

Title: Traffic Management

PCoP: G:8
Richard Fenwick/
Author: Rowan Smith

Date: June 2018
Post: County Highways Manager/ Local Highways Manager

	Page
CONTENTS: Introduction	1
<i>Definitions</i>	<i>2</i>
<i>Scope and Application</i>	<i>2</i>
<i>Standards and Information Available</i>	<i>2</i>
<i>Planning Road Works and Risk Management</i>	<i>2</i>
<i>Traffic Management for Road Works General Considerations</i>	<i>3</i>
<i>Convoy Working</i>	<i>5</i>
Protection of Works	6
Pedestrian Safety	6
<i>Additional Requirements</i>	<i>7</i>
<i>Important Reminder</i>	<i>8</i>

First Issue Date:	August 1999
Re-Issue Dates:	05/06, 09/11, 11/14, 07/15, 06/18
Revision No:	5
Last Reviewed:	June 2018
Reviewed by:	Richard Fenwick/ Rowan Smith
Next Review Due:	June 2021

PLACE HEALTH AND SAFETY MANUAL

1. Introduction

The execution of road works is likely to have a major effect on the safety of both road user and road worker. Road work schemes inevitably require judgements between keeping traffic flowing and getting the work done as quickly and as safely as possible. All reasonably practicable steps shall be taken to ensure the safety of the public and persons undertaking the works. Any member of staff who is unsure what is expected of them must consult with their line manager.

Road works in, or adjacent to, a carriageway, cycleway or footway, or in a shared space may impair the safety and free movement of vehicles, cyclists and pedestrians (particularly visually impaired or disabled pedestrians).

The Health and Safety at Work etc. Act 1974 requires any person working on the highway to put in place and maintain safe systems of work which effectively segregate construction equipment and works personnel from the travelling public. The Highways Act 1980 and the New Roads and Street Works Act 1991 place an obligation on the person carrying out the works to adequately sign, light and guard the works - and on the Highway Authority to be responsible for enforcing those requirements. Within the scope of The Construction (Design and Management) Regulations 2015, health and safety issues must be taken into account and managed through the design and planning stage to the site work (subsequent maintenance, use and ultimate demolition).

The Environment & Economy Directorate requires that all works carried out on the highways of Lincolnshire shall conform to the "red book" Safety at Street Works and Road Works A Code of Practice (ACoP) supplemented by Chapter 8 of the Highways Agency's 'Traffic Signs Manual' as the normal minimum standard for traffic signing, guarding and lighting of works. There will be circumstances where these requirements cannot be fully implemented. In such circumstances every effort will be made to ensure that neither the public nor works personnel are put at avoidable risk nor this may necessitate special safety measures being put in place.

When reviewing traffic management a useful exercise is to ask yourself the following:

"WILL SOMEONE COMING ALONG THE ROAD OR FOOTWAY IN EITHER DIRECTION UNDERSTAND EXACTLY WHAT IS HAPPENING AND WHAT IS EXPECTED OF THEM AT ANY TIME INCLUDING NIGHT-TIME, OR IN POOR VISIBILITY OR INCLEMENT WEATHER?"

When planning road works, cross reference should always be made to the Traffic Management at Road works process map on the Management System.

PLACE HEALTH AND SAFETY MANUAL

2. Definitions

Road works are defined as any works or temporary restriction which cause partial or total obstruction of the highway (the term 'highway' covers the carriageway, verges, any footways or cycleways, shared space, laybys, bus bays, central reserve etc.)

For the purposes of this code of practice, a competent person is defined as someone who has received formal training in traffic safety measures and signs for road works. Evidence of such competency could be by an appropriate New Roads and Street Works Act 1991 qualification or an industry recognised signing/guarding/lighting qualification.

For short duration stops, such as those to facilitate a street light bulb replacement operatives may be trained in 302.1 which is derived from National Highway Sector Schemes NHSS12D.

3. Scope and Application

This Safety Code of Practice provides guidance for all staff that are required to prepare contracts for, issue orders or instructions for, or supervise works for highway purposes or by others, on the public highway. This may involve works carried out by utility companies, developers or other third party contractors. Safety Code of Practice CPF3 (Traffic Management for Laboratory Operations) provides specific guidance for highway testing works.

4. Standards and Information Available

The current requirements and layouts are shown in the document Safety at Street Works and Road Works - A Code of Practice (the red book). This book has had statutory backing since 2002; failure to comply with it may lead to criminal prosecution.

Supplementary advice can be gained from Chapter 8 of the Traffic Signs Manual entitled 'Traffic Safety Measures and Signs for Road Works and Temporary Situations'.

In some situations, as a result of site specific risk assessments, bespoke traffic management layouts may be adopted. These should be above and beyond those demonstrated within the ACoP and not implemented without the approval of a competent manager or highway safety advisor.

5. Planning Road Works and Risk Management

The Health and Safety at Work etc. Act 1974 places a duty on employers to ensure that they carry out their undertakings in a manner which will not cause injury or ill health to persons not directly in their employment. The Management of Health and Safety at Work Regulations 1999 require employers to assess risks to the health and safety of their employees and any others who may be affected by their actions. The Construction (Design and Management) Regulations 2015 place duties on Clients, Principal Designers, Contractors and Principal Contractors to ensure that any designs produced

PLACE HEALTH AND SAFETY MANUAL

can be constructed safely. In this way, measures required to comply with relevant health and safety law and precautions to reduce risks to an acceptable level are identified. Thus obligations extend to both clients and contractors.

At an early stage in the road works planning process cross-reference must be made to the Traffic Management at Roadworks process map to ensure a consistent approach to the type of traffic management chosen by application of the calculator spreadsheet.

Works must be carefully planned and specific risk assessments carried out for non-routine situations. It is imperative that method statements and risk assessments are documented and communicated to the relevant parties.

Planning and risk assessment should identify the individual road work operations which are to be carried out and how they can be carried out with risk reduced so far as is reasonably practicable. Such planning should identify whether the standard requirements can be implemented and whether there are any additional safety measures necessary to ensure safety of both the workforce and the public. If it is not reasonably practicable to fully comply with the code of practice and any other current relevant guidance, the problems and associated hazards should be stated together with the risks arising from those hazards as determined from the designers risk assessment. Considering the requirements of the Traffic Management at Roadworks process map a risk assessment coupled with liaison with a competent manager or Highway Safety Advisor should be used to identify the most suitable safe method of traffic control and the proposed traffic management should be fully described in the Works Information. Some contractors have developed a range of traffic management options which may contain an alternative way of tackling a particular problem. Any alternative methods should be given full consideration.

6. Traffic Management for Road Works

General Considerations

In all instances where non-standard traffic management regimes are being considered, early contractor involvement is essential to determine a safe and effective system of work.

The ACoP seeks to minimise risks at road works by effectively separating the works, plant and operatives from 'live' traffic, including pedestrians, by means of 'safety zones'. Where the required 'safety zones' cannot be achieved, the traffic must be diverted away from the works or must be reduced to a maximum of 10 mph and a safe method of working imposed on the site. Speed limits, both advisory and mandatory, cannot be relied upon to reduce vehicular speeds to 10 mph and it will be necessary to have some form of 'convoy working' which uses a convoy vehicle to physically restrain following vehicles to a maximum of 10 mph. Convoy working is detailed in the Highways Agency Advice Note TA 63/97 and guidance is given in Section 7 of

PLACE HEALTH AND SAFETY MANUAL

this Code of Practice.

For works of long duration over short site lengths, such as bridge works, it may be possible to construct some form of temporary widening with a similar running surface to that of the adjacent carriageway that traffic may use so that suitable safety zone widths can be achieved. This may not be a cost effective solution for short duration works on longer length sites, such as carriageway resurfacing.

Where errant vehicles entering the works area would present a particular risk, consideration should be given to offering greater protection to both workforce and traffic by using a containment barrier such as temporary vertical concrete safety barriers (TVCBs) or water filled temporary plastic containment barriers (Rhino Barriers). Use of these plastic barriers needs to be considered carefully as they have a much greater working width than TVCB's. Note that the use of TVCB on Trunk Roads requires the approval of the Highways Agency. Guidance on how to determine the level of containment and length of need is given in section 8 of this Safety Code of Practice.

Special consideration is necessary when there is a possibility that traffic management measures may affect road traffic using a level crossing (see Safety Code of Practice CPA 8 - Working in Proximity to Railways).

When planning road works, after consultation with the contractor at ECI, the designer should agree the timescale for carrying out the work with the relevant Local Highways Office and book road space / raise the permit through the Highways Asset Management System (Confirm). They must allow sufficient time for any Temporary Traffic Regulation Order (TRO) with respect to temporary speed limits, width and/or height and/or weight restrictions, temporary one-way orders, road closures and approval for temporary traffic signals etc. (Note that site authorisations are required for temporary signals which straddle junctions with other public highways whether or not they are signalled).

When working within 100m of a permanent traffic signal installation cross reference must be made to HAT 15/2/10.

The Principal Engineer (Traffic Signals) is to be notified of any intention to place temporary traffic lights on the highway to prevent any conflict with permanent installations. Further guidance on the use of temporary traffic signals can be found in traffic advisory leaflets TAL 2/11 and TAL 3/11.

All vehicles engaged in road works should be fitted with twin amber flashing beacons or lighting bars which should be used at all times during operation and be visible from 360 degrees. Conspicuity of vehicles should be as per Chapter 8.

High visibility clothing to BS EN ISO 20471: 2013 is to be worn by all personnel working on or near the carriageway. Personal Protective Equipment on Lincolnshire Highway Alliance sites is to include, as a minimum; hard hat, Class 3 reflective jackets with sleeves, Class 1 orange

PLACE HEALTH AND SAFETY MANUAL

trousers, lace up safety boots, suitable eye / face protection and gloves – further information on personal protective equipment can be found in CPA5. These minimum requirements are to be supplemented with other PPE when identified in risk assessments for explicit operations.

If any member of staff observes unsatisfactory traffic management measures in operation in Lincolnshire then the Highways Divisional office should be informed so that appropriate measures can be taken by a competent person. Any situation which poses immediate danger to the highway user must be addressed at once, with a direct approach to the contractor if necessary, and advising the Highways Divisional office of any action taken. In such instances where there is a serious danger to the public then a competent member of the Divisional staff will visit the site as soon as possible to ensure that remedial action has been taken and that no danger to the public still exists.

7. Convoy Working

The ACoP states that the use of speed control must be considered as part of the works planning, furthermore, in exceptional circumstances where the road width prevents the provision of appropriate sideways safety clearance and diversion of traffic would be impracticable, traffic speeds must be reduced to 10mph or less and a safe method of working imposed. As speed limits, both advisory and mandatory, can be ignored by drivers, they cannot be relied upon to achieve the required reduction in vehicle speeds through the site. Convoy Working involves the use of a works vehicle to lead traffic past the works, physically restricting following vehicles to 10 mph.

The requirements for Convoy Working are contained in the Highways Agency's Design Manual for Road and Bridges (DMRB) Volume 8 Section 4 Part 5 TA63/97. Note that it will be necessary to obtain a Traffic Regulation Order (TRO) for a mandatory 10 mph speed limit.

Considerable planning should be undertaken by a competent person familiar with Convoy Working as to the most appropriate convoy system. As the whole essence of a safe convoy control system is physically to restrain traffic, the designer should devise a system asking themselves whether their system will safeguard and prevent any unrestrained vehicle passing the work.

Particular emphasis should be placed upon side roads and accesses within the works length. Generally three vehicles will be required, with a fully-signed back-up vehicle in reserve, but at low traffic flow sites a single vehicle may be sufficient. If a single vehicle is used the traffic control must be provided using manual STOP/GO boards.

Pre-planning is essential to ascertain the most effective form of convoy working and to determine safe methods to deal with side roads, accesses, designated turning areas for convoy escorts, precise radio commands, and how to deal with emergency vehicles. A comprehensive site briefing will be required for all those involved in the works and operation of the convoy control as to their precise roles and responsibilities.

PLACE HEALTH AND SAFETY MANUAL

Proper consideration needs to be given to how site traffic and delivery vehicles access and egress the site and how they are managed to prevent gaps opening up in the moving traffic that will allow the traffic that has been held up to accelerate to an unacceptable speed through the traffic management.

Much of the development of convoy working has been carried out in Lincolnshire. A need has been established for two personnel in each vehicle, to allow for maintaining radio communication whilst mobile, and frequent driver changes to alleviate fatigue. The temporary traffic signals will need to be manually controlled with the operator in radio contact. Some work, for example using tractors to 'feed' Rolled Asphalt chipping spreaders may require an extra tractor, or two chipping stockpiles, to permit working behind a convoy without further delaying the next 'convoy'.

8. Protection of the Works

A risk assessment must be done to determine the length of need and type of barriers needed to protect the workforce from passing traffic.

For roads with a permanent speed limit of 50mph or above, carrying 5000vpd with a programmed works period between 2 and 28 days, the risk assessment must be done in line with Interim Advice Note IAN 142/11 Temporary Barrier Decision Tool (TBDT).

For works programmed to last longer than 28 days the assessment should be done in line with TD19/06 Requirements for Road Restraint Systems, this assessment is the Road Restraint Risk Analysis Programme (RRRAP).

9. Pedestrian Safety

When promoting works, consideration must be given to the safety of pedestrians, with a view to protect them from the works and also any passing traffic. Pedestrians include children, the elderly, NMUs and those who are visually impaired. A clearly delineated, suitably barriered thoroughfare that separates pedestrians from works or traffic hazards is to be provided when a pedestrian need is identified.

When closing a footway, or part thereof, the works promoter must provide a safe alternative including, where appropriate, access to adjacent buildings, properties and public areas. Absolute minimum width of pedestrian thoroughfares is one metre but desirable is 1.5 metres, in addition to sideways safety clearance.

Signing and guarding must be in place before the start of any site work.

Where pedestrians are to be temporarily diverted from a footway into the carriageway, suitable ramps are to be provided to allow all pedestrians and NMUs to safely negotiate the kerb face. Ramps should be non-slip and have sufficient room at the top and bottom for NMUs to turn.

Footway boards should be non-slip and not present a trip hazard. The boards

PLACE HEALTH AND SAFETY MANUAL

should be rigidly fixed to prevent movement.

In urban areas, where pedestrian movements are significant, consideration should be given to the inclusion of temporary pedestrian crossings. On such occasions the works promoter must consult with the Principal Engineer (Traffic Signals) for advice as to their suitability, safety and operation.

10. Additional Requirements

It is the Directorate's policy to require that the following requirements in addition to those required by the ACoP are applied to all high speed roads within the County:

- (a) The first warning sign must be at a minimum distance of 800 yards in advance of any works site.
- (b) Where there is a risk of overtaking traffic on the approach to and within the advance signing then doubling up of the signs is required (that is on both sides of the carriageway facing the oncoming traffic).*
- (c) Two heads shall be used where the works are controlled by temporary traffic signals (Fig.1). The heads shall be placed one each side of the shuttle lane and any cable protectors used shall be signed with 'Ramp Ahead' and 'Ramp' signs.*



Fig.1

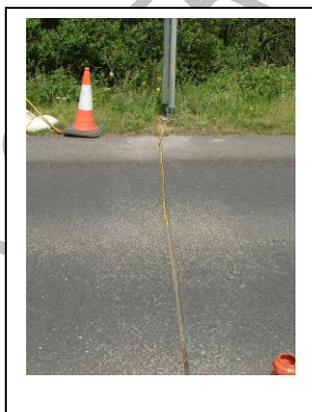


Fig. 2

Alternative methods include cableless traffic lights or the cables can be recessed into channels cut into the carriageway (Fig. 2).

High speed roads are defined as being those with a speed limit greater than 40mph and will generally be classified as Class 1 or 2 but this may be extended to include roads of a lower classification where problems have been known to occur in the past.

PLACE HEALTH AND SAFETY MANUAL

Where sharp deviations occur in the route which vehicles are required to take as part of any road works traffic management, then the advice of the Signs and Markings Senior Engineer should be sought. This is particularly necessary where vehicles are diverted from the normal highway layout, ie. at road closures or where roundabouts are being constructed.

- (d) If a risk assessment concludes that the only safe option available is to close the road, this must first be agreed, in principle, with the Divisional Office. Traffic should, except in exceptional circumstances, be diverted onto roads of equivalent class or better. Diversion signs are to comply with the Traffic Signs Regulations and General Directions and placed in a convenient, safe, prominent position on the diversion route. The signs are to remain in a serviceable condition for the duration of the work.

Signs are to be placed either side of the carriageway informing passing motorists that the road is going to be closed a minimum of two weeks in advance of the work starting on site. The information should include a starting date and programme period.

11. Emergency/Urgent Works

Lincolnshire County Council has a statutory duty under Section 41 of the Highways Act 1980 to maintain the Highway. Certain Category 1 Defects, as outlined in the Highways Asset Management Plan, require emergency or urgent works to make them safe within prescribed timescales. It is therefore deemed acceptable to revert to the standards in the ACoP in the following situations:

- The site is not left unattended
- Stop/Go boards are available on site to be used in cases of signal failure

When Category 1 defects, as defined in the Highways Asset Management Plan, cannot be made safe within 60 minutes of attending site but removing traffic management would pose a risk to Highway users, a risk assessment shall be carried out to determine if the additional requirements of Section 10 of this CPE are appropriate.

12. Important Reminder

Traffic management is a crucial element of the work of many members of staff of the Directorate. As always the golden rule is to SEEK ADVICE FROM A MORE EXPERIENCED OR SENIOR MEMBER OF STAFF IF YOU ARE UNSURE.

All standards referred to in this Code of Practice are correct at the time of issue.