# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>SECTION</th>
<th>CONTENT</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SECTION 1</strong></td>
<td><strong>INTRODUCTION</strong></td>
<td>1/3</td>
</tr>
<tr>
<td>1.1</td>
<td>PURPOSE</td>
<td>1/3</td>
</tr>
<tr>
<td>1.2</td>
<td>DEVELOPMENT</td>
<td>1/3</td>
</tr>
<tr>
<td>1.3</td>
<td>APPROPRIATE TYPES OF TTM</td>
<td>1/3</td>
</tr>
<tr>
<td>1.4</td>
<td>FURTHER ASSESSMENT</td>
<td>1/3</td>
</tr>
<tr>
<td>1.5</td>
<td>SITE SPECIFIC RISK ASSESSMENTS</td>
<td>1/3</td>
</tr>
<tr>
<td><strong>SECTION 2</strong></td>
<td><strong>GENERAL PRINCIPLES OF HANDBOOK</strong></td>
<td>2/1</td>
</tr>
<tr>
<td><strong>SECTION 3</strong></td>
<td><strong>THE CONCEPT OF ROUTINE OPERATIONS</strong></td>
<td>3/1</td>
</tr>
<tr>
<td>3.1</td>
<td>GENERAL CONCEPT</td>
<td>3/1</td>
</tr>
<tr>
<td>3.2</td>
<td>ANTICIPATED DURATIONS</td>
<td>3/1</td>
</tr>
<tr>
<td>3.3</td>
<td>PARTICULAR REQUIREMENTS FOR ROUTINE OPERATIONS</td>
<td>3/1</td>
</tr>
<tr>
<td><strong>SECTION 4</strong></td>
<td><strong>EQUIPMENT</strong></td>
<td>4/1</td>
</tr>
<tr>
<td>4.1</td>
<td>VARIABLE MESSAGE SIGNS</td>
<td>4/1</td>
</tr>
<tr>
<td>4.2</td>
<td>WORKS / WARNING VEHICLE RECOMMENDATIONS</td>
<td>4/2</td>
</tr>
<tr>
<td>4.3</td>
<td>OTHER VEHICLES</td>
<td>4/3</td>
</tr>
<tr>
<td>4.4</td>
<td>COMMUNICATION SYSTEM</td>
<td>4/3</td>
</tr>
<tr>
<td>4.5</td>
<td>RECOMMENDED PPE</td>
<td>4/4</td>
</tr>
<tr>
<td>4.6</td>
<td>STOP / GO DISCS</td>
<td>4/4</td>
</tr>
<tr>
<td><strong>SECTION 5</strong></td>
<td><strong>TEMPORARY TRAFFIC MANAGEMENT CHECKLISTS</strong></td>
<td>5/1</td>
</tr>
<tr>
<td><strong>SECTION 6</strong></td>
<td><strong>TTM LAYOUT DIAGRAMS – TRAFFIC SIGNS</strong></td>
<td>6/1</td>
</tr>
<tr>
<td><strong>SECTION 7</strong></td>
<td><strong>IN THE EVENT OF AN EMERGENCY</strong></td>
<td>7/1</td>
</tr>
<tr>
<td><strong>SECTION 8</strong></td>
<td><strong>TTM PLAN – RISK ASSESSMENT PRO FORMA</strong></td>
<td>8/1</td>
</tr>
<tr>
<td><strong>SECTION 9</strong></td>
<td><strong>REFERENCES AND ACKNOWLEDGEMENTS</strong></td>
<td>9/1</td>
</tr>
</tbody>
</table>
# Glossary of Terms

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSCS</td>
<td>Construction Skills Certification Scheme</td>
</tr>
<tr>
<td>DTTAS</td>
<td>Department of Transport, Tourism, and Sport</td>
</tr>
<tr>
<td>GCMTRW</td>
<td>Guidance for the Control and Management of Traffic at Road Works</td>
</tr>
<tr>
<td>GSJ</td>
<td>Grade-Separated Junction</td>
</tr>
<tr>
<td>HSA</td>
<td>Health and Safety Authority</td>
</tr>
<tr>
<td>IPV</td>
<td>Impact Protection Vehicle</td>
</tr>
<tr>
<td>km/h</td>
<td>Kilometres Per Hour</td>
</tr>
<tr>
<td>LMCC</td>
<td>Lorry Mounted Crash Cushion</td>
</tr>
<tr>
<td>NRA</td>
<td>National Roads Authority</td>
</tr>
<tr>
<td>PSCS</td>
<td>Project Supervisor Construction Stage</td>
</tr>
<tr>
<td>PSDP</td>
<td>Project Supervisor Design Process</td>
</tr>
<tr>
<td>Roadworks</td>
<td>Meaning repairs, maintenance, alterations, improvements, installations, or any works to, above or under a public road</td>
</tr>
<tr>
<td>SSWP</td>
<td>Safe Systems of Work Plan</td>
</tr>
<tr>
<td>TM</td>
<td>Traffic Management</td>
</tr>
<tr>
<td>TTM</td>
<td>Temporary Traffic Management</td>
</tr>
<tr>
<td>TTMGH</td>
<td>Temporary Traffic Management Guidance Handbook</td>
</tr>
<tr>
<td>TSM</td>
<td>Traffic Signs Manual</td>
</tr>
<tr>
<td>veh/h</td>
<td>Vehicles Per Hour</td>
</tr>
<tr>
<td>VMS</td>
<td>Variable Message Sign</td>
</tr>
<tr>
<td>vpd</td>
<td>Vehicles Per Day</td>
</tr>
</tbody>
</table>
1 INTRODUCTION

1.1 PURPOSE

This guidance handbook is designed to serve as a quick and easy-to-use reference document for the planning and implementation of temporary traffic management (TTM) measures for routine operations relating to traffic sign maintenance. These operations range in duration from a few minutes up to one day, but are never more than one day’s work.

This handbook takes a practical approach to TTM arrangements, giving due consideration to the safety of road users and workers. It intends to complement existing standards and guidance. It also considers the practical issues and risks associated with setting up a TTM layout, which may take significantly longer than carrying out the works themselves, works which are relatively low risk routine operations.

It is intended to be used as a ‘dashboard’ handbook, and to become a commonplace reference document which will encourage a greater level of consistency in TTM measures for routine operations, such as:

- Road traffic signs installation / repair / replacement
- Cleaning / removal
- Junction definition post installation / repair / replacement
- Vegetation control (e.g. hedge trimming)

1.2 DEVELOPMENT

This handbook is based on:

- The principles and guidance of Chapter 8 of the Traffic Signs Manual (TSM) and the Guidance for the Control and Management of Traffic at Road Works (GCMTRW)
- Consultation with the HSA, Local Authorities, TM service providers, and the traffic signing industry
- NRA experience in implementing and managing road maintenance contracts

1.3 APPROPRIATE TYPES OF TTM

The appropriate TTM for routine traffic sign maintenance varies depending on duration, location and the nature of the work being carried out. In addition, some activities involve continuously moving or short stop operations.

Therefore the most appropriate TTM setup for such works may not fall neatly into the standard roadwork types as set out in the TSM Ch. 8 (i.e. Static Types A, B, C, Semi Static, and Mobile).

As such, the layouts included in this handbook, where necessary, combine elements from the various roadwork types in order to arrive at what is considered to be the most suitable TTM arrangement.

1.4 FURTHER ASSESSMENT

While the guidance contained here will provide some consistency in TTM measures used for routine operations, no ‘one’ set of TTM layouts can cover all sites and conditions. Therefore, at each site, a risk assessment is required, and further development of layouts may be necessary prior to TTM setup. Where further development is required, reference shall always be made to Chapter 8 of the TSM. For the purposes of this handbook:

- Shall or must indicates that a particular requirement is mandatory,
- Should indicates a recommendation and
- May indicates an option.

1.5 SITE SPECIFIC RISK ASSESSMENTS

It is important for TTM auditors and installers to note that the layouts in this guidance handbook cover typical scenarios only. There are many instances where they may not suit the particular operation or location. The Contractor’s TTM designer may need to develop new layouts or amend the typical layouts shown here, in order to meet their particular site conditions.

It is therefore a requirement that a Site Specific Risk Assessment be carried out by the TTM installer on any layout used in this handbook, prior to implementing it on site.

Section 8 contains a standard Site Specific Risk Assessment pro forma which should be used. Alternatively refer to the GCMTRW document for further guidance on risk assessments.

NO COMPROMISE SHALL BE MADE ON THE SAFETY OF ROAD USERS OR WORKERS
2 GENERAL PRINCIPLES OF HANDBOOK

Complement other TTM guidance
This handbook intends to complement existing standards and guidance, and apply it to specific routine operations.

Use of best practice and experience
While based on the principles of TSM Chapter 8 and the GCMTRW documents, this handbook is informed by years of experience in routine road maintenance operations.

TTM types
In order to achieve the most practical setup, elements of different types of TTM have been blended or combined.

Take account of works duration
Consider if safe and reasonably practicable to spend extended durations setting up TTM for short duration works. Longer exposure to traffic increases risk.

Incident response
TTM setup should be capable of being removed quickly in the event of an incident or emergency.

Risk assess for routine operations
Is putting out the TTM more hazardous for operatives and road users than the routine operation itself?

Consistency
There are different interpretations of the current standards, which gives rise to inconsistencies and potential commercial advantages. The layouts provided here aim to remove ambiguity for routine operations.

Standardising PPE and works vehicles
A benchmark for PPE and vehicle conspicuity will help give a consistent message to road users.

Maximising visibility for operatives
If an operative can see what’s coming, he has at least some chance of escape or preparing himself.

Continuously Moving Works
Routine operations which move continuously with very short stops for single carriageways. Use of advance signage and repeaters.

Stop/Go Operative
This vulnerable operative must be protected, while ensuring he has good visibility and is conspicuous.

Using Spotters
Where operatives are working at high risk locations and are engaged in an activity, dedicated spotters are used as a second set of eyes to protect the operative. All spotters should carry whistles and flags.

Advance lines of cones to alert drivers
Cones used in advance of works to alert errant drivers before they reach the works area, and to give them time to recover.

Works vehicles as shields
Use works vehicle(s) to protect workers from errant vehicles, allowing for potential shunting etc.

Mitigate against vehicle shunting
A shunting distance should be provided to mitigate against the risk of a shunted works vehicle impacting the works area.

Safety Zones
Longitudinal and lateral safety zones and tapers implemented to protect the works area.

Carry TM equipment to maximise visibility
Always carry signs and cones on side away from traffic, to maximise operative and traffic visibility.

Impact Protection Vehicle (IPV)
IPV’s are used to set up the TTM, therefore where possible should also be used during the works to protect operatives.

January 2014
3 THE CONCEPT OF ROUTINE OPERATIONS

3.1 GENERAL CONCEPT
Routine operations are considered to be those of short duration (less than one working day). Where works are greater than one working day, the standard static layouts of TSM Chapter 8 apply.

3.2 ANTICIPATED DURATIONS

- **< 5 minutes**
  A series of short-hop maintenance operations along a route where each stop is limited to 5 minutes or less. (Typical operations include: pole caps, patching, sign washing, hedge maintenance).

- **< 30 minutes**
  Short duration stops for minor maintenance operations where the works zone is generally limited to 2km in length. (Typical operations include: single post installations, sign face replacement, minor removals, hedge clearance, landscaping).

- **> 30 minutes**
  Medium duration stops for maintenance operations. (Typical operations include: sign installations, sign removals, tree clearance).

- **> 3 hours**
  Longer duration maintenance operations. Always less than one day.

- **> 1 working day**
  Long term works at fixed sites. Considered to be outside the scope of this handbook. Refer to TSM Ch. 8.

3.3 PARTICULAR REQUIREMENTS FOR ROUTINE OPERATIONS

- Careful consideration must always be given to site specific conditions and further risk assessment must be carried out if deviations from the outlined durations are required (refer also to Section 1.5).

- The emphasis must always be on the safety of the work force, and road users being safely able to pass the works.

- Existing pedestrian and/or cyclist facilities shall be maintained where reasonably possible, otherwise they shall be safely guided through the site, or a safe temporary route past the works shall be provided.

- Particular precautions must be taken during adverse weather conditions. The Contractor must consider what further measures are appropriate, up to and including pulling off site. Weather conditions such as, but not limited to, low-lying sun, fog, frost/ice/snow, heavy rainfall, wet/slippery roads.

- Where TTM is set up to encompass multiple works areas within close proximity, these areas may be considered as separate sites for the purposes of duration, only if further risk assessment has determined that the cumulative duration is not excessive. Additional TTM measures are required if this cannot be clearly demonstrated, or if other additional risks result.

- It should be noted that the TTM layouts in this handbook are considered to be appropriate for daylight hours only. Further assessment is required for the use of TTM for works outside of this period.
4 EQUIPMENT

4.1 VARIABLE MESSAGE SIGNS

Principles of Use
Variable Message Signs (VMS) are considered a requirement in the following circumstances:

- Single Carriageways –
  - Recommended for use as part of continuously moving operations (<5 mins), up to a max distance of 10km in advance of the works vehicles.
  - Generally not required otherwise unless the works zone is of an extended length (>2km), or operatives working on the live carriageway.
  - Can be used in other particular situations if risk assessment deems them necessary.

- Dual Carriageways & Motorways –
  - Required for all works >30 mins duration. Typically located in close proximity to the works, in line with the advance signs.
  - Required for all works <30 mins duration, except for One-Off Isolated Works*. Located up to a max distance of 3km in advance of the works.
  - Required for all works <5 mins duration, except for One-Off Isolated Works*. Located up to a max distance of 10km in advance of the works.
  - Also recommended for the following scenarios on Dual Carriageways & Motorways –
    - as part of continuously moving operations, up to a max distance of 10km in advance of the works.
    - where works are on the live carriageway.
    - where the works zone is of an extended length (>2km).

*One-Off Isolated Works refer to scenarios that are isolated to one works area (one site), no closer than 10km from the next site. They are restricted to <30 mins operations, and are not considered to be linear or extensive in nature.

VMS Protection & Positioning
VMS should be regarded as a fixed object (hazard) in accordance with NRA DMRB TD 19. They should be located behind existing safety barriers where possible. The following diagrams give the various scenarios that are considered acceptable for protecting the VMS.

VMS Message Sets
The messages displayed on VMS should be clear and concise. Preferably only one message should be displayed, as alternating messages are often illegible to passing traffic. For Traffic Sign operations one of the following typical messages should be used as appropriate:

VMS sizes and specifications are to be in accordance with EN12966 and the NRA Guidelines For The Use Of Variable Message Signs On National Roads (www.nra.ie).
4.2 WORKS / WARNING VEHICLE RECOMMENDATIONS

Front Markings (All vehicles)
- Main body of vehicle painted in a conspicuous yellow.
- Optional conspicuity markings may be added to the front of the vehicle in an alternative colour to the main body. Ensure reflective markings do not ‘dazzle’ approaching drivers.
- Front markings must be Class RA1 retro-reflective material only.

Rear Markings (All Vehicles)
- The rear of the vehicle should be covered in markings as much as possible. Chevron markings to be used, comprising alternate strips of fluorescent orange-red Class RA2 retro-reflective material and fluorescent yellow non-retroreflective material, of not less than 150mm width each, inclined at 45-60° to the horizontal and pointing upwards.
- The rear of the vehicle must be kept as clean as possible to maximise conspicuity and maintain its retro-reflective properties.
- Visibility through the rear of the vehicles should be maintained as much as possible.
- All signs on the rear of vehicles must be removed/covered once operations are complete (or work is finished for the day).
- If trailers or other equipment is towed to the works site, it must not block the vehicle mounted signage during operations. All equipment must be detached prior to operations commencing, or if not, the vehicle signage must be replicated on the back.

If non-standard vehicles (e.g. concrete trucks) are used as part of short term operations, where they may be potentially exposed to oncoming traffic, they must be made highly conspicuous with appropriate markings and signage, as per the requirements for other works and warning vehicles.

There is to be no working from the rear of any vehicle, unless it is suitably protected from oncoming traffic in that direction.
4.3 OTHER VEHICLES

Any vehicle stopping on the road for works purposes or inspections should be conspicuously marked in the same manner as the work vehicles (described on previous page).

Vehicles must be equipped with either a roof-mounted flashing amber warning light bar or independent roof-mounted flashing amber warning beacons, visible through 360°. For vehicles with bodies, the rear window chevrons should be semi-transparent to allow a clear view out the back of the vehicle where possible.

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.

Requirements for Vehicle Mounted Beacons

- Must comply with the requirements of the Road Vehicle Lighting Regulations and should also comply with the United Nations Economic Commission for Europe (UNECE) Regulation 65 on Special Warning Lamps.
- Where obscured by others parts of the vehicle or any equipment carried on the vehicle, additional beacons should be fitted where they will remain visible.

They shall be in use when entering, leaving or moving within the site, when travelling in traffic at less than the general traffic speed, when working through junctions and roundabouts, and when stationary on the hard shoulder.

When stationary within the confines of a fully installed traffic management layout, the roof-mounted beacons shall be switched off, unless they form part of the guarding of the works, e.g. works on minor roads, or are required for mobile works.

