



National Ambulance
Resilience Unit
NARU



Guidance for Ambulance Service response to Incidents on the Motorway Network (Including Smart Motorways)



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INFORMATION READER BOX

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Forward

This document is designed to outline best practice for UK ambulance services when responding to incidents on the motorway network. Although the key principles are based on the motorway network in England operated by Highways England (formerly the Highways Agency), the principles can equally be applied in the devolved administrations of Wales, Scotland and Northern Ireland. The document will supplement local agreements and standard operating principles in place across the various ambulance trust regions.

It is important to note that localised incidents on motorways have the potential for widespread disruption. To ensure the most effective response and reduce the potential for confusion, arrangements for a co-ordinated response should be established in the early stages. For UK ambulance services, timely access to the scene to commence patient treatment is of paramount importance.

Each agency will establish its own control arrangements and continuous inter-agency liaison is essential. Effective response depends on good communication and mutual understanding; this agreement will define roles and responsibilities of strategic partners and agreed protocols.

In January 2009, in the government's "delivering a sustainable transport system" paper, an announcement of a £6bn programme, to deliver "Managed Motorways" on around 500 miles of the English motorway network, was produced from findings of the Traffic Management pilot scheme (2006).

This paper showed that part-time hard shoulder running, Managed Motorways-Dynamic Hard Shoulder (MM-DHS) could produce significant congestion and journey time benefits without compromising safety, with no negative impact on Emergency Responder operations.

Managed Motorways-All Lane Running (MM-ALR) has developed from MM-DHS and is the permanent replacement of the hard shoulder with a controlled running lane.

There has been a recent name change from Managed Motorways to Smart Motorways due to the movement towards harnessing technology within traffic management.

A further expansion of the Smart motorways programme was announced in the autumn budget statement in 2014, which will see the introduction of further schemes across the network in England.

Although much of the guidance references the Smart motorway system the principles can and should be applied to any motorway operated by Highways England and some of the principles can also be applied on major trunk roads.

1. Introduction

1.1 PURPOSE

This document is best practice guidance concerned with Ambulance Service operational delivery issues and its principal purpose is to define the working partnership and practices between strategic partners. The guidance defines the role of Ambulance Services, Fire and Rescue Services, Police forces and Highways England.

1.2 SCOPE

This agreement will cover the management of the partnership, partnership working in relation to Incident Detection, Responder Access, Incident Management, Network Restoration and the Debrief Process. Incidents on motorways that are attended by partners need to be managed and maintained, this guidance is intended to cover these arrangements.

1.3 REVIEW

This guidance is a “living document” which will be periodically reviewed, considering changes to practice and any new legislation.

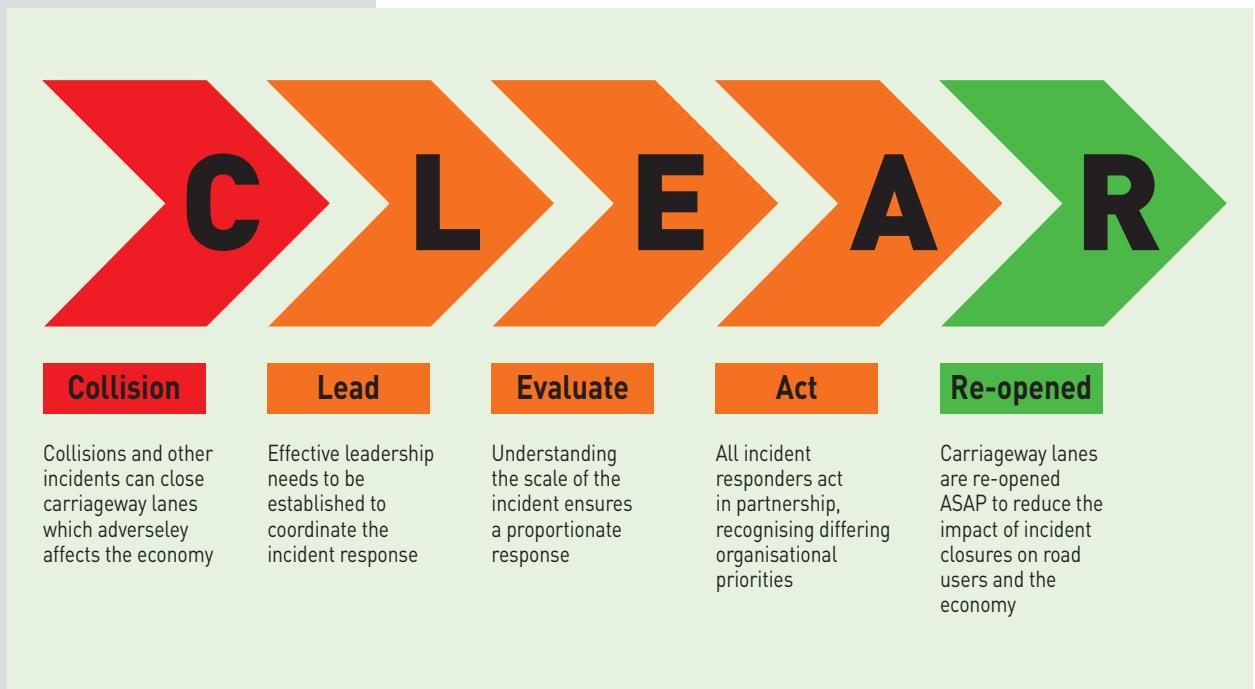


2. Roles and Responsibilities - CLEAR

The CLEAR keep traffic moving document outlines the roles and responsibilities of the key organisations involved in traffic incident management on the strategic road network, setting out a joint outcome.

This document has been released by Highways England with approval from Department of Transport, Home Office, National Police Chiefs Council, Chief Fire Officers Association and Association of Ambulance Chief Executives. It will help to improve the understanding of the priorities of each organisation and the collective joint working principles. This will lead to improved communication and collaboration, more effective incident management and a reduction in incident duration.

All parties must recognise and drive the need to work together collectively in order to minimise the impact of closures, whilst recognising individual objectives.



Further details on joint responsibilities and specific responsibilities can be found at Annex A.

3. Terminology

It is important that all responders are fully aware of the terminology to be used. Responder's operational procedures and personnel training must reflect this common terminology. This will maintain a high level of understanding and interoperability.

3.1 SMART MOTORWAYS

Smart Motorways make use of a range of traffic management measures to control speeds, add capacity, and inform road users of conditions on the network.

- Variable mandatory speed limits (VMSL) with associated enforcement and Compliance system.
- Driver information including lane availability, displayed at intervals not exceeding 1500m. Information is provided through a mixture of gantry and verge mounted signs and signals capable of displaying mandatory speed limits, full carriageway mandatory lane closures and lane closures (non-mandatory on verge mounted displays) using Red X Stop signal aspects. Pictograms and text can also be displayed. Entry slip signals (ESS) are also provided.
- A queue protection system and congestion management system. Pan-tilt-zoom (PTZ) CCTV coverage allowing operators to see key parts of the network – the provision of CCTV varies depending on the particular type of smart motorway.
- Motorway Service Areas (MSA) and other roadside facilities perform an important road safety function by providing road users with the opportunity to stop and take a break in the course of their journey.
- Emergency Roadside Telephones (ERT) are provided which give a direct communication link to Highways England's Regional Control Centres (RCC).

Gantries with supporting variable message signs, sometimes also with signals, display automatically altered speed limits as per the Motorway Incident Detection and Automatic Signaling (MIDAS) operating system. MIDAS is a distributed network of traffic sensors which are designed to detect incidents and congestion, subsequently setting variable message signs and advisory speed limits. The speed will be controlled so that traffic is able to flow more smoothly which will help to reduce congestion. The display can also be manually adjusted and set as required or requested.



3.2 CONTROLLED MOTORWAYS

Controlled motorways are the simplest version of Smart motorway and have three or more lanes with variable mandatory speed limits that can be changed remotely. Normal road users can only use the hard shoulder in a genuine emergency.

3.3 DYNAMIC HARD SHOULDER (DHS)

One of the Smart motorway traffic control measures is to dynamically open the hard shoulder to running traffic during busy periods. This measure therefore adds capacity to the carriageway at a vastly reduced cost to conventional carriageway widening. Gantries with supporting variable message signs and signals are installed at nominal 800m intervals.

Emergency Refuge Areas (ERAs) with Emergency Roadside Telephones (ERTs) are spaced at nominal 800m intervals and are generally located after a gantry. These areas offer some protection from oncoming vehicles having crash barriers installed. They are also wider than the existing hard shoulder, therefore, providing a safer place for drivers to stop in an emergency or vehicle breakdown.

Speed cameras are positioned on the rear of most gantries and will automatically detect and enforce vehicles travelling at excessive speeds to the speed displayed on the signal on the front of the same gantry.

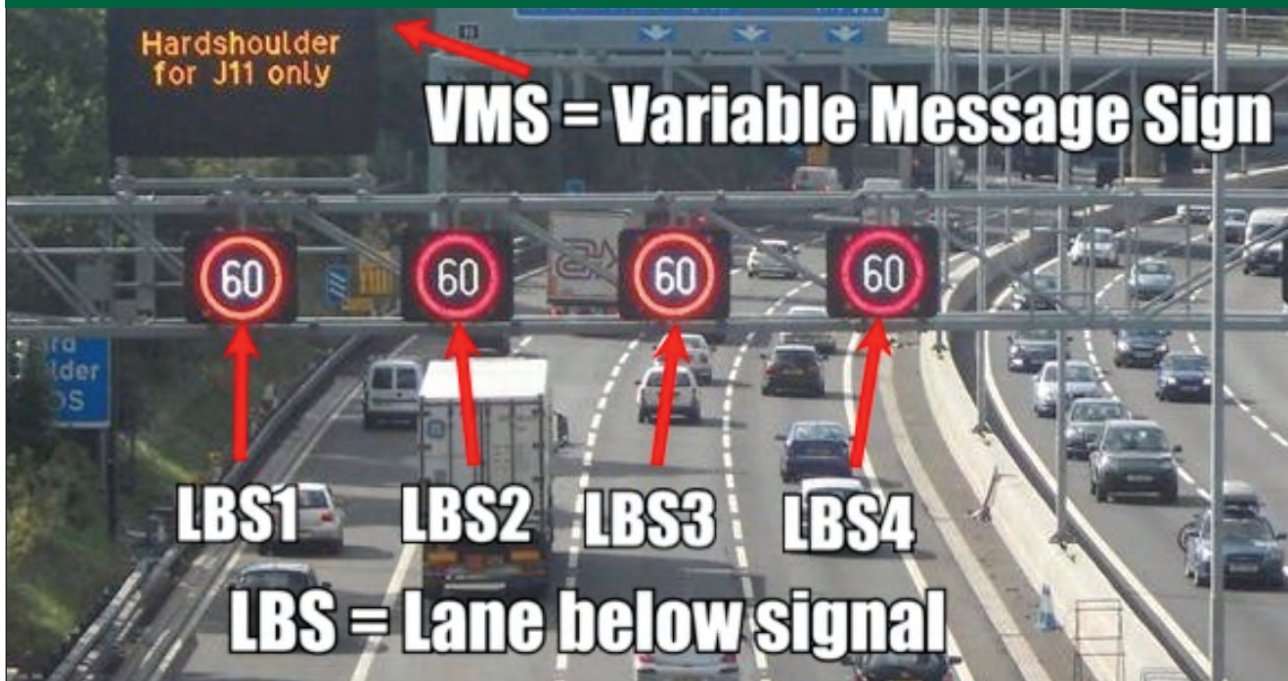
There is more than 95% of the network covered by the Highways England CCTV network. These can be used to inform responding emergency services of incident details, in particular the location, traffic conditions and access routes.

