

# **Safety at Street Works and Road Works Guidance**



## **Key Question**

***Ask yourself this question:***

***“Will someone coming along the road or footway from any direction understand exactly what is happening and what is expected of them?”***

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## 1.0 Introduction

This document has been created to offer best practice guidance to Northern Ireland Local Authorities that perform work activities on or beside Public highways. Its guidance is based upon Chapter 8 – Traffic Safety Measures and Signs for Road Works and Temporary Situations and the Safety at Street Works and Road Works a Code of Practice.

A Working Group was commenced by LASAN with Representation from Castlereagh Borough Council, Dungannon & South Tyrone Borough Council, Newry & Mourne District Council, North Down Borough Council and the Health and Safety Executive Northern Ireland. The groups remit was to assess the work activities that Local Authorities perform on or beside Highways and offer best practice guidance. This document does not take the place of Chapter 8 or Safety at Street Works and Road Works ACOP but aims to guide local authorities of their duties and put in place best practice and tools to enable the safety of staff and members of the public.

Attached within the appendix are sample risk assessments, sample site plans and safe systems of work to assist Local Authorities in developing Safe operating Procedures.

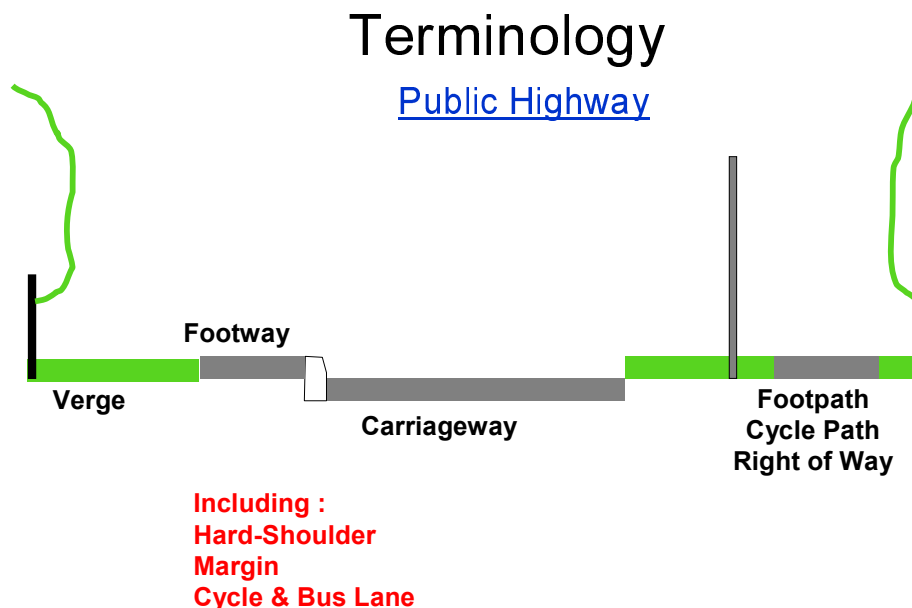
A PDF version of the Safety at Street Works and Road Works ACOP is also contained to be used as a practical aid for the development and ongoing management of site plans and Temporary Traffic Management.

### **Conditions to avoid**



## 2.0 Definitions

The terminology of Public Highway is shown below, the Public Highway encompasses the whole area as indicated below, commencing from the verge, footway, the main carriageway and any other footpaths and cycle paths.



**Road Works:** defined as any works or temporary restrictions which cause partial or total obstruction of any road or highway, whether on the verge, hard shoulder, footway, cycleway, bridleway or carriageway. Examples may include highway improvement schemes, excavations, structural or maintenance works of any kind, street works or any other work executed on or near the highway together with the necessary working space, safety zones, space required for the storage of any materials, the construction of any temporary structures and the operation of any constructional plant required for the execution of such work, including associated surveys and inspections.

**Verge:** \_\_\_\_\_ The verge is the area situated between the earth works slope or highway boundary and either the back of the hard shoulder or the edge of the carriageway.

**Hard Shoulder:** The hard shoulder is the area provided adjacent to the near side of the carriageway to offer a place for vehicles to stop in emergencies clear of main line traffic.

**Live Lane:** A traffic lane that does not form part of the works area or safety zone. Unless signing advises to the contrary, the hard shoulder should not be classified as a live lane.

**High Speed Dual Carriageway:** A dual carriageway road which is subject to a permanent speed limit of 50mph or more.

**Short, medium and long duration stops on the hard shoulder:** The following definitions include any work activity or any vehicle parked on or encroaching on the hard shoulder:

- Short duration; up to 15 minutes
- Medium duration; up to 90 minutes
- Long duration; over 90 minutes

**Stops on the verge:** The following definitions include any work activity or any vehicle parked on the verge

- Short duration; up to 15 minutes
- All others; over 15 minutes

**Works area:** The works area is the excavation, area that the work activity is being performed in.

**What is the working space:** The working space is the space around the works area where you will need to store tools, excavated material, equipment and plant, etc. It is also the space that you need to move around in to do the job.

You must leave enough working space to make sure that the movement and operation of the plant (e.g. swinging of jibs and excavator arms) is clear of passing traffic and is not encroaching into the safety zone, or adjacent footway or cycle track.

**What is the Safety Zone:** The safety zone is the zone provided to protect staff from traffic and to protect the traffic from staff activities.

***You must not enter the safety zone in the normal course of work. Materials and equipment must not be placed in the zone. You will need to enter the zone only to maintain cones and other road signs.***

The Safety Zone is made up of:

- **The length of the lead-in taper of cones (T)**

This will vary with the speed limit and the width of the works.

- **The longways clearance (L)**

This is the length between the end of the lead-in taper of cones (T) and the working space. It will vary with the speed limit.

- **The sideways clearance (S)**

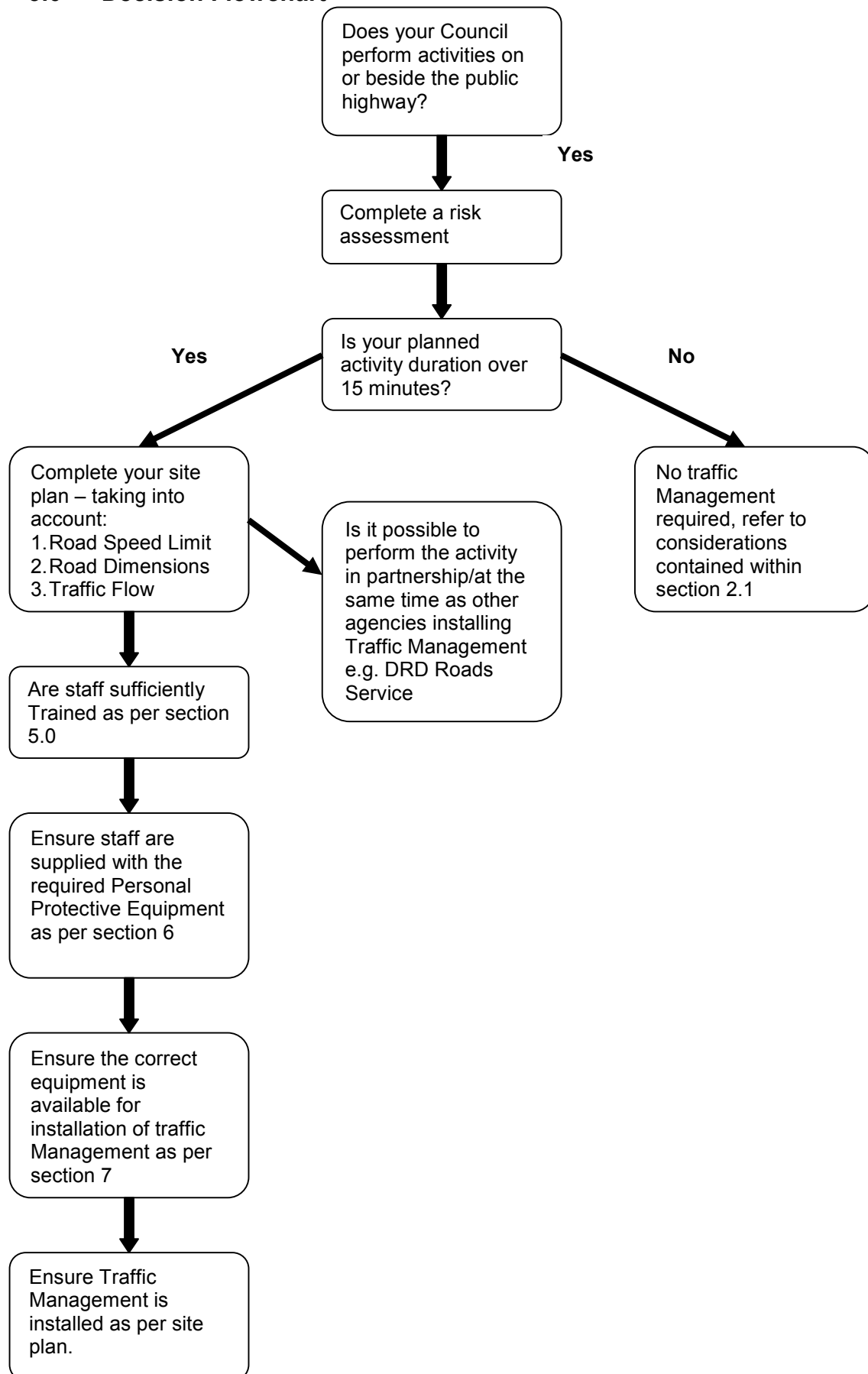
This is the width between the working space and moving traffic. The sideways clearance is measured from the outside edge of the working space to the bottom of the conical sections of the cones on the side nearest to the traffic. It will vary with the speed limit.

- **The exit taper**

This is always at 45° to the kerb-line or road edge.

Visual examples of the work area and safety zones can be found on pages 8, 9 & 10 of the Safety at Street Works and Road Works ACOP.

### 3.0 Decision Flowchart



## 4.0 Council Activities Applicable

The requirements to manage local authority works in the highway will be dependant on the speed of the road and the duration of the works, i.e. short duration or not.

The following list is not exclusive but a common range of Council activities that this guide may be applicable to.

<b>Fixed Works</b>	<b>Moving Works</b>
Planting	Litter Picking
Strimming	Street Sweeper
Grass Cutting	Spraying
Weeding	Waste Collection
Street Signs and Street Furniture	Watering of Hanging baskets/plants

Any works planned for hard shoulders or roadside verges needs to plan for:

- The length of time to carry out the work;
- Traffic volumes and patterns, including peak traffic flow information;
- Worker visibility, including if carried out in the hours of darkness;
- Available Parking locations, including the number of vehicles required;
- Getting in and out of the work location;

### **4.1 Fixed Short Duration Activities:**

Short Duration Activities (up to 15 minutes): NO TEMPORARY TRAFFIC MANAGEMENT IS REQUIRED, however a robust risk assessment is required taking into account Conspicuity of staff and traffic conditions.

Where short duration works are planned; i.e. up to 15 minutes, consideration must be given to the following:

- Carry out a Risk Assessment
- Plan to carry out work in periods of light traffic
- Ensure all staff are adequately trained, informed and supervised
- Carry out a site survey and plan prior to work
- If reduced visibility (weather conditions) do not embark on works
- When possible face oncoming traffic and work at least 18m from the front of the works vehicle
- Get in and out of the vehicle and load and unload tools and equipment from the nearside if possible

Note: If 1.2m distance from live lane cannot be achieved alternative temporary traffic management arrangements should be made.

## **4.2 Fixed Longer Duration Activities:**

If works/activities are longer than 15 minutes: TRAFFIC MANAGEMENT IS REQUIRED. Ensure a site risk assessment and site survey performed to identify the appropriate Temporary Traffic Management requirements.

## **4.3 Mobile/Moving Works**

Mobile/Moving works are those works which involve a vehicle or work team either standing for a short duration or operating at low speed along the carriage way where mobile lane closures are in-appropriate.

Examples of Council activities can be found in section 4.0.

Where a vehicle is deployed in Mobile/Moving works then that vehicle shall be equipped with a vehicle mounted “keep left/right” sign conspicuously on the rear or front of the vehicle as appropriate to show approaching drivers which side to pass. The sign should be covered when the vehicle is moving to or from the work area. See section 8 for further vehicle Conspicuity requirements.

Where Mobile/Moving Works are performed by work men without vehicles i.e. litter picking on the road then advance warning to traffic in each direction should be given by a “road works” sign with a supplementary plate with the activity and a “road narrows” sign.

With all these activities the following considerations must be given

- Carry out a Risk Assessment
- Plan to carry out work in periods of light traffic and low risk
- Ensure all staff are adequately trained, informed and supervised
- Carry out a site survey and plan prior to work
- If reduced visibility (weather conditions) do not embark on works

## **5.0 Risk Assessment**

While Local Authorities across Northern Ireland perform similar operation as per section 4.0, the environment that these are performed in differs greatly across the province. These differences will determine what levels of control are required when performing the risk assessment.

Considerations when performing the risk assessment should contain the following:

1. Speed Limit of the Carriageway
2. Type of carriage way i.e. single or dual carriageway.
3. The width of the carriageway
4. Work activity, and its impact upon the traffic.

5. The amount of traffic on the carriageway
6. Works vehicles and parking locations
7. Pedestrian access

Other considerations must also include whether it's possible to alter the activity or perform it in partnership of other agencies. If for example the activity is cutting grass or litter picking roads, then there is opportunity to link this work in with the Roads Service and utilise their expertise in signing, lighting and guarding or remove the activity. A further opportunity may be to use Road Service equipment to avoid the expenditure of purchasing. Sample risk assessments have been included in the appendices to assist in their development.

When attempting to assess the need for Temporary Traffic Management, similar considerations are required to decide upon the appropriate method. Training is an essential requirement to ensure that any such arrangements are performed correctly. Further assistance on assessment of Temporary Traffic Management can be found in appendix 1 of [http://www.ukas.com/library/Technical-Information/Pubs-Technical-Articles/Pubs-List/NHSS12D\\_%20Dec\\_2009.pdf](http://www.ukas.com/library/Technical-Information/Pubs-Technical-Articles/Pubs-List/NHSS12D_%20Dec_2009.pdf)

A Site Plan survey plan template has been included in the appendix to assist with the assessment and identification of Temporary Traffic Management.

## **6.0 Training**

There are two different training schemes relating to working on or beside the highway. These are the (NRSWA) Street Works Scheme and the (NHSS) 12A, 12B, 12C and 12D Sector Scheme.

Dependent upon the risk assessment and Site Plan outcomes will indicate which scheme provides the adequate level of training for the activity your traffic management work activities are located at low speed/risk locations, the street works Scheme may be suitable. Where your activities involve mobile works or traffic management on high speed dual carriageways with hard shoulders then the NHSS 12D scheme will be required.

### **Street Works Qualifications for Supervisors and Operatives:**

Under the New Roads and Street Works Act (1991) (NRSWA), the installation, renewal, maintenance and inspection of underground apparatus in any street or roads must be under the control of competent people. The training applies to all highways and roads except motorways and dual carriageways with hard shoulders

This means that street works will be supervised by a qualified street works 'supervisor'. In addition, whether the street is excavated or not, a 'trained operative', with an 'operative' qualification must be present on site at all times when the work is in progress. One person may not cover the operative and supervisor roles for a site at the same time.

If you are working or supervising works in the highway, you could be required to hold one or more of the Street Works qualifications, depending on your job role.

There are sixteen units of competence for operatives and supervisors. Nine units are applicable to operatives and eight to supervisors. One of these units (Unit 1) applies to both groups.

Unit 2 Signing, Lighting and guarding for operators and Unit 10 Monitoring signing, lighting and guarding for supervisors provide training for Temporary Traffic Management. Both take a day to complete and on completion the trainee will be placed upon the Street Works register.

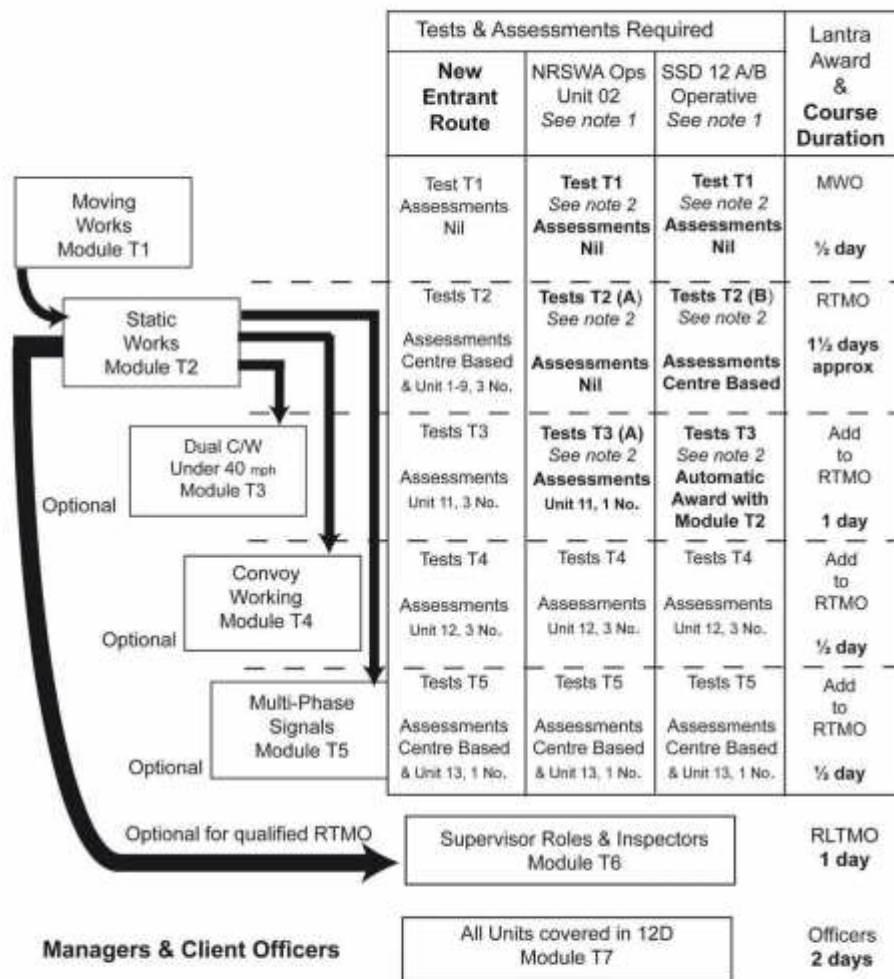
### **National Highway Sector Schemes 12D:**

National Highway Sector Schemes 12D Installing, maintaining and removing temporary traffic management on rural and urban roads is part of the nationally recognised training and competency assessment regime that is considered appropriate for the Highway Authorities road works traffic management activities.

