Regional Network Report for West Midlands 2008
The Highways Agency Customer Promise

• Helping you with your journey
• We will help you make your journeys safely and reliably
• We will provide value for money and invest in improved services
• We will provide helpful information to enable you to make choices before and during your journey
• We will clear up incidents quickly and safely
• We will limit any delays when carrying out roadworks and improvements
• We will play our part in protecting the environment
• We will ask you for your views and act on feedback
• We will deal with you promptly, courteously and helpfully
To strengthen our focus on regional issues, the Highways Agency has formed the new Network Operations Directorate. This brings together operational activities, planning and the traffic officer service to deliver a national service regionally. As the director for the West Midland division, I have pleasure in presenting the Highways Agency’s new Regional Network Report (RNR).

This report, produced by the forward planning team, follows the publication in March 2007 of the Department for Transport’s important new policy on Planning and the Strategic Road Network (Circular 02/2007). The circular sets out how the Highways Agency, on behalf of the Secretary of State for Transport, will participate in all stages of the planning process to help the achievement of wider Government aims and objectives.

Together with other parts of Government the Highways Agency is one of the key delivery partners working with Communities and Local Government to help shape Development Plans and their outcomes. Through its participation in the development and revision of Regional Spatial Strategies and the preparation of Local Development Frameworks, the Highways Agency’s role is to ensure that the Strategic Road Network supports the delivery of sustainable development whilst maintaining the safe and efficient movement of longer distance traffic.

In this new version of the RNR, there are some innovations that I hope you will find useful. In particular, you may wish to look at the new travel pattern pie chart map in Figure 3.2 and 3.3, showing the proportion of movement by mode, and the new journey to work diagram in Figure 3.1.

This Report contains information on and analysis of the key issues facing the Strategic Road Network within the West Midland. It also describes the initiatives and interventions which the Highways Agency will promote, both now and in the future, to enable the network to operate most effectively in the face of growing demands for its use.

The programme of major schemes which is an important part of this document is currently under review by the Highways Agency and the DfT. That process will not be completed until later this Spring. Internally, the Highways Agency is restructuring to align more closely with regional partners. To report on both these issues, an addendum to this Report will be issued as an update.

Our partners in the West Midland should find this Report a valuable contribution to the preparation of regional strategies, local development documents and transport funding programmes.

The Highways Agency is an executive agency of the Department for Transport (DfT). We are responsible for operating, maintaining and improving England's Strategic Road Network on behalf of the Secretary of State for Transport.
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1. Introduction

The West Midlands and the Regional Network Report 08

The West Midlands region is situated in the heart of England and covers an area of 12,998km² from Stoke-on-Trent in the north to Hereford and Evesham in the South, from Shrewsbury in the West to Rugby and Burton-on-Trent in the East. The Region is home to 5.27 million people (9% of the UK total), with more than half of the population living in the large conurbation areas focussed around the Region’s major cities of Birmingham, Wolverhampton, Coventry and Stoke. The Region lies at the centre of the country’s road and rail network, with motorways linking the North with the South East and South West, and the West Coast Mainline converging on Birmingham. The Strategic Road Network (SRN) within the region comprises over 990 km of carriageway and has a key role to play in securing the prosperity of the country as whole as well as linking the regions diverse sub-regions.

This Report sets out the strategic and operational functions of the SRN in the context of the West Midlands Region, and its inter-regional connectivity. It is written by the Network Strategy Division of the Highways Agency, which on behalf of the Secretary of State for Transport is responsible for the maintenance, operation and improvement of the SRN. The Report provides a summary of the key issues affecting the SRN from a regional perspective and identifies a range of initiatives that have been developed by the Highways Agency in partnership with others to make best use of the network. It also explains how the Highways Agency works with other Government Departments, Regional Offices, regional and local planning and transport authorities, public transport providers and developers to align and meet national and regional aims.

The Regional Network Report 08 is commended to all in the West Midlands engaged in the spatial planning process and working on the identification of transport funding priorities.

Working with the Planning System

The West Midlands Region has a strong history of positively responding to economic change. Today, the Region faces the need for economic restructuring and reinvention to meet the challenges of population growth and the impacts of the global economy and climate change.

The efficient movement of goods and people on the SRN is essential for a modern economy but the pressures on that network are great. This RNR explains how the Highways Agency works to balance the national needs of maintaining a safe and efficient network for longer distance traffic whilst working with partners towards achieving the prosperous and sustainable development of the West Midlands Region in support of wider Government policy objectives.

Government policies for growth and regeneration rely on supporting infrastructure such as the transport system. The Highways Agency is a key delivery partner in achieving the outcomes for the West Midlands Region as set out in the Development plan. This RNR assists promotion of an evidence based approach for such considerations, particularly for:-

- informing the preparation of RSS and LDF documents;
- identifying and prioritising the delivery of associated transport infrastructure interventions; and
- communicating to partners and the public the Highways Agency’s approach to the management and operation of the SRN in the West Midlands Region

The Regional Network Report Process

The new Report (WM RNR 08) is the 3rd edition for the West Midlands Region. The diagram (Figure 1.1) shows how this report fits into the family of reports that cover all of England.
West Midlands Regional Network Report 08 has evolved significantly from earlier versions in response to feedback received from regional partners and other parts of Government. It now includes more regionally-specific information and moves towards a more evidence-based review of the SRN performance and capabilities. Also, for the first time, it includes some coverage of the more important parts of the Local Highway Authority network.

The RNR will continue to evolve in response to the growing need to strengthen the evidence-based information, particularly that relating to future stress on the network which is important to inform decisions on the need for investment. Potential exists for future versions of both the RNRs and the National Network Report to incorporate the outputs from more sophisticated transport modelling work that can predict the future transport affects of changing land use and economic prosperity. This could make a significant contribution to the preparation of National Planning Statements and recommendations by the Independent Planning Commission (IPC) arising from its consideration of major infrastructure, as proposed in the Planning White Paper 2007 (Planning for a Sustainable Future).

**Structure of the Regional Network Report**

The Report is divided into eight sections. This Introduction is followed by Sections 2 and 3 which provide the broad policy and regional perspective within which the SRN operates (Section 4). Section 5 brings together in one location all the various environmental considerations that relate to road transport and the SRN. The current and future performance of the network is set out in Sections 6 and 7 respectively and a vision of the shape of our future road transport is given at Section 8.

- **Section 1** – this Introduction
- **Section 2** – an overview of the national and regional policy context as it affects the SRN
- **Section 3** – a description of the economic and social geography of the West Midlands Region, identifying key pressures that have the potential of having significant travel and transport implications
- **Section 4** – a picture of the SRN in the West Midlands Region with reference to relevant studies and improvement schemes
- **Section 5** – a summary of all aspects of the environmental context for the current and future SRN
- **Section 6** – the current performance of the SRN considering stress, delays and safety
- **Section 7** – the predicted future performance of the SRN with an indication of future network stress if current trends continue
- **Section 8** – here are listed the various initiatives and interventions that the Highways Agency is pursuing to enable the SRN to meet the Government’s and the region’s objectives
Figure 1.1 Network Reports Family Tree

Highways Agency Business Plan

National Network Report

- East Midland RNR
- West Midland RNR
- North East RNR
- North West RNR
- Yorkshire and Humber RNR

- South East RNR
- East of England RNR
- London RNR
- South West RNR
2. The Policy Context

Introduction

England’s SRN carries one third of all traffic (by mileage) and two thirds of all goods traffic. The level of demand for travel and the consequent use of the SRN is a function of economic growth and changes in income and expenditure. Road use satisfies important social needs and desires, but the economic dimension is essential. The Eddington Transport Study 2006 (The Case for Action) concluded that an effective transport network is crucial to maintaining and sustaining the long term viability and competitiveness of the UK’s and regional economies. The efficient management and development of national, regional and local transport networks is therefore a priority for Government transport policy.

This section of the RNR sets out the key elements of the Government’s transport policies and the national economic policy objectives which underpin these and which will have a significant impact on the nature and demand for the use of the SRN. It describes the pivotal contribution of the Highways Agency to the formulation of policy and to national and regional funding processes so critical to its implementation.

Economic Policy

The central themes of Government economic policy are a strong economy and fair society, where there is opportunity and security for all. Productivity growth, coupled with high and stable levels of employment, is the essence of long-term economic performance. Eddington noted that the strategic road network has a vital role to play in supporting the implementation of the Government’s wider policy objectives, particularly in relation to:

- raising the sustainable rate of productivity growth
- improving the economic performance of all English regions
- achieving a better balance between housing availability and demand
- reducing the gap in productivity growth in rural areas and improving their accessibility
- improving people’s quality of life
- tackling climate change and improving air quality

Eddington found that a comprehensive and high performing transport system is an important enabler of sustained economic prosperity and the success of wealth generating urban areas. However, demand for travel is, in turn, fuelled by economic success and parts of the transport system are already under serious strain. If left unchecked, congestion would cost an extra £22 billion in lost time, in England alone, by 2025.

Because the UK already has good internal and external connections, the key challenge to supporting the economy is to optimise the performance of the existing network. This means focusing on those parts of the system where networks are most critical in supporting economic growth. These are the growing and frequently congested urban areas and their catchments, and the key inter-urban corridors and international gateways which serve them, particularly those with problems of increasing congestion and unreliability. The approach requires a sophisticated policy and fiscal mix to meet economic and environmental goals. Transport and spatial planning policy is particularly critical to the future role of the SRN.
Transport Policy

The October 2007 discussion document, Towards a Sustainable Transport System, draws upon the Eddington and Stern reports, and suggests how their recommendations can be translated into the policy-making process. It sets out five goals as the “challenge for transport”. These are:

- Maximise the competitiveness and productivity of the economy – by improving the performance of the existing network
- Address climate change - by cutting emissions of carbon dioxide and other greenhouse gases
- Protect peoples safety security and health – by improvements to road safety and the promotion of the health benefits of cycling and walking
- Improve quality of life – by tackling the issues of noise, vibration, biodiversity and landscape
- Promote greater equality of opportunity – by ensuring our transport system provides effective access for everyone

Sagely, the document recognises that this “will take time to implement in its entirety”. But this is not only for the future as Government policy already has ambitious plans for the period to 2014.

Current Government transport policy is set out in a series of White Papers. The key issues can by summarised as follows:


This White Paper sets out the Government’s overarching transport policy objectives against the backdrop of four key challenges:

- economic growth resulting in an increasing demand for travel
- past planning policies and demographic changes that have historically driven a trend towards longer journeys
- the growth in the number of trips made by car
- the implications of population changes

Dealing with these challenges requires a balance between the need and demand for travel, and the need to improve quality of life in other ways. This is achieved by:-

- managing our road and rail networks more efficiently
- planning ahead so that we can make the best use of our networks, including the use of demand management measures and road pricing
- investing in new infrastructure (where it is aligned with wider environmental goals) and public transport
- reducing the damaging environmental impacts from transport
‘The Future of Rail’ White Paper (July 2004)

The 2004 White Paper sets out the Government’s objectives and proposals for the restructuring of the railway industry over the coming decades in order to deliver improved train performance and reliability, enhance rail capacity to meet growing demand, and provide a service that plays its part in meeting wider environmental objectives.


This White Paper sets out a strategic framework for the development of airport capacity in the UK over the next 25 years. Demand for air travel is projected to be between two and three times current levels by 2030. Whilst airports are an important driver of economic growth, their development and expansion can have significant transport and environmental impacts. The Government expects airport operators to develop appropriate ‘surface access’ plans, and to contribute to the costs of the additional infrastructure or services that may be needed. These may require the implementation of traffic management measures (including airport road charging to reduce airport-related road journeys) as well as to tackle congestion on the nearby SRN.