3.4 LANE/SIGN TERMINOLOGY - DHS

Smart motorway carriageway lanes will be identified as per picture 1 below. Emergency Services and Highways England operators will need to be aware of this terminology, as they may be responsible for confirming which lanes are affected and the signs and signals which need to be altered.

For all other types of motorway (non Smart) the correct terminology is Hard Shoulder, Lane 1,2,3 etc.

SMART MOTORWAYS SECTION



Lane/Sign Terminology

3.5 ALL LANE RUNNING (ALR)

This involves many of the features as described for a DHS scheme; however, the main difference is that the hard shoulder is permanently converted into a running lane. In addition, there is a reduction in the infrastructure, i.e. slightly fewer gantries (nominal 900m spacing), ERAs with ERTs (maximum 2500m refuge spacing, nominally more like 1800m). An ALR scheme generally consists of:

- No hard shoulder throughout the scheme – all lanes are live running lanes.
- Through junction running, i.e. the hard shoulder is not retained after the exit slip road and before the entry slip road of the junction (lane drop / lane gain will be implanted where traffic flows warrant it).
- Slightly reduced number of overhead gantries to that of a DHS scheme.
- Mixture of verge mounted variable message signs and lane signals.
- Highways England CCTV cameras are positioned to provide 100% coverage of ALR sections of the network; these cameras are also equipped with Infra-Red capability for low light conditions (e.g. darkness hours, no carriageway lighting).

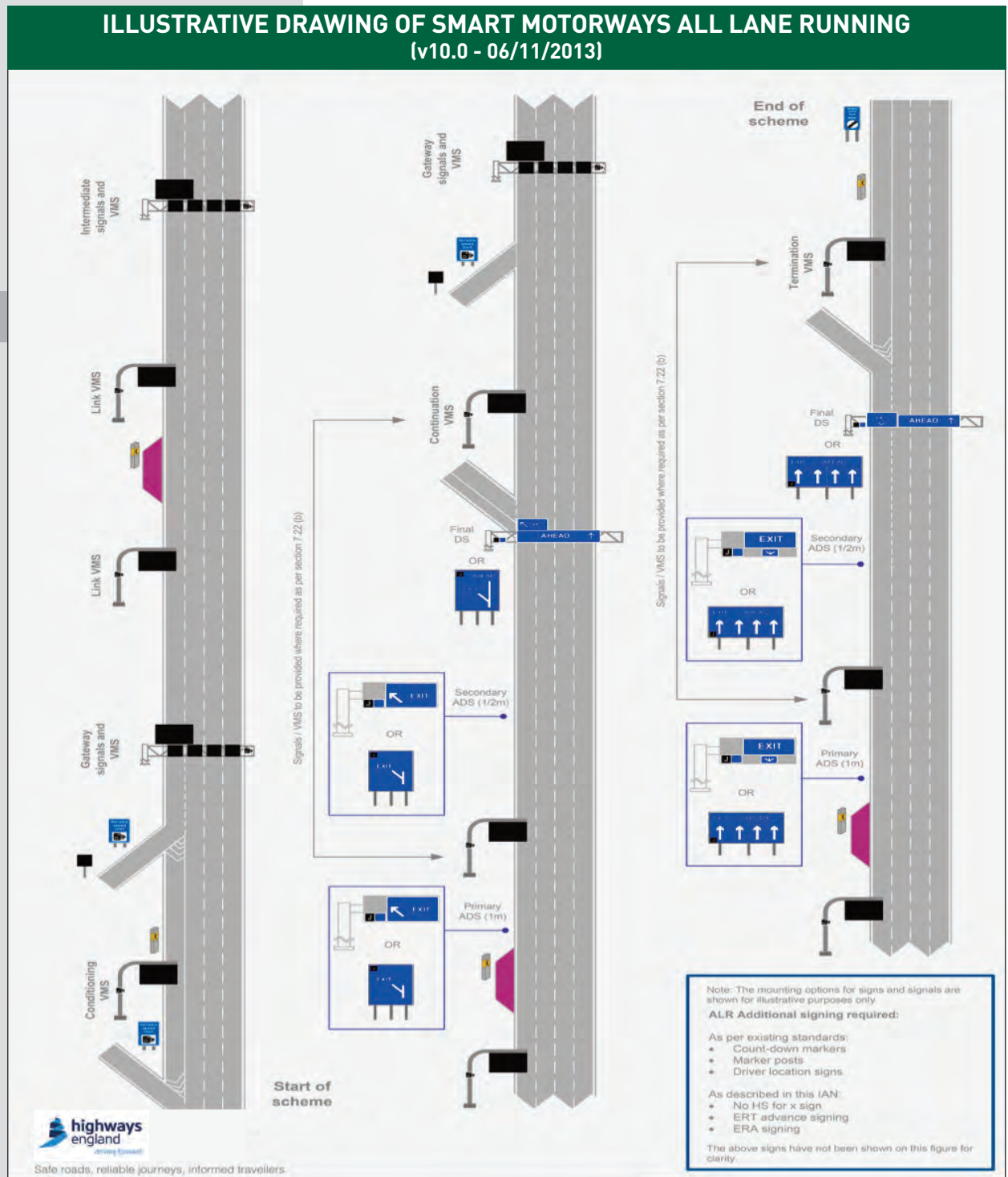


Figure 1:
ILLUSTRATIVE DRAWING OF SMART MOTORWAYS ALL LANE RUNNING

3.6 CARRIAGEWAYS/SLIP ROADS IDENTIFICATION

Highways England RCC operators will change this terminology during communications with Emergency Services Control Rooms.

Main Carriageways are identified by the letters "A" or "B"

Carriageway "A"

Ascending junction numbers

Away from origin of Motorway

Carriageway "B"

Descending junction numbers

Back to origin of Motorway

Slip roads off the main carriageways are identified by the letters "J", "K", "L" or "M"

- "J" – Slip road off Carriageway A
- "K" – Slip road onto Carriageway A
- "L" – Slip road off Carriageway B
- "M" – Slip road onto Carriageway B

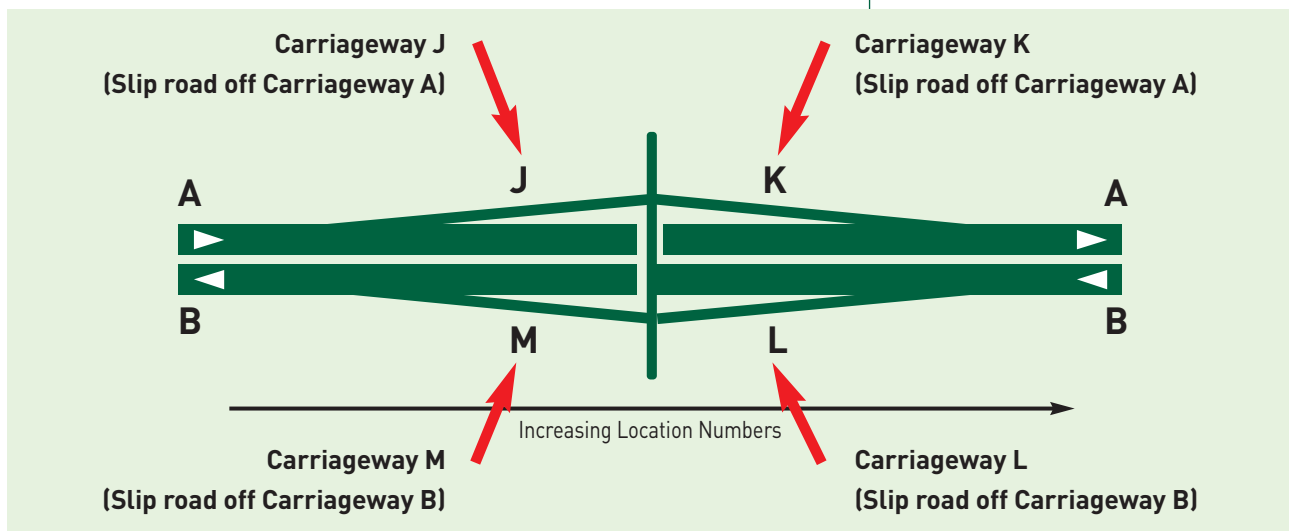


Figure 2:
SLIP ROAD IDENTIFICATION ON AND OFF THE CARRIAGEWAY

3.7 LANE REFERENCING

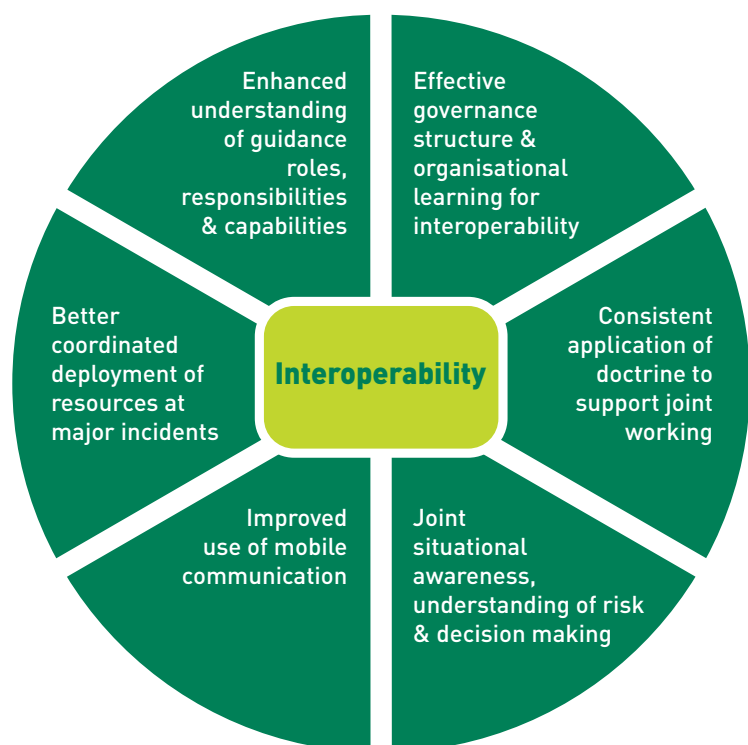
Standard lane referencing is used throughout ALR sections. Within a four lane section, lane one is closest to the nearside verge and lane four is adjacent to the central reserve. Some small lengths of hard shoulder have been maintained on certain sections of Smart motorways.



4. Operating Procedures

Adoption of this guidance and improved management capabilities will assist cooperation between Highways England and the Emergency Services in carrying out operational responsibilities for motorway incidents, they will:

- Improve tactical management of traffic in advance of an incident, and at the incident itself.
- Encourage a greater degree of operational co-operation between agencies.
- Facilitate a greater degree of information sharing between agencies.
- Taken from the Joint Emergency Service Interoperability Principles (JESIP) below is framework for an effective and consistent joint response to incidents, wherever they may take place.



4.1 INCIDENT DETECTION

The detection phase of an incident is the period between an incident occurring and someone being aware of it. Following detection, details of the incident will require verification to ascertain the most appropriate deployment of responders.

Incidents will either be reported to the partners from Highways England RCC, or by other means direct to the partners control operators. Highways England CCTV cameras are positioned to provide coverage of the motorway (the degree of coverage depends on the type of motorway). Highways England RCC operators will use these cameras to verify location and any other details as shown below. This information will be communicated to all responders via respective control centres. Ambulance and Fire Service operators have access to the CCTV coverage via Edge client.

4.2 INITIAL CALL FROM HIGHWAYS ENGLAND

Highways England RCC will give the following information:

- Confirm if it is on camera and the camera number;
- Confirm the location of the incident, marker posts and between which junctions;
- Affected carriageways;
- Whether the incident is between the slip roads on the main carriageway;
- Whether the incident is on the access or exit slip road;
- Type of incident;
- Size of incident;
- If it is a Road Traffic Collision, vehicle type, number involved and nature of incident;
- Numbers of casualties, if known;
- Any casualties trapped, if known;
- If a Highways England Traffic Officer is on scene;
- Confirmed access point.
- Route to scene of incident.