NHSS 12D recognises the training assessment and accreditation for NRSWA Street Works, it provides for training and competency assessment beyond that required by the New Roads and Street Works Act (1991). It provides for training and competency assessment beyond that required by the 1991 Act including requirements for risk assessment and positive temporary traffic management for activities other than those covered in the act.

Similar to the Street works scheme, the NHSS 12D has a range of units that cover different elements of traffic management. These can be seen below in the Scheme sector 12 Route Map. On top of the formal training sessions, the 12D scheme also has a range of assessments at the training centre and on live roads prior to being certified.

## Scheme Sector 12D Route Map



**Note 1:** For Candidates requiring 12D with current certificates prior to 1 February 2005, and will only be available up to 31 August 2007

**Note 2:** Candidates following the Fast track route (in Bold) and failing to achieve 60% on relevant test, will be required to follow new entrant route.

## 7.0 PPE

Class 3 High Visibility Clothing conforming to BS EN471:1994 should be worn at all times. Jackets with sleeves must be worn on dual carriageways with a speed of 50mph or above. The colour should normally be fluorescent yellow with retro-reflective material should also comply with BS EN471:1994 Tables 2 & 5.

## 8.0 Equipment

## 8.1 Signs

- Advance Signs
- Road Works Ahead Sign
- Combination plates e.g. Grass cutting for men at work (
- Road Narrows Sign
- Keep Right/Keep Left Sign

End Sign: Indicates the end of the works, end of temporary restrictions, including speed limits associated with the works. It must be placed beyond works that are 50m or more in length, between the end of the

## 8.2 Cones and Lamps

Road Danger Lamps should be used at night on roads with a speed limit of 40mph or above, must not be higher than 1.5m above the road or 1.2m where the speed limit is more than 40mph.

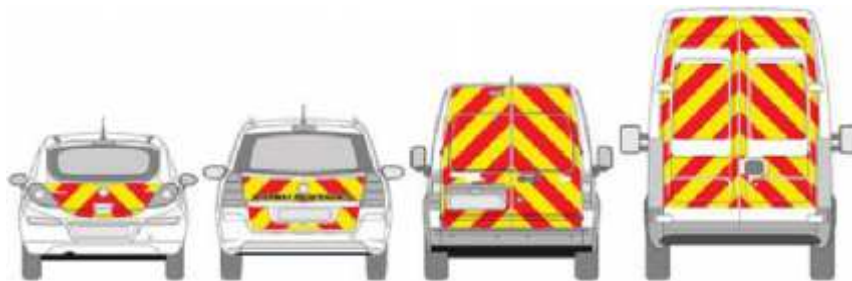
## 9.0 Vehicles and Conspicuity

Vehicles should be parked facing the same direction as the traffic flow; at least 0.5m away from the live lane in a manner that avoids obscuring sightlines. If this distance cannot be achieved, alternative temporary traffic management arrangements are required.

A roof-mounted flashing amber warning bar (comprising of two independent light sources) or two independent roof mounted flashing amber warning beacons visible through 360°, is to be used throughout the work period for short duration activities. For longer duration activities, the beacon should only be used when entering and leaving the works.

Any vehicle engaged in works on the highway not in an established work zone should be of a conspicuous colour.

In addition, on high speed roads, all vehicles stopping on the highway for work purposes or inspections shall be equipped with high visibility rear markings, examples can be seen below. Red retroreflective tape shall also be applied to all rear facing open doors, guardrails and equipment lockers.



Vehicles used for works purposes shall be identified by displaying to the rear the sign to diagram 7404 "HIGHWAY MAINTENANCE". The sign to diagram 7404 variant "MOTORWAY MAINTENANCE" may be used instead when working on motorways only.



Works vehicles should be kept clean to maintain conspicuity.