Vehicles should carry spare beacons to ensure the vehicle has at least one lamp working, should a bulb blow.

Beacons must be kept clean and serviceable at all times, and be inspected as part of the normal vehicle inspection regime.

4.4 COMMUNICATION SYSTEM

A reliable communication system should be provided between all vehicles. This is considered particularly important where there is no clear line of sight between vehicles and operatives.

It is also recommended that a communication system be provided for operatives on the ground, acting in traffic control and spotter roles (e.g. Stop/Go man) at all times.

All operatives with communication devices should be interconnectable.
4.5 RECOMMENDED PPE

- Long sleeve high-vis vest (or jacket) and trousers to be worn by all operatives at all times.
- Steel toe cap boots to be worn at all times.
- Hard hats, gloves, eye and ear protection, etc. to be worn as required, depending on the operation.

Recommended for all Operatives

4.6 STOP / GO DISCS

- Where Stop/Go discs are used, they must be visible to oncoming traffic at all times (particularly on bends and crests of hills).
- They must be a minimum height of 2m, but may need to be higher in certain circumstances, to maintain visibility.
- Typically they should include LED's on both faces, to improve conspicuity.
5 TEMPORARY TRAFFIC MANAGEMENT CHECKLISTS

Delinquency – Consultation and Approvals

☐ Develop TTM layouts
☐ Agree Programme for the Works & Working Hours
☐ Notify An Garda Síochána (incl. Traffic Corps)
☐ Notify Emergency Services (if required)
☐ Obtain Road Opening Licence / Road Closure Order (if required)
☐ NRA’s Road Space Booking System – request consent through the Motorway Traffic Control Centre (where applicable)
☐ Submit AF2 Forms to the Health and Safety Authority (HSA)
☐ Client to appoint PSCS (to be accepted by the Contractor)
☐ Appoint Temporary Traffic Operations Supervisor
☐ Inform Bus Operators (where applicable)

Pre Setup – H&S Requirements

☐ PSDP to be notified
☐ Site Specific Risk Assessment – to be carried out and recorded for each separate works site location.
☐ Modifications to TTM Layouts – where required under risk assessment, modifications to layouts must be recorded prior to implementation on site.
☐ Communicate to TTM Installer – the Temporary Traffic Operations Supervisor (or PSCS) must adequately communicate any particular changes or requirements of the specific TTM layouts to the TTM Installer prior to set-up.
☐ Hazard Identification – identification of utilities and other hazards must be carried out prior to TTM set-up.

Pre Setup – H&S Documentation

The following documentation is to be held in the works vehicle at all times.

☐ Site Specific TTM Layouts
☐ PSCS’s Construction Stage Safety & Health Plan
☐ Signing, Lighting & Guarding at Roadworks CSCS card (for Temporary Traffic Operations Supervisor only)
☐ Safe Pass cards
☐ Machine Operator CSCS cards
☐ IPV Driver Qualifications (where applicable)

During Works – General Requirements

☐ 3 minute traffic counts must be carried out and recorded prior to TTM setup where required. Repeat at intervals to ensure that traffic flows are not exceeded for the selected layout.
☐ Queue lengths to be checked regularly. If excessive build up is observed, Contractor to consider pulling off site and returning when traffic volumes adequately reduce.
☐ Weather conditions, such as heavy rain, fog, snow, low lying sun, etc. which can reduce visibility, should be considered when implementing TTM.
☐ Permanent signs should be covered or taken down if in contradiction with the TTM layout.
☐ Removing TTM may be required to deal with high traffic volumes, adverse weather conditions, and emergency access.
☐ TTM equipment, cones, signs, barriers, PPE, etc. should be cleaned and checked regularly for displacement or damage, and replaced where needed.

For short duration or moving works, varying degrees of TTM will be required at different stages as site conditions change. At all stages, the TTM must be capable of properly managing road users and protecting operatives, particularly when transitioning between different TTM scenarios.

All TTM must be removed once the works are completed. Any permanent signs covered/removed for the duration of the works must now be reinstated.

Care must be taken not to cause detrimental damage to verges, filter drains, and landscaped areas, when manoeuvring the works vehicles.

TTM Installers must face oncoming traffic (and be visible to oncoming traffic) when placing and removing signs and cones.
Temporary Traffic Management Layout Diagrams

For

TRAFFIC SIGNS
# Traffic Signs

## Temporary Traffic Management Guidance Handbook

### LAYOUT INDEX

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>Minor Maintenance (Continuously Moving)</th>
<th>Standard Maintenance / Minor Works</th>
<th>Standard Works</th>
</tr>
</thead>
</table>
| TYPICAL OPERATIONS | - Pole Caps  
- Patching  
- Sign Washing  
- Hedge Maintenance | - Single Post Installations  
- Sign Face Replacement  
- Minor Removals  
- Hedge Clearance  
- Landscaping | - Sign Installations  
- Sign Removals  
- Tree Clearance |
| DURATION | **<5 mins** | **<30 mins** | **>30 mins** |

### WORKS LOCATION / SITE CHARACTERISTICS

<table>
<thead>
<tr>
<th>SINGLE C/W</th>
<th>WITH H/S</th>
<th>NO H/S - GOOD SIGHT LINES</th>
<th>NO H/S - POOR SIGHT LINES (SINGLE BEND)</th>
<th>NO H/S - POOR SIGHT LINES (DOUBLE BEND)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mainline Verge</strong></td>
<td>TS 01</td>
<td>TS 02</td>
<td>TS 03</td>
<td>TS 04</td>
</tr>
<tr>
<td><strong>Junction Verge</strong></td>
<td>TS 05</td>
<td>TS 06</td>
<td>TS 07</td>
<td>TS 08</td>
</tr>
<tr>
<td><strong>Roundabout - All Works Areas</strong></td>
<td>TS 09</td>
<td>TS 10</td>
<td>TS 11</td>
<td>TS 12</td>
</tr>
<tr>
<td><strong>Roundabout - Isolated Works Area</strong></td>
<td>Entry Verge</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Roundabout - Multiple Works Areas</strong></td>
<td>Traffic Island</td>
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<td></td>
<td>Central Island</td>
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### LAYOUT REFERENCE

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**TS69 and TS70 are examples of typical scenarios for works in highly urban areas (Main Street locations)**
### DURATION

<table>
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<th>&lt;5 mins</th>
<th>&lt;30 mins</th>
<th>&gt;30 mins</th>
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</thead>
<tbody>
<tr>
<td>TS 10</td>
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</tr>
<tr>
<td>TS 11</td>
<td>TS 29</td>
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</tr>
<tr>
<td>TS 12</td>
<td>TS 30</td>
<td>TS 55</td>
</tr>
<tr>
<td>TS 13</td>
<td>TS 31</td>
<td>TS 56</td>
</tr>
<tr>
<td>TS 14</td>
<td>TS 32</td>
<td>TS 57</td>
</tr>
<tr>
<td>TS 15</td>
<td>TS 34</td>
<td>TS 61</td>
</tr>
<tr>
<td>TS 16</td>
<td>TS 35</td>
<td>TS 62</td>
</tr>
<tr>
<td>TS 17</td>
<td>TS 36</td>
<td>TS 63</td>
</tr>
<tr>
<td>TS 18</td>
<td>TS 37</td>
<td>TS 64</td>
</tr>
<tr>
<td>TS 19</td>
<td>TS 38</td>
<td>TS 65</td>
</tr>
<tr>
<td>TS 20</td>
<td>TS 39</td>
<td>TS 66</td>
</tr>
<tr>
<td>TS 21</td>
<td>TS 40</td>
<td>TS 67</td>
</tr>
<tr>
<td>TS 22</td>
<td>TS 41</td>
<td>TS 68</td>
</tr>
</tbody>
</table>

### WORKS LOCATION / SITE CHARACTERISTICS

<table>
<thead>
<tr>
<th>URBAN DUAL CW (2/3 Lane)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mainline Verge</strong></td>
</tr>
<tr>
<td>With H/S (or Bus Lane)</td>
</tr>
<tr>
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</tr>
<tr>
<td><strong>Mainline Median</strong></td>
</tr>
</tbody>
</table>

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<thead>
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</tr>
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</tr>
<tr>
<td>With H/S</td>
</tr>
<tr>
<td>With H/S - Diverge Taper</td>
</tr>
<tr>
<td>No H/S</td>
</tr>
<tr>
<td><strong>Mainline Lane 1</strong></td>
</tr>
<tr>
<td>Standard</td>
</tr>
<tr>
<td>Diverge Taper</td>
</tr>
<tr>
<td><strong>Mainline Lane 2/3 or Median</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grade-Seperated Junction (Full GSJ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exit Nose</td>
</tr>
<tr>
<td>Off-Ramp - LHS</td>
</tr>
<tr>
<td>Off-Ramp - RHS</td>
</tr>
<tr>
<td>Start of On-Ramp</td>
</tr>
<tr>
<td>End of On-Ramp - LHS</td>
</tr>
<tr>
<td>End of On-Ramp - RHS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Compact Grade-Seperated Junction (Compact GSJ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exit Nose &amp; Traffic Island</td>
</tr>
<tr>
<td>Slip-Road</td>
</tr>
</tbody>
</table>
1. For continuously moving operations, where required, pedestrians and cyclists are to be guided safely through or around the works.

2. For isolated one-off stops, refer alternatively to TS23.

VMS must not be towed as part of a moving operation.

**SSD Parameters**

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Speed Limit (km/h)</th>
<th>Stopping Sight Distance (SSD) (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SINGLE C/W</td>
<td>50 / 60 / 70</td>
<td>100 / 300 / 500</td>
</tr>
</tbody>
</table>

**Notes**

1. For continuously moving operations, where required, pedestrians and cyclists are to be guided safely through or around the works.
2. For isolated one-off stops, refer alternatively to TS23.

**Legend**

- Min.SSD: Minimum Stopping Sight Distance (SSD)
- Works Area

---

**January 2014**

**TS 01**

**Minor Maintenance (Continuously Moving)**

Pole Caps / Patching / Sign Washing / Hedge Maintenance

< 5 mins

**Single C/W**

Mainline Verge - With H/S
VMS to give drivers advance notification of continuously moving operation ahead.
May not be required for One-Off Isolated Works.
VMS must not be towed as part of a moving operation.

Traffic must yield behind warning vehicle to oncoming traffic.

Legend
- Forward Clear Visibility
- Minimum Stopping Sight Distance (SSD)
- Works Area

Notes
1. Where traffic volumes are > 20 veh / 3 mins (400 veh/h), refer to TS43. Three minute traffic counts should be carried out at regular intervals to ensure flows are not exceeded.
2. Where sight lines are poor refer to TS03 or TS04 as appropriate.
3. For continuously moving operations, where required, pedestrians and cyclists are to be guided safely through or around the works.
4. For isolated one-off stops, refer alternatively to TS24.
5. Vehicles to have minimal encroachment on the running lanes where possible.
6. Care must be taken not to damage verges or cause debris when maneuvering vehicles.
7. Should not be used in poor weather conditions.
1. To be used for a single bend i.e. where good sight lines are achievable after the Works Vehicle.
2. For multiple bends refer to TS44. Further risk assessment and additional TM development may also be required.
3. Where traffic volumes are > 20 veh / 3mins (400 veh/h), refer to TS44. Three minute traffic counts should be carried out at regular intervals to ensure flows are not exceeded.
4. For continuously moving operations, where required, pedestrians and cyclists are to be guided safely through or around the works.
5. For isolated one-off stops, refer alternatively to TS44.
6. Vehicles to have minimal encroachment on the running lanes where possible.
7. Care must be taken not to damage verges or cause debris when maneuvering vehicles.
8. Should not be used in poor weather conditions.

VMS to give drivers advance notification of continuously moving operation ahead. May not be required for One-Off Isolated Works. VMS must not be towed as part of a moving operation.

Traffic must yield behind warning vehicle to oncoming traffic.

### Notes
1. To be used for a single bend i.e. where good sight lines are achievable after the Works Vehicle.
2. For multiple bends refer to TS44. Further risk assessment and additional TM development may also be required.
3. Where traffic volumes are > 20 veh / 3mins (400 veh/h), refer to TS44. Three minute traffic counts should be carried out at regular intervals to ensure flows are not exceeded.
4. For continuously moving operations, where required, pedestrians and cyclists are to be guided safely through or around the works.
5. For isolated one-off stops, refer alternatively to TS44.
6. Vehicles to have minimal encroachment on the running lanes where possible.
7. Care must be taken not to damage verges or cause debris when maneuvering vehicles.
8. Should not be used in poor weather conditions.
**Suggested Operation**

**Phase 1**
- **YIELD**
- **SIGN MAINTENANCE AHEAD**

**Phase 2**
- **YIELD**
- **SIGN MAINTENANCE AHEAD**

**Minor Maintenance (Continuously Moving)**
- Pole Caps / Patching / Sign Washing / Hedge Maintenance
- **< 5 mins**

**Mainline Verge - No H/S - Poor Sight Lines (Double Bend)**

**Traffic Signs**

**RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS**

**Legend**
- Flagman / Spotter (as required)
- Forward Clear Visibility
- 80 / 100 km/h
- 30 / 50 / 60 km/h
- Minimum Stopping Sight Distance (SSD)
- Stop / Go & Operative
- Works Area

**Notes**

1. To be used for a double bend i.e. where good sight lines are not achievable after the Works Vehicle.
2. For multiple bends refer to TS44. Further risk assessment and additional TM development may also be required.
3. Where traffic volumes are > 15 veh / 3mins (300 veh/h), refer to TS44. Three minute traffic counts should be carried out at regular intervals to ensure flows are not exceeded.
4. Where the flagman observes excessive queuing, he must communicate to the works vehicle to pull off the running lane and allow traffic to pass.
5. For continuously moving operations, where required, pedestrians and cyclists are to be guided safely through or around the works.
6. For isolated one-off stops, refer alternatively to TS44.
7. Vehicles to have minimal encroachment on the running lanes where possible.
8. Care must be taken not to damage verges or cause debris when maneuvering vehicles.
9. Should not be used in poor weather conditions.

**VMS**
- To give drivers advance notification of continuously moving operation ahead.
- May not be required for One-Off Isolated Works.
- VMS must not be towed as part of a moving operation.

- **ALL STOP**

- **WARNING VEHICLE**

- **Driver of the Warning Vehicle to act as a spotter for the All Stop operative.**

- **All STOP in one direction**

- **Distance to allow for traffic to queue behind All Stop operative**

- **5m to 10m**

- **Min.SSD**

- **VMS to give drivers advance notification of continuously moving operation ahead.**

- **May not be required for One-Off Isolated Works.**

- **VMS must not be towed as part of a moving operation.**

- **Traffic must yield behind warning vehicle to oncoming traffic.**

**SSD Parameters**

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Speed Limit (km/h)</th>
<th>Stopping Sight Distance SSD (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAIN C/W</td>
<td>30 / 70</td>
<td></td>
</tr>
<tr>
<td></td>
<td>50 / 60</td>
<td>90 / 120</td>
</tr>
<tr>
<td></td>
<td>80 / 100</td>
<td>160 / 215</td>
</tr>
</tbody>
</table>

**Example Only - Not to Scale**

**January 2014**
Suggested Operation

**Minor Maintenance (Continuously Moving)**

- Pole Caps / Patching / Sign Washing / Hedge Maintenance

**< 5 mins**

**Single C/W**

**Junction Verge - With H/S**

**TS 05**

---

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

---

**Legend**

- Flagman / Spotter (as required)
- Minimum Stopping Sight Distance (SSD)
- Works Area

**Notes**

1. Where side road traffic volumes are > 20 veh / 3 mins (400 veh/h), implement TS01 or TS02 for works on side road as appropriate.
2. For continuously moving operations, where required, pedestrians and cyclists are to be guided safely through or around the works.
3. For isolated one-off stops, refer alternatively to TS25.

---

**SSD Parameters**

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Speed Limit (km/h)</th>
<th>SSD Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Int C/W</td>
<td>30 / 60 / 90</td>
<td>90 / 120, 160 / 215</td>
</tr>
</tbody>
</table>

---

**EXAMPLE ONLY - NOT TO SCALE**

---

Temporary Traffic Management Guidance Handbook

Traffic Signs

---

VMS to give drivers advance notification of continuously moving operation ahead. May not be required for One-Off Isolated Works. VMS must not be towed as part of a moving operation.

---

10km Max.

---

VMS to give drivers advance notification of continuously moving operation ahead. May not be required for One-Off Isolated Works. VMS must not be towed as part of a moving operation.

---

Distance to ensure side road sight lines are maintained

---

Flagman / Spotter required to guide side road traffic.

---

Distance to ensure side road sight lines are maintained

---

Approx. 150m

---

Approx. 150m

---

Min.SSD

---

Approx. 150m

---

Min.SSD

---

**WARNING VEHICLE**

---

**SIGN MAINTENANCE AHEAD**

---

**STOP**

---

**SIGN MAINTENANCE**

---

**VEHICLE WORKS**
**VMS** to give drivers advance notification of continuously moving operation ahead.
May not be required for One-Off Isolated Works.
VMS must not be towed as part of a moving operation.

**Notes**
1. Where mainline and side road traffic volumes are > 20 veh / 3 mins (400 veh/h), refer to TS46. Three minute traffic counts should be carried out at regular intervals to ensure flows are not exceeded.
2. Where sight lines are poor refer to TS07 or TS08 as appropriate.
3. For continuously moving operations, where required, pedestrians and cyclists are to be guided safely through or around the works.
4. For isolated one-off stops, refer alternatively to TS26.
5. Vehicles to have minimal encroachment on the running lanes where possible.
6. Care must be taken not to damage verges or cause debris when maneuvering vehicles.
7. Should not be used in poor weather conditions.

<table>
<thead>
<tr>
<th>SSD Parameters</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Road Type</strong></td>
<td><strong>SSD Parameters</strong></td>
</tr>
<tr>
<td><strong>VMS</strong></td>
<td><strong>Speed Limit (km/h)</strong></td>
</tr>
<tr>
<td>C/W</td>
<td>30</td>
</tr>
<tr>
<td>50 / 60</td>
<td>90 / 120</td>
</tr>
<tr>
<td>80 / 100</td>
<td>160 / 215</td>
</tr>
</tbody>
</table>

**Legend**
- Flagman / Spotter (as required)
- 80 / 100 km/h: Forward Clear Visibility
- 30 / 50 / 60 km/h: Minimum Stopping Sight Distance (SSD)
- Works Area

**January 2014**

**Temporary Traffic Management Guidance Handbook**

**Traffic Signs**

**RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS**

**EXAMPLE ONLY - NOT TO SCALE**

**TS 06**

**Minor Maintenance (Continuously Moving)**

- Pole Caps / Patching / Sign Washing / Hedge Maintenance
- < 5 mins
- Single C/W
- Junction Verge - No H/S - Good Sight Lines
## Minor Maintenance (Continuously Moving)

**Pole Caps / Patching / Sign Washing / Hedge Maintenance**

### SSD Parameters

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Speed Limit (km/h)</th>
<th>Stopping Sight Distance SSD (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single C/W</td>
<td>30 / 60</td>
<td>70 / 120</td>
</tr>
<tr>
<td>80 / 100</td>
<td>160 / 215</td>
<td></td>
</tr>
</tbody>
</table>

### Notes
1. To be used for a single bend i.e. where good sight lines are achievable after the Works Vehicle.
2. Where mainline and side road traffic volumes are > 20 veh / 3mins (400 veh/h), refer to TS46. Three minute traffic counts should be carried out at regular intervals to ensure flows are not exceeded.
3. For continuously moving operations, where required, pedestrians and cyclists are to be guided safely through or around the works.
4. For isolated one-off stops, refer alternatively to TS46.
5. Vehicles to have minimal encroachment on the running lanes where possible.
6. Should not be used in poor weather conditions.

### Ts 07

**Single C/W**

**Junction Verge - No H/S - Poor Sight Lines (Single Bend)**

---

**Legend**

- Flagman / Spotter (as required)
- Forward Clear Visibility
  - 80 / 100 km/h
  - 30 / 50 / 60 km/h
- Minimum Stopping Sight Distance (SSD)
- Reliable communication system recommended

**January 2014**
SIGN MAINTENANCE AHEAD

1. To be used for a double bend i.e. where good sight lines are not achievable after the Works Vehicle.
2. For a series of bends refer to TS46. Further risk assessment and additional TM development may also be required.
3. Where mainline and side road traffic volumes are > 15 veh / 3mins (300 veh/h), refer to TS46. Three minute traffic counts should be carried out at regular intervals to ensure flows are not exceeded.
4. Max. allowable period for All Stop is 5 mins.
5. Where the flagman observes excessive queuing, he must communicate to the works vehicle to pull off the running lane and allow traffic to pass.
6. For continuously moving operations, where required, pedestrians and cyclists are to be guided safely through or around the works.
7. For isolated one-off stops, refer alternatively to TS46.
8. Vehicles to have minimal encroachment on the running lanes where possible.
9. Care must be taken not to damage verges or cause debris when maneuvering vehicles.
10. Should not be used in poor weather conditions.

Minor Maintenance (Continuously Moving)
Pole Caps / Patching / Sign Washing / Hedge Maintenance

TS 08

January 2014

Traffic Signs

Legend

- Flagman / Spotter (as required)
- Forward Clear Visibility
- 80 / 100 km/h
- 30 / 50 / 60 km/h
- Stop / Go & Operative
- Works Area

VMS to give drivers advance notification of continuously moving operation ahead. May not be required for One-Off Isolated Works. VMS must not be towed as part of a moving operation.

Traffic must yield behind Warning Vehicle to oncoming traffic.

Driver of the Warning Vehicle to act as a spotter for the All Stop operative.

All Stop operative to be in constant communication with the Warning Vehicle and the Works Vehicle. Works Vehicle operative to communicate when the vehicle is off the running carriageway (see Phase 4 above).

Distance to ensure side road sight lines are maintained

Min. SSD

150m

100m

70m

100m

3.5m min

3.5m min

3.5m min

5m to 10m

Distance to allow for traffic to queue behind flagman

All STOP in one direction

Driver of the Warning Vehicle to act as a spotter for the All Stop operative.

Min. SSD

100m

70m

Stay in lane

5m to 10m

Alternative vehicle positions

Reliable communication system recommended

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY - NOT TO SCALE
Notes

1. This layout illustrates typical Works Areas at a roundabout. These locations may be changed to suit site conditions, and are not necessarily implemented simultaneously.
2. Vehicles to find a suitable pull-in location off the running lane for both mainline and side roads. Vehicles must park in suitable hard-standing areas where possible. Care must be taken not to damage landscaped areas when maneuvering.
3. Operatives and flagman / spotter to move on foot between various works areas.
4. Works to be sequenced to minimise road crossings. Operatives to be clearly visible to traffic when crossing the carriageway.
5. For continuously moving operations, where required, pedestrians and cyclists are to be guided safely through or around the works.

VMS to give drivers advance notification of continuously moving operation ahead. May not be required for One-Off Isolated Works. VMS must not be towed as part of a moving operation.

Legend
Flagman / Spotter as required to warn / guide oncoming traffic (positioning dependant on works area)

Temporary Traffic Management Guidance Handbook

Traffic Signs

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS
EXAMPLE ONLY - NOT TO SCALE

Minor Maintenance (Continuously Moving)
Pole Caps / Patching / Sign Washing / Hedge Maintenance

Single C/W
Roundabout - All Works Areas

COVERS ALL WORKS AREAS SHOWN

January 2014

Legend
Flagman / Spotter (as required)
Works Area

< 5 mins
TS 09
Notes
1. Layout not suitable for use during peak hours, particularly where a Bus Lane is present. Queues to be monitored and queue lengths kept to a minimum.
2. Operatives to be particularly observant of queuing through junctions.
3. Where numerous side accesses or high traffic volumes are encountered, the distance between the warning vehicle and works vehicles should be carefully considered. A flagman / spotter may be required to guide / warn approaching traffic, subject to risk assessment.
4. For continuously moving operations, where required, pedestrians and cyclists are to be guided safely through or around the works.
5. For isolated one-off stops, refer alternatively to TS28.
6. Vehicles to have minimal encroachment on the running lanes where possible (where Bus Lane is present).
7. Further development of this layout may be required to suit site conditions, where risk assessment deems it necessary for the road type.

VMS to give drivers advance notification of continuously moving operation ahead. Location to be optimised for the operation. May not be required for One-Off Isolated Works. VMS must not be towed as part of a moving operation.

VMS to give drivers advance notification of continuously moving operation ahead. Location to be optimised for the operation. May not be required for One-Off Isolated Works. VMS must not be towed as part of a moving operation.

**Notes**

1. Layout not suitable for use during peak hours, particularly where a Bus Lane is present. Queues to be monitored and queue lengths kept to a minimum.
2. Operatives to be particularly observant of queuing through junctions.
3. Where numerous side accesses or high traffic volumes are encountered, the distance between the warning vehicle and works vehicles should be carefully considered. A flagman / spotter may be required to guide / warn approaching traffic, subject to risk assessment.
4. For continuously moving operations, where required, pedestrians and cyclists are to be guided safely through or around the works.
5. For isolated one-off stops, refer alternatively to TS28.
6. Vehicles to have minimal encroachment on the running lanes where possible (where Bus Lane is present).
7. Further development of this layout may be required to suit site conditions, where risk assessment deems it necessary for the road type.

VMS to give drivers advance notification of continuously moving operation ahead. Location to be optimised for the operation. May not be required for One-Off Isolated Works. VMS must not be towed as part of a moving operation.

**Notes**

1. Layout not suitable for use during peak hours, particularly where a Bus Lane is present. Queues to be monitored and queue lengths kept to a minimum.
2. Operatives to be particularly observant of queuing through junctions.
3. Where numerous side accesses or high traffic volumes are encountered, the distance between the warning vehicle and works vehicles should be carefully considered. A flagman / spotter may be required to guide / warn approaching traffic, subject to risk assessment.
4. For continuously moving operations, where required, pedestrians and cyclists are to be guided safely through or around the works.
5. For isolated one-off stops, refer alternatively to TS28.
6. Vehicles to have minimal encroachment on the running lanes where possible (where Bus Lane is present).
7. Further development of this layout may be required to suit site conditions, where risk assessment deems it necessary for the road type.

VMS to give drivers advance notification of continuously moving operation ahead. Location to be optimised for the operation. May not be required for One-Off Isolated Works. VMS must not be towed as part of a moving operation.

**Notes**

1. Layout not suitable for use during peak hours, particularly where a Bus Lane is present. Queues to be monitored and queue lengths kept to a minimum.
2. Operatives to be particularly observant of queuing through junctions.
3. Where numerous side accesses or high traffic volumes are encountered, the distance between the warning vehicle and works vehicles should be carefully considered. A flagman / spotter may be required to guide / warn approaching traffic, subject to risk assessment.
4. For continuously moving operations, where required, pedestrians and cyclists are to be guided safely through or around the works.
5. For isolated one-off stops, refer alternatively to TS28.
6. Vehicles to have minimal encroachment on the running lanes where possible (where Bus Lane is present).
7. Further development of this layout may be required to suit site conditions, where risk assessment deems it necessary for the road type.

VMS to give drivers advance notification of continuously moving operation ahead. Location to be optimised for the operation. May not be required for One-Off Isolated Works. VMS must not be towed as part of a moving operation.

**Notes**

1. Layout not suitable for use during peak hours, particularly where a Bus Lane is present. Queues to be monitored and queue lengths kept to a minimum.
2. Operatives to be particularly observant of queuing through junctions.
3. Where numerous side accesses or high traffic volumes are encountered, the distance between the warning vehicle and works vehicles should be carefully considered. A flagman / spotter may be required to guide / warn approaching traffic, subject to risk assessment.
4. For continuously moving operations, where required, pedestrians and cyclists are to be guided safely through or around the works.
5. For isolated one-off stops, refer alternatively to TS28.
6. Vehicles to have minimal encroachment on the running lanes where possible (where Bus Lane is present).
7. Further development of this layout may be required to suit site conditions, where risk assessment deems it necessary for the road type.

VMS to give drivers advance notification of continuously moving operation ahead. Location to be optimised for the operation. May not be required for One-Off Isolated Works. VMS must not be towed as part of a moving operation.

**Notes**

1. Layout not suitable for use during peak hours, particularly where a Bus Lane is present. Queues to be monitored and queue lengths kept to a minimum.
2. Operatives to be particularly observant of queuing through junctions.
3. Where numerous side accesses or high traffic volumes are encountered, the distance between the warning vehicle and works vehicles should be carefully considered. A flagman / spotter may be required to guide / warn approaching traffic, subject to risk assessment.
4. For continuously moving operations, where required, pedestrians and cyclists are to be guided safely through or around the works.
5. For isolated one-off stops, refer alternatively to TS28.
6. Vehicles to have minimal encroachment on the running lanes where possible (where Bus Lane is present).
7. Further development of this layout may be required to suit site conditions, where risk assessment deems it necessary for the road type.
VMS to give drivers advance notification of continuously moving operation ahead.
Location to be optimised for the operation.
May not be required for One-Off Isolated Works.
VMS must not be towed as part of a moving operation.

Notes:
1. Traffic volumes are restricted to 60 veh / 3 mins (1200 veh/h). Three minute traffic counts should be carried out at regular intervals to ensure flows are not exceeded.
2. Layout not suitable for use during peak hours. Queues to be monitored and queue lengths kept to a minimum. Operatives to be particularly observant of queuing through junctions.
3. Where numerous side accesses or high traffic volumes are encountered, the distance between the warning vehicle and works vehicles should be carefully considered. A flagman / spotter may be required to guide / warn approaching traffic, subject to risk assessment.
4. For continuously moving operations, where required, pedestrians and cyclists are to be guided safely through or around the works.
5. For isolated one-off stops, refer alternatively to TS29.
6. Vehicles to have minimal encroachment on the running lanes where possible.
7. Care must be taken not to damage verges or cause debris when maneuvering vehicles.
8. Further development of this layout may be required to suit site conditions, where risk assessment deems it necessary for the road type.

<table>
<thead>
<tr>
<th>SSD Parameters</th>
<th>Road Type</th>
<th>Speed Limit (km/h)</th>
<th>Stopping Sight Distance (SSD) (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>50 / 60</td>
<td>90 / 120</td>
<td>80</td>
</tr>
</tbody>
</table>

Legend:
- Minimum Stopping Sight Distance (SSD)
- Works Area
- Minimum Speed
- Warning Vehicle
- Alternative 3-Lane Version
- Overtaking of set-up as one
- IPV for 80 km/h only, used where risk assessment deems it necessary and suitable for the road type
- To allow separate overtaking manouevres.

The onus is on vehicle drivers to be cognisant of traffic behind them being unable to overtake, particularly if traffic volumes are heavy.
They must pull in where possible to allow traffic to pass the works safely.

Related communication system recommended.

TS 11

January 2014

Urban Dual C/W - 2/3 Lane (<80km/h)
Mainline Verge - No H/S

< 5 mins

Minor Maintenance (Continuously Moving)
Pole Caps / Patching / Sign Washing / Hedge Maintenance

Examples Only - Not to Scale
VMS to give drivers advance notification of continuously moving operation ahead.
Location to be optimised for the operation.
May not be required for One-Off Isolated Works.
VMS must not be towed as part of a moving operation.

Notes:
1. Traffic volumes are restricted to 60 veh / 3 mins (1200 veh/h). Three minute traffic counts should be carried out at regular intervals to ensure flows are not exceeded.
2. Layout not suitable for use during peak hours. Queues to be monitored and queues kept to a minimum. Operatives to be observant of queuing through junctions.
3. Where numerous side accesses or high traffic volumes are encountered, the distance between the warning vehicle and works vehicles should be carefully considered. A flagman / spotter may be required to guide / warn approaching traffic, subject to risk assessment.
4. For continuously moving operations, where required, pedestrians and cyclists are to be guided safely through or around the works.
5. For isolated one-off stops, refer alternatively to TS30.
6. Vehicles to have minimal encroachment on the running lanes where possible.
7. Care must be taken not to damage verges or cause debris when maneuvering vehicles.
8. Further development of this layout may be required to suit site conditions, where risk assessment deems it necessary for the road type.
VMS to give drivers advance notification of continuously moving operation ahead. May not be required for One-Off Isolated Works. VMS must not be towed as part of a moving operation.

**SIGN MAINTENANCE AHEAD**

10km Max.

1. This layout may be suitable for use at Start of Diverge Taper locations.

**SSD Parameters**

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Speed Limit (km/h)</th>
<th>Stopping Sight Distance SSD (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C/W</td>
<td>100 / 120</td>
<td>215 / 295</td>
</tr>
</tbody>
</table>

**Notes**

- IPV to be used for all dual C/W and motorway works >80km/h.
- The IPV may only be substituted with a Warning Vehicle in limited circumstances, for one-off isolated works of <5 mins only, where risk assessment has deemed it appropriate.

**Legend**

- Minimum Stopping Sight Distance (SSD)
- Works Area

**TS 13**

**Minor Maintenance (Continuously Moving)**

Pole Caps / Patching / Sign Washing / Hedge Maintenance

< 5 mins

**Dual C/W & Motorway - 2/3 Lane (>80km/h)**

Mainline Verge - With H/S

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY - NOT TO SCALE
1. Traffic volumes are restricted to 60 veh / 3 mins (1200 veh/h). Three minute traffic counts should be carried out at regular intervals to ensure flows are not exceeded.

2. Layout not suitable for use during peak hours. Queues to be monitored and queue lengths kept to a minimum.

3. Warning Vehicles must pull in where possible, to ensure minimal encroachment on the running lane.

4. Care must be taken not to damage verges or cause debris when maneuvering vehicles.

VMS to give drivers advance notification of continuously moving operation ahead.
May not be required for One-Off Isolated Works.
VMS must not be towed as part of a moving operation.

