure and capable of withstanding the force of an individual falling. In addition to edge protection, visible hazard warning measures such as traffic cones and safety tape should be used
- Edge protection should be upright and horizontally continuous containing no gaps
- Edge protection should be installed and maintained by competent personnel only



- While working on excavations ensure adequate protection is in place around the excavation
- Edge perimeter of all excavations should be fully protected before close of work each day
  - This also applies to any short intervals throughout a working day when an excavation may be left unattended; e.g. Lunch breaks

*For further information refer to Regulations 55 and 56 of the Safety, Health and Welfare at Work (Construction) Regulations 2013*

See overleaf for examples...

# Edge Protection Excavations

## Unsafe Practices



## Good Practices



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For further information on Health and Safety related issues go to [www.hsa.ie](http://www.hsa.ie)

## Access Walkways



These Advice Notes have been prepared in order to share current good practice with respect to various construction activities

- Safe access routes must be provided and maintained between different work areas
- Sites should be clearly signposted, directing personnel towards the designated access routes to follow when travelling from one area to another
- Ramps, installed at a gradual incline, or steps may be used to achieve safe access between areas of variant height levels

- These should be fixed in position and have handrails / edge protection on either side, where possible

- Handrail and edge protection should tie in with the edge protection of any adjoining walkway
- Access routes should be installed and maintained by competent personnel only

*For further information refer to Regulation 30 (2)(b) of the Safety, Health and Welfare at Work (Construction) Regulations 2013)*

See overleaf for examples...

# Access Walkways

## Unsafe Practices



## Good Practices



This document contains examples on good practice which are not compulsory but which you may find helpful in considering what you need to do.

For further information on Health and Safety related issues go to [www.hsa.ie](http://www.hsa.ie)

## Manhole Protection



These Advice Notes have been prepared in order to share current good practice with respect to various construction activities

- Manholes should be covered at all times:
  - Manholes should be covered immediately after work is completed
  - Manholes should be covered before close of site each working day
- While working on manholes ensure adequate protection is in place around the manhole
- Where temporary covers are in place, eg. Wooden boards, they should be fixed securely and

identified to ensure against damage from vehicles etc

- For convenience and to prevent transport of safety barriers over long distances between manholes, work should be carried out and completed in sequence on small groups of manholes within the same site region
- Ensure manhole covers are fully secured

*For further information refer to Regulation 55 of the Safety, Health and Welfare at Work (Construction) Regulations 2013*

See overleaf for examples...

# Manhole Protection

## Unsafe Practices



## Good Practices



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For further information on Health and Safety related issues go to [www.hsa.ie](http://www.hsa.ie)

## Washout Areas



These Advice Notes have been prepared in order to share current good practice with respect to various construction activities

- The purpose of Washout Areas is to prevent soil, groundwater and storm water drainage systems being contaminated by cement waste
- All concrete delivery vehicles need to wash out their rotating drum following delivery to site
- Wash out areas should be constructed so that;
  - Washout water cannot seep away from the washout location
  - Runoff from a rainstorm cannot carry wastes away from the washout location
  - Washout areas should not

- impact on future land uses (i.e. parks, open spaces, etc.) ✓
- Washout areas must be accessible to all vehicles before exiting site
- Appropriate signage should be in place adjacent to washout area to inform concrete equipment operators to utilise the facilities properly
- Existing facilities must be cleaned, or new facilities must be constructed and ready for use once the washout is 75% full
- Loose piles of excavated dirt are good for absorbing waste from washouts and can often form a barrier against runoff

*For further information refer to Section 16 of the Protection of the Environment Act, 2003.*

See overleaf for examples...

# Washout Areas

## Unsafe Practices



This document contains examples on good practice which are not compulsory but which you may find helpful in considering what you need to do.

## Good Practices



For further information on Health and Safety related issues go to [www.hsa.ie](http://www.hsa.ie)

## Site Security - Access Control



These Advice Notes have been prepared in order to share current good practice with respect to various construction activities

- A safe means of access to and egress from a site must be provided and maintained
- When selecting a site access point issues such as location, vehicle sweep path, parking areas, site offices and cleanliness (mud, debris, etc.) should all be taken into consideration
- Site perimeter should be signposted and laid out so that its access points are clearly visible and identifiable
- The number of access points should be kept to a minimum
- Appropriate barriers should be in

place at access points to prevent unauthorised entry to site

- Access points should be manned by a flagman throughout periods when gates are open
- Site rules and safety procedures should be clearly displayed at access points
- All personnel need to sign in and out to site. If it is not possible to monitor sign in procedures at access areas, personnel need to be directed to site office to do so before entry onto main site area

*For further information refer to Regulation 30 (2) of the Safety, Health and Welfare at Work (Construction) Regulations 2013*

See overleaf for examples...

# Site Security - Access Control

## Unsafe Practices



## Good Practices



**This document contains examples on good practice which are not compulsory but which you may find helpful in considering what you need to do.**

For further information on Health and Safety related issues go to [www.hsa.ie](http://www.hsa.ie)

## Side Netting - Falling Debris



These Advice Notes have been prepared in order to share current good practice with respect to various construction activities

- The risk of injury due to falling materials should be minimised by keeping workplaces at height clear of loose materials and stacking / storing materials away from the edges
- If it is not practicable to prevent the fall of materials or objects, measures taken may include the provision of debris nets, fencing etc

- Side netting should be installed to prevent debris from falling onto areas of activity below, including water courses.

