

**Government Office for the South West**

London to South West and South Wales

Multi Modal Study

SWARMMS FINAL REPORT

May 2002



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# