

Highways Agency  
Heron House  
49/53 Goldington Road  
BEDFORD  
MK40 3LL

# **M1 Junctions 1-19 and M10**

## **Route Management Strategy**

### **Main Report**

**March 2006**

---



## Executive Summary

This report presents the Route Management Strategy (RMS) developed for the M1 motorway from Junction 1 (London – Brent Cross) to Junction 19 with the M6 and the A14(T). It also includes the M10 motorway which connects St Albans to the M1 at Junction 7.

The M1 motorway is one of the north south transport corridors from London to the Midlands and the North. The length of M1 being studied is approximately 125.5 kilometres (80 miles). The M1 study route serves a number of large population and employment centres such as: London, Luton, Milton Keynes and Northampton. The M10 is approximately 4.5 kilometres (2.8 miles) in length.

This RMS contains a set of Route Outcomes that will promote studies and interventions to improve the operation and maintenance of the M1 and M10 Motorways.

This RMS addresses the recommendations from the recently completed Multi-Modal Studies, namely the London Orbit Multi-Modal Study, the London to South Midlands Multi-Modal Study and the East Midlands M1 Multi-Modal Study. In addition to the Multi-Modal Studies, it also takes into account of other studies which are relevant to this RMS. Further details can be found in Section 3.7 and Section 3.8.

Chapter 3 of this report contains details of Policy Objectives as they relate to the M1 and M10, in co-ordination with the Government's Ten Year Transport Plan and the Highways Agency's Strategic Plans. The Policy Objectives for the route are considered using the five investment criteria of Safety, Environment, Economy, Accessibility and Integration. Local transport and planning policy objectives have also been identified and further details of these can be found in Appendix G.

The Route Functions and Performance for the M1 and M10 are identified and analysed in Chapter 4. The chapter reports the determination of the National, Regional and Local Functions of the M1 and M10 within the study area. Within the chapter, factors affecting the route performance are identified by matching the National, Regional and Local Route Functions against the five investment criteria.

Chapters 6 and 7 outline the Route Outcomes and Strategy Impact Statement, intended to guide investment into and improvement for the M1 and M10. The Strategy Impact Statement briefly describes the RMS Review process and outlines the impact the Route Outcomes will have on the future operation and maintenance of the M1 and M10.

The Land Use and Development Control Statement (LUDCS) for the M1 and M10, highlighting the relationship between communities and the transport network anticipated to serve it. This document gives details of the planning policies and guidance pertinent to the M1 and M10 as well as current and proposed major developments likely to impact on the future operation and function of the M1 and M10.

The Appendices for this RMS have been separately documented including the traffic flow and safety data. Following a period of public and stakeholder consultation, this Route Management Strategy has been formally published and adopted. A Route Management Plan will be developed by the Highways Agency to plan and carry out actions to fulfil the Route Outcomes over the next ten years.

The M1-M10 Route Management Strategy is presented in three volumes:

- Main Report
- Land Use and Development Control Statement
- Appendices

<b>List of Contents</b>		<b>Page</b>
1	Introduction	1-1
1.1	The M1-M10 RMS Route	1-1
1.2	What is a Route Management Strategy?	1-1
1.3	RMS Study Programme	1-3
1.4	Multi-Modal Studies	1-4
1.5	Consultation	1-5
1.6	M1-M10 RMS Public Consultation	1-5
1.7	Secretary of State's Announcement	1-6
2	Route Description	2-1
2.1	History	2-1
2.2	Road Condition and Type	2-2
2.3	Traffic Flow	2-4
2.4	Safety	2-4
2.5	Noise	2-5
2.6	Air Quality	2-6
2.7	Landscape and Environment	2-7
2.8	Integration and Accessibility	2-8
2.8.1	London Luton Airport	2-8
(i)	Rail Services	2-8
(ii)	Bus and Coach Services	2-9
(iii)	Luton – Dunstable Translink	2-9
3	Policy Objectives	3-1
3.1	Introduction	3-1
3.2	National Objectives	3-2
3.3	Regional Objectives	3-2
3.4	Local Objectives	3-2
3.5	Route Objectives	3-2
3.5.1	Environment	3-3
3.5.2	Safety	3-3
3.5.3	Economy	3-3
3.5.4	Accessibility	3-4
3.5.5	Integration	3-4

---

3.6	Managing Agent Contractors	3-4
3.7	Multi Modal Studies	3-5
3.7.1	London to South Midlands Multi-Modal Study (LSMMMS)	3-5
(i)	The M1 Widening	3-6
(ii)	Dunstable Northern Bypass	3-6
(iii)	A421 dualling from M1 to Bedford	3-6
(iv)	M1 Junction 14	3-6
(v)	A421 Milton Keynes to M1 dualling	3-7
(vi)	Luton Northern Bypass (M1-A505 link)	3-7
3.7.2	London Orbit Multi-Modal Study (ORBIT)	3-8
3.8	Other Studies	3-9
3.8.1	M1 Junction 19 Road Based Study	3-9
3.8.2	A43/A45 Route Management Strategy	3-10
3.8.3	Pilot Study Scheme – High Occupancy Vehicle (HOV) Lane	3-10
4	Route Functions and Performance	4-1
4.1	Introduction	4-1
4.2	Existing Route Functions	4-2
4.2.1	National Functions	4-2
4.2.2	Regional Functions	4-2
4.2.3	Local Functions	4-2
4.3	Route Performance	4-3
4.4	Factors Affecting Route Performance	4-4
4.5	Future Route Functions	4-6
4.5.1	Future National Functions	4-6
4.5.2	Future Regional Functions	4-6
4.5.3	Future Local Functions	4-6
5	Route Problems and Issues	5-1
5.1	Introduction	5-1
5.2	Problems and Issues	5-1
5.2.1	Environment	5-2
5.2.2	Safety	5-3
5.2.3	Economy	5-5
5.2.4	Accessibility	5-7
5.2.5	Integration	5-8
6	Route Outcomes	6-1
6.1	Introduction	6-1
6.2	Route Outcomes Summary Sheets	6-1
6.2.1	Route Outcome 1	6-3
6.2.2	Route Outcome 2	6-4
6.2.3	Route Outcome 3	6-5
6.2.4	Route Outcome 4	6-6
6.2.5	Route Outcome 5	6-7
6.2.6	Route Outcome 6	6-8
6.2.7	Route Outcome 7	6-9
6.2.8	Route Outcome 8	6-10
6.2.9	Route Outcome 9	6-11
6.2.10	Route Outcome 10	6-12

6.2.11	Route Outcome 11	6-13
6.2.12	Route Outcome 12	6-14
6.2.13	Route Outcome 13	6-15
6.2.14	Route Outcome 14	6-16
6.2.15	Route Outcome 15	6-17
6.2.16	Route Outcome 16	6-18
6.2.17	Route Outcome 17	6-19
7	Strategy Impact Statement	7-1
7.1	Statement	7-1
7.2	Impact Table	7-1
7.3	Future Actions	7-1

## Tables

Table 2.1:	M1 Construction Dates	2-2
Table 2.2:	Cumulative Junction Distances	2-3
Table 2.3:	Identified High Noise Severity Locations on the M1 Motorway	2-5
Table 2.4:	Typical Journey Times between Stations	2-10
Table 3.1:	A43/A45 RMS Route Outcomes 10 and 15	3-10
Table 4.1:	Factors Affecting Performance Functions – National Functions	4-4
Table 4.2:	Factors Affecting Performance Functions – Regional Functions	4-5
Table 4.3:	Factors Affecting Performance Functions – Local Functions	4-5
Table 5.1:	Route Problems and Issues – Environment	5-2
Table 5.2:	Route Problems and Issues – Safety	5-3
Table 5.3:	Route Problems and Issues - Economy	5-5
Table 5.4:	Route Problems and Issues – Accessibility	5-7
Table 5.5:	Route Problems and Issues – Integration	5-8
Table 7.1:	Impact of Route Outcomes in relation to Route Problems and Issues	7-2
Table 7.2:	Impact of Route Outcomes in relation to Route Functions	7-3
Table 7.3:	Impact of Route Outcomes in relation to Development Control	7-5
Table 7.4:	Impact of Route Outcomes in relation to Policy Objectives	7-7

## Figures

Figure 2.1:	Newspaper Cutting, Wolverton Express (6 November 1959)	2-1
Figure 2.2:	Proposed Luton-Dunstable Translink Route Map	2-10
Figure 3.1:	LSMMMS Study Area	3-5
Figure 3.2:	The Orbit MMS Study Area	3-8
Figure 3.3:	M1 Junction 19 Preferred Solution – All Movement Junction	3-9

---

## List of Abbreviations

AADT	Annual Average Daily Traffic
AONB	Area of Outstanding Natural Beauty
AQMA	Air Quality Management Area
AQS	Air Quality Strategy
BAA	British Airport Authority
BCC	Bedfordshire County Council
CCA	Civil Aviation Authority
DEFRA	Department of Environment, Food and Rural Affairs
DETR	Department of Environment, Transport and the Regions
DfT	Department for Transport
DIRFT	Daventry International Rail Freight Terminal
DTLR	Department of Transport, Local Government and the Regions
FY	Financial Year
HA	Highways Agency
HGV	Heavy Goods Vehicle
HOV	High Occupancy Vehicle
HRA	Hot Rolled Asphalt
IDM	Integral Demand Management
KSI	Killed or Severely Injured
LA	Local Authority
LBC	Luton Borough Council
LLAOL	London Luton Airport Operations Ltd
LPA	Local Planning Authority
LSMMMS	London to South Midlands Multi-Modal Study
LTP	Local Transport Plan
LUDCS	Land Use Development Control Statement
M1MMS	East Midlands Multi-Modal Study
MAC	Managing Agent Contractor
MKSM	Milton Keynes and South Midlands
MMS	Multi-Modal Study
mppa	Million Passenger per Annum
MSA	Motorway Services Area
NMU	Non-Motorised User
NO <sub>2</sub>	Nitrogen Dioxide
ODPM	Office of the Deputy Prime Minister
ORBIT	London Orbit Multi-Modal Study
PC	Public Consultation
PIA	Personal Injury Accident
PM <sub>10</sub>	Particulate Matter
P&R	Park and Ride
RMP	Route Management Plan
RMS	Route Management Strategy
RO	Route Outcome
RPF	Route Performance Framework
RPG	Regional Planning Guidance
RSS	Regional Spatial Strategy
RTS	Regional Transport Strategy
SOS	Secretary of State
TfL	Transport for London
TPI	Targeted Programme of Improvements
TRL	Transport Research Laboratory
TSC	Thin Surface Courses

TWA	Transport and Work Act
TWC	Thin Wearing Course
VM	Value Management
VMS	Variable Message Sign

# 1 Introduction

## 1.1 The M1-M10 RMS Route

The M1 motorway is one of the main north south transport corridors in England, linking London with the Midlands and the North, including Northampton, Nottingham, Sheffield and Leeds. This M1 study covers approximately 125.5 kms (80 miles), starting from Junction 1 (London - Brent Cross) to Junction 19 with the M6 and the A14(T). This part of the M1 serves the major conurbations at Luton, Milton Keynes, Northampton and Rugby.

This study also includes the M10 which is approximately 4.5 kms (2.8 miles), connecting St Albans to the M1 at Junction 7. The status of this motorway will be de-classified from M10 motorway to the A414 principal trunk road, once the M1 Junctions 6A-10 Widening scheme is completed (current estimate end of 2008). The re-classified A414 will connect to the new parallel link roads which are to be built between M1 Junctions 7 and 8 as part of the motorway widening scheme. This will then complete an all purpose link between Hemel Hempstead and St Albans thus opening up the route to a wider range of traffic.

## 1.2 What is a Route Management Strategy?

Route Management Strategies are ‘...a technique being developed by the Highways Agency to provide a framework for managing individual trunk routes as part of wider transport networks. Route Management Strategies will interlock with local transport strategies (set out in Local Transport Plans) within the context established by Regional Planning Guidance’. (Reference Para 3.1.34 ‘A New Deal for Transport: Better for Everyone’).

The Route Management Strategy (RMS) process has been developed to:

- Assist the Highways Agency (HA) in planning and optimising investment in the trunk road/motorway network (across different budget headings), and in the delivery of HA strategic plans and ten year transport strategy.
- Provide consistency, transparency, openness and integration, particularly with other transport related strategies, including local and regional transport plans.
- Enable the HA to provide an input into these strategies and plans.
- Maximise customer focus.
- Improve forward planning over a 10-year period.

The development of RMSs assists the HA to achieve its objective which is:

- To deliver a high quality service to all its customers by:
  1. Improving road safety
  2. Making journeys more reliable through better network management and information
  3. Respecting the environment.

The development of an RMS will be administered and delivered by the HA, with the assistance of consultants, through undertaking a Route Management Strategy Study.

It should be noted that whilst a RMS will be focused upon a particular route, the impact which other routes may have upon it and the impact that the route may have on others should be considered within the study. This would be particularly applicable where an issue on one route can be resolved through an outcome on another route.

The HA has a set of strategic plans for the road network. The RMS system has been designed to ensure that these plans are used to develop roads that better serve the people who use them.

This report has been prepared by Mott MacDonald on behalf of the HA, in accordance with Route Management Strategy Guidance issued by the HA (Version 2 dated November 2003).

An RMS comprises the following elements:

**Policy Objectives** – wider planning, economic and transport objectives, which are pertinent to the route.

**Route Functions and Performance** – describe the purposes the route serves currently, how well it serves these and those it is intended to serve in the future.

**Route Problems and Issues** – matters of concern to the HA, stakeholders or the public, that may prevent the Policy Objectives being met or hinder the performance of Route Functions.

**The Land Use and Development Control Statement** – outlines the HA's approach to future land use and development issues which materially affect the route.

**Route Outcomes** – set out what the HA will seek to achieve for the route over the 10 year period of the Route Management Strategy. They should contribute to Policy Objectives, improve the performance of the Route consistent with its future Functions and seek to address Route Problems and Issues. Some of the Outcomes may point towards individual projects and investigations which will subsequently be developed by the HA as a Route Management Plan.

The overall impact of the Route Outcomes (ROs) on the Policy Objectives, Route Functions and Problems, is contained within a Strategy Impact Statement. This statement can also be used to identify potential actions, which may contribute to delivering the ROs.

The HA intend to have a RMS in place for each route in the strategic road network.

A RMS will lead to preparation of a Route Management Plan (RMP) which will assist the HA to achieve its strategic aim which is to contribute to sustainable development by maintaining, operating and improving the trunk road network in support of the Government's integrated transport and land use planning policies.

This RMS will provide a 10-year framework for preparing the RMP managing the M1 Between Junction 1 (London - Brent Cross) to Junction 19 with the M6 and the A14(T).

This RMS embraces the five key policy objectives for transport:

- To protect and enhance the built and natural **environment**
- To improve **safety** for all travellers
- To contribute to an efficient **economy** to support sustainable economic growth in appropriate locations
- To promote **accessibility** to every day facilities for all, especially those without access to a car
- To promote the **integration** of all forms of transport and land use planning, leading to a better, more efficient transport system.

### **1.3 RMS Study Programme**

The M1-M10 RMS study followed the timetable outlined below:

#### **Start of Project (4 February 2002)**

Consultation letters were sent to key stakeholders, Local Authorities, transport operating companies, environmental organisations, Local Parish Councils, pressure groups and business representatives in the immediate area of the route, explaining the study and inviting them to give their views.

#### **Draft RMS – Internal Workshop (19 April 2002)**

An internal workshop was held on 19 April 2002 which set out our initial view of the route functions, route objectives and problems and the draft strategy at a workshop attended by the Managing Agents, the Project Owner and the Project Sponsor in order to develop an initial Draft RMS.

#### **Break**

There has been a break in the RMS process whilst the findings of the Multi-Modal Studies (MMSs) were finalised and published their final reports. The Secretary of State's (SOS's) comments on the MMSs can be found in Section 3.7.

#### **Route Management Strategy – Seminar (16 June 2003)**

Representatives from key stakeholders and other organisations were invited to a RMS Seminar, where the RMS Study was introduced and a list of possible problems and solutions identified by the attendees. The seminar took account of the findings of the Multi-Modal Studies that are relevant to the RMS study.

### **Value Management Workshop (30 July 2003)**

The Value Management (VM) workshop allowed the Highways Agency, major key Stakeholders and the Local Authorities to priorities problems with solutions and to identify a set of Outcomes which could be taken forward.

### **Initial Route Management Strategy (January 2005)**

Following the VM workshop, the Draft RMS was updated and presented as the Initial Route Management Strategy. The Initial RMS details the HA's policy objectives, functions and problems which together with a land use development control statement form the basis of the report for Public Consultation.

### **Public Consultation (February to May 2005)**

A public consultation was carried out over a 12-week period to publicise the proposed Route Management Strategy and to encourage comments from members of the public.

### **Publication of Final RMS (Winter2005/06)**

After taking into account comments received during the public consultation, a 10-year Route Management Strategy has been published.

### **Route Management Plan**

Following completion of the RMS, a Route Management Plan will be developed by the HA providing the implementation plan for actions which will contribute to the Route Outcomes.

## **1.4 Multi-Modal Studies**

This RMS has been undertaken in parallel with three Multi-Modal Studies. Their final reports have been published and responded to by the Secretary of State (SOS).

- ORBIT, covering orbital movements around London;
- The London to South Midlands Multi-Modal Study (LSMMMS), which broadly looks at transport north of the M25 up to and including Junction 19 on the M1 corridor;
- The East Midlands Multi-Modal Study (M1MMS), broadly looks at transport issues along the M1 corridor from Junction 21 to 30. Although this study encompasses an area to the north of the M1 RMS, any proposals at the southern end of the study area may have an effect on the outcome of the RMS.

The ORBIT and LSMMMS studies have overlapping boundaries in terms of their areas of interest, however for the purposes of the study, the boundary is assumed to be immediately north of the M25. It was originally intended that the RMSs would focus on lower level local issues with strategic issues being covered by the MMSs. However from the comments made by the consultees, it became evident that it is not possible to divorce local from strategic issues, particularly in relation to the outcomes identified in the Government's 10 Year Plan for Transport.

The Multi-Modal Studies reported their recommendations, and further details of these can be found in Section 3.7 of this document. Following the reporting of the MMSs, the Secretary of State reviewed the recommendations and made his announcements, commenting on items to be taken forward. Details of these recommended items are outlined in Section 1.7.

## **1.5 Consultation**

This Route Management Strategy (RMS) for the M1 and M10 has been developed through initial consultation in February 2002 with the key stakeholders and user groups. A detailed list of consultees can be found in Table A-1 of Appendix A.

## **1.6 M1-M10 RMS Public Consultation**

The Public Consultation (PC) period began on 21 February 2005 and finished on 16 May 2005. Responses and completed questionnaires were to be returned to the HA by the last day of the consultation period, however the HA decided to allow late submission of comments until the end of May 2005.

The consultation period gave members of the public and other stakeholders the opportunity to give their views on the Initial Route Management Strategy and how the HA should manage and operate the M1 (Junctions 1-19) and M10 over the next 10 years. Comments received from the consultation would be given careful consideration before the M1-M10 RMS was finalised.

The views expressed by those who responded to the Public Consultation are not necessarily endorsed by the HA. Whilst serious consideration will be given to all suggested ideas, additions or changes to the Initial RMS document, these would not automatically be taken forward into the Final RMS document.

In general the M1-M10 RMS consultation had been conducted successfully. The M1-M10 RMS Public Consultation reached a wide and varied audience, with 665 responses received from across the Midlands.

Of the problems identified by stakeholders, there were seven issues that stood out. These are:

- Support widening of the M1
- Heavy Goods Vehicles (HGVs) and slow moving vehicle movement restrictions
- Additional junction (J13A) to reduce congestion at Milton Keynes
- Improve information to travellers, lane markings, signs and VMS messages
- Additional junction (J14A) to reduce congestion at Milton Keynes

- Dedicated left hand lane between M1 Junctions 7 and 8 northbound
- Widen and lengthen junctions slip roads in general

Congestion, noise, safety and road users' information on the M1 motorway appear to be the core issues amongst the majority of respondents. The received comments also included driver behaviour and greater enforcement as well as improving safety at Junction 19. Nevertheless, other environmental considerations also figure highly and this suggests that any solutions identified need to be sensitive to these concerns. A separate report has been prepared on this Public Consultation.

## **1.7 Secretary of State's Announcement**

Of the Multi-Modal Studies that the Secretary of State for Transport has responded to, the London to South Midlands MMS (LSMMMS) has the most direct impact on this Route Management Strategy.

The Secretary of State has considered these recommendations in the light of the advice he has received from the Regional Assembly, the Highways Agency and other interested organisations; including Statutory Environmental Bodies. He supports a programme of trunk road improvements and he is asking the Highways Agency to consider the following schemes:

- Widening the M1 to dual-4 lanes between Junctions 6A to 13;
- The Dunstable Northern Bypass (A5-M1 Link); and
- A421 dualling from M1 to Bedford

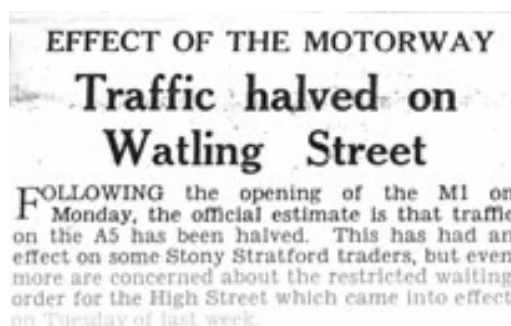
The details of the Secretary of State's comments on these MMSs mentioned above are to be found in Sections 3.7.

## 2 Route Description

### 2.1 History

The London to Birmingham Motorway was officially opened on 2 November 1959. The M1 was constructed to alleviate severe congestion problems which had developed on the local road network and also to provide a long distance route from London to the Midlands and the North-East of England.

The motorway was one of the first to be built in the United Kingdom. It is around 300 kilometres (200 miles) long and was constructed in stages between the 1950s and 1970s, with a further extension in the late 1990s. The M1 was first designed and constructed as a London to Birmingham route broadly following the route of the A5, starting south of St Albans and ending at Coventry. Subsequently the road was diverted at the southern end to Watford and then in two stages to London. The stub to St Albans becoming the M10. At the northern end, with changing traffic patterns, the road was extended northwards to Leeds and the stub remaining here became the M45.



**Figure 2.1:Newspaper Cutting, Wolverton Express (6 November 1959)**

The M1 has been described as a car park, due to congestion caused by the huge increase of cars on Britain's roads from 2.8 million in 1959 to over 27.5 million today. More importantly, a mere 13,000 vehicles were estimated to use the M1 on a daily basis in 1959 compared with today's figure of just over 88,000.

The introduction of long distance travel and the fuel consumption involved, plus the added strain on haulage lorries, required structural and engine modifications to off-set these problems. Added to this was a new problem for the driver-tiredness, which resulted in two service stations being added. The first introduced was at Newport Pagnell, followed by the Watford Gap.

Junction 3 on the M1 was originally intended as a turn-off for Scratchwood, but is now only used for the London Gateway service station.

The Highways Agency has a programme to widen the M1 between Junctions 6A (M25) and 10 (Luton) to become a four lane motorway with continuous hard shoulders. Once the M1 widening has been completed and open to traffic in 2008, the M10 will be de-classified to an all purpose trunk road and re-numbered as A414(T). It will then form part of the existing A414 connecting to the M1 motorway.

The dates of opening of various sections of the M1 motorway are detailed in Table 2.1 below.

<b>Contract</b>	<b>Location</b>	<b>Date of Road Opening</b>
Berrygrove - Crick	Junction 5 to 18	Nov 1959
Crick - Kegworth	Junction 18 to 24	Nov 1965
Kegworth - Sandiacre	Junction 24 to 25	May 1966
Brockley - Berrygrove	Junction 4 to 5	Nov 1966
Sandiacre - Nuthall	Junction 25 to 26	Nov 1966
Wakefield - East Ardsley	Junction 40 to 42	Apr 1967
Page Street - Brockley	Junction 2 to 4	May 1967
Nuthall - Pinxton	Junction 26 to 28	May 1967
Thurcroft - Tinsley	Junction 32 to 34	Jul 1967
East Ardsley - Stourton	Junction 42 to 44	Oct 1967
Pinxton - Thurcroft	Junction 28 to 32	Nov 1967
Meadowhall - Tankersley	Junction 34 to 36	Jun 1968
Tankersley - Darton	Junction 36 to 38	Sep 1968
Darton - Wakefield	Junction 38 to 40	Oct 1968
Brent Cross - Page Street	Junction 1 to 2	Jul 1977
Stourton - Hook Moor	Junction 42 to 48	Feb 1999

**Table 2.1: M1 Construction Dates**

## **2.2 Road Condition and Type**

The M1 between Junctions 1 and 19 is a distance of approximately 125.5 kms (80 miles) whilst the M10 is approximately 4.5 kms (2.8 miles) in length. Table 2.2 shows the cumulative distances from Junction 1 and the lengths between major junctions.

The M1 and M10 are primarily dual-3 lane and dual-2 lane motorways respectively; with the exception of the M1 Junctions 6A-7 northbound, Junctions 7-8 both directions and Junction 9-10 northbound which are all four lane standard.

The M1 motorway between Junctions 1 and 19 was originally constructed with a concrete surface. Almost all of the sections of both carriageways have been re-surfaced with a bituminous surface of either Hot Rolled Asphalt (HRA) or Thin Wearing Course (TWC). The remaining concrete surface section is located on the southbound carriageway between Junctions 5 and 7. The Highways Agency Area 5 Managing Agent Contractor (MAC) has recently carried out a value management exercise on the section south of M25 to Junction 5, however there is no plan to resurface this section at present, subject to funding. The section north of M25 to Junction 7 will be resurfaced as part of the M1 Junction 6A-10 widening.

Location along the M1	Junction with	Distance from Junction 1 in kms (miles)	Distance between junctions in kms (miles)
Junction 1	A406 & A41	0.0 (0.0)	0.0 (0.0)
Junction 2	A1	3.5 (2.2)	3.5 (2.2)
London Gateway Service		8.7 (5.4)	5.2 (3.2)
Junction 4	A41	10.8 (6.7)	2.1 (1.3)
Junction 5	A41 & A408	18.0 (11.2)	7.2 (4.5)
Junction 6	A405	21.9 (13.6)	3.9 (2.4)
Junction 6A	M25	22.4 (13.9)	0.5 (0.3)
Junction 7	M10	25.9 (16.1)	3.5 (2.2)
Junction 8	A414	26.4 (16.4)	0.5 (0.3)
Junction 9	A5 & A5183	33.6 (20.9)	7.2 (4.5)
Junction 10	A1081	37.5 (23.3)	3.8 (2.4)
Junction 11	A505	43.1 (26.8)	5.6 (3.5)
Toddington Service		50.2 (31.2)	7.1 (4.4)
Junction 12	A5120	51.0 (31.7)	0.8 (0.5)
Junction 13	A421 & A507	62.3 (38.7)	11.3 (7.0)
Junction 14	A509	71.6 (44.5)	9.3 (5.8)
Newport Pagnell Service		76.1 (47.3)	4.5 (2.8)
Junction 15	A508	91.1 (56.6)	15.0 (9.3)
Junction 15A	A43 & Rotherstrophe Service	95.1 (59.1)	4.0 (2.5)
Junction 16	A45	101.3 (62.9)	6.1 (3.8)
Watford Gap Service		113.9 (70.7)	12.6 (7.8)
Junction 17	M45	116.6 (72.4)	2.7 (1.7)
Junction 18	A428, A5 & A361	119.0 (73.9)	2.4 (1.5)
Junction 19	A14 & M6	125.5 (77.9)	6.5 (4.0)
	<b>Junction with</b>	<b>Length</b>	
Junction 10 to 10A	M1	1.0 (0.6)	
M10	M1 & A414	4.5 (2.8)	

**Table 2.2: Cumulative Junction Distances**

## 2.3 Traffic Flow

The existing level and pattern of traffic flow on the M1 reflects to some degree the route characterisation described in Appendix I. Combined (north and south) Annual Average Daily Traffic (AADT) in 2003 ranged from a high of 177,000 vehicles at the section between Junctions 7 and 8, to a low of 49,000 vehicles at the section between Junctions 1 and 2. This pattern is plotted in Figure I-1, of Appendix I.

The northbound and southbound traffic flows are almost identical, the difference varying from just 170 vehicles between Junctions 4 and 5 and around 4,000 vehicles between Junction 16 and 17.

The 2003 AADT 2-way flows at the southmost section of the study area rise progressively from 49,000 at Junction 1 to 92,500 at Junction 5 (Watford). The next section to Junction 6A is notable for a fall in traffic flow to just over 70,000 AADT as the highway bypasses North Watford.

At Junction 6A, however, the M1 motorway's strategic function comes into play as it joins with the M25, providing one of the major north south transport corridors linking London with the Midlands and the North. Traffic doubles in both directions to bring combined AADT to over 148,000. From the M25, traffic levels on the M1 continue to rise to Junction 8 as traffic filters in and out of St Albans and Hemel Hempstead hitting a peak for the strategy area of AADT of 177,000.

Junction 7 provides access to the M10 and although flows appear to be relatively low on this short piece of motorway (less than 24,000 AADT), the true impact lies on the M1 where the flows converge.

Junction 8 marks a change in the traffic pattern of flow on the M1 as the vehicular flows begin to fall. From Junction 7 to Junction 15 (south of Northampton), the level of traffic drops progressively to around 114,000 AADT.

From Junction 15 there is a further fall up to Junction 15A, with over 16,000 less vehicles on the motorway than the flow between Junctions 15A and 16. In addition to the presence of Northampton, this may be explained by the proximity of the A43 and A45 providing east west links to the M40 and M11 respectively.

At Junction 15A, a further change takes place in the prevailing pattern with an increase in traffic level to Junction 17 as the A45 (via the M45) contributes to levels similar to those through Luton of around AADT 130,000. Here the situation changes with a further fall to the northern extent of the strategy area at Junction 19. AADT in the final section of the M1-M10 RMS is 111,000, over double the flow at its origin 125.5 kms south at Junction 1.

## 2.4 Safety

Data derived from the national UK STATS19 database of injury accidents (supplied by TRL) for the three years, 2000 to 2002, shows that there were 2,103 Personal Injury Accidents (PIAs) on the 131 km length of the M1 and M10 in the RMS study area. Of this number, 2% (35) were fatal, 12% (252) serious and the remaining 86% (1,816) slight (see Table J-1 in Appendix J). This equates to 535 PIAs per annum per 100 km.

A comparative value of 290 PIAs per annum, per 100 km for a motorway of this type (Highways Agency Optional Folder, 2002), suggests that the M1, as a route, has an accident rate significantly higher than the national average.

The overview of performance of the M1 and M10 in terms of safety is significant for revealing the very high number of total accidents that have taken place on the main carriageway over the three years to 2002. Accidents rates on the route and on specific link sections are twice that of the national average. However, although the route is experiencing a high number of total PIAs it is notable that in terms of severity the M1 and M10 have ratios that are very much in line with average rates. It is possible that a correlation exists between these trends and the high level of traffic flow reported in Appendix I.

Of particular note is the very high number of accidents reported on the central sections of the route around Luton area, between M1 Junctions 8 and 10, and very high number of PIA incidents on Junction 1.

Further details of safety on the M1 and M10 can be found in Appendix J.

## 2.5 Noise

The 1999 Roads Review outlined provisions for the mitigation of traffic noise from older (pre-1988) roads, provided that certain criteria were satisfied. Within the current M1 RMS study area, a number of sites were identified as “noise hotspots” resulting from a history of public complaint, of which three inter-junction sections satisfied the criteria for further assessment and possible mitigation.

Table 2.3 shows the three high noise severity sites on the M1 within the RMS study area. These sites were taken forward for a more detailed assessment to quantify the severity of noise impact and suggest possible means of noise mitigation (e.g. noise barriers/bund and/or “low-noise” surfacing). The results were presented in the Reports published by the Parsons Brinckerhoff (Area 5) and AIRO Ltd (Area 8).

Section	Location	Highways Agency Managing Area
Junction 5 to 6	Watford/Garston (Herts)	Area 5
Junction 10 to 11	Luton (south)	Area 8
Junction 11 to 12	Luton/Dunstable	Area 8

**Table 2.3: Identified High Noise Severity Locations on the M1 Motorway**

All locations above were included in a list of sites which was published in Hansard in November 1999.

Furthermore, the Government is committed to resurfacing roads with quieter materials – Thin Surfaces Courses (TSC), when routine pavement maintenance is required.

Further details of all the noise mitigations relating to M1 motorway can be found in Appendix M.

## 2.6 Air Quality

Eight Local Authorities have declared Air Quality Management Areas (AQMAs) within their boundaries that include the M1. This means that pollutant concentrations in these areas are not unexpected to achieve the objectives which are set out in the Air Quality Strategy.

Northampton Borough Council has declared an AQMA with regard to Nitrogen Dioxide (NO<sub>2</sub>). The area is located alongside the southbound carriageway of the M1 motorway within the boundaries of Northampton Borough Council. The area varies in width from between 40 and 54 metres when measured from the central reservation on the M1.

Luton Borough Council has declared an AQMA which is located in a narrow strip along the M1 within the residential areas. The pollutant declared here is Nitrogen Dioxide (NO<sub>2</sub>).

St Albans City & District Council had declared a total of six AQMAs at the Stage 3 Air Quality Review & Assessment, with four of them located along the M1. These four AQMAs have subsequently been revoked since the changes recommended at the Stage 4 Air Quality Review & Assessment. The two remaining areas comprise the London Road (1-7 and 2-38), Beechtree Cottages, Hemel Hempstead Road and St Albans (adjacent to Junction 7 of M1 and M10). The pollutant declared is Nitrogen Dioxide (NO<sub>2</sub>).

Three Rivers District Council has declared five AQMAs which are all located around the M25, two of which are likely to be revoked in the future. The pollutants declared are Nitrogen Dioxide (NO<sub>2</sub>) and Particulate Matter < 10 µm (PM<sub>10</sub>).

Hertsmere Borough Council has declared four AQMAs with one adjacent to the M1 and three around the M25. The pollutant declared is Nitrogen Dioxide (NO<sub>2</sub>).

Lastly the London Boroughs of Barnet, Brent and Harrow have declared their entire boroughs, including Junction 1 of M1, as an AQMA with regard to Nitrogen Dioxide (NO<sub>2</sub>) pollution.

These Local Authorities are required to prepare an Air Quality Action Plan to try to achieve the objectives. As an operator of the M1 and M10, the HA is required to work with the Local Authorities to try to achieve the objectives. Achieving the Air Quality Strategy Objectives is a Public Service Agreement target between DEFRA and DfT. The objective that is proving the most difficult to achieve is that for annual mean Nitrogen Dioxide concentrations which is to be achieved by 2005. The EU has set out a mandatory limit value for nitrogen dioxide which is to be achieved by 2010.

As a result, it is essential that the effect on air quality of the M1-M10 RMS is carefully assessed so that the air quality can be improved, especially within the Air Quality Management Areas. The RMS is an ideal opportunity to produce a coherent strategy to help improve air quality in these areas by reducing emissions from the M1 and M10.

Further details of the status of all Local Authorities' Air Quality Management Plans affected by the M1 and M10 can be found in Appendix N.

## **2.7 Landscape and Environment**

The M1 from Junctions 1 to 19 and the M10 pass through seven character areas as noted in the Countryside Agency's Countryside Character Initiative published in 1999, Volume 7 (South East and London) and Volume 4 (East Midlands).

The M1 motorway begins in an area identified as the Northern Thames Basin, Hertfordshire Plateaux and River Valleys. This is a diverse landscape containing the River Colne. Extensive areas of broad-leaved woodlands are the principal feature of the areas beyond the motorway. Railway lines, prominent electricity pylons, elevated road sections, sound barriers and screen planting are key major influences on character. Any floodplain land is divided by hedgerow deficient boundaries. Some long views are possible over mixed scrub and woodland. The intensity of the industrial and residential 'town' contrasts strongly with the rural suburban edge.

The town of St Albans is visible from the M10 motorway, which connects to Junction 7 of the M1. The motorway then passes into the Chilterns, chalk hills and plateaux with prominent escarpments in many places. Extensive areas of the downland have been invaded by scrub. Luton lies to the east and extensive views are possible past industrial units. Electricity pylons run in extensive lines parallel to and across the M1. Small fields and dense ancient hedgerows are present along with extensive areas of beech woodland on the plateau. The agricultural landscape is dominated by hedges, trees and small woodland groups.

Panoramic views are now possible across the Bedfordshire Greensand Ridge to extensive tracts of woodland on distant ridges. Rolling countryside with settlements visible to the west of the M1 lie beyond the extensive solid hedgerows. Electricity pylons are still highly visible running next to the motorway.

On entering the Bedfordshire Claylands the landscape becomes open and intensively arable. Fields are bounded by sparse close cut hedges with varying hedgerow trees. The Great Ouse River is a prominent feature with its floodplains, river willows and larger hedges. Woodland is mainly deciduous and located on higher ridges. Views to towns and church spires can be seen to the east with long views to hills behind agricultural land. Major junctions to Milton Keynes dominate the immediate environment with lagoons and balancing ponds present at a number of junctions.

The motorway passes through a narrow section of the Yardley - Whittlewood Ridge characterised by medium sized fields with full hedgerows and numerous hedgerow oak trees. There is a low density of settlement and consequently few local roads.

With Northampton to the east, the Northampton Vales are dominated by views to the town. The River Nene and its floodplains, church spires and a flourmill are all prominent features. The motorway has characteristic (Owen Williams) concrete bridges that are noticeable landmarks along this stretch of the motorway. Further afield there are extensive views of small settlements and close-cropped hedges.

Open arable farmland mixed with pastureland enclosed by hedges and hedgerow trees is a key characteristic of the Northamptonshire Uplands. In the distance are mixed woodland, extensive hedge lines and farm buildings.

Daventry International Rail Freight Terminal (DIRFT) is a major environmental and visual influence on the immediate area. Masts next to the motorway dominate the skyline, whilst the mainline railway and Grand Union Canal are both highly visible and run parallel to the west of the motorway. There is one service area (Watford Gap) on this stretch of the motorway. The characteristic concrete bridges continue to cross the motorway. Radio masts are also present at Rugby and dominate the skyline.

The motorway is of an age where the planting on the cut slopes has had the opportunity to mature.

## **2.8 Integration and Accessibility**

The existing interchange facilities and the interface between the M1 and M10 and other transport modes are described in Section 2.7.

### **2.8.1 London Luton Airport**

In 2002, Luton was the United Kingdom's 8<sup>th</sup> busiest airport, with a throughput of 6.6 million passengers per annum (mppa) and 32,000 tonnes of cargo handled<sup>1</sup>.

The airport site comprises 245 hectares to the Southeast of the Luton – Dunstable conurbation. It can be accessed from the M1 at Junction 10A via Junction 10. The airport is served by rail services from Luton Airport Parkway station which is situated midway between the airport and M1 Junction 10. The airport is also served by express coach services from London, the West and East Midlands, the North East and major destinations including Heathrow and Gatwick Airports.

A survey by the Civil Aviation Authority (CAA) indicated that 25% of passengers accessed the airport by rail, bus or coach in 2003. An employee survey reveals that in the same year, 89% of staff travelled to work by private car, 4% travelled by bus and rail and a further 4% on foot or by bicycle.

London Luton Airport Operations Ltd (LLAOL) will publish its final Master Plan in May 2006. Later in 2006, LLAOL will publish its final Airport Surface Access Strategy (ASAS) which will appraise the impact of airport growth on the local and strategic highway network and set out challenging targets for increasing the proportion of passengers and employees accessing the airport by public transport. The ASAS will be developed in conjunction with the Highways Agency, DfT Rail, Hertfordshire County Council, Bedfordshire County Council and Luton Borough Council, as well as other key stakeholders.

In order to achieve these targets the LLAOL will rely on the development of the existing levels of rail and bus/coach provision described below:

#### **(i) Rail Services**

Luton station is served by Thameslink and Midland Mainline trains. There used to be a shuttle bus service from the station to nearby London Luton Airport. This service was made redundant after the construction of Luton Airport Parkway railway station that opened in 1999.

---

<sup>1</sup> Response to "The Future Development of Air Transport in the UK (South East and East)", Second Edition (Feb 2003), London Luton Airport Operations Ltd, June 2003

The Luton Airport Parkway railway station is located on the Midland Main Line and is served by Thameslink and Midland Mainline trains. Connection to the airport from the railway station is provided by LLAOL with a free shuttle bus service that takes 5 minutes and runs at a 10 minute frequency.

Thameslink Rail operates a mixture of fast (CityFlier) and stopping (CityMetro) services from Central London to Luton and Bedford. Thameslink provides a high degree of connectivity with London and the south-east with between 4 and 8 services every hour running via West Hampstead, Kentish Town, King's Cross, Farringdon, Blackfriars, London Bridge and Wimbledon and south to Brighton.

Midland Mainline operates an hourly service from Luton Airport Parkway railway station to London St Pancras, Leicester and Derby.

