

Consultation Paper

Birmingham Box Active Traffic Management
Phases 1 and 2



January 2009



Summary of the Consultation

Topic of this consultation:	The Highways Agency is expanding the innovative Active Traffic Management ('ATM') scheme onto other sections of the motorway 'box' around Birmingham.
Scope of this consultation:	This consultation exercise concentrates on the draft Regulations needed to provide ATM on certain motorway stretches around Birmingham. Copies of the Regulations are enclosed within the Consultation Paper, and we would specifically welcome comments on the Regulations.
Geographical scope:	The ATM scheme covers sections of the motorway 'box' around Birmingham (including sections of the M6, M40 and M42 as described in the Regulations) and will introduce control and signalling to enable proactive management of the motorway network. The scheme includes the introduction of variable speed limits and hard shoulder running which use the latest technology to make best use of existing road space whilst maintaining and, where possible, improving current safety standards.
Impact Assessment:	A full Impact Assessment (IA) has been included at Annex A.

General Information

To:	The consultation is aimed at any affected stakeholders and the general public.
Body/bodies responsible for the consultation:	The Highways Agency, Network Operations Division, ATM and ITS Solutions Team.
Duration:	The consultation will last for a period of 12 weeks commencing on 8 th January 2009. The consultation period will close on 2 nd April 2009 and responses should arrive no later than that date, please.
Enquiries:	Highways Agency C/o: Paul Marsh Mouchel 2 Rye Hill Office Park, Allesley, Coventry, CV5 9AB

	<p>Email: BBATM.PMO@mouchel.com Telephone: +44 (0) 7976 456433</p>
<p>How to respond:</p>	<p>Please respond to the consultation in writing at the following address:</p> <p>Highways Agency C/o: Paul Marsh Mouchel 2 Rye Hill Office Park, Allesley, Coventry, CV5 9AB</p> <p>Or alternatively you can respond to the consultation by email:</p> <p>BBATM.PMO@mouchel.com</p>
<p>Additional ways to become involved:</p>	<p>As this consultation exercise is predominantly a technical issue with specialist interests following discussions with those affected, this will be purely a written exercise.</p> <p>The Highways Agency website will include a copy of this consultation pack which will be available to the general public. The website address is: http://www.highways.gov.uk/business/133.aspx.</p> <p>To receive further information on the scheme you can contact our Highways Agency Information Line on: 08457 504030.</p> <p>Alternatively you can email the ATM Team at: BBATM@highways.gsi.gov.uk</p> <p>Also please check out the ATM Website at: www.highways.gov.uk/knowledge/1356.aspx</p>
<p>After the consultation:</p>	<p>All responses received from consultees within the consultation period will be considered and responded to as necessary. Following the consultation a summary report will be made available on the Highways Agency website. The summary report will provide an analysis of responses received and provide justification for the selected option outlined in the Impact Assessment.</p> <p>Subject to the results of the consultation; we envisage that the Regulations will be introduced in Summer 2009.</p>

Compliance with the Code of Practice on Consultation:	This consultation complies with the Government's Code of Practice on Consultation.

Background

Previous engagement:	<p>The implementation of ATM around the Birmingham Box follows the Secretary of State's announcement in July 2008 that a £6bn investment programme would be taken forward to tackle motorway congestion and make better use England's key roads. As part of this, a further 500 miles of motorway are being considered for hard shoulder running during busy periods, following a successful trial of ATM on the M42 to the south of Birmingham.</p> <p>Since September 2006 an ATM pilot scheme has been in operation on the M42 from Junctions 3A to 7. The ATM Pilot scheme was developed in close consultation with the DfT and the Central Motorways Policing Group and emergency services. The Highways Agency is committed to expanding this scheme following this successful pilot.</p> <p>During the consultation process for the M42 ATM Pilot comments were received from a variety of stakeholders included members of the emergency services, road user groups, local Members of Parliament and vehicle recovery operators. The process began on the 19 July 2004 and over the following 14 weeks; comments were received regarding both the draft Regulations and the project itself. Meetings and discussions with key stakeholders are being undertaken through the design and construction of the Birmingham Box ATM scheme.</p>
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Ministerial Foreword

The implementation of Active Traffic Management around the Birmingham Box follows the Secretary of State for Transport announcement in July 2008 that a £6bn investment programme would be taken forward to tackle motorway congestion and make better use England's key roads. As part of this, a further 500 miles of motorway are being considered for hard shoulder running during busy periods, following a successful trial of Active Traffic Management on the M42 to the south of Birmingham.

The Minister of State for Transport, Andrew Adonis said:

“Hard shoulder running is one of the innovative ways in which we can use the existing road network to help drivers beat the jams. The trial on the M42 showed it really makes a difference – cutting people’s journey times and giving business and commuters the reliability they need. That’s why we’re today working to extend it to more of the motorway network around Birmingham, and looking at where else around the country we can offer this as a solution.”

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Executive Summary

This consultation will provide an opportunity for interested parties and individuals to comment on the legislative changes, by way of the following draft Regulations, required to allow for the implementation of variable speed limits and hard shoulder running:

- The M42 (Junctions 3A to 7) (Actively Managed Hard Shoulder and Variable Speed Limits) (Amendment) Regulations 200X;
- The M40 (Junction 16 to M42 Junction 3A) (Northbound) (Variable Speed Limits) Regulations 200X;
- The M42 (Junctions 7 to 9) (Variable Speed Limits) Regulations 200X; and
- The M6 (Junctions 4 to 5) (Variable Speed Limits and Actively Managed Hard Shoulder) Regulations 200X.

A further consultation will be undertaken at a later date for the following (provisionally titled) M6 (Junctions 8 to 10A) (Variable Speed Limits and Actively Managed Hard Shoulder) Regulations 2XXX;

The proposed draft Regulations will allow for variable speed limits to be utilised according to prevailing traffic conditions with speed limits to be clearly displayed above each lane of the main carriageway.

