Bristol/Bath to South Coast Study

Final Report - Strategic Corridor
Government Office for the South West

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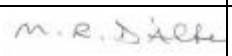
Signature			
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1 INTRODUCTION

Study Background

1.1 In 1997, the "Roads Review - Consultation Document - What Role for Trunk Roads in England?" identified that some 40% of roads in the trunk road network would be potential candidates for detrunking. This included the A36/A46 between the M4 junction 18 and the M27 junction 2. The detrunking proposals for this particular route were strongly opposed by certain highway authorities as well as the then regional planning body. Government Office for the South West commissioned a short study to examine the case for this route's detrunking and to facilitate future decisions on the status of the A36/A46. This report was produced in September 2000.

1.2 The report concluded that a further review would be required of the A36/A46, and the A350, but, in the meantime, the Regional Assembly reconfirmed their objection to the detrunking proposals on the grounds that the report had not adequately led to the conclusion that the route should be detrunked. The Secretary of State meanwhile confirmed the decision to promote the detrunking of the route.

1.3 Subsequently, the Regional Planning Guidance for the South West [RPG10] was published in September 2001. Table 6 of the Guidance specifically identifies the requirement for "improvements to north/south transport links from the Bristol/Wiltshire and Bath and North East Somerset area to Southampton/Bournemouth/Poole, which addresses in particular the World Heritage city status of Bath". The requirement further demands that the functionality of the A36/A46, and the other north/south routes which extend from the south coast towards the M4 motorway, have to be better understood in order to recommend appropriate measures for their management.

1.4 In order to address the concerns of the Regional Assembly and the highway authorities, Government Office for the South West, in consultation with the Highways Agency, commissioned a further study, the Bristol/Bath to South Coast, (BB2SC), Study, in order to supplement the previous study undertaken in 2000. The findings are to be reported to the South West Regional Assembly in order to enable it to consider revisions to the Regional Transport Strategy [RTS], which forms part of the emerging Regional Spatial Strategy [RSS].

1.5 WSP was commissioned by Government Office for the South West on behalf of the South West Regional Assembly to undertake the BB2SC Study.

The Strategic Report

1.6 The deliverables for the BB2SC study require a "Bath Report" and a "Strategic Report". This report is the Strategic Report for the study. It concentrates on the functionality of the key north/south routes in the study area, and also examines the two improvement measures in Wiltshire remitted to the study by the Secretary of State for Transport and measures considered appropriate to address travel demand on the A36/A46 once the detrunking order has been approved.

Study Area Remit

1.7 The study area is shown opposite as Figure 1.1. It includes the A37 to the west in order to take account of issues pertinent to the A350 and A37 from south-east Dorset and the Poole/Bournemouth conurbation to the M4/M5 corridors. To the east the study area is bounded by the A34 which is itself to be the subject of a multi-modal study to be commissioned by Government Office for the South East. To the north, the M4 bounds the study area and to the south, the South Coast.

1.8 Within the study area, there are a number of routes of significance including the A36/A46 between junction 18 of the M4 to Warminster, Salisbury and the M27 at junction 2. From junction 17 of the M4, the A350 runs due south through the towns of Melksham and Westbury connecting to the A36 at Warminster, before continuing to Poole, via Shaftesbury and Blandford. The A35/A37 in the west extends from the south east Dorset region and runs due north to the A303 and on to Bristol as well as connecting to the M5 via the A358. In the east, the A34 is a trunk road which connects the M3 to the A303 and the M4.

1.9 East/west issues have recently been examined by the South West and South Wales Regional Multi-Modal Study, (SWARMMS), the South Coast Multi-modal Study, (SOCOMMS), ,and the A31/A35 Route Management Study. They are therefore not covered in any detail as part of the BB2SC study.

1.10 Within this study area there are also important rail routes which offer opportunities for improved freight and passenger flows, most notably the South Coast to Bristol and South Wales line between Bristol and Bath, Westbury and Southampton.

Issues of Relevance

1.11 Issues identified as being particularly relevant to the study include:

- The potential for a new container port at Dibden Bay on the South Coast, planned to be constructed opposite the existing container terminal at Southampton port. This proposal, if approved, could become fully operational by 2012. It is expected to more than double the number of HGV movements to and from the port of Southampton, even with 30% being carried by rail.
- Wiltshire County Council's aspirations for an A350 bypass for Westbury.
- Wiltshire County Council's aspirations to improve the safety of the A36 between Codford and Heytesbury.
- Access to the south-east Dorset conurbation, Bournemouth and Poole, and the impact on the villages in Dorset, in particular on the C13 and A350
- The upgrading and opportunity for enhanced use of the Salisbury/Bristol railway line focussing on opportunities for inter-modal transfer.

Study Objectives

1.12 The Commissioning Report[1] identifies the objectives for the study. In summary these are:-

- To identify and recommend a transport strategy for maintaining an appropriate level of service in the corridor which is multi-modal in approach, concentrating on long distance HGV and car traffic.
- Developing implementation plans to address the strategic and sub-regional transport plans within the corridor.
- Production of an implementation programme which focuses on overcoming particular constraints within the corridor.
- Assisting to develop an integrated transportation strategy to address the issues relating to through traffic in the corridor on the historic city of Bath.

Study Deliverables

1.13 The Terms of Reference for the study, found in Appendix A of the Commissioning Report, define a number of stages and deliverables. These are principally reports, supported with plans, tables and other information and include:

[1] "Bristol/Bath to South Coast Study - Commissioning Report, WSP, 2002

- The Commissioning Report
- The Data Collection Report
- The Stage One Consultation and Participation Report
- The Rail Report
- The Environmental Assets Report
- The Traffic Model Validation Report
- The Identification of Problems and Issues Report
- The Option Development and Appraisal Report
- The Stage Two Consultation and Participation Report
- The Final Report for Bath, and
- The Final Report for the Strategic Corridor

1.14 All of the final reports are available on the Internet site, www.bb2scstudy.org.uk

2 STUDY APPROACH

2.1 The study has required significant data assimilation throughout the corridor. It has collected primary and secondary data from a range of stakeholders covering issues relating to travel demand, infrastructure capacity and environmental assets. The travel demand information and travel infrastructure information has together assisted in defining the problems and issues within the corridor. The environmental information has been used to produce an Environmental Assets and Constraints Plan which has assisted in the production of option development, appraisal and constraints analysis.

2.2 There has been extensive consultation with stakeholders. This has included workshops with four selected stakeholder groups, responses via a Citizens Panel, newsletters, and commentary and comments received via the website (detailed above).