Motor vehicles with a maximum gross weight exceeding 7.5 tonnes and trailers with a maximum gross weight exceeding 3.5 tonnes must be fitted with rear markings in accordance with the Lighting Regulations. Further information on this can be found at:

<http://www.dft.gov.uk/vosa/repository/FTA%20DfT%20Conspicuity%20Guide.pdf>

## **10.0 References**

Safety at Street Works and Road Works – a Code of Practice (the Red Book)

Chapter 8 of the Traffic Signs Manual 2006 (Chapter 8)

Section 2.1 C8 Appendix 4 – Inspection Stops in Northern Ireland

C8 8.3 Inspection Stops

Guidance for Works on the Hard Shoulder and Road Side Verges on high Speed Dual Carriageways

Temporary Traffic Management on High Speed Roads – Good Working Practice

National Highway Sector Scheme 12D – Sector Scheme Document for installing maintaining and removing temporary traffic management on rural and urban roads

## **Site Plan Survey**

**Location**\_\_\_\_\_.

**Survey Completed by:**

**Date:**

<b>Type of Carriageway</b>	
<b>Speed Limit</b>	
<b>Carriageway Width</b>	
<b>Footway Width</b>	
<b>Site Length</b>	
<b>Position of proposed works (footway/Carriage way)</b>	
<b>Traffic Flow Over 3 Minute Period</b>	
<b>Duration of Works</b>	
<b>Unusual Features</b>	

**Indicate in the Boxes below how many of each item is required**

<b>Description of Equipment</b>	<b>Quantity</b>
<b>Road Works Ahead</b>	
<b>Road Narrows (from left)</b>	
<b>Road Narrows (from right)</b>	
<b>Keep Right Blue Arrow</b>	
<b>Keep Left Blue Arrow</b>	
<b>Stop and Go Boards</b>	
<b>Road Works End</b>	
<b>Cones</b>	
<b>Sand Bags</b>	
<b>Other (specify Below)</b>	

***To be marked upon the Work area site drawing***

<b>Activity</b>	<b>Street-works for the Park section</b>
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<b>Site</b>	Various Sites	<b>Reference</b>	T&E/066/PS/Streetworks
<b>Department</b>	OSU	<b>Revision</b>	01
<b>Assessor</b>		<b>Signature</b>	
<b>Manager</b>		<b>Signature</b>	
<b>Assessment Date</b>		<b>Review Date</b>	

<b>Severity/Hazard</b>	
Death	5
Severe illness or injury	4
Significant Injury	3
Minor injury	2
Nuisance	1

<b>Probability/Risk</b>	
Imminent	5
Very Likely	4
Likely	3
Possible	2
Unlikely	1

<b>Outcome (Severity x Likelihood)</b>	
20-25	Unacceptable
15-19	Very High
10-14	High
4-9	Normal
1-3	Low

No.	Hazard	Who is at Risk	Risk			Existing Controls (use bullet points)	Residual Risk			Further Controls Necessary? (9+)
			Severity	Likelihood	Risk		Severity	Likelihood	Risk	
1	Road Vehicles	Operator/ vehicle owners	5	4	20	<ul style="list-style-type: none"> <li>All work areas assessed and surveyed with clear instruction at each site</li> <li>Safe system of work in place and must be followed at all times</li> <li>Placement of roads signage and cones as per Chapter 8 legislation assessed and identified prior to activity taking place.</li> <li>Street works code of practice is to be used as the basis for all traffic management solutions.</li> <li>Placement of signage and cones to be performed by trained personnel to 12 D Parts 1 &amp; 2</li> <li>Safety zones for staff to be in place and maintained for the duration of the activity. Work activity is not to commence until the safety zones are established.</li> <li>Safety zones to be periodically checked to ensure they are in place</li> <li>PPE (HI-VIS) to class 3 standard to be worn by all staff during activity.</li> <li>Supervisors to monitor activities to ensure compliance with safe system of work.</li> <li>Staff must report any damaged/defective equipment immediately</li> <li>All operators must be Street works signing, lighting and</li> </ul>	3	2	6	Yes

No.	Hazard	Who is at Risk	Risk			Existing Controls (use bullet points)	Residual Risk			Further Controls Necessary? (9+)
			Severity	Likelihood	Risk		Severity	Likelihood	Risk	
						guarding trained •				
2	Parking of Council Vehicles	Operator/ vehicle owners	5	4	20	<ul style="list-style-type: none"> <li>All work vehicles/trailers must have chapter 8 hazard warning markings and signage as well as warning beacons.</li> <li>Warning beacons must be activated while parking and deploying.</li> <li>Safe system of work must be followed while parking vehicles.</li> <li>Vehicle operators must ensure parked vehicles do not inhibit pedestrian walk ways.</li> <li>Safety signage and cones must be stored correctly before transportation.</li> </ul>	3	2	6	Yes
3	Projectiles	Operator / vehicle owners / pedestrians	3	3	9	<ul style="list-style-type: none"> <li>Safety zones must be in operation prior to commencing activity.</li> <li>Operatives should walk the area to check for stones etc. prior to commencing work.</li> <li>Operators to take care when working close to the road area</li> <li>Operators should not allow the mower guards to go over the curb</li> <li>Operators to be aware of pedestrians and suspend work activities when required</li> </ul>	3	2	6	