Traffic Signs

Min.SSD Minimum Stopping Sight Distance (SSD)

Legend

Mini.SSD Minimum Stopping Sight Distance (SSD)

Works Area

VMS to give drivers advance notification of continuously moving operation ahead.
May not be required for One-Off Isolated Works.
VMS must not be towed as part of a moving operation.

Table:

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Speed Limit (km/h)</th>
<th>Stopping Sight Distance SSD (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C/W</td>
<td>100 / 120</td>
<td>215 / 295</td>
</tr>
</tbody>
</table>

Notes:
1. Traffic volumes are restricted to 60 veh / 3 mins (1200 veh/h). Three minute traffic counts should be carried out at regular intervals to ensure flows are not exceeded.
2. Layout not suitable for use during peak hours. Queues to be monitored and queue lengths kept to a minimum.
3. Warning Vehicles must pull in where possible, to ensure minimal encroachment on the running lane.
4. Care must be taken not to damage verges or cause debris when maneuvering vehicles.

Minor Maintenance (Continuously Moving)
Pole Caps / Patching / Sign Washing / Hedge Maintenance

< 5 mins Dual C/W & Motorway - 2/3 Lane (>80km/h)
Mainline Verge - No H/S (& Mainline Lane 1)

TS 14

January 2014

Risk Assessment and Further Development of Layouts Will Be Required To Suit Site Conditions
Example Only - Not To Scale
VMS to give drivers advance notification of continuously moving operation ahead. May not be required for One-Off Isolated Works. VMS must not be towed as part of a moving operation.

1. Care must be taken not to damage verges or cause debris when maneuvering vehicles.

### SSD Parameters

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Speed Limit (km/h)</th>
<th>Stopping Sight Distance SSD (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C/W</td>
<td>100 / 120</td>
<td>215 / 295</td>
</tr>
</tbody>
</table>

### Notes

- IPV to be used for all dual C/W and motorway works >80km/h.
- The IPV may only be substituted with a Warning Vehicle in limited circumstances, for one-off isolated works of <5 mins only, where risk assessment has deemed it appropriate.

### Minor Maintenance (Continuously Moving)

Pole Caps / Patching / Sign Washing / Hedge Maintenance

### Dual C/W & Motorway

- 2/3 Lane (>80km/h)
- Full GSJ - Exit Nose

### Risk Assessment and Further Development of Layouts

Legend:
- Minimum Stopping Sight Distance (SSD)
- Works Area

- Example Only - Not to Scale

January 2014
Minor Maintenance (Continuously Moving)
Pole Caps / Patching / Sign Washing / Hedge Maintenance

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Speed Limit (km/h)</th>
<th>Stopping Sight Distance (SSD) (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DUAL C/W</td>
<td>100 / 120</td>
<td>215 / 295</td>
</tr>
</tbody>
</table>

Notes:
1. Traffic volumes are restricted to 25 veh / 3 mins (500 veh/h). Three minute traffic counts should be carried out at regular intervals to ensure flows are not exceeded.
2. Layout may not be suitable for use during peak hours. Queues to be monitored and queue lengths kept to a minimum.
3. Vehicles to have minimal encroachment on the running lanes where possible.
4. Care must be taken not to damage verges or cause debris when maneuvering vehicles.

VMS to give drivers advance notification of continuously moving operation ahead. May not be required for One-Off Isolated Works. VMS must not be towed as part of a moving operation.

SIGN MAINTENANCE AHEAD

Flagman / Spotter required for offside works location, where works not protected by works vehicle.

Alternative IPV location. Only if space permits and minimum SSD requirements are achieved.

IPV to be used for all dual c/w and motorway works >80km/h. The IPV may only be substituted with a Warning Vehicle in limited circumstances, for one-off isolated works of <5 mins only, where risk assessment has deemed it appropriate.

Legend:
- Flagman / Spotter (as required)
- Minimum Stopping Sight Distance (SSD)
- Works Area

Dual C/W & Motorway - 2/3 Lane (>80km/h)
Full GSJ - Off-Ramp - LHS
TS 16

January 2014
RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY - NOT TO SCALE

Minor Maintenance (Continuously Moving)
Pole Caps / Patching / Sign Washing / Hedge Maintenance

< 5 mins

Dual C/W & Motorway - 2/3 Lane (>80km/h)
Full GSJ - Off-Ramp - RHS

TS 17
Notes
1. Works relating to signs at the tops of interchanges and associated approaches are treated as standard single carriageway and/or roundabout works. Refer to TS01 to TS09 as appropriate.
2. It may be appropriate to use TS09 for such scenarios, where the vehicles find a suitable pull-in location, and operatives travel on foot.
3. Vehicles to have minimal encroachment on the running lanes where possible.
4. Care must be taken not to damage verges or cause debris when maneuvering vehicles.

Legend
- Flagman / Spotter (as required)
- Minimum Stopping Sight Distance (SSD)
- Works Area

Table:

<table>
<thead>
<tr>
<th>Road Type</th>
<th>SSD Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>DUAL C/W</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Speed Limit</td>
</tr>
<tr>
<td></td>
<td>Stopping Sight Distance SSD (m)</td>
</tr>
<tr>
<td>50 / 60 / 80</td>
<td>90 / 120</td>
</tr>
<tr>
<td>100 / 120</td>
<td>215 / 295</td>
</tr>
</tbody>
</table>

Notes

1. IPV to be located here when works are being carried out as part of a mainline operation.
2. Flagman / Spotter required for offside works location, where works not protected by works vehicle.
Dual C/W & Motorway

Minor Maintenance (Continuously Moving)
Pole Caps / Patching / Sign Washing / Hedge Maintenance

< 5 mins

Dual C/W & Motorway - 2/3 Lane (>80km/h)
Full GSJ - End of On-Ramp - LHS

TS 19

Legend
- Flagman / Spotter (as required)
- Minimum Stopping Sight Distance (SSD)
- Works Area

<table>
<thead>
<tr>
<th>SSD Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road Type</td>
</tr>
<tr>
<td>DUAL C/W</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Notes
1. Vehicles to have minimal encroachment on the running lanes where possible.
2. Care must be taken not to damage verges or cause debris when maneuvering vehicles.
Minor Maintenance (Continuously Moving)
Pole Caps / Patching / Sign Washing / Hedge Maintenance

Dual C/W & Motorway - 2/3 Lane (>80km/h)
TS 20

Full GSJ - End of On-Ramp - RHS

< 5 mins

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY - NOT TO SCALE
Notes
1. Vehicles to have minimal encroachment on the running lanes where possible.
2. Care must be taken not to damage verges or cause debris when maneuvering vehicles.

VMS to give drivers advance notification of continuously moving operation ahead.
May not be required for One-Off Isolated Works.
VMS must not be towed as part of a moving operation.

If adequate space for the IPV is not available in the junction nosing, it should be located at the start of diverge taper.
In such instances a flagman / spotter is required, subject to risk assessment, in the verge opposite the traffic island (behind safety barrier or other safe location) to warn approaching traffic of the works.

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY - NOT TO SCALE

Legend
- Minimum Stopping Sight Distance (SSD)
- Works Area

SSD Parameters

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Speed Limit (km/h)</th>
<th>Stopping Sight Distance (SSD) (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DUAL C/W</td>
<td>100 / 120</td>
<td>215 / 295</td>
</tr>
</tbody>
</table>

TS 21

Dual C/W & Motorway - 2/3 Lane (>80km/h)
Compact GSJ - Exit Nose & Traffic Island

Minor Maintenance (Continuously Moving)
Pole Caps / Patching / Sign Washing / Hedge Maintenance

< 5 mins
**Temporary Traffic Management Guidance Handbook**

**Traffic Signs**

**Notes**

1. Layout not suitable for use during peak hours. Queues to be monitored and queue lengths kept to a minimum.
2. Traffic volumes are restricted to 20 veh / 3 mins (400 veh/h). Three minute traffic counts should be carried out at regular intervals to ensure flows are not exceeded. Otherwise refer to TS68.
3. Vehicles to have minimal encroachment on the running lanes where possible.
4. Care must be taken not to damage verges or cause debris when maneuvering vehicles.

**VMS to give drivers advance notification of continuously moving operation ahead.**

May not be required for One-Off Isolated Works.

VMS must not be towed as part of a moving operation.

**If minimum passing width is not available to maintain 2-way traffic, due to the presence of centre line bollards, refer to TS68.**

In such instances, a section of bollards may need to be temporarily removed to facilitate traffic passing the works.

**If centre line bollards are not present, cones are to be used to delineate a temporary centre line, to maintain 2-way traffic.**

In such instances 6m min. width is required adjacent to the works. Otherwise refer to TS68.

**SIGN MAINTENANCE AHEAD**

**Min.SSD**

Flagman / Spotter required in the verge (behind safety barrier or other safe location), to warn approaching traffic of works ahead and possible queue on the slip road.

**3m min.**

**10km Max.**

If adequate space for the IPV is not available in the junction nosing, it should be located at the start of diverge taper. The use of the flagman / spotter is particularly important in such instances to warn approaching traffic.

**IPV to be used for all dual c/w and motorway works >80km/h.**

The IPV may only be substituted with a Warning Vehicle in limited circumstances, for one-off isolated works of <5 mins only, where risk assessment has deemed it appropriate.

**If centre line bollards are not present, cones are to be used to delineate a temporary centre line, to maintain 2-way traffic.**

In such instances 6m min. width is required adjacent to the works. Otherwise refer to TS68.

**Legend**

- Flagman / Spotter (as required)
- Forward Clear Visibility 30 / 50 / 60 km/h
- Minimum Stopping Sight Distance (SSD)
- Works Area

**Road Type**

<table>
<thead>
<tr>
<th>SSD Parameters</th>
<th>Road Type</th>
<th>Speed Limit (km/h)</th>
<th>Stopping Sight Distance (SSD) (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DUAL C/W</td>
<td>100 / 120</td>
<td>215 / 295</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50 / 60</td>
<td>90 / 120 / 160</td>
</tr>
</tbody>
</table>

**RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS**

**EXAMPLE ONLY - NOT TO SCALE**

**Minor Maintenance (Continuously Moving)**

Pole Caps / Patching / Sign Washing / Hedge Maintenance

< 5 mins

**Dual C/W & Motorway - 2/3 Lane (>80km/h)**

Compact GSJ - Slip Road

TS 22

January 2014
1. Signs may be vehicle mounted. Vehicles should park clear of the running lane in the verge or entrance ways.

2. For works at a side road junction refer to TS25.

3. For works directly opposite a junction (e.g. header sign), this layout may not be suitable if the hard shoulder is reduced to accommodate right turning movements. In such instances TS43 or TS44 should be used, with traffic control required on the side road also.

4. Where a cross roads is encountered, works are to be carried out on each side of the carriageway as separate operations.

5. Where required, pedestrians and cyclists are to be guided safely through or around the works.

---

**Notes**

1. Signs may be vehicle mounted. Vehicles should park clear of the running lane in the verge or entrance ways.

2. For works at a side road junction refer to TS25.

3. For works directly opposite a junction (e.g. header sign), this layout may not be suitable if the hard shoulder is reduced to accommodate right turning movements. In such instances TS43 or TS44 should be used, with traffic control required on the side road also.

4. Where a cross roads is encountered, works are to be carried out on each side of the carriageway as separate operations.

5. Where required, pedestrians and cyclists are to be guided safely through or around the works.
1. Signs may be vehicle mounted. Vehicles should park clear of the running lane in the verge or entrance ways.

2. Where traffic volumes are > 20 veh / 3 mins (400 veh/h), refer to TS43. Three minute traffic counts should be carried out at regular intervals to ensure flows are not exceeded.

3. For works directly opposite a junction (e.g. header sign), this layout may not be suitable if it impacts the space required to maintain traffic freeflow around right turning vehicles. In such instances TS43 or TS44 should be used, with traffic control required on the side road also.

4. For works at a side road junction refer to TS26.

5. Where a cross roads is encountered, works are to be carried out on each side of the carriageway as separate operations.

6. Where sight lines are poor refer to TS44.

7. Where required, pedestrians and cyclists are to be guided safely through or around the works.

8. Vehicles to have minimal encroachment on the running lanes where possible.

9. Care must be taken not to damage verges or cause debris when maneuvering vehicles.

**Notes**

- Speeds are referred to in Table 7.1 of TS43.
- SSD for works placed on the carriageway is 50+mm for 30km/h, 120+mm for 70km/h.
- SSD for works placed on the verge is 750mm for 30km/h, 1000mm for 70km/h.

**Table 7.1 - SSD Parameters**

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Speed Limit (km/h)</th>
<th>Stopping Sight Distance (SSD) (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single C/W</td>
<td>30 / 50 / 60</td>
<td>75 / 90 / 120</td>
</tr>
<tr>
<td></td>
<td>80 / 100 / 120</td>
<td>160 / 215</td>
</tr>
</tbody>
</table>

**Legend**

- Cones (0.75m min)
- Forward Clear Visibility
  - 60 km/h
  - 70 km/h
- Visibility to Sign
  - 80 km/h / 100 km/h
- 30 km/h / 60 km/h
- Minimum Stopping Sight Distance (SSD)
- Traffic Sign
- Works Area

**Example Only - Not to Scale**

January 2014
**Standard Maintenance / Minor Works**

**< 30 mins**

**Single C/W**

**Junction Verge - With H/S**

**TS 25**

- **Sign Maintenance** / **Minor Works**
  - Single Post Installations / Sign Face Replacement / Minor Removals / Hedge Clearance / Landscaping
  - Single C/W < 30 mins
  - TS 25

---

**Guidance Handbook**

- **RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS**

---

**Temporary Traffic Management**

- **Traffic Signs**

---

**EXAMPLE ONLY - NOT TO SCALE**

---

**January 2014**

---

**Legend**

- Cones (0.75m min)
- Visibility to Sign
- Minimum Stopping Sight Distance (SSD)
- Traffic Sign
- Works Area

---

**SSD Parameters**

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Speed Limit (km/h)</th>
<th>Stopping Sight Distance SSD (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mains Carriageway (MCW)</td>
<td>30</td>
<td>90 / 120</td>
</tr>
<tr>
<td>50 / 60</td>
<td>160 / 215</td>
<td></td>
</tr>
<tr>
<td>80 / 100</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes**

1. Signs may be vehicle mounted. Vehicles should park clear of the running lane in the verge or entrance ways.
2. Where a cross roads is encountered, works are to be carried out on each side of the carriageway as separate operations.
3. Where required, pedestrians and cyclists are to be guided safely through or around the works.
4. When the side road cross section and traffic volumes are similar to the mainline, TM as per the mainline is to be implemented on the side road.
**Temporary Traffic Management Guidance Handbook**

**Traffic Signs**

**RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS**

**Example Only - Not to Scale**

**Standard Maintenance / Minor Works**

- Single Post Installations / Sign Face Replacement / Minor Removals / Hedge Clearance / Landscaping

**< 30 mins**

**Single C/W**

Junction Verge - No H/S - Good Sight Lines

**TS 26**

---

**Notes**

1. Signs may be vehicle mounted. Vehicles should park clear of the running lane in the verge or entrance ways.
2. Where traffic volumes are > 20 veh / 3 mins (400 veh/h), refer to TS46. Three minute traffic counts should be carried out at regular intervals to ensure flows are not exceeded.
3. Where sight lines are poor refer to TS46.
4. Where a cross roads is encountered, works are to be carried out on each side of the carriageway as separate operations.
5. Where required, pedestrians and cyclists are to be guided safely through or around the works.
6. When the side road cross section and traffic volumes are similar to the mainline, TM as per the mainline is to be implemented on the side road.
7. Vehicles to have minimal encroachment on the running lanes where possible.
8. Care must be taken not to damage verges or cause debris when maneuvering vehicles.

---

**SSD Parameters**

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Speed Limit (km/h)</th>
<th>Stopping Sight Distance (SSD) (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single C/W</td>
<td>30 / 60 / 90 / 120</td>
<td>120 / 160 / 215</td>
</tr>
</tbody>
</table>

---

**Legend**

- Cones (0.75m min)
- Forward Clear Visibility 80 / 100 km/h
- 30 / 50 / 60 km/h
- Visibility to Sign 80 / 100 km/h
- 30 / 50 / 60 km/h
- Min SSD Minimum Stopping Sight Distance (SSD)
- Traffic Sign
- Works Area

---

**January 2019**
Notes
1. This layout illustrates typical Works Areas at a roundabout. These locations may be changed to suit site conditions, and are not necessarily implemented simultaneously.
2. Layout not suitable for use during peak hours.
3. The positions of the Works Vehicle(s) are indicative only, illustrating typical locations. Where space does not allow for vehicle parking, e.g. on islands and verges adjacent to the works, alternative vehicle locations may be required depending on site conditions. Positions in front of islands and where visibility will be restricted are not considered suitable parking locations.
4. Vehicles to have minimal encroachment on the running lanes where possible. Vehicles must park in suitable hard-standing areas where possible. Care must be taken not to damage landscaped areas when maneuvering.
5. Works to be sequenced to minimise road crossings. Operatives to be clearly visible to traffic when crossing the carriageway.
6. Where all works and vehicles are completely off the carriageway, cones as shown may be reduced and the works area coned off locally.
7. If works do not affect the circulatory carriageway advanced warning signs are to be placed on the relevant approaches only.
8. Where required, pedestrians and cyclists are to be guided safely through or around the works.