*For further information refer to Regulation 35 of the Safety, Health and Welfare at Work (Construction) Regulations 2013*

See overleaf for examples...

# Side Netting - Falling Debris

## Unsafe Practices



## Good Practices



**This document contains examples on good practice which are not compulsory but which you may find helpful in considering what you need to do.**

For further information on Health and Safety related issues go to [www.hsa.ie](http://www.hsa.ie)

## Welfare Facilities



These Advice Notes have been prepared in order to share current good practice with respect to various construction activities

- Toilets must be accessible, adequately lit and clean
- Ensure washbasins are equipped with hot and cold running water, soap and clean towels
- Washbasins should be kept clean and be large enough to wash up to the elbow
- Drying room facilities should be available, ie. facilities where workers can change, store and dry clothing.
- A site must provide clean

facilities where workers can sit, make hot drinks and prepare food

- Drinking water must be readily available and cups should be provided
- Welfare facilities should be easily and safely accessible to all workers
- Welfare facilities should be heated and well ventilated

*For further information refer to Regulation 17 (3) of the Safety, Health and Welfare at Work (Construction) Regulations 2013*

See overleaf for examples...

# Welfare Facilities

## Unsafe Practices



## Good Practices



This document contains examples on good practice which are not compulsory but which you may find helpful in considering what you need to do.

For further information on Health and Safety related issues go to [www.hsa.ie](http://www.hsa.ie)

## Stockpiling



These Advice Notes have been prepared in order to share current good practice with respect to various construction activities

- Stockpiles of granular material pose a significant hazard to vehicular traffic on site
- Where possible avoid creating material stockpiles on or adjacent to haul routes
- Where stockpiling is required, efforts should be made to ensure they are kept to a minimum
- Ensure stockpiles are appropriately cordoned off and made clearly visible using cones, plastic barriers or similar



- Stockpiles should be clearly segregated from haul routes
  - Consideration should be given to the passage of pedestrians
  - If stockpiling material on carriageways, efforts should be made to maintain piles in neat rows, preferably to one side of the carriageway

*For further information refer to Regulation 30 (1) of the Safety, Health and Welfare at Work (Construction) Regulations 2013*

See overleaf for examples...

# Stockpiling

## Unsafe Practices



## Good Practices



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For further information on Health and Safety related issues go to [www.hsa.ie](http://www.hsa.ie)

## Edge Protection of Structures



These Advice Notes have been prepared in order to share current good practice with respect to various construction activities

- Minimum sufficient protection is at least two rows of horizontal bars, the top bar being approximately 1metre in height above ground and bottom bar being approximately 0.5metre above ground level
- Ensure all accessible edges of structures are adequately protected
- Edge protection needs to be strong and securely connected, capable of resisting forces resulting from an individual falling against it
- Edge protection should be upright and continuous containing no gaps

- Edge protection should not terminate at the end of the height drop, but should continue for at least 1.5metre past the end of the height drop
- Edge protection should be installed and maintained by competent personnel only

*For further information refer to Regulation 103 (2) of the Safety, Health and Welfare at Work (General Application) Regulations 2007*

See overleaf for examples...

# Edge Protection of Structures

## Unsafe Practices



## Good Practices



**This document contains examples on good practice which are not compulsory but which you may find helpful in considering what you need to do.**

For further information on Health and Safety related issues go to [www.hsa.ie](http://www.hsa.ie)

## Personnel & Plant Segregation



**These Advice Notes have been prepared in order to share current good practice with respect to various construction activities**

- Safe access walkway routes that are segregated from plant and machinery must be provided and maintained between different work areas on site
- Sites should be clearly signposted, directing personnel and plant as to the correct access routes to follow when travelling from one section of site to another
- Personnel access route paths should be either flat or at a gradual incline, be kept clear and should be surfaced with a granular material

- Edges of paths may be lined with traffic cones and ticker tape
- Access routes between areas of significant height differences may be provided using either a ramp at gradual incline or a stairway system
  - Both these need to be secure and have handrails and edge protection on either side
- Access routes should be installed and maintained by competent personnel only

*For further information refer to Regulation 87 (1) & (2) of the Safety, Health and Welfare at Work (Construction) Regulations 2013*

See overleaf for examples...

# Personnel & Plant Segregation

## Unsafe Practices



## Good Practices



This document contains examples on good practice which are not compulsory but which you may find helpful in considering what you need to do.

For further information on Health and Safety related issues go to [www.hsa.ie](http://www.hsa.ie)

## Housekeeping



These Advice Notes have been prepared in order to share current good practice with respect to various construction activities

- Every worker on site is responsible for good housekeeping
- Housekeeping involves keeping the worksite tidy and free from unnecessary clutter and debris that could cause an injury or accident
- Materials kept on site should be limited to the minimal amount required
- All work areas and equipment should be kept tidy with any waste or debris cleared and disposed of
- Secure storage compounds must be provided. These areas must allow for site delivery, off loading and stacking of materials
- Appropriate facilities & containers



must be provided for storage of flammable or hazardous materials

- Designated waste disposal areas and containers need to be provided.
  - Arrangements need to be in place for the regular collection and disposal of these materials
- Safe access and egress routes free from obstruction should be provided and maintained
- Fire doors must be kept clear at all times
- Welfare facilities should to be kept clean and to a hygienic standard

*For further information refer to Regulation 18 of the Safety, Health and Welfare at Work (General Application) Regulations 2007*

See overleaf for examples...