## **(ii) Bus and Coach Services**

A wide range of bus and coach services utilise a set of stopping facilities located directly outside the main terminal building of London Luton Airport. The location of the airport in relation to the M1 and M10 ensures that the majority of services ply the M1. Services include:

- Direct services from Central London;
- Rail Link services;
- Services from the South and East (including Brighton, Milton Keynes, Cambridge, Hemel Hempstead, Stevenage, Corby, Kettering, Bedford, St Albans, Watford and Rickmansworth);
- Services from the East Midlands (including Wolverhampton, Birmingham and Coventry); and
- Services from the North East (including Newcastle, Sunderland, Middlesbrough and Darlington).

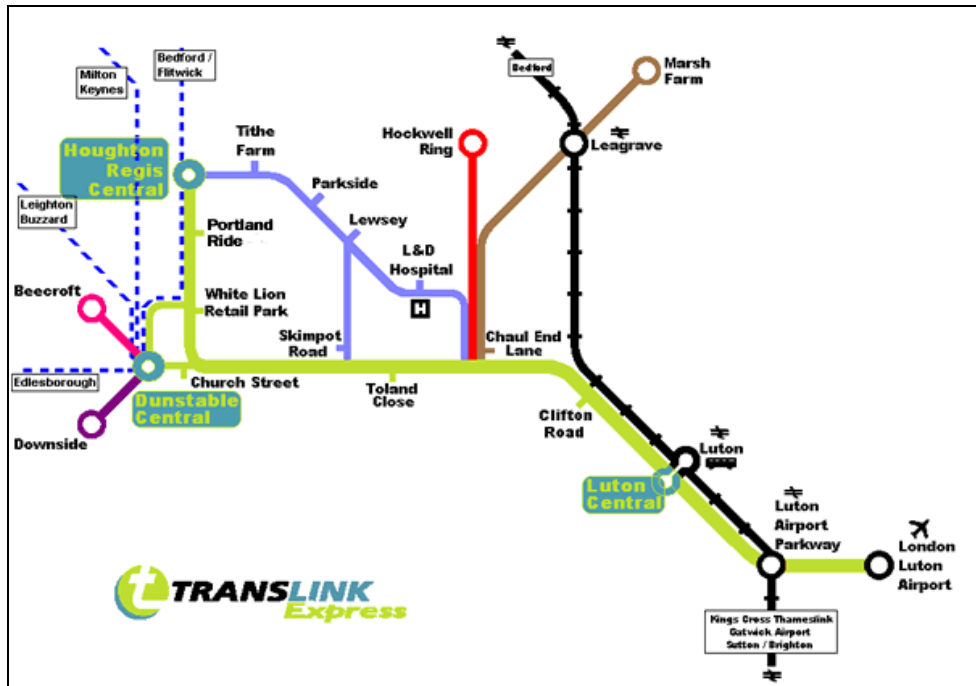
## **(iii) Luton – Dunstable Translink**

Translink is planned as a high quality guided bus service that will run between the urban conurbations of Luton, Dunstable and Houghton Regis. The importance of the Translink system towards facilitating the sustainable growth of Luton and Dunstable has been recognised in two major studies. Both the “Sustainable Communities Strategy,” produced by the Office of the Deputy Prime Minister (ODPM) and the London to South Midlands Multi-Modal Study (LSMMMS) argue that Translink and associated public transport infrastructure have a valuable role to play in the future development of the region.

In 2003, Translink was the subject of an application for a Transport and Works Act (TWA) order to secure powers to acquire land and planning permission and the Department for Transport (DfT) announced funding approval in December 2003.

A Public Inquiry was held at the Council Chamber, Luton Borough Council, Town Hall, opening on 15 February 2005 and adjourning on 23 March 2005. The inquiry reopened on 24 June 2005 and finished on 01 August 2005.

Figure 2.2 illustrates the proposed route running East - West, linking London Luton Airport to Luton Parkway railway station and the three town centres (Luton, Dunstable and Houghton Regis).



**Figure 2.2: Proposed Luton-Dunstable Translink Route Map**

Table 2.4 below shows the typical journey times between stations:

Journey	Duration
Luton Station and Dunstable Town Centre	15 minutes
Dunstable and London Luton Airport	22 minutes
Luton Town Centre and London Luton Airport	10 minutes
Houghton Regis and Luton Station	25 minutes

**Table 2.4: Typical Journey Times between Stations**

## **3 Policy Objectives**

### **3.1 Introduction**

In July 1998, the Government set out its plan for a new integrated transport system within its white paper “A new deal for Transport – Better for Everyone”. The two main themes of this paper are the Integration and Accessibility. The paper sets out policy for a transport system that is safe, efficient, clean and fair and which allows people to make more sustainable transport choices.

The paper marked a step change in thinking towards the provision of transport infrastructure in the UK, with recognition that transport had a much wider role to play, with more far reaching impacts than those suggested in traditional appraisal techniques.

The White Paper has defined integrated transport policy as:

- integration within and between different types of transport - so that each contributes its full potential and people can move easily between them;
- integration with the environment - so that our transport choices support a better environment;
- integration with land use planning - at national, regional and local level, so that transport and planning work together to support more sustainable travel choices and reduce the need to travel;
- integration with our policies for education, health and wealth creation – so that transport helps to make a fairer, more inclusive society.

A second Government’s White Paper “The Future of Transport – a network for 2030” was published in July 2004. This paper is built around three central themes and they are:

- Sustained investment – the Government has promised to keep investment sustained over the long term.
- Improvements in transport management – better traffic management which will ease congestion on the road network. Where it makes sense economically and environmentally, capacity will be added. Where this is done benefits such as road tolling and carpooling/High Occupancy Vehicle (HOV) lanes will be added on.
- Planning ahead – the Government will lead the debate on road pricing.

The second white paper’s strategy seeks to plan for transport over the next 30 years. For the road network this will include:

- new capacity where it is needed, assuming that any environmental and social costs are justified;
- locking in the benefits of new capacity through various measures (e.g. HOV lanes where appropriate);

- Government leading the debate on road pricing and its capacity to lead to better choices for motorists;
- Better management, exploiting the potential of new technology to avoid problems and deal with them rapidly if they occur; and
- Using new technology to keep people informed both before and during their journey.

In order for the Highways Agency's policy objectives for the M1 and M10 to integrate with wider planning, economic and transport objectives, a comprehensive review of National, Regional and Local Objectives pertinent to the M1 and M10 routes has been undertaken.

The Policy Objectives established for the M1 and M10 motorways are listed below. Full tables of the Policy Objectives, including quoted objectives and their sources together with targets where appropriate are included in Appendix G.

### **3.2 National Objectives**

The framework for National transport policy objectives, are set out in the transport white paper and is also supported by further documents including Planning Policy Guidance, Highway Authority Strategic Plans and DTLR Circular 4/2001. Because this RMS has been developed within the lifetime of the 1998 white paper "A new deal for Transport – Better for Everyone", the majority of this RMS's national objectives are based on its policy objectives.

### **3.3 Regional Objectives**

The regional objectives have been sourced from the Regional Planning Guidance 8 and 9 (RPG 8 and 9), the Milton Keynes and South Midlands (MKSM) Panel Report and the Regional Transport Strategies that compose chapters in this document.

### **3.4 Local Objectives**

The local objectives have been sourced from Structure Plans, Local Plans and Local Transport Plans of the County Council's and District Council's with which the M1 and M10 traverses.

### **3.5 Route Objectives**

Derived from problems and issues on the M1-M10 RMS corridor, these have been identified and listed under the five objectives for transport: Environment, Safety, Economy, Accessibility and Integration.

### **3.5.1 Environment**

Government Objective: *To protect and enhance the built and natural environment*

Route Objective:

- Env1 – To mitigate and seek to reduce noise levels in line with government policy
- Env2 – To improve air quality (with special regard to Air Quality Management Areas)
- Env3 – To minimise the adverse effect of lighting on the environment
- Env4 – To seek to ensure effective measures are in place to enhance water quality along the route from pollutant spillage on the highway
- Env5 – To maintain a clean and tidy route
- Env6 – To minimise or avoid impact on environmentally designated areas
- Env7 – To protect the environment elsewhere in the region by encouraging appropriate traffic to use the route
- Env8 – To promote Bio-diversity

### **3.5.2 Safety**

Government Objective: *To improve safety for all travellers*

Route Objective:

- S1 – To review and where possible improve the safer operations of the route
- S2 – To investigate where the provision of improved lighting would improve safety, without disproportionate environmental damage
- S3 – To seek to achieve a consistently high standard of variable and static signing along the route
- S4 – To seek to manage vehicle speeds at appropriate levels
- S5 – To review safety and the security for non motorised users crossing the route at interchanges and for bridges/subways
- S6 – To seek to improve the quality of user facilities and provide adequate rest and emergency facilities
- S7 – To seek to improve safety for people working on the route

### **3.5.3 Economy**

Government Objective: *To contribute to an efficient economy, and to support sustainable economic growth in appropriate locations*

Route Objectives:

- Ec1 – To seek to prioritise actions with regard to the needs of the national, regional and local economy
- Ec2 – To seek to reduce congestion, particularly between London and Milton Keynes
- Ec3 – To seek to minimise traffic disruption due to traffic incidents
- Ec4 – To seek to plan all works to achieve optimum whole life costs with minimal disruption to users

- Ec5 – To seek to maximise the availability of the route for users, and the serviceability of the road, structures and other highway equipment
- Ec6 – To seek to improve journey time reliability and information
- Ec7 – To seek to support the objectives in the Land Use Planning System
- Ec8 – To seek to reduce congestion at major interchanges

#### **3.5.4 Accessibility**

Government Objective: *To promote accessibility to everyday facilities for all, especially those without a car*

Route Objectives:

- Ac1 – To seek to reduce community severance
- Ac2 – To seek to make appropriate provision for and encourage the use of public transport
- Ac3 – To seek to make appropriate provision for non-motorised users
- Ac4 – To seek to make appropriate provision for disabled and elderly users

#### **3.5.5 Integration**

Government Objective: *To promote the integration of all forms of transport and land use planning and development, leading to a better, more efficient transport system.*

Route Objectives:

- In1 – To improve user information
- In2 – To increase knowledge of user patterns and needs
- In3 – To support regional transport strategy, local transport plans and development plans
- In4 – To make better use of the route by working in partnership with road users, transport providers and operators, local authorities and those affected by the network
- In5 – To recognise the two-way interaction between the RMS and other RMSs (e.g. A43/A45 RMS – suggestions on Junction 15 and 15A)

### **3.6 Managing Agent Contractors**

The M1 motorway is currently managed by two Managing Agent Contractors (MACs): Mouchel Parkman is partnering with Carillion for the Highways Agency's Area 5 and URS is in a joint venture with Carillion for Area 8. They are responsible for carrying out the design, construction and supervision of maintenance and improvement schemes on the trunk road network, on behalf of the Highways Agency.

Refer to Appendix D for further details of the Managing Agent Contractors. The major maintenance and improvement schemes can be found in Appendix E.

### 3.7 Multi Modal Studies

#### 3.7.1 London to South Midlands Multi-Modal Study (LSMMMS)

The London to South Midlands Multi-Modal Study (LSMMMS) was commissioned by the Government Office for the East of England and made its final report in February 2003. The LSMMMS broadly looks at transport north of the M25 to include the M1 Junction 19 as shown in Figure 3.2.



**Figure 3.1: LSMMMS Study Area**

The study recommends a £4,159m package of measures designed to tackle existing and future transport problems in the South Midlands area and north of London. Based on the recommendations within the LSMMMS, the Secretary of State announced in July 2003 the following schemes to be included in the Targeted Programme of Improvements (TPI) schemes:

- Widening the M1 to dual-4 lanes between Junctions 6A to 13;
- The Dunstable Northern Bypass (A5-M1 link); and
- A421 dualling from M1 to Bedford.

The details of these schemes and their programmes can be found in Appendix E (Sections E.2.2 to E.2.5).

### **(i) The M1 Widening**

The M1 between Junctions 6A and 13 will be taken to dual-4 lane standard. This stretch of the M1 has been prioritised into two sections as Junctions 6A to 10 and Junctions 10 to 13. The former has been afforded the highest priority of any scheme within the study area. In the view of particularly high levels of congestion, the LSMMMS final report stated that this “should proceed at the earliest opportunity”. Widening between Junctions 10 to 13 is recommended, but not in advance of Junctions 6A to 10. Once the widening between M1 Junctions 6A-10 has been completed, the status of the M10 motorway will be re-classified to the A414 principal trunk road.

### **(ii) Dunstable Northern Bypass**

The Dunstable Northern Bypass will be the main route around Dunstable and the main access to the M1 from the A5 north of Dunstable. It provides a strategic route between the A5 and the M1.

### **(iii) A421 dualling from M1 to Bedford**

The programme of widening will also affect adjoining roads in the proximity of the M1. The A421 will become dual-2 lane standard from M1 Junction 13 to Bedford.

### **(iv) M1 Junction 14**

The Secretary of State has asked the HA to carry out a review of the operation of M1 Junction 14 in the light of proposed expansion of Milton Keynes–South Midlands (MKSM) and the early priority to widen the M1 up to Junction 13.

## **Demand Management**

The LSMMMS recommended the introduction of area wide road user charging post-2016. There is however little evidence of how physical demand measures such as ramp metering might work in the UK at present and it will be necessary to take into account the impact on safety and traffic flows across the road network.

The Government has decided to undertake a detailed feasibility study of road pricing. Decisions on whether to implement such a regime are for the future.

## **Local Road Improvements**

The Secretary of State has also commented on the LSMMMS recommendations in terms of local (non HA) road improvement on the following: -

**(v) A421 Milton Keynes to M1 dualling**

The Secretary of State has invited Milton Keynes Council, working in partnership with neighbouring authorities to carry out further work on this proposal and submit an appraisal for consideration by the Department as part of the Local Transport Plan (LTP) process. The provision of funding will depend on the performance of the scheme against the HA's appraisal criteria.

**(vi) Luton Northern Bypass (M1-A505 link)**

The Secretary of State also recognises the importance of such schemes for supporting economic development in the Luton area. Part of the route passes through the Chiltern Area of Outstanding Natural Beauty (AONB) and could have an adverse environmental impact. As a result the SOS is asking Luton Borough Council (LBC) and Bedfordshire County Council (BCC) to carry out further work in liaison with the Statutory Environmental Bodies and neighbouring authorities, which will include examination of alternative options with the aim of minimising environmental impacts.

**Other Local Authority Issues**

The Secretary of State has encouraged the Local Authorities within the study area to work with local partners and delivery agencies to develop the following in more detail and, where appropriate, submit proposals for funding to the Department through the Local Transport Plan (LTP) process:

- A range of measures to improve public transport services and promote more sustainable travel choices (including improved bus/ rail integration, new parkway stations and measures to influence travel behaviour such as travel planning)
- Land Use planning policies

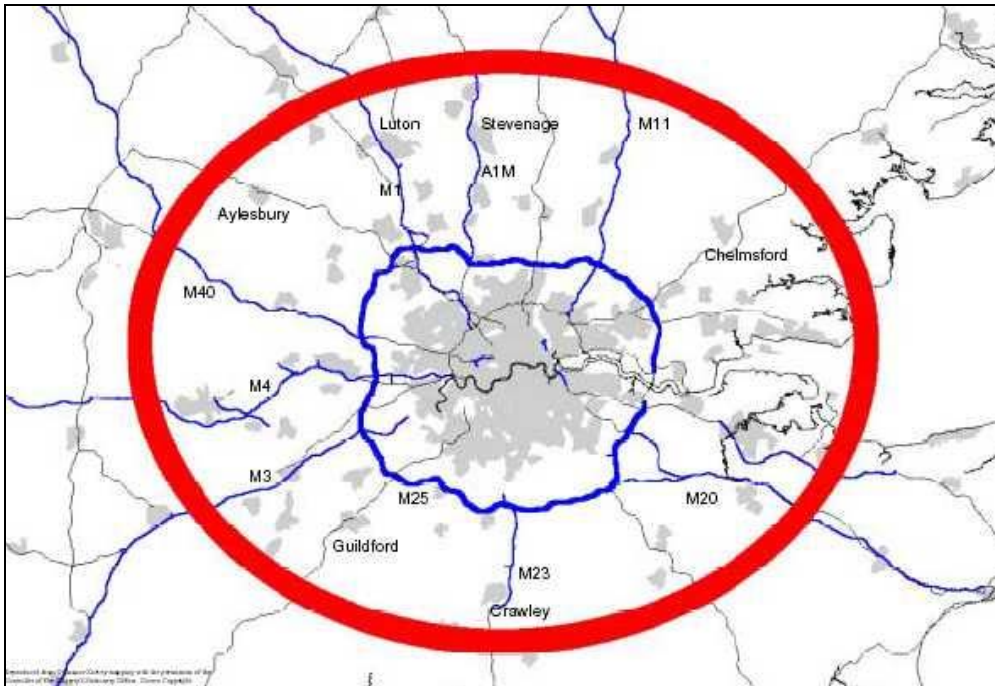
Provision of funding will depend on the performance of schemes against the government's appraisal criteria.

The Secretary of State endorses the support from the LSMMS for promoting measures to reduce travel demand and encouraging more sustainable travel choices, which he looks to Local Authorities to take these forward. The guidance on LTPs asked Local Authorities to set out how they would work with employers, schools and other local organisations to develop travel plans. They must publish annual reports of progress on implementing their LTPs and use their powers under the development control process to require travel plans for all new developments with significant transport implications.

Finally, the Secretary of State supports the recommendation from a number of studies on the need for close integration between land use and transport policies. Current national planning policy already places a strong emphasis on locating development in appropriate locations to promote sustainable transport choices and reduce the need to travel, especially by car. The Secretary of State looks to Local Planning Authorities to locate major generators of personal travel in areas best served by public transport.

### 3.7.2 London Orbit Multi-Modal Study (ORBIT)

The London Orbital Multi Modal Study (ORBIT) was commissioned by the Government Office for the South East and made its final report in November 2002. The intention of the study was to identify causes of congestion along and approaching the M25 (as shown in Figure 3.2), and recommend a preferred strategy of possible solutions to alleviate the impact of congestion on the M25.



**Figure 3.2: The Orbit MMS Study Area**

The final Orbit study report recommended strategic measures to alleviate medium to long-term congestion problems. The report identified a number of sections and junctions of the M25 that will need widening or improvements to increase capacity for future growth. In table 12.1 of the Orbit study, the report identified that the M25 approaches to the M1 Junction are operating at or near to capacity.

The key elements as proposed by the Orbit study which relevant to this RMS is to widen the M25 between Junctions 16-23 (M40 – A1(M)) to dual-4 lane standard. This was in the main supported by the Secretary of State's announcement in July 2003. In addition, he has also accepted that widening between Junctions 23-27 (A1(M) – M11) is both feasible and justified. Subsequently, the Secretary of State for Transport has announced the two widening schemes mentioned above have entered into the Highways Agency's TPI schemes in April 2004.

### 3.8 Other Studies

#### 3.8.1 M1 Junction 19 Road Based Study

The M1 Junction 19 is a key node in both the national and Trans-European highway network; it is an intersection between three major motorway and trunk roads; the M1, the M6 and the A14(T). More than 100,000 vehicles a day use this Junction. It also gives access to Swinford and Catthorpe and the minor local roads. At present it is possible to perform ten out of twelve possible turning movements at the junction; the exception is the A14 to/from the M1(S) which is not possible.

Direct merge and diverge slip roads are provided for movements between the M6 and the M1(S). Other movements are catered for by a dumbbell roundabout arrangement linked beneath the M1. There is one lane eastbound beneath the bridge and two lanes westbound. This arrangement does not currently allow for movements from/to the A14(T) to/from the M1(S).

The main issues at M1 Junction 19 relate to highway capacity, congestion and safety and the possible impact of future and planned developments on the local road network. The study has examined the problems and looked at a range of possible improvement solutions. These have been designed so that the junction can operate safely and without serious congestion well into the future. Consultations during this work have taken place with a wide group of public and private organisations, the local community and landowners. A variety of options were developed and assessed. A single 'Preferred Scheme' that addresses the problems for the long term has been selected (see Figure 3.3).

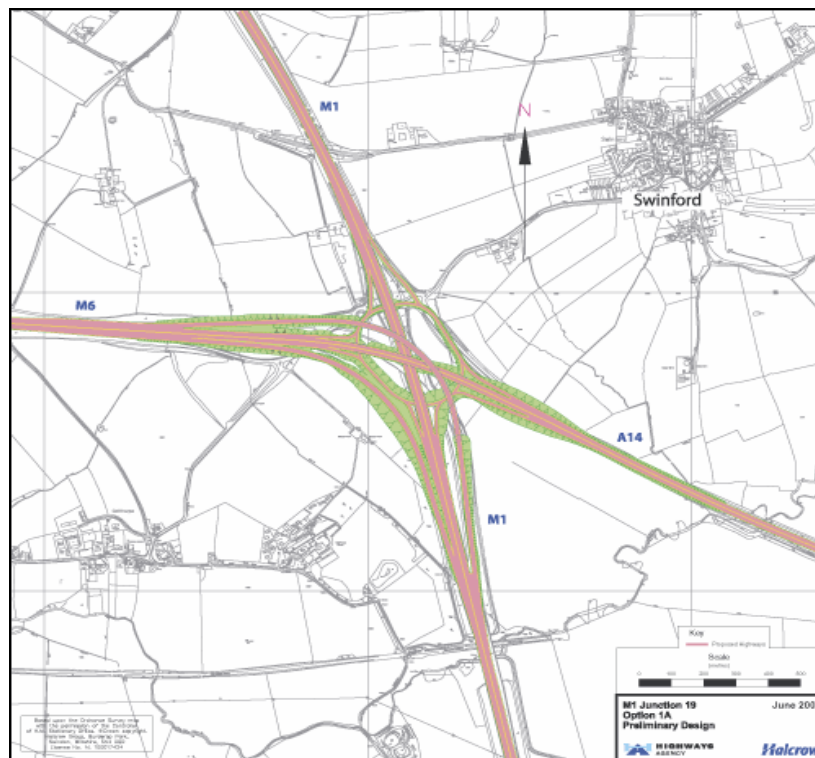


Figure 3.3: M1 Junction 19 Preferred Solution – All Movement Junction

A small scale improvement has recently been implemented by the HA on a short term measure. This has involved the signalisation of both the roundabouts and the re-arrangement of both dumbbell roundabouts.

In February 2003, the Secretary of State for Transport announced that the proposal has been included into the TPI schemes. It is anticipated that the construction period will be commenced during the financial year 2007/8 and will open to traffic in 2010/11.

### 3.8.2 A43/A45 Route Management Strategy

The A43/A45 RMS was completed by Carillion-URS (C/URS) on behalf of the HA and published on August 2004. There are two issues, which are pertinent to the M1/M10 RMS. They are identified as Route Outcomes 10 and 15 of the A43/A45 RMS.

<b>A43/A45 RMS Outcome 10</b>	To ease capacity problems at the A45/M1 Junction 15 Interchange
Related Issues	<ul style="list-style-type: none"> <li>Capacity problems causing peak hour queuing and delays</li> <li>Junction design</li> <li>Access difficulty from Grange Park</li> <li>Further development proposals will aggravate problem</li> </ul>
Possible Actions	<ul style="list-style-type: none"> <li>Review traffic signal timings and arrangements and amend as appropriate</li> <li>Review whole junction layout in conjunction with future development proposals</li> <li>Control further development proposals which could increase congestion</li> </ul>
<b>Outcome 15</b>	To reduce traffic queuing at M1 Junction 15A where traffic travelling south from the M1 to the A43 crosses traffic travelling north from the A43 to the M1 at the roundabout south of the M1
Related Issues	<ul style="list-style-type: none"> <li>Traffic flow conflict causing queuing and delays</li> <li>Junction design</li> </ul>
Possible Actions	<ul style="list-style-type: none"> <li>Provide new northbound exit slip road from M1 to A43 directly onto A43 west roundabout</li> </ul>
Other issues	Relevant LNMS construction currently under Area 8 Programme for 2005-6: M1 Junction 15A New Northbound Off-slip (December 2005)

**Table 3.1: A43/A45 RMS Route Outcomes 10 and 15**

### 3.8.3 Pilot Study Scheme – High Occupancy Vehicle (HOV) Lane

On 9 December 2004, the Transport Secretary, Alistair Darling announced an innovation scheme to reduce congestion and improve journey times on the M1 motorway by creating a dedicated lane which will be reserved for vehicles carrying 2 or more people. The High Occupancy Vehicle (HOV) lane could be created by widening the road to create an additional lane. The HOV lane aims to encourage drivers to share their vehicles. The HOV motorway lanes will be tested on the M1, northbound and southbound as below:-

- M1 Junctions 7 to 10 (St Albans to Luton)

The vehicle-sharing lane will operate at peak times to help minimise delay and congestion for road users. There is work already planned to widen the motorway at this section from dual-3 to dual-4 lanes. It is estimated that there would be 5% fewer vehicles on the road if vehicle sharing is adopted. Work is due to start in February 2006.

Transport Secretary, Alistair Darling said:

“the Government is determined to tackle congestion on Britain’s roads. Carpool lanes help drivers carrying several people by providing dedicated lanes. This makes best use of scarce capacity on our roads.”

“Carpool lanes are part of the Government’s commitment to provide better service to road users. These lanes have been used to great effect both in America and Australia and within the UK and could play a key role in reducing congestion on motorways. I hope that drivers will be encouraged to consider car-pooling to take advantage of the new lanes. It works elsewhere. There is no reason why it can’t work here as well.”

If the scheme proves successful, the Government may consider extending the vehicle-sharing lanes as far as Junction 13 when this section of motorway is widened.

## 4 Route Functions and Performance

### 4.1 Introduction

The Government, in its vision for transport in England (“Transport 2010: The 10 Year Plan” (1998)), describes the motorways and trunk roads that make up the strategic road network in England as being the “backbone of our transport system”. They provide the main transport arteries for the country, playing a vital role, both economically and socially. Although representing less than 4% of the total road network in England, the strategic road network carries around 34% of traffic and 67% of freight (by vehicle miles)<sup>2</sup>, providing for the efficient movement of goods and people while at the same time maintaining the Government’s 5 objectives for transport: safety, environment, economy, accessibility and integration.

The Highways Agency in its role as Network Operator has a remit that runs beyond the traditional notion of the Agency as road builder and maintainer towards achieving a wider strategic aim:

*"to contribute to sustainable development by maintaining, operating and improving the trunk road network in support of the Government's integrated transport and land use policies".*

In its management of the motorway and trunk road network towards this end, the HA are guided by a number of key objectives:

- Giving priority to maintenance whilst minimising whole life costs
- Developing the network operator role
- Reducing congestion and increasing journey time reliability
- Carrying out the targeted investment programme
- Minimising the environmental impact of the trunk road network
- Improving safety for all road users
- Working in partnership and promoting choice and information for travellers

Providing focus for these key objectives within the Government’s five investment criteria, the HA have produced a set of strategic plans, outlining its method, strategy and vision for the future. These plans provide the context for the development of a set of performance functions for the M1 and M10 which reflect the character and operation of the route. The Highways Agency’s Family of Strategic Plans are downloadable from its website: [www.highways.gov.uk](http://www.highways.gov.uk)

---

<sup>2</sup> Source: “Road to the Future”, Highways Agency Strategic Plan for Operating the Network, 2000

## **4.2 Existing Route Functions**

The following lists have been derived and agreed by key stakeholders, the M1-M10 RMS project board and their consultant. It is a view of the existing route functions for the M1 motorway between Junctions 1-19 and the M10.

### **4.2.1 National Functions**

- NF1 Forms part of a major transport link between London and the M25 to the East and West Midlands, the North West and Yorkshire
- NF2 Forms part of the Trans European Road Network
- NF3 Provides a route for heavy and wide loads
- NF4 Provides a link to London Luton Airport
- NF5 Provide the main route for coaches between London and Luton, Milton Keynes, Northampton and the North
- NF6 Provide a key link for freight from M25 to the Midlands and the North
- NF7 Forms a Highways Agency landscape and biodiversity corridor

### **4.2.2 Regional Functions**

- RF1 Provides a major north south road transport link between the M25 and the North Circular Road
- RF2 Provides a major transport link between regional centres of population and employment

In accordance with the work undertaken by the LSMMMS; it is recognised that the M1 will continue to form a crucial aspect of the regional transport network.

### **4.2.3 Local Functions**

- LF1 It relieves communities of traffic along its length
- LF2 It provides a distributor function around large population centres including Luton, Milton Keynes, London and Northampton
- LF3 It acts as a commuter route

### **4.3 Route Performance**

The future route performance of the M1 and M10 is dependent on improvements to their operation and maintenance that will begin to resolve the conflict between their functions.

Through maintenance studies and schemes that the RMS can identify and recommend, these also have the potential to influence and improve the route functions and therefore give greater route performance whilst minimising whole life costs.

The RMS anticipates changes in the functions of the route that will incorporate greater integration between local and strategic-regional functions. Reducing the conflict between functions is likely to make a greater impact on route performance, improving safety for all users, increasing journey time reliability and improving integration and accessibility for the route's catchment area.

Route performance can be affected by potentially large traffic generating developments or land use.

The Land Use and Development Control Statement of this RMS proposes how the HA will respond to planning applications and to future development plans or strategies which have the potential to increase traffic movements and reduce route performance. There is strict development control along the M1 and M10 due in part to the environmental sensitivity and designation of the countryside adjacent to the route. The future of the route's performance in the period of this RMS is likely to be affected by some of the proposed major developments.

The following tables indicate factors that are affecting route performance in co-ordination with the Highways Agency's five investment criteria.

#### 4.4 Factors Affecting Route Performance

**Table 4.1: Factors Affecting Performance Functions – National Functions**

	Existing Route Functions	Factors Affecting Route Performance				
		Safety	Economy	Environment	Accessibility	Integration
NF1	Forms part of a major transport link between London and the M25 to the East and West Midlands, the North West and Yorkshire	<p>Accidents on the route may generate major disruption.</p> <p>Slow vehicles using the middle lane and driving too close.</p> <p>At capacity junctions cause “exit blocking” where off slip queues tail back to the main carriageway.</p>	<p>Congestion delays could impact on the economic function of the M1 and of other strategic routes, also upsetting the local pattern of inter-settlement commuting and movement of goods and services.</p> <p>Congestion delays, particularly on M1 Junction 10 and 10A and negatively affecting Luton Airport.</p> <p>Problems exacerbated by accident locations and people leaving the Watford Gap service area.</p>	<p>Traffic noise is a matter of complaint.</p> <p>Noise and Air Quality affected by increased vehicular flow.</p> <p>Visual intrusion from Junction 10 to 12.</p> <p>Flooding problems of the hamlet of Tathall End between Junctions 14 and 15.</p>	<p>Congestion occurs at most junctions between Junctions 4 and 17</p> <p>There are limited movements possible between the M25 and M1 at Junction6/6A.</p> <p>Junctions 7 and 8 traffic moving between M10 and Hemel Hempstead (A414) causes additional congestion.</p>	<p>Inadequate NMU facilities at junctions.</p> <p>Lack of adequate cost effective public transport alternatives encourages private car usage to the major airports.</p> <p>Lack of traffic information system on the corridor for the road users.</p>
NF2	Forms part of the Trans European Road Network					
NF3	Provides a route for heavy and wide loads					
NF4	Provides a link to London Luton Airport					
NF5	Provide the main route for coaches between London and Luton, Milton Keynes, Northampton and the North					
NF6	Provide a key link for freight from M25 to Midlands and the North					
NF7	Forms a Highways Agency landscape and biodiversity corridor					

**Table 4.2: Factors Affecting Performance Functions – Regional Functions**

	Existing Route Functions	Factors Affecting Route Performance				
		Safety	Economy	Environment	Accessibility	Integration
<b>RF1</b>	Provides a major north south road transport link between the M25 and the North Circular Road	Heavy congestion at peak times at interchanges is a potential cause of accidents.	Congestion delays, particularly on M1 Junction 10 and 10A impact on economic function and negatively affecting Luton Airport.  Problems exacerbated by accident locations.  Congestion may deter employees from using the M1 motorway, suffocating the regional economy.	Noise and Air Quality affected by high volumes of traffic at peak time.	Availability and awareness of user facilities.	Inadequate NMU facilities at junctions.  Lack of adequate cost effective public transport alternatives encourages private car usage to the major airports.  Lack of traffic information system on the corridor for the road users.
<b>RF2</b>	Provides a major transport link between regional centres of population and employment					
<b>RF3</b>	Provides quick and safe journeys for athletes, officials and spectators during the 2012 London Olympics					

**Table 4.3: Factors Affecting Performance Functions – Local Functions**

	Existing Route Functions	Factors Affecting Route Performance				
		Safety	Economy	Environment	Accessibility	Integration
<b>LF1</b>	It relieves communities along its length of traffic	Accidents on the route may generate disruption to this function.	Poor junction layouts at local communities can cause potential delay and disruption to local economies.	Noise and Air Pollution from increased vehicle flow.	Conflict with Non-Motorised Users at junctions.  Regional usage conflicts with strategic functions.  Local usage conflicts with regional functions.	Inadequate NMU facilities at junctions.  Lack of adequate cost effective public transport alternatives encourages private car usage to the major airports.
<b>LF2</b>	It provides a distributor function around large population centres: including Luton, Milton Keynes, London and Northampton					
<b>LF3</b>	It acts as a commuter route					

## **4.5 Future Route Functions**

Table 4.1 – Table 4.3 identify possible factors affecting the performance of the existing functions of the M1 and M10. Integrating these factors into the existing functions within the context of Section 4.3 has led to the development of a set of future functions for the route. The nature of the route is such that the future route functions include all existing functions (NF1-NF7, RF1-RF2 and LF1-LF3), all of which are expected to hold for the life time of this RMS. There are, however, additional functions that will become increasingly important over time.

### **4.5.1 Future National Functions**

There are no changes expected to the National Functions, subject to the availability of capacity.

### **4.5.2 Future Regional Functions**

The additional Regional Function is:

RF3 Provides quick and safe journeys for athletes, officials and spectators during the 2012 London Olympics

### **4.5.3 Future Local Functions**

There are no changes expected to the Local Functions, subject to the availability of capacity.

## **5 Route Problems and Issues**

The Highways Agency gives priority to maintenance whilst minimising whole life costs. In developing its role as network operator, the HA would like to deal with problems and issues along the route in a manner that gives the greatest beneficial impact to users and communities along the route as well as to the five transport investment criteria of safety, environment, economy, accessibility and integration.

The HA as maintainer and operator of the M1 and M10 has a number of key objectives designed to support the Agency's strategic aim of contributing to sustainable development in support of integrated transport and land use policies.

These objectives are set in the construction and maintenance context of the Government's five investment criteria for transport and the responsibility that the HA now has, both to users and to communities along the route.

### **5.1 Introduction**

During the course of the initial consultation, comments on problem areas, sometimes with suggestions for improvement, were made by the stakeholders approached.

A draft Route Performance Framework (RPF) was developed during the early stages of this RMS study to give a broad indication of where problem areas and potential issues lie. The RPF, which has not been updated, is included in Appendix O.

Further Route Problems and Issues have been raised through discussion and widespread consultation with key stakeholders, including the Local Authorities, user groups, Managing Agent Contractors (Areas 5 and 8) and the Police Forces. These have been supported by internal consultation (Mott MacDonald) and the Highways Agency.

The Public Consultation, Value Management Workshop and Stakeholder Seminar presented a further opportunity to identify further Route Problems and Issues and discuss the development of the previously identified problems and issues.

### **5.2 Problems and Issues**

Problems and issues are considered to be obstacles against the effective fulfilment of the Route Functions and each one has been assigned as a Policy Objective.

The following tables give a clear indication as to how problems and issues along the route affect particular Functions and Policy Objectives of the M1 and M10. The tables are presented under the headings of the five investment criteria and list the problems and/or issues.

The problems and issues raised in the following tables (Tables 5.1 – 5.5) are those raised by respondents both in written and public consultations; and do not necessarily reflect the views of the HA.

## 5.2.1 Environment

**Table 5.1: Route Problems and Issues – Environment**

	<b>Problem/Issue</b>	<b>Cause/Source</b>	<b>Function</b>	<b>Objective</b>
PEn1	Noise barrier/fencing has a “tunnel effect” look on the M1 motorway.	Noise barriers are dull and uninteresting for drivers; it also blocks the landscape views from the motorway.	NF1, NF3, NF4, NF5, NF6, NF7, RF1, RF2, LF2	Env1, Env6, Env7, Env8
PEn2	Close proximity of houses adjacent to the M1 suffering high level of noise, in particular with the following locations J2-J3, J5-J10, J11-J12, J14-J15, and J18-J19.	The increased volume of traffic along the M1 which generate a huge amount tyre noises. In addition, the current noise barriers are ineffective because they are too low.  A number of noise hotspots have been identified on some sections of the M1 between J5-J10 and J11-J12, however, the Highways Agency has programmed to improve these hotspots.	NF1, NF3, NF4, NF5, NF6, NF7, RF1, RF2, LF2	Env1, Env5, Env6, Env7, Env8
PEn3	A number of AQMAs have been declared along the M1 and M10 by the Local Authorities of Northampton BC, Luton BC, St Albans DC, Three Rivers DC, Hertsmere BC and the London Boroughs of Barnet, Brent and Harrow.	Two of the main pollutants, Nitrogen Dioxide (NO <sub>2</sub> ) and Particulate Matter (PM <sub>10</sub> ) have been recorded that are above the standard limits.	NF1, NF3, NF4, NF5, NF6, NF7, RF1, RF2, LF2	Env2, Env5, Env6, Env7, Env8, Ec2, Ec8
PEn4	Air pollution is likely to increase along the M1 by the new development proposals, if they are permitted.	The new development proposals in the Milton Keynes and South Midlands growth area and the future growth of Luton Airport would have an effect on the local air quality.	NF1, NF3, NF4, NF5, NF6, NF7, RF1, RF2, LF2	Env2, Env5, Env6, Env7, Env8, Ec2, Ec8
PEn5	Lighting pollution from the M1 motorway.	Some sections of the M1 motorway are unnecessarily lit. The lighting from Toddington MSA has a large impact on the local residents within the immediate area of Toddington village.	NF1, NF2, NF3, NF4, NF5, NF6, NF7, RF1, RF2, LF1, LF2, LF3	Env3, Env5, Env6, Env7, Env8, S2
PEn6	The visual intrusion of Variable Message Signs (VMSs) into neighbouring areas.	Some of the recently installed gantries have been insensitively sited and are dominant in the landscape. The VMSs are highly visible from locations with some distance away from the motorway and constitute an intrusion into neighbouring area.	NF1, NF2, NF3, NF4, NF5, NF6, NF7, RF1, RF2, RF3, LF1, LF2, LF3	Env5, Env6, In1
PEn7	Excessive surface water at some locations on the M1, in particular between J4-J5 northbound.	This section suffer from large volume of surface water creating sever visibility problems and hazard for users. There are 40mph signs and static signs have been erected.	NF1, NF3, NF4, NF5, NF6, NF7, RF1, RF2, LF2	Env4, Env5, Env7, Env8

## 5.2.2 Safety

**Table 5.2: Route Problems and Issues – Safety**

	<b>Problem/Issue</b>	<b>Cause/Source</b>	<b>Function</b>	<b>Objective</b>
PS1	The M1 southbound section between J9 and J8 where causes most of the accidents and delays.	The on-slip at J9 from the A5183 contains very tight bend which stops vehicles, particularly HGVs from accelerating and joining the motorway at a reasonable speed.  Junction 9 is at the bottom of the hill; merging traffic forces slow HGVs onto the middle lane. There are frequent collisions between the slow HGVs climbing on the steep gradient with the much faster vehicles (e.g. New signing has been introduced to warn drivers of queuing traffic ahead).	NF1, NF2, NF5, NF6, RF1, RF2, LF1, LF2, LF3	S1, S3, S4, Ec1, Ec2, Ec3, Ec8, In1, In4
PS2	The general driving discipline is poor on the M1.	Poor lane use by motorists causes accidents and delays. Slower vehicles using the middle lane and vehicles are driving too close.	NF1, NF2, NF3, NF4, NF5, NF6, RF1, RF2, RF3, LF1	S1, S3, S4, S7, Ec5, Ec6, In1
PS3	Dangerous drivers trying to cut across three lanes from the outside lane for leaving the motorway at the last minute.	Most of the time the M1 inside lane is occurred by the HGVs and the road signs near the verge are always blocked. As a result, motorists have no idea of how far is the next exit.	NF1, NF2, NF3, NF4, NF5, NF6, RF1, RF2, RF3, LF1	S1, S3, S4, S7, Ec5, Ec6, In1
PS4	Northbound vehicles on the M1 are weaving between lanes attempting to exit the motorway whilst avoiding vehicles entering the motorway from the M10 between J7 and J8 at peak hours.	The junctions are too close to one another. Traffic travelling from the M10 towards the M1 and Hemel Hempstead (J8) is in conflict with the northbound traffic exiting the motorway to Hemel Hempstead on the inside lane.  Vehicles travelling from M10 queue up to join the M1 (where the M10 converge 2-lanes into one) while drivers use the hard shoulder as a second slip road onto the M1 and to exit the M1 at J8 (Hemel Hempstead). This problem will be addressed by the M1 J6A-J10 Widening scheme.	NF1, NF2, NF3, NF4, NF5, NF6, RF1, RF2, RF3, LF1, LF2, LF3	S1, S3, S4, S7, Ec1, Ec2, Ec3, Ec4, Ec5, Ec6, Ec8, In1, In3, In4
PS5	Traffic weaving between M1 Junction 12 and the Toddington MSA.	The close proximity of services and J12 is causing confusion for drivers over where the correction junction exit is. A high number of weaving movements and making access to lane 2 cause difficulty for vehicles exiting the MSA. This problem will be addressed by the M1 J6A-J10 Widening scheme.	NF1, NF2, NF3, NF4, NF5, NF6, RF1, RF2, LF1, LF2, LF3	S1, S3, S4, S7, Ec1, Ec2, Ec3, Ec4, Ec5, Ec6, Ec8, In1, In3, In4
PS6	M1 Junction 11 – hard shoulder use.	Queuing occurs on the main line of the M1 motorway; drivers tend to leave the motorway at J11 and want to use the hard shoulder to expedite their exit. This is also a problem at many junctions on the M1.	NF1, NF2, NF3, NF4, NF5, NF6, NF7, RF1, RF2, LF1, LF2, LF3	S1, S3, S4, S6, Ec1, Ec2, Ec3, Ec4, Ec5, Ec6, Ec8, In1, In3, In4
PS7	M1 Junction 6 southbound off-slip is an issue.	Queuing accidents are common, particularly in winter. Confusion for road users is the major problem. There is some poor driver behaviour including pushing into exit at Junction 6A and this results in accidents. This problem will be addressed by the M1 J6A-J10 Widening scheme.	NF1, NF2, NF3, NF4, NF5, NF6, RF1, RF2, RF3, LF1, LF2, LF3	S1, S3, S4, S7, Ec1, Ec2, Ec3, Ec4, Ec5, Ec6, Ec8, In1, In3, In4

	<b>Problem/Issue</b>	<b>Cause/Source</b>	<b>Function</b>	<b>Objective</b>
PS8	Perceived safety issues between M1 Junctions 6-6A.	38 Personal Injury Accidents (PIAs) have been occurred on this section between 1996-2000. Of this injuries, 12 were rated as killed or severely injured (KSI). 6 of these KSIs occurred in 1996, whilst none occurred in 1998 or 2000.	NF1, NF2, NF3, NF4, NF5, NF6, NF7, RF1, RF2, RF3, LF1, LF2, LF3	S1, S3, S4, S7, Ec1, Ec2, Ec3, Ec4, Ec5, Ec6, Ec8, In1, In3, In4
PS9	Perceived safety issues at M1 Junction 19.	The present arrangement of M1 J19 is in a confliction of a three movement junction. It leads to dangerous queues at peak hours on the slip roads. Accidents almost happen daily causing knock on effects to M1 both north and southbound  The Highways Agency has programmed to improve this junction. This improvement will reduce the number of accidents on the network due to an improved junction layout, which includes a free-flow link from M6 to A14, solving the existing problems for this movement.	NF1, NF2, NF3, NF5, NF6, NF7, RF1, RF2, LF1, LF2, LF3	S1, S3, S4, S7, Ec1, Ec2, Ec3, Ec4, Ec5, Ec6, Ec8, In1, In3, In4
PS10	Bad/Poor road surface at some sections of the M1 (e.g. between Junctions 4-6 northbound).	The HGVs cause rutting and damage to the road surface which is dangerous, especially for the motorcyclists.	NF1, NF2, NF3, NF5, NF6, NF7, RF1, RF2, RF3, LF1, LF2, LF3	S1, S2, S3, S6, S7
PS11	Potential for accidents due to HGV's parking on hard shoulder.	Lack of HGV parking along the M1 resulting in queues on the slip roads. Problem at most of the Motorway Service Areas (MSAs); was predominantly with foreign drivers.	NF1, NF2, NF3, NF5, NF6, NF7, RF1, RF2, LF1, LF2, LF3	Env5, S1, S3, S6, Ec1, Ec2, Ec3, Ec4, Ec5, Ec6, Ec8, In4
PS12	Difficult access to London Gateway Services from M1 Junction 3 southbound carriageway.	The M1 southbound slip road towards the London Gateway MSA contains a very sharp right hand turning into an over-bridge to reach the services which sits on the northbound carriageway. Motorists attempting to re-join the M1 both north and south bounds appear to be confused by the road leading to the HA Depot.	NF1, NF2, NF3, NF4, NF5, NF6, RF1, RF2, LF1, LF2, LF3	S1, S3, S4, S5, S6, Ec1, Ec3, Ec4, Ec5, Ec8, Ac1
PS13	Short on and off slips at some of the M1 Junctions (e.g. Junctions 3, 9, 10, 11, 13 and 14). With some of this slip roads consisting of a tight and/or sharp bend.	These short, tight and sharp bend slip roads cause traffic to slow down and lead to a build up of traffic back on to the motorway.	NF1, NF2, NF3, NF4, NF5, NF6, RF1, RF2, LF1, LF2, LF3	S1, S3, S4, S7, Ec1, Ec2, Ec3, Ec4, Ec5, Ec6, Ec8, In1, In3, In4

### 5.2.3 Economy

**Table 5.3: Route Problems and Issues - Economy**

	<b>Problem/Issue</b>	<b>Cause/Source</b>	<b>Function</b>	<b>Objective</b>
PEc1	Congestion problems between Junctions 6A-11.	High percentage of HGVs causes congestion particularly between J11 and J8 southbound. This section is known for delays normally caused by traffic to and from M25 (J6A) or in and out of London and Luton Airport (J10 & J10A).  Further development planned with the vicinity of Junctions 8-11 will exacerbate congestion problems.	NF1, NF2, NF3, NF4, NF5, NF6, NF7, RF1, RF2, RF3, LF1, LF2, LF3	Env1, Env2, S3, S4, Ec1, Ec2, Ec3, Ec4, Ec6, Ec8, Ac2, In1, In3, In4
PEc2	Congestion problems between Junctions 13-14.	High percentage of HGVs causes congestion north of J12. New development (at Milton Keynes) is likely to have impact on operation of Junction13.	NF1, NF3, NF5, NF6, RF1, RF2, LF1, LF2, LF3	Env1, Env2, S3, S4, Ec1, Ec2, Ec3, Ev4, Ec6, Ec8, Ac2, In1, In3, In4
PEc3	HGVs travelling on the southbound of the M1 cannot access to M45 at J17, where the HGVs coming from the M45 also cannot access to the M1 north of J17.	Lack of north access slips at M1 J17 which causes problems for HGV movements to the South West and DIRFT. As a result the HGV traffic has to be rerouted via the M6.	NF1, NF2, NF3, NF5, NF6, RF1, RF2, LF1, LF2	S1, S3, S6, Ec1, Ec4, Ec5, Ec6, In1, In2, In3
PEc4	Junction 15 (Northampton) is operating at capacity; queues form at peak hours and causing delays.	Access difficulty from Grange Park. Further development proposals will aggravate problems.	NF1, NF2, NF3, NF5, NF6, NF7, RF1, RF2, LF1, LF2	Env1, Env2, S1, S3, S4, S5, Ec1, Ec2, Ec5, Ec6, Ec7, Ec8, Ac1, Ac2, In1, In2, In3, In4, In5
PEc5	Junction 14 (Milton Keynes) is operating at capacity and access to the Milton Keynes coachway is affected by congestion in the peak periods.	Due to queues on both of the slip roads, around the junction roundabout and through to the next roundabout towards Milton Keynes.	NF1, NF2, NF3, NF5, NF6, , RF1, RF2, LF1, LF2, LF3	Env1, Env2, S1, S3, S4, S5, Ec1, Ec2, Ec5, Ec6, Ec7, Ec8, Ac1, Ac2, In1, In2, In3, In4, In5
PEc6	Junction 13 (Milton Keynes) is operating at capacity; severe queuing in the morning peak.	Both J13 and J14 become congested at peak times and experience some dangerous driving behaviour, including cutting across lanes to exit the motorway.	NF1, NF2, NF3, NF5, NF6, , RF1, RF2, LF1, LF2, LF3	Env1, Env2, S1, S3, S4, S5, Ec1, Ec2, Ec5, Ec6, Ec7, Ec8, Ac1, Ac2, In1, In2, In3, In4, In5
PEc7	When there are accidents occur on the M1 or M25, the roundabout at the end of the M10 gets very congested and grid-locked.	Most of the traffic is diverted onto the M10 when accidents occur on the M1 or M25. The roundabout at end of the M10 has four arms and is a non signalised junction.	NF1, NF2, NF3, NF4, NF5, NF6, RF1, RF2, RF3, LF1, LF2, LF3	S1, S3, S4, S6, Ec1, Ec2, Ec3, Ec4, Ec5, Ec6, Ec7, Ec8, Ac2, In1, In2, In4, In5
PEc8	Likelihood of increased volume of traffic at J18.	Due to expansion of Daventry International Rail Freight Terminal (DIRFT).	NF1, NF2, NF3, NF5, NF6, RF1, RF2, LF1, LF2, LF3	Env1, Env2, S3, S4, Ec1, Ec2, Ec3, Ev4, Ec6, Ec8, Ac2, In1, In3, In4

	<b>Problem/Issue</b>	<b>Cause/Source</b>	<b>Function</b>	<b>Objective</b>
PEc9	Road user information is not always available or accurate	Lack of driver information to help avoid congestion. At present such traffic information provided by radio and by signs are frequently out of date and inaccurate.	NF1, NF2, NF3, NF4, NF5, NF6, RF1, RF2, RF3, LF1, LF2, LF3	Ec1, Ec2, Ec5, In1
PEc10	M1 Junction 5 southbound off slip backs up onto the M1 in peak periods.	This is associated with the traffic signals at the junction with A4008 and A41(T). There may be possible improvements that could be made to signal phasing and junction design.	NF1, NF2, NF3, NF4, NF5, NF6, NF7, RF1, RF2, RF3, LF1, LF2, LF3	S1, S3, S4, Ec1, Ec2, Ec3, Ev4, Ec6, Ec8, Ac2, In1, In3, In4
PEc11	The M1 Junction 8 northbound causes exit blocking onto the M1 during peak periods, especially in the evening.	When the roundabout on the A414 is congested, vehicles queue up onto the motorway causing inside lane traffic under the M10 overpass to come to a halt while outside lane traffic stays at the speed limit. This problem will be addressed by the M1 J6A-J10 Widening scheme.	NF1, NF2, NF3, NF4, NF5, NF6, RF1, RF2, RF3, LF1, LF2, LF3	S1, S3, S4, Ec1, Ec2, Ec3, Ev4, Ec6, Ec8, Ac2, In1, In3, In4
PEc12	Localised congestion appears on some stretches of the M1 corridor.	A significant proportion of local traffic using the M1 to bypass more congested local roads. Discourage local traffic from making short journeys on the M1 could help reduce congestion.	NF1, NF2, NF3, NF4, NF5, NF6, NF7, RF1, RF2, LF1, LF2, LF3	S1, S3, S4, Ec1, Ec2, Ec3, Ev4, Ec5, Ec6, Ec8, Ac2, In1, In2, In3, In4
PEc13	M1 Junction 10 – Future expansion at Luton Airport could cause queuing back onto the motorway.	Growth of the airport could contribute to pressures on the road network beyond 2015, depending on the rate of build up.	NF1, NF2, NF3, NF4, NF5, NF6, NF7, RF1, RF2, LF1, LF2, LF3	Ec1, Ec2, Ec3, Ec4, Ec5, Ec6, Ec7, Ec8, Ac1, Ac2, In1, In2, In3, In4

## 5.2.4 Accessibility

**Table 5.4: Route Problems and Issues – Accessibility**

	<b>Problem/Issue</b>	<b>Cause/Source</b>	<b>Function</b>	<b>Objective</b>
PA1	Some junctions on the M1 are “no go” areas for cyclists. For example M1 Junctions 11 and 14	Lack of Non-Motorised User (NMU) facilities and signal assistance to cross the slip roads. Barriers to safe cycling for both local trips and cross country journeys. (Please note that not all junctions on M1 are under the control of HA.)	RF1, RF2, LF1, LF2, LF3	S1, S3, S5, S7, Ec1, Ec4, Ec5, Ec6, Ac1, Ac3, Ac4, In4
PA2	Traffic travelling from the north on M1 cannot access the M6 at J19, which causes traffic to route via J18.	Lack of south access on southbound of the M1 at Junction 19.  This problem has been investigated at the M1 J19 Road Based Study. In February 2003, the Secretary of State announced that the proposed solution of the study has been entered the Targeted Programme of Improvements (TPI) schemes.	NF1, NF2, NF3, NF5, NF6, RF1, RF2, LF1, LF2, LF3	S1, S3, S4, S5, S6, S7, Ec1, Ec3, Ec4, Ec5, Ec6, Ec8, Ac1, In1, In3, In4
PA3	Severance in communities – The M1 motorway divides the towns of Luton and Dunstable.	Junction proximity and congestion experienced at and between J10-J10A and J11 increase traffic.	NF1, NF2, NF3, NF4, NF5, NF6, RF1, RF2, LF1, LF2, LF3	S1, S2, S3, S5, S6, S7, Ec1, Ec2, Ec3, Ec4, Ec5, Ac1, Ac2, Ac3, Ac4, In3
PA4	Severance in communities – The M1 motorway divides the towns of Hemel Hempstead and St Albans	Junction proximity and congestion experienced at and between Junctions 7 and 8 increases traffic. NMUs have to use busy local roads to cross underneath or over the motorway.	NF1, NF2, NF3, NF5, NF6, NF7, RF1, RF2, RF3, LF1, LF2, LF3	S1, S2, S3, S5, S6, S7, Ec1, Ec2, Ec3, Ec4, Ec5, Ac1, Ac2, Ac3, Ac4, In3
PA5	Motorists travelling north on the M1 cannot access on to the M25 Junction 21A (with M1 J6A) and vehicles on the M25 cannot travel south of the M1 at this junction.	Lack of south access on the M1 Junction 6A onto M25. Motorists have to use the J6 of the M1 and connect to the M25 at Junction 21A via the A405. Local traffic from Bricket Wood also has to use the A405, which causes considerable conflict.  If there is congestion on the M25 westbound, vehicles leave at J22 and use the roads around Bricket Wood in order to get to J5 of the M1.	NF1, NF2, NF3, NF4, NF5, NF6, RF1, RF2, RF3, LF1, LF2, LF3	S1, S2, S3, S5, S6, S7, Ec1, Ec2, Ec3, Ec4, Ec5, Ac1, Ac2, Ac3, Ac4, In3
PA6	There is a potential for cyclists and equestrians falling from the over-bridge on the M1.	Cyclists and equestrians are concerned that some of the existing parapets on the over-bridges of the M1 are too low. (e.g. The bridleway bridge at north of M1 J18 has a low parapet of 1.3 meters.)  The Highways Agency has a current scheme to provide new parapets to replace the sub-standard ones and also to avoid any projectiles being thrown over from carriageway structures.	RF1, RF2, LF1, LF2, LF3	S1, S5, Ac3, Ac4

## 5.2.5 Integration

**Table 5.5: Route Problems and Issues – Integration**

	<b>Problem/Issue</b>	<b>Cause/Source</b>	<b>Function</b>	<b>Objective</b>
PI1	Difficult access to and from the London Gateway Services at M1 Junction 3 compared to other MSAs on the motorway.	National Express Coach Ltd have considered using this service area as a local stop for the north London area. It could also become a potential Park & Ride location when the new Wembley Stadium opens in May 2006.	NF1, NF2, NF3, NF5, NF6, RF1, RF2, LF1, LF2, LF3	S1, S3, S4, S5, S6, S7, Ac1, Ac3, Ac4, In1, In2, In3, In4
PI2	Lack of public transport alternatives to the private car. Increased opportunities for possible Park & Ride Facilities for Long Distance Rail Commuters.	Railway infrastructure constraints are hindering possible increased frequency during the busy periods, to give a more attractive alternative to the private car. Cost effectiveness and convenience continues to place the private car ahead of public transport.	NF1, NF2, NF3, NF4, NF5, NF6, RF1, RF2, LF1, LF2, LF3	Ec1, Ec2, Ec6, Ac2, In1, In2, In3, In4
PI3	Lack of Park and Ride (P&R) facilities on the M1-M10 RMS corridor.	There is lack of P&R facilities along on the M1 corridor. The existing P&R at M1 J14 Milton Keynes Coachway has limited parking spaces available.  The Milton Keynes Council has recently been awarded a grant for a feasibility study for J14.	NF1, NF2, NF3, NF4, NF5, NF6, RF1, RF2, LF1, LF2, LF3	Ec1, Ec2, Ec6, Ac2, In1In3, In4
PI4	Bus Lanes problems on the M1 Junction 1 and Junction 7.	Buses have not been identified previously as an issue. M1 Junction 1 – Buses should leave at J2 to follow the preferred route into London. M1 Junction 7 – Congestion issues should be reduced as part of the widening.	NF1, NF2, NF3, NF4, NF5, NF6, RF1, RF2, LF1, LF2, LF3	Ec1, Ec2, Ec6, Ac2, In1In3, In4

## **6 Route Outcomes**

### **6.1 Introduction**

Route Outcomes (ROs) set out what the HA will seek to obtain from the M1 and M10 routes over the ten year period of the RMS. They are designed to contribute to the Policy Objectives defined in Section 3, improve the performance of the Route Functions defined in Section 4, support the Land Use and Development Control statement and address Route Problems and Issues along the whole route or at specific locations.

Route Outcomes are initially developed from Route Problems and Issues, proposed land use developments, development planning control policies and where poor route performance has been identified. For each scenario that affects the function or performance of the M1 and M10, a Route Outcome has been derived. This produces a large number of possible actions that after rationalisation, the HA will seek to use to prioritise improvements for the M1 and M10 over the next ten years.

The Route Outcomes focus on achieving the on the HA's three key objectives:

*“Safe roads, Reliable journeys, Informed travellers”*

### **6.2 Route Outcomes Summary Sheets**

The method of numbering these route outcomes does not reflect or make any assumption as to the HA's prioritisation for delivery of the possible actions, found in the summary sheets, or the importance of particular route outcomes over others.

The following have been identified as Route Outcomes:

- RO1 Improve journey time reliability along the M1 (Junction 1-19)**
- RO2 Improve information to road users**
- RO3 Reduce accidents at the M1 junctions and/or links, including the M10**
- RO4 Minimise the impact of the M1 and M10 on the adjacent local environment**
- RO5 Minimise the impact of noise caused by M1 and M10**
- RO6 Improve Non-Motorised User (NMU) facilities, especially at Junctions**
- RO7 M1 Junction 3 - Improve accessibility from the M1 to London Gateway Service Area**
- RO8 M1 Junction 5 - Reduce queuing on M1 southbound approach**
- RO9 M1 Junction 13 - Review capacity improvements and NMU facilities**

- RO10 M1 Junction 14 - Improve junction operation**
- RO11 M1 Junctions 15 to 15A - Reduce congestion and improve accessibility at junctions**
- RO12 M1 Junction 17 - Improve accessibility at junction to allow Heavy Goods Vehicles (HGVs) to gain access to Daventry International Rail Freight Terminal (DIRFT)**
- RO13 Facilitate the development of the Milton Keynes and South Midlands (MKSM) growth area whilst safeguarding the operation of the trunk road network.**
- RO14 Minimise the traffic effect of the future growth at London Luton Airport**
- RO15 Safeguard the use of the M1 route as an abnormal load route**
- RO16 Facilitate increased multi-modal transport integration**
- RO17 M1 Junction 7 to 8 - Reduce the conflict of northbound traffic weaving and congestion**

## 6.2.1 Route Outcome 1

<b>Route Outcome</b>	<b>Improve journey time reliability along the M1 (Junction 1-19)</b>
<b>RO1</b>	
<b>Short Name</b>	<b>Improve Journey Time Reliability</b>
<b>Related Route Functions</b>	NF1-NF6, RF1-RF3 and LF1-LF3 (Reference to Sections 4.2 and 4.5 of this report)
<b>Improvements to Related Route Functions</b>	<ul style="list-style-type: none"> <li>Increased journey time reliability for National and Regional traffic</li> <li>Safer journeys for all users</li> <li>Major benefits to be derived in terms of National and Regional competitiveness</li> <li>Relief for communities along the length of M1</li> </ul>
<b>Related Route Problems and Issues</b>	PS1-PS13, PEc1-PEc13, PA5 and PI1-PI4 (Reference to Table 5.1 – 5.5 in Section 5.2.1 to 5.2.5)
<b>Locations</b>	M1 Junctions 1-19
<b>Policy Objectives</b>	<p>S1 To review and where possible improve the safer operations of the route</p> <p>S3 To seek to achieve a consistent high standard of variable and static signing along the route</p> <p>S4 To seek to manage vehicle speeds at appropriate levels</p> <p>S6 To seek to improve the quality of user facilities and provide adequate rest and emergency facilities</p> <p>Ec1 To seek to prioritise actions with regard to the needs of the national, regional and local economy</p> <p>Ec2 To seek to reduce congestion, particularly between London and Milton Keynes</p> <p>Ec3 To seek to minimise traffic disruption due to traffic incidents</p> <p>Ec5 To seek to maximise the availability for use of the route for users, and the serviceability of the road, structures and other highway equipment</p> <p>Ec6 To seek to improve journey time and reliability and information</p> <p>Ec8 To seek to reduce congestion at major interchanges</p> <p>Ac2 To seek to make appropriate provision for and encourage the use of public transport</p> <p>In1 To improve user information</p> <p>In2 increase knowledge of user patterns and needs</p> <p>In3 To support regional transport strategy, local transport plans and development plans</p> <p>In5 To recognise the two-way interaction between the RMS and other RMSs (e.g. A43/A45 RMS – suggestions on Junction 15 and 15A)</p>
<b>Target</b>	Undertake studies to identify appropriate schemes and measures to reduce congestion and improve journey time reliability
<b>Timescale</b>	To be assessed as part of the Route Management Plan
<b>Possible Actions</b>	<p><b>Actions to consider in study may include:</b></p> <ul style="list-style-type: none"> <li>Consider demand management measures</li> <li>Improve incident management, reducing congestion after accidents and incidents at and between junctions</li> <li>Examine congestion problems</li> <li>Provide useful information to users before possible alternative route decisions</li> <li>Improve carriageway markings</li> </ul>
<b>Other issues</b>	<ul style="list-style-type: none"> <li>Potential development in the Milton Keynes and South Midlands growth areas and London Luton Airport growth</li> </ul> <p>Highways Agency's Targeted Programme of Improvements Schemes:</p> <ul style="list-style-type: none"> <li>M1 Widening between J6A-J10 and J10-J13</li> <li>M1 Junction 19 Improvement Scheme</li> <li>The M25 motorway widening from J16 to J23 (M40-A1(M)) and J23 to J27 (A1(M)-M11)</li> <li>A5-M1 Link (Dunstable Northern Bypass)</li> </ul>

## 6.2.2 Route Outcome 2

<b>Route Outcome</b>	<b>Improve information to road users</b>
<b>RO2</b>	
<b>Short Name</b>	<b>Better Information</b>
<b>Related Route Functions</b>	NF1-NF2, NF4-NF6, RF1 and LF1-LF2 (Reference to Sections 4.2 and 4.5 of this report)
<b>Improvements to Related Route Functions</b>	<ul style="list-style-type: none"> <li>• Increased reliability and journey time</li> <li>• Safer journeys for all users</li> <li>• Reduced congestion on M1</li> <li>• Better informed travellers</li> </ul>
<b>Related Route Problems and Issues</b>	PEnv6, PS2, PEc1-PEc7 and PEc9-PEc12 (Reference to Table 5.1 – 5.5 in Section 5.2.1 to 5.2.5)
<b>Locations</b>	M1 Junctions 1-19
<b>Policy Objectives</b>	<p>S1 To review and where possible improve the safer operations of the route</p> <p>S3 To seek to achieve a consistent high standard of variable and static signing along the route</p> <p>S5 To review safety and the security for non motorised users crossing the route at interchanges or bridges/subways</p> <p>Ec1 To seek to prioritise actions with regard to the needs of the national, regional and local economy</p> <p>Ec2 To seek to reduce congestion, particularly between London and Milton Keynes</p> <p>Ec3 To seek to minimise traffic disruption due to traffic incidents</p> <p>Ec5 To seek to maximise the availability for use of the route for users, and the serviceability of the road, structures and other highway equipment</p> <p>Ec6 To seek to improve journey time and reliability and information</p> <p>Ac1 To seek to reduce community severance</p> <p>In1 To improve user information</p>
<b>Target</b>	Undertake studies to identify appropriate schemes to improve road user information and communication media
<b>Timescale</b>	To be assessed as part of the Route Management Plan
	<b>Actions to consider in study may include:</b>
<b>Possible Actions</b>	<ul style="list-style-type: none"> <li>• Improve road signing and marking</li> <li>• Consider the introduction of further Variable Message Signs (VMSs) on the M1 to provide earlier information allowing travellers to make informed decisions when incidents have occurred and thus avoid further traffic being held up on the motorway. (The suitable locations could be a reasonable distance before a junction from which a sensible alternative route can be accessed.)</li> <li>• Consider improved CCTV coverage to monitor flow conditions</li> <li>• Improved real time information on transport based websites and communication media</li> <li>• Advanced warning of traffic disruption, roadworks, congestion and incidents</li> <li>• Review all the existing signs (including gantries) and road markings</li> <li>• Keeping signing consistent between Highways Agency's Area 5 and 8</li> <li>• Ensure faded road markings are re-painted</li> <li>• Consider the provision of signing to the rail network off the M1</li> </ul>
<b>Other issues</b>	<ul style="list-style-type: none"> <li>• Most of the signing works have been completed by the Highways Agency</li> </ul>

### 6.2.3 Route Outcome 3

<b>Route Outcome</b>	<b>Reduce accidents at the M1 junctions and/or links, including the M10</b>
<b>RO3</b>	
<b>Short Name</b>	<b>Accident Reduction</b>
<b>Related Route Functions</b>	NF1-NF6, RF1-RF2 and LF1-LF3 (Reference to Sections 4.2 and 4.5 of this report)
<b>Improvements to Related Route Functions</b>	<ul style="list-style-type: none"> <li>Increased reliability and journey time</li> <li>Safer Journeys for all users</li> <li>Reduce congestion on the M1 and M10</li> </ul>
<b>Related Route Problems and Issues</b>	PS1-PS13 (Reference to Table 5.1 – 5.5 in Section 5.2.1 to 5.2.5)
<b>Locations</b>	M1 Junctions 1-19 and M10 (both directions)
<b>Policy Objectives</b>	<p>S1 To review and where possible improve the safer operations of the route</p> <p>S2 To investigate where the provision of improved lighting would improve safety, without disproportionate environmental damage</p> <p>S3 To seek to achieve a consistent high standard of variable and static signing along the route</p> <p>S4 To seek to manage vehicle speeds at appropriate levels</p> <p>S5 To review safety and the security for non motorised users crossing the route at interchanges or bridges/subways</p> <p>S6 To seek to improve the quality of user facilities and provide adequate rest and emergency facilities</p> <p>S7 To seek to improve safety for people working on the route</p> <p>Ec1 To seek to prioritise actions with regard to the needs of the national, regional and local economy</p> <p>Ec2 To seek to reduce congestion, particularly between London and Milton Keynes</p> <p>Ec3 To seek to minimise traffic disruption due to traffic incidents</p> <p>Ec6 To seek to improve journey time and reliability and information</p> <p>Ec8 To seek to reduce congestion at major interchanges</p>
<b>Target</b>	Continually monitor accident cluster locations, undertake action studies to identify appropriate measures and improve the management of the route after accidents and incidents
<b>Timescale</b>	To be assessed as part of the Route Management Plan
	<b>Actions to consider in study may include:</b>
<b>Possible Actions</b>	<ul style="list-style-type: none"> <li>Consider demand management measures</li> <li>Carry out a safety review of the M1 junctions</li> <li>Consider modifying the entry and exit lanes at junctions, subject to studies</li> <li>Develop incident management plan (applies to whole route)</li> </ul>
<b>Other issues</b>	<ul style="list-style-type: none"> <li>Strategic and Local Diversions</li> </ul>

## 6.2.4 Route Outcome 4

<b>Route Outcome</b>	<b>Minimise the impact of the M1 and M10 on the adjacent local environment</b>
<b>RO4</b>	
<b>Short Name</b>	Environment Mitigation
<b>Related Route Functions</b>	NF7 and LF3 (Reference to Sections 4.2 and 4.5 of this report)
<b>Improvements to Related Route Functions</b>	<ul style="list-style-type: none"> <li>• Improve environment for local residents</li> <li>• Increase integration between local and uses</li> <li>• Promote Bio-diversity</li> </ul>
<b>Related Route Problems and Issues</b>	PEnv1-PEnv7 (Reference to Table 5.1 – 5.5 in Section 5.2.1 to 5.2.5)
<b>Locations</b>	Generally along the whole of the M1 and M10 Embankments/verges and Highways Agency's land the length of the route
<b>Policy Objectives</b>	<p>Env1 To mitigate and seek to reduce noise levels in line with government policy</p> <p>Env2 To improve air quality (with especial regard to Air Quality Management Areas)</p> <p>Env3 To minimise the adverse effect of lighting on the environment</p> <p>Env4 To seek to ensure effective measures are in place to enhance water quality along the route from pollutant spillage on the highway</p> <p>Env5 To maintain a clean &amp; tidy route</p> <p>Env6 To minimise or avoid impact on environmentally designated areas</p> <p>Env7 To protect environment elsewhere in the region by encouraging appropriate traffic to use the route</p> <p>Env8 Promote Bio-diversity</p> <p>S2 To investigate where the provision of improved lighting would improve safety</p> <p>In3 To support regional transport strategy</p>
<b>Target</b>	Contribute to achievement of Key Performance Indicators, for the route, such as bio-diversity and landscape.
<b>Timescale</b>	To be assessed as part of the Route Management Plan
	<b>Actions to consider in study may include:</b>
<b>Possible Actions</b>	<ul style="list-style-type: none"> <li>• Produce and review Bio-diversity Action and Environmental management Plans for entire route</li> <li>• Reduce disturbance by protecting and enhancing the visual quality and tranquillity of the surrounding countryside</li> <li>• Collaborate with Environment Agency to investigate the integrity of the M1 motorway's drainage network, to reduce water pollution from motorway drainage and spills</li> <li>• Collaborate with neighbouring local authorities who have designated Air Quality Management Areas (AQMAs)</li> <li>• Carry out study on current lit areas</li> <li>• Further conservation and enhancement of SSSIs</li> <li>• Work in partnership with local Wildlife Trust for better management for wildlife</li> </ul>
<b>Other issues</b>	None

## 6.2.5 Route Outcome 5

<b>Route Outcome</b>	<b>Minimise the impact of noise caused by M1 and M10</b>
<b>RO5</b>	
<b>Short Name</b>	Noise Mitigation
<b>Related Route Functions</b>	NF7 LF2 and LF3 (Reference to Sections 4.2 and 4.5 of this report)
<b>Improvements to Related Route Functions</b>	<ul style="list-style-type: none"> <li>• Improve environment for local residents</li> <li>• Increase integration between local and uses</li> </ul>
<b>Related Route Problems and Issues</b>	PEnv1 and PEnv2 (Reference to Table 5.1 – 5.5 in Section 5.2.1 to 5.2.5)
<b>Locations</b>	Generally along the M1 Junctions 1-19, in particularly with the following locations between J2-J3, J5-J10, J11-J12, J14-J15, and J18-J19
<b>Policy Objectives</b>	<p>Env1 To mitigate and seek to reduce noise levels in line with government policy</p> <p>Env6 To minimise or avoid impact on environmentally designated areas</p> <p>Env7 To protect environment elsewhere in the region by encouraging appropriate traffic to use the route</p> <p>Env8 Promote Bio-diversity</p> <p>Ec5 To seek to maximise the availability for use of the route for users, and the serviceability of the road, structures and other highway equipment</p>
<b>Target</b>	Identify appropriate schemes to reduce noise issues
<b>Timescale</b>	To be assessed as part of the Route Management Plan
	<b>Actions to consider in study may include:</b>
<b>Possible Actions</b>	<ul style="list-style-type: none"> <li>• Consider maximising the use of the quieter surfacing on the M1</li> <li>• Benefit of noise barriers where appropriate (additional planting may be required to mitigate against the visual impact of the noise barriers)</li> </ul>
<b>Other issues</b>	<ul style="list-style-type: none"> <li>• Some of the noise improvements have been partially completed at this stage</li> </ul>

## 6.2.6 Route Outcome 6

<b>Route Outcome</b> <b>RO6</b>	<b>Improve Non-Motorised User (NMU) facilities, especially at Junctions</b>
<b>Short Name</b>	NMU Facilities
<b>Related Route Functions</b>	LF1, LF2 and LF3 (Reference to Sections 4.2 and 4.5 of this report)
<b>Improvements to Related Route Functions</b>	<ul style="list-style-type: none"> <li>• Safer and easier access for vulnerable users</li> <li>• Safer journeys for all users</li> <li>• Link between communities and local access</li> <li>• Improve safety facilitating journey time reliability for all vehicular traffic</li> <li>• Increased accessibility to public transport and the countryside</li> </ul>
<b>Related Route Problems and Issues</b>	PA1 and PA3-PA6 (Reference to Table 5.1 – 5.5 in Section 5.2.1 to 5.2.5)
<b>Locations</b>	The length of M1
<b>Policy Objectives</b>	<p>S1 To review and where possible improve the safer operations of the route</p> <p>S5 To review safety and the security for non motorised users crossing the route at interchanges or bridges/subways</p> <p>S6 To seek to improve the quality of user facilities and provide adequate rest and emergency facilities</p> <p>Ac1 To seek to reduce community severance</p> <p>Ac3 To seek to make appropriate provision for and encourage the use of public transport</p> <p>Ac4 To seek to make appropriate provision for non-motorised users</p> <p>In2 increase knowledge of user patterns and needs</p> <p>In3 To support regional transport strategy, local transport plans and development plans</p>
<b>Target</b>	To work with Local Highway Authorities to undertake studies to identify appropriate measures. Carry out and monitor the improvements identified in the Area 5 and 8 NMU studies.
<b>Timescale</b>	To be assessed as part of the Route Management Plan
	<b>Actions to consider in study may include:</b>
<b>Possible Actions</b>	<ul style="list-style-type: none"> <li>• Consider the provision of higher parapets for cyclists and equestrians at grade separated junctions and footbridges where appropriate</li> <li>• Maintain and improve crossing facilities in consultation with pedestrian, cyclist, equestrian and mobility impaired interest groups</li> <li>• Collaborate with Sustrans and the relevant local authorities to provide cycle routes where appropriate</li> </ul>
<b>Other issues</b>	<ul style="list-style-type: none"> <li>• Not all junctions on the M1 between Junctions 1-19 are under the HA's control</li> </ul>

## 6.2.7 Route Outcome 7

<b>Route Outcome</b> <b>RO7</b>	<b>M1 Junction 3 - Improve accessibility of the M1 to London Gateway Service Area</b>
<b>Short Name</b>	M1-Jct 3 Improve Access
<b>Related Route Functions</b>	NF1-NF2, RF1-RF2 and LF1 (Reference to Sections 4.2 and 4.5 of this report)
<b>Improvements to Related Route Functions</b>	<ul style="list-style-type: none"> <li>• Increased reliability and journey time</li> <li>• Safer journeys for all users</li> <li>• Relief for communities along the length of M1</li> </ul>
<b>Related Route Problems and Issues</b>	PS12 and PI1 (Reference to Table 5.1 – 5.5 in Section 5.2.1 to 5.2.5)
<b>Locations</b>	Slip roads approaching M1 Junction 3 (London Gateway MSA)
<b>Policy Objectives</b>	<p>S1 To review and where possible improve the safer operations of the route</p> <p>S4 To seek to manage vehicle speeds at appropriate levels</p> <p>S5 To review safety and security for non motorised users crossing the route at interchanges or bridges/subways</p> <p>S6 To seek to improve the quality of user facilities and provide adequate rest and emergency facilities</p> <p>Ec8 To seek to reduce congestion at major interchanges</p> <p>Ac1 To seek to reduce community severance</p> <p>In1 To improve user information</p> <p>In2 increase knowledge of user patterns and needs</p> <p>In4 To make better use of the route by working in partnership with road users, transport providers and operators, local authorities and those affected by the network</p>
<b>Target</b>	Undertake studies to identify appropriate schemes to improve accessibility on the approaching slip roads at junctions
<b>Timescale</b>	To be assessed as part of the Route Management Plan
<b>Possible Actions</b>	<p><b>Actions to consider in study may include:</b></p> <ul style="list-style-type: none"> <li>• Work with motorway services operator to improve accessibility to London Gateway Services</li> <li>• Review current entry and exit slip roads operation</li> </ul>
<b>Other issues</b>	None

## 6.2.8 Route Outcome 8

<b>Route Outcome</b> <b>RO8</b>	<b>M1 Junction 5 - Reduce queuing on M1 southbound approach</b>
Short Name	M1-Jct 5 Reduce Queuing
<b>Related Route Functions</b>	NF1-NF2, NF5-NF6, RF1-RF2, LF1 and LF3 (Reference to Sections 4.2 and 4.5 of this report)
<b>Improvements to Related Route Functions</b>	<ul style="list-style-type: none"> <li>Increased accessibility on the RMS corridor</li> <li>Reduced congestion on M1</li> <li>Relief for communities along the length of M1</li> <li>Increased accessibility to public transport and the countryside</li> </ul>
<b>Related Route Problems and Issues</b>	PEn7, PS13, PEc10 and PE12 (Reference to Table 5.1 – 5.5 in Section 5.2.1 to 5.2.5)
<b>Locations</b>	Slip roads approaching M1 Junction 5
<b>Policy Objectives</b>	<p>S1 To review and where possible improve the safer operations of the route</p> <p>S2 To investigate where the provision of improved lighting would improve safety, without disproportionate environmental damage</p> <p>S3 To seek to achieve a consistent high standard of variable and static signing along the route</p> <p>S5 To review safety and the security for non motorised users crossing the route at interchanges or bridges/subways</p> <p>Ec2 To seek to reduce congestion, particularly between London and Milton Keynes</p> <p>Ec3 To seek to minimise traffic disruption due to traffic incidents</p> <p>Ec5 To seek to maximise the availability for use of the route for users, and the serviceability of the road, structures and other highway equipment</p> <p>Ec8 To seek to reduce congestion at major interchanges</p> <p>In1 To improve user information</p> <p>In2 increase knowledge of user patterns and needs</p> <p>In4 To make better use of the route by working in partnership with road users, transport providers and operators, local authorities and those affected by the network</p>
<b>Target</b>	Undertake studies with relevant partners to identify appropriate measures
<b>Timescale</b>	To be assessed as part of the Route Management Plan
<b>Possible Actions</b>	<p><b>Actions to consider in study may include:</b></p> <ul style="list-style-type: none"> <li>Consider demand management measures</li> <li>Provide useful information to users integrated with other forms of communication media</li> <li>Improve carriageway markings and signing</li> </ul>
<b>Other issues</b>	None

## 6.2.9 Route Outcome 9

<b>Route Outcome</b> <b>RO9</b>	<b>M1 Junction 13 - Review capacity improvements and NMU facilities</b>
<b>Short Name</b>	M1-Jct 13 Capacity Improvement
<b>Related Route Functions</b>	NF1-NF3, NF5-NF6, RF1-RF2 and LF1-LF3 (Reference to Sections 4.2 and 4.5 of this report)
<b>Improvements to Related Route Functions</b>	<ul style="list-style-type: none"> <li>• Safer Journeys for all users</li> <li>• Increased reliability and journey time certainty</li> <li>• Increased accessibility on the RMS corridor</li> <li>• Reduced congestion on the M1</li> </ul>
<b>Related Route Problems and Issues</b>	PEn4, PS13, PEc2, PEc6 and PEc12 (Reference to Table 5.1 – 5.5 in Section 5.2.1 to 5.2.5)
<b>Locations</b>	M1 Junction 13 with A421 and A507
<b>Policy Objectives</b>	<p>Env6 To minimise or avoid impact on environmentally designated areas</p> <p>Env8 Promote Bio-diversity</p> <p>S1 To review and where possible improve the safer operations of the route</p> <p>S3 To seek to achieve a consistent high standard of variable and static signing along the route</p> <p>S5 To review safety and the security for non motorised users crossing the route at interchanges or bridges/subways</p> <p>S6 To seek to improve the quality of user facilities and provide adequate rest and emergency facilities</p> <p>S7 To seek to improve safety for people working on the route</p> <p>Ec1 To seek to prioritise actions with regard to the needs of the national, regional and local economy</p> <p>Ec2 To seek to reduce congestion, particularly between London and Milton Keynes</p> <p>Ec3 To seek to minimise traffic disruption due to traffic incidents</p> <p>Ec5 To seek to maximise the availability for use of the route for users, and the serviceability of the road, structures and other highway equipment</p> <p>Ec8 To seek to reduce congestion at major interchanges</p> <p>Ac1 To seek to reduce community severance</p> <p>Ac2 To seek to make appropriate provision for and encourage the use of public transport</p> <p>In1 To improve user information</p> <p>In2 increase knowledge of user patterns and needs</p> <p>In3 To support regional transport strategy, local transport plans and development plans</p> <p>In4 To make better use of the route by working in partnership with road users, transport providers and operators, local authorities and those affected by the network</p> <p>In5 To recognise the two-way interaction between the RMS and other RMSs (e.g. A43/A45 RMS – suggestions on Junction 15 and 15A)</p>
<b>Target</b>	To work with the Local Highway Authorities to undertake studies to identify appropriate measures
<b>Timescale</b>	To be assessed as part of the Route Management Plan
	<b>Actions to consider in study may include:</b>
<b>Possible Actions</b>	<ul style="list-style-type: none"> <li>• Study how junction operation can be improved whilst reducing/removing congestion on the motorway</li> <li>• Consider improved signing and road markings</li> <li>• A421 Dual from M1 J13 to Bedford (TPI Scheme). These works, reducing congestion and improving both safety and journey time reliability, are due to commence in April 2006 and are expected to be completed in 2010.</li> </ul>
<b>Other issues</b>	None