No.	Hazard	Who is at Risk	Risk			Existing Controls (use bullet points)	Residual Risk			Further Controls Necessary? (9+)
			Severity	Likelihood	Risk		Severity	Likelihood	Risk	
4	Manual Handling	Operator	4	3	12	<ul style="list-style-type: none"> <li>Equipment to be stored upon trailer and brought to the road section where possible.</li> <li>Good manual handling techniques must be deployed whilst deploying safety signage, cones and work equipment.</li> <li>Mechanical aids to be used when possible</li> </ul>	3	2	<b>6</b>	
5	Incremental weather	Operator / Vehicle Owner	5	3	15	<ul style="list-style-type: none"> <li>Weather to be assessed before activity is commenced / where visibility for operators/vehicle owners is likely to be impaired then the activity must be suspended e.g. fog or heavy rain.</li> <li>All signage to be stabilized with sand bags / where windy conditions do not permit the safe standing of signage then the activity must be suspended</li> </ul>	3	2	<b>6</b>	

## Action Plan



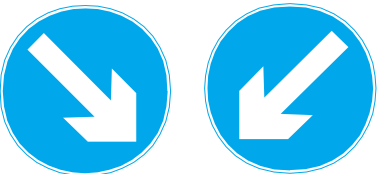
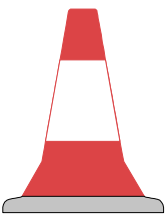

No.	Hazard	Action Required	By Whom	By When
1	Vehicles	Surveys of each work area to be performed		
2	Vehicles	Assessment of placement of roads signage and cones as per Chapter 8 legislation prior to activity taking place		
3	Vehicles/vehicle parking	All operators to receive street works signing, guarding and lighting training		
4	Vehicle Parking	All vehicles to have the appropriate chapter 8 signage and warning beacons installed		



## SAFETY SYSTEM OF WORK

### ROAD SAFETY PROCEDURES FOR WORKING ALONG PUBLIC HIGHWAYS

Type of work:	Maintaining green area beside public highways	Reference	T&ES/002/PS/SSW/ Streetworks
Time of day work completed:	Various	Average duration:	2 day
Supervisor:		Relevant Documentation	Risk Assessment - T&E/066/PS/Streetworks, Site Plan, Safety at Street Works and Road Works - A Code of Practice,
Specialist skills or training required:	12 D 7 Parts 1 & 2	Is a permit to work required Y/N?  If “Yes”, what type?	No
Tools and equipment: (list)	Road works signage, cones, enhanced vehicle and trailer with warning beacons, hazard markings and high way maintenance signage	PPE and safety equipment: (list)	All staff to where appropriate High Visibility clothing to Class 3 specification
Significant risks associated with the task:	<ul style="list-style-type: none"><li>Vehicle collision with staff and/or work equipment</li><li>Projectiles hitting passing vehicles and/or pedestrians</li></ul>		
Other factors that may affect the safe completion of the task:	<ul style="list-style-type: none"><li>Weather conditions that effect visibility of staff and vehicle users as well as high winds</li></ul>		
Safe Work Sequence			
Before	<ul style="list-style-type: none"><li>This safe system of work is designed to be followed in conjuncture with risk assessment ref: T&amp;E/066/PS/Streetworks and appropriate site plan indicating the location of traffic management</li><li>Weather conditions must be assessed before commencement of activity with the supervisor, where visibility is effected by fog or heavy rain and/or high winds are present then the activity will be suspended in agreement with the supervisor.</li><li>All staff must have the required PPE – High Visibility bottoms and tops to class 3 specification prior to commencing activity</li></ul>		
Parking	<ul style="list-style-type: none"><li>You must park your vehicle safely before you unload or set up signs. If you can't park it off the road make sure the vehicle can be seen clearly by other drivers. Turn on your roof-mounted amber beacon(s). Do not obstruct a footway or cycle track when parking off the road.</li><li>You must park your vehicle at the designated parking area on the site plan</li><li>If you can not do this then you must park your vehicle in a safe place. If you park in the road you must protect it from traffic going past Set up a 'Keep Right' sign at the outside corner of the vehicle, along with a Traffic Cone.</li></ul>		

