

The Multi-Modal Studies

How they all add up

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Executive Summary

In 1997 the new Labour Government inherited a roads programme of 147 schemes at a capital cost of £6 billion; significantly reduced from over 500 schemes at a cost of £17 billion in the early 1990s. Decisions were taken on 14 schemes in July 1997 and a further 37 schemes were placed in the Highways Agency's targeted programme of improvements. A new programme of 27 studies was proposed to implement the Government's new integrated transport policies set out in the 1998 White Paper *A New Deal for Transport: Better for Everyone*. The studies were split into Roads-Based Studies and Multi-Modal Studies. This paper concentrates on the Multi-Modal Studies. The Studies were established to take a view on how all modes can contribute to the solution for the transport problem identified and to make recommendations on relevant road schemes from the previous administration's programme. This paper reviews the process and the outcomes of the first 9 studies to be completed by the end of August 2002.

The Multi-Modal Studies have taken a view of the contribution that all modes of transport can have in reducing congestion and improving transport choice. The Studies have proposed a mixture of significant public transport expansion and selected road widening and have produced scaled down road solutions to those remitted to the studies in the 1998 roads review. The Studies have also been a positive process in understanding transport patterns, consulting with local communities and examining a range of solutions.

However, the Studies have raised a number of serious issues that remain to be addressed that will determine whether the UK has moved towards a more fully integrated transport system on the ground rather than simply on paper. In particular, the following issues have been highlighted:

1. The studies were not told how they were to contribute to the achievement of the 10 Year Plan objectives. It is not therefore clear whether the solutions proposed contribute enough or perhaps too much towards meeting the Department's targets.
2. The duration of the strategies and scale of solutions varies considerably between similar studies, raising concerns about the affordability and equity of the solutions proposed.
3. Area wide road user charging will be necessary if the benefits of expanded infrastructure are not to be eroded over time. However, the extent to which such charging is required and its timing has not been studied in a consistent manner. There is a risk that some of the schemes would not be necessary under some charging assumptions.
4. No agreement has been reached on the extent to which behaviour change initiatives can influence transport patterns. In some studies it represents the most important element of the strategy, in others it is only considered to be of secondary importance. The long-term impacts

- of these strategies are, as yet, unknown. The success or failure of some of the strategies would appear to be strongly linked to this.
5. The studies have proposed significant public transport enhancements and scaled down road building solutions. However, whilst there is a clear delivery mechanism for the roads solutions through the Highways Agency, and a committed process for speeding this up, there is no such parallel for public transport solutions. The Strategic Rail Authority has cast doubt on the rigour of some of the analysis coming out of the Studies and on the affordability and priority of some of the rail solutions. Other bus and LRT solutions will require further development through the Local Transport Plan process. There is a risk that many of the public transport schemes will fail to be completed and we will have only a scaled down roads programme – a highly unsatisfactory outcome.
 6. There is a conflict between regional aspirations and central budget control. The studies have been strongly influenced by Regional Steering Groups and a number of bold solutions have been put forward. However, the studies were not strongly budget constrained so one would expect this. In implementation however, Central Government (or its delivery agencies) are making decisions about national priorities. A different pattern of investment and a different decision making process would almost certainly have resulted from devolved regional decision making bodies with responsibility for finance as well as strategy.

Whilst this paper has highlighted many areas of concern, the extent to which these concerns are important will be determined by the manner in which the Government reconciles the differences between national objectives and regional aspirations. Perhaps of greater importance is whether or not the popular infrastructure improvements will be matched by the difficult demand management policies proposed.

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Multi-Modal Study Summary Table

The Multi-Modal Studies – How they all add up

Dr Greg Marsden

1 Introduction

In 1989, the then Conservative Government published its White Paper, *Roads to Prosperity*,¹ setting out a £17 billion trunk road expansion programme. In 1994, the Standing Advisory Committee on Trunk Road Assessment (SACTRA) published a report, *Trunk Roads and the Generation of Traffic*,² showing that building new roads can generate extra traffic. This extra traffic eroded many of the time benefits that the expanded infrastructure was meant to provide and brought into question the cost-benefit analysis justification for parts of the programme. Concerns about the generation of extra traffic combined with affordability constraints and concern about the environmental consequences of constructing so many new roads³ lead to a sharp reduction in the programme. By 1997, the roads programme had been cut back from 500 schemes to 147 schemes at a capital cost of £6 billion.

The new Labour Government of 1997 produced a White Paper on Transport, *A New Deal for Transport: Better for Everyone*,⁴ with a key theme of integration between transport modes and across policy areas to make the best use of our existing transport infrastructure. A daughter document on the trunk road programme, *A New Deal for Trunk Roads in England*,⁵ reviewed the trunk road programme to provide a new direction and a more stable pattern of investment. Of the 147 schemes in the roads programme inherited by the Labour Government, decisions were taken on 14 schemes in July 1997. Schemes that could not be started within 5 years were excluded from the review and a further two schemes were added. This left 67 schemes for assessment. 37 schemes were approved to be taken forward as part of the Highways Agency's 'Targeted programme of improvements' costing £1.4 billion (1997 prices). A greater emphasis was also placed on trunk road maintenance to remove the maintenance backlog.

The remaining transport problems not addressed by the targeted programme of improvements were to be analysed in a new programme of 27 studies which would be either:

- **Road-Based Studies** which focused on particular problems on the road system; or
- **Multi-Modal Studies** that take a view on how all modes can contribute to the solution for the transport problem identified.

The studies were to be undertaken using the New Approach to Appraisal (NATA) focussing on five criteria: Integration; Safety; Economy; Environmental Impact and Accessibility. NATA should enable a balanced decision to be taken based on a range of quantifiable and non-quantifiable outcomes expected from a project, moving away from an approach dominated by economic cost-benefit analysis, although this retains an important role.

This paper describes the Multi-Modal Study process and presents a review of progress of the studies that have been completed by Summer 2002. Where possible, given the diverse nature of the studies, comparisons are drawn between approaches and solutions to examine the consistency of the studies. The paper begins with a description of the studies. This is followed by a summary of the key scheme and policy outcomes of the studies and the expected benefits of the new strategies. The discussion section then compares the study outcomes with national policy and examines the consistency of the different studies. The paper concludes with a short summary of the main issues highlighted by the review.

2 The Studies

The Department for Transport (then DETR) issued guidance on the methodology for Multi-Modal Studies in March 2000.⁶ It sets out the aim of the studies to “investigate problems on or with all modes of transport and to seek solutions to those problems” (p1). The studies are to develop a range of options consisting of specific schemes for each modes. The analysis of the collective impact of the solutions should be “sufficiently detailed to ensure that robust decisions are made” (p1). The studies are to be used by Regional Planning Bodies in developing and reviewing their Regional Transport Strategies as set out in Planning Policy Guidance Note 11: Regional Planning.

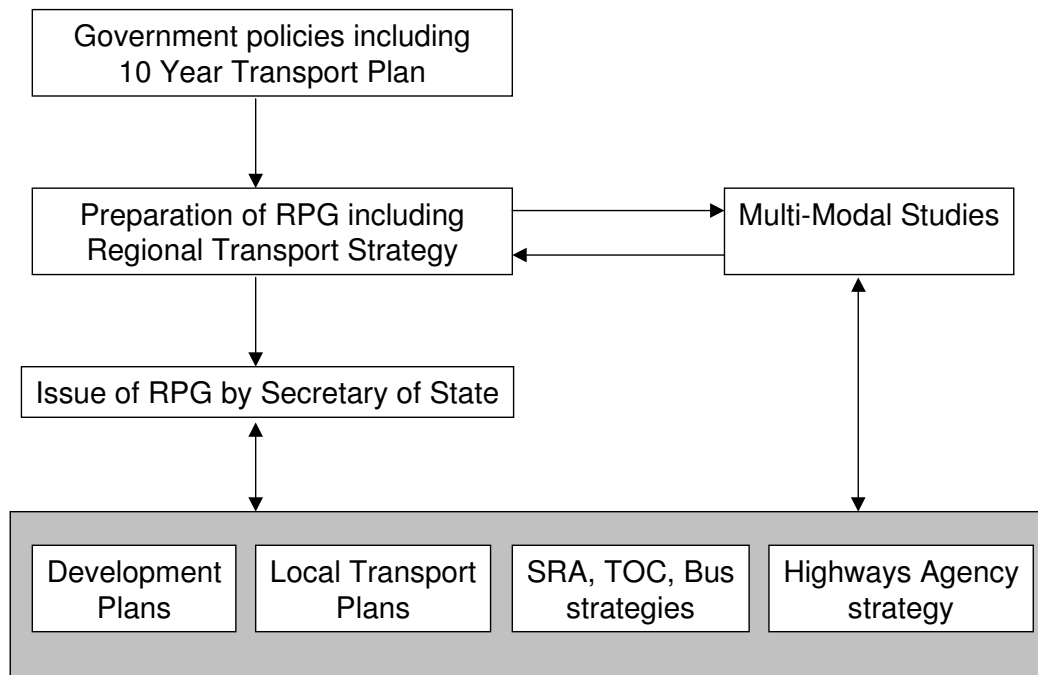


Figure 1: Multi-Modal Studies and Regional Planning Guidance

Source: Based on Figure 2, PPG11

The initial programme of Multi-Modal Studies came from the 1998 review of the roads programme. Each of the studies has therefore been asked to

reconsider a number of trunk-road problems and to review the previous recommendations made for upgrading the road infrastructure, based on the contribution that all modes can make to solving the problem. The Department proposed 22 studies, which have been let in 3 tranches. The first Tranche of studies was let in late 1999 and early 2000 and a number have recently concluded. All of the Tranche 2 studies are underway and the smaller studies are beginning to report. Two of the three Tranche 3 studies are not due to be completed until 2003/2004. A summary of the current position of all of the studies and details of the study team, the sponsoring Government Office and the web site for the study is provided as Annex A. Table 1 below lists the studies that were complete (i.e. had made final recommendations to the Regional Planning Body (RPB) or where these recommendations had been approved by the Planning Body and sent to the Secretary of State (SoS) for Transport) by August 2002 and form part of this review.

Table 1: Multi-Modal Studies reviewed

Study	Acronym	Type	Status
Access to Hastings	A2H	Area	Recommendations modified by SoS
Cambridge to Huntingdon	CHUMMS	Corridor	Endorsed by SoS
South East Manchester	SEMMMS	Area	Endorsed by SoS
West Midlands Area	WMAMMS	Area	With RPB
West Midlands to North West Conurbations	MIDMAN	Corridor	With RPB
London to South West & South Wales (A303, M4)	SWARMMS	Corridor	With RPB
North South Movements in the M1 corridor in the East Midlands	M1MMS	Corridor	With RPB
A1 (North of Newcastle)	A1MMS	Corridor	With RPB
Hull East-West Corridor	HUMMS	Corridor	With RPB

The studies are diverse in nature, size and therefore complexity. Smaller studies such as the Cambridge to Huntingdon study (CHUMMS) examined traffic patterns around a major corridor between two urban centres, a distance of about 18 miles. This can be compared with the South West Area study (SWARMMS) which examined travel from the west edge of the M25 along two major corridors to Cornwall in the South West incorporating strategies for Bristol and Swindon. Whilst the studies are different in nature, the Guidance issued by the Department set out a number of processes that each study should follow as shown in Figure 2.

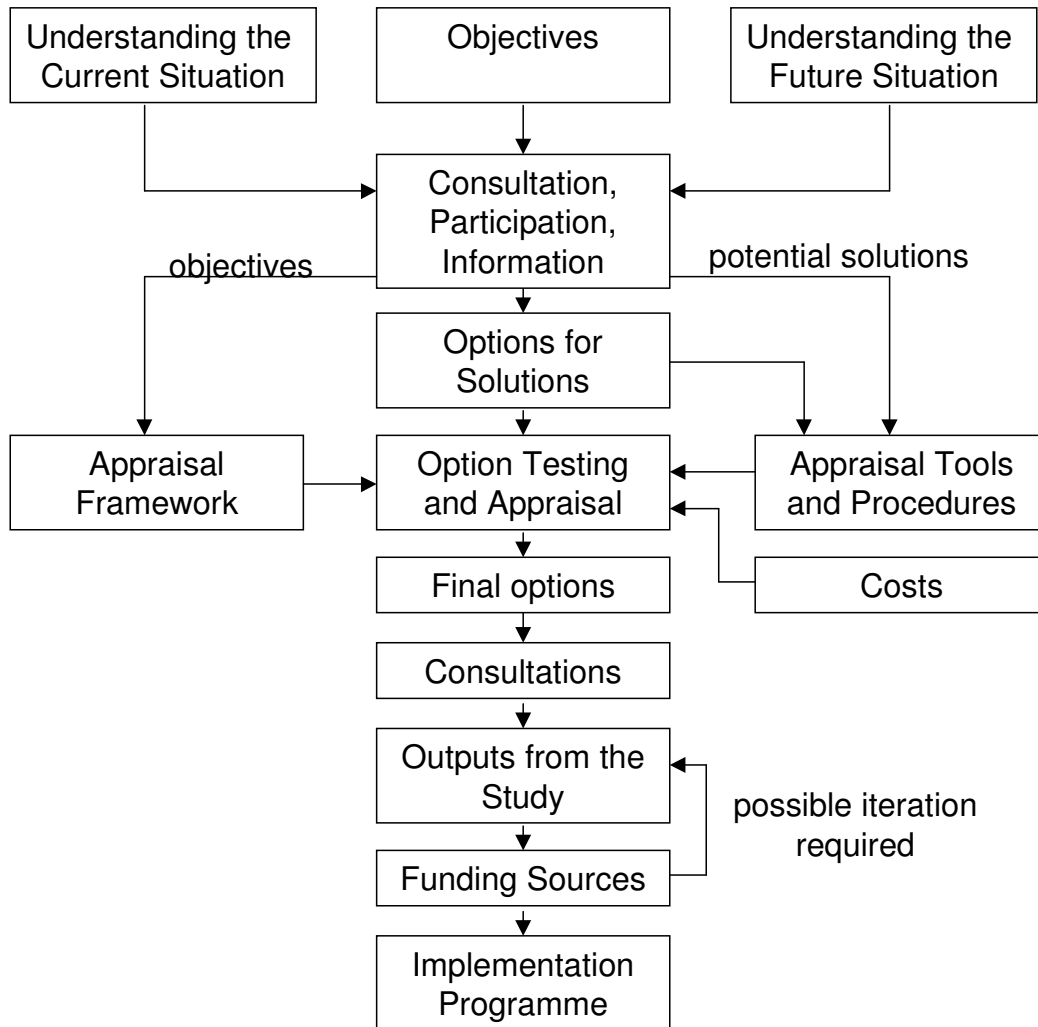


Figure 2: Study Approach

(Source Guidance on Methodology for Multi Modal Studies, p9)

2.1 Objectives

The objectives of the studies strongly shape the nature of the solutions. A mixture of central government objectives (largely based on the environment, safety, economy, accessibility and integration objectives of the New Approach to Appraisal) and local objectives from draft Regional Planning Guidance and current Local Transport Plans were used to help develop study specific objectives.

A comparison of some of the objectives of the two North-South strategic motorway based studies, MIDMAN and M1MMS highlights differences between similar studies. The MIDMAN study set more prescriptive objectives for road and public transport than M1MMS. The extent to which this influences the outcomes of the studies is addressed in the section on study outcomes.

MIDMAN

- To enable the M6 to retain a strategic role, this being measured by acceptable journey times (average speeds at all times >50mph), improved levels of journey time reliability and safety and reductions in the diversion of strategic traffic onto local routes.
- To enable the public transport networks (e.g. the West Coast Main Line) to provide a quality of service to facilitate modal transport in the corridor to attract the maximum numbers of passengers and volume of freight

M1MMS

- Explore and conclude whether it is desirable or not to add significantly to the capacity of the motorway and associated junctions, given the requirement to manage demand.
- Explore and conclude on the extent to which the potential for a shift from road to rail or to water is important.

2.2 Understanding the Current and Future Situation

The Multi-Modal Studies have funded the largest ever in-depth cross-modal studies of transport problems in the UK. Whilst every effort was made to make use of existing data sets, the studies have conducted an unprecedented level of household travel surveys, roadside interviews and other data collection exercises to inform the modelling process. The greater understanding of multi-modal travel patterns gained through this must be seen as a positive outcome from the studies.

A series of land-use and transport models have been established, expanded or updated to inform the decision making process. These tools will be of great use in the development of forthcoming revisions to Local Transport Plans and therefore have added value. However, whilst some areas have benefited from a state-sponsored update to their modelling capabilities, those areas not included in the studies have not. The Department should carefully examine the implications of this and the fact that some areas now have a string of major capital schemes to take forward as part of future Local Transport Plans. Authorities that have not benefited from this may be seen as lagging behind, especially given the acknowledged shortage of funds and skills for project development.⁷ As the Department continues to move towards capital settlements based on performance, such differences may grow over time.

2.3 Consultation, Participation and Information

All of the studies have included considerable levels of local participation. At a formal level, steering groups including RPBs, major businesses, local authorities, councillors, Highways Agency, Strategic Rail Authority, pressure groups and freight bodies have regularly reviewed and fed back into the studies. Wider Reference Groups were also established, typically comprising of members of local organisations and companies. Newsletters and road shows have been used to raise wider public awareness along with

questionnaire feedback. Household questionnaires have also been used to help identify solutions for the studies to examine and preferences for options at a later stage. As the guidance for the studies points out, it is important to have engaged in this process thoroughly at this stage as it will help reduce the amount of time required by public inquiries in taking some of the schemes forward. However, the study teams have had an important role to play in interpreting public opinion. In the A1MMS north of Newcastle, there is strong public support for converting the whole of the stretch from Newcastle to Berwick to dual carriageway although there is no investment case for doing so. The M1 study consultation highlighted the “need to reduce lorry movements on the motorway” when this is clearly preferable to lorry movements on other local routes.

3 Summary of Outcomes

3.1 Major Schemes

This section presents a summary of the key outputs of the studies to date. Table 2 lists the road schemes remitted to the studies, the recommendations made and key comments. A number of smaller road improvements have been excluded from the table. Table 3 lists the major public transport investments put forward by each study. Smaller public transport improvements are also not listed.

All of the Studies analysed compared a range of scenarios at an early stage. They then refined the most promising elements of the scenarios into a smaller number of final options for more in-depth appraisal. In the first round of scenario analysis each study put forward a ‘public transport improvement’ option. Very significant levels of public transport investment were included in these scenarios with only minimal road expansion. In addition, the studies each included road pricing and travel demand management measures (such as commuter travel plans) to differing degrees. None of the studies were able to reduce the traffic problems that were the genesis for the studies without a mixture of road and public transport improvements.

As Table 2 shows, nearly all of the road schemes remitted to the Studies were approved, although in most cases the schemes were approved in a scaled-down manner. For example, on-line widening and at-grade junctions were generally preferred to parallel widening and grade separated junctions in urban areas (e.g. SEMMMS and HUMMMS). Significant motorway widening schemes have been put forward for all of the major motorways, normally preceded by interchange modifications that will bring short-term improvements to flow. One exception is the raised section of the M6 in Birmingham where expansion was not deemed feasible.

Table 2: Outcome of road scheme review

Study	Schemes remitted	Recommendations	Comments
Hastings	<ol style="list-style-type: none"> 1. A259 Pevensey – Bexhill improvement 2. A259 Bexhill and Hastings Western Bypass 3. A259 Eastern Bypass 4. A21 Tonbridge Pembury dualling 	<ol style="list-style-type: none"> 1. Withdrawn 2. Recommended by RPB 3. Recommended by RPB 4. On-line dualling of A21 	The Secretary of State rejected the case for the Eastern and Western Bypasses on the grounds that the roads would not guarantee the regeneration benefits expected but the environmental cost would be high.
CHUMMS	<ol style="list-style-type: none"> 1. A14 Improvement (A1 to M11 Jcn 14) 2. M11 Jcn 14 improvement 	<ol style="list-style-type: none"> 1. On-line widening of A14 to dual 3 lane. New bypass South of Huntingdon 2. Extra link and slip roads at Jcns 13 and 14 of M11 	On-line widening preferred to new route. New bypass accompanied by reallocation of road space to public transport. Public transport improvements with no road build does not solve A14 congestion problem.
SEMMMS	<ol style="list-style-type: none"> 1. A6 (M) Stockport North-South Bypass 2. A555 Manchester Airport Road Link 3. A555/523 Poynton Bypass 	<ol style="list-style-type: none"> 1. Scaled down version 2. Scaled down version 3. Scaled down version 	All of the schemes were recommended but at a reduced scale (e.g. at-grade junctions rather than grade separated). Accompanied by road space reallocations although the detail will be determined by local authorities. Alderly Edge Bypass also recommended.
WMAMMS	<ol style="list-style-type: none"> 1. M42 between M40 and M6 2. M5/M6 through the conurbation (mentioned in study brief but not formally remitted) 	<ol style="list-style-type: none"> 1. Dual 5 lanes plus hard shoulder Jcns 3A to 7, 3 to 3A dual four lanes, 1 to 3 no widening 2. M5 hard shoulder running. M6 no expansion (raised section) 	Also recommended a motorway standard link between the M54 and the M6Toll and a dual carriageway link from the A449 to the Dudley Southern Bypass. The road spending in the WMAMMS strategy is one-sixth of that on public transport measures. WMAMMS strategy contains largest public transport and sustained behaviour change strategy of the strategies studied.
MIDMAN	<ol style="list-style-type: none"> 1. M6 Widening to 4 lanes Jcn 11a to 19 2. A556(M) improvement (M6 to M56) 	<ol style="list-style-type: none"> 1. Recommended 2. Further study required 	The 4 lane parallel widening of the M6 was recommended as remitted. A 5 lane scheme performed better in the cost:benefit analysis and 'no widening' rejected on level of service and diversion concerns

SWARMMS	<ol style="list-style-type: none"> 1. A30/303 Marsh-Honiton 2. A35 Honiton Eastern Bypass 3. A38 Saltash-Stoketon Cross Improvement 4. A38 Dobwalls Bypass 5. A303 Ilminster Bypass Improvements 6. A303 Ilminster to Marsh improvement 7. A303 Sparkford to Ilchester Improvement 8. A303 Wyle-Stockton Wood Improvement 9. A303 Chicklade Bottom-Mere Improvement 	<ol style="list-style-type: none"> 1. Rejected 2. Rejected 3. Rejected 4. Recommended 5. Recommended 6. Rejected 7. Recommended 8. Recommended 9. Recommended 	<p>Other infrastructure approved includes A358 widening A30 Temple-Bodmin dual carriageway, Climbing lanes on M4 J18 and additional lanes J19-20 M5 junction improvements, climbing lanes J17-18, 19-20 and 20-19 and additional lanes 16 to 18.</p> <p>The consultants recommended the A358 upgrade rather than dualling the A30/303 West of Ilminster. The SWRA subsequently included this scheme in its recommendation to the Secretary of State.</p> <p>The strategy is only up to 2016 when further investment will be required.</p>
M1MMS	<ol style="list-style-type: none"> 1. M1 Widening proposals 2. Kegworth A6 Bypass 	<ol style="list-style-type: none"> 1. M1 21A to 23 widened to 4 lanes, 24 to 24A 4 lanes, 24A to 27 5 lanes, 27 to 30 4 lanes, 28 to 30 additional crawler lanes 2. Approved 	<p>South to North, only 7% of motorway traffic is through traffic. The majority are using the motorway for short-hop trips on East-West corridor trips. A public transport improvement only strategy could not cater for forecast demand. Also proposes A617 bypasses and further Trent crossing.</p>
A1MMS	No scheme formally remitted	<ol style="list-style-type: none"> 1. Dual 13km stretch Morpeth to Felton 2. 2 short sections of dualling between Berwick and Alnwick 3. Local Safety Schemes 	<p>The Option to fully dual A1 was appraised and rejected as the investment case is weak (Benefit:Cost ratio 0.9). Also, little regeneration impact and A1 North of Berwick to Dunbar remains single carriageway. The Regional Assembly has however requested that the full dualling remain in the Regional Planning Guidance.</p>
HUMMS	1. A63 Castle Street on-line improvements	1. Modified scheme recommended	<p>The scheme recommended is a more pedestrian friendly version of the original scheme reducing severance. Other options are constrained by geography of the area.</p>

Table 3: Major Public Transport Schemes

Study	Schemes Proposed	Comments
Hastings	<ol style="list-style-type: none"> 1. Electrification of Hastings-Ashford railway 2. Ore-Bexhill metro rail service 3. New station at Glyne Gap 4. Improvements Wadhurst-Tonbridge railway 5. Quality Bus Partnerships 	The electrification of Hastings to Ashford has recently been rejected by the SRA – a study commissioned by the SRA showed the costs outweighed the benefits by about nine times. The Ore-Bexhill rail service also appears unlikely to be funded.
CHUMMS	<ol style="list-style-type: none"> 1. Cambridge-Huntingdon guided busway 	Mostly uses the route of a disused rail line from Cambridge to St Ives. More cost effective and flexible than the rail and LRT options also assessed.
SEMMMS	<ol style="list-style-type: none"> 1. 3 Metrolink lines inc Stockport and Airport 2. Orbital rail services 3. Urban Metro rail services 4. Eastern and Western Rail Links 5. Area wide Quality Bus Contracts 	Many of the rail service improvements are dependent on the upgrade to the South Manchester Hub which is not anticipated before 2010. The Metrolink extension to the Airport is a committed GMPTA policy although funding from DfT has not yet been secured. Without the Eastern and Western Rail links, the benefit:cost ratio rises from 2.4:1 to 3.5:1
WMAMMS	<ol style="list-style-type: none"> 1. RER urban Metro rail network 2. City centre rail tunnel 3. 4 tracking Wolverhampton-Coventry 4. 11 Light Rail Lines 5. Super Showcase Bus routes 	The Network of Regional Express Rail services will cost £4.2 billion and would increase rail mode share from 3.2% to 7.9% in morning peak. The expenditure on showcase bus corridors increases bus mode share from 25.3% to 31.9% in 2031 and bus will still carry 6 times as many passengers as rail.
MIDMAN	<ol style="list-style-type: none"> 1. Stafford bypass rail line 2. Sanbach-Northwich line reopening 3. Grade separated junctions 4. Bus lanes M6-town centres 5. Fare reductions 	Measures suggested in the West Midlands and Manchester rail capacity studies are assumed as is the PUG2 specification West Coast Upgrade. No extra capacity for rail freight, beyond the 2011 levels was anticipated.
SWARMMS	<ol style="list-style-type: none"> 1. Upgrade Great Western Mainline rail 2. Double track Exeter-Salisbury 3. Interchange and service improvements 4. Rail freight enhancements 5. Motorway coachways 	Rail travel is forecast to increase by 69% but will remain a relatively small proportion of total travel across the study area. Reducing travel demand is an important part of the strategy.

M1MMS	<ol style="list-style-type: none"> 1. 15 minute turn-up and go rail services 2. New services to Birmingham and Manch. 3. Nottingham tram extensions 4. 2 additional Nottingham tram routes 5. LRT line for Leicester 6. 10% reduction in bus and rail fares 	A number of the rail services proposed are acknowledged to fail to satisfy the SRA's value for money criteria. The study suggests that the criteria should be changed.
A1MMS	<ol style="list-style-type: none"> 1. New Newcastle to Berwick service 2. Ashington Blyth & Tyne passenger railway 	These and the other public transport measures reduce traffic by 4% compared to reference case.
HUMMS	<ol style="list-style-type: none"> 1. 4 guided busway schemes 2. New rail station 	Some rail improvement costs have not been included as they form a small part of larger long-distance improvements.

Table 3 shows a strong reliance on rail improvements in most of the strategies. The strategies include new rail infrastructure, new rolling stock and enhanced service frequencies. The current list of projects included in the SRA's Strategic Plan is assumed to be part of the baseline assessment. The studies acknowledge that the outcomes of these projects are not yet clear and that the rail strategies may need reviewing in the light of any changes. For example, MIDMAN notes that a failure to achieve the 140 mph upgrade of the West Coast Main Line would impact on its assumptions.

The studies recommend an expansion of LRT schemes for large cities such as Manchester, Birmingham, Bristol, Nottingham and Leicester. The M1MMS study noted however, that a lack of short-distance urban flow data made the justification of further LRT schemes difficult. Smaller cities and towns such as Hull and Cambridge proposed strategies based on guided busways. All of the studies proposed increased bus priority although the detail and sometimes the location of the schemes was outside the scope of the studies.

3.2 Charging Measures

The Government's 10 Year Plan for Transport states that the conclusions of the Multi-Modal Studies with respect to charging will be one of the factors feeding into the decision on the need for inter-urban road tolling. However, the studies were instructed to assume that inter-urban road user charging could not practically be introduced before 2010. Most of the studies have examined a range of assumptions on the introduction of inter-urban tolling, local charging schemes and area-wide charging. In February 2002, the Department for Transport (then Department of Transport Local Government and the Regions) held a seminar to discuss the approaches and outcomes of the different studies' assumptions on charging.⁸ The study recommendations are shown below in Table 4.

The Department left each study to determine the best balance of infrastructure investment and charging regimes. The different approach adopted by the studies has highlighted some interesting issues which will need to be resolved at a national level.

Inter-urban road charging was recommended for the M1 (M1MMS), M42 and M5 (WMAMMS). The MIDMAN study was unsure as to whether tolling would be necessary for the M6, this being dependent on whether or not intelligent vehicle control technologies could improve flow significantly over the next twenty years. If this was not the case, the MIDMAN study proposed a motorway entry toll by 2030 whereas all of the other studies (including those that did not finally include a recommendation for charging such as SWARMMS) have rejected entry tolls due to the diversionary effects that such tolls have. The negative safety, severance and congestion impacts that a higher level of traffic on other, less suitable, trunk roads has outweigh the improvements to the motorway flow. It therefore seems almost certain that an interoperable area wide charging scheme will be required.

At an urban level, a considerable expansion in urban charging schemes was proposed although the approach taken was inconsistent between studies. For example, adjacent studies such as WMAMMS and MIDMAN have made different assumptions about the level of road pricing in the West Midlands (£2.50 and £5.00 respectively). The West Midlands took an area wide approach to charging assessment supporting the uptake of charging in a number of urban centres. However, the South East Manchester study did not take such assumptions and performed a sensitivity test which suggested that the roads schemes proposed would be required both with and without charging. Whilst SEMMMS would not include an urban congestion charge assumption for Manchester, the MIDMAN study of the M6 assumed a £5 charge by 2011.

The decision to adopt urban charging schemes is a contentious one that will ultimately be driven by local decision-makers. The risk that such schemes will not be adopted, which remains high, is an issue that will have to be monitored carefully by the Department for Transport. The real commitment to such charging schemes will become evident in the second round of Local Transport Plans[#] in 2005/06.

3.3 *Changing Behaviour*

The studies have presented very different approaches to the role that changing behaviour can have on reducing travel demand. The large city studies such as WMAMMS and SEMMMS have suggested heavy investment in behaviour change measures (such as individualised marketing, commuter travel plans etc.). These studies suggest that these measures will contribute more to the success of the strategy than the infrastructure improvements, a position that would have been inconceivable 5 years ago. WMAMMS expects behavioural change to achieve a 10% reduction in car trips by 2011 and 20% by 2031.

The corridor studies have been less consistent in their expectations. SWARMMS expects demand management to reduce travel growth from 30% to 21%, the most important part of the strategy. MIDMAN expects behavioural change to reduce travel demand by 5% by 2031. Some of the differences are however due to the different nature of travel patterns in the corridors and cities. In February 2002 the Department for Transport published a report by Halcrow on the likely impact of these so called 'soft factors' on travel demand.⁹ Whilst this may help in standardising expectations from these initiatives, the impacts from their long-term and widespread application are not known and must be monitored to ensure that the plans are based on sound assumptions.

[#] Local Transport Plans are 5 year strategies for transport improvements submitted by local authorities in England.

Table 4: Multi-Modal Study Charging Recommendations

Study	Recommendation	Timescale	Comments
Hastings*	No charging	-	Would go against regeneration objective of study
CHUMMS	No charging (£3 charge examined)	-	Would reduce traffic levels in Cambridge by more than is necessary
SEMMMS	No recommendation (10p/km on all roads peak only and all day)	-	SEMMMS does not have a remit to propose charging for whole of Manchester. Charging scheme tested did not remove need for investment in roads.
WMAMMS	City centre Charging: Birmingham, Wolverhampton, Solihull, Walsall, Merry Hill (all @ £2.50) Area wide charging: 3p to 22p/km in peak 1p to 6p/km off peak	2005-2015 by 2020	Motorway entry tolls cause diversion onto less suitable roads. The only form of charging considered suitable was area-wide charging which would have to be introduced in a regional or national manner.
MIDMAN	City Centre Charging: West Midlands, Merseyside, Greater Manchester (all @ £5), Stoke/Newcastle- Under-Lyme (£2.50) Motorway Entry Toll £2.50	By 2011 2031	Urban charging assumed in the relatively short term (on current progress) and to a far higher level than anticipated in WMAMMS for example. Trunk road tolling is recommended for the longer-term only if telematics systems do not provide extra capacity. There are concerns about diversion.
SWARMMS	City centre Charging: Bristol	2005-2010	Motorway tolling leads to diversion onto unsuitable routes. An assessment of an area wide charge of up to 6p/km was undertaken which reduced motorway flows by 3% and had little impact on rail use. Road schemes would still be required.
M1MMS	Workplace Parking Levy: Nottingham, Leicester, Derby Area Wide Charging: 6p/km peak and 3p/km off peak	By 2010 By 2021	Inter-urban tolling was rejected due to diversion effects. An area wide scheme was recommended by 2021.
A1MMS	No charging	-	Unlikely to meet safety and capacity concerns
HUMMS	No charging	-	Access to Port and lack of suitable alternative routes makes charging for small area not viable.

3.4 Project Costs

No budget limitations were given to the Multi-Modal Studies. The 10 Year Plan for Transport states that it “provides the resources to implement decisions arising from the Multi-Modal Studies”.¹⁰ The studies proposed solutions for different future time periods ranging from 15 to 30 years. The size of the study areas are also very different, making comparisons of project costs difficult. Nevertheless, some cost comparisons are revealing. Table 5 shows the project costs and how they are split over the forthcoming decades.

Table 5: Project Costs and Spend Profile[§]

Study	Period	Total cost (£ Millions)	2000-2010	2011-2020	2021-2030
Hastings*	20	90	90	0	0
CHUMMS	15	261	250	11	0
SEMMMS	20	1065	325	740	0
WMAMMS	30	7670	2484	4020	1166
MIDMAN	30	1694	313	1062	319
SWARMMS	15	2867	841	1809	217
MIMMS	20	1793	1753	40	0
A1MMS	30	219	219	0	0
HUMMS	15	200	200	0	0
Total		15859	6475	7682	1702

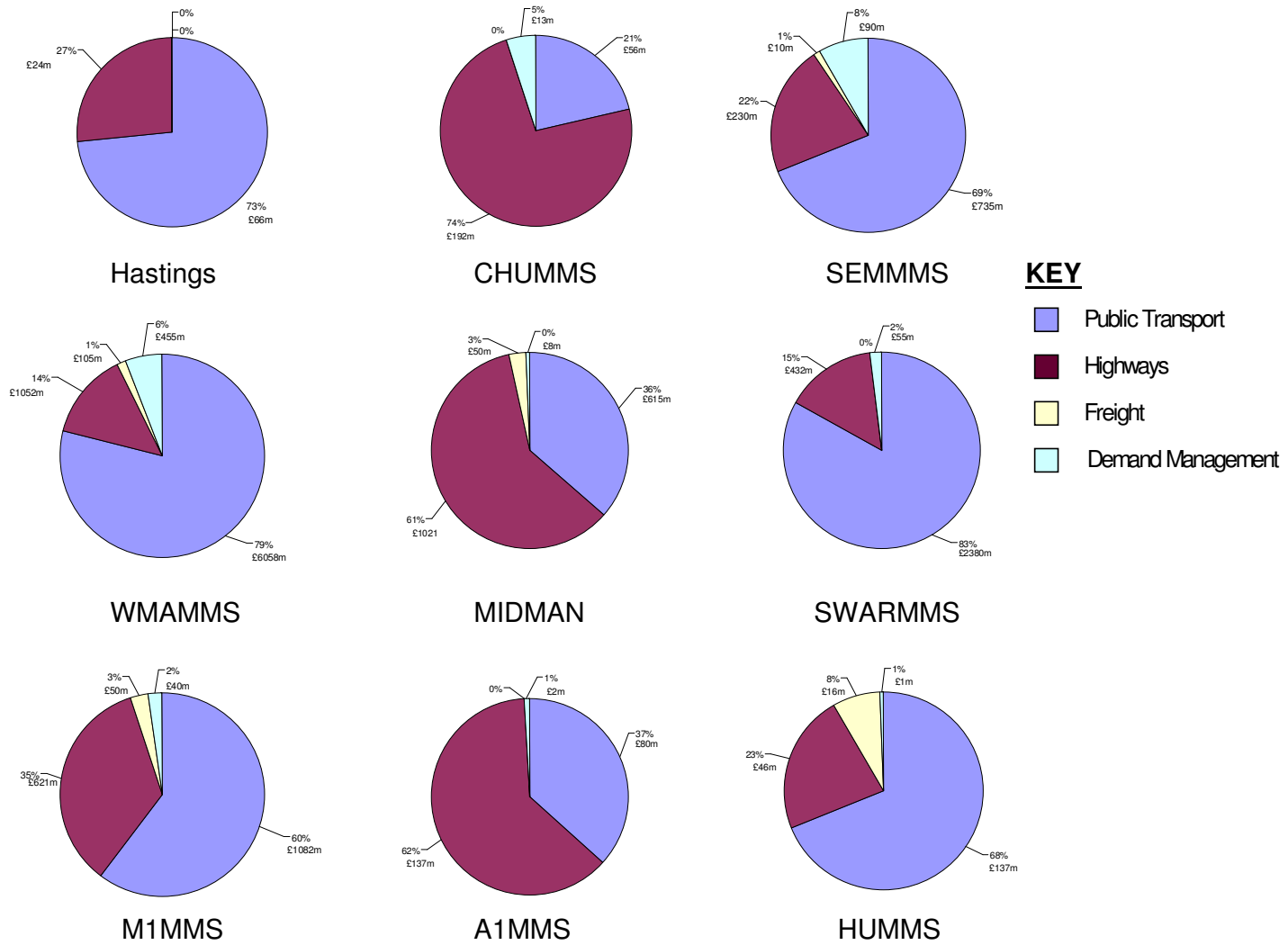
[§] These costs do not include revenue support or existing schemes

* The Hastings costs shown are for the strategy without bypasses

The 9 studies, out of a total of 22 (excluding roads-based studies), have put forward a programme costing £16 billion. It is more instructive to consider the costs over the next 10 to 20 years as not all studies have looked beyond the second decade. £6.5 billion of funding will be required over the period of the 10 Year Plan for these nine (out of 22) studies. It is difficult to determine the extent to which this implies extra spending over and above that committed to in the 10 Year Plan (£60 billion public and £60 billion private capital investment). The funding for any rail schemes would require additional funding¹¹ whilst the Highways Agency expects to be able to complete any projects arising from the studies within its budget.¹² The future demands for investment in local transport schemes across the UK are not yet clear so the extent to which the schemes proposed require additional funding is also uncertain. Some studies have identified the costs as additional. For example, WMAMMS notes that £2 billion of investment has already been committed over the next decade and the £2.48 billion identified by the study is additional. The funding identified by the Studies is expected to come from a mixture of public and private sector providers dependent on the nature of the schemes. Extra revenue support will also be required for the schemes for maintenance and subsidy.

Figure 3 shows the breakdown of funding for the studies between roads, public transport, freight and demand management measures.

Figure 3: Split of Expenditure by Area



The expenditure on freight category is limited to freight quality partnerships and expenditure on special rail freight facilities. Expenditure on improved road and rail that benefits both travellers and freight is grouped under highways and public transport expenditure respectively.

In six of the 9 studies expenditure on public transport measures is greater than 50% of the study expenditure. Whilst the studies have, on the whole, proposed significant road building measures, they have put forward even greater levels of public transport improvements. WMAMMS and SEMMMS have proposed the largest levels of investment in demand management measures including commuter travel plans and individualised travel marketing initiatives.

3.5 Transport Economic Efficiency

The transport cost/benefit analysis procedure for the Multi-Modal Studies is set out in Volume 2 of the Guidance issued by the Department for Transport. The analysis is broken down into its component effects on users, Public sector transport providers, Private sector providers and Other Government impacts. The Guidance sets out 4 different methods for comparing the worth of a strategy or plan and describes them as follows:

1. *Net Present Value (NPV)*. NPV is the discounted sum of all future benefits less the discounted sum of future costs over the appraisal period. In a world with no constraints on investment funds, there would be a strong case for taking forward all projects with a positive NPV.
2. *Benefit/Cost Ratio (BCR)*. BCR is given by the ratio of the discounted sum of all future costs and benefits except investment costs to the discounted sum of all investment costs. The BCR is therefore a value for money measure, which indicates how much net benefit would be obtained in return for each unit of operating and investment costs;
3. *Value/Cost to Government Ratio (VCGR)*. VCGR is the ratio of NPV to Present Value of Cost to Government (PVCG - the net impacts on public sector providers including investment and operating costs less any revenues to public sector providers plus the total payments of grant and subsidy to private sector providers). This measure is of particular relevance for the Multi-Modal Studies because it enables assessors to compare the overall benefit to society of an option (NPV) with the cost to Government required to deliver it. Affordability to Government will be a critical factor in deciding whether options are realistic and practical; and
4. *The Forecast Year Benefit/Cost Ratio (FYBC)*. The Forecast Year Benefit/Cost Ratio is a crude measure, not always available for comparable periods in the study final reports and has not been compared for this review.

Table 6 shows a summary of the cost benefit analysis results from the studies.

Table 6: Cost-Benefit Analysis results

Study	NPV (£m)	PVCG (£m)	BCR	VCGR
Hastings*	-59	96	0.3	-0.7
CHUMMS	613	440	5.3	1.4
SEMMMS	1348	604	2.4	2.2
WMAMMS	5400	2700	1.9	2
MIDMAN	578	1436	1.3	0.4
SWARMMS	3546	4289	1.8	1.9
M1MMS	3256	638	3	5.1
A1MMS	36	184	1.2	0.2
HUMMS	218	127	2.4	1.7

* The Hastings costs shown are for the strategy without bypasses

There is a large range of BCR and VCGR. It appears, for example, considerably better value for money to invest in the improvements in the M1 study area (BCR 3, VCGR 5.1) than in those around the M6 (BCR 1.3, VCGR 0.4). Of the smaller studies, CHUMMS appears to offer very good value for money whilst the A1 and Hastings studies have a weaker case for investment.

The VCGR are generally higher for studies proposing a majority of expenditure on public transport as some of this expenditure is anticipated to come from the private sector whereas the roads based solutions will be built mostly from Government finance.

It is important to note that these figures only include those aspects of the studies that can be financially quantified and therefore only form part of the overall appraisal. Indeed, several studies (including MIDMAN) examined larger road building schemes which performed better on BCR and VCGR grounds than the scheme selected. However, they failed to meet wider accessibility and environmental objectives.

The next section draws together the outcomes presented in this section and discusses their implications.

4 Discussion

4.1 10 Year Plan

The Studies do not tie in well to the 10 Year Plan. That is not to say that the outcomes of the studies are not in-tune with Government policy, but that it is unclear exactly how each of the studies will contribute to the national targets set. The Tranche 1 studies were commenced before the 10 Year Plan was produced and the Department only issued guidance to the Studies on how they should treat the targets from the 10 Year Plan in April 2002.¹³ The majority of Tranche 1 studies were already complete or at final consultation stage by this point and the guidance has not had a significant impact on these studies.

It has not been possible to discern the extent to which each study area contributes to the national picture of congestion and public transport use identified in the 10 Year Plan. Each study has been left to determine the extent to which it feels congestion should be ameliorated without guidance on how important this is to the national picture. As such, solutions of differing scales have been proposed for different areas. It may be that these reflect the different severity of the problems in their area. However, the different scale of solutions may also reflect different levels of regional aspirations. This can be illustrated by two examples:

1. The M6 corridor study MIDMAN set an objective of achieving a minimum average speed on the M6 of 50 mph. No such parallel objective existed on the M1. Whilst the significant road improvements on the M1 will reduce journey times and improve reliability it is not clear why two major routes are aiming for different levels of service. In the case of the rail network, the SRA is co-ordinating the level of service requirements for the whole network yet the Highways Agency does not appear to perform that role for the road network.
2. The WMAMMS study proposes that Birmingham will achieve a reduction in car use from 76% to 60% in the morning peak. This is a more impressive reduction than that proposed in most other study areas – should it be and is it cost-effective to try and achieve this here compared to spending some of this money elsewhere?

In not providing clearer nationally led objectives and an unconstrained resource budget, regional and local aspirations may have overly influenced what is affordable from a Government perspective.

4.2 A More Balanced Approach?

The Multi-Modal Studies were proposed to examine how all modes of transport can contribute to the relief of a series of transport problems, largely centred around the review of the roads building programme. Despite the genesis of the studies being problems on the road network, the studies have all proposed significant public transport investment which, in six out of the nine studies examined, have exceeded the expenditure anticipated for road improvements. The level of data collection and consultation that has supported this process has been significant and the studies represent the largest package of integrated transport studies in the UK to date.

Road schemes

The New Approach to Appraisal has had an impact on the road recommendations put forward by the studies. This is highlighted clearly in the MIDMAN study. It examined improvements to the M6 corridor and tested three, four and five lane solutions for the M6 with different levels of accompanying measures for public transport and behavioural change. The 5 lane solution had a BCR of 1.7 compared to BCRs of 1.3 for the 4 lane and 1.2 for the 3 lane solution. However, the 5 lane solution caused greater environmental damage and did not meet the objectives to provide greater options for transport choice. Whilst the 3 lane solution had a positive NPV, it

created increased congestion on the motorway and surrounding routes which failed to meet the level of service objectives set for the motorway, impacted negatively on a number of regeneration areas and did not reduce community severance. The 4 lane solution provided the most balanced approach.

Whilst many of the road schemes referred to the studies have been recommended the schemes have generally been scaled down as a result of improvements to public transport. Where schemes have been recommended, road space reallocation elsewhere has been proposed to balance the impacts. However, there are still some concerns about the environmental impacts of some of the schemes. The RPB for the Hastings study recommended 2 bypasses through Areas of Outstanding Natural Beauty (AONB) which were not guaranteed to meet the regeneration objectives of the study but were more likely to do so than the alternative scenario. The study team was unable to present a clear recommendation between the two strategies. The Secretary of State reviewed the case for the bypasses and subsequently rejected them. The WMAMMS study has proposed roads solutions that have one adverse impact and 11 moderate adverse impacts. WMAMMS believes the regeneration impacts will be such that the benefits outweigh the environmental concerns.

Public transport

Whilst the studies have promoted significant public transport improvements, public transport will continue to cater for a minority of journeys. In no instances did a public transport improvement scenario only meet the objectives of a study. The importance of the public transport improvements (in addition to the widening of travel choice) is that they have enabled smaller scale road improvements to be implemented. The largest impacts from public transport improvements were found in the WMAMMS study, which has the largest public transport investment. WMAMMS expects to reduce the proportion of peak hour car trips from 76% to 60%. The CHUMMS guided busway strategy reduces peak hour car trips to Cambridge by 39% compared to the 2015 reference case, matching Cambridge's traffic reduction objectives. In other studies the impacts of public transport are more modest (a 4% mode shift in A1MMS).

Some studies proposed modest reductions in rail and bus fares. Whilst this might be a desirable policy (identified in most consultation processes) there seems little prospect of such changes being brought about. The SRA is currently consulting on a review of its fare strategy with little prospect of overall reductions in fares.¹⁴ The consultation paper points out that investment in railways must come from the tax payer or the fare payer. Most bus fares are not regulated and due to a variety of factors are currently increasing above the rate of inflation.¹⁵

The uncertainty about the timing and nature of the upgrade to the West Coast Mainline and, to some extent, East Coast Mainline means many of the study findings may need to be reviewed. Most of the studies were commissioned before Railtrack was placed into administration and before the true cost

implications of the WCML upgrade were fully apparent. The implications of any changes to the SRA's Plan will require particular attention to be paid to strategies based around Birmingham, Manchester and the North East.

4.3 Demand Management

Section 3.2 highlighted the different approach to road user charging put forward by all of the studies. Whilst the Studies point to the difficulty of introducing motorway tolling without full area charging, there is a general lack of agreement on the future for charging. Adjacent studies have proposed different levels of urban charging and some of the assumptions appear extremely challenging, for example it is difficult to envisage Merseyside with a £5 urban road charge and Stoke with a £2.50 charge by 2011. The M6 corridor study assumed charging in a number of urban centres outside of its core study area (including Manchester) yet the South of Manchester study only carried out sensitivity tests on a per/km charge and believed the future of charging in Greater Manchester to be outside of the study's remit. It seems strange that in the West Midlands an area wide study was proposed that was able to take such strategic decisions whilst this was not felt to be suitable for Manchester. The difference is principally an accident of geography in that the SEMMMS study was drawn up to cover an area based around three relevant road schemes.

A recent study by the Commission for Integrated Transport (CfIT)¹⁶ examined a new way of paying for road use that was revenue neutral but offset road user charges with a cut in fuel duty, more accurately reflecting the marginal cost of car travel. This enabled much greater variations to be made to peak hour charges, leading to greater behavioural shift. Whilst all of the current Studies appear to conclude that the case for building the roads proposed are robust with and without the charging measures studied, it is not clear whether that would remain the case with the different approach suggested by CfIT.

It is to be expected that different areas will come to different conclusions about the extent and timing of future charging. The Government will have to consider all of the charging scenarios proposed and develop a nation-wide strategy as it appears that piecemeal entry/exit tolls are inappropriate. However, the benefits of the road and public transport schemes proposed are dependent on the details of the scheme. It is therefore essentially that a decision is reached at the earliest possible point to ensure that the studies will continue to represent best value for money.

Similar differences exist between studies on the impact of 'soft measures' to change behaviour such as commuter travel plans, individualised travel marketing, education etc. The large city studies such as WMAMMS and SEMMMS have suggested that behaviour change measures will contribute more to the success of the strategy than the infrastructure improvements, a position that would have been inconceivable 5 years ago. WMAMMS expects behavioural change to achieve a 10% reduction in car trips by 2011 and 20% by 2031.

The corridor studies have been less consistent in their expectations. SWARMMS expects demand management to reduce travel growth from 30% to 21%, the most important part of the strategy. MIDMAN expects behavioural change to reduce travel demand by 5% by 2031. Some of the differences are due to the different nature of travel patterns in the corridors and cities. In February 2002 the Department for Transport published a report by Halcrow on the likely impact of these so called 'soft factors' on travel demand.¹⁷ Whilst this may help in standardising expectations from these initiatives, the impacts from their long-term and widespread application are not known and must be monitored to ensure that the plans are based on sound assumptions.

4.4 Implementation

Once the schemes put forward by the Regional Planning Body are approved, or otherwise, by the Secretary of State the outcomes of the Studies will have to be implemented by a variety of bodies (Highways Agency, Local Authorities, Strategic Rail Authority, Bus Companies etc.). However, it already appears that there is little confidence that this will happen in an integrated and co-ordinated manner. The WMAMMS study team highlighted this issue:

“The implementation programme for the recommended Strategy and Plan and the complexity and diversity of existing delivery mechanisms leads to some concerns regarding the institutional capacity to take a long-term view for the whole conurbation and determine priorities for spending within an overall budget.”

The Studies have been conducted to enable robust strategy decisions to be taken and not to provide detailed implementation plans for individual schemes. This in itself is a concern although the reasons for this approach are sensible. A recent study by Mott MacDonald for the Treasury has highlighted a typical underestimate of project costs of between 44% and 66%.¹⁸ It is possible that the estimates contained within these studies will be subject to similar such increases (The M1MMS notes that the cost estimates are only an outline for example). Each of the major project schemes will have to be separated out from the study and subject to a new financial and economic appraisal. There are particular concerns that funding is available for the road schemes but not for the public transport improvements and multi-modal strategies may not, therefore, end being constructed as multi-modal solutions.¹⁹

The Highways Agency has funding to complete works put forward to it during the 10 year Plan. The Strategic Rail Authority has stated that most of the major schemes from the Studies will not be able to be constructed until after 2010.²⁰ The SRA is currently grappling with increasing unit costs of railway construction and has a limited budget. Even some of the major rail schemes suggested in the 10 Year Plan will not be constructed in the coming decade. The Studies have put forward extremely ambitious levels of rail investment – for example £4 billion for an RER network of services serving Birmingham. It

is far from clear that such proposals, when costed in more detail, will prove affordable or good value for money. The M1MMS acknowledged that some of the rail schemes it proposed were unlikely to meet the SRA's value for money criteria and suggested that the criteria were changed. Even smaller schemes such as the electrification of the Hastings-Ashford line and the Ore-Bexhill Metro rail service that were recommended in the Hastings study have been shown to be poor value for money by the SRA and therefore unlikely to be funded.²¹

It seems incompatible for the Multi-Modal Studies to have developed strategies assuming that the funding would be available to implement at least the first 10 years of their recommendations when the SRA is clearly operating on a highly constrained budgetary basis.

Some of the public transport schemes proposed appear to offer worse value for money than the roads schemes. For example, the HUMMS study without investment in public transport had a BCR of 6.2 and a VCGR of 5.2 compared to 2.4 and 1.7 respectively with the final strategy. In assessing the options, the HUMMS study decided that a strategy based on road improvements alone would not meet the objectives of the study area. Overall, with all of the schemes, there is still a case for the whole strategy to be implemented. However, on a case by case basis, the public transport investment (in this case guided bus) may not stand up. The M1MMS stated "it can be concluded that the Value for Money of the combined total public transport elements of the strategy is poor." (p86) M1MMS believes that the investment in public transport is still necessary to prevent future traffic.

Whilst many of the public transport schemes will perform well as stand-alone projects, many will not. If this is the case then there is a risk that a number of smaller scale road schemes will be built without the necessary supporting public transport measures and the strategies will begin to unravel. The key question is: If the studies are proposing an integrated strategy then should they be funded as such? The Government has thus far resisted this approach.²²

The studies have also taken a very different line to analysing the risk involved in proposing such large-scale integrated strategies.

SEMMMS states that "*it is not possible to pick and choose elements of the strategy because they are apparently popular or easy or quick or cheap to implement. The full benefits from the strategy will only be seen when it is implemented as a whole. If this should be proved not possible, the entire strategy should be reviewed.*"

M1MMS takes a contrary view "*each element of the recommended strategy is considered to be an important part of the package. Whilst a detailed analysis of individual schemes has not been completed, on the basis of previous detailed analysis, the omission of no other single element (apart from the road expansion) will render the strategy ineffective in terms of the Government's national transport objectives.*"

There is a wide range of delivery agencies responsible for implementing the recommendations of the studies. Not all of the elements of the studies will be implemented and the timing of the introduction of each measure is also difficult to determine. However, the study models are available and calibrated and should be used to understand the implications of changes to the study programme and its implementation. In future, the implications of the non-completion of major schemes should be analysed and presented as part of the implementation plan as a key piece of information for decision makers.

4.5 *Regional and Local Aspirations*

There are differences between the recommendations of the studies, the aspirations of local and regional government and the views of the Department. The Access to Hastings, A1MMS and SWARMMS have all put forward schemes that have not achieved consensus.

The Hastings study team was unable to recommend one of the two final strategies (one with and one without the bypasses) and left this decision to the Regional Assembly. The Assembly recommended the bypass but the Government turned this strategy down on environmental grounds. In doing so however, the Department essentially selected the “without bypass” strategy which had a negative NPV and BCR of 0.3. The strategy has been further deconstructed by the decisions taken by the SRA on some of the major rail elements of the strategy. Whilst other regeneration initiatives are now underway in Hastings the study failed to put forward a convincing investment package for transport improvements.

The A1MMS examined the preference of Northumberland County Council and the Regional Assembly for complete dualling of the A1 north of Newcastle to Berwick. Despite demonstrating that dualling was not necessary, even by 2031, and offered poor value for money compared to the proposed solution, the Regional Assembly decided to keep the full dualling option as part of its Regional Planning Guidance.

The SWARMMS recommended that the second major transport corridor into Devon (after the M5), the A30/303 was not upgraded but that an alternative route from the A303 to the M5 (the A358) was upgraded to enable traffic to link to the M5 and into the far south west. The A30/303 passes through an AONB and an upgrade was rejected largely on these grounds. The South West regional Assembly subsequently decided to add the A30/303 upgrade to the recommendations of the study (including the A358 upgrade) to provide two main routes into the south west. The Secretary of State has yet to make a decision on whether this scheme will be approved.

5 Conclusion

The Multi-Modal Studies have taken a view of the contribution that all modes of transport can have in reducing congestion and improving transport choice. The Studies have proposed a mixture of significant public transport expansion and selected road widening and have produced scaled down road solutions to those remitted to the studies in the 1998 roads review. The Studies have also been a positive process in understanding transport patterns, consulting with local communities and examining a range of solutions.

However, the Studies have raised a number of serious issues that remain to be addressed that will determine whether the UK has moved towards a more fully integrated transport system on the ground rather than simply on paper. In particular, the following issues have been highlighted:

1. The studies were not told how they were to contribute to the achievement of the 10 Year Plan objectives. It is not therefore clear whether the solutions proposed contribute enough or perhaps too much towards meeting the Department's targets.
2. The duration of the strategies and scale of solutions varies considerably between similar studies, raising concerns about the affordability and equity of the solutions proposed.
3. Area wide road user charging will be necessary if the benefits of expanded infrastructure are not to be eroded over time. However, the extent to which such charging is required and its timing has not been studied in a consistent manner. There is a risk that some of the schemes would not be necessary under some charging assumptions.
4. No agreement has been reached on the extent to which behaviour change initiatives can influence transport patterns. In some studies it represents the most important element of the strategy, in others it is only considered to be of secondary importance. The long-term impacts of these strategies are, as yet, unknown. The success or failure of some of the strategies would appear to be strongly linked to this.
5. The studies have proposed significant public transport enhancements and scaled down road building solutions. However, whilst there is a clear delivery mechanism for the roads solutions through the Highways Agency, and a committed process for speeding this up, there is no such parallel for public transport solutions. The Strategic Rail Authority has cast doubt on the rigour of some of the analysis coming out of the Studies and on the affordability and priority of some of the rail solutions. Other bus and LRT solutions will require further development through the Local Transport Plan process. There is a risk that many of the public transport schemes will fail to be completed and we will have only a scaled down roads programme – a highly unsatisfactory outcome.
6. There is a conflict between regional aspirations and central budget control. The studies have been strongly influenced by Regional Steering Groups and a number of bold solutions have been put forward. However, the studies were not strongly budget constrained so one would expect this. In implementation however, Central Government (or its delivery agencies) are making decisions about

national priorities. A different pattern of investment and a different decision making process would almost certainly have resulted from devolved regional decision making bodies with responsibility for finance as well as strategy.

Whilst this paper has highlighted many areas of concern, the extent to which these concerns are important will be determined by the manner in which the Government reconciles the differences between national objectives and regional aspirations. However, many of the studies concur with SEMMMS that *“The full benefits from the strategy will only be seen when it is implemented as a whole. If this should be proved not possible, the entire strategy should be reviewed.”* If the Government does not intend to fund the strategies and introduce demand management measures as an integrated whole then it is questionable as to whether we will indeed have a truly integrated transport strategy.

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