# Housekeeping

## Unsafe Practices



## Good Practices



This document contains examples on good practice which are not compulsory but which you may find helpful in considering what you need to do.

For further information on Health and Safety related issues go to [www.hsa.ie](http://www.hsa.ie)

## Personal Protective Equipment



These Advice Notes have been prepared in order to share current good practice with respect to various construction activities

- Personal Protective Equipment (PPE) is safety equipment which protects the wearer. It is the employer's responsibility to control risks by supplying appropriate PPE
- PPE that is uncomfortable or not compatible is less likely to be used correctly. Factors such as movement, visibility, breathing, irritation and Health issues should all be taken into account
- PPE is to be provided free of charge by the employer
- An employer shall ensure that PPE is always maintained in good working order and in a hygienic condition by means of any



necessary storage, maintenance, repair or replacement. Record keeping is also particularly important

- Personnel should wear PPE whenever they are exposed to the risk. Exemptions are not allowed for those jobs which take "just a few minutes"
- Employees have a responsibility to use PPE properly and when required, check and report defects or damage to PPE immediately, participate in any PPE training and to inform their employer of any medical conditions which may be affected by the use of the PPE provided.

*For further information refer to Regulations 62 to 67 of the Safety, Health and Welfare at Work (General Application) Regulations 2007.*

See overleaf for examples...

# Personal Protective Equipment

## Unsafe Practices



## Good Practices



This document contains examples on good practice which are not compulsory but which you may find helpful in considering what you need to do.

For further information on Health and Safety related issues go to [www.hsa.ie](http://www.hsa.ie)

## Overhead Lines Protection



These Advice Notes have been prepared in order to share current good practice with respect to various construction activities

- Whenever possible, where overhead power lines exist, they must be redirected away from the area of the site.
- If the powerlines cannot be redirected away from the area they should be switched off.
- If it is not possible to divert the lines or switch off the lines then the ESB / service provider should be contacted regarding the work to be carried out. Liaise with a member from the ESB / service provider and discuss what procedures have to be in place prior to work commencing.



- Ensure the code of practice for Avoiding Danger from Overhead Electricity Lines is followed
- Always treat the cable as live to prevent damage to the cables.
- Ensure a goalpost system is in place to protect all services.
- Ensure the plant and machinery used to carry out the work can't physically come into contact with the overhead lines.
- Ensure a weekly documented check is taking place.

*For further information refer to the ESB COP and Regulations 41 of the Safety, Health and Welfare at Work (Construction) Regulations 2013*

See overleaf for examples...

# Access to Structures

## Unsafe Practices



## Good Practices



**This document contains examples on good practice which are not compulsory but which you may find helpful in considering what you need to do.**

For further information on Health and Safety related issues go to [www.hsa.ie](http://www.hsa.ie)

## Working at Height - Ladders



These Advice Notes have been prepared in order to share current good practice with respect to various construction activities

- A ladder should only be used for work at height if the risk assessment has demonstrated that the use of more suitable work equipment is not justified because the level of risk is low, the duration of use is short or existing features at the place of work cannot be altered.
- The ladder is so positioned as to ensure its stability during use.
- The portable ladder is prevented from slipping during use by either securing the stiles, effective anti-slip materials or devices, or any other arrangement of equal effectiveness



- 3 points of contact are maintained at all times.
- Access system should be subject to weekly inspections
- The ladders should not stop short of the top of the landing platform
- System should be installed and maintained by competent personnel only
- Construction work should be prohibited on structures without a safe working platform

*For further information refer to Regulations 114 of the Safety, Health and Welfare at Work (General Application) Regulations 2007*

See overleaf for examples...

# Working at Height - Ladders

## Unsafe Practices



## Good Practices



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For further information on Health and Safety related issues go to [www.hsa.ie](http://www.hsa.ie)

## Temporary Safety Measures on High Speed Roads



**These Advice Notes have been prepared in order to share current good practice with respect to various construction activities**

- A site specific Temporary Traffic Management (TTM) Plan should be developed for each individual site or task.
  - Care should be taken to ensure that both the road worker and the road user's safety are considered at all times.
  - Where possible, works should be carried out during periods of low traffic flow only.
  - Safe Systems of Work (SSW) should be utilised.
  - Signage should be clearly visible and minimum sight lines maintained.
  - Signage should not be clustered or crammed into small areas.
- Only signs identified in Chapter 8 of the Traffic Signs Manual should be used.
  - At live junctions, care should be taken to ensure that all approaches and exits are signposted.
  - Where possible, working in adverse weather conditions (fog, snow, heavy rainfall, high winds) should be avoided. If there is a requirement for the works to be completed during adverse weather, the TTM Plan and SSW should be reviewed.
  - Crossing live traffic lanes by foot should be restricted unless this has been considered in the TTM Plan.

*For further information refer to Chapter 8 'Temporary Traffic Measures & Signs for Roadworks' of the Traffic Signs Manual and Safety Health and Welfare at Work (Construction) Regulations, 2013.*

See overleaf for examples...