## 6.2.10 Route Outcome 10

<b>Route Outcome</b> <b>RO10</b>	<b>M1 Junction 14 - Improve junction operation</b>
<b>Short Name</b>	M1-Jct 14 Junction Operation
<b>Related Route Functions</b>	NF1-NF3, NF5-NF6, RF1-RF2 and LF1-LF3 (Reference to Sections 4.2 and 4.5 of this report)
<b>Improvements to Related Route Functions</b>	<ul style="list-style-type: none"> <li>• Increased reliability and journey time certainty</li> <li>• Better informed traveller</li> <li>• Safer journeys for all users</li> </ul>
<b>Related Route Problems and Issues</b>	PEnv2, PS13, PEc2, PEc5, PEc12 and PA1 (Reference to Table 5.1 – 5.5 in Section 5.2.1 to 5.2.5)
<b>Locations</b>	M1 Junction 14 with A509
<b>Policy Objectives</b>	<p>S1 To review and where possible improve the safer operations of the route</p> <p>S3 To seek to achieve a consistent high standard of variable and static signing along the route</p> <p>S4 To seek to manage vehicle speeds at appropriate levels</p> <p>S5 To review safety and the security for non motorised users crossing the route at interchanges or bridges/subways</p> <p>S6 To seek to improve the quality of user facilities and provide adequate rest and emergency facilities</p> <p>S7 To seek to improve safety for people working on the route</p> <p>Ec1 To seek to prioritise actions with regard to the needs of the national, regional and local economy</p> <p>Ec2 To seek to reduce congestion, particularly between London and Milton Keynes</p> <p>Ec3 To seek to minimise traffic disruption due to traffic incidents</p> <p>Ec5 To seek to maximise the availability for use of the route for users, and the serviceability of the road, structures and other highway equipment</p> <p>Ec8 To seek to reduce congestion at major interchanges</p> <p>Ac1 To seek to reduce community severance</p> <p>Ac2 To seek to make appropriate provision for and encourage the use of public transport</p> <p>In1 To improve user information</p> <p>In2 increase knowledge of user patterns and needs</p> <p>In3 To support regional transport strategy, local transport plans and development plans</p> <p>In4 To make better use of the route by working in partnership with road users, transport providers and operators, local authorities and those affected by the network</p>
<b>Target</b>	To work with the Local Highways Authorities to identify appropriate measures to remove queuing on exit slip roads and manage entry flows so that peak capacity of the M1 is not exceeded.
<b>Timescale</b>	To be assessed as part of the Route Management Plan
	<b>Actions to consider in study may include:</b>
<b>Possible Actions</b>	<ul style="list-style-type: none"> <li>• Study how junction operation can be improved whilst reducing/removing congestion on the motorway</li> <li>• Consider improved signing and road markings</li> <li>• Consider demand management measures</li> <li>• Consider modifying the exit lanes at junctions, subject to studies</li> </ul>
<b>Other issues</b>	None

## 6.2.11 Route Outcome 11

<b>Route Outcome</b> <b>RO11</b>	<b>M1 Junctions 15 to 15A - Reduce congestion and improve accessibility at junctions</b>
<b>Short Name</b>	<b>M1-Jct 15 to 15A Reduce Congestion and Improve Capacity</b>
<b>Related Route Functions</b>	NF1-NF3, NF5-NF6, RF1-RF2 and LF1-LF3 (Reference to Sections 4.2 and 4.5 of this report)
<b>Improvements to Related Route Functions</b>	<ul style="list-style-type: none"> <li>• Safer journeys for all users</li> <li>• Increased accessibility on the RMS corridor</li> <li>• Increased reliability and journey time certainty</li> <li>• Reduced congestion on the M1</li> </ul>
<b>Related Route Problems and Issues</b>	PEnv2-PEnv4, PS2 and PEc3 (Reference to Table 5.1 – 5.5 in Section 5.2.1 to 5.2.5)
<b>Locations</b>	M1 Junctions 15 (with A508) and 15A
<b>Policy Objectives</b>	<p>S1 To review and where possible improve the safer operations of the route</p> <p>S3 To seek to achieve a consistent high standard of variable and static signing along the route</p> <p>S4 To seek to manage vehicle speeds at appropriate levels</p> <p>S5 To review safety and the security for non motorised users crossing the route at interchanges or bridges/subways</p> <p>S6 To seek to improve the quality of user facilities and provide adequate rest and emergency facilities</p> <p>S7 To seek to improve safety for people working on the route</p> <p>Ec1 To seek to prioritise actions with regard to the needs of the national, regional and local economy</p> <p>Ec2 To seek to reduce congestion, particularly between London and Milton Keynes</p> <p>Ec3 To seek to minimise traffic disruption due to traffic incidents</p> <p>Ec5 To seek to maximise the availability for use of the route for users, and the serviceability of the road, structures and other highway equipment</p> <p>Ec8 To seek to reduce congestion at major interchanges</p> <p>Ac1 To seek to reduce community severance</p> <p>Ac2 To seek to make appropriate provision for and encourage the use of public transport</p> <p>In1 To improve user information</p> <p>In2 increase knowledge of user patterns and needs</p> <p>In3 To support regional transport strategy, local transport plans and development plans</p> <p>In4 To make better use of the route by working in partnership with road users, transport providers and operators, local authorities and those affected by the network</p> <p>In5 To recognise the two-way interaction between the RMS and other RMSs (e.g. A43/A45 RMS – suggestions on Junction 15 and 15A)</p>
<b>Target</b>	Undertake studies to identify appropriate schemes to reduce queuing on and at junction approaches
<b>Timescale</b>	To be assessed as part of the Route Management Plan
	<b>Actions to consider in study may include:</b>
<b>Possible Actions</b>	<ul style="list-style-type: none"> <li>• Study how junction operation can be improved whilst reducing/removing congestion on the motorway</li> <li>• Consider demand management measures</li> <li>• Consider improved signing and road markings</li> </ul>
<b>Other issues</b>	<ul style="list-style-type: none"> <li>• Liaison with ongoing A43/A45 Route Management Strategy is required</li> </ul>

## 6.2.12 Route Outcome 12

<b>Route Outcome</b> <b>RO12</b>	<b>M1 Junction 17 - Improve accessibility at junction to allow Heavy Goods Vehicles (HGVs) to gain access to Daventry International Rail Freight Terminal (DIRFT)</b>
<b>Short Name</b>	M1-Jct 17 Improve Access
<b>Related Route Functions</b>	NF1-NF3, NF5-NF6, RF1-RF2 and LF1-LF3 (Reference to Sections 4.2 and 4.5 of this report)
<b>Improvements to Related Route Functions</b>	<ul style="list-style-type: none"> <li>• Safer journeys for all users</li> <li>• Better informed traveller</li> <li>• Increased reliability and journey time certainty Major benefits to be derived in terms of National and Regional competitiveness</li> <li>• Reduced community severance, whilst increasing accessibility</li> </ul>
<b>Related Route Problems and Issues</b>	PEc3 and PEc8 (Reference to Table 5.1 – 5.5 in Section 5.2.1 to 5.2.5)
<b>Locations</b>	M1 Junction 17 with M45
<b>Policy Objectives</b>	<p>S1 To review and where possible improve the safer operations of the route</p> <p>S3 To seek to achieve a consistent high standard of variable and static signing along the route</p> <p>S4 To seek to manage vehicle speeds at appropriate levels</p> <p>S5 To review safety and the security for non motorised users crossing the route at interchanges or bridges/subways</p> <p>S6 To seek to improve the quality of user facilities and provide adequate rest and emergency facilities</p> <p>S7 To seek to improve safety for people working on the route</p> <p>Ec1 To seek to prioritise actions with regard to the needs of the national, regional and local economy</p> <p>Ec2 To seek to reduce congestion, particularly between London and Milton Keynes</p> <p>Ec3 To seek to minimise traffic disruption due to traffic incidents</p> <p>Ec5 To seek to maximise the availability for use of the route for users, and the serviceability of the road, structures and other highway equipment</p> <p>Ec8 To seek to reduce congestion at major interchanges</p> <p>Ac1 To seek to reduce community severance</p> <p>Ac2 To seek to make appropriate provision for and encourage the use of public transport</p> <p>In1 To improve user information</p> <p>In2 increase knowledge of user patterns and needs</p> <p>In3 To support regional transport strategy, local transport plans and development plans</p> <p>In4 To make better use of the route by working in partnership with road users, transport providers and operators, local authorities and those affected by the network</p> <p>In5 To recognise the two-way interaction between the RMS and other RMSs (e.g. A43/A45 RMS – suggestions on Junction 15 and 15A)</p>
<b>Target</b>	To work with the Local Highways Authorities to undertake studies to identify appropriate measures
<b>Timescale</b>	To be assessed as part of the Route Management Plan
<b>Possible Actions</b>	<p><b>Actions to consider in study may include:</b></p> <ul style="list-style-type: none"> <li>• Study how junction operation can be improved whilst reducing/removing congestion on the motorway Review current entry and exit slip roads operation</li> </ul>
<b>Other issues</b>	None

### 6.2.13 Route Outcome 13

<b>Route Outcome RO13</b>	<b>Facilitate the development of the Milton Keynes and South Midlands (MKSM) growth area whilst safeguarding the operation of the trunk road network</b>
<b>Short Name</b>	Development Growth
<b>Related Route Functions</b>	NF1-NF3, NF5-NF6, RF2 and LF1-LF3 (Reference to Sections 4.2 and 4.5 of this report)
<b>Improvements to Related Route Functions</b>	<ul style="list-style-type: none"> <li>Increased reliability and journey time certainty</li> <li>Reduced congestion on the M1</li> <li>Support growth of Milton Keynes and South Midlands area</li> </ul>
<b>Related Route Problems and Issues</b>	PEc2, PEc4-PEc6, PEc8 and PA2 (Reference to Table 5.1 – 5.5 in Section 5.2.1 to 5.2.5)
<b>Locations</b>	M1 Junctions 11 to 15A
<b>Policy Objectives</b>	<p>Env1 To mitigate and seek to reduce noise levels in line with government policy</p> <p>Env2 To improve air quality (with especial regard to Air Quality Management Areas)</p> <p>S3 To seek to achieve a consistent high standard of variable and static signing along the route</p> <p>S4 To seek to manage vehicle speeds at appropriate levels</p> <p>S5 To review safety and the security for non motorised users crossing the route at interchanges or bridges/subways</p> <p>S6 To seek to improve the quality of user facilities and provide adequate rest and emergency facilities</p> <p>S7 To seek to improve safety for people working on the route</p> <p>Ec1 To seek to prioritise actions with regard to the needs of the national, regional and local economy</p> <p>Ec2 To seek to reduce congestion, particularly between London and Milton Keynes</p> <p>Ec3 To seek to minimise traffic disruption due to traffic incidents</p> <p>Ec5 To seek to maximise the availability for use of the route for users, and the serviceability of the road, structures and other highway equipment</p> <p>Ec8 To seek to reduce congestion at major interchanges</p> <p>Ac1 To seek to reduce community severance</p> <p>Ac2 To seek to make appropriate provision for and encourage the use of public transport</p> <p>In1 To improve user information</p> <p>In2 increase knowledge of user patterns and needs</p> <p>In3 To support regional transport strategy, local transport plans and development plans</p> <p>In4 To make better use of the route by working in partnership with road users, transport providers and operators, local authorities and those affected by the network</p> <p>In5 To recognise the two-way interaction between the RMS and other RMSs (e.g. A43/A45 RMS – suggestions on Junction 15 and 15A)</p>
<b>Target</b>	To work with the relevant partners to identify appropriate measures
<b>Timescale</b>	To be assessed as part of the Route Management Plan
<b>Possible Actions</b>	<p><b>Actions to consider in study may include:</b></p> <ul style="list-style-type: none"> <li>Work with the key stakeholders (including Government Officers and Local Authorities) to ensure that traffic resulting from developments as part of the Milton Keynes-South Midlands Growth Area are minimised.</li> <li>Jointly develop and implement transport measures that prevent traffic queuing back on to M1 at exit slips and manage entry flows so that peak capacity of the M1 is not exceeded.</li> </ul>
<b>Other issues</b>	<ul style="list-style-type: none"> <li>None</li> </ul>

## 6.2.14 Route Outcome 14

<b>Route Outcome</b> <b>RO14</b>	<b>Minimise the traffic effect of the future growth at London Luton Airport</b>
<b>Short Name</b>	Luton Airport Growth
<b>Related Route Functions</b>	NF1-NF2, NF4-NF5 and LF2 (Reference to Sections 4.2 and 4.5 of this report)
<b>Improvements to Related Route Functions</b>	Increased reliability and journey time certainty Reduced congestion on the M1
<b>Related Route Problems and Issues</b>	PEc1, PEc13 and PA3 (Reference to Table 5.1 – 5.5 in Section 5.2.1 to 5.2.5)
<b>Locations</b>	M1 Junctions 10 and 10A (London Luton Airport)
<b>Policy Objectives</b>	<p>Env1 To mitigate and seek to reduce noise levels in line with government policy</p> <p>Env2 To improve air quality (with especial regard to Air Quality Management Areas)</p> <p>S1 To review and where possible improve the safer operations of the route</p> <p>S3 To seek to achieve a consistent high standard of variable and static signing along the route</p> <p>S6 To seek to improve the quality of user facilities and provide adequate rest and emergency facilities</p> <p>Ec1 To seek to prioritise actions with regard to the needs of the national, regional and local economy</p> <p>Ec2 To seek to reduce congestion, particularly between London and Milton Keynes</p> <p>Ec5 To seek to maximise the availability for use of the route for users, and the serviceability of the road, structures and other highway equipment</p> <p>Ac1 To seek to reduce community severance</p> <p>Ac2 To seek to make appropriate provision for and encourage the use of public transport</p> <p>Ac3 To seek to make appropriate provision for non-motorised users</p> <p>In3 To support regional transport strategy, local transport plans and development plans</p> <p>In4 To make better use of the route by working in partnership with road users, transport providers and operators, local authorities and those affected by the network</p>
<b>Target</b>	Work with relevant partners (including London Luton Airport and Luton Borough Council) to identify appropriate measures
<b>Timescale</b>	To be assessed as part of the Route Management Plan
	<b>Actions to consider in study may include:</b>
<b>Possible Actions</b>	<ul style="list-style-type: none"> <li>Close liaison with relevant partners to ensure that measures are implemented to accommodate development related traffic</li> </ul>
<b>Other issues</b>	None

## 6.2.15 Route Outcome 15

<b>Route Outcome</b> <b>RO15</b>	<b>Safeguard the use of route as an abnormal load route</b>
<b>Short Name</b>	Safeguard Abnormal Load Route
<b>Related Route Functions</b>	NF2-NF3, RF1 and LF2 (Reference to Sections 4.2 and 4.5 of this report)
<b>Improvements to Related Route Functions</b>	<ul style="list-style-type: none"> <li>• Journey time reliability for abnormal loads</li> <li>• Major transport route for freight movements</li> <li>• Route serving industrial and commercial development</li> </ul>
<b>Related Route Problems and Issues</b>	PS1, PS10-PS11, PEc3 and PEc8 (Reference to Table 5.1 – 5.5 in Section 5.2.1 to 5.2.5)
<b>Locations</b>	The length of M1 (Junctions 1-19) with J14 in particular
<b>Policy Objectives</b>	<p>S1 To review and where possible improve the safer operations of the route</p> <p>S7 To seek to improve safety for people working on the route</p> <p>Ec2 To seek to reduce congestion, particularly between London and Milton Keynes</p> <p>Ec3 To seek to minimise traffic disruption due to traffic incidents</p> <p>Ec6 To seek to improve journey time and reliability and information</p> <p>Ec8 To seek to reduce congestion at major interchanges</p> <p>In1 To improve user information</p> <p>In4 To make better use of the route by working in partnership with road users, transport providers and operators, local authorities and those affected by the network</p>
<b>Target</b>	Undertake studies where appropriate to identify appropriate measures
<b>Timescale</b>	To be assessed as part of the Route Management Plan
	<b>Actions to consider in study may include:</b>
<b>Possible Actions</b>	<ul style="list-style-type: none"> <li>• Implement study to clarify the usage of the route as an abnormal load route</li> <li>• Consider identifying suitable locations for abnormal load lay-bys</li> </ul>
<b>Other issues</b>	None

## 6.2.16 Route Outcome 16

<b>Route Outcome</b> <b>RO16</b>	<b>Facilitate increased multi-modal transport integration</b>
<b>Short Name</b>	<b>Multi-Modal Integration</b>
<b>Related Route Functions</b>	NF1-NF5, RF2 and LF1-LF3 (Reference to Sections 4.2 and 4.5 of this report)
<b>Improvements to Related Route Functions</b>	Increased accessibility on the RMS corridor Reduced congestion on the M1 and M10 Increased accessibility to public transport and the countryside
<b>Related Route Problems and Issues</b>	PI2, PI3 and PI4 (Reference to Table 5.1 – 5.5 in Section 5.2.1 to 5.2.5)
<b>Locations</b>	Milton Keynes and South Midlands Area London Luton Airport
<b>Policy Objectives</b>	<p>Ec1 To seek to prioritise actions with regard to the needs of the national, regional and local economy</p> <p>Ec2 To seek to reduce congestion, particularly between London and Milton Keynes</p> <p>Ec3 To seek to minimise traffic disruption due to traffic incidents</p> <p>Ec4 To seek to plan all works to achieve optimum whole life costs with minimal disruption to users</p> <p>Ec6 To seek to improve journey time and reliability and information</p> <p>Ec7 To seek to support the objectives in the Land Use Planning System</p> <p>Ac2 To seek to make appropriate provision for and encourage the use of public transport</p> <p>In3 To support regional transport strategy, local transport plans and development plans</p> <p>In4 To make better use of the route by working in partnership with road users, transport providers and operators, local authorities and those affected by the network</p> <p>In5 To recognise the two-way interaction between the RMS and other RMSs (e.g. A43/A45 RMS – suggestions on Junction 15 and 15A)</p>
<b>Target</b>	Undertake studies with the relevant partners to identify appropriate measures
<b>Timescale</b>	To be assessed as part of the Route Management Plan
	<b>Actions to consider in study may include:</b>
<b>Possible Actions</b>	<ul style="list-style-type: none"> <li>Continued close liaison with the relevant partners (including London Luton Airport and Network Rail, Local Authorities and other public transport operations) who can work to provide choice of transport alternatives at London Luton Airport and MKSM area</li> <li>To work with stakeholders to investigate the feasibility of incorporating coach stop facilities (with P&amp;R) to offer motorists to board long distance coach services to/from the major cities on the M1 and London</li> <li>Improve access to existing P&amp;R facilities</li> </ul>
<b>Other issues</b>	None

## 6.2.17 Route Outcome 17

<b>Route Outcome</b> <b>RO17</b>	<b>M1 Junction 7 to 8 - Reduce the conflict of northbound traffic weaving and congestion</b>
<b>Short Name</b>	M1 – Jct 7 to 8 Weaving Traffic
<b>Related Route Functions</b>	NF1-NF3, RF1-RF3 and LF2-LF3 (Reference to Sections 4.2 and 4.5 of this report)
<b>Improvements to Related Route Functions</b>	<ul style="list-style-type: none"> <li>• Increased reliability and journey time certainty</li> <li>• Reduced congestion on the M1</li> <li>• Safer journeys for all users</li> </ul>
<b>Related Route Problems and Issues</b>	PS4, PEc1 and PEc11 (Reference to Table 5.1 – 5.5 in Section 5.2.1 to 5.2.5)
<b>Locations</b>	M1 Junctions 7 to 8 (northbound carriageways)
<b>Policy Objectives</b>	<p>S1 To review and where possible improve the safer operations of the route</p> <p>S3 To seek to achieve a consistent high standard of variable and static signing along the route</p> <p>S4 To seek to manage vehicle speeds at appropriate levels</p> <p>Ec1 To seek to prioritise actions with regard to the needs of the national, regional and local economy</p> <p>Ec2 To seek to reduce congestion, particularly between London and Milton Keynes</p> <p>Ec3 To seek to minimise traffic disruption due to traffic incidents</p> <p>Ec6 To seek to improve journey time and reliability and information</p> <p>Ec8 To seek to reduce congestion at major interchanges</p> <p>In1 To improve user information</p>
<b>Target</b>	Undertake studies with the relevant partners to identify appropriate measures
<b>Timescale</b>	To be assessed as part of the Route Management Plan
<b>Possible Actions</b>	<p><b>Actions to consider in study may include:</b></p> <ul style="list-style-type: none"> <li>• Improve carriageway markings and signing</li> <li>• The HA's TPI – M1 Junctions 6A-10 Widening. Works to widen the M1, reducing congestion and improving both safety and journey time reliability, are due to commence in mid March 2006 and are expected to be completed in 2008.</li> </ul>
<b>Other issues</b>	None

## 7 Strategy Impact Statement

### 7.1 Statement

The RMS Study for the M1 and M10 has identified a number of key route issues. In order to overcome these route issues a strategy has been devised, culminating in Route Outcomes (RO's), which will enable the performance of the route to be improved.