4.3 INITIAL CALL FROM OTHER SOURCES

Calls may be received from other sources other than Highways England, these calls are normally made on the '999' system and are received directly at an Emergency Service control centre. On receipt of these calls, operators will gather most of the same information from the caller and contact Highways England RCC Operator to confirm the incident and information which has been received.



4.4 LOCATION VERIFICATION

The primary objective during verification is to ascertain that sufficient details are gathered about an incident to enable the most appropriate deployment of the resources of each responder to be made.

The mnemonic **METHANE** is commonly used by all emergency responders and can also be used to structure and deliver initial information:

- M** is this a Major incident
- E**xact Location
- T**ype of Emergency
- H**azards, Present and Potential
- A**ccess / Egress routes
- N**umber and types of Casualties
- E**mergency services present and required

Upon notification / detection of an incident occurring within the ALR area the receiving Emergency Service call taker will attempt to confirm:

- The location of incident, specifying which carriageway and between which junctions as a minimum requirement and providing marker posts where possible
- If the incident is between slip roads
- If the incident is on an entry slip or exit slip
- The type of incident
- The extent/size of the incident
- If a Road Traffic Collision, the vehicle type(s), number involved and the nature of the collision
- The number of casualties
- If any casualties are trapped
- If any responder is already on scene
- Any identified hazards

The receiving Emergency Service Control centre will then be responsible for notifying all other required responders (either by electronic interface or by phone).

Highways England RCC will use CCTV to confirm the location of the incident and to provide or expand on the information initially provided.

This information will be disseminated to other responders via their respective control rooms (either by electronic interface or by phone) and will include the relevant CCTV camera number(s) or marker post information. Other stakeholders may also have access to the Highways England CCTV system and, where possible, they too may use this system to gather information and disseminate to other responders. (E.g. Police, Fire, Ambulance or Highways England RCC).

To register and access HACCTV please go to
<https://www.hacctv.org.uk/HACCTVOperational/login.jsp>

4.5 SIGNAL SETTING / POLICE INCIDENT COMMANDER

When dealing with an incident within a motorway section it is important that any requests to set or alter variable message signs and signals are done through one person to avoid any confusion. Therefore, it is important that the correct person is identified, to and by, Police and Highways England RCC Operators as soon as possible. For Police led incidents this should initially be the first Police Officer on scene and taken over by a Police Incident Commander if appropriate. If the incident is Highways England Traffic Officer led then the setting and altering of signals should be left to Highways England staff.

(Note - on non-Smart motorways the signs will not be as capable and may only be able to display advisory speed limits)

Any emergency responder that notices that variable message signs and signals have been incorrectly or inappropriately set, must immediately as a matter of urgency notify the Incident Commander for subsequent action to rectify the situation.

4.6 RESPONDER ACCESS

When an incident has been detected and verified, the deployment of resources will be determined by the access point to the motorway network. Therefore, all information gathered will be used to identify an appropriate access point which offers a traversable route to the incident.

Any deterioration of the arranged access point or route will be immediately reported by Highways England RCC operators to partner control operators. Alternative routes or access points should be discussed and considered.





4.7 ACCESS VIA NORMAL FLOW OF TRAFFIC ON THE AFFECTED CARRIAGEWAY

Emergency response in normal traffic flow will be the initial and preferred approach to attend incidents. This entails approaching the incident from the rear using the reported carriageway and in the same normal direction of traffic flow.

Where traffic flows indicate that access can be achieved by travelling with the normal flow of traffic on the affected carriageway on an ALR motorway the Highways England RCC will set Red X lane closure signals to provide an access lane to the incident scene (as there is no hard shoulder for access). To encourage compliance the Red Xs will be supplemented by the legend "Lane closed for incident access" (see below). The access lane will be established well in advance of the incident and can be set back as far as the previous junction, or beyond, where necessary. Typically, the access lane will be established in lane one for incidents occurring in nearside lanes and in lane four for those occurring in offside lanes, as below:

- **RTC in Lanes 1 & 2 –**
Highways England RCC will close Lane 1 to provide the access route.
- **RTC in Lanes 3 & 4 –**
Highways England RCC will close Lane 4 to provide the access route.
- **RTC in Lanes 2 & 3 –**
Highways England RCC will close Lane 1 to provide the access route (as first preference).

This approach aims to keep as many lanes as safely possible open past the incident to keep traffic flowing and facilitate emergency response from upstream on the affected carriageway. It is noted that whilst more than one lane may be closed at the incident scene, only one lane will be closed for incident access.

Highways England RCC will notify all responder control rooms as to which lane has been closed to provide the access route and they, in turn, will be responsible for disseminating this information to their respective resources. Should there be any delay in the sharing of this information, those attending the incident should use the lane indicated by the variable message signs and signals. (Please see below).

It should be noted that an incident scene may not specifically be within an ALR section however access to the scene will be through an ALR section of motorway and as such will require management of traffic through the use of variable message signs and signals, for example by providing an

incident access lane. This would also help deal with medical emergencies in the ALR section traffic.

If traffic is stationary, emergency services responders should ease through the gaps in traffic queues (ideally between the offside lanes where parallel parked LGV's are unlikely to be encountered) or gaps created by motorists moving their vehicles.

4.8 INCIDENT ACCESS SIGNALLING

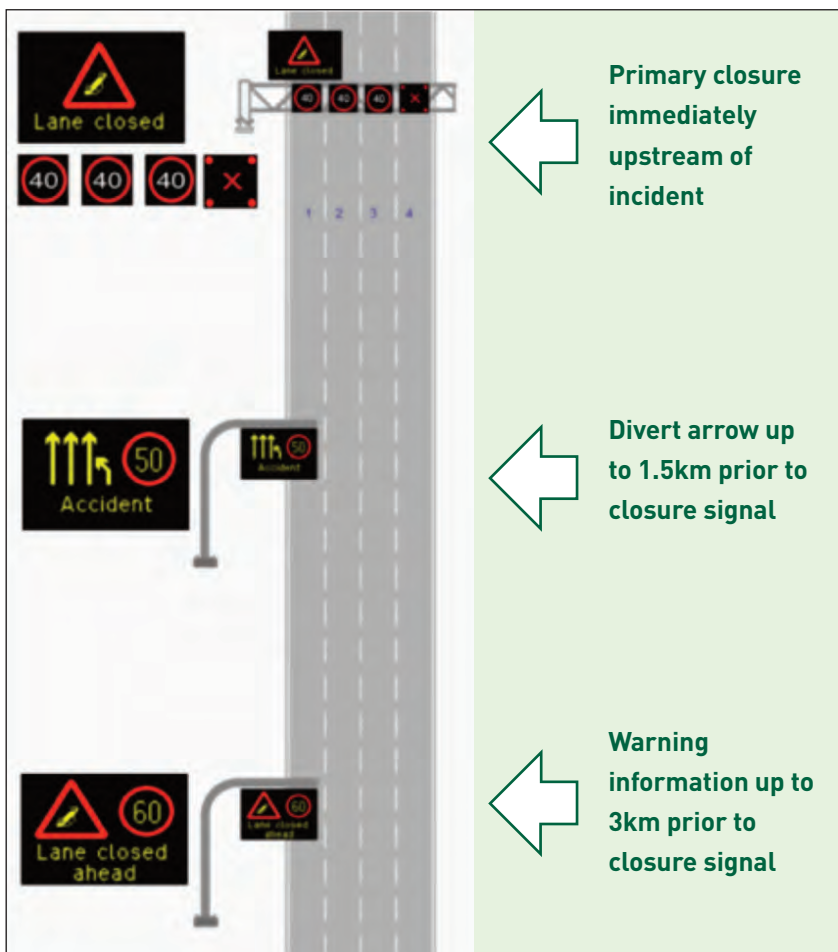


Figure 3:
CARRIAGEWAY INCIDENT SIGNALLING

4.9 REVERSE ACCESS

Reverse access is used when it is not possible to approach the scene of the incident from the rear; it is implemented to allow vehicles to approach from the front of the incident safely and in a structured manner. In essence the carriageway is turned into a two way road, thus allowing emergency vehicles to get to and from the scene of operations.



4.10 IMPLEMENTING REVERSE ACCESS

Summary of minimum criteria

- 1. Police, Fire or Highways England Operational commander has control of head of scene**
- 2. Confirmed no vehicles downstream of incident scene to access point (by CCTV, line of sight or vehicle)**

The option to implement reverse access will need to be considered if it is not possible to access an incident with the flow of traffic on the affected carriageway. The Highways England RCC will advise the Emergency Services if access on the affected carriageway is impeded. First responding resources from the emergency services should also advise their own control rooms if they encounter difficulties accessing the incident.

Reverse access entails responder vehicles entering the affected carriageway at an agreed access point somewhere downstream from the incident (e.g. at the next junction or an emergency turnaround point) and travelling against the normal flow of traffic to the incident scene.

A Joint Hazard Assessment should be quickly carried out by Highways England in conjunction with the Emergency services control rooms and the following criteria considered before the implementation of reverse access:

Criteria 1: Police, Fire or Highways England Operational commander has control of head of scene

The most important and overriding requirement before reverse flow can be implemented is the establishment of an Operational Commander at the incident scene who can verify that no vehicles can pass the scene and any vehicles who have stopped after the scene remain stationary and will not move until instructed to do so. The Operational Commander will be responsible for coordinating all vehicle movements to and from the incident scene.

Criteria 2: Confirmed no vehicles downstream of incident scene to access point

Before vehicles can enter the carriageway from the access point it is necessary to check there are no vehicles between the head of the incident scene and the access point. This can be achieved in a number of ways including use of CCTV, line of sight or vehicle. If there are vehicles in an emergency refuge area the Highways England's RCC will try to contact them to advise them to not leave.

4.11 REVERSE ACCESS PROCEDURE

Once the Operational Commander has confirmed the two criteria above a standard reverse access procedure will be adopted. The affected carriageway essentially becomes a two-way road and it is imperative that all responders adhere to the prescribed procedures (see figure 4 and 5 on page 20 and 21).

This approach will be supported by variable message signs and signals on the affected carriageway after the incident scene by closing lanes four, three and two with red "X"s and leaving lane one open in the correct direction with speed restrictions of 20mph, the legend "ONCOMING VEHICLE" will also be displayed.

4.12 REVERSE ACCESS

This will normally be the tactical option in the early stages of an incident when access with the flow of traffic on the affected carriageway becomes problematic for any reason.

Reverse access requires resources to report to a Rendezvous Point (RVP) at the reverse flow access point (normally the next junction downstream from the incident). The resources at the access point need to be instructed clearly on the procedure to be followed for reverse access including turning safely into the carriageway at the end of the entry slip onto the motorway.

Emergency vehicles will enter the motorway on the ON slip road (except on junctions where there isn't an ON slip road in which case the OFF Slip road will be used) and turn right across the motorway to travel contraflow to the incident site. (Caution should be exercised when crossing the carriageway at the entrance point as there may be vehicles passing along the carriageway in lane 1)

Resources will travel to the incident site in offside lane (lane nearest the central reserve) and leave the incident in nearside lane, by the exit slip road.

Emergency services vehicles accessing an incident using reverse access will be claiming an exemption from the following road traffic regulations:

Direction of Driving – Section 6 of the The Motorways Traffic (England and Wales) Regulations 1982 (as amended) control the manner in which motor vehicles are driven on motorways.



In claiming this exemption the same care should be taken when claiming any other exemption from road traffic law for the purposes of responding to an emergency call.