Legend
- Cones (0.75m min)
- Visibility to Sign
- 80 / 100 km/h
- 30 / 50 / 60 km/h
- Traffic Sign
- Works Sign
- Works Area

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

Examples Only - Not to Scale

Standard Maintenance / Minor Works
- Single Post Installations
- Sign Face Replacement
- Minor Removals
- Hedge Clearance
- Landscaping

< 30 mins

Single C/W
Roundabout - All Works Areas

TS 27

January 2014
VMS to give drivers advance notification of the operation ahead. Location to be optimised for the operation. Can be located up to a max. of 2km in advance of the works. May not be required for One-Off Isolated Works. VMS must not be towed as part of a moving operation.

Repeater signs to be located after each significant junction and/or at 500m centres.

Cones, vehicle and signs to move in tandem with the works.

Advance signs to cover works within 2km max.

Legend

- Cones (0.75m min)
- Visibility to Sign
  - 80 km/h
  - 50 / 60 km/h
- Min.SSD
- Minimum Stopping Sight Distance (SSD)
- Traffic Sign
- Works Area

Notes
1. Signs may be vehicle mounted. Vehicles should park clear of the running lane in the verge or entrance ways.
2. Layout not suitable for use during peak hours, particularly where a Bus Lane is present. Queues to be monitored and queue lengths kept to a minimum. Operatives to be particularly observant of queuing through junctions.
3. Where numerous side accesses or high traffic volumes are encountered, a flagman/spotter may be required to guide/warn approaching traffic, subject to risk assessment.
4. IPV may be used in advance of the works vehicle for 80 km/h only, or where a risk assessment deems it necessary and suitable for the road type.
5. Where required, pedestrians and cyclists are to be guided safely through or around the works.
6. Vehicles to have minimal encroachment on the running lanes where possible (where Bus Lane is present).
7. Further development of this layout may be required to suit site conditions, where risk assessment deems it necessary for the road type.
**Temporary Traffic Management Guidance Handbook**

**Traffic Signs**

VMS to give drivers advance notification of the operation ahead. Can be located up to a max. of 1km in advance of the works. May not be required for One-Off Isolated Works. VMS must not be towed as part of a moving operation.

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

- **TS 29**

**Standards Maintenance / Minor Works**

- Single Post Installations / Sign Face Replacement / Minor Removals / Hedge Clearance / Landscaping

**< 30 mins**

**Urban Dual C/W - 2/3 Lane (<80km/h)**

Mainline Verge - No H/S

Notes:

1. Signs may be vehicle mounted. Vehicles should park clear of the running lane in the verge or entrance ways.
2. Layout not suitable for use during peak hours. Queues to be monitored and queue lengths kept to a minimum. Operatives to be particularly observant of queuing through junctions.
3. Traffic volumes are restricted to 60 veh / 3 mins (1200 veh/h). Three minute traffic counts should be carried out at regular intervals to ensure flows are not exceeded.
4. Where numerous side accesses or high traffic volumes are encountered, a flagman / spotter may be required to guide / warn approaching traffic, subject to risk assessment.
5. IPV may be used in advance of the works vehicle for 80 km/h only, or where a risk assessment deems it necessary and suitable for the road type.
6. Where required, pedestrians and cyclists are to be guided safely through or around the works.
7. Vehicles to have minimal encroachment on the running lanes where possible.
8. Operatives to be clearly visible to, and be facing oncoming traffic when crossing the carriageway.
9. Further development of this layout may be required to suit site conditions, where risk assessment deems it necessary for the road type.

**Legend**

- Cones (0.75m min)
- Visibility to Sign
  - 80 km/h
  - 50 / 60 km/h
- Minimum Stopping Sight Distance (SSD)
- Traffic Sign
- Works Area

**January 2014**

**SSD Parameters**

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Speed Limit (km/h)</th>
<th>Stopping Sight Distance SSD (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DUAL C/W</td>
<td>50 / 60</td>
<td>90 / 120</td>
</tr>
</tbody>
</table>
**Traffic Signs**

VMS to give drivers advance notification of the operation ahead. Location to be optimised for the operation. Can be located up to a max. of 1km in advance of the works. May not be required for One-Off Isolated Works. VMS must not be towed as part of a moving operation.

---

**Notes**

1. Signs may be vehicle mounted. Vehicles should park clear of the running lane in the verge or entrance ways.
2. Layout not suitable for use during peak hours. Queues to be monitored and queue lengths kept to a minimum. Operatives to be particularly observant of queuing through junctions.
3. Traffic volumes are restricted to 60 veh / 3 mins (1200 veh/h). Three minute traffic counts should be carried out at regular intervals to ensure flows are not exceeded.
4. Where numerous side accesses or high traffic volumes are encountered, a flagman / spotter may be required to guide / warn approaching traffic, subject to risk assessment.
5. IPV may be used in advance of the works vehicle for 80 km/h only, or where a risk assessment deems it necessary for the road type.
6. Where required, pedestrians and cyclists are to be guided safely through or around the works.
7. Vehicles to have minimal encroachment on the running lanes where possible.
8. Operatives to be clearly visible to, and be facing oncoming traffic when crossing the carriageway.
9. Further development of this layout may be required to suit site conditions, where risk assessment deems it necessary for the road type.

---

**SSD Parameters**

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Speed Limit (km/h)</th>
<th>Stopping Sight Distance SSD (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dual C/W</td>
<td>50 / 60</td>
<td>90 / 120</td>
</tr>
<tr>
<td></td>
<td>80</td>
<td>160</td>
</tr>
</tbody>
</table>
VMS to give drivers advance notification of the operation ahead. Location to be optimised for the operation. Can be located up to a max. of 3km in advance of the works, to cover standard interchange signage. May not be required for One-Off Isolated Works. VMS must not be towed as part of a moving operation.

### SSD Parameters

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Speed Limit (km/h)</th>
<th>Stopping Sight Distance (SSD) (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dual C/W &amp; Motorway - 2/3 Lane (&gt;80km/h)</td>
<td>100 / 120</td>
<td>215 / 295</td>
</tr>
<tr>
<td>Mainline Verge - With H/S</td>
<td>50m</td>
<td>5m to 10m</td>
</tr>
</tbody>
</table>
VMS to give drivers advance notification of the operation ahead.
Location to be optimised for the operation.
Can be located up to a max. of 3km in advance of the works, to cover standard interchange signage.
May not be required for One-Off Isolated Works.
VMS must not be towed as part of a moving operation.

SSD Parameters

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Speed Limit (km/h)</th>
<th>Stopping Sight Distance SSD (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dual C/W</td>
<td>100 / 120</td>
<td>215 / 295</td>
</tr>
</tbody>
</table>

Legend

- Cones (1.0m min)
- Min SSD
- Minimum Stopping Sight Distance (SSD)
- Traffic Sign
- Works Area

Standard Maintenance / Minor Works

Single Post Installations / Sign Face Replacement / Minor Removals / Hedge Clearance / Landscaping

< 30 mins

Dual C/W & Motorway - 2/3 Lane (>80km/h)
Mainline Verge - With H/S - Diverge Taper

TS 32
VMS to give drivers advance notification of the operation ahead. Location to be optimised for the operation. Can be located up to a max. of 2km in advance of the works. May not be required for One-Off Isolated Works. VMS must not be towed as part of a moving operation.

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY - NOT TO SCALE

<table>
<thead>
<tr>
<th>SSD Parameters</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road Type</td>
<td></td>
</tr>
<tr>
<td>Speed Limit</td>
<td>Stopping Sight Distance SSD (m)</td>
</tr>
<tr>
<td>C/W</td>
<td>100 / 120</td>
</tr>
</tbody>
</table>

1. Traffic volumes are restricted to 60 veh / 3 mins (1200 veh/h). Three minute traffic counts should be carried out at regular intervals to ensure flows are not exceeded.
2. Layout not suitable for use during peak hours. Queues to be monitored and queue lengths kept to a minimum.
3. Warning vehicles must pull in where possible, to ensure minimal encroachment on the running lane.
4. Where there is limited pull-in space for the advance warning vehicles, a flagman / spotter may be required in advance, to warn approaching traffic, subject to risk assessment. In such instances, he must always be positioned at a safe location behind a safety barrier.
5. Care must be taken not to damage verges or cause debris when maneuvering vehicles.

Standard Maintenance / Minor Works
- Single Post Installations / Sign Face Replacement / Minor Removals / Hedge Clearance / Landscaping

Dual C/W & Motorway - 2/3 Lane (>80km/h)
- Mainline Verge - No H/S (& Mainline Lane 1)

< 30 mins

TS 33
VMS to give drivers advance notification of the operation ahead. Location to be optimised for the operation. Can be located up to a max. of 3km in advance of the works, to cover standard interchange signage. May not be required for One-Off Isolated Works. VMS must not be towed as part of a moving operation.

### SSD Parameters

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Speed Limit (km/h)</th>
<th>Stopping Sight Distance SSD (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dual C/W &amp; Motorway - 2/3 Lane (&gt;80km/h)</td>
<td>100 / 120</td>
<td>215 / 295</td>
</tr>
</tbody>
</table>

### Legend

- Cones (1.0m min)
- 160m Visibility to Sign
- 100 / 120 km/h
- Min. SSD
- Minimum Stopping Sight Distance (SSD)
- Traffic Sign
- Works Area

### Dual C/W & Motorway - 2/3 Lane (>80km/h)

- Full GSJ - Exit Nose

### Standard Maintenance / Minor Works

- Single Post Installations / Sign Face Replacement / Minor Removals / Hedge Clearance / Landscaping

### RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY - NOT TO SCALE
VMS to give drivers advance notification of the operation ahead. Location to be optimised for the operation. Can be located up to a max. of 3km in advance of the works, to cover standard interchange signage. May not be required for One-Off Isolated Works. VMS must not be towed as part of a moving operation.

### SSD Parameters

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Speed Limit (km/h)</th>
<th>Stopping Sight Distance (SSD) (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C/W - 100 / 120</td>
<td>215 / 295</td>
<td></td>
</tr>
</tbody>
</table>

#### Notes

1. Traffic volumes are restricted to 25 veh / 3 mins (500 veh/h). Three minute traffic counts should be carried out at regular intervals to ensure flows are not exceeded.
2. Layout may not be suitable for use during peak hours. Queues to be monitored and queue lengths kept to a minimum.
3. Vehicles to have minimal encroachment on the running lanes where possible.
VMS to give drivers advance notification of the operation ahead. Location to be optimised for the operation. Can be located up to a max. of 3km in advance of the works, to cover standard interchange signage. May not be required for One-Off Isolated Works. VMS must not be towed as part of a moving operation.

**Notes**
1. Traffic volumes are restricted to 25 veh / 3 mins (500 veh/h). Three minute traffic counts should be carried out at regular intervals to ensure flows are not exceeded.
2. Layout may not be suitable for use during peak hours. Queues to be monitored and queue lengths kept to a minimum.
3. Vehicles to have minimal encroachment on the running lanes where possible.

**SSD Parameters**

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Speed Limit (km/h)</th>
<th>Stopping Sight Distance (SSD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DUAL</td>
<td>100 / 120</td>
<td>215 / 295</td>
</tr>
</tbody>
</table>

**Legend**
- Cones (1.0m min)
- Visibility to Sign 160m / 100 / 120 km/h
- Min.SSD
- Minimum Stopping Sight Distance (SSD)
- Traffic Sign
- Works Area

**TS 36**

January 2014
Temporary Traffic Management Guidance Handbook

Traffic Signs

Notes
1. Works relating to signs at the tops of interchanges and associated approaches are treated as standard single carriageway and/or roundabout works. Refer to TS23 to TS27 as appropriate.
2. Vehicles to have minimal encroachment on the running lanes where possible.
3. Care must be taken not to damage verges or cause debris when maneuvering vehicles.

Legend
- Cones (1.0m min)
- Visibility to Sign
- Minimum Stopping Sight Distance (SSD)
- Traffic Sign
- Works Area

EXAMPLE ONLY - NOT TO SCALE

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

SIGN MAINTENANCE

Legend
- Cones (1.0m min)
- Visibility to Sign
- Minimum Stopping Sight Distance (SSD)
- Traffic Sign
- Works Area

SSD Parameters

Road Type | Speed Limit (km/h) | Stopping Sight Distance (SSD m)
----------|-------------------|----------------------
DUAL C/W   | 100 / 120         | 215 / 295             
           | 90 / 120 / 160    | 90 / 120 / 160        
           | 50 / 60 / 80      | 90 / 120 / 160        

January 2014

- 2/3 Lane (>80km/h)
- Full GSJ - Start of On-Ramp

TS 37
Standard Maintenance / Minor Works
Single Post Installations / Sign Face Replacement / Minor Removals / Hedge Clearance / Landscaping

< 30 mins.
Dual C/W & Motorway - 2/3 Lane (>80km/h)
Full GSJ - End of On-Ramp - LHS

TS 38

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS
EXAMPLE ONLY - NOT TO SCALE

Traffic Signs

Legend

Cones (1.0m min)
Visibility to Sign
Minimum Stopping Sight Distance (SSD)
Traffic Sign
Works Area

Notes
1. Vehicles to have minimal encroachment on the running lanes where possible.
2. Care must be taken not to damage verges or cause debris when maneuvering vehicles.

Road Type

<table>
<thead>
<tr>
<th>Speed Limit (km/h)</th>
<th>SSD Parameters</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 / 120</td>
<td>215 / 295</td>
<td></td>
</tr>
<tr>
<td>50 / 60 / 80</td>
<td>90 / 120 / 160</td>
<td></td>
</tr>
</tbody>
</table>

January 2014
RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY - NOT TO SCALE

Standard Maintenance / Minor Works
Single Post Installations / Sign Face Replacement / Minor Removals / Hedge Clearance / Landscaping

< 30 mins Dual C/W & Motorway - 2/3 Lane (>80km/h)
Full GSJ - End of On-Ramp - RHS

January 2014

Legend
- Cones (1.0m min)
50m Visibility to Sign
Min SSD Minimum Stopping Sight Distance (SSD)
Traffic Sign
Works Area

Legend
- Cones (1.0m min)
50m Visibility to Sign
Min SSD Minimum Stopping Sight Distance (SSD)
Traffic Sign
Works Area

SSD Parameters

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Speed Limit (km/h)</th>
<th>Stopping Sight Distance SSD (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DUAL C/W</td>
<td>100 / 120</td>
<td>215 / 295</td>
</tr>
<tr>
<td>50 / 60 / 80</td>
<td>90 / 120 / 160</td>
<td></td>
</tr>
</tbody>
</table>

Notes
1. Vehicles to have minimal encroachment on the running lanes where possible.
2. Care must be taken not to damage verges or cause debris when maneuvering vehicles.
Standard Maintenance / Minor Works

Single Post Installations / Sign Face Replacement / Minor Removals / Hedge Clearance / Landscaping

< 30 mins

Dual C/W & Motorway - 2/3 Lane (>80km/h)
Compact GSJ - Exit Nose & Traffic Island

TS 40

Temporary Traffic Management Guidance Handbook

Traffic Signs

VMS to give drivers advance notification of the operation ahead. Location to be optimised for the operation. Can be located up to a max. of 3km in advance of the works, to cover standard interchange signage. May not be required for One-Off Isolated Works. VMS must not be towed as part of a moving operation.

Legend

Traffic Sign
Cones (1.0m min)
Works Area
Min.SSD Minimum Stopping Sight Distance (SSD)
Visibility to Sign
Traffic Sign

Notes

1. Coning around the works area may be optimised if permanent bollards are in place, subject to on site risk assessment.

If adequate space for the IPV is not available in the junction nosing, it should be located at the start of diverge taper. In such instances a flagman / spotter is required, subject to risk assessment, in the verge opposite the traffic island (behind safety barrier or other safe location) to warn approaching traffic of the works.

VMS must be located at the start of the diverge taper in order to provide advance notification of the operation.

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY - NOT TO SCALE
### Standard Maintenance / Minor Works
- Single Post Installations / Sign Face Replacement / Minor Removals / Hedge Clearance / Landscaping

### Dual C/W & Motorway - 2/3 Lane (>80km/h)
- Compact GSJ - Slip Road

### RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

#### SSD Parameters

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Speed Limit (km/h)</th>
<th>Stopping Sight Distance SSD (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DUAL C/W</td>
<td>100 / 120</td>
<td>215 / 295</td>
</tr>
<tr>
<td></td>
<td>50 / 60 / 80</td>
<td>90 / 120 / 160</td>
</tr>
</tbody>
</table>

#### Notes
1. Layout not suitable for use during peak hours. Queues to be monitored and queue lengths kept to a minimum.
2. Traffic volumes are restricted to 20 veh / 3 mins (400 veh/h). Three minute traffic counts should be carried out at regular intervals to ensure flows are not exceeded.
3. Vehicles to have minimal encroachment on the running lanes where possible.
4. Care must be taken not to damage verges or cause debris when maneuvering vehicles.