# Temporary Safety Measures on High Speed Roads

## Unsafe Practices



## Good Practices



This document contains examples on good practice which are not compulsory but which you may find helpful in considering what you need to do.

For further information on Health and Safety related issues go to [www.hsa.ie](http://www.hsa.ie)

## Temporary Safety Measures Exiting Vehicles



**These Advice Notes have been prepared in order to share current practice with respect to various traffic management activities**

This Advice Note acts as a reminder to persons involved in the construction and maintenance of the road network in relation to exiting/entering vehicles in close proximity to live traffic:

- A method statement and risk assessment should be prepared for all works activities,
- The procedure for and the method of safe access and egress to the workplace should be addressed in the method statement and risk assessment and briefed to operatives as part of the site safety induction,

- Where it is necessary to exit a works vehicle in close proximity to a live carriageway lane, a safe system of access and egress should be used,
- Temporary Safety Measures should be utilised in accordance with Chapter 8 of the Traffic Signs Manual,
- Operatives should exit /enter vehicles from the side furthest away from live traffic i.e. for hard shoulder works - the near-side,
- Operatives should be aware of weather conditions, road speed and lateral safety zones,
- Operatives should be aware of approaching traffic.

## Temporary Safety Measures Block Vehicles

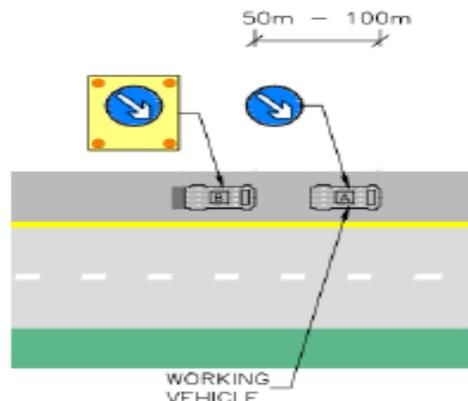


**These Advice Notes have been prepared in order to share current practice with respect to various traffic management activities**

This Advice Note acts as a reminder to persons involved in the implementation of Temporary Safety Measures with regard to the correct positioning of the block vehicle.

- For mobile lane closures, block vehicles should be in accordance with Section 8.5.3 Chapter 8 of the Traffic Signs Manual,
- In accordance with Chapter 8, the distance between the block vehicle and the Working Vehicle should be 50 – 100 metres,

- Where there is a risk of traffic entering the area between the block vehicle and the working vehicle, the distance between these vehicles should be 50 metres,
- To minimise the risk of the block vehicle being shunted into the working vehicle the distance should never be less than 50 metre.,



## Temporary Safety Measures Road Markings



**These Advice Notes have been prepared in order to share current practice with respect to various traffic management activities**

This Advice Note has been prepared to advise on best practice with respect to Road Markings at Temporary Traffic Measures.

- Chapter 8 of the Traffic Signs Manual gives guidance on Temporary Road Markings to be used at Temporary Traffic Management layouts.
- Temporary road markings, where required at road works should be to IS EN 1436 and as per the road markings defined in Chapter 7 of the Traffic Signs Manual.
- Existing road markings should be removed or obscured prior to the application of temporary road markings.

- Temporary road markings must be removed and replaced to represent any change in the temporary traffic management layout or when the permanent layout is complete.
- Where it is necessary to highlight to the road user the presence of road works and or the temporary nature of the road surface, orange road markings may be used. Their use is defined in Chapter 7 of the traffic signs manual.
- Once the works are complete, the removal of temporary traffic management measures including temporary road markings should be carried out only if it is possible to ensure that the road is safe and free from any obstructions.

**Further Guidance is given on Temporary Road Markings in Chapter 7 of the Traffic Signs Manual.**

## Temporary Safety Measures Lighting



**These Advice Notes have been prepared in order to share current practice with respect to various traffic management activities**

This Advice Note has been prepared to advise on best practice with respect to lighting at Temporary Traffic Measures

- Chapter 8 of the Traffic Signs Manual gives guidance on the use of rotating and reflective lighting to be used at Temporary Traffic Management layouts.

- Maintain the temporary traffic measures during the works and clean traffic management equipment during the works including cones, signs and reflectors.

- At night, lines of cones in un-lit areas should be fitted with steady state lamps with amber light or a combination of steady amber lamps & rotary amber reflectors at regular intervals.

- Rotating reflectors may be used in place of steady state lamps on the longitudinal sections of cones or barriers adjacent to the trafficked edge but may not be used on lead in tapers.

- These amber lamps or rotary reflectors may be mounted on cones provided the apparatus does not block any of the reflective strips of the cones or protrude onto the carriageway.