The Government’s ports policy is currently under review. This includes the consideration of the extent to which port developers should be expected to contribute to the cost of any attendant road and rail improvements. It is also looking at how any national policy framework for ports might fit alongside other regional strategies and take account of the findings of the Eddington Study.

Planning Policy

The national planning policy context, as it most closely relates to the SRN, can be similarly summarised:


The White Paper sets out an ambitious programme of proposed reforms to the planning system to be taken forward over the next three years. For key national infrastructure – such as major airports and port projects, major road improvements and power generating and utilities provision – the Government proposes to simplify the current system of multiple consent regimes. This would be based on the creation of an Independent Planning Commission (IPC) to take decisions on nationally significant infrastructure. A series of new National Infrastructure Policy Statements on the UK’s future strategic infrastructure needs, including transport, would provide a framework for decision making.

Planning and the Strategic Road Network (DfT Circular 02/2007)

Published in March 2007, the Circular explains how the Highways Agency will participate in all stages of the planning process. The Circular:

- sets out how the Highways Agency will take part in the development of Regional Spatial Strategies (RSSs) and Local Development Frameworks (LDFs) from the earliest stages
- encourages the Highways Agency, Regional Planning Bodies (RPBs) and Local Planning Authorities (LPAs) to work together to ensure effective participation in the preparation of regional and local sustainable development policy
- sets out how the Highways Agency will deal with planning applications

The Circular which is accompanied by Guidance on Transport Assessment and Guidance on Agreements with the Secretary of State for Transport under the Highways Act 1980, reinforces the Highways Agency’s approach to mitigating the transport impacts of
development. In considering proposals for new development the Agency will apply the following measures:

- avoid adverse impact by encouraging development in sustainable locations
- minimise impact through deliverable and enforceable travel plans
- access management
- capacity enhancements as a last resort and where compatible with sustainable development principles

The Highways Agency’s role in developing Regional Spatial Strategies

The Highways Agency contributes to the revision of the RSS, which includes the Regional Transport Strategy (RTS), by advising on the ability of the SRN to support proposed land-use policies and proposals. This includes evaluating the impact of strategies on road performance, taking into account safety and environmental considerations. The Highways Agency will:

- work with the RPB to contribute to the production of a sound, sustainable and deliverable RSS
- help to develop options and proposals in the RSS in support of broader policy aims
- provide advice and support on technical aspects of strategies, such as traffic forecasting on the SRN and the effect of measures, such as demand management
- provide advice, consistent with a regional context, on possible costs of options and proposals

The Highways Agency’s role in the preparation of Local Development Frameworks

Engagement throughout the preparation of Local Development Documents will enable the Highways Agency to contribute to the evidence base and facilitate the delivery of sustainable development. The Agency will:

- offer advice and technical support that will guide the identification of the location, scale and timing of proposals in relation to the SRN
- provide guidance, on the appropriate scale and nature of improvements to the SRN, including demand management measures that may be required to facilitate sustainable development

The Highways Agency’s role in the Development Control Process

The Highways Agency will offer advice and guidance on development proposals which are likely to impact on the SRN. As a statutory consultee in planning applications, the Highways Agency may take one of the following actions:

- offer no objection
- recommend that planning permission should either be refused, or granted only subject to conditions
• direct conditions to be attached to any planning permission

• direct that planning permission not be granted (either indefinitely or for a specified period)

The Highways Agency will also work with developers to ensure that the mitigation of traffic and environmental impact of highway works, resulting from new development, is in line with national guidance and European Union Directives for air quality and noise. When such statutory limits are predicted to be breached on the SRN, it is the Secretary of State’s responsibility to take action accordingly, including directing that planning permission should not be granted.

Capacity enhancements and access to the network

Circular 02/2007 establishes that there will be a general presumption against capacity enhancements on routes of strategic national importance purely to accommodate new developments. Capacity enhancements should be identified in the RSS and/or LDF and will not normally be considered as a fresh proposal at the planning application stage.

There is also a general presumption that there will be no additional accesses to motorways and other routes of strategic national importance, other than for the provision of service areas, facilities for the travelling public, maintenance compounds and, exceptionally, other major transport interchanges.

The Highways Agency will adopt a graduated and less restrictive approach to accesses on the remainder of the SRN, but there will still be a presumption in favour of using existing accesses and junctions. Any additional junctions or increased junction capacity should be identified in the Development Plan and will be considered within the context of the Highways Agency’s forward programme of works.

West Midlands Policy Context

This report has been prepared within the framework of the following key regional strategies for the West Midlands:

Integrated Regional Strategy (IRS)

The West Midlands Integrated Regional Strategy – ‘A Sustainable Future for the West Midlands – Regional Sustainable Development Framework’ (July 2006) has four themes; sustainable consumption and production; climate change and energy; natural resource protection and environmental enhancement; and sustainable communities. It identifies 33 objectives for the preparation of all strategies in the West Midlands. These include the need to increase use of public transport, cycling and walking as a proportion of total travel in order to reduce road traffic congestion, pollution and accidents and the need to provide easy and equitable access to services, facilities and opportunities including jobs.

Regional Economic Strategy (RES)

‘Connecting to Success’ the new West Midlands Economic Strategy, was published on 10th December 2007. It sets out the regions approach to closing the £10 billion output gap, by seeking to raise output per head in the West Midlands to at least the average for the UK as a whole.

‘Connecting to Success’ sets a vision for the region as ‘a global centre where people and business choose to connect’. This will be achieved by the region becoming:

• A more prosperous region, but recognising that economic growth must support overall improvements in the quality of life and well being of all the region’s residents;
• A more cosmopolitan and inclusive region, making full use of the skills and talents of our people and ensuring equality of opportunity, across the region, in relation to the wealth and prosperity generated through continued economic growth;

• Becoming a more sustainable region, correctly valuing our natural, historic and cultural assets, seeking to minimise our use of the planet's resources and preparing for a low-carbon future

The strategy is structured around three main components of the economy – Business, Place and People and contains 10 key objectives which include recognition of the need for constant investment in the Region’s infrastructure to support economic growth and competitiveness. This will require more effective management and use of infrastructure including both transport and ICT.

Regional Spatial Strategy (RSS)

The West Midlands Regional Spatial Strategy (RSS11) is currently under review. The Phase Two Preferred Option was submitted to the Secretary of State in December 2007 as a draft revision to the RSS. Objections and representations on the draft revisions are due to be considered by a Panel appointed by the Secretary of State to undertake an ‘Examination-in-Public’ to be held in September/October 2008. Following the completion of the revision process the new West Midlands Regional Spatial Strategy will replace the current RSS issued by the Government in March 2005. It identifies the scale and distribution of new housing and priorities for the environment, transport, infrastructure, economic development, minerals, waste treatment and disposal. The Strategy also provides the longer term planning framework for the RES.

The Spatial strategy can be summarised as enabling all parts of the region to meet their own needs, in a mutually supportive and sustainable way and is underpinned by the following strategic objectives:

• to make the Major Urban Areas (MUAs) of the West Midlands increasingly attractive places where people want to live, work and invest;

• to secure the regeneration of the rural areas of the Region;

• to create a joined-up multi-centred Regional structure where all areas/centres have distinct roles to play;

• to retain Green Belt but to allow an adjustment of boundaries, where exceptional circumstances can be demonstrated.

• to support the cities and towns of the Region to meet their local and sub-regional development needs;

• to support the diversification and modernisation of the Region’s economy while ensuring that opportunities for growth are linked to meeting needs and reducing social exclusion;

• to ensure the quality of the environment is conserved and enhanced across all parts of the Region;

• to improve significantly the Region’s transport systems;

• to promote the development of a network of strategic centres across the Region;

• to promote Birmingham as a global city
The overarching spatial strategy seeks to focus the majority of new development within the MUAs and in Settlements of Significant Development (SSDs). It is proposed that new development should be distributed according to the following principles:

In the MUAs of Birmingham/Solihull, the Black Country, Coventry and the North Staffordshire conurbation, more development opportunities will be created to retain and attract people and investment primarily by:

- supporting the market renewal of residential areas in Birmingham/Sandwell and North Staffordshire currently suffering from low demand with different policy approaches reflecting the particular circumstances in each area
- tackling deprivation and creating employment opportunities in the five Regeneration Zones which cover parts of all the MUAs
- protecting and enhancing the quality of urban environments
- creating a balanced network of vital and vibrant town and city centres as the strategic focus for major retail, leisure and office developments
- generally resisting peripheral expansion but, in certain circumstances, allowing sustainable urban housing extensions and/or Regionally important employment where this supports the urban renaissance of the MUAs
- improving the quality of transport networks to reduce social exclusion, improve economic performance and facilitate a more sustainable pattern of development.

In other parts of the Region, where necessary, new development will be focused in and adjacent to towns which are most capable of balanced and sustainable growth to complement the role of the MUAs. In particular, the following ten areas have been designated as Settlements of Significant Development – Burton-on-Trent, Hereford, Nuneaton/Bedworth, Redditch, Rugby, Shrewsbury, Stafford, Telford, Warwick/Leamington and Worcester. In each case, the aim will be to meet local and sub-regional economic and social needs in the most sustainable way without attracting investment or migration from the MUAs. In support of this objective, the need to resolve existing transport infrastructure problems is highlighted as a key issue for the RSS.

The Government has provisionally designated a number of locations across the West Midlands as New Growth Points:

- Birmingham and Solihull
- Coventry
- Telford
- East Staffordshire – Burton-on-Trent
- Hereford
- Shrewsbury and Atcham
- Worcester

Further New Growth Points may be designated by the Government in due course and any proposals for additional housing above that currently identified will need to be considered through the RSS process.
Regional Transport Strategy (RTS)

The West Midlands Regional Transport Strategy (RTS) is also set out in the Draft West Midlands Regional Spatial Strategy Phase Two Revision Preferred Option (December 2007). The RTS provides the regional framework for regional and local transport planning within the West Midlands by:

- Ensuring better integration between transport policies and priorities and the wider WMRSS policies
- Contributing to the economic ambitions of the Region as set in the WMES
- Steering the development of Local Transport Plans and Local Development Documents

A major transport challenge for the Region is balancing the needs of new housing and the economy against increasing levels of congestion on the strategic network. As a consequence a cross cutting theme of the RTS in the West Midlands is the need to manage the increasing demand for travel. In order to address this the RTS proposes a coherent package of measures including:

- measures to reduce the need to travel
- provision of good quality, well designed walking and cycling facilities
- promotion of travel awareness initiatives
- a significant improvement in public transport
- well-designed park and ride facilities
- better public management of public and private car parking
- appropriate demand management measures and
- better management of transport networks

RSS/RTS Policy T12 “Priorities for Investment” sets out a wide-ranging programme of investment to improve accessibility and mobility across the West Midlands Region, in support of the Spatial Strategy. These will be reviewed as part of the process of considering the WMRSS Phase Two Revision Preferred Option and will reflect both the emergence of new transport priorities arising through the RSS Revision process and progress made in implementing existing priorities as set out in the West Midlands Transport Delivery Plan (2007).

The regional transport investment priorities identified by the RTS in the June 2004 version of the WMRSS include the proposals listed in Table 1.

Table 1: Regional Transport Priorities (WMRSS June 2004)

<table>
<thead>
<tr>
<th>Scheme</th>
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<tbody>
<tr>
<td>Measures to achieve behavioural change</td>
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<tr>
<td>West Coast Mainline Strategy</td>
</tr>
<tr>
<td>Upgrading rail freight routes to Felixstowe and Southampton</td>
</tr>
<tr>
<td>M6 widening J11a – J19</td>
</tr>
</tbody>
</table>
- M40 J15 Longbridge improvement
- M42 Active Traffic Management Pilot
- M42 widening J3-7
- M54 – M6/M6 Toll link
- Active Traffic Management for M5/M6/M42 motorway box
- A5 Weeford – Fazeley improvement
- A38 Streethay – A50 improvements
- A45/A46 Tollbar End improvement
- West Midlands Rail Short and Medium term capacity and performance enhancement schemes
- Passenger capacity enhancement Birmingham New Street
- West Midlands Rail Strategy – long term capacity needs
- Local congestion charging studies
- West to East Midlands MMS (W2EMMS)
- BIA, development of services and improved surface access

The delivery of these priorities, and those that emerge through the RSS Revision process, will require funding and action by central government, Growth Points, the Highways Agency, Network Rail, rail operators, public transport operators, local authorities, income from local charges, Birmingham International Airport, Advantage West Midlands, developers and other partners.

A large number of transportation models have been used across the region to inform the RTS and the identification of investment priorities. However, there is scope to better examine how regional objectives may best be achieved. The Highways Agency is therefore keen to work with regional partners and local authorities to further develop the transport evidence base underpinning the various transport, spatial planning and funding allocation processes within the region.

### 2006 Regional Funding Allocation Advice Documents

In 2006 the West Midlands Regional Assembly in conjunction with the Regional Development Agency, Advantage West Midlands, submitted to Central government its list of transport priorities for funding. The RFA for transport includes capital funding for major schemes in Local Transport Plans and major Highways Agency schemes. The Highways Agency played a full role in the development of these proposals that also included advice on the Region’s programme for economic development and housing investment.

In July 2006 the Department for Transport (DIT) published a list of those schemes for which funding would be provided in the period between 2006/7 and 2008/9. Schemes approved but not in the construction/development phases were the:

- A45/A46 Tollbar End (Highways Agency)
- Selly Oak New Road (Birmingham)
• Tunstall Northern Bypass (Stoke on Trent City)
• Rugby Western Relief Road (Warwickshire)
• Owen Street Level Crossing Relief Road (Sandwell)
• Brierley Hill Sustainable Access Network (Dudley)
• West Midlands Urban Traffic Control (CEPOG - Met Districts)
• Darlaston Strategic Development Area (Walsall)
• A4123/A461 Burnt Tree Junction (Dudley/Sandwell)
• SPARK - Leamington Spa/Warwick Public Transport (Warwickshire)
• Birmingham International Airport/NEC Public Transport Access (Solihull)

A number of schemes were not accepted into the Programme pending further work and assessment. They were:

• Chester Road Access Improvements (Birmingham)
• Coventry Rapid Transit (Coventry)
• Longbridge Link Road (Birmingham)
• West Midlands Red Route Package 2 (CEPOG - Met Districts)
• Brinsford Park and Ride (Staffordshire)
• Wolverhampton I54 Access (Wolverhampton)
• Coventry Station Interchange (Coventry)

A second round of regional funding prioritisation in the West Midlands has been initiated but is under review pending assessment of the Stern and Eddington reports. Local Authorities and the Highways Agency have been invited to submit assessments of their priority schemes for future regional appraisal.

Local Development Frameworks

The West Midlands Region comprises: the West Midlands Metropolitan Area (Birmingham, Coventry, Solihull and the Black Country Districts of Dudley, Sandwell, Walsall and Wolverhampton – all Unitary Authorities); the counties of Herefordshire (a Unitary Authority), Shropshire, Staffordshire, Warwickshire and Worcestershire; and Stoke-on-Trent and Telford and Wrekin (both Unitary Authorities, geographically situated within Staffordshire and Shropshire respectively).

All these authorities, including in the case of the non-unitary County Councils their constituent district authorities, are required to prepare their own Local Development Frameworks (LDF) within a published timescale. The Highways Agency is a statutory consultee in the LDF process and plays its full part in the preparation of the key LDF documents through early and continuous engagement (known as ‘front-loading’) with the LPAs. This will help ensure that all emerging spatial plans have a sound transportation foundation underpinned by a robust evidence base.
Local Transport Plans

Local Transport Plans (LTPs) cover the period 2006 to 2011, and have a set of ‘Shared Priorities’ agreed between central Government and the Local Government Association, for investment in transport locally. The Shared Priorities for transport are:

- Tackling congestion
- Delivering accessibility
- Improving air quality
- Safer roads

Each LTP also contains Local Priorities. These generally focus upon the areas of maintenance, regeneration, and quality of life, including personal security and reducing the impacts of traffic, and relate closely to the wider policy objectives of the authorities.

LTPs set out Major Schemes costing over £5m, proposed to be taken forward during the Plan period. The delivery of these schemes is subject to approval through the RFA process as above. The LTPs also include proposed investment programmes for other transport schemes. Key elements of the LTPs in place across the West Midlands region are set out in Table 3.

In parallel with the LTP process, the Transport Innovation Fund (TIF) represents a new approach by Department for Transport to direct resources towards the achievement of two very high priority key objectives - tackling congestion and improving productivity. The fund currently has some £10bn allocated over seven years from 2008/09, increasing annually to a level of £2.5bn a year by 2014. Local authorities can also bid for resources allocated through the LTP process and TIF.

The West Midlands Conurbation was the recipient of the largest share of funding from the first round of the TIF pump-priming allocation of some £2.6m. The Local Authorities within the Conurbation are assessing the feasibility of schemes combining demand management, such as road pricing with better public transport, in order to tackle congestion and improve local traveling conditions.

Councils are also seeking to ensure that scheme promoters contribute towards infrastructure requirements which arise as a result of further development. The use of developer contributions is obtained through Section 106 and Section 278 agreements. This is a supplementary resource for transport services and infrastructure to support growth.

Table 3: Local Transport Plan Proposals within the West Midlands

<table>
<thead>
<tr>
<th>Area</th>
<th>Major Scheme Proposals</th>
<th>Proposals which may Influence the Regional Network</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Midlands</td>
<td>• Junction 10 (M6) Improvements</td>
<td>• The improvements should reduce the pressure at the Junction 10</td>
</tr>
<tr>
<td></td>
<td>• M54 / Wobaston Road (i54) Access</td>
<td>• Walsall town centre improvements are local within the town but may have an impact on Junction 10 (M6)</td>
</tr>
<tr>
<td></td>
<td>• Walsall town centre improvement scheme</td>
<td>• The strategic park and ride will provide greater modal choice</td>
</tr>
<tr>
<td></td>
<td>• Longbridge Link</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Longbridge Strategic park and ride</td>
<td></td>
</tr>
<tr>
<td>Warwickshire</td>
<td>• Coleshill Parkway</td>
<td>• The majority of the schemes have been completed.</td>
</tr>
<tr>
<td></td>
<td>• Barford Bypass</td>
<td>• LTP2 proposals do not have a significant impact on the SRN</td>
</tr>
<tr>
<td></td>
<td>• Nuneaton Development Project</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Rugby Western Relief Road</td>
<td></td>
</tr>
<tr>
<td>Area</td>
<td>Projects</td>
<td>LTP2 Impact</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Worcestershire | • Worcestershire Parkway Station  
• A441 Bordesley Bypass                                                      | • LTP2 proposals have no impact on the SRN                                   |
| Staffordshire | • Burton – Swadlincote Regeneration Route (A38-A444-A511)  
• Stafford Western Access Improvements  
• Cannock Line Railway Showcase                                                   | • The Regeneration Route has the potential to increase pressure on the A38  
• This will assist in achieving a modal shift                                  |
|              |                                                                           | • This will assist in achieving a modal shift                                |
| North Staffordshire | • Tunstall Northern Bypass  
• Tunstall South Western Access Road  
• Tunstall South Eastern Access Road  
• Stoke Inner Relief Road  
• Burslem North Western  
• Access Improvements  
• Etruria Valley Link  
• Wolstanton Link Road                                                      | • The Tunstall and Burslem proposals may have an impact in reducing pressure on the A500  
• The Etruria Link Road is likely to reduce pressure on the A500  
• The Wolstanton Link Road will have an impact on the A500. It is likely to reduce pressure on the A500/A53 junction however it is likely to increase pressure at the Wolstanton junction of the A500 |
| Telford & Wrekin | • Greyhound Link  
• Park & Ride / Rail Station / Multi-storey Car Park                        | • This may have an impact on the M54  
• This will assist in achieving a modal shift                                  |
| Herefordshire | • Bid for the A49 Ross Road to A465 Abergavenny Road Link 2008-2011         | • This is likely to reduce the pressure on the A49 and A465                  |
| Shropshire    | • Shrewsbury North West Relief Road  
• A53 Hodnet Bypass  
• A41 Sandford Bypass  
• Shrewsbury Parkway Station                                                  | • LTP2 proposals have no impact on the SRN  
• This will assist in achieving a modal shift                                  |
3. The West Midlands Regional Perspective

Introduction

Each English region has its own distinctive economic and social geography which correspondingly makes different demands on the regional transport network. The scale and nature of these demands varies greatly, according to the disposition of major urban areas, key international gateways and the linkages between these. This section describes the principal economic and spatial characteristics of the West Midlands Region. It identifies the principal transport and development pressures which are likely to have an impact on the future performance and operation of the SRN in this part of the country.

Key Transport and Spatial Influences on Transport Demand

The West Midlands lies at the heart of the country’s transport network providing unrivalled connections to all parts of the UK and to international markets. The Region’s position relative to the UK motorway network, combined with high-speed rail connectivity and an international airport, are important assets which will sustain and accelerate further growth.

Birmingham is the region’s central economic powerhouse, boasting a concentration of economic drivers including key business sectors, universities, and tourism assets. It competes on an international footing, acting as a gateway to the entire Region. Beyond the regional capital, the West Midlands contains great diversity among its other cities, larger shire towns, market towns and rural communities. Together, this network of places provides a strong attraction to current and potential residents of the Region looking for a high quality of life.

The central location of the region presents a number of opportunities for cross-regional activity on economic development and regeneration. These include the important strategic transport links, particularly along the M6 and the West Coast Mainline to the North West and along the M45-M1, M40 and West Coast Mainline to the South East. Important functional linkages also exist with the East Midlands, referred to in ‘Smart Growth: Midlands Way’ and between the south-eastern part of the region and the Milton Keynes –South Midlands growth area.

That the West Midlands is a diverse region is best illustrated by comparing and contrasting the characteristics of the Region’s component sub-areas.

The Birmingham, Coventry and the Black Country City Region

Birmingham, Coventry and the Black Country City region contains a large part of the Region’s economy and have the potential for significantly increasing the Region’s economic performance. The continued development of Birmingham as a Global City has an important role to play in this process. Birmingham’s 20-year vision is to secure long-term sustainable growth in its population through the delivery of several large-scale regeneration and development initiatives around the City Centre and its hinterlands.

Solihull plays a pivotal role within the region and is host to Birmingham International Airport (BIA), the National Exhibition Centre (NEC) and two Regional Investment Sites (Birmingham and Blythe Valley Business Parks). The Black Country Sub-region is composed of the four Black Country local authorities of Dudley, Sandwell, Walsall and Wolverhampton. The area has strong economic and transport linkages both with Birmingham and with the surrounding areas of South Staffordshire and Telford. As the traditional industrial heartland of the region the Black Country has in recent decades failed to attract the investment that is driving economic growth elsewhere within the region.

Key investment priorities in the sub-area include:
• Promoting Birmingham as a Global City and supporting the development of the City Centre Masterplan and maximising the benefit of the BIA, NEC and the International Convention Centre (ICC) as prime assets for the region

• Promoting and Developing Birmingham Science City, and the connection of Birmingham City University, Aston University and Birmingham University into knowledge transfer and business development

• Emphasising the importance of New Street Station and BIA as gateways for the Region, and the key part that they play in linking goods, people and services to markets

• Improving transport and accessibility both to and through the City region including the redevelopment of Birmingham New Street and the development of extended public transport networks to reduce congestion on the Region’s existing transport infrastructure

• Targeting the most deprived areas of the sub-region, including the City Centre, Eastern and North West Birmingham, and North Solihull

• Diversifying the economy by attracting more knowledge-based industries

• Developing the four strategic centres (Wolverhampton, Walsall, West Bromwich and Brierley Hill) and creating four Employment Land Investment Corridors as the focus for new employment and economic restructuring in the Black Country

• Creating new housing development along public transport corridors (served by rail, Metro and quality bus services) within the Black Country to address issues of low demand and social polarisation

• Capitalising on the low carbon agenda

Telford

Telford is the largest urban area in the West Midlands Region, outside of the Major Urban Areas (MUAs). Telford is part of the wider Birmingham, Black Country and Coventry City Region. As the former New Town’s infrastructure was designed for much larger population than at present, there is considerable potential for further growth. This is reflected in its designation as a New Growth Point

Telford’s function is generally that of a freestanding, self contained, employment area with localised travel to work and migration links to Shrewsbury rather than significant longer distance commuting patterns with Birmingham and the Black Country

Key investment priorities in the sub-area include:

• The development of Telford as a New Growth Point

• Further development of the Wolverhampton-Telford Technology Corridor and building on the area’s strengths in business clusters to increase the levels of employment in technology-driven, knowledge based firms

• Meeting the needs of new, growing and incoming businesses by ensuring an appropriate supply of serviced land and premises

• Transforming Telford Town Centre to provide a vibrant heart to the town and its district centres

• Support for transport and technological infrastructure to overcome barriers to access services and opportunities
Coventry and Warwickshire

Coventry forms part of the Birmingham City region but also has strong economic and social ties with Warwickshire and Solihull. Coventry has aspirations for growth and is a ‘New Growth Point’ but the City also recognises the importance of its Regeneration Zones to improving the overall quality of life for its residents.

With Coventry at its centre, the sub-region has strong structural and functional relationships running in a corridor from Nuneaton/Bedworth through Coventry, to Warwick/Leamington Spa. Within this North-South Corridor, there are significant contrasts between the less prosperous areas to the north and wealthier areas to the south. This is reflected in strong growth pressures along the M40 corridor and to the east and south of Coventry. The Coventry, Solihull and Warwickshire area is also crossed by an east west transport axis to the west through Coventry to Rugby in the east where the town acts as a ‘gateway’ with the East Midlands and the South East Region.

Key Investment priorities in the sub-area include:

- Developing the assets of the business base in the sub-region, in particular those linked to high technologies, digital technologies, high value added engineering and manufacturing, and the creative industries
- Focusing on vibrant city and town centres supporting the development of Nuneaton Town Centre and Coventry City Centre along with the smaller Market Towns
- Promoting the importance of Stratford and the role it plays in the visitor economy and in creating a positive image for the region
- Creating the conditions for sustainable communities by regenerating the most deprived communities in the sub-region
- Maximising the employment and enterprise opportunities created by the close proximity of the Coventry, Solihull & Warwickshire High Technology Corridor and the Coventry and Nuneaton Regeneration Zone

Staffordshire and the North Staffordshire Conurbation

Due to the decline of the County’s traditional industries a number of settlements are designated Local Regeneration Areas (i.e. Biddulph, Burton, Cannock, Leek, Rugeley, Stafford and Tamworth) where the aim is to improve the longer term economic prospects of the towns. Burton-upon-Trent is the major town within East Staffordshire, an area currently experiencing a significant period of re-structuring. This is reflected in its designation as one of the ‘New Growth Points’ in the West Midlands and offers the opportunity for longer term growth and prosperity.

Within Staffordshire, the north Staffordshire Conurbation is made up of the combined communities of the City of Stoke-on-Trent and Newcastle-under-Lyme and is centrally located midway between regional centres of Birmingham and Manchester having functional relationships with adjoining authorities and centres in both the West Midlands and North West regions. The decline of the North Staffordshire traditional industries has led to a collapse in the local economy with major implications for the housing market in the area which is characterised by low demand and low prices.

The need to restructure the inner core through extensive regeneration and diversification is a major challenge. The North Staffordshire Regeneration Partnership together with RENEW the North Staffordshire Housing Market Renewal Pathfinder have key roles to play in ensuring that essential economic, environmental, housing and transport investment is co-ordinated.

Key investment priorities in the sub-area include:
• To increase the number of high value added companies in Staffordshire, particularly in the North Staffs Regeneration Zone

• Diversifying the economy and maximising opportunities in the knowledge base through targeted investment to physically develop Keele and Staffordshire Universities

• Developing Staffordshire as a unique and diverse tourism destination which attracts international interest and continues to be a profitable growth sector

• Major investment to develop and create a strong and vibrant City Centre in Stoke-on-Trent, and link to this a new University Quarter

• Making Staffordshire a residential location of choice, aligning and connecting areas of major housing with economic regeneration

• Promoting and investing in the physical assets of Staffordshire to develop vibrant and sustainable town centres, market towns and surrounding rural villages

• Addressing economic exclusion by increasing employment rates in the most deprived communities and groups

**Worcestershire**

Worcestershire shares with South Warwickshire the same key sub-Regional housing market characteristics of high prices, high demand and acute affordability problems. Worcestershire has experienced significant economic change and the towns of Kidderminster, Redditch and Worcester have been identified as Local Regeneration Areas where the aim is to improve their longer term economic prospects.

In the past, the North of the County (e.g. Redditch, Bromsgrove, and Droitwich) saw rapid residential growth. Today growth is now intended to be focused in ‘Settlements of Significant Development’ which represent towns that are capable of balanced and sustainable growth. Within Worcestershire, two such towns have been designated – Worcester City and Redditch. The historic cathedral city of Worcester forms one of the West Midlands ‘New Growth Points’ and will act as a sub-regional focus for longer term growth in the County.

Outside of Worcester, further development in the County will be focused within other larger settlements and market towns acting as strategic locations for housing and employment growth.

Key investment priorities in the sub-area include:

• Building on the area’s strengths in business clusters to increase the levels of employment in technology-driven, knowledge based firms

• Revitalising the industrial estates to ensure that an abundant supply of serviced employment land fully meets the requirements of the market/and or employment sectors targeted for growth

• Meeting the needs of new, growing and incoming businesses in market towns and cities by ensuring an appropriate supply of serviced land and premises

• Enhancing the role of the sub-region’s hierarchy of cities and shire towns, larger towns such as Kidderminster and Redditch and Market towns as sustainable settlements providing access to employment, skills development, enterprise support, housing and services
Supporting investment in transport and technological infrastructure to overcome barriers to access to services and opportunities

**Shropshire and Herefordshire- the Rural West**

The Counties of Shropshire and Herefordshire make up the Rural West of the region. Compared to the rest of the West Midlands, the population of the Rural West is sparse and is generally accommodated in a range of different sized settlements in the form of the two sub-regional centres of Hereford and Shrewsbury, market towns, villages and hamlets.

The rural west has suffered economically as traditional rural industries and services have declined. A key challenge therefore is to secure a rural renaissance of both key settlements and the areas of countryside which surround them as recognised by the designation of a Rural Regeneration Zone over much of the area.

The cathedral City of Hereford and Shrewsbury each act as a sub-regional centres for an extensive surrounding hinterland. In both cases there are significant limits on the existing transport capacity, which will need to be overcome if each centre is to accommodate major new development as ‘Settlements of Significant Development’.

Outside of these two centres development will be focused within key market towns acting as strategic locations for balanced housing and employment growth.

Key investment priorities in the sub-area include:

- Building on the area’s strengths in business clusters to increase the levels of employment in technology-driven, knowledge based firms
- Revitalising the industrial estates to ensure that an abundant supply of serviced employment land fully meets the requirements of the market and or employment sectors targeted for growth
- Meeting the needs of new, growing and incoming businesses in market towns and cities by ensuring an appropriate supply of serviced land and premises
- Enhancing the role of the sub-region’s hierarchy of cities and shire towns, larger towns and market towns as sustainable settlements providing access to employment, skills development, enterprise support, housing and services
- Supporting investment in transport and technological infrastructure to overcome barriers to access to services and opportunities
- Developing business investment in skills through links with major developments such as the Edgar Street Grid

**Travel Movement Maps**

In order to give a visual representation of travel movements in the West Midlands, three maps have been included.

**Figure 3.1 Journey to Work Movements**

This map, extracted from data in the 2001 census, shows in a “spider” diagram the 50 largest journey to work movements in the Region; these are primarily related to the principal population centres.

**Figure 3.2 Travel Patterns Within Major Areas**
This map, again using 2001 census data, shows in pie chart form the modal split of journeys to work wholly contained within individual main urban areas and districts. This is helpful in comparing the local use of public transport across the region.

**Figure 3.3 Travel Patterns Associated with Major Areas**

This map shows, in pie chart form, the modal split of all journeys to work travelling from all locations to individual main urban areas and districts. This is helpful in comparing the local use of public transport across the region. Again the data is drawn from the 2001 census.

**Key Strategic Transport Issues**

The West Midlands benefits from its strategically important position in the centre of the country with road, rail, port and airport provision providing easy access to neighbouring regions, the rest of the UK and Europe, and beyond.

**Highways Network**

The West Midlands is at the centre of the national road network with important north-south road links via the M5, M6 and M40, with the M6 Toll providing relief to the M6 within the West Midlands conurbation. There are also good road links between the Region and the neighbouring East Midlands via the M69, M42 and A38. Congestion and journey time reliability are significant issues for the SRN, particularly in the conurbation. Despite proposed infrastructure investment these pressures are likely to increase with the growth in road-based freight and commuting trips.

The country’s first Active Traffic Management (ATM) pilot scheme is situated on the M42 between Junctions 3A and 7. This includes variable speed limits and the controlled use of the hard shoulder by all traffic.

**Rail Network**

The West Midlands rail network is key to the performance of the national system. Birmingham’s New Street Station is a major hub in the UK’s passenger rail network (including the West Coast Main Line and Cross Country routes), but currently suffers major capacity problems. As part of the recent rail High Level Output Statement, the Department for Transport has committed funding of £128m towards the rebuilding of New Street Station to meet current and future predicted levels of passenger demand. The new West Midlands Franchise operated by Govia London Midland is committed to increasing capacity and introducing new rolling stock on key commuter corridors into Birmingham and to providing new inter-regional services on the West Coast Mainline (M6 / M1 axis) from 2008. The West Coast franchise operated by Virgin Trains will increase frequencies on the West Midlands to London route in the same timeframe.

**Airports**

Two airports serve the region. A major airport at Birmingham provides domestic, European and intercontinental services and a smaller airport at Coventry provides European services.

Birmingham International Airport (BIA) is to the east of Birmingham, adjacent to M42 Junction 6 and close to the M6. BIA is a key national and regional asset, currently handling around 9 million passengers per annum (mppa). In December 2007 the airport published its master plan which indicated that by 2030 it would be carrying approximately 27mppa. Such expansion would affect traffic flow on the M42 in particular. The Airport owners have stated their policy is to work closely with the Highways Agency to develop a robust strategy for improving surface access to the airport.
Coventry Airport previously served a specialist role within the region, catering for business aviation, airmail and some freight transportation. Proposals for a new terminal capable of handling up to 2mppa were rejected by the Secretary of State following a Public Inquiry. This is subject to an appeal.

**Ports**

Although the West Midlands has no ports within the region access to them is dependant on the Strategic Road and rail networks that provide links to other regions. The Highways Agency has been involved in the development of the Regional Freight Strategy that encourages the coordination of freight policies with other regions to ensure sustainable long distance movement of goods to destinations including ports.
Figure 3.1 50 largest Journey to Work Movements

2001 Journey to Work Census Data Source: National Statistics
Note: Destinations are grouped into local authority areas. The trips internal to the local authority districts are excluded. Trips shown as if travelling on the left hand side of the road from place of residence to place of work.

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Figure 3.2 Travel Patterns within Major Areas
Figure 3.3 Travel Patterns to and from Major Areas
Figure 3.4 Locations of Railway Stations, Ports and Airports
4. The West Midlands Strategic Road Network

Introduction

The region has a typically hierarchal roads system. Motorways and trunk roads, administered by the Highways Agency are generally referred to as the Strategic Road Network (SRN). Other important routes, in particular the remainder of the Primary Route Network are managed by Local Highway Authorities.

During the past decade high level studies have been carried out into the performance of the transport network; multi-modal studies, assessing all transport modes to develop sustainable long-term solutions to problems, and road based studies, examining road travel problems. These have been supplemented at various levels by much other work which form the basis for the management and improvement of the network.

This section describes the road network and the relevant transportation studies that have been carried out.

Road Network

Tern

The Trans-European Road Network (TERN) is an extensive long-distance network across Europe, including parts of England’s SRN, established to assist the movement of goods and people within the internal market and to support economic growth. TERN routes within the region are shown in Figure 4.1.

Strategic Road Network

The SRN in the region is shown in Figure 4.2, with comparative statistics of road lengths set out in Table 4.1.

<table>
<thead>
<tr>
<th></th>
<th>Motorway</th>
<th>Rural Trunk</th>
<th>Urban Trunk</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Midlands</td>
<td>474</td>
<td>382</td>
<td>29</td>
</tr>
<tr>
<td>England</td>
<td>2,992</td>
<td>4,022</td>
<td>308</td>
</tr>
</tbody>
</table>

Table 4.1 Trunk Road and Motorway: Kilometres (2005)

Local Authority Roads

In some regions, parts of the non-core trunk road network identified in the 1998 document Roads for Prosperity, are due to be transferred to Local Highway Authority control. A number of routes have now been transferred and the HA is negotiating with Local Highway Authorities the transfer of the remaining routes. The aim is to complete this process by summer 2008. However, as a new initiative in the “08” version of this report, information about the LHA administered Primary Route network is now included. A map showing the LHA administered Primary Route network is shown in section 6 Figure 6.1.

The roads awaiting transfer are:

- A5 from Junction with A38 to M6 Junction 12
- A38 from Junction with A5 at Weeford to Junction with A4097 at Minworth (Birmingham)
- A456 from M5 Junction 3 to A449 at Kidderminster
Transportation Studies

In 1999 the Government Offices in partnership with Regional Planning Bodies began the programme of Multi-Modal Studies (MMS). These looked into issues relating to the rail and bus networks as well as private road transport, and also access to ports and airports. The size and complexity of studies varied greatly. Some considered area wide transport networks and others focused on local problems of congestion. Where a full MMS was not necessary, Road Based Studies (RBS), examining only road travel, looked for solutions to problems on the highway network. The emphasis was always on solutions that made best use of existing road infrastructure, and took full account of safety and environmental considerations. The location of the Multi-Modal and Road Based study areas in this region are shown on Figure 4.3.

Multi-Modal Studies

The studies relevant to the West Midlands are:

- **West Midlands Area Multi-Modal Study (WMAMMS)** - WMAMMS was an area-wide study of a major conurbation and as such was not limited to investigating mode shift within a single traffic corridor. The final report of the study, published in October 2001, recommended implementation of the following major strategic highway schemes and measures affecting the SRN:
  - M54 to M6/M6 Toll Link
  - Western Bypasses of Stourbridge and Wolverhampton
  - M42 Widening between Junctions 3 and 7
  - M42 Junction Improvements, Junctions 6 and 7
  - Active Traffic Management (ATM) on the Birmingham motorway box sections of the M5, M6 and M42 motorways

The Secretary of State for Transport’s formal response to WMAMMS was announced in July 2003. It rejected the recommendation for western bypasses of Stourbridge and Wolverhampton and any widening of M42 was deferred pending the outcome of the Active Traffic Management pilot scheme between Junctions 3A and 7.

- **West Midlands to North West Conurbations Multi-Modal Study (MidMan MMS)** - The aim of the MidMan MMS was to develop an over-arching strategy for the M6 corridor between the West Midlands and North West (J11A - J20). The final report was published in May 2002. Recommendations included widening of the M6, with associated junction improvements, and the introduction of innovative traffic management techniques and/or demand management.

- **West Midlands to East Midlands MMS** - The West Midlands to East Midlands MMS (W2EM MMS), which reported in July 2003, looked at transportation problems and recommended a package of transportation-based intervention measures. For the trunk road network, the study looked at congestion problems on the M69, A5, M42/A42 and A38 routes. Recommendations included improving sections of the A5 and upgrading parts
of the A38 to 3-lane dual carriageway. The schemes are being considered by the Region for future inclusion in the Regional Funding Allocation.

Road-Based Studies

Road-Based Studies (RBS) did not model multi-modal travel effects, but assessed predominantly car-based travel where a full MMS was not deemed necessary. The studies relevant to the West Midlands are:

- **M40 Junction 15 (Longbridge) RBS**: The final report was published in September 2002. It has resulted in a scheme to address the capacity and operational issues affecting the key M40/A46 junction. This was added to the Government’s Targeted Programme of Improvements for delivery within the “10 year Plan” period.

- **A5/A483 Shrewsbury to Chester RBS**: The final report was published in April 2002. The recommendation for proposed dualling was considered unachievable within a practical timescale. This led to a further study of the route from Queens Head to Wolfs Head from which a scheme has been identified and is being considered for inclusion in the RFA. A further study of A49 Bayleys Roundabout identified small scale improvements to improve the operation of the Junction. This work is due to be completed in Spring 2008.

Route Management Strategies

The Agency’s Route Management Strategy (RMS) programme was introduced to develop a strategic approach to the maintenance, operation and improvement of the trunk road and motorway network on a route by route basis. Several RMSs have been completed for routes in this region and the recommendations from these are being incorporated into delivery plans. Completed RMSs include:

- M1-Birmingham (comprising sections of the M6/M45/A45/A46/A5)
- A50/A500 (M1-M6)
- A49 Ross-on-Wye to Shrewsbury
- A5/A483/A458 Shrewsbury-Welshpool-Chester
- A5/M54/A449/A5 Shrewsbury to M6
- A46/M5/M50/A40 Coventry to Welsh Border
- M6 Junction 11a to Junction 20

Schemes in the Major Schemes Programme and Emerging Schemes

MMSs and RBSs assisted in the identification of required improvements to the SRN, taking into account the contribution that could be made by other modes of travel. Those schemes identified as priorities are being progressed, and funded either nationally (M40 Junction 15) or through the Regional Funding Allocation (RFA) process.

Important transport models were built for these studies and some of these have potential as a basis for future area wide transportation modelling, which may be undertaken by the Highways Agency and its partners to inform regional investment decisions. Such improvement schemes are increasingly expected to reflect national and regional priorities with particular attention to the priorities emphasised in the Eddington Study recommendations.
All schemes in the region that are in or are under consideration for inclusion for entry into the Major Schemes Programme (over £5 million, and formerly known as the Targeted Programme of Improvements [TPI]), are shown in Figure 4.4 and listed in Table 4.2.

Funding decision for the M40 Junction 15 in the West Midlands Region are considered at national level, as these routes are designated as being of predominantly national and international importance. For the remainder of the network, both the Trunk and the Local Highway Authority road, future decisions regarding major (>£5m) schemes will take account of advice from regional planning bodies through the RFA process.

During 2007, following the Nichols Review, the Highways Agency (working with DfT) have reviewed the structure of the Major (>£5m) Schemes Programme. The previous terminology of Targeted Programme of Improvements (TPI), has been replaced by the “Programme of Major Schemes”.

Note:

Following the Nichols Review of the Highways Agency the cost of all major road schemes costing more than £5m are being reviewed in accordance with new estimating procedures. The revised cost estimates will be taken into account by Ministers in their decisions on the programme of schemes on the national strategic road network to be taken forward following the 2007 Comprehensive Spending Review. The revised cost of schemes on the regional strategic road network will be taken into account by the regions when they next review their recommended programmes of schemes funded from Regional Funding Allocations for major transport schemes. If necessary, an amendment to this section of the plan will be issued to reflect any changes which may occur as a result of these processes.

Table 4.2

<table>
<thead>
<tr>
<th>Major Schemes that have entered the Major Schemes Programme</th>
<th>Description</th>
<th>Assumed Opening Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>National</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M40 Junction 15 (Longbridge Bypass)</td>
<td>New D2 bypass of M40 Junction 15</td>
<td></td>
</tr>
<tr>
<td>Regional</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A45/A46 Junction Improvements</td>
<td>D2 underpass at Tollbar End roundabout and widening A45 to D3 between Tollbar End and Stonebridge roundabout.</td>
<td>2006/07 – 2008/09*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Schemes in preparation for Programme entry</th>
<th>Description</th>
<th>Assumed Opening Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>National</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M54 to M6 Toll Link</td>
<td>New link road</td>
<td></td>
</tr>
</tbody>
</table>

* - taken from Annexes A and B of Secretary of States letter dated 06 July 06.

Note: These schemes are being actively progressed as their likely timing for start of works is early enough to warrant continued preparation at the current time.
Figure 4.1 TERN Routes in the Region
Figure 4.2 The West Midlands Strategic Road Network
Figure 4.3 Multi-Modal and Road Based Studies

Key
- Motorways
- Trunk Roads
- Government Office Boundary
- Multi-Modal Study
- Road Based Study

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Figure 4.4 Major Scheme locations - November 2006

Key
- Green: Under construction
- Orange: In preparation
- Blue: Motorway
- Red: Trunk Road
- Dotted: De-Trunked Road
- Urban

Schemes are removed from the list and the map on completion. Only Major Schemes which are currently under construction, or in preparation, are included.
5. The Environmental Dimension

Introduction

Protecting the environment has always been a high priority for the Highways Agency, and we published our first Environmental Strategic Plan in 1996. The current Strategic Plan sets out the key environmental objective to “minimise the impact of the trunk road network on both the natural and built environment”. This approach is reflected in the National Network Report.

The Highways Agency will continue to operate and manage its network and land with regard to biodiversity, air emissions, noise, waste, water, landscape and townscape, and heritage. The HA adheres, for example, to air quality targets that are more stringent than the legally binding EU standards. It also continues to implement projects that reduce emissions, especially those within Air Quality Management Areas, and it may not progress a scheme that would produce or worsen a compliance problem. The Highways Agency will also continue to deliver a programme of noise reduction measures across the region’s network. Procurement and monitoring are an important part of this environmental management strategy.

Beyond its own programmes and management regime, the Highways Agency is also fully engaged in the spatial planning processes which have so much influence on environmental change. The relationship between transport and spatial planning is critical to the Highways Agency’s contribution at the regional level to national sustainable development objectives.

The Government has put tackling climate change at the centre of what is expected from good planning. The draft Planning Policy Statement (PPS) on Planning and Climate Change sets out how planning, in providing for the new homes, jobs and infrastructure needed by communities, should help shape places with lower carbon emissions and which are resilient to climate change.

Locating development to reduce the need to travel, and supporting integrated development will assist in reducing emissions, and the Highways Agency has long been supportive of this policy objective.

The Highways Agency’s participation in all stages of the planning process – Regional Spatial Strategies, Local Development Frameworks and development control – is described in Section 2. DfT circular 2/2007 sets out the basis for this engagement, and this also includes national policy on the environmental impact of development:

• The Highways Agency will seek to ensure that the mitigation of the environmental impact of highway works resulting from new development is in line with current guidance

• When a breach of statutory environmental limits is thought likely to occur on the SNR, it is the Secretary of State’s responsibility to take measures to avoid the breach. This may include directing that planning permission not be granted

• Promoters of development which would cause a predicted breach of environmental standards through the creation of additional traffic on the SRN must develop proposals to mitigate the environmental impact of the development

• The developer will ensure that sufficient environmental information is provided at all stages of the planning process to satisfy authorities that environmental impacts have been comprehensively considered, and that full mitigation measures have been included

The Regional Dimension

Whilst the international and national context is important, it is at the regional and local level where environmental impacts can be measured, assessed, and addressed. In some instances, mitigation of detrimental impacts may be required and be satisfactorily achieved,
but in others the HA will conclude that it has no other option than to direct that planning permission not be granted.

Environmental considerations vary enormously, with some, such as air quality and noise, liable to constant change from a wide-range of unpredictable influences. Other environmental factors, such as landscape and heritage, are more stable. In terms of the impact on the SRN, and the current and future performance of the network as set out in this RNR, the broad issues in this region can be summarised below:

**Policy context**

The West Midlands Region contains a wide variety of environmental assets, both natural and cultural. Conserving the quality of the environment and prudent use of natural resources are key elements in the achievement of sustainable development and the implementation of the West Midlands Integrated Regional Strategy – ‘A Sustainable Future for the West Midlands – Regional Sustainable Development Framework’ (RSDF) and the West Midlands Regional Spatial Strategy.

A number of the RSDFs thirty three objectives relate to the inter-relationships between the demand for travel and its impact on the quality of the environment:

- Increasing the use of public transport, cycling and walking as a proportion of total travel in order to reduce road traffic congestion, pollution and accidents
- Ensuring development is primarily focussed in the major urban areas, and makes efficient use of existing physical infrastructure and reduces need to travel, especially by the private car
- Minimise the Region’s contribution to the causes of climate change by reducing emissions of green house gases from transport, domestic, commercial and industrial sources
- Value, protect, enhance and restore the Region’s environmental assets, including the natural, built and historic environment and landscape
- Minimising air, water, soil, light and noise pollution levels and create good quality air, water and soils

The West Midlands Regional Spatial Strategy sets out the contribution that spatial planning in the Region can make to protecting and enhancing its environmental assets and addressing climate change, by enabling and promoting measures to reduce emissions, and ensuring new developments are adaptable to the changing climatic conditions likely to be experienced during their lifetimes.

**The HA and its Regional Role**

This policy context sets the parameters and the basis on which the Highways Agency can assist with meeting wider environmental goals. The Highways Agency can contribute through its:

- role in managing the Strategic Road Network and associated operational land
- investment programme in highway improvement schemes
- engagement in the spatial planning process

The environment is a fast-changing area of natural and man-made factors within a fluid framework of public policy and regulation. Information, guidance and advice is widely-available from a variety of sources. The Highways Agency needs to be aware and informed of
both detailed matters and the wider picture in order to focus its attention and optimise it
ccontributions. There are six specific areas of interest that form its own Environmental
Strategic Plan, and a brief resume of key issues within this region is set out below.

**Air Emissions Management**

Although air quality in the region is improving, Local Authorities with poor air quality may need
to declare Air Quality Management Areas (AQMA) and to produce action plans to reduce air
pollution to meet national standards.

The Highways Agency addresses air quality issues as they relate to the SRN through its
engagement with both the development control and development plan processes. It will also
support the delivery of the PSA target for air quality by seeking opportunities to implement
projects that reduce emissions in AQMAs. In the West Midlands AQMAs have been declared
for the following areas:

- Birmingham
- Bridgnorth
- Bromsgrove
- Coventry
- Dudley
- Herefordshire
- North Warwickshire
- Oswestry
- Rugby
- Sandwell
- Shrewsbury and Atcham
- South Staffordshire
- Stoke-on-Trent
- Walsall
- Warwick
- Wolverhampton
- Wyre Forest

**Noise Management**

Tranquillity is a fundamental element of a high quality of life. Exposure to constant
background noise, often from traffic, can be a cause of stress, and therefore has health
implications. The Highways Agency has a role to play in assessing and mitigating the impact
of noise from the SRN on existing or proposed development.
It is now the Highways Agency’s policy to install quieter surfacing on all new roads and when maintenance is carried out, and to implement measures where noise is a particular problem for local communities.

**Waste Management**

The impact of waste management on the SRN is another consideration for the Highways Agency in its engagement with the planning system. There is a need for the more efficient use of resources and for a reduction in the amount of waste generated. Sustainable construction initiatives should be adopted in the future to enable this. Overall, the region is self-sufficient in waste treatment and disposal facilities although performance locally with regard to waste minimisation, reduction and recycling varies widely.

**Water Management**

The impact of waste management on the SRN is another consideration for the Highways Agency in its engagement with the planning system. There is a need for the more efficient use of resources and for a reduction in the amount of waste generated. Sustainable construction initiatives should be adopted in the future to enable this. Overall, the region is self-sufficient in waste treatment and disposal facilities although performance locally with regard to waste minimisation, reduction and recycling varies widely.

**Landscape and Townscape**

As elsewhere, the landscape of the West Midlands makes an important contribution in terms of tourism and recreation, and provides the framework for biodiversity and a record of the Region’s historic development.

The Region’s “countryside character”, “natural areas”, and “historic landscapes” are defined by Natural England and English Heritage, and embrace the wide range of natural, cultural and historic elements of the landscape together with more aesthetic and qualitative aspects such as tranquillity. The assets include several Areas of Outstanding Natural Beauty (AONBs), numerous listed buildings, archaeological sites, conservation areas and sites of special scientific interest (SSSIs).

The Highways Agency, in considering the current and future network, and in engaging with the planning system, must also take account of the relationship between the SRN and the surrounding landscape and townscape. It will seek opportunities to deliver improvements to the SRN by implementing projects to enhance the landscape.

**Heritage**

The Highways Agency acknowledges that within the West Midlands there are many historical and archaeological assets that contribute to the distinctive urban, industrial and rural character of the region. There are nearly 1500 scheduled monuments, over 34,000 listed buildings, 148 EH Registered Parks and Gardens and 6 historic battlefields. The region contains the internationally important industrial World Heritage Site at Ironbridge, important prehistoric sites along the M40 near Warwick and elsewhere, historic houses, such as the medieval Stafford Castle within sight of the M6, historic parks such as “Capability” Brown’s work at Croome Park bisected by the M5 in Worcestershire, and battlefields such as the Civil War battlefield at Edgehill near the M40 in Warwickshire. These provide a link to the past and contribute to regional distinctiveness in terms of culture, settlement, economy and landscape. The presence of high quality historic resources, both urban and rural, has been shown to contribute not just to quality of life but also to the economic well being of communities.

The RES recognises that the historic environment is an irreplaceable resource that could potentially be eroded by a number of factors, including development and road construction unless they are planned with care. The strategic planning aspirations for the West Midlands
will require transport links and these will need to be taken forward using a method that minimises any potential adverse impacts on cultural heritage assets and important historic landscapes. Roads can also serve a positive role by contributing to the accessibility of cultural heritage resources, which is another planning aspiration.

Some roads and transport features are historic assets in themselves, such as the canal system and “Spaghetti Junction”, and are representative of the industrial development that marks out the unique character of the region. The forthcoming publication of the West Midlands Regional Research Agenda will establish the priorities for cultural heritage activities, and guide responses to development proposals and associated road schemes.

**Introduction**

There are three broad objectives for the SRN: improving reliability and reducing congestion; improving safety across all transport modes; and reducing the impact of transport on the environment. The Highways Agency, as the DfT’s delivery partner, has responsibility for meeting the Public Sector Agreement (PSA) targets in these areas. Achievement of the PSA target for journey time reliability will be through the implementation of a strategy which includes improved management of demand, traffic incident and maintenance, and better information. The Highways Agency also has a road safety strategy in order to meet that PSA target. These strategies are described in Section 8.

Whilst safety is the foremost concern to the Highways Agency, congestion on the SRN has significant adverse consequences for the national economy. The West Midlands Metropolitan Area Congestion Management Study, “Gridlock or Growth – Choices and Challenges for the Future” (September 2006) estimates that the annual cost to the West Midlands business community, due to lost time and additional fuel costs, amounts to some £2.2bn a year.

**Improving Reliability; Measuring Delay**

Delays to users of the SRN arise in various ways, including congestion from heavy demand, incidents, and maintenance works. Monitoring of congestion and reliability is undertaken using the MIDAS system (see Section 8) and automatic number-plate recognition cameras.

Maintenance of the network costs nationally some £800 million (2007/08) per annum. This work, informed by a comprehensive inspection regime, enables the development and delivery of a cost-effective maintenance programme. It is carefully planned in the interests of safety and minimising congestion. The National and Regional Traffic Control Centres, Traffic Officers, and information technology add to the improvement of reliability and safety, as set out in Section 8. The PSA target for journey time reliability will be achieved if the average vehicle delay associated with the 10% slowest daytime journeys on each of the defined routes on the SRN is lower in the current year than in the baseline period (August 2004-July 2005). The PSA ‘congestion’ target is derived from specific journeys across the SRN nationally. Some of these routes are within this region; as shown in Table 6.1.

<table>
<thead>
<tr>
<th>Journey Route</th>
<th>Start</th>
<th>End</th>
<th>Route Length (km)</th>
<th>Length (km) in region</th>
</tr>
</thead>
<tbody>
<tr>
<td>A5</td>
<td>M1 J18 - Rugby</td>
<td>A38 Lichfield</td>
<td>58</td>
<td>58</td>
</tr>
<tr>
<td>A38</td>
<td>Birmingham</td>
<td>M1 J28 – Mansfield</td>
<td>85</td>
<td>54</td>
</tr>
<tr>
<td>A49</td>
<td>A40 Ross-on-Wye</td>
<td>Shrewsbury</td>
<td>103</td>
<td>103</td>
</tr>
<tr>
<td>M6</td>
<td>M1 J19 - Rugby</td>
<td>J8 West Bromwich</td>
<td>63</td>
<td>63</td>
</tr>
<tr>
<td>M6</td>
<td>J8 West Bromwich</td>
<td>J20 Warrington</td>
<td>105</td>
<td>72</td>
</tr>
<tr>
<td>M40</td>
<td>J10 Bicester</td>
<td>M42 J3a</td>
<td>64</td>
<td>30</td>
</tr>
<tr>
<td>M42</td>
<td>J1 Bromsgrove</td>
<td>J7 – For M6</td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td>M42/A42</td>
<td>J8/9 Sutton Coldfield</td>
<td>M1 J23a – Castle Donnington</td>
<td>51</td>
<td>26</td>
</tr>
<tr>
<td>M45/A45</td>
<td>M1 J17 - Rugby</td>
<td>A45 Coventry</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>M54/A5</td>
<td>M6 J10a Wolverhampton</td>
<td>A5 Oswestry</td>
<td>88</td>
<td>30</td>
</tr>
<tr>
<td>M69</td>
<td>M1 J21 Leicester</td>
<td>M6 J2 Coventry</td>
<td>26</td>
<td>26</td>
</tr>
<tr>
<td>A5</td>
<td>M1 J18 - Rugby</td>
<td>A38 Lichfield</td>
<td>58</td>
<td>58</td>
</tr>
<tr>
<td>A38</td>
<td>Birmingham</td>
<td>M1 J28 – Mansfield</td>
<td>85</td>
<td>54</td>
</tr>
<tr>
<td>A49</td>
<td>A40 Ross-on-Wye</td>
<td>Shrewsbury</td>
<td>103</td>
<td>103</td>
</tr>
</tbody>
</table>

Table 6.1 Congestion Target Monitoring Routes in the Region
Delay information along these routes gives an indication of how the Highways Agency is progressing towards its objectives. The final assessment to determine if the target has been reached will be undertaken after the monitoring period, which ends in July 2008.

The Government has announced a new PSA delivery target to be effective from April 2008, including PSA Delivery Agreement 5: Deliver reliable and efficient transport networks that support economic growth.

This means that, with a rising demand for travel, priority will be given to improvements in the reliability and capacity of those parts of the transport system which are critical to supporting economic growth.

Of the four PSA indicators, indicator 2, will be the responsibility of the Highways Agency to deliver.

Indicator 2: Journey time reliability on the strategic road network, as measured by the average delay experienced in the worst 10 per cent of journeys for each monitored route.

Nationally, the current reliability target covers 91 out of 103 routes where data quality are sufficiently high for the indicator to be calculated with confidence. We expect to see a new baseline set, with at least as many routes for monitoring reliability in future years.

The measure can be thought of as the delay you typically would experience one journey in ten. It is most useful when looking at change over time, since it reflects the change in journey time reliability.

Levels of road traffic and congestion are continuously measured. The most recently available full-year of data (2006) is summarised in Figures 6.1 to 6.4.

Selected two-way daily traffic flows for the Primary Route Network (SRN and other major local highway authority roads) are illustrated on Figure 6.1.

**Delay and Congestion**

Note - Delay and congestion are caused by varying circumstances and range from total blockage to a reduction in free flow speed. Equally, the effects on traffic can be measured in various ways. The following three figures, 6.2, 6.3 and 6.4 indicate the level of service provided by the network from different perspectives, and allow a wide view of network performance.

Figure 6.2 shows the total delay per year, in vehicle hours based on the Highways Agency Traffic Information Service (HATRIS) data, on each of the discrete road lengths in the region. It is a broad measure, but gives a visual indication of where the economic costs to the region are incurred on the SRN due to congestion and incidents in 2006. The actual experience of individual drivers might be rather different from that portrayed in Figure 6.2, which shows the largest values where the greatest volume of vehicles is being delayed as this is where the economic effects are most felt.

From the figure, particular locations where regular high levels of stress lead to economic costs can be selected. Currently the less transport-efficient parts of the SRN in the West Midlands are:

- M5 – between Junction 2 and Junction 8 of the M6
- M5 – between Junctions 4a and 6
- M6 – between Junctions 2 and 16
- M42 – between Junctions 2 and 10
- M50 between junction 3 and 4, particularly the eastbound carriageway
- A40 south of Ross-on-Wye from its junction with the A4137 to the Welsh border
- A46 south of Warwick
- A46 east of Coventry
- A49 at various locations within Hereford and south of Hereford to the A49/A466 junction

For individual drivers it is their daily experience that registers, and that is dominated by flow breakdown and by over-capacity at junctions. Figure 6.3 illustrates the total observed delay (2006) divided by the traffic volume using that road length to produce a delay, in seconds, for each vehicle. Because the delay is summed over the whole day, peak hour delays at some critical junctions may be diluted by improved performance in off-peak hours. Such information can be used to determine where individuals might perceive the delays on the SRN to occur. Drivers may choose to avoid those routes with high delays per vehicle.

Drivers on the SRN in the region are familiar with the range of conditions shown in Figure 6.3, and avoidance of the locations with large delays, particularly at peak time, is a common phenomenon. Particular (perceived) problem locations for commuters and other individuals are:

- M6 – between Junctions 3a and 4 for the M42 and A446
- M6 – between Junctions 8 up to and including Junction 10 for Walsall & Wolverhampton
- M6 – between Junctions 4a and 5 for Sutton Coldfield
- M6 – between Junctions 7 Perry Bar and 8 for the M5
- M42 – between Junctions 4 for Shirley and 7 for M6 and A446
- A49 at various locations within Hereford and south of Hereford to the A49/A466 junction
- M50 between junction 3 and 4, particularly the eastbound carriageway
- A40 south of Ross-on-Wye from its junction with the A4137 to the Welsh border
- M50 M5 to Junction 1
- A46 from A435 to M5
- A46 from M40 to A439
- A46 from M6 Junction 2 to M40

An alternative view of traffic conditions is the concept of ‘stress’. In the simplest terms, stress is the daily flow divided by the daily capacity. Flow information is available from a series of electronic counters located across the network, from which daily flow (Annual Average Daily Traffic Flow or ADDT) can be calculated. Because levels of traffic vary throughout the day, the daily capacity of the road is best determined by the maximum sustainable traffic flow in the peak hour.

Some roads are congested for longer than just the morning and evening peak hour. In these cases, stress levels can be described as being “more than 100%”, and, as would be
expected, such roads are busy for a substantial proportion of the day. Figure 6.4 shows stress levels (2006 figures) of each discrete link of the SRN in six colour bands as follows:

- Less than 90%
- 90% to 100%
- 100% to 120%
- 120% to 130%
- 130% to 150%
- more than 150%

As some roads can be busy outside of the peak hours, it is possible for a road’s “stress” to exceed 100%. Where such high stress values occur, the roads are likely to be busy for substantial proportions of the day.

The stress parameter is best-related to the road sections between the major intersections; they are less useful for information about specific junctions. What they bring out better than any other measure are:

- the ‘ambiance’ of the journey experience
- the ‘reliability’ of particular routes; mainly because the occurrence of incidents is clearly related to a route’s stress levels

For the West Midlands, the road-lengths with high daily stress levels in 2006 were:

- M6 – between Junctions 3a and 4
- M6 – point between Junctions 8 and 9 up to and including Junction 10
- M6 – between Junctions 4a and 5
- M6 – between Junctions 7 and 8
- M42 – between Junctions 4 and 7

From these three measures can be derived an overall appreciation of the affect that high traffic volumes and incidents has upon the SRN in the West Midlands. These can be related to future stress (see Section 7) and programmed improvement schemes listed in Table 4.2. This shows where congestion is encroaching upon network capacity but improvement is not under consideration. This vividly and graphically portrays the need for a new philosophy. The policy is to no longer improve roads to add capacity on a ‘predict and provide’ basis, but the issues will not go away. It will need the application of all available techniques to enable the SRN to meet the twin needs of the regional growth agenda and that of the national economy. Sections 7 and 8 look more closely at how the network is expected to perform in the future and the means available to the Highways Agency to improve upon this.

**The Economic Costs of Congestion in the West Midlands**

The seven Metropolitan Authorities in the West Midlands and the PTA commissioned the study, “Gridlock or Growth – Choices and Challenges for the Future” (September 2006). Analyses of congestion were undertaken for the Strategic (motorway and trunk road) network and for urban areas in the region. They showed that:
• Total delay is greatest on the M6 and M42 primarily due to the combination of length of trips and volume of traffic (particularly on the M6)

• Substantial total delays are also experienced on the M5, A5, and A38

• Based on 2001 data, the transport network of the West Midlands urban area carries a total of 5.2m trips on an average weekday

• Within the West Midlands metropolitan region, total delays are the highest in Birmingham City Council’s area which accounts for 37% of delays. Delays are somewhat lower but still significant in the other metropolitan areas

• Between 1996 and 2006 in the West Midlands metropolitan area Average car ownership increased from 40 cars to 45 cars per 100 residents with similar increases in other areas

• The CBI estimate that the annual cost to the West Midlands business community is £2.2bn a year

• Poor air quality is a serious problem in most of the metropolitan districts and in regional city / town centres. The majority of air quality management areas in the region have been declared to tackle traffic generated emissions

Congestion imposes a real cost on many aspects of life in the West Midlands. The CBI has estimated that the annual cost to the West Midlands business community, due to lost time, additional fuel costs and general stress, amounts to some £2.2bn a year. This additional cost affects the costs of goods and services and the loss of competitive advantage to our businesses. The increased fuel costs for road vehicles due to congestion alone have been estimated to be £0.9bn per annum.
Figure 6.2: Observed Delay Total Vehicle Hours Delay 2006
Figure 6.4: Observed Stress 2006
7. Network Performance: The Future

Introduction

The Highways Agency's objectives for improving reliability and safety whilst addressing congestion and environmental concerns, necessitates considered and long-term investment together with the intelligent use of ‘intervention measures’ (see Section 8). The approach requires a firm understanding of the dynamic policy and spatial context (see Sections 2 and 3), as well as a sound forecasting methodology. The conclusions of this report are therefore based on an assessment of network performance in 2016 and 2026, as set out in the RNR spreadsheet forecast model, the ‘workbook’.

This uses as much data from detailed forecasting models as possible, but can only provide a generalised rather than detailed indication of network performance. Based on a series of assumptions, the workbook methodology assesses how the network performance will change in 2016 and 2026 on a link-by-link basis as traffic grows in the future and network improvements are carried out. The results are a collation of modelled network performance data based on a mix of observed traffic flows and modelled flows from other sources.

The forecast maps are based on traffic growth contained within TEMPRO 5.3 (April 2006), and are therefore a ‘trend based’ reflection of the future of the network assuming policy ‘status quo’. It should also be noted that the forecasts reflect the policies and initiatives up to May 2007 only, and assumes the implementation of schemes within the major schemes programme. The forecast maps should be seen as a baseline rather than a target.

Forecast Methodology

The SRN has been divided into discrete road lengths, or links, in the Highways Agency’s Traffic Information System (HATRIS). To undertake the traffic growth based on the HATRIS links a spreadsheet model has been developed to project network performance forward into the future. This model takes into account:

- The current network layout and characteristics
- The current network performance
- Traffic levels in the future where forecast by more detailed regional and local models
- Changes in flow due to future developments over and above that expected within the land use assumptions contained within the DfT’s TEMPRO program
- Network characteristics once future road schemes opened
- Changes in flow due to future road schemes
- National and Local traffic growth levels
- Application of fuel and income factors to stated development flows
- Application of traffic growth from base or modelled year to forecast year, and
- Traffic growth restriction to national economically sustainable levels

Where no other data is available the traffic forecast is based on the observed 2006 flows with traffic growth and any appropriate development and road schemes taken into account. Where other detailed traffic models have been run, the traffic forecast is automatically based on this modelled flow in preference to the observed flow. The RNR workbook reflects national traffic
growth models, but permits adjustments to be made where development is higher than expected national growth (i.e. over and above TEMPRO). The process ensures that the development is not double-counted, that is to say the overall growth in traffic (vehicle kilometres) on the trunk road network is constrained.

The programmed road schemes included in the forecast impacts are the committed strategic road schemes within the major schemes programme (see Section 4) and Priority Action Sites and major schemes expected to enter the major schemes programme within the planning horizon. The predicted status of the regional road network with respect to road hierarchy and changes to the number of available lanes by 2015 are included in Figure 7.1.

The model is unable to reflect the impact of the programme of smaller scale safety or congestion schemes that will continue to be developed and implemented over the next twenty years, or the roll-out of the Traffic Officer service. These would be expected to make a positive contribution to overall network performance, and the model outputs may therefore be considered as a ‘worse case scenario’.

The development assumptions are based upon RSS and LDF proposals, and other identifiable from land-use changes that increase pressure on the SRN.

The forecast stress on the network in 2016 and 2026 is shown on Figures 7.1 and 7.2. As with observed daily stress map (Figure 6.4) these future maps present the comparison of the daily traffic flow to the road’s capacity, and show the stress for each individual link. The stress maps are colour-coded into bands as follows:

- Less than 90%
- 90% to 100%
- 100% to 120%
- 120% to 130%
- 130% to 150%
- more than 150%

(It should be noted that a link which is identified as being below capacity in stress terms, may include a junction at or above capacity).
Figure 7.2 Forecast Daily Stress 2026
**West Midlands: Methodology and Forecast**

The following assumptions have been made for the West Midlands region:

**Scheme Assumptions**

The schemes for the ATM on the M42 junctions 3a to 7, the A500 pathfinder project, A5 Weeford to Fazeley, A45/A46 Tollbar End and M40 junction 15 Longbridge Bypass are included within this assessment.

**Development Assumptions**

In the West Midlands region the strategic roads serving Stoke-on-Trent and East Staffordshire are likely to experience growth in excess of TEMPRO data due to the Chatterley Valley (A500) Blythe Bridge (A50) and Branston (A38) developments. Appropriate adjustments have been made to traffic projections.

The forecasting methodology relies on the identification of the junctions at the centre of the most congested sections of the West Midlands strategic road network that act as a restriction on trips. These are at the M5/M6 and M42/M6 junctions. The one-directional link flow approaching on each arm of these junctions was divided by the total flow arriving at the junction to produce a trip distribution. The excess development trips, over and above TEMPRO growth, were then allocated to the approach links over a 10km radius (beyond this distance it is assumed that development flows would be dispersed and subsumed into general traffic growth).

The strategic roads serving the Birmingham City Centre, Coventry, Solihull, Telford and Hereford areas were also identified as likely to experience growth in excess of TEMPRO, due to their location as growth points within the West Midlands region.

The additional flows within the workbook for these areas was balanced by a reduction in the growth factors applied to other districts in order that the total growth for the region equates to the TEMPRO growth forecast for the region.

Additional flows (above TEMPRO) were assumed for the proposed expansion at Nottingham East Midlands and Birmingham International Airports.

**Future Network Stress**

It can be seen from the forecast stress maps where some of the most congested parts of the network, as shown on the observed 2006 daily stress map, have been addressed by the following programmed schemes:

**National**

- Active Traffic Management between Junctions 3a and 7 of the M42
- Targeted Programme of Improvement (TPI) at M40 Junction 15 Longbridge Bypass

**Regional**

- A5 Weeford to Fazeley
- A45/A46 Tollbar End
- A500 pathfinder project in Stoke-on-Trent
By 2016 Figure 7.1 current trends would indicate that the following roads are likely to be more highly stressed:

- M5 between Junction 1 West Bromwich and Smethwick and Junction 16 Worcester
- M6 between Junction 2 Coventry and Junction 16 Newcastle Under Lyme & Crewe
- M40 between Junction 15 Warwick and Junction 3a of the M42
- M42 between Junction 1 Bromsgrove and Junction 3a
- M54 between Junction 1 with M6 Junction 10a and Junction 7 with the A5
- A5 between Junction 10 of the M42 and the A444

Further into the future, by 2026 Figure 7.2, (the ‘future’ date of this round of the planning process) many roads would become even more heavily stressed. The following roads, on current trends, would start to register prolonged busy periods:

- M5 between Junction 1 West Bromwich and Smethwick and Junction 7 Worcester
- M6 between Junction 2 Coventry and Junction 16 Newcastle Under Lyme & Crewe
- M40 between Junction 15 Warwick and Junction 3a of the M42
- M42 between Junction 1 Bromsgrove and Junction 7 with the M6
- M54 between Junction 1 with M6 Junction 10a and the A5 to Shrewsbury
- A5 between Junction 10 of the M42 and the A444
- A38 between Lichfield and Burton upon Trent
- A45 between Junction 6 of the M42 and the A452 Stonebridge roundabout
- A46 Warwick Bypass between Leamington Spa and Kenilworth
- A46 between Junction 15 of the M40 and Stratford upon Avon
- A49 between Shrewsbury and Ludlow
8. The Road Ahead

Introduction

This Regional Network Report for the West Midlands illustrates the role within Government of the Highways Agency, in responding to the challenges of economic growth and climate change. The latest information about the Government’s goals is set out in the Department for Transport’s (DfT) discussion document “Towards a Sustainable Transport System” (2007). This sets out the five goals as:

- to maximise the competitiveness and productivity of the economy (through reliable and efficient transport networks);
- to address climate change by cutting emissions of carbon dioxide (through improvement of the environmental performance of transport);
- to protect people’s safety, security and health (through recognising concerns about crime and the enduring terrorist threat, and the health benefits of cycling and walking);
- to improve quality of life (through reducing negative impacts such as noise and vibration, and enhancing the positives such as access to choice of goods and services); and
- to promote greater equality of opportunity (through enhancing access to jobs, services and social networks)

The goals reflect the specific Government objectives for the period 2008 – 11 as set out in the Comprehensive Spending Review 2007 and for which DfT has been assigned responsibility.

Debate has now commenced over the measures needed to achieve the Government’s five transport goals. Through this RNR, the RNRs for England’s other regions, and its National Network Report (NNR), the Highways Agency joins the debate in respect of the Strategic Road Network.

The Challenge

The Government recognises that improving reliability and tackling congestion on the Strategic Road Network poses a particular challenge against a background of increasing cost and legitimate environmental concerns.

National and regional growth strategies rely on the Strategic Road Network, but their very success, in turn, puts even more pressure on the network. In the West Midlands, the performance of the SRN is vital to unlocking the Regional Assembly’s vision for the region.

The West Midlands central location generates enormous demands on its transport network from commuters, visitors and through traffic. As demonstrated by the figures in Sections 6 and 7, travel demand and pressure for use of the Strategic Road Network is expected to grow significantly in the future, placing even more demand on the region’s transport infrastructure. This is likely to be most severe in and around the regions major urban areas and growth points and along inter and intra-urban corridors linking them and to international gateways. Much of the region is already experiencing high levels of congestion; journey times are increasing and reliability is falling. This will impact on the region’s competitiveness, is already affecting air quality, health and the environment, and could undermine perceptions of the West Midlands as a place to live, work and invest in.

But, the response from the Highways Agency to the challenge is not simply to “predict and provide”. It is a sophisticated mix that starts by promoting development in sustainable locations, and goes on to encourage behavioural change, smart transport choices, demand
management, and the application of technological innovation to the day to day operation of the network. The challenge is getting the balance right at a cost we can afford.

**Safety and Traffic Management**

Cohesive thinking and a willingness to innovate are the hallmarks of the Highways Agency’s approach to meeting this challenge. This can be seen in its measures to improve highway safety and the management of traffic.

**Improving Highway Safety**

The Highways Agency’s Strategic Safety Action Plan (SAP) sets out how the road casualty reduction PSA targets 2010 will be met. It describes roles and responsibilities, and monitors and measures the progress being made. The SAP highlights twenty three key actions that look beyond traditional engineering solutions towards closer working with partners and driver education. With partners the Highways Agency promotes area safety action plans and works at local level to reduce casualties in each area.

**Tackling Congestion**

The Highways Agency is actively exploring and promoting a variety of measures aimed at reducing the amount of traffic on the road and, in particular, managing the demand for private car journeys. Integrated Demand Management (IDM) is a term that describes a range of measures that deal with the management of demand across the SRN. The delivery of IDM is focused on three main strategies: engaging with the spatial planning system (see section 2 and 3), Integrated Traffic Management (ITM), and Influencing Travel Behaviour (ITB). The Highways Agency has varying degrees of control and influence in these areas. IDM can only be effective when users are provided with appropriate traffic and operational information to allow them to make informed journey decisions

**Transport Innovation Fund (TIF)**

**Integrated Traffic Management**

ITM covers a range of measures to manage traffic on the SRN. These include the use of signals to regulate the flow of traffic, variable speed limits, and segregated lanes. The techniques used include the following examples.

- **Motorway Access Management**

  This helps to avoid flow breakdown and prevents congestion which results from ‘stop-start’ traffic conditions. It uses traffic signals on slip roads operated during peak demand periods to regulate the amount of traffic joining the motorway. The system has been successfully trialled on the M6 north of Birmingham, and is now being introduced on other parts of the motorway network.

- **Active Traffic Management (ATM)**

  The objective of ATM is to make the best use of the existing road space by providing additional capacity for vehicles, including use of the hard shoulder and the use of signals to open and close lanes. A pilot on the M42 in the West Midlands commenced in 2005 has had positive outcomes.

- **Motorway Incident Detection and Automatic Signalling System (MIDAS)**

  Variable Message Signs (VMS) provide information and advice to drivers about emergencies, incidents, and network management. Variable message and speed regulatory signs help
drivers make decisions to avoid congestion and protects those already in a queue. It uses in-road loops to identify slowing traffic, set information signs and reduce speed limits.

Other ITM Initiatives include Automatic Queue Warning (electronic message signs to give drivers advance warning); Traffic Diversion Signs (electronic message signs to advise of alternative routes), and Traffic Smoothing (mandatory variable speed limits). The Highways Agency spends some £14 million (2006 / 07) on a wide-ranging programme of research and development into these and other initiatives. Current and proposed studies include looking into the effectiveness of HOV lanes, lane departure warning systems, ‘close-following’, fatigue-related accidents, and a range of new Intelligent Transport Systems applications.

Influencing Travel Behaviour (ITB)

The ITB programme (and its ‘Smarter Travel Choices’ initiative) aims to help users make better travel choices, by working with partners or securing Travel Plans through the planning process. Other initiatives include the consideration of trials of hard shoulder running for coaches, and introducing car-sharing or high-occupancy vehicle (HOV) lanes on the SRN.

The Highways Agency is also pursuing a number of initiatives to provide greater information to the users of the SRN, with up-to-date information provided via over-head gantries and information points at motorway service stations. Further trials and pilots are exploring the potential of using computers and mobile phones, such as internet radio and SMS text messaging.

The Future

The emerging picture will be dominated by national transportation thinking, set out comprehensively in the NNR. The salient points are as follows:

Future Policy

Policy initiatives, including the possibility of road user charging, will be instrumental in determining the future relationship between transport and the national economy. The Government’s objectives and intended policy direction over the short, medium and long term is set out in DfT’s 2007 discussion document ‘Towards a Sustainable Transport System’.

Future Funding

The TIF Productivity Fund supports national, inter-regional, regional, and inter-urban transport schemes that are expected to make a substantial and sustainable contribution to national productivity. The Highways Agency is currently working with DfT to develop three candidate schemes on the A14, M62, and M42. Money from the Fund will become available from 2008/09, and the Fund is forecast to grow from £290 million in 2008/09 to over £2 billion by 2014/15.

A substantial part of the Highways Agency’s spending falls within the Government’s long-term regional funding allocations covering transport, housing and economic development for which Community Infrastructure funding (CIF) and Growth Area Funding (GAF) are available. These provide funding for larger schemes on those strategic roads that are primarily of regional importance. Outside allocated spending programmes, investment in the SRN can be through development based sources, such as Section 278 agreements, and could in future be from the proposed Community Infrastructure Levy.

The Changing Environment

The Government is clear that a fundamental goal of transport policy must be to ensure that the transport sector plays its proper role in the fight to tackle climate change. DfT’s ‘Towards a Sustainable Transport System’ (2007) describes the Government’s aim of “supporting
economic growth in a low carbon world” and provides its response to the reports of Eddington and Stern. The role of the Highways Agency is recognised within the discussion document identifying, for example, a re-examination of its programme of major road improvements, and making better use of the existing strategic road network.

This is the road ahead for the Highways Agency.