#### Flagman / Spotter
- Required in the verge (behind safety barrier or other safe location), to warn approaching traffic of possible queues and works on the slip road.

#### IPV
- VMS to give drivers advance notification of the operation ahead. Location to be optimised for the operation. Can be located up to a max. of 3km in advance of the works, to cover standard interchange signage. May not be required for One-Off Isolated Works. VMS must not be towed as part of a moving operation.

#### Legend
- Cones (1.0m min)
- Flagman / Spotter
- Forward Clear Visibility
- Visibility to Sign
- Minimum Stopping Sight Distance (SSD)
- Traffic Sign
- Works Area
Traffic Sign Cones (0.75m min) Works Area 120m (50m) 80 / 100 km/h 30 / 50 / 60 km/h

Legend
- Cones (0.75m min)
- Visibility to Sign
- Traffic Sign
- Other Dimensions
- Minimum Stopping Sight Distance (SSD)
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

Notes
1. For roads < 80 km/h, distance plate should be 50m.
2. For works at a side road junction refer to TS46.
3. For works directly opposite a junction (e.g. header sign), this layout may not be suitable if the hard shoulder is reduced to accommodate right turning movements. In such instances TS43 or TS44 should be used, with traffic control required on the side road also.
4. Where a cross roads is encountered, works are to be carried out on each side of the carriageway as separate operations.
5. The lateral safety zone may be reduced to prevent encroachment on the running lane, in which case warning tape must be used along the line of cones. If encroachment on the running lane is unavoidable, refer to TS43.
6. Existing pedestrian and/or cycle facilities are to be maintained (as per illustration), otherwise they are to be guided safely through or around the works.

Standard Works
Sign Installations / Sign Removals / Tree Clearance

> 30 mins

Single C/W
Mainline Verge - With H/S

TS 42

January 2014
**Temporary Traffic Management Guidance Handbook**

**Traffic Signs**

**Standard Works**

*Sign Installations / Sign Removals / Tree Clearance*

- **Single C/W**
- **Mainline Verge - No H/S - Good Sight Lines**

**TS 43**

- **Risk Assessment and Further Development of Layouts Will Be Required to Suit Site Conditions**

**January 2014**

**Notes**

1. For roads < 80 km/h, distance plates should be 100m and 75m.
2. For works at a side road junction refer to TS46.
3. If this layout is used for works directly opposite a junction (header sign), full traffic control (Stop/Go) is required on the side road.
4. Where a cross roads is encountered, works are to be carried out on each side of the carriageway as separate operations.
5. Where the works and TM can be contained completely off the running carriageway in the verge, consideration can be given to using a layout similar to TS42, but only where risk assessment deems it suitable and appropriate based on site conditions.
6. Existing pedestrian and/or cycle facilities are to be maintained (as per illustration), otherwise they are to be guided safely through or around the works.

**SSD Parameters**

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Speed Limit (km/h)</th>
<th>Stopping Sight Distance (SSD) (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SINGLE C/W</td>
<td>30</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>50 / 60</td>
<td>90 / 120</td>
</tr>
<tr>
<td></td>
<td>80 / 100</td>
<td>160 / 215</td>
</tr>
</tbody>
</table>
Temporary Traffic Management Guidance Handbook

Traffic Signs

Lateral Safety Zone

Pedestrian and Cycle Requirements

Reliable communication system recommended

Standard Works

Sign Installations / Sign Removals / Tree Clearance

> 30 mins

Single C/W

Mainline Verge - No H/S Single Bend

TS 44

Notes
1. For roads < 80 km/h, distance plates should be 100m and 75m.
2. This plan can also be used for multiple bends, provided minimum SSD is achievable to the Stop/Go operatives in both directions. Further risk assessment and additional TM development may be required to suit site conditions.
3. For works at a side road junction refer to TS46.
4. If this layout is used for works directly opposite a junction (header sign), full traffic control (Stop/Go) is required on the side road.
5. Where a cross roads is encountered, works are to be carried out on each side of the carriageway as separate operations.
6. Where the works and TM can be contained completely off the running carriageway in the verge, consideration can be given to the use TS42, but only where risk assessment deems it suitable and appropriate based on site conditions.
7. Existing pedestrian and/or cycle facilities to be maintained (as per illustration), otherwise they are to be guided safely through or around the works.

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

TEMPORARY TRAFFIC MANAGEMENT

Traffic Signs

Guidance Handbook

EXAMPLE ONLY - NOT TO SCALE

January 2014

Mainline Verge - No H/S Single Bend

Traffic Signs

Legend

Côrch

END

200m

800m

600m

STOP HERE

GO

20m

STOP

MIN.SSD

25m

120m

12m

3.5m min

0.5m

Min. SSD

60m

25m

20m

600mm

750mm

30m

60m

120m

30 / 50 / 60 km/h

80 / 100 km/h

 works

VEHICLE (S)

5m to 10m

3m

3.5m min (0.5m)

Additional spotter / flagman required on side road where junction is within works.

Notes
1. For roads < 80 km/h, distance plates should be 100m and 75m.
2. This plan can also be used for multiple bends, provided minimum SSD is achievable to the Stop/Go operatives in both directions. Further risk assessment and additional TM development may be required to suit site conditions.
3. For works at a side road junction refer to TS46.
4. If this layout is used for works directly opposite a junction (header sign), full traffic control (Stop/Go) is required on the side road.
5. Where a cross roads is encountered, works are to be carried out on each side of the carriageway as separate operations.
6. Where the works and TM can be contained completely off the running carriageway in the verge, consideration can be given to the use TS42, but only where risk assessment deems it suitable and appropriate based on site conditions.
7. Existing pedestrian and/or cycle facilities to be maintained (as per illustration), otherwise they are to be guided safely through or around the works.

Standard Works

Sign Installations / Sign Removals / Tree Clearance

> 30 mins

Single C/W

Mainline Verge - No H/S Single Bend

TS 44

Notes
1. For roads < 80 km/h, distance plates should be 100m and 75m.
2. This plan can also be used for multiple bends, provided minimum SSD is achievable to the Stop/Go operatives in both directions. Further risk assessment and additional TM development may be required to suit site conditions.
3. For works at a side road junction refer to TS46.
4. If this layout is used for works directly opposite a junction (header sign), full traffic control (Stop/Go) is required on the side road.
5. Where a cross roads is encountered, works are to be carried out on each side of the carriageway as separate operations.
6. Where the works and TM can be contained completely off the running carriageway in the verge, consideration can be given to the use TS42, but only where risk assessment deems it suitable and appropriate based on site conditions.
7. Existing pedestrian and/or cycle facilities to be maintained (as per illustration), otherwise they are to be guided safely through or around the works.

Standard Works

Sign Installations / Sign Removals / Tree Clearance

> 30 mins

Single C/W

Mainline Verge - No H/S Single Bend

TS 44
Temporary Traffic Management Guidance Handbook

Traffic Signs

Standard Works
Sign Installations / Sign Removals / Tree Clearance

> 30 mins Single C/W
Junction Verge - With H/S

TS 45

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY - NOT TO SCALE

Side road signs may be 600mm for narrow roads

Traffic Signs

Guidance Handbook

EXAMPLE ONLY - NOT TO SCALE

January 2014

Junction Verge - With H/S

SIGN MAINTENANCE

STOP

25m

Signs may be sized to 600mm for narrow roads or can be omitted for traffic volumes < 1 veh / 3 mins (20 veh/h)

Road Type

SSD Parameters

Speed Limit (km/h) Stopping Sight Distance SSD (m)

30 75
50 / 60 90 / 120
80 / 100 160 / 215

Notes

1. For roads < 80 km/h, distance plate should be 100m.
2. The lateral safety zone may be reduced to prevent encroachment on the running lane, in which case warning tape must be used along the line of cones. If encroachment on the running lane is unavoidable, refer to TS46.
3. Where a cross roads is encountered, works are to be carried out on each side of the carriageway as separate operations.
4. When the side road cross section and traffic volumes are similar to the mainline, TM as per the mainline to be implemented on the side road.
5. Existing pedestrian and/or cycle facilities are to be maintained (as per illustration), otherwise they are to be guided safely through or around the works.

Legend

Cone (76mm)
Flagman / Spotter (as required)
Visibility to Sign
80 / 150 km/h
30 / 50 / 60 km/h
Minimum Stopping Sight Distance (SSD)
Other Dimensions
80 / 150 km/h
30 / 50 / 60 km/h
Traffic Sign
Longitudinal Safety Zone
Lateral Safety Zone
Works Area

Visibility to Sign
750mm

(600mm)

Minimum Stopping Sight Distance (SSD)

Pedestrian and Cycle Requirements

1.2m

(0.5m)

1.2m

(0.5m)

1.8m to 1.2m (min.)

3m shared facility (min.)

25m

25m

Flagman / Spotter required to guide side road traffic.

Notes
1. For roads < 80 km/h, distance plate should be 100m.
2. The lateral safety zone may be reduced to prevent encroachment on the running lane, in which case warning tape must be used along the line of cones. If encroachment on the running lane is unavoidable, refer to TS46.
3. Where a cross roads is encountered, works are to be carried out on each side of the carriageway as separate operations.
4. When the side road cross section and traffic volumes are similar to the mainline, TM as per the mainline to be implemented on the side road.
5. Existing pedestrian and/or cycle facilities are to be maintained (as per illustration), otherwise they are to be guided safely through or around the works.

Legend

Cone (76mm)
Flagman / Spotter (as required)
Visibility to Sign
80 / 150 km/h
30 / 50 / 60 km/h
Minimum Stopping Sight Distance (SSD)
Other Dimensions
80 / 150 km/h
30 / 50 / 60 km/h
Traffic Sign
Longitudinal Safety Zone
Lateral Safety Zone
Works Area

Visibility to Sign
750mm

(600mm)

Minimum Stopping Sight Distance (SSD)

Pedestrian and Cycle Requirements

1.2m

(0.5m)

1.2m

(0.5m)

1.8m to 1.2m (min.)

3m shared facility (min.)

25m

25m

Flagman / Spotter required to guide side road traffic.

Notes
1. For roads < 80 km/h, distance plate should be 100m.
2. The lateral safety zone may be reduced to prevent encroachment on the running lane, in which case warning tape must be used along the line of cones. If encroachment on the running lane is unavoidable, refer to TS46.
3. Where a cross roads is encountered, works are to be carried out on each side of the carriageway as separate operations.
4. When the side road cross section and traffic volumes are similar to the mainline, TM as per the mainline to be implemented on the side road.
5. Existing pedestrian and/or cycle facilities are to be maintained (as per illustration), otherwise they are to be guided safely through or around the works.
RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY - NOT TO SCALE

Reliable communication system recommended

Standard Works
Sign Installations / Sign Removals / Tree Clearance

> 30 mins Single C/W
Junction Verge - No H/S

TS 46
**Temporary Traffic Management Guidance Handbook**

**Traffic Signs**

**Pedestrian and Cycle Requirements**

1. **1.8m to 1.2m (min.)**
2. **1.5m to 1.26 (min.)**
3. **3m shared facility (min.)**

**Legend**

- **Cones (0.75m min.)**
- **Visibility to Sign**
- **Approach Arm**
- **Speed Limit**
- **Traffic Sign**
- **Longitudinal Safety Zone**
- **Lateral Safety Zone**
- **Works Area**

**Notes**

1. Layout may not be suitable for use during peak hours. Queues to be monitored and queue lengths to be kept to a minimum.
2. The position of the Works Vehicle(s) are indicative only, illustrating typical locations. Where space does not allow for vehicle parking, e.g. on islands and verges adjacent to the works, alternative vehicle locations may be required depending on site conditions. Positions in front of islands and where visibility will be restricted are not considered suitable parking locations. Where vehicles do compromise sight lines, a flagman / spotter may be required to guide approaching traffic.
3. Vehicles to have minimal encroachment on the running lanes where possible. Vehicles must park in suitable hard-standing areas where possible. Care must be taken not to damage landscaped areas when maneuvering.
4. Works to be sequenced to minimise road crossings. Operatives to be clearly visible to traffic when crossing the carriageway.
5. Where all works and vehicles are completely off the carriageway, cones as shown may be reduced and the works area coned off locally. The number of cones required will vary depending on site conditions.
6. Taper lengths may be altered to suit site conditions.
7. TM on each arm can vary in line with the approach arm speed limit.
8. If works do not affect the circulatory carriageway, advanced warning signs are to be placed on the relevant approaches only.
9. Existing pedestrian and/or cycle facilities are to be maintained (as per illustration), otherwise they are to be guided safely through or around the works.

**Standard Works**

*Sign Installations / Sign Removals / Tree Clearance*

**Single C/W**

*Roundabout - Isolated Works Area - Entry Verge*

**TS 47**

*January 2014*

**Covers the Isolated Works Area Shown**
Temporary Traffic Management Guidance Handbook

Traffic Signs

Pedestrian and Cycle Requirements

1. Layout may not be suitable for use during peak hours. Queues to be monitored and queue lengths to be kept to a minimum.
2. The position of the Works Vehicle(s) are indicative only, illustrating typical locations. Where space does not allow for vehicle parking, e.g. on islands and verges adjacent to the works, alternative vehicle locations may be required depending on site conditions. Positions in front of islands and where visibility will be restricted are not considered suitable parking locations. Where vehicles do compromise sight lines, a flagman / spotter may be required to guide approaching traffic.
3. Vehicles to have minimal encroachment on the running lanes where possible. Care must be taken not to damage landscaped areas when maneuvering.
4. Works to be sequenced to minimise road crossings. Operatives to be clearly visible to traffic when crossing the carriageway.
5. Where all works and vehicles are completely off the carriageway, cones as shown may be reduced and the works area coned off locally. The number of cones required will vary depending on site conditions. Taper lengths may be altered to suit site conditions.
6. TM on each arm can vary in line with the approach arm speed limit.
7. If works do not affect the circulatory carriageway, advanced warning signs are to be placed on the relevant approaches only.
8. Existing pedestrian and/or cycle facilities are to be maintained (as per illustration), otherwise they are to be guided safely through or around the works.

Legend

- Cones (0.75m min)
- Approach Arm Speed Limit
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

Notes

1. Layout may not be suitable for use during peak hours. Queues to be monitored and queue lengths to be kept to a minimum.
2. The position of the Works Vehicle(s) are indicative only, illustrating typical locations. Where space does not allow for vehicle parking, e.g. on islands and verges adjacent to the works, alternative vehicle locations may be required depending on site conditions. Positions in front of islands and where visibility will be restricted are not considered suitable parking locations. Where vehicles do compromise sight lines, a flagman / spotter may be required to guide approaching traffic.
3. Vehicles to have minimal encroachment on the running lanes where possible. Care must be taken not to damage landscaped areas when maneuvering.
4. Works to be sequenced to minimise road crossings. Operatives to be clearly visible to traffic when crossing the carriageway.
5. Where all works and vehicles are completely off the carriageway, cones as shown may be reduced and the works area coned off locally. The number of cones required will vary depending on site conditions. Taper lengths may be altered to suit site conditions.
6. TM on each arm can vary in line with the approach arm speed limit.
7. If works do not affect the circulatory carriageway, advanced warning signs are to be placed on the relevant approaches only.
8. Existing pedestrian and/or cycle facilities are to be maintained (as per illustration), otherwise they are to be guided safely through or around the works.

Standard Works
Sign Installations / Sign Removals / Tree Clearance

获得更多信息，请访问：[NRA](http://www.nra.ie)

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY - NOT TO SCALE
**Temporary Traffic Management Guidance Handbook**

**Traffic Signs**

**Pedestrian and Cycle Requirements**

- 1.8m to 1.25m (min.)
- Longitudinal Safety Zone: 3m shared facility (min.)
- Lateral Safety Zone: 1.8m to 1.2m (min.)
- 2.5m to 2.3m (min.)
- 1.2m (min.)

**Notes**

1. Layout may not be suitable for use during peak hours. Queues to be monitored and queue lengths to be kept to a minimum.
2. The position of the Works Vehicle(s) are indicative only, illustrating typical locations. Where space does not allow for vehicle parking, e.g. on islands and verges adjacent to the works, alternative vehicle locations may be required depending on site conditions. Positions in front of islands and where visibility will be restricted are not considered suitable parking locations. Where vehicles do compromise sight lines, a flagman / spotter may be required to guide approaching traffic.
3. Vehicles to have minimal encroachment on the running lanes where possible. Vehicles must park in suitable hard-standing areas where possible. Care must be taken not to damage landscaped areas when maneuvers.
4. Works to be sequenced to minimise road crossings. Operatives to be clearly visible to traffic when crossing the carriageway.
5. Where all works and vehicles are completely off the carriageway, cones as shown may be reduced and the works area coned off locally. The number of cones required will vary depending on site conditions.
6. Taper lengths may be altered to suit site conditions.
7. TM on each arm can vary in line with the approach arm speed limit.
8. If works do not affect the circulatory carriageway, advanced warning signs are to be placed on the relevant approaches only.
9. Existing pedestrian and/or cycle facilities are to be maintained (as per illustration), otherwise they are to be guided safely through or around the works.