- Where public lighting is not provided along the site, steady beacons, rotating reflectors or reflective strips should be installed on barriers to highlight their presence

**Further Guidance is given on Lighting in the Control and Management of Traffic at Road Works – Second Edition 2010**

## Temporary Safety Measures Temporary Safety Barriers



**These Advice Notes have been prepared in order to share current practice with respect to various traffic management activities**

This Advice Note has been prepared to advise on best practice with respect to Working Widths of Temporary Safety Barriers at Temporary Traffic Measures

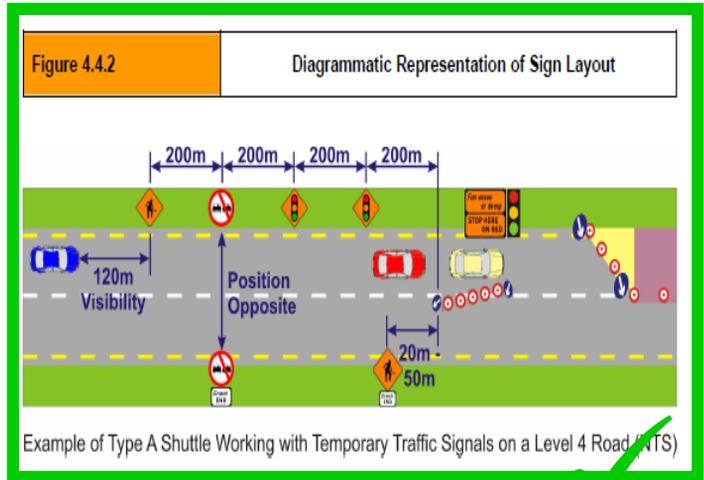
- Chapter 8 of the Traffic Signs Manual gives guidance on Temporary Safety Barriers to be used at Temporary Traffic Management layouts.

- Where Safety Barriers are used not only to delineate the areas where pedestrians or traffic should go but also to prevent errant vehicles encroaching into the area of the roadworks, their design shall be in accordance with IS EN 1317 and GE-TBU-01019, which specify the performance parameters required for safety barriers for use on public roads.

- The placement of barriers should allow for the required working width.
- This working width can be included as part of the lateral safety zone. The lateral safety zone/working width may be used for the purpose of an emergency lane.
- At no time should vehicles be parked, materials stored, or operations be carried out within the working width or lateral clearance.
- The design of the layout of barriers must adhere to the manufacturer's requirements to ensure the temporary safety barrier acts as intended on impact. Manufacturer's requirements include:
  - Maintaining clear working width;
  - Anchorage of terminals;
  - Interlocking of units, e.g. on concrete barriers.

**Further Guidance is given on Temporary Safety Barriers GE-TBU-01019**

## Temporary Safety Measures End of No Overtaking



These Advice Notes have been prepared in order to share current practice with respect to various traffic management activities

This Advice Note has been prepared to provide guidance on the positioning of End of No Overtaking signs at Temporary Traffic Measures

- Table 8.2.4 of Chapter 8 of the Traffic Signs Manual gives guidance on the use of sign RUS 014 No Overtaking at Temporary Traffic Management layouts.
- No Overtaking sign RUS 014 prohibits overtaking at locations where it is considered dangerous to do so.
- At the point where the overtaking restriction ends, Sign RUS 014 shall be erected together with a Supplementary Plate P 010, End.

- Ideally the End of No Overtaking sign should be positioned opposite the No Overtaking sign as per Fig 4.4.2 of the Guidance for the Control and Management of Traffic at Roadworks.
- The position of the End of No Overtaking sign should not be in conflict with the permanent road signs or road markings i.e. it should not be positioned at a location where overtaking is permanently prohibited.
- If a suitable location for positioning the End of No Overtaking sign is not identified on site, consideration should be given to the removal of the End of No Overtaking sign from the Traffic Management layout in consultation with the Traffic Management Designer.
- Any modifications made to the Traffic Management Plan to suit site specific conditions must be recorded on the Traffic Management Plan.

## Temporary Safety Measures MMaRC – Vegetation Works



These Advice Notes have been prepared in order to share current practice with respect to various traffic management activities

This Advice Note acts as a reminder to those contractors involved in the Maintenance Management of the road network under the MMaRC Contract to ensure that controls are in place to protect workers from the hazards associated with vegetation works such as:

- **Grass cutting**
- **Weed spraying**
- **Landscape maintenance**
- These activities have risks associated that can not only affect the worker but also the road user.

- These activities must be risk assessed and controls implemented to reduce the risk to the worker and road user.
- Inspections must be carried out by the contractor to ensure compliance with approved methods of work.
- Method Statements and Risk Assessments must be in place and communicated with the work crew.
- PPE requirements must be identified and adhered to by all working on the network.
- Where Temporary Traffic Measures are required, prior notification must be given through the TII Website.
- All accidents and incidents must be reported to TII through the verbal reporting chain / incident reporting tool.

The HSA provides further information on the management of worker safety relating to working on roads.

## Temporary Safety Measures Flagmen



**These Advice Notes have been prepared in order to share current practice with respect to various traffic management activities**

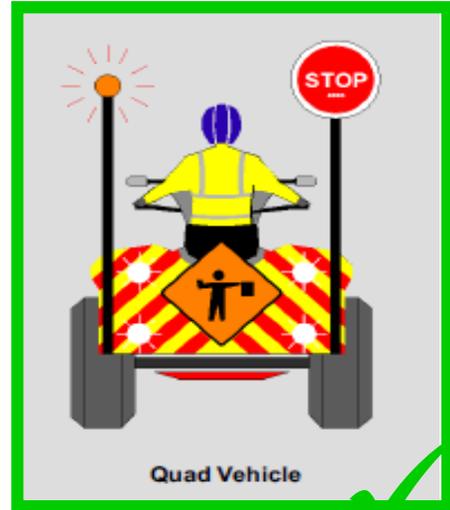
This Advice Note has been prepared to advise on best practice with respect to the use of signs and cones for stop/go traffic management on foot for continuously moving works in accordance with the Temporary Traffic Management (TTM) Guidance Handbook for Road Marking Works.