The Environmental Assets and Constraints

2.3 The study area for the environmental work broadly comprises a 1km band either side of the main transport corridors within the study area, which run north-south. This includes the A350 from Junction 17 of the M4 towards Poole. In addition, the South Coast to Bristol and South Wales railway line is included for specific attention. The 1km buffer either side of these transport routes is expected to identify the vast majority of environmental assets likely to be affected by any transport interventions.

2.4 The data collection used to collate the environmental assets covers issues relating to noise, air quality, landscape, townscape, nature conservation, cultural heritage, water environment. Much of the data is available from relevant statutory bodies, as well as the local authorities. The environmental assets and constraints information has been brought together and is reported more fully in the Environmental Assets and Constraints Report[2].

Travel Demand Data Collection

2.5 At the centre of this study's analysis is a transport model. The model has been assembled from a number of existing transport models; the Salisbury Transportation Model, the West Wilts Traffic Model, the Bath and North East Somerset multi-modal model and the SWARMMS regional model. Data from these sources has been amalgamated with new primary data collected from six roadside interviews and automatic traffic counts undertaken in September 2002. Rail patronage

[2] "Bristol/Bath to South Coast Study – Environmental Assets and Constraints Report", WSP, 2003

data has also been collected from the LENNON and CAPRI datasets. A validated transport model has been developed and is fully reported upon in the Local Model Validation Report. This model is used to test options at the study's forecast year, 2023.

2.6 Other data which has proved invaluable to the study's processes includes:

- Automatic Traffic Count data from the councils of Wiltshire, Hampshire, Bath and North East Somerset, Somerset and Dorset, and the Highways Agency
- Manual Classified Count data, also from the same sources
- Journey time information from AutoRoute

2.7 In addition, and in order to assess the impacts of the closure of the A36 at Limpley Stoke between mid-September and early December 2002, significant data collection was undertaken on a number of routes in and around the study area in order to gauge the effect of re-routing arising from this road closure. A separate report detailing the impact of the A36 closure at Limpley Stoke is also provided in the Limpley Stoke Monitoring Study[3]. This work indicates significant localised re-routing around Bath, but little strategic re-routing in response to this closure of the A36.

2.8 Rail data was collected from the SWARMMS study, through discussions with the train operating companies (Wales and Borders, Wessex Trains, EWS and Freight Liner) and from further discussions via consultations and stakeholder workshops. More recently in the study, the LENNON revenue database has come on stream and Wessex Trains provided information to the project team for the South Coast to Bristol and South Wales railway line, on numbers of ticket transactions - a good proxy for passenger numbers.

2.9 Also during the course of the study, the Joint Strategic Planning & Transportation Unit [JSPTU] and North Somerset Council undertook a series of boarding and alighting surveys for all stations that lie within the former Avon area.

2.10 Discussions with the bus operators provided background to service patterns and aspirations. It was clear from these discussions that the public transport operators are concentrating more on service quality and consolidation rather than on service expansion.

2.11 The summary data collected during the surveys and from previous sources came together to form a robust and comprehensive database which was used for the development of current travel demand by mode and the calibration and validation of a network traffic model for the entire study area, which has been used to analyse a number of options.

[3] "Bristol/Bath to South Coast Study - Limpley Stoke Closure Monitoring Report", WSP, 2003

3 PROBLEMS AND ISSUES

3.1 The Problems and Issues Report sets out the policy context within which the study has to consider issues of relevance to travel in the study area. At the highest level, RPG10, sets out a framework to the year 2016 through the Regional Spatial Strategy and guidance for Local Transport Plans. The RTS determines the framework for directing transport infrastructure investment and Table 6 of the RTS identifies the need for :-"improvements to north/south transport links from the Bristol/Bath, Wiltshire and North East Somerset District to Bournemouth, Southampton and Poole which will address the World Heritage city of Bath" as well as "improvements to other cross-country and branch line railway services to provide enhanced services and frequencies and adequate capacity." The management of demand is also identified as having a key role to play - parking provision, fiscal policies and the use of highway space to allow priority for public transport on the transport network.

3.2 There are specific issues that are relevant to each of the Local Authorities and which are also pertinent to the study: -

- Dorset County Council identified that the north/south routes from the south coast in particular, the A350 and the A37 provide important links to cross-channel ports and yet sever a number of important villages. Access to the economic centres in Poole, Bournemouth and the South East Dorset conurbation are very important considerations.
- Proposals for a new container port at Dibden Bay may have impacts in terms of the generation of extra HGV and rail movements, Wiltshire identified the dispersed patterns of settlement arising from a number of factors.
- In particular the cost of living in Bath results in a travel migration pattern between the West Wiltshire towns to Bristol/Bath in the peak periods which cannot be addressed by one single authority.
- Hampshire County Council is looking to develop a coherent transport and land-use strategy that underpins the region's economy and future prospects, and the first element of major infrastructure to underpin this is the first stage of the South Hampshire Rapid Transit System. Other public transport improvements include the recent re-opening of the Chandlers Ford railway station. The southern section of the A36 includes the two settlements of West Wellow and Plaitford, and here there are particular road safety issues which require urgent address. A Speed and Safety Study for HCC, has identified a number of improvement measures including speed reductions, camera enforcement, gateway features, prohibition of turning movements (at the A36 Whinwhistle Road junction), and vehicle actuated signs.

- Bath & North East Somerset's Local Transport Plan identifies that the District is influenced not only by the City of Bath itself, but also by the proximity of the City of Bristol. The journey to work travel pattern is dominated by these two major employment centres and attracts a number of commuter trips from the south west area of the District, northern Somerset and also from the west Wiltshire towns. The LTP also sees opportunities for more frequent trains between Cardiff, Southampton and Portsmouth and also on the "Heart of Wessex" line to Weymouth. The Council's Local Transport Plan identifies significant scope for improving both bus and rail services to encourage a greater modal share for public transport. The LTP also identifies the A36/46 as being a key transport route in the Council's area. The Council reserve their concerns regarding the de-trunking of this route, given the fact that there is still not an effective eastern by-pass for traffic between the A46 at Swainswick/Batheaston through to the A36 at Limpley Stoke.

The Public Consultation Process

3.3 The stakeholder workshops, undertaken in November 2002, and the subsequent workshop held in early 2003 for the stakeholders of North Dorset, addressed strategic issues through the Wider Reference Group and more sub-regional issues through a Bath Group, a West Wiltshire Group and a Freight Logistics Group. The comments received are found within the Problems and Issues Report[4] but it was clear that the consultation exercise found a degree of overall consensus on the urgent need to address the problem of north-south traffic movements on the A36/A46 and on the A350. Both of these routes are perceived to be have been neglected for many years. Traffic congestion, and HGV impacts on historic towns and environments were also major concerns. Many of the groups consulted saw road building as offering a key to these problems but these views were also balanced by the opportunities that were afforded by the railway network and for buses and coaches to integrate effectively. The workshops and citizens panels presented a balanced and pragmatic approach with support for locally targeted bypasses where these were felt to be of benefit and also for encouraging modal shift from road to rail and buses.

3.4 Comments received from the website were more polarised towards local issues. A bypass for Westbury attracted the highest number of hits, followed closely by commentary on an A36/A46 link. From North Dorset, a number of comments were received relating to the need to improve north-south road links and also on how best to manage traffic issues on the A350 and its parallel route the C13. Despite the lack of a North-South railway route in North Dorset, comments also identified the general requirement to improve the railway network. .

[4] "Bristol/Bath to South Coasts Study - Problems Issues Report" WSP, 2003

4 TRAVEL DEMAND - STRATEGIC OVERVIEW

4.1 The Regional Transport Strategy has several objectives which support the spatial strategy of the Regional Planning Guidance, namely: reduce the impacts of transport on the environment, improve accessibility, promote safe use of the transport network and create a modern efficient integrated transport system. The role of the railway and buses is particularly pertinent in delivering an integrated transport solution for the study area and underpins the Regional Transport Strategy.

Railways

4.2 A significant amount of work has been undertaken examining the railway infrastructure, in particular on the South Coast to Bristol and South Wales railway line, and also with some consideration of the Weymouth line. A detailed assessment of the infrastructure's condition and a range of measures to improve the former route are specified in the Rail Report[5].

4.3 Since the study began a number of organisational changes have taken place, most notably the creation of Network Rail. This new infrastructure management body, combined with the severe budget cuts introduced by the Strategic Rail Authority, has had significant implications for how this study can proceed regarding recommendations for the railways.

4.4 The following represent the principal problems facing passenger and service operations:

- There is overcrowding on the Bath to Trowbridge and Romsey to Southampton sections of the line. This is particularly acute in the peak periods and is unlikely to encourage further patronage to be attracted to the railways from cars.
- The service frequency operates at roughly three trains every two hours. It is not a "clock face" timetable. Research has indicated that a clockface timetable with services operating at regular intervals is one of the main determinants encouraging passengers' perception of the railway to be robust and reliable.
- There is very limited ability for trains to overtake or to be held clear of faster trains thereby limiting the inter-mixing of freight and passenger trains on the line.
- The age of the signalling does not allow for short headways (gaps) between trains.
- Some of the stations have limited car parking availability thereby discouraging inter-modal transfer or Park & Ride.
- There are specific issues of service reliability due to the age of the rolling stock and the age of the signalling infrastructure.

[5] Bristol/Bath to South Coast Study, The Rail Report, WSP 2003

4.5 Through discussions with Wessex Trains, a number of measures were identified which would improve the service including the re-modelling of signalling at Bristol Temple Meads, remodelling at Bradford on Avon junction, removing line speed restrictions at level crossings and upgrading infrastructure to allow for more platform usage at Salisbury and at Southampton. Many of these measures are worthy of consideration but, because of the costs, are likely only to be taken forwards through other main line improvements such as those forecast for the Great Western main line.

Rail Freight

4.6 The Westbury line is used sporadically for freight movements during the typical week. A number of paths have been made available for freight trains, (up to 15), but these are not always taken up. The main primary freight movement is that of aggregates to the "virtual" quarry at Westbury. Two issues were raised for the study to consider:

- Dibden Bay container terminal and the additional movements of container boxes onto the Westbury line
- The opportunity for inter-modal freight transfer at a proposed freight transfer station to the north of Westbury

4.7 The proposed Dibden Bay Container Terminal, if constructed, could move up to 30% of its container boxes by rail. However the infrastructure and gauge on parts of the South Coast to Bristol and South Wales railway line is inappropriate to accommodate this traffic by rail. Positive direction from the Strategic Railway Authority has been received which indicates that the line from Southampton via Eastleigh, Basingstoke and Reading will be their focus for investment for container traffic. The gauge and height restrictions on the South Coast to Bristol and South Wales railway line would require significant investment to overcome and therefore it is not expected that any additional traffic arising from the container terminal will be introduced to this line.

4.8 The Westbury Freight Terminal has been an aspiration for Wiltshire County Council for a number of years. The former United Milk plant, recently constructed on the Brook Lane development site in Westbury, was considered to be an "anchor" development with exactly the right sort of commodity to make a freight transfer station a viable proposition. However, with the facility having recently gone into receivership, [it is now trading as Westbury Dairies], and the indeterminate suspension of the rail freight grant funding regime by the Strategic Rail Authority, there is little prospect of the terminal being built in the short to medium time span.

Bus Services

4.9 Strategic issues relating to bus services relate mainly to opportunities for long distance travel between principal urban areas. At present only one such service exists, the X4, X5 and X6 which is jointly operated by the Wilts and Dorset Bus Company and by First Bristol. A number of other improvements are also promoted by the local authorities to improve interconnections between bus services in order to facilitate long distance travel. These are particularly important for the socially disadvantaged, and those living in settlements along the corridor without regular access to a car.

Highway Network

4.10 The Regional Transport Strategy will be reviewing road routes according to their strategic or sub-regional function. If a route meets a strategic demand and caters for relatively large numbers of long distance car and HGV movements then there is a strong case for it to be included in the core network managed by the Highways Agency. If the demand is more of a regional or sub-regional nature then the route should be managed by the relevant local authorities. An inter-regional route should provide a fast, high standard access between major centres of commercial activity and population; whereas an intra-regional route should be managed to cater for demand between principal urban areas within the region.

4.11 This study has examined this issue for the A36/A46 as well as competing routes such as the A34, the A37 and the A350. Table 4.1 below compares the vehicle kilometres per kilometre (veh.kms/km) for motorways, trunk roads, principal and non-principal roads within England with the key north-south routes in the study area. This is a measure that enables comparisons to be drawn between the intensity of use as well as average typical distance travelled.