Where actively managed hard shoulder running will be introduced the Regulations are needed to modify the Motorways Traffic (England and Wales) Regulations 1982 (SI 1982/1163) with regards to those roads specifically defined (the changes will not apply nationally).

The scheme will introduce control and signaling to enable proactive management of the motorway network adjacent to the Birmingham conurbation. Hard shoulder running will be implemented where appropriate.

This consultation exercise is concentrated on the draft proposed Regulations which are needed in order to implement active traffic management by way of variable speed limits and hard shoulder running. Copies of which are included at Annexes C to F. We would welcome comments specifically on how the draft Regulations could affect your organisation or those you represent. Similarly we welcome your comments on the Impact Assessment which can be found in Annex A. Consultees are invited to offer views on the treatment of costs and benefits in the accompanying Impact Assessment, and the results will feed into the final assessment which will be published alongside the final Regulations. This is not, however, a consultation on the operation of the Birmingham Box Active Traffic Management scheme.

The introduction of Variable Speed Limits Hard Shoulder Running

The Highways Agency is committed to expanding the Active Traffic Management ('ATM') Pilot project (variable speed limits with the addition of hard shoulder running), which has been in operation on the M42 from junctions 3A to 7 since September 2006. The expansion of ATM will contribute to:

- Reducing congestion;
- Providing more reliable journey times;
- Reducing the impact of accidents/incidents;
- Increasing information for the driver;
- Maintaining current safety levels; and
- Reducing driver stress.

The M42 Active Traffic Management Pilot has provided additional congestion relief benefits without the need for widening or land take and has provided the tools for the Highways Agency (HA) to undertake the Network Operator Role.

The key to the success of ATM is the innovative 'Operational Regimes' introduced to make best use of the existing road space. An Operational Regime is the scenario or plan that the operator or system implements in response to real time traffic conditions. The Operational Regimes include the introduction of variable speed limits and hard shoulder running which use the latest technology to make best use of existing road space whilst maintaining and, where possible, improving current safety standards.

APPENDICES

Annex A - Impact Assessment

Annex B - Consultation List

Annex C - The M42 (Junctions 3A to 7) (Actively Managed Hard Shoulder and Variable Speed Limits) (Amendment) Regulations 200X;

Annex D - The M40 (Junction 16 to M42 Junction 3A) (Northbound) (Variable Speed Limits) Regulations 200X;

Annex E - The M42 (Junctions 7 to 9) (Variable Speed Limits) Regulations 200X

Annex F - The M6 (Junctions 4 to 5) (Variable Speed Limits and Actively Managed Hard Shoulder) Regulations 200X.

1. HOW ARE WE CONDUCTING THE CONSULTATION

1.1 WHAT IS THIS CONSULTATION ABOUT?

We are consulting on the content of four proposed Regulations that provide for the expansion of variable speed limits ('VSL') and actively managed hard shoulder running ('HSR') to parts of the motorway box surrounding Birmingham. This is not, however, a consultation on the operation of the Birmingham Box Active Traffic Management scheme.

The project aims to build upon the success of the M42 Active Traffic Management Pilot project, currently operational on part of the Birmingham motorway box between junctions 3A and 7.

This paper describes the effects of the proposed Regulations.

1.2 WHY DO WE NEED THIS NEW TECHNOLOGY?

The Government has undertaken a £6 billion investment programme to improve and make better use of motorways and other key roads. The Highways Agency is developing its role as Network Operator through a series of traffic management, network control and other measures with the aim of:

- Achieving best use of existing road space;
- Responding more quickly to incidents and reducing clear-up times; and
- Reducing congestion and increasing the reliability of journey times.

Both VSL and HSR are key deliverables against these requirements. They aim to tackle congestion through the introduction of new technology and innovative solutions to make best use of the existing road space whilst maintaining and, where possible, improving current safety standards.

1.3 JOINING THE DEBATE

We would like to encourage any representative organisations, businesses or individuals affected by the proposed legislation to make contact with us and communicate your views.

We have written directly to the organisations and persons listed at Annex B to involve them in our consultation exercise. The list is not exhaustive, but represents the types of organisations who are affected by the changes proposed in this paper.

If you are responding on behalf of an organisation, it would be helpful if you could note this in your reply. Please also indicate the nature of the

organisation, how many individuals' views are included in the response, and ways in which these views were gathered.

1.4 SENDING YOUR CONSULTATION RESPONSE

All responses should be sent in writing (email or by post) to Paul Marsh at the address below. Please let us have your comments by the 2nd April 2009.

Highways Agency
C/o: Paul Marsh
Mouchel
2 Rye Hill Office Park,
Allesley,
Coventry,
CV5 9AB

Email: BBATM.PMO@mouchel.com
Telephone: +44 (0)7976 456433

1.5 HOW WE WILL ACT ON YOUR RESPONSES

Following the consultation period, we will publish a 'Response to Consultation Report', summarising how we have modified our proposals according to your comments. This will be published on the Highways Agency website.

Information provided in response to this consultation, including personal information, may be subject to publication or disclosure in accordance with the access to information regimes (these are primarily the Freedom of Information Act 2000 (FOIA), the Data Protection Act 1998 (DPA) and the Environmental Information Regulations 2004).

If you want other information that you provide to be treated as confidential, please be aware that, under the FOIA, there is a statutory Code of Practice with which public authorities must comply and which deals, amongst other things, with obligations of confidence.

In view of this it would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on the Highways Agency.

The Highways Agency will process your personal data in accordance with the DPA and in the majority of circumstances this will mean that your personal data will not be disclosed to third parties.