- The TTM Guidance Handbook is designed to serve as a quick and easy-to-use reference document for the planning and implementation of TTM measures for routine operations relating to road marking, including stud works.

- Sets of 'flagman sign & cones' to be pre-dropped during initial TM setup, in the verge at pre-determined locations.
- Stop/Go operatives to implement each set separately during operation and remove to the verge when moving to next location.
- Cones to be placed along centre line where space permits, and if not along the verge, for 10m in advance of the flagman location.
- Sign WK061 Flagman Ahead must be placed 20m in advance of cones.
- A minimum of 20m must be maintained between the flagman and warning vehicle/works area.

**A Site Specific Risk Assessment must be carried out by the TTM installer on any layout used in the TTM Guidance Handbook, prior to implementing it on site.**

## Temporary Safety Measures Use of Quads



These Advice Notes have been prepared in order to share current practice with respect to various traffic management activities

This Advice Note has been prepared to advise on best practice with respect to the use of helmets on quads for stop/go traffic management for continuously moving works in accordance with the Temporary Traffic Management (TTM) Guidance Handbook for Road Marking Works.

- The TTM Guidance Handbook is designed to serve as a quick and easy-to-use reference document for the planning and implementation of TTM measures for routine operations relating to road marking, including stud works.
- A quad is a mechanically propelled vehicle. As such, irrespective of engine capacity, under Road Traffic legislation

the user of a 'quad' in a public place must have insurance, road tax, a driving licence and **wear a helmet**.

- Where quad vehicles are used as part of traffic control operations, they must be road worthy, and fitted with wing mirrors, LED's and high-level lights.
- *Operatives must wear protective helmets at all times.* The Stop/Go batten must be positioned on the right hand side of the vehicle.
- Stop/Go discs should include LED's on both faces, to improve conspicuity.
- Operatives driving the quad must be seated at all times when manoeuvring the quad within temporary traffic management.

**A Site Specific Risk Assessment must be carried out by the TTM installer on any layout used in the TTM Guidance Handbook, prior to implementing it on site.**

## Temporary Safety Measures Use of Warning Vehicles



**These Advice Notes have been prepared in order to share current practice with respect to various traffic management activities**

This Advice Note has been prepared to advise on best practice with respect to the use of Warning Vehicles for continuously moving works in accordance with the Temporary Traffic Management (TTM) Guidance Handbook for Road Marking Works.

- There is to be no working from the rear of any vehicle, unless it is suitably protected from oncoming traffic in that direction.
- Warning vehicles can be used in advance of the works area to provide protection to workers for continuously moving works where a risk assessment deems it appropriate.
- Warning vehicles must be of conspicuous colour with appropriate rear markings and signage as per Section 4.2 of the TTM Guidance Handbook for Road Marking Works.

- If a Contractor proposes not implementing a warning vehicle e.g. for short term works where conditions and visibility are good and traffic is light, a documented risk assessment to deal with the increased risk of removing the warning vehicle must be completed to identify suitable and sufficient alternative controls.
- If no warning vehicle is used, at a minimum operatives must be protected by a dedicated spotter at their location. Traffic must be marshalled by follow me vehicle to control speeds past the works area.
- The lateral safety zone should be maintained using a cantilevered spring board.
- Rear doors of the vehicle must be closed to ensure the traffic management signage on the works vehicle is clearly visible to the road user.

**A Site Specific Risk Assessment must be carried out by the TTM installer on any layout used in the TTM Guidance Handbook, prior to implementing it on site.**

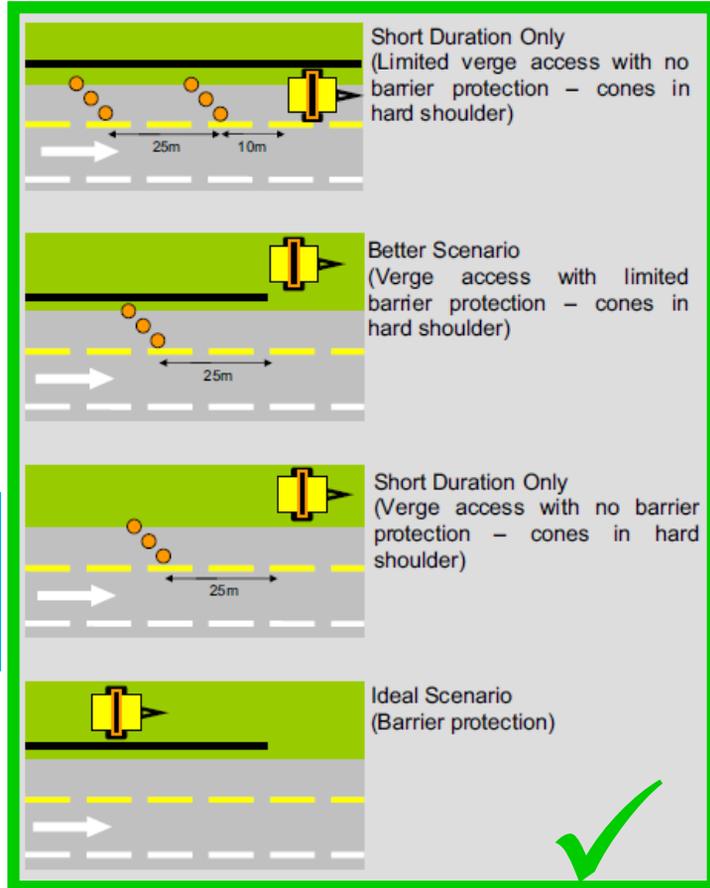
## Temporary Safety Measures Variable Message Sign (VMS)



These Advice Notes have been prepared in order to share current practice with respect to various traffic management activities

This Advice Note has been prepared to advise on best practice with respect to the positioning and securing in place of temporary VMS Boards at Road Works.