Table 4.1: Comparison Of Vehicle – Kilometres per Kilometre For Key Roads In The Study Area with National Data

	Annual Mveh.km	12 hour veh.kms	Distance (km)	Veh.kms/ KM
NATIONAL FIGURES BY ROAD TYPE				
Motorway	86,935	207,111,376	2949	70,231
Trunk Built Up	8,184	19,497,320	956	20,395
Trunk Not built up	55,204	131,516,379	6372	20,640
Principal built up	60,476	144,076,236	10853	13,275
Principal not built up	51,179	121,927,338	13996	8,712
STUDY AREA TRUNK ROAD FIGURES				
A34 (M3 to M4)	875	2,084,013	47	44,106
A303 (A36 to A34)	644	1,534,851	48	31,777
A303 (TOTAL A37 to A34)	1,130	2,691,284	101	26,779
A303 (A37 to A36)	485	1,156,433	52	22,154
STUDY AREA NON-TRUNK ROAD FIGURES				
A46 Bath to M4	99	235,187	12	19,155
A350 Warminster to M4	241	575,321	37	15,427
A36 Warminster to Bath	142	339,173	25	13,487
A36 Warminster to A303	111	263,942	20	12,916
A36 Salisbury to A303	76	172500	15	11,427
A36 Salisbury to M27	127	290,000	24	14,125
A37 Dorchester to Yeovil	304	723,505	93	7,750
A350 South of Warminster	159	378,227	56	6,749
A350 / C13 Sth Warminster combined	193	459,502	72	6,388
C13 (Blandford to Shaftesbury)	34	81,275	16	5,115

Source Traffic Estimates for Major Roads 2001 - Department of Transport, and, BB2SC Traffic Model

4.12 The table shows that south of the A303, all of the key links have an average veh.kms/km which are less than a national principal route. To the north of the A303, the A36 has a level of use considerably greater than a rural principal route but well below a rural trunk route. Along the corridor, the A46 has the highest veh.kms/km at 19,155, similar to that of a rural trunk road. For all other instances, none of the links exceed the average rural trunk road values, indicating the non-strategic function of the north/south routes within the study area. All routes fall well below the value observed for the A34 trunk road.

Trip Length Frequencies

4.13 The analysis detailed in Table 4.1 was also substantiated by examining the numbers of trips travelling certain bands of distance directly from the transport model. These are commonly known as “trip length frequency histograms” and a detailed review can be found in the Problems and Issues Report. Table 4.2 below summarises these statistics. The table shows that for those routes

north of the A303, there is a very strong skew towards trips of less than 25km or 15 miles. Indeed, on the A36 at Limpley Stoke, some 73% of car and van trips are less than this distance and on the Cleveland Bridge within Bath, 40% of all car trips are less than 10km or 6 miles. South of the A303 the routes display opposite characteristics with 49% of all trips on the A350 or the C13 being greater than 50km and on the A37 south of Yeovil, some 24% of all car trips are in excess of 100km.

Table 4.2 – Summary of Trip Lengths on Key Links

LIGHT VEHICLES	**Number of trips within distance range**						**Proportion of trips within distance range**					
	0-10 km	10-25 km	25-50 km	50-100 km	>100 km	TOTAL	0-10 km	10-25 km	25-50 km	50-100 km	>100 km	TOTAL
A350 Melksham	1,308	6,792	4,428	2,376	216	15,120	9%	45%	29%	16%	1%	100%
A36 Cleveland Bridge	7,140	4,080	3,420	2,268	852	17,760	40%	23%	19%	13%	5%	100%
A36 Limpley Stoke	3,300	9,540	2,280	1,692	984	17,796	19%	54%	13%	10%	6%	100%
A36 Near Warminster	2,136	1,608	3,516	4,236	1,440	12,936	17%	12%	27%	33%	11%	100%
A350 / C13 combined	0	192	3,864	3,312	660	8,028	0%	2%	48%	41%	8%	100%
A37 South of Yeovil	0	984	3,228	876	1,596	6,684	0%	15%	48%	13%	24%	100%
HEAVY GOODS VEHICLES	**Number of trips within distance range**						**Proportion of trips within distance range**					
	0-10 km	10-25 km	25-50 km	50-100 km	>100 km	TOTAL	0-10 km	10-25 km	25-50 km	50-100 km	>100 km	TOTAL
A350 Melksham	0	199	364	312	36	911	0%	22%	40%	34%	4%	100%
A36 Cleveland Bridge	43	145	276	442	366	1,272	3%	11%	22%	35%	29%	100%
A36 Limpley Stoke	24	156	356	446	360	1,343	2%	12%	27%	33%	27%	100%
A36 Near Warminster	0	48	672	1,968	474	3,162	0%	2%	21%	62%	15%	100%
A350 / C13 combined	0	0	171	262	192	625	0%	0%	27%	42%	31%	100%
A37 South of Yeovil	0	180	366	253	336	1,135	0%	16%	32%	22%	30%	100%

4.14 The tabulation also shows HGV movement data. Most of the routes have between 60% and 80% of HGVs undertaking trips of more than 50km. Very few of the HGV trips are less than 10km.

4.15 These statistics, when combined, would confirm that the A36 and A46 routes are not as intensively used as the average trunk road network, fulfilling an **intra-regional** rather than **inter-regional** function.

Through Traffic

4.16 The issue of through traffic is particularly relevant for Bath – this is dealt with more thoroughly in the Bath Final Report.

The A37, A338, A350/C13 and the A34 North – South Routes

4.17 The A350, A338 and the A37 represent the main north-south routes extending from the south-east Dorset conurbation of Bournemouth, Poole and Christchurch north towards the M4 and M5. They need to be considered in conjunction with the A34, which is the main trunk road from the Southampton /Bournemouth and Poole areas, to the East, West and North of England.

4.18 The C13 runs parallel to the A350 between the Dorset towns of Blandford Forum and Shaftesbury. Whilst the A350 is the designated primary route, the C13 is some 2km shorter and is generally a good quality single 2 lane carriageway which passes through only one small village, the historic settlement of Melbury Abbas. This section of the A350 by comparison is very tortuous and passes through a number of small settlements along its route, many of which also have historic significance. Significant representation has been made to the study group and to the Government Office in relation to the designation of these two routes. Should the A350 continue to be the primary designated route or should the C13, in conjunction with some form of improvement to bypass Melbury Abbas, be considered as a more appropriate alternative for the primary route?

4.19 Based on current information, the C13 carries almost 2,000 more vehicles over the 12 hour period than the A350. This indicates that despite the advisory heavy goods vehicle restriction, the C13 continues to be regarded by the majority of drivers as being a shorter and more efficient route to take.

The A36 Codford to Heytesbury Improvement

4.20 The section of the A36 between Codford and Heytesbury has a very poor accident record with a personal injury accident rate in excess of that expected for a road of this type. Whilst speed restrictions have been implemented in recent years, its alignment is still substandard. An improvement scheme prepared by Wiltshire County Council was remitted by the Secretary of State for Transport to the Bristol/Bath to South Coast Study for assessment. A separate scheme was also submitted to the study team by the Council for the Protection of Rural England, which, for the most part, retains the A36 in its current condition but does include some of the junction improvements specified by the County Council. Both of these schemes have been assessed and the Wiltshire County Council design was recommended on the basis that environmental impacts could be mitigated. It reduces severance and will allow the community to re-integrate. The economic analysis indicates a positive net present value of between £1.8million and £3.1million over the 30 year evaluation period.

The A350 Westbury Bypass

4.21 The need for a bypass of Westbury was also remitted to the study by the Secretary of State for Transport. The A350 currently passes directly through the town centre with a number of sharp turns which are difficult for HGVs to negotiate. This has resulted in a short section adjacent to the route being declared an Air Quality Management Area. The BB2SC study was specifically required to identify the "strategic need" for a bypass rather than any specific alignment. Despite this, the majority of responses to consultation, while generally supporting the need for a bypass, often opposed a particular alignment.

4.22 Since the study is not looking at a specific route, or to recommend a specific route, the environmental assessment examined the broad impacts expected for Westbury Town Centre as a result of a new bypass. It is recognised that there will be disbenefits in terms of the impact of a particular alignment on the surrounding landscape, but these have not been evaluated through the BB2SC study, since it is not the objective to evaluate a particular route. However, it should be recognised that a full environmental impact appraisal will need to be undertaken by WCC.

4.23 For all alignments, the main impacts in the town centre are positive for all options, represented by reductions in noise and improvements in air quality. Other benefits will arise from reductions in severance, and a greater likelihood of people using alternative modes of transport as a result of less traffic presenting a safer environment for travel.

Summary

4.24 The travel demand information indicates that, with the exception of the A34, none of the routes within the study area have either the volume or the trip lengths close to those observed on strategic trunk routes. This is supported by examination of trip length frequencies, using data from the traffic model. To the north of the A303 many of the trips are found to be very local, especially around Bath, although the short length of A46 north of Bath is very close in comparison to traffic intensity found on a trunk road. South of the A303 the trip lengths tend to be longer, particularly for heavy goods vehicles, but the veh.kms/km are still well below those observed on national trunk routes.

4.25 The study concludes that the A36/A46/A350 is not extensively used for inter-regional trips, (e.g. from the South East to the South West, or from the West Midlands to the South West). Trips of this nature do occur but they are a very low proportion of the overall total. The route instead is used mainly for intra-regional travel between major settlements and commercial generators within the study area. The study can therefore conclude that the A36/A46/A350 routes fulfil an important intra-regional function and the decision to detrunk the route A36/A46 was appropriate.

4.26 In this analysis the C13/A350 parallel route between Blandford Forum and Shaftesbury is identified as having a local role in terms of both level of flow and position in the hierarchy of routes within the Study Area. It should not be promoted as an intra-regional route. Nonetheless, the route is still perceived as being of major significance by Bournemouth and Poole Borough Councils as well as Dorset County Council.

4.27 The main issue relevant to the railway network is the inadequate capacity on the Wessex line in the peak periods. There are specific low cost opportunities to improve the capacity of the network through longer train sets and small scale infrastructure improvements to provide additional train paths. Freight is not an issue on this route.

4.28 Bus services are the main measure by which improved accessibility to essential services can take place. The two main operators have already demonstrated that they can work successfully with each other as well as with the County Councils. More measures need to be implemented to widen the accessibility of the transport network to all sectors of the community and improve accessibility to essential services in towns and cities along the corridor. These measures can only take place through improved quality of services, real time information and continuing the dialogue between local authorities and public transport operators.

5 ENVIRONMENTAL ASSETS

5.1 The Environmental Assets Report has presented the key issues in two categories. The first relates to assets within the study area which have statutory protection or specific importance and which would represent a key constraint to any management strategy. Such categories include World Heritage sites, Areas of Outstanding Natural Beauty (AONB), Sites of Special Scientific Interest (SSSI), Scheduled Ancient Monuments (SAM), Candidate Special Areas for Conservation (CSAC), RAMSAR sites, and Special Protection Areas (SPAs).

5.2 The second relates to non-statutory assets that, due to their abundance or responsiveness to mitigation measures may represent assets that can accommodate and incorporate a change in the future.

The Strategic Corridor

5.3 The key statutory environmental designations within or adjacent to the A36/A46 corridor largely relate to landscape, nature conservation and cultural heritage designations. There are also some constraints relating to air quality and noise impacts on sensitive receptors.

5.4 The A46 from Bath to the M4 lies entirely within the Cotswold AONB. Of particular note is the section of the A36 which passes through the Cranborne Chase and West Wiltshire Downs AONB. At the southern end of the A36 approaching the M27 at junction 2 the route passes adjacent to the northern edge of the New Forest, itself a designated RAMSAR site, a Special Protection Area and a Candidate Special Area of Conservation. It is also currently the subject of a public inquiry for a new national park. The route also passes close to or through a number of designations found under the Countryside Agencies character initiative which include the New Forest character area, Salisbury Plain and the West Wiltshire Downs, the Avonvale and the Cotswolds.

5.5 On the A350 north of Warminster, key statutory designations include that section of road which passes to the west of Salisbury Plain, a designated SPA, SAC and SSSI. There are also a number of Scheduled Ancient Monuments and designations within settlements along the route which would present constraints relating to community severance, noise and air quality. South of the A303, the key statutory designations on the A350 are the Cranborne Chase and West Wiltshire AONBs and the South Wessex Downs Environmentally Sensitive Area (ESA). There are several SSSIs adjacent to the route including those at Fontmell and Melbury Downs, Sutton Combe, Hod and Hambleton Hills, Corfe Mullen and at Upton Heath.

5.6 Appreciation of the environmental assets are important to ensure that any options are developed with due consideration of the statutory and non-statutory environmental designations. The Bath Final Report examines in more detail the issues, in particular those related to the built environment, relevant to the city of Bath and its World Heritage status.

6 STRATEGIC OPTIONS

Appraisal Frameworks

6.1 Each of the options has been reviewed and where appropriate assessed using the Government's recommended approach for assessing transport schemes, the New Approach to Transport Appraisal, (NATA), supplemented by the guidance on methodology for multi-modal studies, (GOMMMS). This framework encourages projects to develop proposals that offer improvements across Government's main five objectives for transport, namely:

- The maintenance and improvement of the environment,
- Improving safety,
- Ensuring that schemes represent benefits to the economy,
- Improving accessibility across all sectors of the community, and,
- Improving integration in particular between different modes of transport.

Transport Interventions

6.2 A range of measures are possible for improving transport within the study area and Table 3.1 of the Options Report[6] identifies strategic intervention measures which are a range of "hard" and "soft" measures. The soft measures relate more to behavioural change and fiscal policies which encourage such behavioural responses. Harder measures refer to the construction or improvement of infrastructure.

6.3 The study findings confirm that the majority of journeys will, for the foreseeable future, continue to be undertaken by road transport. However the study acknowledges that measures must also be promoted that can combat the environmental damage being caused by cars and HGVs within the study area and to assist with more sustainable transport solutions. Measures must therefore encourage and influence travel by other modes. Many of the measures will need to be implemented through the Local Transport Plan process by the relevant local authorities. With the detrunking of the route a centrally managed approach to improvements will not be immediately possible although, as the options indicate, cross-boundary planning and improvements will be encouraged wherever possible.

[6] "Bristol/Bath to South Coast Study - Option Development and Appraisal Report", WSP, 2003

Improvements to the Rail Services and Operations

6.4 The following represent recommended strategic improvements for rail services and infrastructure on the railway network:

- As an immediate response to reduce the over-crowding on the South Coast to Bristol and South Wales railway line, the train operating companies should lengthen existing train services on the current timetable pattern.
- The Train Operating Company (TOC) should then consider the introduction of a two train per hour service between 0700-1900 between Southampton and Bath Spa stations. These improvements, which require additional rolling stock but no new infrastructure, will need to be approved by the SRA,
- Through research and discussions with TOCs, consideration should be given towards "express" and "local" service patterns on the timetable and opportunities for selective market segmentation with an improved quality of comfort for those prepared to pay a premium fare.
- Limited rail infrastructure improvements on the line to enhance service reliability, including signalling improvements between Bradford junction and Bathampton, can potentially be delivered as part of the Great Western Main Line upgrade which forms part of the Government's 10 year plan to 2010.
- At selected stations, consider improvements to parking availability, passenger waiting facilities and passenger information to improve the perception of the rail services, funded jointly by the TOC(s) and the Local Authorities via their LTP.

Car to Rail Passenger Transfer

6.5 The analysis indicates that based upon these service enhancements an additional 3,690 passengers per day could be expected to transfer to the railway network over a 12 hour period. Some 2,600 of these new passengers would travel through Bath Spa station thereby allowing the SRA to focus their investment on this particular interchange once budgetary constraints are removed. Clearly, for these transfers to take place, the current passenger market needs to be retained and then, for the "new" market to be attracted from their cars, the changes identified above will have to be introduced.

Implementation

6.6 The improvements to the railway network are singly dependent upon the train franchisee leasing additional rolling stock to either lengthen trains, or taking on additional rolling stock and staff, to provide a higher service frequency. The benefits will be retention of existing patronage and

higher patronage as a consequence of improved reliability and service frequency. Market segmentation may enable a premium fare to be charged for those prepared to pay for a higher level of comfort, particularly travelling on business. Again, this will be at the instigation of the train operating company. Many of the improvements at railway stations such as passenger information facilities will be secured through the co-operative working of the local authority with the train operating companies and funding for specific improvements via the local authority and the Strategic Rail Authority.

6.7 In order to attract these passengers, the rail service needs to be improved. Train lengthening will address the overcrowding. Increases in train frequencies will attract more passengers. The existing service of 3 trains every two hours is assumed to improve to 2 trains every hour. This is estimated to require an additional 3 train-sets.

6.8 From discussions with Wessex Trains and Porterbrook Leasing, the current cost of leasing a type 158 3-car set, including maintenance, is about £630,000 per annum. The track access charges are estimated in 2023 to be approximately £500,000, and wages for crew, approximately £210,000. The total incremental costs for a 2tph service frequency are estimated to be in the order of £2.63 million per annum, at 2003 prices. The additional revenue would be equivalent to the 3,690 trips estimated to switch to rail by year 2023 identified in paragraph 4.20 of the Options and Appraisal Report. Based on a current (2004) fare of £8.33 per round trip, this would generate incremental revenue of £8.8 million with no allowance for inflation. This will result in a net financial benefit for the operator in 2023. Clearly a proportion of this demand will arise as soon as the service enhancements are introduced. It could then be expected to increase to the 3690 trips at 2023. If the study was to assume that only one third of these new trips were derived in, say 2005 then the financial case for the service increase would still exist. This approximate calculation will need some refinement, but it is evident that a business case exists for a more frequent train service on the line. More detailed consideration of a service operating pattern is not within the remit of this study, but if the basic operational parameters could be satisfied by the Train Operating Company (TOC), then the overcrowding would be reduced and the perception of the service on this line would be improved.

Bus Transport

6.9 The majority of the bus improvements will be delivered by the local authority in partnership with the bus operators. In discussions with the bus operators, most of their identified opportunities for improving bus services relate to infrastructure and quality of service as opposed to service expansion. These improvements, which are already happening and which can be further expanded, include the roll-out of real-time passenger information to bus stops, interchanges and other important “nodes” for passengers; improving the perception of the quality of service through

improvements of bus stops and other waiting facilities; driver courtesy - in fact all of the essential elements of a “quality bus” approach.

6.10 This study also recommends that a cross-boundary Transport Planning and Operations Partnership is established drawn from representatives of local authorities, the bus operators, rail operators and regional bodies such as Government Office for the South West, the Regional Assembly, as well as Government Office for the South East in order to ensure that travel between this region and the South Coast conurbations is addressed. This body would be able to take a holistic view on public transport service patterns, co-ordination and integration, cutting across administrative boundaries where required.

Strategic Improvements to the Highway Network

6.11 The detrunking of the A36/A46 would revert the management of this transport route from the Highways Agency to the local highway authorities of Hampshire, Wiltshire, Somerset County Councils, Bath and North East Somerset Council and South Gloucestershire Council. The Terms of Reference for this study require the identification of measures to ensure that the corridor is managed to a consistent standard by these highway authorities. In addition, two schemes were remitted to this study by the Secretary of State for Transport, a safety improvement scheme on the A36 between Codford and Heytesbury and a bypass for Westbury on the A350.

A36 Codford to Heytesbury Scheme

6.12 The A36 between Warminster and Salisbury has been improved incrementally over the years. Between Codford and Heytesbury, the A36 is sub-standard and has a poor accident record and, although some improvements have taken place to reduce speeds, there were still 41 road traffic accidents in the five year period between November 1997 to October 2002. Their locations are found along the whole length of the road and not just concentrated at junctions. By converting these accidents to a rate per million vehicle-kms travelled, it was found that the accident rate for this section of road was some three times higher than that which would be expected for a road of this type, based on national statistics.

6.13 Two schemes were examined to improve this section of highway. A low cost alternative was promoted by the Council for the Protection of Rural England and a higher cost alternative by Wiltshire County Council. The road is in an Area of Outstanding Natural Beauty and close to a Special Area of Conservation and has raised particular concerns for the CPRE and others regarding its impact on the environment. As such the low cost alternative seeks to maximise the scheme safety benefits yet minimise impacts on the local environment through addressing the safety issues at the junctions. Because the lower cost scheme retained considerable lengths of the

existing road, the reduction in accidents would not be as great as with the Wiltshire County Council scheme, which includes junction and highway realignment but has also sought to minimise impacts on the sensitive landscape through mitigation measures.

6.14 The schemes have both been appraised through the NATA/GOMMMS framework. The economic net present value of the Wiltshire County Council high cost scheme would be between £1.8M and £3.1M, depending on the economic growth projections. This compares to an economic net present value of -£0.98M to -£0.68M for the lower cost alternative. The benefit to cost ratio for the Wiltshire CC scheme is between 1.3 and 1.5 and it would reduce accidents by between 98 to 118 personal injury accidents.

6.15 Concerns regarding the intrusive remodelling of the WCC scheme can be offset through the proposed roads cutting which would also reduce visual intrusion of the traffic using the route. Management measures will also control surface run off into sensitive receptors, (including the River Wylye).

6.16 Overall, the Wiltshire County Council scheme meets the objective of improving safety whilst retaining a positive rate of return. Its impacts on the sensitive local landscape are mitigated, it reduces severance and allows the community to be reintegrated. It can also provide a standard of route which is unlikely to bring about an increase in demand over and above that currently expected through natural traffic growth. The WCC scheme is recommended to proceed through the statutory processes.

A350 Bypass for Westbury

6.17 A bypass for this town has been considered for a number of years and an eastern route was taken to public consultation in the late 1990s by Wiltshire County Council. The Secretary of State for Transport, in December 2001, determined that the requirement for a bypass at Westbury should be remitted to the BB2SC study. Three different bypass alignments have been examined - to the east, to the west and an inner western route.

6.18 The BB2SC transport model permits an analysis of traffic routings with the bypasses in the model network. An evaluation has also been undertaken examining the savings to vehicles from their travel time and operating costs. This allows a comparison to be made independently to the WCC appraisal. The appraisal undertaken by WCC indicates that for the eastern bypass the scheme would reduce accidents over a 30 year evaluation period by 180 PIAs. This is monetarised to a saving of almost £5M. The vehicle travel time and operating cost savings are very significant, being some £62.7M over the 30 year period. When these benefits are compared to the present value of the scheme's cost, estimated at £14.4M, then it is clear that there are strong net present

values for an eastern bypass. The analysis undertaken by Wiltshire County Council compares favourably to the BB2SC assessment, undertaken for each of the bypasses alignments, as tabulated in Table 4.6 of the Option Development and Appraisal Report.

6.19 Environmental impacts for each of the three alignments were not undertaken but the benefits attributed to the town centre arising from the three generic routes examined would imply significant benefits in terms of air quality impacts, reductions in noise, community severance, and vibration.

6.20 The analysis also demonstrated that the scheme's impact on the A36 would be limited. It is therefore recommended that a Westbury Bypass be approved as a local improvement measure for the town with complementary traffic calming in order to improve the town centre, improve the local commercial and town centre environment and encourage use of the bypass.

The A350 as an alternative route to the A36/A46

6.21 The benefits that a bypass of Westbury brings to the town are not of a scale to have a strategic impact on the use of the A36/A46. The A350 from M4 junction 17 south to Warminster has been mooted as an alternative route to the northern section of the A46/A36. Consequently, an option which examined dualling the A350 north of Warminster was assessed by the study in order to establish whether this would have a strategic impact on traffic flows within each of the corridors.

6.22 The assessment indicated that in terms of reducing traffic on the A36/A46 through Bath, there was negligible impact. While traffic flows on the A350 north of Warminster were predicted to increase, this was as a result of local traffic on local roads adjacent to the A350 re-assigning to the A350 in order to take advantage of the much higher travel speeds on the proposed dual carriageway. Since this local benefit is not part of the study's objectives then this alternative improvement package was not progressed further.

A36/A46 Link Road

6.23 A section of highway linking the A36 south of Bath to either the A4 or the A46, primarily to remove through north-south traffic, has been examined on a number of occasions. A link between the A4 at Bathampton Meadows to the A36 at Dry Arch south of Bathampton was considered and rejected by the Inspector at the Batheaston Inquiry in 1990. A much longer route, the East of Bath to Beckington scheme, was instead progressed since this would offer much wider strategic traffic benefits, removing traffic from the historic town of Bradford on Avon as well as from the city of Bath. This scheme was also subsequently abandoned in the late 1990's and the issue of "through traffic"

using the A36 from Dry Arch via the A4 to rejoin the A46 at London Road roundabout remains with Bath at the current time.

6.24 The resurrection of this link road improvement scheme has been considered by the BB2SC study. The schemes outlined in Figure 6.1 are considered appropriate to progress given the built and natural environment and the specific constraints presented by the topography, the railway line, the A4, the River Avon and the Kennet and Avon canal. Very preliminary engineering assessments have been undertaken on these alignments and they are found to be deliverable. The estimated cost of each is approximately £46M which includes the 65% "optimism bias" which Government recommends for those schemes at preliminary design stage.

6.25 The traffic assessment indicates that the link road options do not have any major impact on the volume of traffic on the A350 north or south of Warminster. Thus, the link road has benefits which are more attributable to local than to longer distance movements. The greatest benefits are observed on the A36 Cleveland Bridge and on the A4 London Road. The latter is predicted to enjoy a traffic flow reduction in 2023 over the 12-hour period of almost 7,000 vehicles under option A, the shorter of the two options considered.

6.26 The analysis has also examined through traffic movements on the A36 Cleveland Bridge assuming the link road is constructed. The total 12 hour flow in 2023 on this bridge is forecast to be of the order of 22,000 vehicles. Of these, some 20,700 are cars and vans, the remainder being HGVs. Of the 20,700 car and van vehicles, 1,300 are movements which are neither starting or stopping within the Bath urban area i.e. through movements. When the link road is constructed these reduce to a little under 200 vehicles which represent only 1% of the remaining car and van traffic left on the bridge when the link road is built (16,195 vehicles).

6.27 Looking at heavy goods vehicles, the quantum of through traffic is the equivalent of 716 HGV movements out of the total 1,300 HGV movements. When the link road is constructed, this reduces to only 24 HGVs in the 12 hour period, a significant reduction.

6.28 In 2023, the link road itself is predicted to carry traffic flows in the 12 hour period of between 14,500 and 16,700 vehicles. There is a high proportion of HGVs on the link road indicating the successful removal of this traffic from the city of Bath. The following conclusions can be drawn from the construction of the A36/A46 link road:

- The link road reduces the 2023 12-hour traffic flows on the A36 Cleveland Bridge by some 6,000 vehicles over the 12-hour period and on the A4 London Road by some 7,000 vehicles.
- Traffic in Bradford on Avon is reduced by 1,000 vehicles over the 12-hour period,

- Traffic on the A36 just south of the link road increases by about 3,500 vehicles and on the A46 north of Bath, by about 2000 vehicles per 12-hour day
- At least 50% of traffic on the link road is undertaking a through movement.
- Most of the HGVs which were previously on the A36 Cleveland Bridge are now on the link road and,
- Through traffic on the A36 Cleveland Bridge is predicted to reduce from some 10% of total traffic to a little over 1% by 2023.

6.29 An economic analysis has also been undertaken using the information obtained from the BB2SC traffic model. The cost of the scheme has already been indicated at some £46M. The time and distance savings across the traffic study area have also been examined, both for the situation without the link road, and under a scenario where a link road is constructed. A net present value has been conservatively determined at £15M with a benefit to cost ratio of 1.5. This analysis excludes any inclusion of traffic accident benefits which would further improve the net present value. Based on this simple calculation this scheme is economically worthwhile constructing.

6.30 The environmental assessment of the link road proposal reveals the following key aspects:

- The new road would reduce the impacts of noise generated by traffic to some 1500 properties on the existing A36/A46 route. Similar benefits are expected for air quality. The London Road is a designated Air Quality Management Area (AQMA) for NO2 and PM10 and the reductions in traffic described above can be expected to reduce the level of pollutants sufficiently to enable the designation to be removed. The traffic reduction can also be expected to bring about some small improvements to the townscape through a reduction in traffic intrusion.
- Since the link removes the majority of HGVs, there would be significant benefits to historic heritage resources along London Road and Bathwick Street.
- The link will have very large adverse impacts on landscape, along with potentially significant adverse impacts on biodiversity, the water environment, and would have major intrusive effects on the valley pattern.
- Where the route crosses the canal, it can be expected to be disruptive to the many leisure users of the canal and towpath, with consequential losses in the sub-objectives of physical fitness.

6.31 The route's significantly large adverse impacts on landscape and biodiversity and the water environment will need to be balanced with the benefits likely to accrue in Bath arising from traffic reduction and associated improvements in noise, vibration, severance, townscape and air quality.

A Management Strategy for the Corridor

6.32 An assessment has also been undertaken on time and distance calculations between common points on the south coast to common points west of the M4. This analysis indicates that for traffic travelling from the port of Southampton and wishing to travel to Cardiff then the A34 is by far the quickest route to use. For routes between Poole and Cardiff, it was found that the A350 was the quickest route, in particular if used in conjunction with the A36/A46. Routes from Poole via the A37 or the A34 were both significantly longer.

6.33 However when comparing fuel costs on motorways and dual carriageways, the A34 route is still a viable proposition from Poole to Cardiff, but the overall standard of route on the A37 would enable HGVs to have fuel consumption between these two end points that is very similar to the A36/A46 route to Junction 18. In this case it is still worth advisory signing for HGVs from the port of Poole via the A37. An indicative signing strategy is detailed as Figure 6.2. The government's introduction of HGV road use charging is likely to reinforce this routing choice, although the method of charging has yet to be determined.

6.34 If the Coordination Group is convened, then its remit could be extended to cover travel by all modes throughout the study area. The body should include representatives of Hampshire, Wiltshire, Dorset and Somerset County Councils, Bath and North East Somerset Council, Bristol City Council and South Gloucestershire Council. Representatives from the Government Office, the Regional Assembly, rail and bus service operators, the police and freight industry could also be invited to attend when the agenda made it appropriate.

6.35 The BB2SC model can assist in this regard by providing a platform for the assessment of some transport interventions. It is also recommended that Government Office for the South West request that the A36/A46 is covered as a separate item under the Annual Progress Report submissions by the authorities affected. A lead authority should be nominated to manage the traffic model on behalf of the local authorities along the route, and Wiltshire County Council is proposed by the study. Issues which this group may wish to consider will include the following:

- Consistency and standard of signage
- Freight routes
- Accident prevention and accident mitigation measures
- Speed management measures
- Development control
- Pedestrians and walking routes
- Integration between transport modes
- Safety improvements

- Bus and rail enhancements

7 SUMMARY

7.1 This report has concentrated on the intervention measures that can deliver benefits to the corridor and tackle the study objectives of:

- Developing a strategy to improve transport services in the corridor
- Seek opportunities for modal transfer, and
- Devise a strategy to manage the north west to south east axis transport corridor.

7.2 The transport networks and corridors have been thoroughly defined. The railway network clearly offers opportunities for improvement but until funding mechanisms via the Strategic Rail Authority are reinstated then the deliverability of many of the more expensive infrastructure improvements detailed in the Rail Report are not considered likely before 2010 at the earliest. Small incremental changes to retain current patronage and to develop this market can be achieved at minimal incremental cost.

7.3 Longer distance coach and stage carriage services also have a role to play in facilitating additional opportunities for the car driver to travel on the road network. Addressing these issues will also depend on the bus operators identifying the commercial need for service expansion and then working in partnership with the local authority(s) to deliver these improvements. The focus is expected to be more on quality of service, encouraging and consolidating the market rather than improving the existing market share.

7.4 The analysis undertaken on the strategic highway network confirms that the decision to detrunk the A36/A46 is correct. This route fulfils an intra-regional function primarily accommodating movements between principal urban areas. The majority of road traffic is undertaking relatively short distance trips, local to towns and cities in the study area or between them. Whilst longer distance movements do take place these are found to be on those routes to the extreme east and west of the area, (the A34 and the A37), and to a lesser extent on those links south of the A303, but on none of the routes are traffic movements comparable to expectations for the core trunk road network.

7.5 Local improvement measures to improve the safety of the highway network and overcome traffic congestion in Westbury have been considered. Both the safety improvement measures on the A36 between Codford and Heytesbury and a bypass for Westbury, are recommended to be taken forward.

7.6 Turning to the issue of a link road between the A36 and the A46 to address the issue of through traffic in Bath, the analysis has indicated that whilst the construction of such a link would be severe in terms of its impact on the landscape and local biodiversity, the benefits to Bath are also considerable. The intrusive nature of cars and HGVs on this historic environment needs to be balanced with the impact of a link road on the local environment. Further work is clearly needed in this regard but the environmental impacts and benefits do have a degree of balance.

7.7 In terms of the economic benefits alone, there is a clear case for building a link road. A simple cost benefit analysis indicates a net present value of at least £15M, which is not surprising given the current and predicted levels of congestion within Bath.

7.8 The link road is also recommended to be taken forward as a scheme worthy of further consideration. The more local impact of measures to address the traffic impact on Bath are included in a separate Final Report on Bath Issues.

7.9 Subject to acceptance of these recommendations by the Regional Assembly and Bath and North East Somerset Council , further work will be required to take these measures forward, using the Local Transport Plan process.

WSP Group