1.6 FURTHER INFORMATION

To receive further information on the scheme you can contact our Highways Agency Information Line on: 08457 504030 where a trained expert will get back to you with a response to your questions. Alternatively you can email the Active Traffic Management Team at:

BBATM@highways.gsi.gov.uk

Also, please visit the Active Traffic Management information page at:

www.highways.gov.uk/knowledge/1356.aspx

1.7 GOVERNMENT'S CODE OF PRACTICE ON CONSULTATION

We are conducting this consultation in accordance with the Government's code of practice on consultation (see below).

1) When to consult

Formal consultation should take place at a stage when there is scope to influence the policy outcome.

2) Duration of consultation exercises Consultations should normally last for at least 12 weeks with consideration given to longer timescales where feasible and sensible.

3) Clarity of scope and impact Consultation documents should be clear about the consultation process, what is being proposed, the scope to influence and the expected costs and benefits of the proposals.

4) Accessibility of consultation exercises Consultation exercises should be designed to be accessible to, and clearly targeted at, those people the exercise is intended to reach.

5) The burden of consultation Keeping the burden of consultation to a minimum is essential if consultations are to be effective and if consultees' buy-in to the process is to be obtained.

6) Responsiveness of consultation exercises Consultation responses should be analysed carefully and clear feedback should be provided to participants following the consultation.

7) Capacity to consult Officials running consultations should seek guidance in how to run an effective consultation exercise and share what they have learned from the experience.

If you have any complaints about the way that this consultation is being conducted please write to Monica Brown, Highways Agency, Zone 2/09K, Temple Quay House, 2 The Square, Temple Quay, Bristol, BS1 6HA

Or alternatively monica.brown@highways.gsi.gov.uk

Further information about the Government's Code of Practice can be located on the Department of Business Enterprise and Regulatory Reform website:

<http://www.berr.gov.uk/whatwedo/bre/consultation-guidance/page44420.html>

2. GENERAL INFORMATION ON THE BIRMINGHAM BOX ATM SCHEME

2.1 PROPOSED EXTENT OF THE SCHEME

The proposed draft Regulations will enable the operation of Variable Speed Limits and, for some motorway sections, Hard Shoulder Running to parts of the motorway box surrounding Birmingham. These are described fully in Sections 3 and 4.

A summary of where the different features will be implemented is included in Table 2A below:

Phase	Motorway	Extent	Carriageway	Feature
1	M40	M40 J16 –	Northbound	Variable Speed Limits
		M42 J3A		
	M42	J7 – 9	Northbound	Variable Speed Limits
		J9 – 7	Southbound	Variable Speed Limits
	M6	J4 – 5	Northbound	Variable Speed Limits and Hard Shoulder Running
		J4A – 4	Southbound	Variable Speed Limits
J5 – 4A		Southbound	Variable Speed Limits and Hard Shoulder Running	
2	M6	J8 -10A	Northbound	Variable Speed Limits and Hard Shoulder Running
		J10A – 8	Southbound	Variable Speed Limits and Hard Shoulder Running

Table 2A: The proposed extent of the Birmingham Box Phases 1 and 2 scheme

2.2 MAP OF THE PROPOSED SCHEMES

A map showing the Birmingham Box (M5, M42 and M6) is shown in Figure 2A, including the proposed scheme extent.

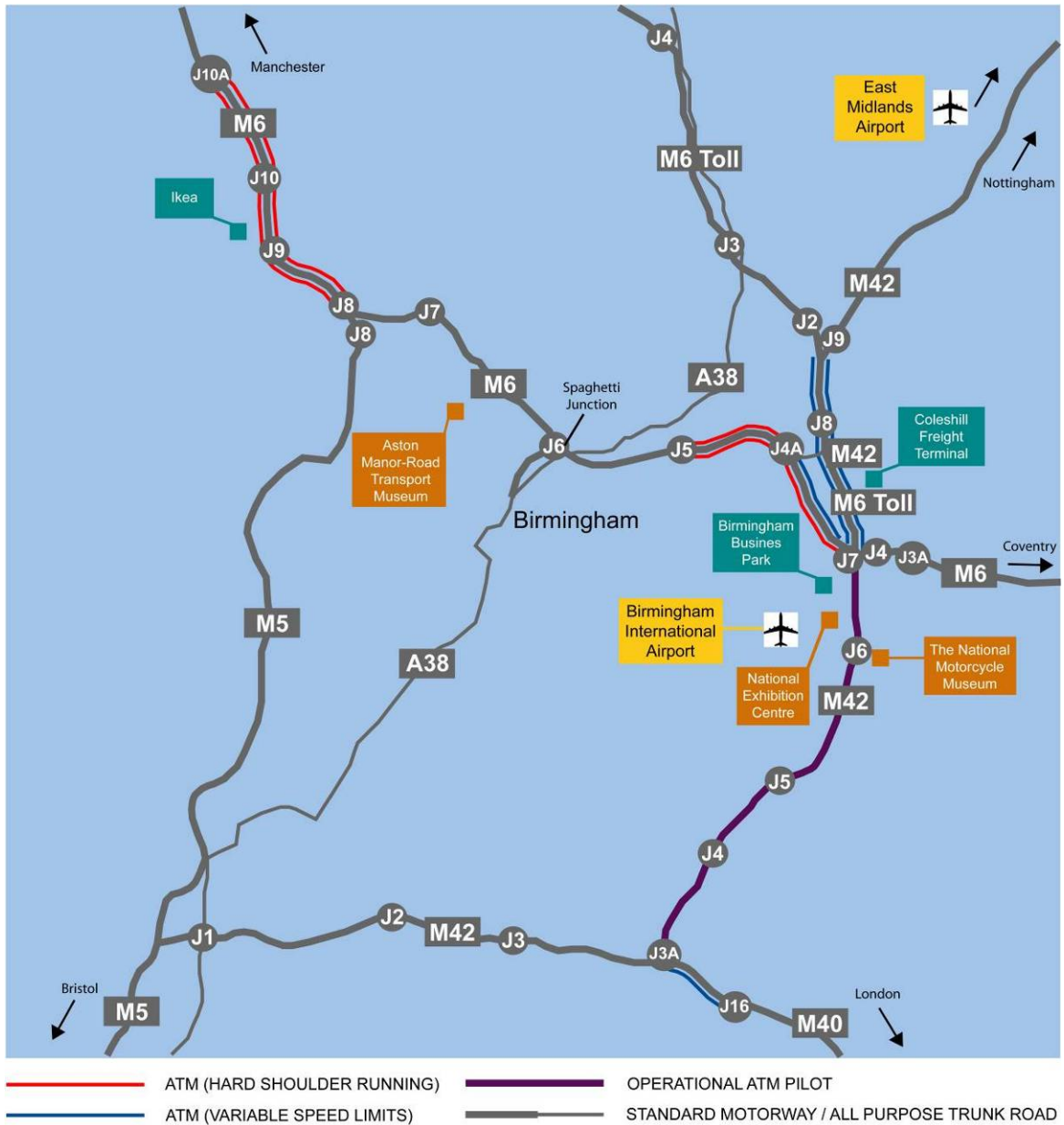


Figure 2A: Map of the Birmingham Box Active Traffic Management scheme

2.3 KEY FEATURES

The proposed regimes will include the following key features:

- Lightweight gantries at nominal 800m spacing with lane specific Advanced Motorway Indicator signals;
- Variable Message Signs located on gantries to provide the latest driver travel information and provide advance warning of incidents;
- Digital speed enforcement equipment to facilitate enforcement and manage compliance. The Highways Agency Digital Enforcement Camera System will be used to enforce the displayed speed limits;
- Vehicle detector loops, located within the road surface, will detect queuing traffic and set warning signals plus a network of CCTV cameras to monitor traffic conditions;
- Partnership with the Police including provision of Highways Agency Traffic Officers to ensure effective incident management; and
- Rapid incident response teams, to remove obstructions, assist with traffic management and repair roadside infrastructure.

In addition, for those schemes where Hard Shoulder Running is to be introduced:

- Controlled use of the hard shoulder as an additional running lane for incident management and during periods of heavy congestion; and
- Emergency Refuge Areas, equipped with Emergency Roadside Telephones, and monitored by CCTV cameras. The Emergency Refuge Areas are an area of safe refuge which provides an increased level of protection to the motorist in the event of a breakdown or emergency.

2.4 ENFORCEMENT

Obtaining an acceptable level of compliance with the speed limits displayed on overhead gantries is key to the successful and safe operation of the scheme. No new offences or sanctions will be introduced as a result of the proposed changes to legislation. Enforcement of the displayed speed limits is planned to be carried out using a combination of gantry-mounted speed enforcement cameras and traditional enforcement.

3. VARIABLE SPEED LIMITS

3.1 INTRODUCTION

Variable Speed Limits with no hard shoulder running will be implemented as follows:

- M40 Junction 16 to M42 Junction 3A Northbound (Phase 1);
- M6 Junctions 4A to 4 Southbound (Phase 1); and
- M42 Junctions 7 to 9 Northbound and Southbound (Phase 1).

The Operational Regimes to be implemented within sections of variable speed limits include:

- Normal Operation;
- Three lane variable speed limits for congestion and incident management; and
- Incident management.

3.2 NORMAL OPERATION

During normal motorway operation, signals on gantries will be blank and the motorway will operate as a standard motorway, as shown in Figure 3A below. This follows the same operating approach as the M42 Active Traffic Management Pilot where the motorway operates using the 'All signals on, all signals off' philosophy. When an Operational Regime is introduced speed limits will be displayed over the carriageway lanes and appropriate text messages displayed on the message signs.

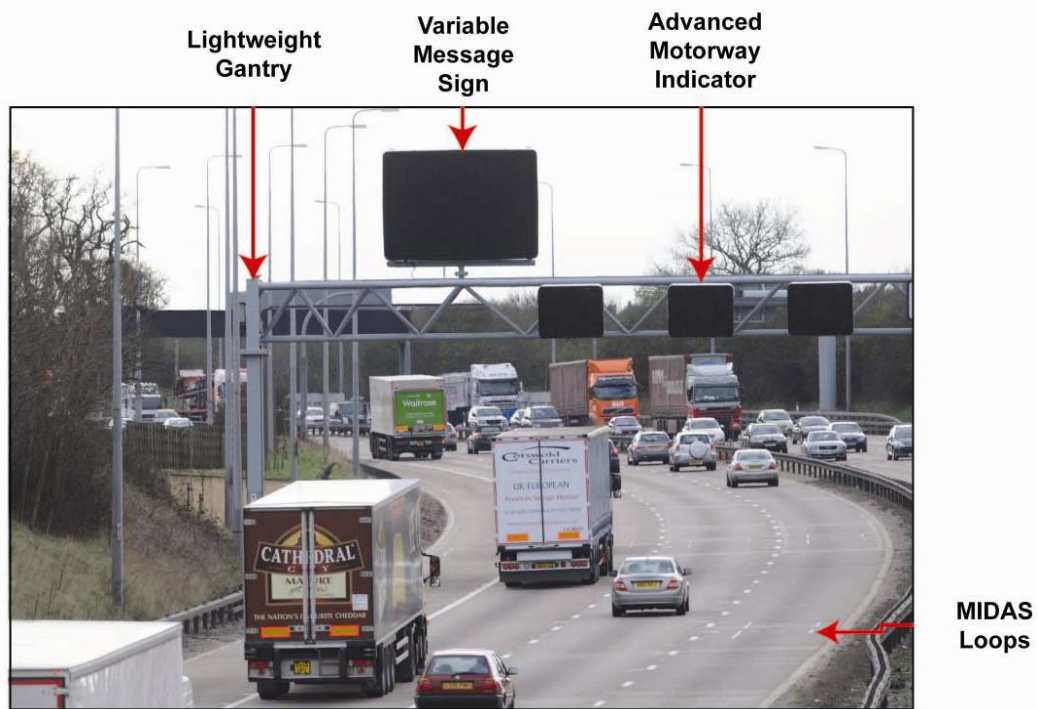


Figure 3A: The scheme during Normal Motorway Operations

3.3 THREE LANE VARIABLE SPEED LIMITS

When an Operational Regime is introduced, clear instructions will be given to drivers via the overhead signs and signals, as illustrated in Figure 3B.

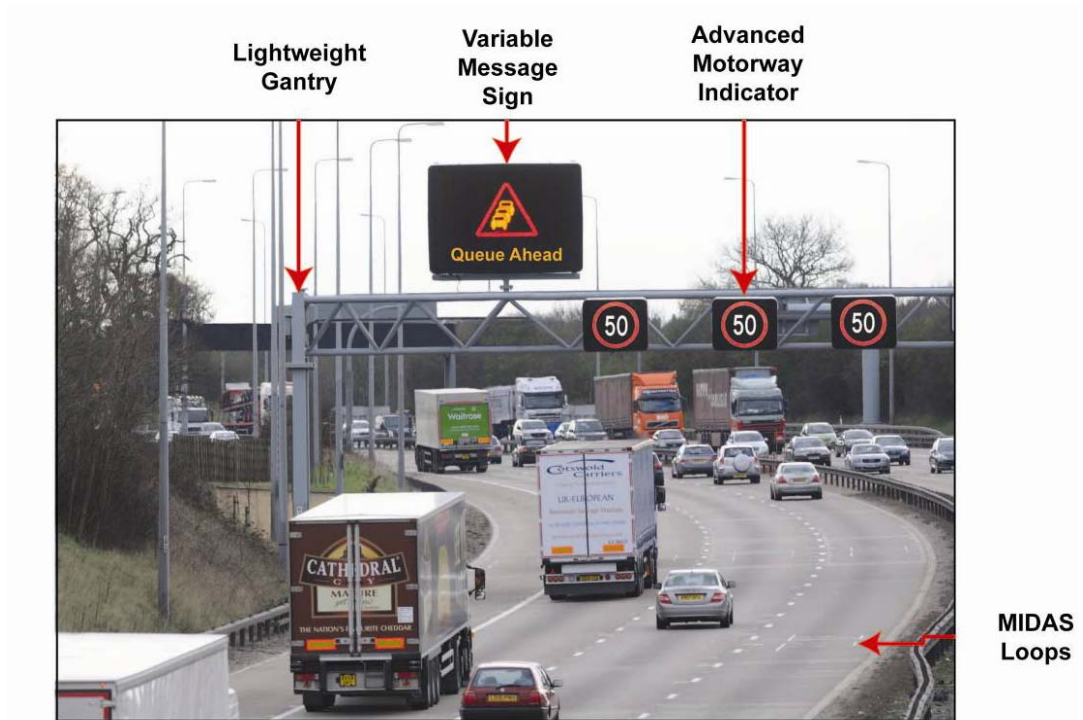


Figure 3B: Three Lane Variable Speed Limits (with queuing traffic ahead)

Three Lane variable speed limits will operate in a similar manner to the M25 Controlled Motorway, with speed limits displayed on the three main carriageway lanes. The following points detail the normal motorway operation:

During the display of variable speed limits, the signals mounted on overhead gantries above the three main carriageway lanes will automatically display 60mph, 50mph or 40mph speed limits as appropriate to the road conditions. Lower speed limits of 20mph or 30mph can be manually set by operators when considered necessary for the safety of the travelling public or those working within the carriageway.

When queuing traffic is present, the message signs will display a “Queue Ahead” (or similar) message.

3.4 INCIDENT MANAGEMENT

During incident management the signs and signals can be set to manage the traffic flow and divert traffic away from an incident in order to protect the scene and provide access to enable the Emergency Services to attend if required. Speed restrictions and lane availability will be indicated through the use of variable speed limits, lane divert arrows with flashing amber lanterns and Red X Stop signals which can be displayed over any of the main carriageway lanes. An example of how the scheme may look during the management of an incident is shown below in Figure 3C.

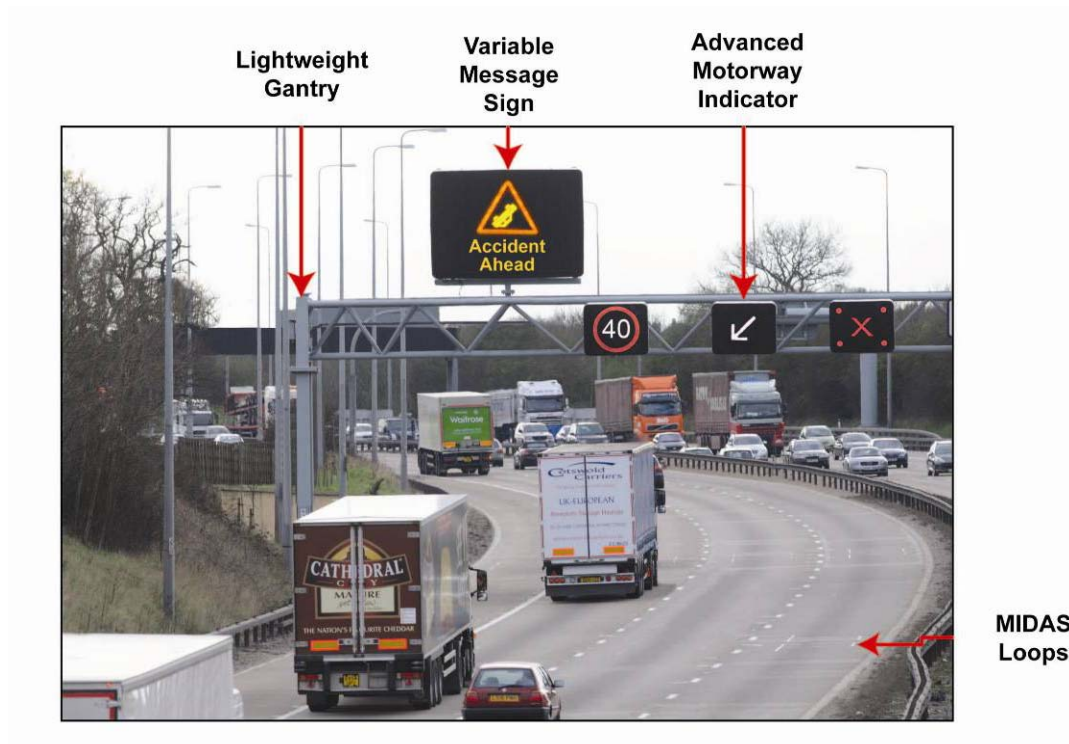


Figure 3C: Management of an incident within three lane variable speed limits

4. VARIABLE SPEED LIMITS WITH HARD SHOULDER RUNNING

4.1 INTRODUCTION

Variable speed limits with hard shoulder running will be implemented as follows:

- M6 Junctions 4 to 5 Northbound and 5 to 4A Southbound;
- M6 Junctions 8 to 10A Northbound and Southbound (Phase 2) – the Regulations needed for this will be consulted on at a later date

The M42 (Junctions 3A to 7 (Actively Managed Hard Shoulder and Variable Speed Limits) Regulations 2005 (SI 2005/1671) will be amended to include an additional section of motorway at M42 Junction 3A.

The Operational Regimes to be implemented within the hard shoulder running sections include:

- Normal operation;
- Three lane variable speed limits for congestion and incident management;
- Four lane variable speed limits under controlled conditions for congestion and incident management; and
- Incident management.

4.2 NORMAL OPERATION

During normal motorway operation, signals on gantries will remain blank and the motorway will operate as a standard motorway. Therefore the hard shoulder will be available for emergency use only and will provide access to the Emergency Refuge Areas as shown in Figure 4A.

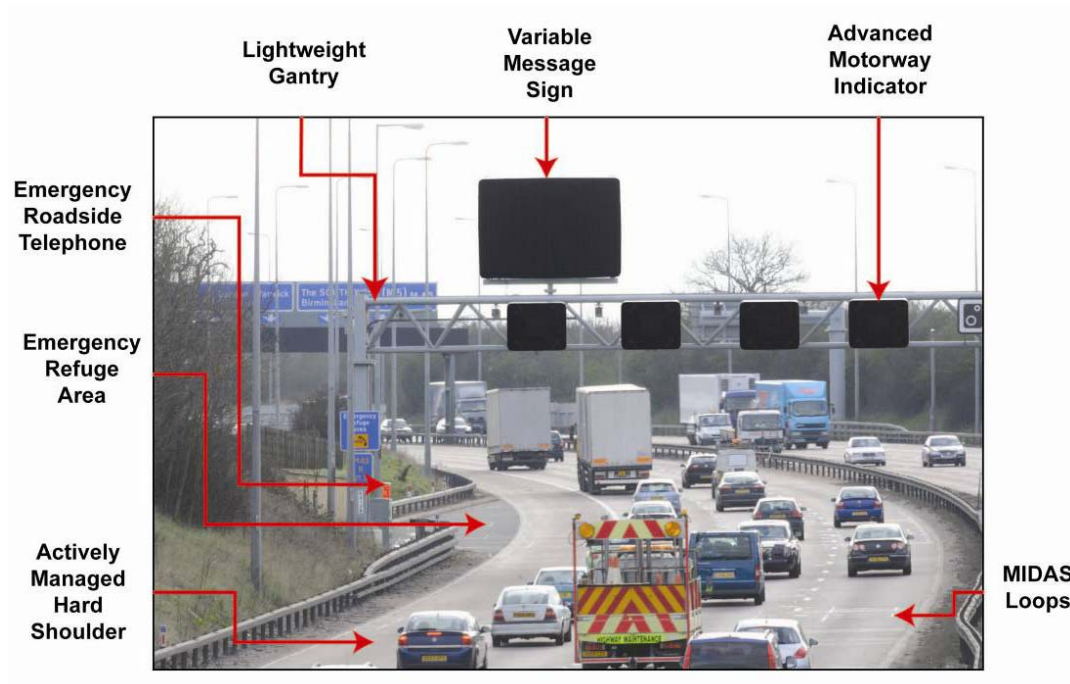


Figure 4A: Hard shoulder running section operating in normal motorway conditions

4.3 THREE LANE VARIABLE SPEED LIMITS

When an Operational Regime is introduced, clear instructions will be given to motorists via the overhead signs and signals, as illustrated in Figures 4B. Three lane variable speed limits will operate in a similar manner to the sections of the scheme operating with variable speed limits only, with speed limits displayed on the three main carriageway lanes.

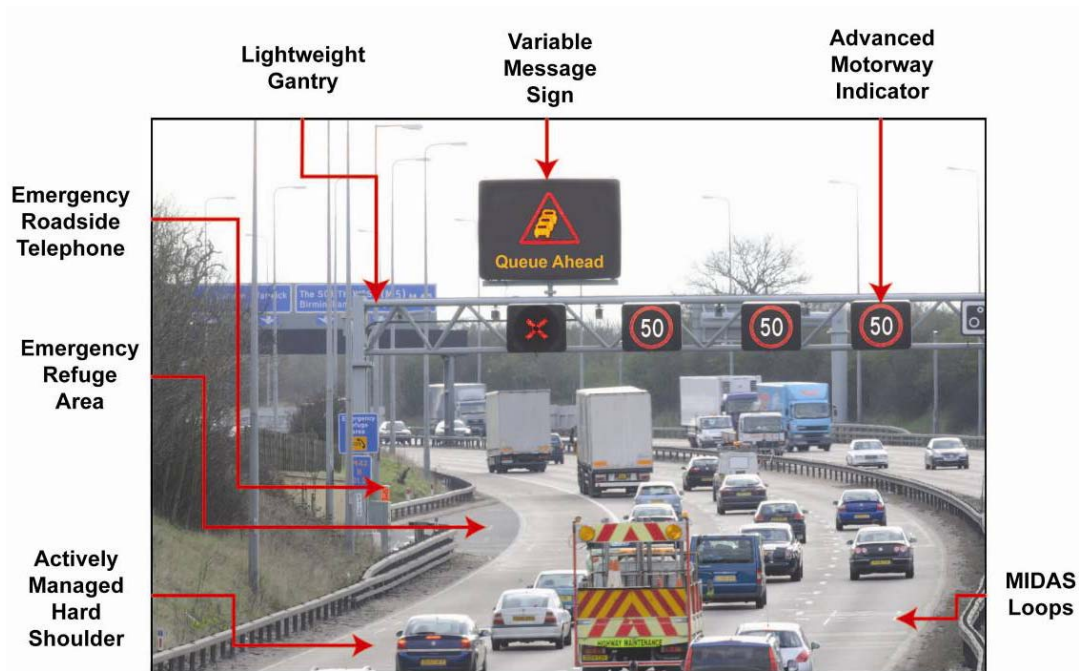


Figure 4B: Three lane variable speed limits (with queuing traffic ahead)

The following points explain the normal motorway operation:

- During three lane variable speed limits, the signals mounted on overhead gantries above the three main carriageway lanes will display 60mph, 50mph or 40mph speed limits as appropriate to the road conditions.
- The additional signal placed above the hard shoulder will display a Red X lane control aspect during three lane variable speed limits, clearly indicating to motorists that the lane is not available as a running lane. However the hard shoulder can still be used in an emergency and to access the Emergency Refuge Areas.
- When queuing traffic is present during three lane variable speed limits, the message signs will display a “Queue Ahead” (or similar) message.

4.4 FOUR LANE VARIABLE SPEED LIMITS

During hard shoulder running, the hard shoulder will be opened as an additional running lane to manage the congestion on the network with speed limits displayed on all overhead signals. The highest speed displayed will be 60 mph; therefore the speed indicated will be either 60 mph, 50 mph or 40 mph.

Emergency Refuge Areas will provide a safe place to stop for vehicles experiencing an emergency or breakdown, and will be equipped with Emergency Roadside Telephones. There will be extensive CCTV coverage of the hard shoulder and Emergency Refuge Areas.

An example of hard shoulder running in operation is shown in Figure 4C below.

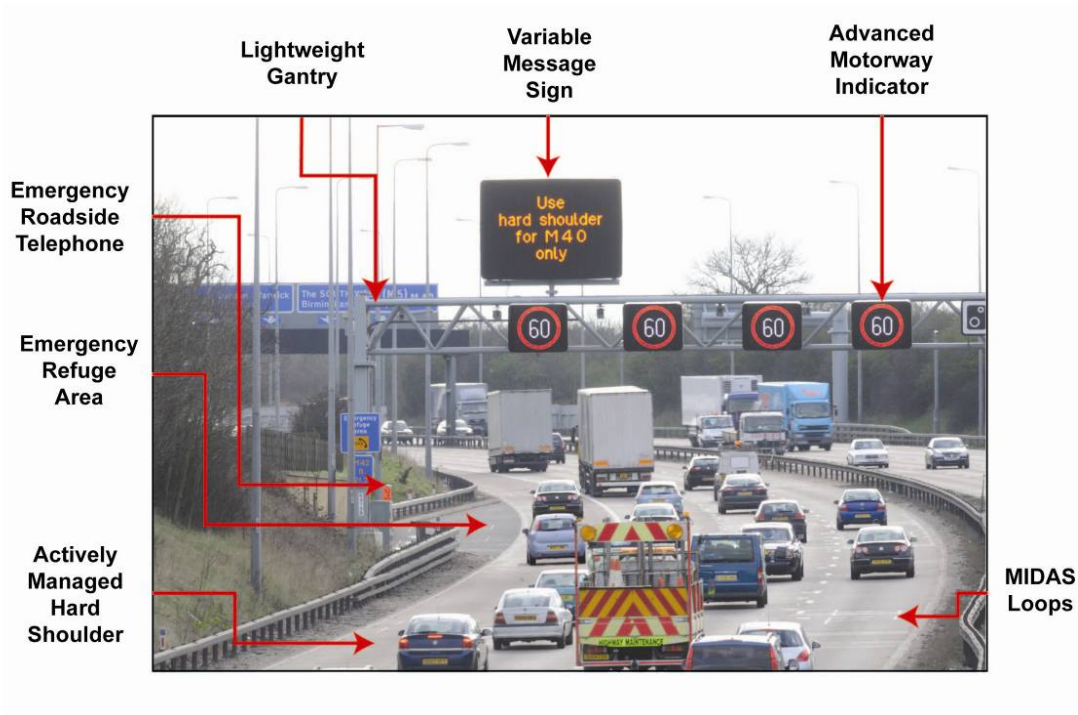


Figure 4C: Hard shoulder running in operation

4.5 INCIDENT MANAGEMENT

As with a section operating variable speed limits with no hard shoulder running, during incident management the signs and signals can be set in order to ensure the safety of road users and protect the scene of an incident. Speed restrictions and lane availability will be indicated through the use of variable speed limits, lane divert arrows with flashing amber lanterns and Red X stop signals. A signal can be set over the hard shoulder if appropriate to manage the flow of traffic around an incident that may have occurred in an outside lane.

An example of how the scheme may look during the management of an incident is shown below in Figure 4D.

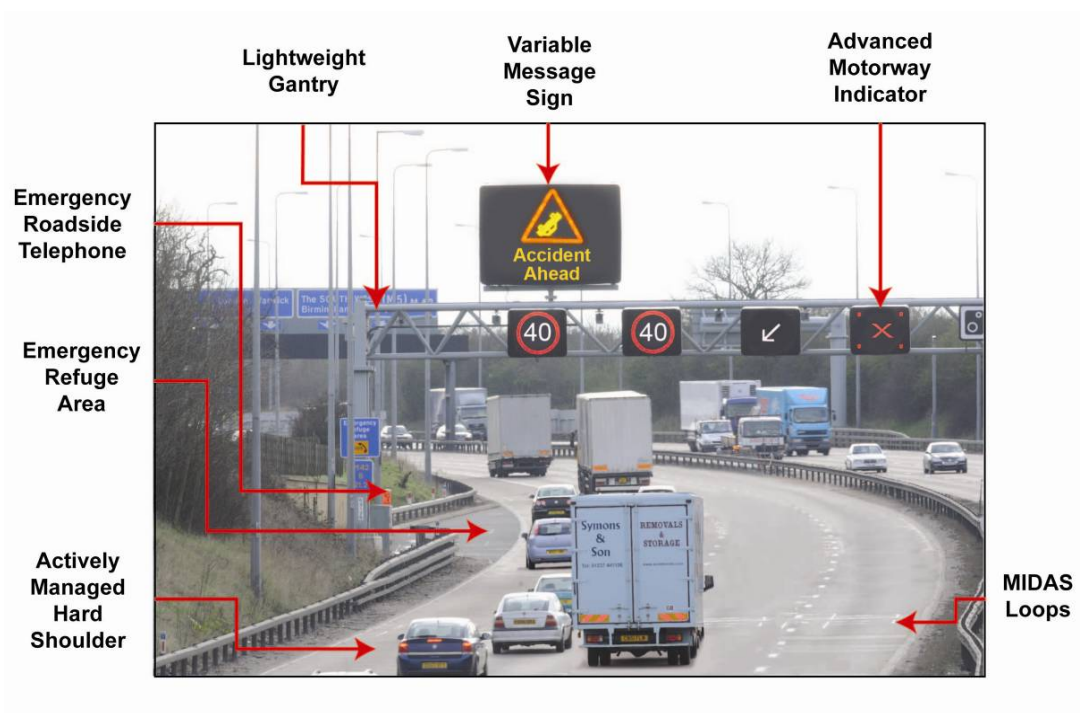


Figure 4D: Management of an incident within hard shoulder running

5. THE DRAFT REGULATIONS

5.1 REQUIRED LEGISLATIVE CHANGES TO ALLOW FOR THE IMPLEMENTATION OF VARIABLE SPEED LIMITS AND HARD SHOULDER RUNNING

Regulations made under the Road Traffic Regulation Act 1984 ('the 1984 Act') are required in order to provide variable speed limits and hard shoulder running on those parts of the motorway as specified around Birmingham.

The relevant legislative power in the 1984 Act under which the Regulations are made allow for variable speed limits to be used on specified parts of the motorway and those roads are set out in the Regulations.

For hard shoulder running to be possible the proposed draft M6 (Junctions 4 to 5) (Variable Speed Limits and Actively Managed Hard Shoulder) Regulations 200X will modify the Motorways Traffic (England and Wales) Regulations 1982 (S.I. 1982/1163).

So, the Regulations:

- Allow implementation and enforcement of variable speed limits;

Vehicles that pass a speed limit sign indicating that a speed limit other than the national speed limit applies, should obey that sign until it passes a further sign indicating that a new speed limit or the national speed limit applies.

Where a speed limit change appears on a speed limit sign less than 10 seconds before it is passed by a vehicle, the vehicle may continue at the speed in force before the change appeared. (The speed applicable in this situation would then be either the national speed limit or the speed displayed at a preceding (variable) speed limit sign).

Where there will be hard shoulder running the draft Regulations:

- Allow controlled use of the hard shoulder as an additional lane under certain circumstances; and,
- Where appropriate, define the 'Actively Managed Hard Shoulder' and 'Emergency Refuge Area'.

None of the draft Regulations will apply nationally – they will apply only to those parts of the motorway as specified in the Regulations.

The proposed Regulations are as follows:

- The M42 (Junctions 3A to 7) (Actively Managed Hard Shoulder and Variable Speed Limits) (Amendment) Regulations 200X;
- The M40 (Junction 16 to M42 Junction 3A) (Northbound) (Variable Speed Limits) Regulations 200X;
- The M42 (Junctions 7 to 9) (Variable Speed Limits) Regulations 200X; and
- The M6 (Junctions 4 to 5) (Variable Speed Limits and Actively Managed Hard Shoulder) Regulations 200X.

As drafted, these proposed Regulations would put in place the legislative framework required to operate phase 1 of the Birmingham Box Active Traffic Management scheme. The draft Regulation amending the M42 Junctions 3A to 7 is a short extension of the existing ATM pilot scheme and will introduce a lead in to the Hard Shoulder Running section.

A further consultation will be undertaken at a later date, nearer the time of implementation, for the following provisionally named M6 (Junctions 8 to 10A) (Variable Speed Limits and Actively Managed Hard Shoulder) Regulations 2XXX. These Regulations will be required for the implementation and operation on Phase 2 of the scheme.