**Standard Works**

- Sign Installations / Sign Removals / Tree Clearance

**Single C/W**

- Roundabout - Isolated Works Area - Central Island

> 30 mins

**TS 49**

**Legend**

- Cones (0.75m min)
- Visibility to Sign
- Approach Arm Speed Limit
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

**Tyler Site Requirements**

**Guidance Handbook**

**January 2014**

**COVERS THE ISOLATED WORKS AREA SHOWN**

**RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS**

**EXAMPLE ONLY - NOT TO SCALE**
Temporary Traffic Management Guidance Handbook

**Traffic Signs**

**Pedestrian and Cycle Requirements**
- 1.8m to 1.2m (min.)
- 3m shared facility (min.)

**Legend**
- Cones (0.75m min.)
- Visibility to Sign
- Approach Arm
- Speed Limit
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

**Notes**
1. Layout may not be suitable for use during peak hours. Queues to be monitored and queue lengths to be kept to a minimum.
2. The position of the Works Vehicle(s) are indicative only, illustrating typical locations. Where space does not allow for vehicle parking, e.g. on islands and verges adjacent to the works, alternative vehicle locations may be required depending on site conditions. Positions in front of islands and where visibility will be restricted are not considered suitable parking locations. Where vehicles do compromise sight lines, a flagman / spotter may be required to guide approaching traffic.
3. Vehicles to have minimal encroachment on the running lanes where possible. Vehicles must park in suitable hard-standing areas where possible. Care must be taken not to damage landscaped areas when maneuvering.
4. Works to be sequenced to minimise road crossings. Operatives to be clearly visible to traffic when crossing the carriageway.
5. Where all works and vehicles are completely off the carriageway, cones as shown may be reduced and the works area coned off locally. The number of cones required will vary depending on site conditions.
6. Taper lengths may be altered to suit site conditions.
7. TM on each arm can vary in line with the approach arm speed limit.
8. If works do not affect the circulatory carriageway, advanced warning signs are to be placed on the relevant approaches only.
9. Existing pedestrian and/or cycle facilities are to be maintained (as per illustration), otherwise they are to be guided safely through or around the works.

**TS 50**
**Single C/W**
Roundabout - Multiple Works Areas - Entry Verge

**Standard Works**
Sign Installations / Sign Removals / Tree Clearance

> 30 mins
RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

Notes
1. Layout may not be suitable for use during peak hours. Queues to be monitored and queue lengths to be kept to a minimum.
2. The position of the Works Vehicle(s) are indicative only, illustrating typical locations. Where space does not allow for vehicle parking, e.g. on islands and verges adjacent to the works, alternative vehicle locations may be required depending on site conditions. Positions in front of islands and where visibility will be restricted are not considered suitable parking locations.
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4. Works to be sequenced to minimise road crossings. Operatives to be clearly visible to traffic when crossing the carriageway.
5. Where all works and vehicles are completely off the carriageway, cones as shown may be reduced and the works area coned off locally. The number of cones required will vary depending on site conditions.
6. Taper lengths may be altered to suit site conditions.
7. TM on each arm can vary in line with the approach arm speed limit.
8. If works do not affect the circulatory carriageway, advanced warning signs are to be placed on the relevant approaches only.
9. Existing pedestrian and/or cycle facilities are to be maintained (as per illustration), otherwise they are to be guided safely through or around the works.

Covering the Multiple Works Areas Shown

Legend
- Cones (0.75m min)
- 120m
- Visibility to Sign
- Approach Arm
- Speed Limit
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

January 2014
Notes

1. Layout may not be suitable for use during peak hours. Queues to be monitored and queue lengths to be kept to a minimum.
2. The position of the Works Vehicle(s) are indicative only, illustrating typical locations. Where space does not allow for vehicle parking, e.g. on islands and verges adjacent to the works, alternative vehicle locations may be required depending on site conditions. Positions in front of islands and where visibility will be restricted are not considered suitable parking locations. Where vehicles do compromise sight lines, a flagman / spotter may be required to guide approaching traffic.
3. Vehicles to have minimal encroachment on the running lanes where possible. Vehicles must park in suitable hard-standing areas where possible. Care must be taken not to damage landscaped areas when maneuvering.
4. Works to be sequenced to minimise road crossings. Operatives to be clearly visible to traffic when crossing the carriageway.
5. Where all works and vehicles are completely off the carriageway, cones as shown may be reduced and the works area coned off locally. The number of cones required will vary depending on site conditions.
6. Taper lengths may be altered to suit site conditions.
7. TM on each arm can vary in line with the approach arm speed limit.
8. If works do not affect the circulatory carriageway, advanced warning signs are to be placed on the relevant approaches only.
9. Existing pedestrian and/or cycle facilities are to be maintained (as per illustration), otherwise they are to be guided safely through or around the works.
RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

**Standard Works**

<table>
<thead>
<tr>
<th>Sign Installations / Sign Removals / Tree Clearance</th>
<th>30 mins</th>
<th>Urban Dual C/W - 2/3 Lane (&lt;80km/h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TS 53 Mainline Verge - With H/S (or Bus Lane)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Traffic Signs**

- **SIGN MAINTENANCE AHEAD**
  - Distance may be modified to suit site conditions.
  - Signs required in median (same as opposite verge) for Works > 3hrs

**Pedestrian and Cycle Requirements**

- 3 cone taper for Works < 3hrs, where risk assessment deems it appropriate.
- 1 in 20 (1 in 10) taper length
- 900mm (750mm)

**Notes**

1. If a Bus Lane is present, additional advance warning signage may be required, in line with TSM Ch.8 Table 8.3.4, subject to on site risk assessment.
2. Layout may not be suitable for use during peak hours, particularly where a Bus Lane is present. Queues to be monitored and queue lengths kept to a minimum. Operatives to be particularly observant of queuing through junctions.
3. The lateral safety zone may be reduced to prevent encroachment on the running lane, in which case warning tape must be used along the line of cones. If this is unavoidable refer to TS54.
4. Cone taper lengths may need to be modified to suit site conditions, where risk assessment deems it appropriate.
5. Where numerous side accesses or high traffic volumes are encountered, a flagman / spotter may be required to guide / warn approaching traffic, subject to risk assessment.
6. IPV may be used in advance of the works vehicle for 80 km/h only, or where a risk assessment deems it necessary and suitable for the road type.
7. Existing pedestrian and/or cycle facilities are to be maintained (as per illustration), otherwise they are to be guided safely through or around the works.
8. Vehicles to have minimal encroachment on the running lanes where possible (where Bus Lane is present).

**Legend**

- Cones (0.75m min)
- Minimum Stopping Sight Distance (SSD)
- Visual to Sight
- 80 / 100 km/h
- Traffic Sign
- 50 / 60 km/h
- Other Dimensions
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

**VMS to be located 1km in advance of the Works. Location may need to be optimised to suit site conditions. VMS must not be towed as part of the Works.**

**Signs**

- Traffic Sign
- Lateral Safety Zone
- Traffic Sign
- Lateral Safety Zone
- Works Area

**TS 53**
VMS to be located 1km in advance of the Works. Location may need to be optimised to suit site conditions. VMS must not be towed as part of the Works.

Notes:
1. Layout not suitable for use during peak hours. Queues to be monitored and queue lengths kept to a minimum. Operatives to be particularly observant of queuing through junctions.
2. Traffic volumes are restricted to 60 veh / 3 mins (1200 veh/h). Three minute traffic counts should be carried out at regular intervals to ensure flows are not exceeded.
3. Where works area is in close proximity after a junction, the chicane must be in advance of the junction.
4. Cone taper lengths may need to be modified to suit site conditions, where risk assessment deems it appropriate.
5. Where numerous side accesses or high traffic volumes are encountered, a flagman / spotter may be required to guide / warn approaching traffic, subject to risk assessment.
6. IPV may be used in advance of the works vehicle for 80 km/h only, or where a risk assessment deems it necessary and suitable for the road type.
7. Existing pedestrian and/or cycle facilities are to be maintained (as per illustration), otherwise they are to be guided safely through or around the works.
8. Operatives to be clearly visible to, and be facing oncoming traffic when crossing the carriageway.

<table>
<thead>
<tr>
<th>SSD Parameters</th>
<th>Road Type</th>
<th>Speed Limit (km/h)</th>
<th>Stopping Sight Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SSD (m)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>80</td>
<td>160</td>
<td></td>
</tr>
</tbody>
</table>

Legend:
- Cones (0.75m min)
- Visibility to Sign
  80 / 100 km/h
  30 / 50 / 60 km/h
- Traffic Sign
- Minimum Stopping Sight Distance (SSD)
- Other Dimensions
  80 km/h
  50 / 60 km/h
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

January 2014

Standard Works
Sign Installations / Sign Removals / Tree Clearance

> 30 mins

Urban Dual C/W - 2/3 Lane (≤80km/h)
Mainline Verge - No H/S

TS 54
VMS to be located 1km in advance of the Works. Location may need to be optimised to suit site conditions. VMS must not be towed as part of the Works.

**Notes:**
1. Layout not suitable for use during peak hours. Queues to be monitored and queue lengths kept to a minimum. Operatives to be particularly observant of queuing through junctions.
2. Traffic volumes are restricted to 60 veh / 3 mins (1200 veh/h). Three minute traffic counts should be carried out at regular intervals to ensure flows are not exceeded.
3. Where works area is in close proximity after a junction, mainline traffic must be diverted into Lane 1 in advance of the junction.
4. Cone taper lengths may need to be modified to suit site conditions, where risk assessment deems it appropriate.
5. Where numerous side accesses or high traffic volumes are encountered, a flagman / spotter may be required to guide / warn approaching traffic, subject to risk assessment.
6. IPV may be used in advance of the works vehicle for 80 km/h only, or where a risk assessment deems it necessary and suitable for the road type.
7. Existing pedestrian and/or cycle facilities are to be maintained (as per illustration), otherwise they are to be guided safely through or around the works.
8. Operatives to be clearly visible to, and be facing oncoming traffic when crossing the carriageway.

**SSD Parameters**

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Speed Limit (km/h)</th>
<th>Stopping Sight Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 / 60</td>
<td>90 / 120</td>
<td>80 / 160</td>
</tr>
</tbody>
</table>

**Legend:**
- Cones (0.75m min) Visibility to Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Traffic Sign
- Works Area

**月份2014年**
VMS to be located 1km in advance of the first advance warning sign. Location may need to be optimised to suit site conditions. VMS must not be towed as part of the Works.

Distance may be modified to suit site conditions.

3 cone taper for Works < 3hrs, where risk assessment deems it appropriate.

Notes
1. The lateral safety zone may be reduced to prevent encroachment on the running lane, in which case warning tape must be used along the line of cones. If this is unavoidable refer to TS58.

Standard Works
Sign Installations / Sign Removals / Tree Clearance

TS 56
Mainline Verge - With H/S

> 30 mins Dual C/W & Motorway - 2/3 Lane (>80km/h)

Legend
- Cones (1.0m min)
- Visibility to Sign 100 / 120 km/h
- Minimum Stopping Sight Distance SSD (m)
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

January 2014

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY - NOT TO SCALE

<table>
<thead>
<tr>
<th>SSD Parameters</th>
<th>Dual C/W &amp; Motorway</th>
<th>2/3 Lane (&gt;80km/h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road Type</td>
<td>Speed Limit (km/h)</td>
<td>Stopping Sight SSD (m)</td>
</tr>
<tr>
<td>DUAL C/W</td>
<td>100 / 120</td>
<td>215 / 295</td>
</tr>
</tbody>
</table>
VMS to be located 1km in advance of the first advance warning sign. Location may need to be optimised to suit site conditions. VMS must not be towed as part of the Works.

**Legend**
- Cones (1.0m min)
- Visibility to Sign
- Minimum Stopping Distance (SSD)
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

**Notes**
1. The lateral safety zone may be reduced to prevent encroachment on the running lane, in which case warning tape must be used along the line of cones. If this is unavoidable refer to TS59.

**SSD Parameters**

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Speed Limit (km/h)</th>
<th>Stopping Sight Distance (SSD) m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dual C/W</td>
<td>100 / 120</td>
<td>215 / 295</td>
</tr>
</tbody>
</table>

**Table of SSD Parameters**

<table>
<thead>
<tr>
<th>Speed Limit</th>
<th>SSD (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 / 120</td>
<td>215 / 295</td>
</tr>
</tbody>
</table>

**Example Only - Not to Scale**

**Traffic Signs**

- **SIGN MAINTENANCE AHEAD**
- **End of Hard Shoulder**
- **IPV Works Vehicle**
- **Works Vehicle (S)**

**Road Type**

- **Dual C/W & Motorway - 2/3 Lane (>80km/h)** Mainline Verge - With H/S - Diverge Taper **TS 57**
- **Standard Works**
  - Sign Installations / Sign Removals / Tree Clearance

**Distance may be modified to suit site conditions.**

3 cone taper for Works < 3hrs, where risk assessment deems it appropriate.

**5m to 10m**

**END OF HARD GUALAINN CRUA**

January 2014
Temporary Traffic Management Guidance Handbook

Traffic Signs

VMS to be located 1km in advance of the first advance warning sign. Location may need to be optimised to suit site conditions. VMS must not be towed as part of the Works.

1. Traffic volumes are restricted to 60 veh / 3 mins per lane (1200 veh/h/lane). Three minute traffic counts should be carried out at regular intervals to ensure flows are not exceeded.
2. Operatives to be clearly visible to, and be facing oncoming traffic when crossing the carriageway.

Notes

Legend
- Cones (1.0m min)
- Visibility to Sign 100 / 120 km/h
- Min SSD
- Minimum Stopping Sight Distance (SSD)
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

Traffic Sign Maintenance

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY - NOT TO SCALE

<table>
<thead>
<tr>
<th>SSD Parameters</th>
<th>Road Type</th>
<th>Speed Limit (km/h)</th>
<th>Stopping Sight Distance SSD (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DUAL C/W</td>
<td>100 / 120</td>
<td>215 / 295</td>
<td></td>
</tr>
</tbody>
</table>

January 2014
**Standard Works**

Sign Installations / Sign Removals / Tree Clearance

**Dual C/W & Motorway - 2/3 Lane (>80km/h)**

Mainline Lane 1 - Diverge Taper

**TS 59**

---

**RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS**

**EXAMPLE ONLY - NOT TO SCALE**

**SSD Parameters**

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Speed Limit (km/h)</th>
<th>Stopping Sight Distance (SSD) (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DUAL C/W</td>
<td>100 / 120</td>
<td>215 / 295</td>
</tr>
</tbody>
</table>

**NOTES**

1. Traffic volumes are restricted to 60 veh / 3 mins per lane (1200 veh/h/lane). Three minute traffic counts should be carried out at regular intervals to ensure flows are not exceeded.
2. Operatives to be clearly visible to, and be facing oncoming traffic when crossing the carriageway.

---

**Legend**

- Cones (1.0m min)
- Visibility to Sign
- Minimum Stopping Sight Distance (SSD)
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

**VMS**

VMS to be located 1km in advance of the first advance warning sign. Location may need to be optimised to suit site conditions. VMS must not be towed as part of the Works.

**Legend**

- Cones (1.0m min)
- Visibility to Sign
- Minimum Stopping Sight Distance (SSD)
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area
**Traffic Signs**

VMS to be located 1km in advance of the first advance warning sign. Location may need to be optimised to suit site conditions. VMS must not be towed as part of the Works.

**Legend**
- Cones (1.0m min)
- Visibility to Sign
- Minimum Stopping Sight Distance (SSD)
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

**Traffic Signage**

1. Traffic volumes are restricted to 60 veh / 3 mins per lane (1200 veh/h/lane). Three minute traffic counts should be carried out at regular intervals to ensure flows are not exceeded.
2. Operatives to be clearly visible to, and be facing oncoming traffic when crossing the carriageway.

**RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS**

**Example Only - Not to Scale**

**SSD Parameters**

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Speed Limit (km/h)</th>
<th>Stopping Sight Distance SSD (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motorway</td>
<td>100 / 120</td>
<td>215 / 295</td>
</tr>
</tbody>
</table>

**Standard Works**

Sign Installations / Sign Removals / Tree Clearance

> 30 mins

**Dual C/W & Motorway - 2/3 Lane (>80km/h)**

Mainline Lane 2/3 or Median

TS 60
VMS to be located 1km in advance of the first advance warning sign. Location may need to be optimised to suit site conditions. VMS must not be towed as part of the Works.

Legend

- Cones (1.0m min)
- Visibility to Sign (100 / 120 km/h)
- Minimum Stopping Sight Distance (SSD)
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area
- Plea

Notes

1. The lateral safety zone may be reduced to prevent encroachment on the running lane, in which case warning tape must be used along the line of cones. If this is unavoidable refer to TS58.