The Strategy Impact Statement demonstrates how the implementation of the route outcomes will result in a beneficial impact on the performance of the route.

Based on an analysis of the route functions, and through consultation, a number of Key Route Outcomes have been identified. These have been determined on the basis of the impact they are expected to have on the route functions, such as serving local businesses and communities or the route issues they address, such as provision of crossing facilities for vulnerable users.

### 7.2 Impact Table

The four impact tables, which present the impact of the Route Outcomes on various factors considered in the preparation of the RMS, can be found on the following pages. The impact tables are assessed using the proposed Route Outcomes against the various performance criteria that make up the M1-M10 Route Management Strategy.

The Impact tables are as follows:

- Table 7.1 – Impact of Route Outcomes in relation to **Route Problems and Issues**
- Table 7.2 – Impact of Route Outcomes in relation to **Route Functions**
- Table 7.3 – Impact of Route Outcomes in relation to **Development Control**
- Table 7.4 – Impact of Route Outcomes in relation to **Policy Objectives**

### 7.3 Future Actions

Following completion of the RMS, a Route Management Plan will be developed by the HA providing the implementation plan for actions which will contribute to the Route Outcomes.

The Route Management Plan will be reviewed regularly by the Highways Agency to ensure that the Route Outcomes are still appropriate.

A major review of the RMS might be triggered if there is a fundamental change which affects the M1 and M10 routes. Such triggers might include significant development proposals or changes to Government, HA, Regional or Local strategies and policies.

**Table 7.1: Impact of Route Outcomes in relation to Route Problems and Issues**

Key Route Problems and Issues	RO1	RO2	RO3	RO4	RO5	RO6	RO7	RO8	RO9
	Improve Journey Time Reliability	Better Information	Accident Reduction	Environment Mitigation	Noise Mitigation	NMU Facilities	M1-Jct 3 Improve Access	M1-Jct 5 Reduce Queuing	M1-J13 Capacity Improvement
Poor driving discipline on the M1	Positive	Positive	Positive				Positive	Positive	Positive
Capacity, Accessibility & Congestion at junctions	Positive	Positive	Positive			Positive	Positive	Positive	Positive
Traffic merging/weaving issues	Positive	Positive	Positive				Positive	Positive	Positive
Accident cluster locations	Positive		Positive			Positive	Positive	Positive	Positive
Impact of accidents/incidents	Positive	Positive	Positive			Positive	Positive		Positive
Non-Motorised User (NMU) Facilities						Positive			Positive
Advanced information signs	Positive	Positive	Positive				Positive	Positive	Positive
Severance in communities				Positive		Positive			Positive
Public transport	Positive	Positive					Positive	Positive	
Promote bio-diversity along the M1 corridor				Positive	Positive				

Key Route Problems and Issues	RO10	RO11	RO12	RO13	RO14	RO15	RO16	RO17
	M1-J14 Junction Operation	M1 J15-15A Reduce Congestion and Improve Capacity	M1-J17 Improve Access	Development Growth	Luton Airport Growth	Safeguard Abnormal Local Route	Multi-Modal Integration	M1 J7-8 Weaving Traffic
Poor driving discipline on the M1	Positive	Positive						Positive
Capacity, Accessibility & Congestion at junctions	Positive	Positive	Positive			Positive	Positive	Positive
Traffic merging/weaving issues	Positive	Positive						Positive
Accident cluster locations	Positive	Positive						Positive
Impact of accidents/incidents	Positive	Positive						Positive
Non-Motorised User (NMU) Facilities	Positive	Positive	Positive					Positive
Advanced information signs	Positive	Positive				Positive	Positive	Positive
Severance in communities	Positive	Positive						Positive
Public transport	Positive			Positive	Positive		Positive	
Promote bio-diversity along the M1 corridor								

**Table 7.2: Impact of Route Outcomes in relation to Route Functions**

M1-M10 Route Functions		RO1	RO2	RO3	RO4	RO5	RO6	RO7	RO8	RO9
		Improve Journey Time Reliability	Better Information	Accident Reduction	Environment Mitigation	Noise Mitigation	NMU Facilities	M1-Jct 3 Improve Access	M1-Jct 5 Reduce Queuing	M1-J13 Capacity Improvement
<b>NATIONAL FUNCTIONS (NF)</b>										
NF1	Forms part of a major transport link between London and the M25 to the East and West Midlands, the North West and Yorkshire	Positive	Positive	Positive						Positive
NF2	Forms part of the Trans European Road Network	Positive	Positive	Positive						Positive
NF3	Provides a route for heavy and wide loads									Positive
NF4	Provides a link to London Luton Airport	Positive	Positive	Positive						Positive
NF5	Provide the main route for coaches between London and Luton, Milton Keynes, Northampton and the North	Positive	Positive	Positive					Positive	Positive
NF6	Provide a key link for freight from M25 to the Midlands and the North	Positive	Positive	Positive						Positive
NF7	Forms a Highways Agency landscape and biodiversity corridor				Positive	Positive				
<b>REGIONAL FUNCTIONS (RF)</b>										
RF1	Provides a major north south road transport link between the M25 and the North Circular Road	Positive	Positive	Positive				Positive	Positive	
RF2	Provides a major transport link between regional centres of population and employment	Positive	Positive	Positive				Positive	Positive	Positive
RF3	Provides quick and safe journeys for athletes, officials and spectators during the 2012 London Olympics	Positive	Positive	Positive						
<b>LOCAL FUNCTIONS (LF)</b>										
LF1	It relieves communities of traffic along its length	Positive	Positive	Positive			Positive	Positive	Positive	Positive
LF2	It provides a distributor function around large population centres including Luton, Milton Keynes, London and Northampton	Positive	Positive	Positive		Positive	Positive			Positive
LF3	It acts as a commuter route	Positive	Positive	Positive			Positive		Positive	Positive

M1-M10 Route Functions		RO10	RO11	RO12	RO13	RO14	RO15	RO16	RO17
		M1-J14 Junction Operation	M1 J15-15A Reduce Congestion and Improve Capacity	M1-J17 Improve Access	Development Growth	Luton Airport Growth	Safeguard Abnormal Local Route	Multi-Modal Integration	M1 J7-8 Weaving Traffic
<b>NATIONAL FUNCTIONS (NF)</b>									
NF1	Forms part of a major transport link between London and the M25 to the East and West Midlands, the North West and Yorkshire	Positive	Positive	Positive				Positive	Positive
NF2	Forms part of the Trans European Road Network	Positive	Positive	Positive			Positive	Positive	Positive
NF3	Provides a route for heavy and wide loads	Positive	Positive	Positive			Positive	Positive	Positive
NF4	Provides a link to London Luton Airport	Positive				Positive		Positive	Positive
NF5	Provide the main route for coaches between London and Luton, Milton Keynes, Northampton and the North	Positive	Positive	Positive	Positive	Positive		Positive	
NF6	Provide a key link for freight from M25 to the Midlands and the North	Positive	Positive	Positive			Positive		Positive
NF7	Forms a Highways Agency landscape and biodiversity corridor								
<b>REGIONAL FUNCTIONS (RF)</b>									
RF1	Provides a major north south road transport link between the M25 and the North Circular Road						Positive		Positive
RF2	Provides a major transport link between regional centres of population and employment	Positive	Positive	Positive				Positive	Positive
RF3	Provides quick and safe journeys for athletes, officials and spectators during the 2012 London Olympics							Positive	Positive
<b>LOCAL FUNCTIONS (LF)</b>									
LF1	It relieves communities of traffic along its length	Positive	Positive	Positive				Positive	
LF2	It provides a distributor function around large population centres including Luton, Milton Keynes, London and Northampton	Positive	Positive					Positive	Positive
LF3	It acts as a commuter route	Positive	Positive	Positive				Positive	Positive

**Table 7.3: Impact of Route Outcomes in relation to Development Control**

Development Control Statement	RO1	RO2	RO3	RO4	RO5	RO6	RO7	RO8	RO9
	Improve Journey Time Reliability	Better Information	Accident Reduction	Environment Mitigation	Noise Mitigation	NMU Facilities	M1-Jct 3 Improve Access	M1-Jct 5 Reduce Queuing	M1-J13 Capacity Improvement
Congestion will be reduced	Positive	Positive	Positive				Positive	Positive	Positive
Safety and efficiency will be maintained	Positive	Positive	Positive			Positive	Positive	Positive	Positive
Speed of traffic will be controlled, improving safety and journey time reliability	Positive	Positive	Positive				Positive	Positive	Positive
Access to alternative transport modes to the private car will be encouraged and facilitated	Positive		Positive		Positive	Positive			
Opportunity for multi-modal integration and increased accessibility will be sought	Positive		Positive	Positive	Positive	Positive		Positive	
Appropriate sustainable development proposals for London Luton Airport	Positive	Positive	Positive	Positive	Positive	Positive			
Appropriate sustainable development proposals for the Daventry International Rail Freight Terminal (DIRFT)	Positive	Positive	Positive	Positive	Positive	Positive			
Appropriate sustainable development proposals for the Milton Keynes and South Midlands growth areas	Positive	Positive	Positive	Positive	Positive	Positive			
Appropriate sustainable development proposals for the business park (e.g. Leavesden Park, Centennial Park and Elstree Park)	Positive	Positive	Positive	Positive	Positive	Positive	Positive	Positive	

Development Control Statement	RO10	RO11	RO12	RO13	RO14	RO15	RO16	RO17
	M1-J14 Junction Operation	M1 J15-15A Reduce Congestion and Improve Capacity	M1-J17 Improve Access	Development Growth	Luton Airport Growth	Safeguard Abnormal Local Route	Multi-Modal Integration	M1 J7-8 Weaving Traffic
Congestion will be reduced	Positive	Positive	Positive				Positive	Positive
Safety and efficiency will be maintained	Positive	Positive	Positive				Positive	Positive
Speed of traffic will be controlled, improving safety and journey time reliability	Positive	Positive	Positive				Positive	Positive
Access to alternative transport modes to the private car will be encouraged and facilitated				Positive	Positive		Positive	
Opportunity for multi-modal integration and increased accessibility will be sought				Positive	Positive		Positive	
Appropriate sustainable development proposals for London Luton Airport					Positive		Positive	
Appropriate sustainable development proposals for the Daventry International Rail Freight Terminal (DIRFT)			Positive					
Appropriate sustainable development proposals for the Milton Keynes and South Midlands growth areas				Positive			Positive	
Appropriate sustainable development proposals for the business park (e.g. Leavesden Park, Centennial Park and Elstree Park)							Positive	

**Table 7.4: Impact of Route Outcomes in relation to Policy Objectives**

M1-M10 Policy Objectives		RO1	RO2	RO3	RO4	RO5	RO6	RO7	RO8	RO9
		Improve Journey Time Reliability	Better Information	Accident Reduction	Environment Mitigation	Noise Mitigation	NMU Facilities	M1-Jct 3 Improve Access	M1-Jct 5 Reduce Queuing	M1-J13 Capacity Improvement
<b>ENVIRONMENT (Env)</b>										
Env1	To mitigate and seek to reduce noise levels in line with government policy				Positive	Positive	Positive			
Env2	To improve air quality (with especial regard to Air Quality Management Areas)	Positive		Positive	Positive		Positive			Positive
Env3	To minimise the adverse effect of lighting on the environment				Positive					
Env4	To seek to ensure effective measures are in place to enhance water quality along the route from pollutant spillage on the highway			Positive	Positive					
Env5	To maintain a clean & tidy route				Positive					
Env6	To minimise or avoid impact on environmentally designated areas				Positive	Positive	Positive			
Env7	To protect environment elsewhere in the region by encouraging appropriate traffic to use the route	Positive	Positive	Positive	Positive	Positive	Positive			
Env8	To promote Bio-diversity				Positive	Positive				
<b>SAFETY (S)</b>										
S1	To review and where possible improve the safer operations of the route	Positive	Positive	Positive			Positive	Positive	Positive	Positive
S2	To investigate where the provision of improved lighting would improve safety, without disproportionate environmental damage	Positive		Positive	Positive					
S3	To seek to achieve a consistent high standard of variable and static signing along the route	Positive	Positive	Positive						Positive
S4	To seek to manage vehicle speeds at appropriate levels	Positive		Positive						
S5	To review safety and the security for non motorised users crossing the route at interchanges or bridges/subways		Positive	Positive			Positive			Positive

M1-M10 Policy Objectives		RO1	RO2	RO3	RO4	RO5	RO6	RO7	RO8	RO9
		Improve Journey Time Reliability	Better Information	Accident Reduction	Environment Mitigation	Noise Mitigation	NMU Facilities	M1-Jct 3 Improve Access	M1-Jct 5 Reduce Queuing	M1-J13 Capacity Improvement
S6	To seek to improve the quality of user facilities and provide adequate rest and emergency facilities	Positive		Positive						
S7	To seek to improve safety for people working on the route			Positive						Positive
<b>ECONOMY (Ec)</b>										
Ec1	To seek to prioritise actions with regard to the needs of the national, regional and local economy	Positive		Positive						Positive
Ec2	To seek to reduce congestion, particularly between London and Milton Keynes	Positive	Positive	Positive				Positive	Positive	Positive
Ec3	To seek to minimise traffic disruption due to traffic incidents	Positive	Positive	Positive						Positive
Ec4	To seek to plan all works to achieve optimum whole life costs with minimal disruption to users	Positive								Positive
Ec5	To seek to maximise the availability for use of the route for users, and the serviceability of the road, structures and other highway equipment	Positive	Positive							Positive
Ec6	To seek to improve journey time and reliability and information	Positive	Positive	Positive						
Ec7	To seek to support the objectives in the Land Use Planning System									
Ec8	To seek to reduce congestion at major interchanges	Positive		Positive				Positive	Positive	Positive
<b>ACCESSIBILITY (Ac)</b>										
Ac1	To seek to reduce community severance		Positive				Positive	Positive	Positive	
Ac2	To seek to make appropriate provision for and encourage the use of public transport	Positive								
Ac3	To seek to make appropriate provision for non-motorised users						Positive			
Ac4	To seek to make appropriate provision for disabled and elderly users						Positive			

M1-M10 Policy Objectives		RO1	RO2	RO3	RO4	RO5	RO6	RO7	RO8	RO9
		Improve Journey Time Reliability	Better Information	Accident Reduction	Environment Mitigation	Noise Mitigation	NMU Facilities	M1-Jct 3 Improve Access	M1-Jct 5 Reduce Queuing	M1-J13 Capacity Improvement
<b>INTEGRATION (In)</b>										
In1	To improve user information	Positive	Positive							
In2	increase knowledge of user patterns and needs	Positive								Positive
In3	To support regional transport strategy, local transport plans and development plans	Positive								Positive
In4	To make better use of the route by working in partnership with road users, transport providers and operators, local authorities and those affected by the network	Positive	Positive	Positive	Positive	Positive	Positive	Positive	Positive	Positive
In5	To recognise the two-way interaction between the RMS and other RMSs (e.g. A43/A45 RMS – suggestions on Junction 15 and 15A)	Positive								

M1-M10 Policy Objectives		RO10	RO11	RO12	RO13	RO14	RO15	RO16	RO17
		M1-J14 Junction Operation	M1 J15-15A Reduce Congestion and Improve Capacity	M1-J17 Improve Access	Development Growth	Luton Airport Growth	Safeguard Abnormal Local Route	Multi-Modal Integration	M1 J7-8 Weaving Traffic
<b>ENVIRONMENT (Env)</b>									
Env1	To mitigate and seek to reduce noise levels in line with government policy							Positive	
Env2	To improve air quality (with especial regard to Air Quality Management Areas)	Positive	Positive					Positive	
Env3	To minimise the adverse effect of lighting on the environment								
Env4	To seek to ensure effective measures are in place to enhance water quality along the route from pollutant spillage on the highway								
Env5	To maintain a clean & tidy route								
Env6	To minimise or avoid impact on environmentally designated areas								
Env7	To protect environment elsewhere in the region by encouraging appropriate traffic to use the route								
Env8	To promote Bio-diversity								
<b>SAFETY (S)</b>									
S1	To review and where possible improve the safer operations of the route	Positive	Positive	Positive					Positive
S2	To investigate where the provision of improved lighting would improve safety, without disproportionate environmental damage								
S3	To seek to achieve a consistent high standard of variable and static signing along the route	Positive	Positive	Positive					Positive
S4	To seek to manage vehicle speeds at appropriate levels								Positive
S5	To review safety and the security for non motorised users crossing the route at interchanges or bridges/subways	Positive	Positive	Positive					
S6	To seek to improve the quality of user facilities and provide adequate rest and								

M1-M10 Policy Objectives		RO10	RO11	RO12	RO13	RO14	RO15	RO16	RO17
		M1-J14 Junction Operation	M1 J15-15A Reduce Congestion and Improve Capacity	M1-J17 Improve Access	Development Growth	Luton Airport Growth	Safeguard Abnormal Local Route	Multi-Modal Integration	M1 J7-8 Weaving Traffic
	emergency facilities								
S7	To seek to improve safety for people working on the route	Positive	Positive	Positive					Positive
<b>ECONOMY (Ec)</b>									
Ec1	To seek to prioritise actions with regard to the needs of the national, regional and local economy	Positive	Positive	Positive	Positive	Positive		Positive	Positive
Ec2	To seek to reduce congestion, particularly between London and Milton Keynes	Positive	Positive				Positive	Positive	Positive
Ec3	To seek to minimise traffic disruption due to traffic incidents	Positive	Positive		Positive		Positive		Positive
Ec4	To seek to plan all works to achieve optimum whole life costs with minimal disruption to users	Positive	Positive	Positive	Positive	Positive			Positive
Ec5	To seek to maximise the availability for use of the route for users, and the serviceability of the road, structures and other highway equipment	Positive	Positive	Positive	Positive	Positive			Positive
Ec6	To seek to improve journey time and reliability and information							Positive	
Ec7	To seek to support the objectives in the Land Use Planning System							Positive	
Ec8	To seek to reduce congestion at major interchanges	Positive	Positive	Positive	Positive	Positive		Positive	Positive
<b>ACCESSIBILITY (Ac)</b>									
Ac1	To seek to reduce community severance								
Ac2	To seek to make appropriate provision for and encourage the use of public transport				Positive	Positive		Positive	
Ac3	To seek to make appropriate provision for non-motorised users	Positive		Positive					
Ac4	To seek to make appropriate provision for disabled and elderly users	Positive		Positive					
<b>INTEGRATION (In)</b>									

M1-M10 Policy Objectives		RO10	RO11	RO12	RO13	RO14	RO15	RO16	RO17
		M1-J14 Junction Operation	M1 J15-15A Reduce Congestion and Improve Capacity	M1-J17 Improve Access	Development Growth	Luton Airport Growth	Safeguard Abnormal Local Route	Multi-Modal Integration	M1 J7-8 Weaving Traffic
In1	To improve user information								
In2	increase knowledge of user patterns and needs	Positive	Positive	Positive	Positive	Positive		Positive	Positive
In3	To support regional transport strategy, local transport plans and development plans	Positive	Positive	Positive	Positive	Positive		Positive	
In4	To make better use of the route by working in partnership with road users, transport providers and operators, local authorities and those affected by the network	Positive	Positive	Positive	Positive	Positive	Positive	Positive	
In5	To recognise the two-way interaction between the RMS and other RMSs (e.g. A43/A45 RMS – suggestions on Junction 15 and 15A)		Positive						