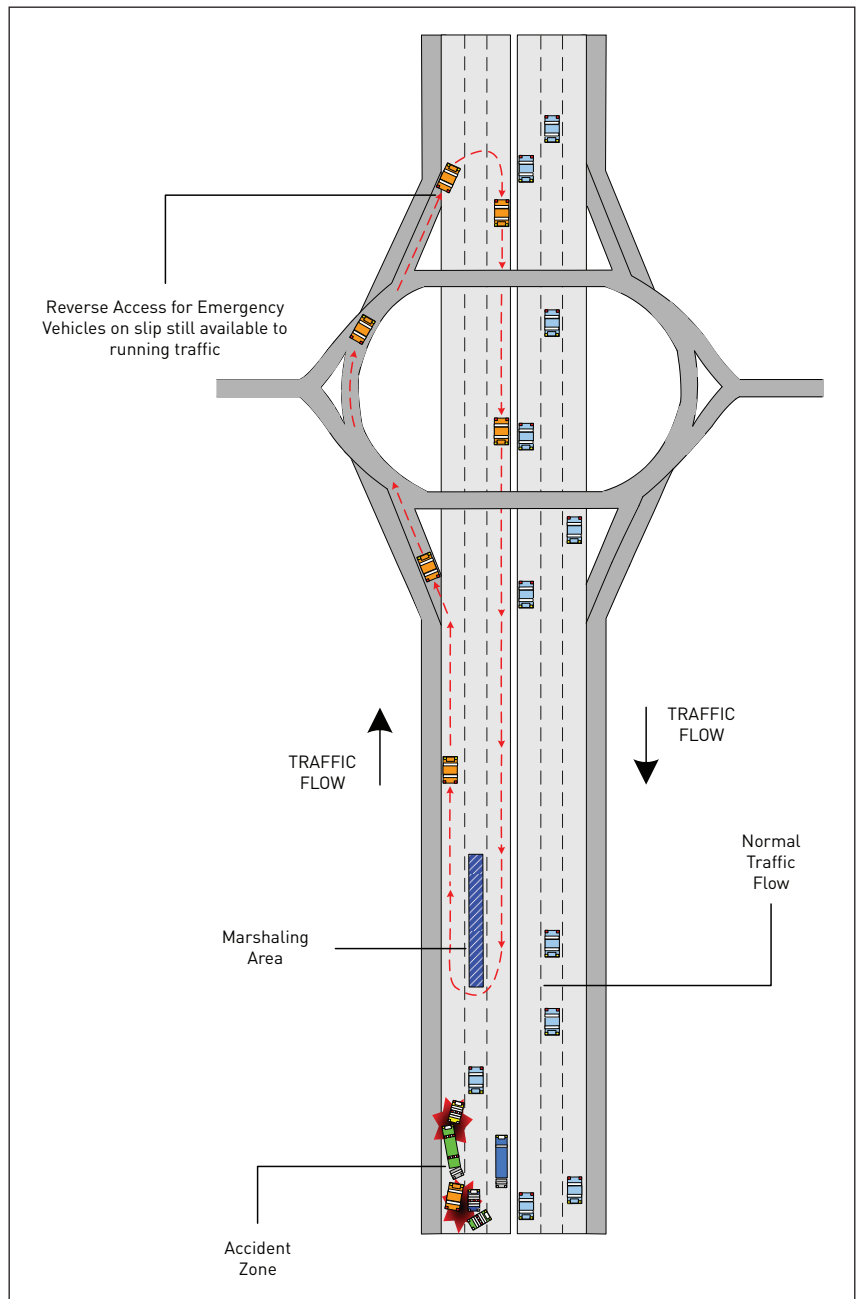


Figure 4:
REVERSE ACCESS ON A MOTORWAY WITH A HARD SHOULDER

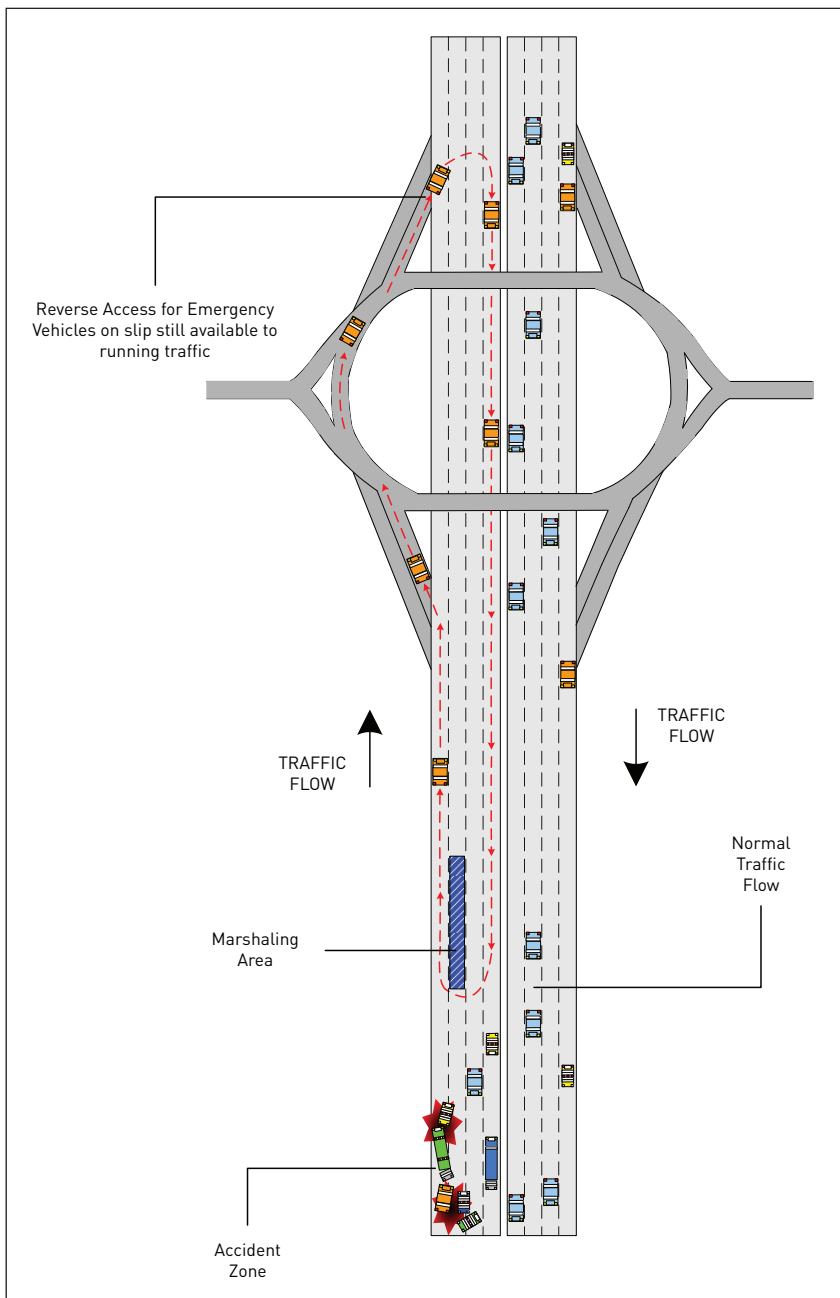


Figure 5:
REVERSE ACCESS ON A MOTORWAY WITHOUT A HARD SHOULDER

RVPs will be agreed by all emergency responders and control centres. Resources can mobilise to these points in order to wait for confirmation of reverse access.

When confirmed, resources will proceed to designated access points and await confirmation of all lane closure on the carriageway and that no vehicles are moving through the scene of operations before entering the motorway network.



The attendance of Highways England / Police escorts should be confirmed at the designated RVP. If there are no escorts available, resources will enter the motorway network when a confirmation of a full closure has been received from Highways England RCC.

Upon receipt of the message that a full closure is in place as above, Ambulance Control rooms will advise attending resources at the RVP when it is safe to proceed.

Ambulance Service vehicles proceeding along the motorway in the reverse direction should display all warning lights and sirens to warn any traffic of their presence.

Ambulance personnel will inform their respective control rooms when teams have entered the motorway network and are at the scene of operations, this information must be conveyed to Highways England RCC.

Highways England will assign a RCC operator to deal exclusively with all issues relating to reverse flow/access running until its conclusion. If CCTV is available, the operator will continually monitor all activities and developments which will be conveyed to all working partners.

A marshalling area should be established a minimum of 100m from the scene, emergency vehicles should park in the approach lane, allowing enough room for vehicles to turn and exit the carriageway. Only vehicles directly involved in rescue/medical treatment should progress past this point. All vehicles should take care on approach and be aware of the possibility of debris in all lanes.



4.13 REARWARD RELIEF

Police and Highways England may also use the same carriageway to release trapped vehicles behind an incident. This procedure is known as rearward relief and is solely the responsibility of the Police and Highways England.

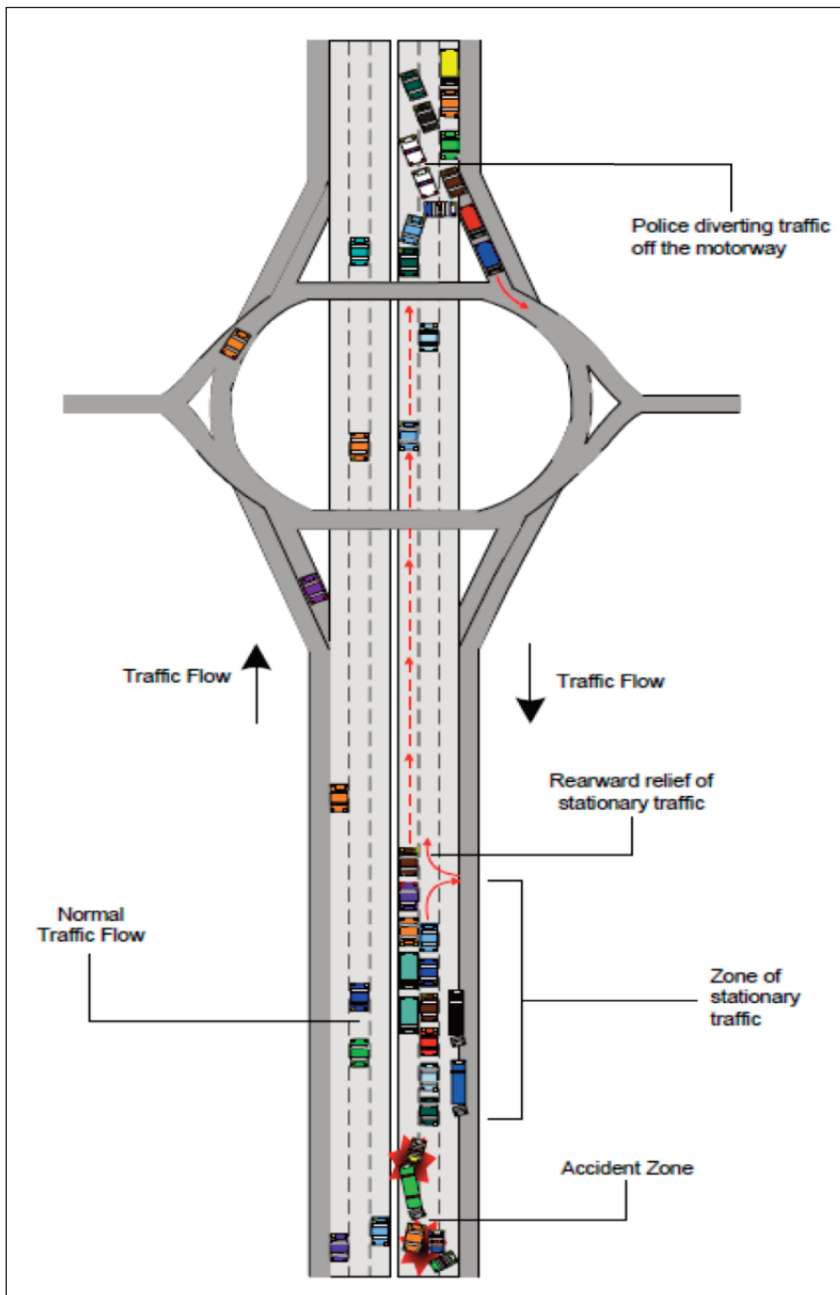


Figure 6:
REARWARD RELIEF TO RELEASE TRAPPED VEHICLES BEHIND
AN INCIDENT



4.14 OPPOSITE CARRIAGEWAY APPROACH

This approach will only be used in exceptional circumstances; it may be used to confirm that all traffic has been stopped on the reported carriageway, prior to instigating the reverse access procedure. In this circumstance a double crewed Police vehicle will access the opposite carriageway and on approach to the scene employ a rolling road block to bring all traffic to a halt. Once traffic has been stopped, the passenger in the Police vehicle will alight the vehicle, cross the central barrier and secure the scene by stopping all traffic. Once complete the reverse access procedure can be instigated and the Police vehicle on the opposite carriageway will proceed and remove the rolling block.

Ambulance Services and Fire Services cannot under any circumstances stop their vehicles on the opposite carriageway unless the lane or carriageway is confirmed closed by Highways England or the Police and scene safety has been established.

4.15 INCIDENT SCENE MANAGEMENT

Incident scene management will begin when responders have reached the scene of operations and start undertaking scene safety duties. If in attendance, this is the responsibility of Police or Highways England and allows other responders to focus on undertaking their core functions.

If Police or Highways England are not in attendance, the Fire Service will be responsible for scene safety and will adopt their own scene safety measures to protect operations and personnel at the scene.

Any lane closures and requests for variable message sign and signal changes made by Ambulance service or Fire Service must be communicated to Highways England RCC via their respective control operators. This should also include a request for additional support from Police and Highways England as appropriate.

Highways England responsibility on scene is to enhance traffic management in accordance with Chapter 8, Traffic safety measures and signs for road works and temporary situations Part 2 Operations:

“Highways England will protect the scene by using signs and signals or by setting up emergency traffic management, enhanced traffic management or temporary traffic management and manage the outer cordon by placing interventions on the approach to the incident to manage traffic across motorway networks.” (Department of Transport, 2009)

The priority of the Highways England during operations is to continue to protect the scene, support emergency services and to manage traffic in the surrounding area to minimise congestion.

Figures 7 and 8 show typical lane closures.

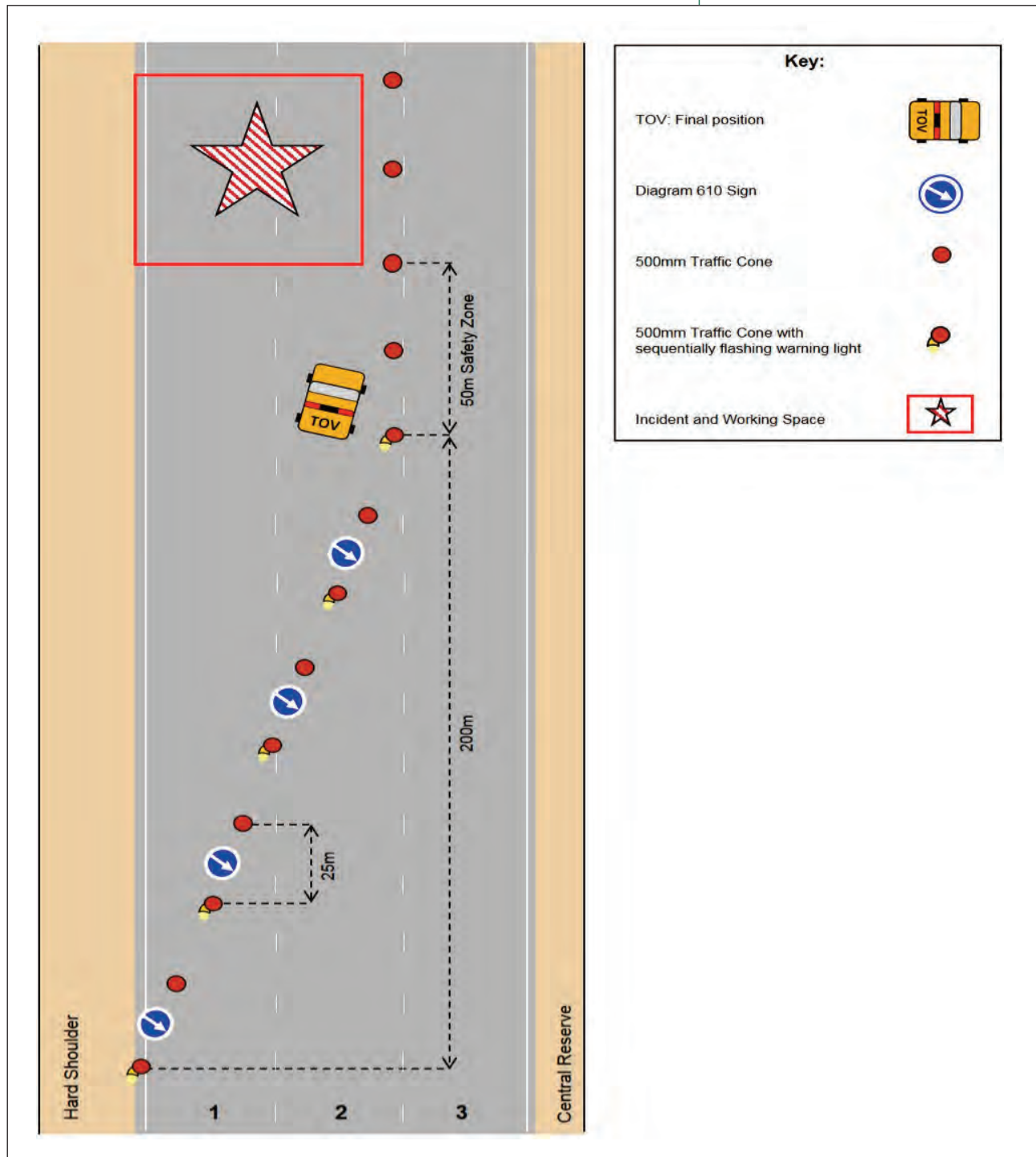


Figure 7:
LANES 1 & 2 CLOSURE (Drawing not to scale)

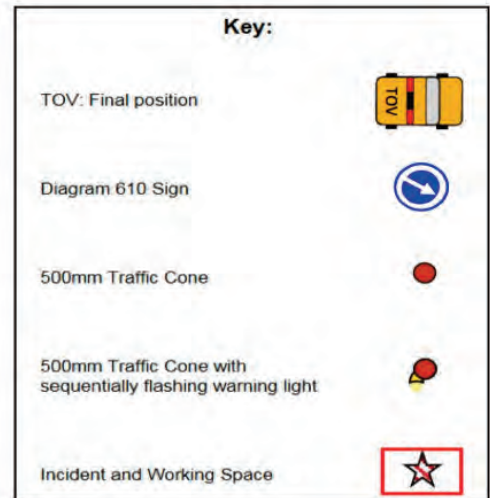
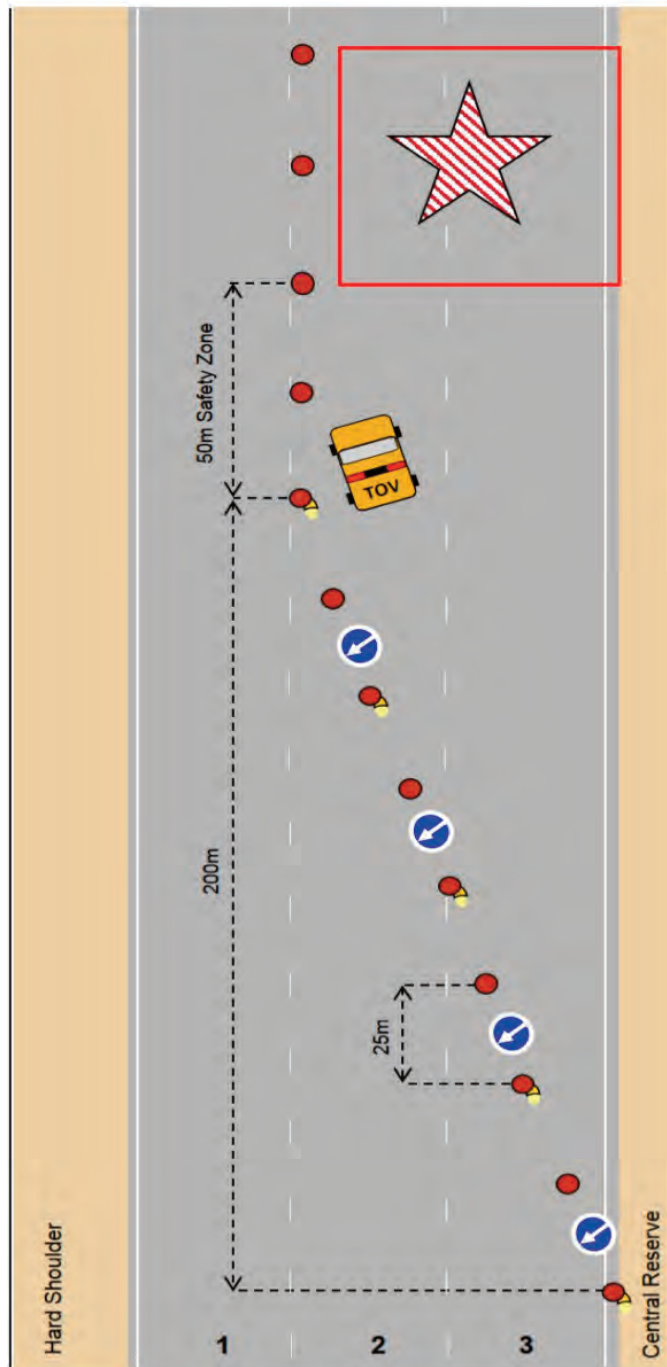


Figure 8:
ETM LANES 2 & 3 CLOSURE (Drawing not to scale)

4.16 VEHICLE POSITIONING

The Police and Highways England will position their vehicles approximately 50m behind the incident site, thus, leaving sufficient space for the Fire Service to position fire appliances in the most appropriate fend off position (angled in line with traffic flow). This should enable sufficient space for specialist fire fighting equipment and/or extrication equipment to be deployed. Fire appliances should be positioned approximately 25m from the rear of the incident.

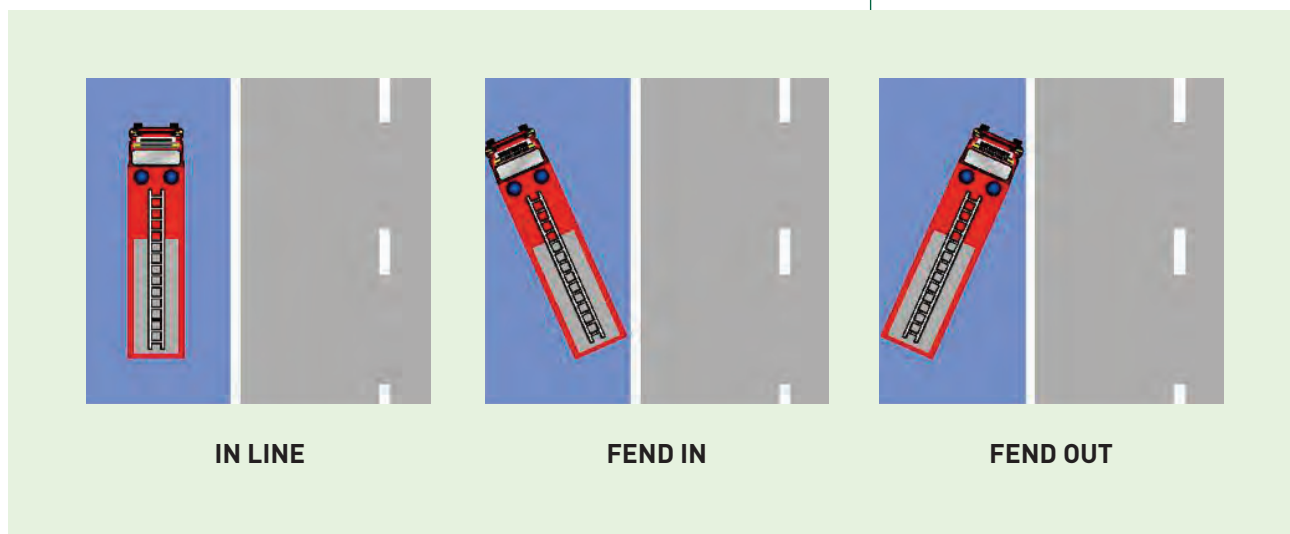


Figure 9:
VEHICLE POSITIONING ON THE CARRIAGEWAY

4.16.1 AMBULANCES

Ambulances will usually be positioned beyond the incident. This will allow the safe loading of casualties for transportation, offer protection from other responding agency vehicles and allow them to leave more quickly. Ultimately positioning will be determined by responding ambulance crews. Access and egress should be maintained throughout the incident to allow removal of casualties when required.