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY - NOT TO SCALE

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Speed Limit (km/h)</th>
<th>Stopping Sight Distance SSD (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DUAL C/W</td>
<td>100 / 120</td>
<td>215 / 295</td>
</tr>
</tbody>
</table>

January 2014

Standard Works
Sign Installations / Sign Removals / Tree Clearance

> 30 mins

Dual C/W & Motorway - 2/3 Lane (>80km/h)
Full GSJ - Exit Nose

TS 61
Standard Works
Sign Installations / Sign Removals / Tree Clearance

Dual C/W & Motorway - 2/3 Lane (>80km/h)
Full GSJ - Off-Ramp - LHS

TS 62

Legend
- Cones (1.0m min)
- Visibility to Sign 100 / 120 km/h
- Minimum Stopping Sight Distance (SSD)
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

Notes
1. Traffic volumes are restricted to 25 veh / 3 mins (500 veh/h). Three minute traffic counts should be carried out at regular intervals to ensure flows are not exceeded.
2. Layout may not be suitable for use during peak hours. Queues to be monitored and queue lengths kept to a minimum.
3. Vehicles to have minimal encroachment on the running lanes where possible.
4. Care must be taken not to damage verges or cause debris when manoeuvring vehicles.

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY - NOT TO SCALE

Legend
- Cones (1.0m min)
- Visibility to Sign 100 / 120 km/h
- Minimum Stopping Sight Distance (SSD)
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

Notes
1. Traffic volumes are restricted to 25 veh / 3 mins (500 veh/h). Three minute traffic counts should be carried out at regular intervals to ensure flows are not exceeded.
2. Layout may not be suitable for use during peak hours. Queues to be monitored and queue lengths kept to a minimum.
3. Vehicles to have minimal encroachment on the running lanes where possible.
4. Care must be taken not to damage verges or cause debris when manoeuvring vehicles.

VMS to be located 1km in advance of the first advance warning sign. Location may need to be optimised to suit site conditions. VMS must not be towed as part of the Works.

VMS to be located 1km in advance of the first advance warning sign. Location may need to be optimised to suit site conditions. VMS must not be towed as part of the Works.

Legend
- Cones (1.0m min)
- Visibility to Sign 100 / 120 km/h
- Minimum Stopping Sight Distance (SSD)
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

Notes
1. Traffic volumes are restricted to 25 veh / 3 mins (500 veh/h). Three minute traffic counts should be carried out at regular intervals to ensure flows are not exceeded.
2. Layout may not be suitable for use during peak hours. Queues to be monitored and queue lengths kept to a minimum.
3. Vehicles to have minimal encroachment on the running lanes where possible.
4. Care must be taken not to damage verges or cause debris when manoeuvring vehicles.

VMS to be located 1km in advance of the first advance warning sign. Location may need to be optimised to suit site conditions. VMS must not be towed as part of the Works.

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY - NOT TO SCALE

Legend
- Cones (1.0m min)
- Visibility to Sign 100 / 120 km/h
- Minimum Stopping Sight Distance (SSD)
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

Notes
1. Traffic volumes are restricted to 25 veh / 3 mins (500 veh/h). Three minute traffic counts should be carried out at regular intervals to ensure flows are not exceeded.
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VMS to be located 1km in advance of the first advance warning sign. Location may need to be optimised to suit site conditions. VMS must not be towed as part of the Works.

Temporary Traffic Management
Guidance Handbook

Traffic Signs

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY - NOT TO SCALE

Legend
- Cones (1.0m min)
- Visibility to Sign 100 / 120 km/h
- Minimum Stopping Sight Distance (SSD)
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

Notes
1. Traffic volumes are restricted to 25 veh / 3 mins (500 veh/h). Three minute traffic counts should be carried out at regular intervals to ensure flows are not exceeded.
2. Layout may not be suitable for use during peak hours. Queues to be monitored and queue lengths kept to a minimum.
3. Vehicles to have minimal encroachment on the running lanes where possible.
4. Care must be taken not to damage verges or cause debris when manoeuvring vehicles.

VMS to be located 1km in advance of the first advance warning sign. Location may need to be optimised to suit site conditions. VMS must not be towed as part of the Works.

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY - NOT TO SCALE

Legend
- Cones (1.0m min)
- Visibility to Sign 100 / 120 km/h
- Minimum Stopping Sight Distance (SSD)
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

Notes
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VMS to be located 1km in advance of the first advance warning sign. Location may need to be optimised to suit site conditions. VMS must not be towed as part of the Works.
**Traffic Signs**

**SSD Parameters**

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Speed Limit (km/h)</th>
<th>Stopping Sight Distance (SSD) (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dual C/W</td>
<td>100 / 120</td>
<td>215 / 295</td>
</tr>
</tbody>
</table>

**Notes**

1. Traffic volumes are restricted to 25 veh / 3 mins (500 veh/h). Three minute traffic counts should be carried out at regular intervals to ensure flows are not exceeded.
2. Layout may not be suitable for use during peak hours. Queues to be monitored and queue lengths kept to a minimum.
3. Vehicles to have minimal encroachment on the running lanes where possible.
4. Care must be taken not to damage verges or cause debris when maneuvering vehicles.

**Legend**

- Cones (1.0m min)
- Visibility to Sign (100 / 120 km/h)
- Minimum Stopping Sight Distance (SSD)
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

**RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS**

**EXAMPLE ONLY - NOT TO SCALE**

**January 2014**
1. Works relating to signs at the tops of interchanges and associated approaches are treated as standard single carriageway and/or roundabout works. Refer to TS42 to TS52 as appropriate.
2. Layout may not be suitable for use during peak hours. Queues to be monitored and queue lengths to be kept to a minimum.
3. Taper lengths may be altered to suit site conditions.
4. TM on each arm can vary in line with the approach arm speed limit.
5. Existing pedestrian and/or cycle facilities are to be maintained (as per illustration), otherwise they are to be guided safely through or around the works.
6. Vehicles to have minimal encroachment on the running lanes where possible.
7. Care must be taken not to damage verges or cause debris when maneuvering vehicles.

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Speed Limit (km/h)</th>
<th>Stopping Sight Distance (SSD) (m)</th>
</tr>
</thead>
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<tr>
<td>Dual C/W</td>
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</tr>
</tbody>
</table>

January 2014
**Standard Works**

Sign Installations / Sign Removals / Tree Clearance

**RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS**

**Example Only - Not to Scale**

**Legend**

- Cones (1.0m min)
- Visibility to Sign
- Minimum Stopping Sight Distance (SSD)
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

**SSD Parameters**

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Speed Limit (km/h)</th>
<th>Stopping Sight Distance SSD (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dual C/W</td>
<td>100 / 120</td>
<td>215 / 295</td>
</tr>
</tbody>
</table>

**Notes**

1. Layout may not be suitable for use during peak hours. Queues to be monitored and queue lengths kept to a minimum.
2. Vehicles to have minimal encroachment on the running lanes where possible.
3. Care must be taken not to damage verges or cause debris when maneuvering vehicles.

**January 2014**

**Dual C/W & Motorway - 2/3 Lane (>80km/h)**

Full GSJ - End of On-Ramp - LHS

**TS 65**
## Temporary Traffic Management Guidance Handbook

### Traffic Signs

**RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS**

**EXAMPLE ONLY - NOT TO SCALE**

**Legend**
- Cones (1.0m min)
- Visibility to Sign
- Minimum Stopping Sight Distance (SSD)
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

### SSD Parameters

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Speed Limit (km/h)</th>
<th>Stopping Sight Distance (SSD) (m)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dual C/W</td>
<td>100 / 120</td>
<td>215 / 295</td>
<td></td>
</tr>
</tbody>
</table>

**Notes**
1. Layout may not be suitable for use during peak hours. Queues to be monitored and queue lengths kept to a minimum.
2. Vehicles to have minimal encroachment on the running lanes where possible.
3. Care must be taken not to damage verges or cause debris when maneuvering vehicles.

### Standard Works

**Sign Installations / Sign Removals / Tree Clearance**

**> 30 mins**

**Dual C/W & Motorway - 2/3 Lane (>80km/h)**

**Full GSJ - End of On-Ramp - RHS**

**TS 66**
**Temporary Traffic Management Guidance Handbook**

**Traffic Signs**

**Legend**
- Cones (1.0m min)
- Visibility to Sign
- Min. SSD
- Traffic Sign
- Longitudinal Safety Zone
- Lateral Safety Zone
- Works Area

**Sign Maintenance Ahead**

**VMS to be located 1km in advance of the first advance warning sign. Location may need to be optimised to suit site conditions. VMS must not be towed as part of the Works.**

**Alternative Works Vehicle location**

**Distances may be modified to suit site conditions.**

**Notes**
1. The lateral safety zone may be reduced to prevent encroachment on the running lane, in which case warning tape must be used along the line of cones. If this is unavoidable refer to TS58.
2. Coning around the works area may be optimised if permanent bollards are in place, subject to on site risk assessment.

**Sides Parameters**

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Speed Limit (km/h)</th>
<th>Stopping Sight Distance (SSD) (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dual C/W &amp; Motorway - 2/3 Lane (&gt;80km/h)</td>
<td>100 / 120</td>
<td>215 / 295</td>
</tr>
</tbody>
</table>

**Standard Works**

Sign Installations / Sign Removals / Tree Clearance

> 30 mins

Dual C/W & Motorway - 2/3 Lane (>80km/h)
Compact GSJ - Exit Nose & Traffic Island

TS 67

January 2014
1. Layout not suitable for use during peak hours. Queues to be monitored and queue lengths kept to a minimum.
2. Traffic volumes are restricted to 20 veh / 3 mins (400 veh/h). Three minute traffic counts should be carried out at regular intervals to ensure flows are not exceeded.
3. A section of centre line bollards may need to be temporarily removed adjacent to the works to facilitate traffic passing as part of the Stop/Go operation
4. If 2-way traffic can be maintained without the need to remove bollards, the Stop/Go operation is not required.
5. Vehicles to have minimal encroachment on the running lanes where possible.

Notes:

- 2/3 Lane (>80km/h)
- January 2014
- Reliable communication system recommended
1. This layout is intended for use in highly urban situations (Main Street locations) where it is ineffective and inappropriate to install full TM, due to lack of space, potential to obstruct, and limited driver awareness. Its use is restricted to speed limits of 60km/h max.

2. The use of a highly conspicuous and well lit works vehicle is essential to provide warning to drivers and pedestrians alike.

3. In this scenario the works are to be completely contained within the available parking bays and the adjacent footpath. The works must be scheduled for a suitable time when parking is likely to be available.

4. It is only appropriate for use when traffic flow can be maintained adjacent to the works. Where this is not achievable, refer to TS42 to TS46 as appropriate.

5. Where it is not possible to maintain the minimum footpath width adjacent to the works, it may be necessary to provide (and sign) a suitable alternative pedestrian crossing point, subject to risk assessment. Alternatively, pedestrians may be safely guided safely through the work zone, if a risk assessment deems it appropriate.

6. Consultation in advance with the Local Authority is essential in relation to urban works, particularly regarding the temporary acquisition of parking bays, and restrictions on pedestrian and cyclist movements.

7. This layout is not suitable for use during peak hours.

**Notes**
Temporary Traffic Management Guidance Handbook

Traffic Signs

RISK ASSESSMENT AND FURTHER DEVELOPMENT OF LAYOUTS WILL BE REQUIRED TO SUIT SITE CONDITIONS

EXAMPLE ONLY - NOT TO SCALE

Notes
1. This layout is intended for use in highly urban situations (Main Street locations) where it is ineffective and inappropriate to install full TM, due to lack of space, potential to obstruct, and limited driver awareness. Its use is restricted to speed limits of 60km/h max.
2. The use of a highly conspicuous and well lit works vehicle is essential to provide warning to drivers and pedestrians alike.
3. It is only appropriate for use when traffic flow can be maintained adjacent to the works. Where this is not achievable, refer to TS42 to TS46 as appropriate.
4. Where it is not possible to maintain the minimum footpath width adjacent to the works, it may be necessary to provide (and sign) a suitable alternative pedestrian crossing point, subject to risk assessment. Alternatively, pedestrians may be safely guided safely through the work zone, if a risk assessment deems it appropriate.
5. Consultation in advance with the Local Authority is essential in relation to urban works, particularly regarding the temporary acquisition of parking bays, and restrictions on pedestrian and cyclist movements.
6. This layout is not suitable for use during peak hours.

Standard Works
Sign Installation / Sign Removal

< 3 hours

Single C/W - Urban
Main Street Locations - No Parking Available

TS 70

Advance signs to be located in build-outs where possible, to minimise footpath obstruction. These signs may be omitted if risk assessment deems them inappropriate.

A suitable alternative crossing point must be provided if 1.2m min. width can not be maintained.

Sign Maintenance
1.8m to 1.2m (min.)

Traffic Sign
Cones (0.75m min)

Pedestrian Requirements

Legend

Pedestrian Barrier
Traffic Sign
Longitudinal Safety Zone
Lateral Safety Zone
Works Area

January 2014
In the event of an emergency, call emergency services immediately (999 or 112) and know your exact location.

**In the case of a Serious Incident**
- Call Emergency Services.
- Stop work, making sure that all vehicles and site equipment are safe.
- Stop traffic if necessary – do not move injured person.
- Assist injured person with First Aid, if appropriate, at the instruction of emergency services phone operator.
- Call Site Supervisor by phone/radio - do not leave injured person alone.
- Arrange for easy access and egress for Emergency Services.
- Wait for Emergency Services, and provide access through the works where required.
- Assist Gardaí with Traffic Control if required.
- Maintain safe traffic flow around injured person if applicable.

**In the case of a Minor Accident**
- Assist injured person with First Aid.
- Stop work if necessary.
- Report injury to the Site Supervisor.
- Log accident.

**Reporting Accidents and Incidents**
- All site accidents and incidents must be immediately reported to the Site Supervisor who in turn will report to the appointed Safety Officer.
- All personnel must fully assist in any investigation resulting from an accident.
- Contact the Employer’s Representative, if any of the following take place:
  - A fatality
  - Any injury to the public requiring medical attention.
  - All notifiable accidents to employees.
  - Road traffic accidents due to or near the works where no injury has been sustained.
  - Any dangerous occurrence or incident.
- Contact the Health and Safety Authority (HSA) for all notifiable accidents.
8

**Temporary Traffic Management Plan - Risk Assessment Pro Forma**

**General Information**

<table>
<thead>
<tr>
<th>Client:</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PSVP:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSCS:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TTM Installer:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Location: (e.g. Route, Town/Village/Townland)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time of Day:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Works Description**

<table>
<thead>
<tr>
<th>Activity/Operation:</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Planned Duration: (at Particular Site Location)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Layout Used as Basis for TTM:</td>
<td>TS</td>
<td></td>
</tr>
<tr>
<td>Alternative TTM Layout: (If Applicable - Reference and Attach)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Site Conditions**

| Surrounding Land Use: (e.g. Urban, Rural, Sub-Urban, etc.) | | |
| Speed Limit: | | |
| Carriageway Type: (e.g. Single, Dual, Motorway, etc.) | | |
| Carriageway Width: | | |
| Hard Shoulder Width: (If Present) | | |
| Pedestrian Facilities: (List any Facilities in Place) | | |
| Other Conditions/Hazards: (e.g. Schools, Hospitals, Special Care Facilities, etc.) | | |

**Site Specific Risks**

| Is Minimum Stopping Sight Distance (SSD) Maintained to the Works? | | |
| Are Pedestrian Facilities Provided? (Describe Where Applicable) | | |
| Weather Conditions: (List as Appropriate) | | |
| Other Risk Items: (List as Appropriate) | | |

**Modifications to Layout (List/Sketch as Appropriate)**

**Signed:** __________________________

**Date:** __________________________

**Notes:** Risk Assessment of the TTM plan must be carried out by the TTM installer prior to the installation of the TTM.

This pro forma is available from the NRA in stand alone PDF format upon request.

---

January 2014
9 REFERENCES AND ACKNOWLEDGEMENTS

These guidelines are based on the standards and guidance published in the following documents:

- Chapter 8 of the Traffic Signs Manual 2010 (DTTAS).
- Guidance for the Control and Management of Traffic at Road Works (DTTAS, HSA, NRA, LGMSB).
- Road Traffic Act 2011.
- Safety, Health and Welfare at Work (General Application) Regulations 2007 to 2012.
- Road Safety Markings Association (RSMA) Best Practice Guide, UK.
- Guidelines for the use of Variable Message Signs on National Roads (NRA).
- EN 12966 Vertical Road Signs: Variable Message Signs

The National Roads Authority gratefully acknowledges the technical assistance of RPS Group in the preparation of this handbook. It would also like to acknowledge the significant collaboration with those who participated directly in the development of this document, including the following:

- The City & County Managers Association
- Local Authority Engineering and Health & Safety Personnel
- National Road Offices, with specialist industry knowledge
- Traffic Signing Industry, in association with the Construction Industry Federation (CIF)
- Traffic Management Service Providers
- The Health & Safety Authority (HSA)

The National Roads Authority also wishes to acknowledge the comments and contributions of the many persons and organisations who reviewed the draft versions of the handbook.