<b>Equipment required</b>	<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">   Men at Work, </div> <div style="text-align: center;">   Road narrowing to left or right </div> <div style="text-align: center;">   Keep right or left </div> </div> <div style="display: flex; justify-content: space-around; align-items: flex-start; margin-top: 20px;"> <div style="text-align: center;">   Cones </div> <div style="text-align: center;">   Works ending </div> </div>				
<b>Establishing the Safety zone</b>	<ul style="list-style-type: none"> <li>• If at all possible place signs so that they do not obstruct vehicles, cyclists, pedestrians or other road users</li> <li>• You are at greatest risk when setting out the signing and guarding, so great care is needed to ensure that you can see the traffic and the traffic can see you.</li> <li>• Wear your high visibility clothing (to class 3 standard) , putting it on before leaving the vehicle. It may be safer to get out of the vehicle on the passenger side, rather than stepping into the traffic stream</li> <li>• Make sure the roof-mounted amber beacon(s) are switched on and operating.</li> <li>• Ensure the cover is removed from the keep left or right sign.</li> <li>• Face the traffic when setting out signs, taking particular care when you are crossing the road to place signs.</li> <li>• Traffic management must be set out as per the site plan,</li> <li>• Signs, lights and guarding equipment must be secured against being blown over or out of position by the wind or by passing traffic, this is to be done with sand bags to provide balast.</li> <li>• Set out the traffic management in order as shown on pages 24 and 25 of the code of practice</li> </ul>				
<b>During</b>	<ul style="list-style-type: none"> <li>• Check regularly that signs have not been moved or damaged or become dirty, including when the site is left unattended for a period of time.</li> </ul>				
<b>After</b>	<ul style="list-style-type: none"> <li>• On completion of the works, ensure that all plant, equipment and surplus materials are removed promptly from the site. All signs, lighting or guarding equipment should be removed immediately.</li> <li>• Reverse the procedure for putting out the traffic management</li> <li>• Cones and signage must be collected single sided when performing activity on the dual carriageway i.e. the collection process goes up the left hand side of the road collecting, and then performs the same operation on the opposite side of the road. At no time should staff be crossing lanes to collect equipment.</li> <li>• Report any faulty equipment to your supervisor</li> </ul>				
<b>Risk assessments and other documentation relevant to work:</b>	T&E/066/PS/Streetworks				
<b>Safety procedure prepared by:</b>		<b>Signature:</b>		<b>Date:</b>	April 2012
<b>Safety procedure reviewed by:</b>		<b>Signature:</b>		<b>Date:</b>	
<b>Additional information:</b>					

This document should be distributed to all staff who are directly involved in the work, or who may be affected by it.

## SIZE AND SITING DISTANCE: DETAILS OF SIGNS AND CONES AND SAFETY ZONE DIMENSIONS

	Minimum and normal maximum siting distance (D) visibility of first sign in advance of lead-in	Minimum clear to first sign	Minimum size of signs (mm)	Minimum height of cones (mm)	Sideways Safety Zone (S)	Details of lead-in cone tapers (but see Notes below) Recommended lengths	Width of hazard (metres) including Safety Zone (S)						
							1	2	3	4	5	6	7
Single carriageway road, restricted to 30mph or less	20 to 45	60	600	450	0.5m	Length of taper (T) in metres	13	26	39	52	65	78	91
						Minimum No. of cones	4	4	6	7	9	10	12
						Minimum No. of lamps at night	3	3	5	6	8	9	11
Single carriageway road, restricted to speeds of 31 to 40mph inclusive	45 to 110	60	750	450	0.5m	Length of taper (T) in metres	20	40	60	80	100	120	140
						Minimum No. of cones	4	6	8	10	13	15	17
						Minimum No. of lamps at night	3	5	7	9	12	14	16
All-purpose dual carriageway road, restricted to 40mph or less	110 to 275	60	750	450	0.5m	Length of taper (T) in metres	25	50	75	100	125	150	175
						Minimum No. of cones	4	7	10	13	15	18	21
						Minimum No. of lamps at night	3	6	9	12	14	17	20
Single carriageway road, with speed limit of 50mph or more	275 to 450	75	750	450	1.2m	Length of taper (T) in metres	25	50	75	100	125	150	175
						Minimum No. of cones	4	7	10	13	15	18	21
						Minimum No. of lamps at night	3	6	9	12	14	17	20
All-purpose dual carriageway road, with speed limit of 50mph or more	725 to 1600	105	1200	750	1.2m	Length of taper (T) in metres	32	64	96	128	160	192	224
						Minimum No. of cones	5	9	12	16	19	23	26
						Minimum No. of lamps at night	4	8	11	15	18	22	25

Speed limit (mph)	30 or less	40	50	60	70
Minimum longways clearance (L) metres	1/2	15	30	60	100

### NOTES:

1. Lead-in tapers used with traffic control, and all exit tapers, shall be at about 45° to the kerb line with cones spaced 1.2 metres apart.
2. The maximum spacing distance of cones in longitudinal lengths of coning shall be 9 metres, but no fewer than 2 cones shall be used in any length between tapers.
3. In certain circumstances on congested roads with speed limits of 30mph or under, the taper may also be reduced to 45° (see page 7).



## APPENDIX

### Magherafelt Public Art – Artist Impression of Gateway Art, Castledawson Roundabout

View 1



View 2