If further vehicles are en-route or required, it may be appropriate, following a discussion with the Police or Highways England, to position these in front of the incident site in an area that does not obstruct flowing traffic, operations and scene access and egress.

On multi-lane carriageways on no account should the incident scene and responders form an island with traffic passing on both sides.



4.16.2 AIR AMBULANCES

Attendance of Air Ambulances will require operations awareness of all responders securing a safe area and communication to all responders. On motorways the following key principles will apply when utilising air ambulances:

- On first attendance air ambulances will normally land off the carriageway adjacent to the accident site
- The air crew will initially attend the incident on foot from the landing site
- Where there is a need to land the aircraft on the carriageway e.g. for casualty loading, both carriageways will need to be closed for safety purposes
- The pilot will land the aircraft on the carriageway and the crew will undertake a "hot load" with the engines running to facilitate a swift exit from the carriageway
- As a working principle Air Ambulance crews may be on scene for some length of time due to extended skills of crews or Doctors on board. The Aircraft should either be moved off the carriageway and returned as the above point when the crew are ready to load. As an alternative where crews are going to be on scene for an extended period if the aircraft is on the carriageway then the rotors should be shut down to allow the traffic flows to be resumed past the scene

At all times communication will be maintained between the aircraft, ambulance control and the Highways England RCC to ensure awareness of the attendance and movement of the aircraft to and from the incident scene.

Figure 10 opposite gives further guidance on safe landing procedures.



AIR AMBULANCE HELICOPTER OPERATIONS AWARENESS

Landing Site Preparations



Landing sites need to be free of people, obstacles, trees and overhead wires. Remove as much litter as possible. Do not cordon off with tape.

Landing on Roads



Both carriageways **MUST** be closed to traffic. Emergency vehicles should not be within 30m of ANY landing site.

Approaching



DO NOT APPROACH without receiving a visual instruction from the pilot. If in doubt do not approach the helicopter until the rotors have fully stopped.



Safety zones for approaching / leaving the helicopter. Stay where the pilot can see you at all times.

Sloping Grounds



On sloping ground, **ALWAYS** approach/depart the helicopter on the downslope side for maximum rotor clearance.

Departure



IN AN EMERGENCY, THE HELICOPTER MAY NEED TO LAND BACK ON THE REJECT AREA.
KEEP ALL PEOPLE AND VEHICLES CLEAR OF AREA.

Briefing from Crew:

- Do **NOT** help the crew without direct instructions.
- Do **NOT** help load/unload the patient without a request from the crew.
- Do **NOT** help the crew with opening or closing the doors.
- Be prepared to control access to the landing site under direction from the crew in preparation for helicopter departure.



Keep in mind:

- Downwash from the helicopter can be damaging. Remove loose objects and hats. Remove as much litter from the site as possible.
- Do not attempt to attract the crew's attention with bright lights or lasers.
- Keeping the Reject Area clear is vital to your safety.
- When landing on or departing from roads - including dual-carriageways and motorways - **BOTH** carriageways must be closed to **ALL** vehicles.



This safety aid has been produced by Bond Air Services Ltd. © February 2014

Figure 10:
AIR AMBULANCE HELICOPTER OPERATIONS AWARENESS



4.17 COMMUNICATIONS

Where the facility exists, the most expeditious means of transferring information from one control centre to another is via electronic interface. Where this facility does not exist, communication between control centres will typically be by phone.

Motorway incidents may cross multiple service boundaries and, until the exact location (i.e. marker post) of an incident can be established, this is likely to result in duplication when deploying resources, with the same Emergency Services response being resourced by more than one partner (i.e. a response from more than one ambulance service).

As the majority of ambulance control rooms do not have an electronic interface with the Highways England RCC, it is expected that multiple phone calls to several agencies will be necessary to share information and the speed with which this can be achieved will be directly affected by the prevailing demand and personnel in the respective control centres.

To assist with efficient communication and interoperability, subject to each responder's own policies and protocols and where the facility exists, all resources attending an incident should be encouraged to use the Emergency Services Interoperability Talk Groups to communicate with other responders. (Note request for use of these talk groups will need to be made via the Police Control room to set this facility up in line with nationally agreed protocols).

When such communication occurs, it will still remain the responsibility of the individual resource to keep their respective control centre updated.

4.18 HAILING CHANNEL

The Emergency Services Interoperability Shared Hailing Talk Group can be used for initial contact and passing of information about an incident.

The facility also exists within the Highways England RCC to dedicate a common incident channel if required that all Police forces can access via their hand held Airwave sets (at the time of writing this agreement this facility does not exist for Fire and Ambulance services).

4.19 INCIDENT COMMAND

Due to the complexity of motorway incidents and the number of potential casualties in one or multiple incidents, early consideration should be given to the deployment of Ambulance Service Incident Commanders to scene.

Once on scene Ambulance Service commanders should make early contact with their counterparts from the Police, Fire Service and Highways England in line with the JESIP principles, to gain a shared situational awareness and joint decision making to resolve the incident in a co-ordinated and timely manner.

4.20 CARRIAGEWAY CLEARANCE

The Police Incident Commander will maintain a dialogue with the Highways England RCC and the Highways England Traffic Officer at the scene to facilitate clearing the incident.

This may include traffic management to assist with:

- Emergency Responder vehicles leaving the incident scene;
- Other vehicles accessing the incident scene to assist with the recovery phase, any investigation and their subsequent departure;
- The phased re-opening of one or more lanes while vehicles are still at the incident scene.

The Highways England RCC should seek advice from the Incident Commander on the status of the incident recovery. This will assist in providing more accurate information on the estimated time of carriageway re-opening.

4.21 SERIOUS INJURY ASSESSMENT

The decision to deploy Police to provide additional / specialised investigation into road traffic collisions will be influenced by the severity of injuries sustained by vehicle occupants or when offences are suspected. Ambulance crews will regularly be asked to provide basic information about the casualties' conditions to assist this assessment before leaving scene. The following definitions and guidance will assist all agencies in determining the need for Police Collision Investigation:



- **Life Threatening** is where there is a high probability of death, most often associated with an inability to maintain an airway or through uncontrolled blood loss.
- **Life Changing** is where there is a high probability that the injured party will not recover sufficiently to lead an independent life, such as in severe head or spinal injury cases and including loss of a limb or eyesight.
- **Serious Injury** is where the injury is less than life changing but is still at a level that would amount to Grievous Bodily Harm under S.20 Offences Against the Person Act 1861, where the injured party has been detained in hospital for treatment and not only for observation.

Police will deploy to ALL injury collisions, however, in relation to Serious Injury cases the following factors will be taken into account in the decision to deploy additional / specialised investigation teams:

1. **Criminal Prosecution** for a 'death by' offence – if the injured party dies OR dangerous driving – if the injured party survives, is a realistic possibility in relation to a third party. Where such an incident is on the Strategic Road Network (SRN), SCIU should not wait for an injury status update from hospital before deploying (CLEAR).
2. **Life Threatening or Life Changing** injuries are strongly suspected but this position cannot be confirmed within a reasonable time of the casualty's arrival at hospital (1 hour). Reference can be made to the local **Ambulance Service Trauma Scoring Guidance** (see sample at Annex D) to assist in making this assessment at the scene with a more cautious approach required for collisions involving occupants ejected from vehicles, pedestrians and cyclists.
3. **Non-Stop RTCs** may benefit from Police Collision Investigation Unit involvement, because even though the extent of the injuries may not amount to life threatening/changing, the use of PCIU specialist resources may help lead to the identification of the driver(s) and vehicle(s) involved.
4. **Elderly Injured Party** aged 70 years or more, particularly as what might first appear to be low level injuries can become life threatening for this age group and so a more cautious approach is required. The greater the forces involved in the collision and the older the injured party then the more likely deployment will be appropriate.

5. **Known Pre-Collision Medical Conditions** that substantially increase the risk of death regardless of age.
6. **Location, Road Type, Time of Day & Weather Conditions** – Incidents on fast and busy roads need to be prioritised, particularly those on the Strategic Road Network (CLEAR). Time of day is an important factor as early deployment may help ensure the road is opened before it becomes busy or allows for the effective and efficient use of resources, i.e. deploying staff in relation to travel and finish times. Existing or approaching bad weather can obviously affect the scene making examination difficult and result in loss of evidence.

IF IN DOUBT – POLICE WILL DEPLOY

4.22 AMBULANCES ON MOTORWAYS CLEARING SCENE

There will be occasions where ambulance crews are completing Patient Report Forms and associated paperwork for patients who are not being conveyed to hospital from motorway incidents. It is important that no excessive delays are being incurred in the re-opening of the motorway (in particular for smart motorways) due to this practice whilst in a live lane.

Where patients have been assessed and not conveyed ambulance crews should aim to clear the motorway as soon as possible to a safe place in line with the CLEAR principles. Crews should take the minimum details required and aim to clear the scene and complete the paperwork off the carriageway in a service area or off the motorway network. Ambulance Control should be informed that they have cleared the scene but not yet cleared the incident.

Once all documentation is complete off the motorway network the crews may call control and make themselves available for tasking.

Highways England will have direct communication with Ambulance Controls and may request that any vehicle they believe to be causing an unnecessary obstruction be asked to clear the carriageway.



4.23 NETWORK RESTORATION

The Incident Management phase will end when emergency responders agree to hand over control to the Highways England. The handover must be a managed process to ensure all parties are aware of the change. The Fire Service must ensure the scene is as safe as practicable and that all stakeholders are aware of risks and hazards. Once completed Highways England will take responsibility of the scene and the incident will move to the recovery and restoration phase.

The recovery phase involves the removal of vehicles and the repair of any damaged infrastructure. The network restoration phase represents the period of time necessary to restore the traffic conditions to a level expected for that time of day

Highways England resources at RCC and at the scene will jointly plan for the recovery and restoration phase during the emergency phase of the incident, alerting recovery and repair services as appropriate and designating RV points to allow a managed approach for their vehicles.

Once the recovery of the incident has been completed and all emergency and recovery responders have left the scene, Highways England will arrange for the carriageway to be re-opened.



4.24 DEBRIEF

Routine de-briefing of incidents is the best way for responding agencies to develop their abilities in incident management and share the experience gained to the benefit of all. However debriefs immediately following the incident should take place off the motorway to avoid delays in the re-opening of carriageway.

A hot debrief is an informal meeting which normally takes place within 24 hours to identify and capture key operational elements whilst fresh in the minds of those involved. Hot debriefs should be facilitated by Highways England.