- VMS should be regarded as a fixed object (hazard) in accordance with TII GE-TBU-01019. They should be located behind existing safety barriers where possible.
- The requirements in relation to the positioning of VMS are similar to those for static signs. Lateral clearance, clear visibility, and road geometry are to be considered when positioning VMS, and when in position the VMS should be free of obstructions such as vegetation.



- Mobile VMS should be secured in position in accordance with the manufacturer's instructions to avoid the sign acting as a sail when caught by the wind and potentially moving into the trafficked carriageway.
- The manufacturer's advised maximum wind speed for erection must be adhered to and a risk assessment approach for positioning and securing of VMS should be followed.

## Temporary Safety Measures TSM not Installed as per the TM Plan

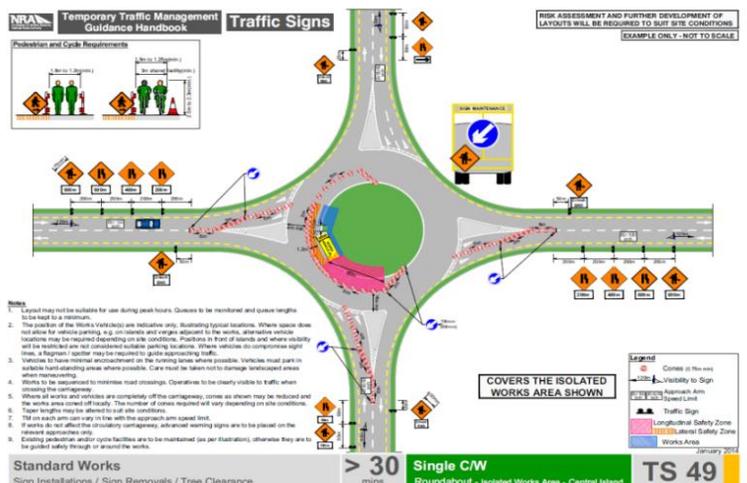


These Advice Notes have been prepared in order to share current practice with respect to various traffic management activities

This Advice Note acts as a reminder to persons involved in the implementation of Temporary Safety Measures using the TII Temporary Traffic Managements Guidance Handbook for Traffic Signs related works

- All traffic management installed should be in accordance traffic management plan, any deviation from the plan must be justified and documented.

- Risk assessment and further development of the layouts are required to suit site conditions.
- Where all works and vehicles are completely off the carriageway, TM as shown may be reduced and the works area coned off locally



## Temporary Safety Measures Works Vehicle Outside TM Setup



**These Advice Notes have been prepared in order to share current practice with respect to various traffic management activities**

This Advice Note acts as a reminder to persons involved in the implementation of Temporary Safety Measures using the TII Temporary Traffic Managements Guidance Handbook and also those involved in the Maintenance Management of the road network under the MMaRC Contract.

- All traffic management installed should be in accordance traffic management plan, any deviation from the plan must be justified and documented.

- All vehicles involved in the works should be parked within the temporary safety measures set-up.
- Vehicles should not encroach the running lane of a carriageway.
- Temporary safety measures should be extended further if required
- Vehicles should travel in the same direction as traffic, vehicles should not reverse into the site from
- Risk assessment and further development of the layouts are required to suit site conditions.

**Further Guidance is given in the Traffic Signs Manual and information is also available by the HSA.**

## Temporary Safety Measures Warning Signage



**These Advice Notes have been prepared in order to share current practice with respect to various traffic management activities**

This Advice Note acts as a reminder to persons involved in the implementation of Temporary Safety Measures using the TII Temporary Traffic Managements Guidance Handbook and also those involved in the Maintenance Management of the road network under the MMaRC Contract.

- All traffic management signage installed during the works should be in good condition.
- Any signage with the retro-reflective material peeling off

the sign face should be replaced.

- Signage installed as part of the traffic management should be correct, it should not be altered on site i.e. turning signage upside down.
- Warning signs give advance warning to the road user usually detailing the nature, extend, duration and necessity of the works ahead, therefore the correct signage must be installed. Signage should be positioned to ensure adequate sightlines for the road user.
- Existing signage should be taken down or covered that may contradict the temporary traffic measures.
- Cones, signs, reflectors and road surfaces must be maintained and kept clean.
- Remove all temporary traffic measures once the works are completed.

## Temporary Safety Measures Cone Spacing



**These Advice Notes have been prepared in order to share current practice with respect to various traffic management activities**

This Advice Note acts as a reminder to persons involved in the implementation of Temporary Safety Measures using the TII Temporary Traffic Managements Guidance Handbook and also those involved in the Maintenance Management of the road network under the MMaRC Contract.