A hot debrief will always be carried out following major or critical incidents. For example where:

- Exceptional/significant damage has occurred to infrastructure;
- Road users (or others) have experienced exceptional/significant disruption;
- There has been multiple agency involvement;
- There was exceptional/significant environmental impact or potential impact;
- Exceptional/significant delay duration;
- Exceptional/significant number of vehicles involved.

Structured (cold) debriefs, which are usually initiated following a major or critical incident or influenced by the outcome of a hot debrief, should be facilitated by Highways England and will be routinely undertaken for all carriageway closures over 5 hours duration.

The following information will be required for a structured debrief:

- Incident logs in chronological order, starting with the earliest recorded entry in any of participating stakeholders;
- CCTV/silent witness footage;
- Photographs.



ANNEX A

Roles and Responsibilities of agencies on the Motorways

JOINT RESPONSIBILITIES

- Ensure due regard for personal safety and the safety of others throughout the co-ordination of the incident response.
- Co-operate, co-ordinate and collaborate to ensure effective and efficient partnership working between responders.
- Support other responders in achieving their objectives, ultimately contributing to timely carriageway re-opening.
- Establish effective leadership from each responder's on scene commander to co-ordinate the incident response.
- Warn and inform with regular updates to control rooms on:
 - Incident management progress.
 - Traffic management measures.
 - Estimating accurate times for carriageway re-opening.
 - Off network issues.
- Participate in timely debriefing with handover of control and scene transfer to appropriate partner responder.
- Identify, agree and allocate time bound actions to address emerging issues.
- Execute allocated actions.

AMBULANCE SERVICES

Role

The Ambulance Services support incident resolution by:

- Ensuring the initial health needs of those people who become ill or injured whilst travelling on the network are met.
- Initiating and seamlessly delivering rapid assessment, response and where required, treatment of those individuals involved.

Responsibilities

- Save life together with the other emergency services.
- Accurately assess and triage calls received to incidents.
- Protect the health, safety and welfare of ambulance staff as far as is reasonably practicable.
- Provide triage, treatment, stabilisation and care of those injured at the scene.
- Treat those involved as individuals and respond to their needs as such.
- Arrange the most appropriate means of transporting those injured to the receiving and specialist hospitals (involving use of Air Ambulances when required).
- Provide a focal point at the incident for all National Health Service and other medical resources.
- Where required, nominate and alert the receiving hospitals to receive those injured.
- Act as a portal into the wider health services including specialist health advice when required.
- Responsible for decontamination of casualties in a Hazardous Materials or chemical, biological, radiological and nuclear incident.

HIGHWAYS ENGLAND

Role

Highways England leads the resolution of incidents* on the strategic road network to keep traffic moving by:

- Keeping road users moving safely through helpful, accurate and timely information.
- Providing appropriate traffic management.
- Efficiently restoring the strategic road network capacity through incident management.

**When an incident does not necessitate a Police response.*



Responsibilities

- Working with partners to restore safe use of the carriageway as soon as possible.
- Assisting the verification of incident location.
- Co-ordinating the emergency response with the other core responders and supporting the lead agency. Traffic management at the inner cordon i.e. the scene.
- Traffic management at the outer cordon including the approach to the incident and wider national/regional intervention across the strategic road network.
- The implementation of diversion routes (in collaboration with HE Maintenance Contractors and local highways authorities).
- Scene clearance after Police handover.
- Assessing, planning and implementing the restoration of:
 - The carriageway for safe use.
 - Infrastructure at the scene including declaration of the asset as being of a standard safe for use.

FIRE AND RESCUE SERVICE

Role

The Fire and Rescue Services support incident resolution by:

- Extinguishing fires and protecting life and property.
- Extricating casualties from Road Traffic Collisions.

Responsibilities

- Save life through search and rescue.
- Rescue people trapped in road traffic collisions and emergencies.
- Extinguish fires and protect life and property in the event of fires.
- Respond to, contain, mitigate effects and prevent further escalation of incidents involving hazardous materials and loads including radioactive substances.
- Assist with casualty handling.

- Undertake body recovery if it is in a dangerous position, such as road traffic collisions which are only accessible by FRS equipment.
- Ensure the health and safety of persons within the inner cordon.
- Conduct decontamination when required (at the request of the Ambulance Service).

POLICE

Role

The Police will lead the resolution of incidents on the strategic road network which involves:

- Death or injury including collisions and suicides.
- Suspected, alleged or anticipated criminality.
- Threats to public order and public safety.
- Occurrences where the powers in law or skills of a constable are required.

Responsibilities

- Working with other agencies to create a safe and sterile rescue and work environment.
- Preserving the life of those present.
- Preventing escalation.
- Co-ordinating the emergency response with the other core responders and supporting agencies.
- Securing, protecting and preserving the scene, maintaining control and ensuring the integrity of the scene for any subsequent investigation where necessary.
- Acting on behalf of HM Coroner.
- Investigating the incident in a timely fashion – this includes obtaining and securing evidence in conjunction with other investigatory bodies (where applicable).
- Handing over the scene or sections of the overall scene to the Highways England as soon as practicable.



- Working with partners to restore safe use of the carriageway as soon as possible.
- Being mindful at all times of the economic pressures surrounding protracted road closures.

VEHICLE RECOVERY

Role

Both the Police and Highways England have a role in managing the recovery of broken down or damaged vehicles involved in incidents, including their loads:

- The Police leads where the vehicle is (or is suspected to have been) involved in criminality or is otherwise the subject of investigation.
- Highways England leads in all other cases where there is no Police interest. Vehicles will ordinarily be removed under the direction of, or with the assistance of Highways England through its National Vehicle Recovery Manager.

Responsibilities

- On instruction, removal of vehicles and their loads that have been abandoned or are causing an obstruction or danger to other drivers.
- Storage and, if necessary, disposal of vehicles that have been removed.
- Undertake forensic recovery of vehicles where investigation is required (Police recovery only).



MAINTENANCE CONTRACTOR

Role

The Highways England Maintenance Contractors support incident resolution by providing a range of specialist vehicles and equipment as required.

Responsibilities

- Deploy traffic management at the inner and outer cordon.
- Respond in a timely manner to make safe damage to highway infrastructure as a result of an incident with a view to full restoration as soon as possible.
- Deploy and operate pollution control devices including emergency spill kits.
- Assist in assessing the need for additional or specialist resources, to help expedite a speedy restoration of normality and traffic flow.
- Assist the Traffic Officer Service or other Emergency Services upon request with the implementation of Emergency Diversion Routes following area network closures.



ANNEX B

Ambulance Control action card for receipt of a call to Motorway incidents



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3.0 Emergency Operations Centre action card for receipt of a call to Motorway incidents

RECEIPT OF A CALL ON A MOTORWAY including SMART (ALL LANE RUNNING) MOTORWAYS

When receiving a call on a motorway especially where the location is given as on a 'Smart Motorways All Lane Running (ALR)' -- the location must be *immediately* confirmed with the local Highways England Regional Control Centre :

A CAD warning will highlight affected sections of Motorway where All lane running is in place as follows:

"Smart Motorways All Lane Running in Operation"

A summary of actions required by ambulance control will then be included.

Call Taker Actions:

It is very important that the call taker asks the caller if the incident is on the main carriageway or on a slip road.

If on main carriageway:

- Which junctions are they between?
- Which carriageway is the incident on (i.e. what direction are they travelling)?
- Which lanes are affected?
- Is the incident between the slip off and slip on at a junction?
(This will affect the access point for the responding vehicle)
- Are there any marker signs visible with letters and numbers on or numbers on an emergency roadside telephone?





If on a slip road:

- Which junction is the slip road at?
- Are they entering or exiting the main carriageway?
- Take extra care in gathering details for an incident on a slip road between different motorways – think about how the responding vehicle is going to reach them.

If you are still unsure as to the incident location or how to accurately zone it, seek advice from a Team Leader immediately.

Contact Highways England, Police and Fire Services as required.

Dispatcher / Team Leader Actions:

Ensure that the Highways England RCC has been contacted and the location has been verified.

Consider which / how many lanes have been affected:

- If all lanes are affected, avoid committing more than one resource to the same carriageway as the incident e.g. with flow (they are very likely to be caught up in the traffic tail-back and be delayed in reaching the patient).
- Liaise with Highways England as to the best point of access. If all lanes are affected they are likely to need to instigate 'reverse' access. If only a few lanes are affected they can close relevant lanes on the same carriageway to allow improved access through the traffic.
- Ensure that all responding crews are clear as to the point of access they need to utilise and give them as much information as possible to help them locate the incident quickly.
- **REVERSE ACCESS** If 'reverse access' is implemented by Highways England, crews should be given appropriate instruction on where to access the incident e.g. RVP at a Junction.





- Crews should be told not to commit to Motorway unless specifically authorised to do so by Ambulance Control or Highways England representative at the access point. This authorisation may come directly to the crew or via the Ambulance Control or from Highways England RCC.
- Once reverse access is agreed the crew should be given specific instruction on entering the motorway and which lane to travel to and from the incident in as per the action card for reverse access.
- Ambulance crews should notify control when entering the motorway under reverse access and when clear of the motorway on leaving the scene. Ambulance Control should update Highways England RCC of all vehicle movements on and off the motorway.

RENDEZVOUS POINTS

The Highways England may request vehicles to attend an RVP where exact location of incident is unknown, these have been predetermined locally.

Ambulance vehicles should park safely on the junction or just off the junction ready to enter the motorway when required. Communication with Ambulance Control should be maintained at all times

Police or Highways England may send an officer to the RVP to provide co-ordination where resources allow.

CO-ORDINATION

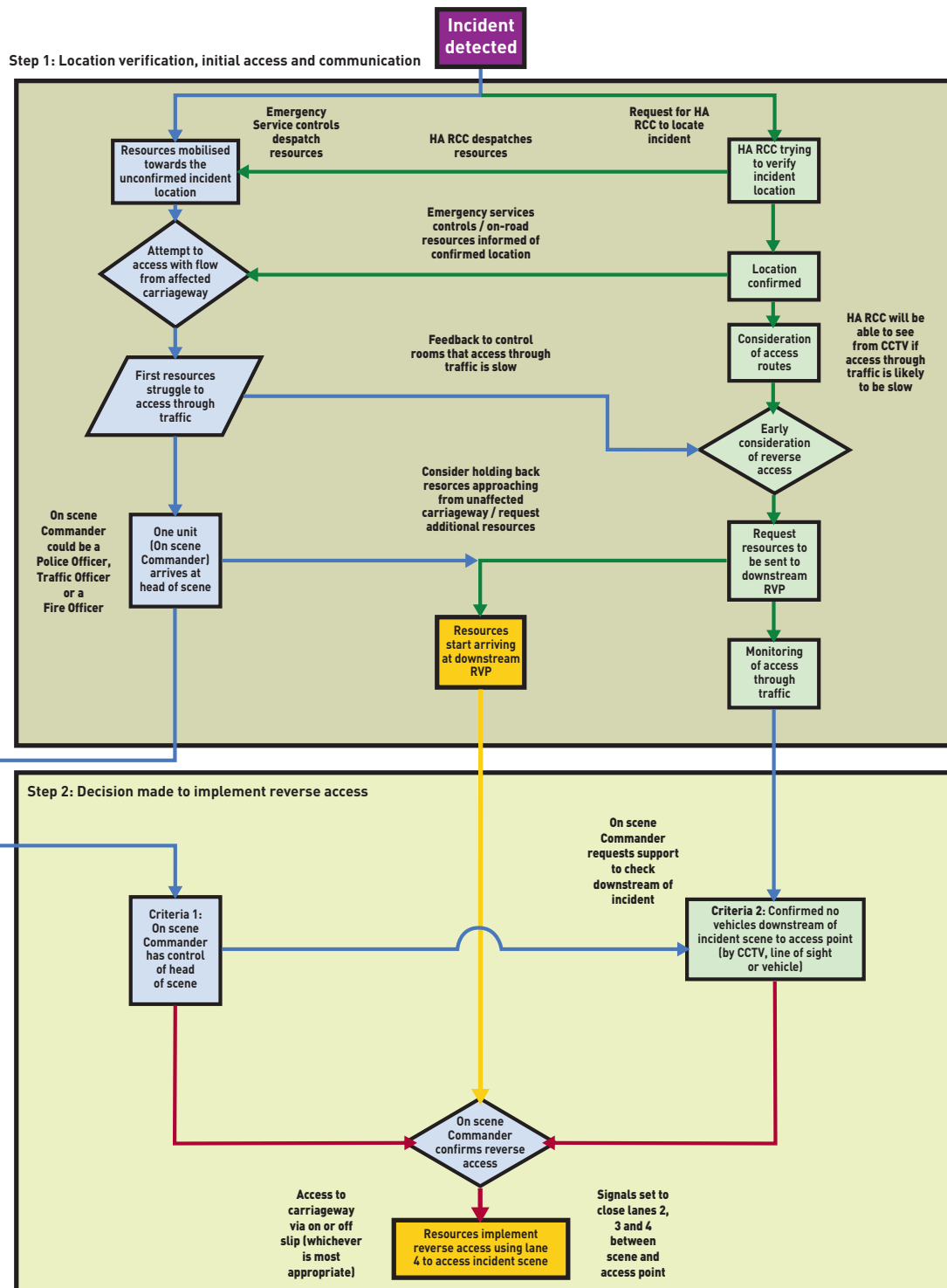
Current responsibilities for incident locations remain unchanged between Ambulance Service controls, however close co-operation is required to maintain a robust response to incidents.



ANNEX C

Highways England Action Card - Reverse Access Flowchart

Flowchart for reverse access to an incident (ideal)





ANNEX D

Action Card for Ambulance Control rooms – Implementing Reverse Access



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4.0 Emergency Operations Centre action card for Implementing Reverse Access to Motorway incidents

- Resources to RVP at the Junction above the incident (downstream)
- Regular communication to be maintained with Highways England RCC and other emergency services control rooms
- Highways England RCC to confirm Highways England, Fire or Police Operational Commander is at the head of the incident and has control of the traffic.
- Crews only to access the motorway once closure confirmed by Highways England RCC
- Crews to inform ambulance control when entering the motorway
- Access via the on slip road and turn across the carriageway into lane 4 to access the incident.
- Crews to run along lane 4 in the reverse direction to the incident and park safely at the scene allowing other vehicles space to move
- Crews to return from the incident with flow in lane 1 and inform the Highways England operational commander and Ambulance Control when leaving the Motorway.
- The proposed exit junction should also be advised especially if the vehicle will pass through the reverse access entry junction.
- Ambulance Control to advise Highways England RCC when all resources are clear of the motorway.

Note – no access by ambulance crews from the opposite carriageway unless this also is closed by Police or Highways England.

Remember that attending ambulance crews and response vehicles will require specific instructions from Ambulance Control to undertake this procedure.

Verification of understanding should be sought at every stage for the safety of all responders.

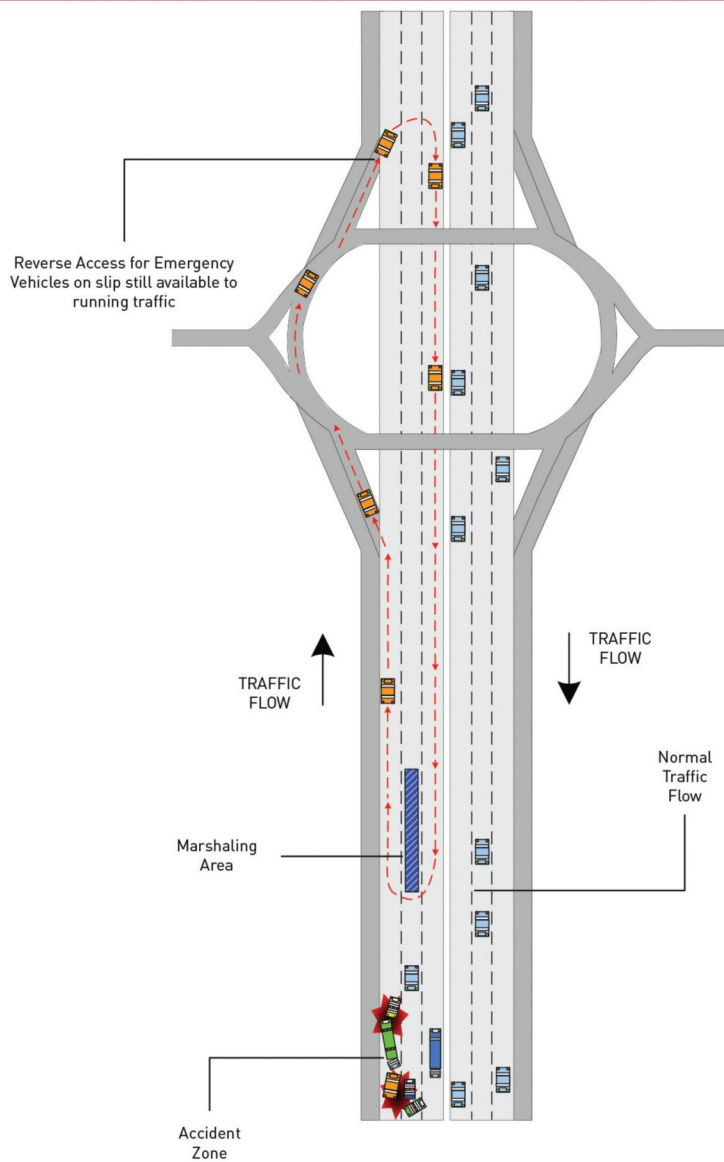
AMBULANCE CONTROL ACTION
CARD FOR IMPLEMENTING
REVERSE ACCESS

4



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Reverse access on a motorway with a hard shoulder



AMBULANCE CONTROL ACTION
CARD FOR IMPLEMENTING
REVERSE ACCESS

4

ROAD AND MOTORWAY INCIDENT ACTION CARDS - October 2015
Version 1.2 - OFFICIAL

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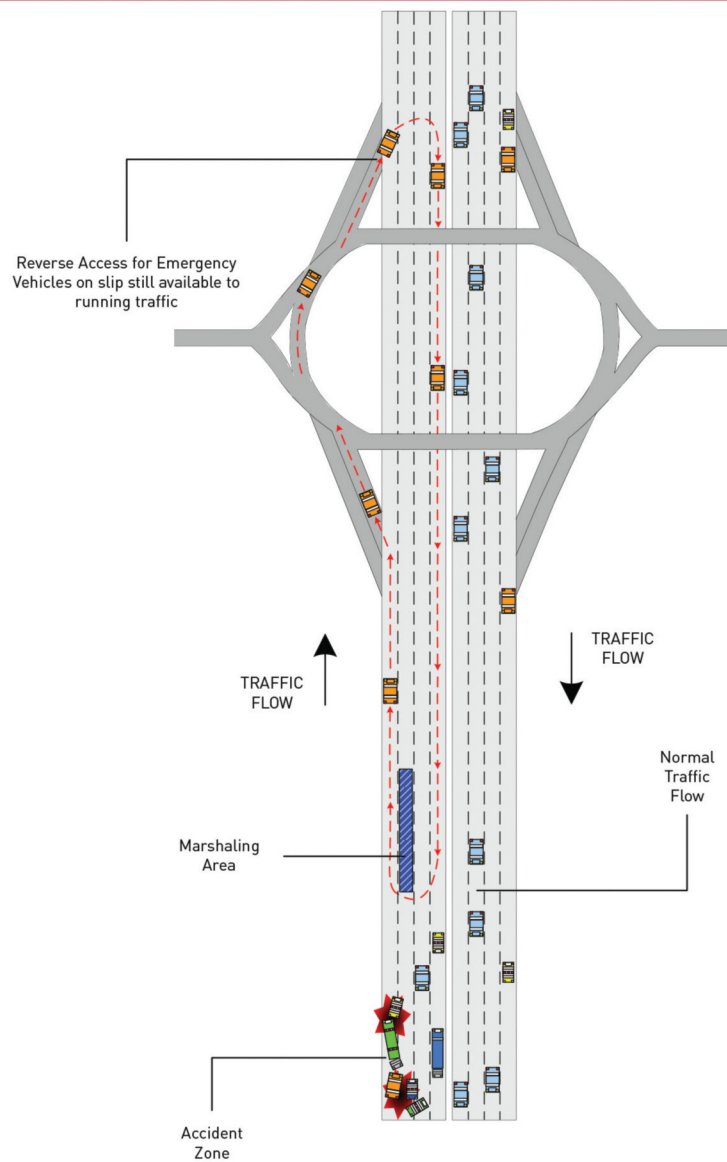
Ambulance Control action
card for receipt of a call to
Motorway incidents

D





Reverse access on a motorway without a hard shoulder



ANNEX E

Sample Ambulance Service Major Trauma Triage Tool

Major Trauma Triage Tool - Primary Patient Transfer

In the context of Major Trauma:

Step 1

Assess vital signs
and level of
consciousness

Glasgow Coma Score ≤ 14
Lucid interval
Sustained systolic blood pressure < 90
Respiratory rate < 10 > 29
OR abnormal paediatric value

Step 2

Assess anatomy
of injury

Chest injury with altered physiology
Traumatic amputation proximal to wrist/ankle
Penetrating Trauma to neck, chest, abdomen, back or groin
Suspected open and/or depressed skull fracture
Suspected pelvic fracture
Spinal trauma suggested by abnormal neurology
Trauma along with facial and/or circumferential burns
Time critical (e.g. isolated burns in excess of 20%)
Two or more long bone fractures
Haemorrhage controlled by CAT Haemostatic dressings

Step 3

Evaluate
Mechanism of
injury

Traumatic death in same passenger compartment
Falls > 20 feet (two floors)
Person trapped under vehicle
Bulldozer window and/or damage to the 'A' post of vehicle
Pedestrian/cyclist vs motor vehicle, thrown/run over with significant impact
Ejection from a vehicle at speed

Step 4

Assess special
patient or system
consideration

Patients who have sustained trauma but do not fit any of the criteria above but are:

- Older patients (> 55)
- Pregnant (> 20 weeks)
- Known to have a bleeding disorder
- Morbidly Obese
- Burns circumferential or 20% (BSA)
- Compensating paediatrics

East Midlands Ambulance Service; Version 2.3 April 2014

The Major Trauma Centre
in the East Midlands
Network is;

**Queen's Medical
Centre Nottingham**

Bordering MTC's are as follows:
Hull Royal Infirmary,
Northern General Hospital and
Sheffield Children's Hospital,
University Hospitals Coventry
and Warwick Hospital
University Hospitals of North
Staffs and Stoke
Birmingham Children's Hospital
University Hospitals of
Birmingham

If you cannot reach a Major
Trauma Centre within 45
minutes, transport to nearest
Trauma Unit and inform EOC

In the event of airway
compromise or major
haemorrhage, consider diverting
patient to nearest Trauma Unit
and inform EOC

If not conveying to the Major
Trauma Centre, complete the
associated major trauma
checklist as a precaution

YES to any,
Convey to Major Trauma
Centre

YES to any,
Convey to Major Trauma
Centre

YES to any,
Convey to Major Trauma
Centre

Consider
Taking clinical
advice

YES to any,
Convey to Major Trauma
Centre

Contact the EOC as soon as practicable





NARU

Notes

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Notes

[illegible]



**National Ambulance
Resilience Unit**

NARU



Guidance for Ambulance Service response to Incidents on the Motorway Network (Including Smart Motorways)

For further information please contact:

National Ambulance Resilience Unit (NARU)

Website: www.naru.org.uk

**November 2015
Version 1.0**