- Cone spacing should be installed as per the approved TM plan.
- Chapter 8 of the Traffic Signs Manual sets out the design parameters for the different road levels.

- Tables 8.3.1 to 8.3.5 of Chapter 8 sets out the design parameters for Level 1 to 6 roads.
- Cone spacing shown in Chapter 8 is the maximum permitted.
- All cones installed should be in good condition and the sleeves of all cones should be in good condition, clean and be reflective.



Table 8.3.1: Design Parameters for Level 1 (Single Carriageway 30km/h)

Design Parameters	Roadworks Type A (Full-Time)	Roadworks Type B (Part-time)	Roadworks Type C (Short Duration)
Speed Limit	30 km/h		30 km/h
<b>Temporary Signs</b>			
Sign Visibility (m)	50		50
Number of Signs	2		2
Cumulative Distance (m)	50		50
Distance between advance signs (m)	25		25
<b>Minimum Rate of Taper</b>			
Taper at Lane (m)	1 in 10		1 in 5
Taper at Hard Shoulder (m)	1 in 5		1 in 5
<b>Maximum Lamp Spacing</b>			
At Taper (m)	6		6
Longitudinal (m)	12		12
<b>Maximum Cone Spacing</b>			
At Tapers (m)	2		3
Longitudinal (m)	6		6
Cone Height (mm)	750		750
<b>Safety Zone</b>			
Longitudinal (m)	5		5
Lateral (m)	0.5		0.5
<b>Minimum Lane Width</b>			
Min Lane Width (m)	3.0		3.0

Note:

1. Refer to Section 8.3.2 for definition of design parameters.
2. 45 degree taper is required at active temporary traffic controlled layouts with cones at 1m centres.
3. Cone spacing shown is the maximum permitted. Where geometry or any other site specific reason dictates the spacing should be reduced accordingly.
4. The optimum lane width for all classes of vehicles is 3.25m. This may be reduced to a minimum of 3.0m. Below this, HGVs and buses must be marshalled past the works. The absolute minimum lane width, if only cars and light vehicles are present, is 2.5m. Refer to Paragraphs 8.3.1.2 to 8.3.1.4.

## Temporary Safety Measures Vulnerable Road Users



**These Advice Notes have been prepared in order to share current practice with respect to various traffic management activities**

This Advice Note acts as a reminder to persons involved in the implementation of Temporary Safety Measures using the TII Temporary Traffic Managements Guidance Handbook

- The needs of vulnerable road users must be considered with a view to reducing risks particularly when designing a TM Plan.
- Availability and suitability of alternative routes for pedestrians and

vulnerable road users must be considered

- The TM plan must demonstrate a practical solution to facilitate safe passage of traffic, including pedestrians and vulnerable road users, past the works.
- The surface should be kept as level as possible.
- Lighting should be provided if required.
- Lane width should be wide enough to allow the safe passage of pedestrians, cyclists etc. past the works.
- In busy areas, it may be necessary to accommodate vulnerable road users crossing movements using temporary traffic signals or STOP/GO batters.

## Temporary Safety Measures Sand Bags



**These Advice Notes have been prepared in order to share current practice with respect to various traffic management activities**

This Advice Note acts as a reminder to persons involved in the implementation of Temporary Safety Measures using the TII Temporary Traffic Managements Guidance Handbook and also those involved in the Maintenance Management of the road network under the MMaRC Contract.

- Sand bags should be used on the bottom rung of the sign frame only.
- Sand bags should not be used for stabilising cones, double up the base of the cone if required.

- Water barriers should be used as designed and sandbags should never be used to secure water barriers.
- Always check sand bags for damage caused by rot in the wet or breakdown in the heat or in the sun before setting them out.
- Only use sand in sand bags never stones or gravel



## Temporary Safety Measures Condition of TSM Equipment



These Advice Notes have been prepared in order to share current practice with respect to various traffic management activities

This Advice Note acts as a reminder to persons involved in the implementation of Temporary Safety Measures using the TII Temporary Traffic Management Guidance Handbook and also those involved in the Maintenance Management of the road network.

- Traffic management (TM) equipment including the rear of vehicles must be kept as clean as possible to maximise conspicuity and to maintain their retro-reflective properties.
- Delineation devices should be installed as per 8.2.5 of the Traffic Signs Manual (TSM). Table 8.2.7 shows the sizes of cones to be used for different types of road and speed limits. Refer to Tables 8.3.1 to 8.3.5 for the max. permitted spacing of cones.

- Installed TM should be inspected regularly in accordance with 8.3.8.1 of the TSM.
- Cones should be sufficiently stable to remain upright in service and have a base design to stop the cone from rolling if knocked over. Consider double bases to cones to prevent cones falling over.
- All cones installed should be in good condition and the sleeves of all cones should be clean and be reflective. Torn reflective sleeves should be replaced.

Table 8.2.7 – Cone Size and Spacing

Road Level	Speed Limit	Type of Road	Minimum Height of Cone (mm)
Levels 1 & 2	30 – 60 km/h	Single Carriageway	750
Levels 3 & 4	80 km/h		750
Levels 3 & 4	100 km/h		750
Level 5	50 – 80 km/h	Dual Carriageway and Motorway	750
Level 6	100 – 120 km/h		1000

Note: 450mm high cones are permitted for works such as road marking and surveying on single carriageway roads only.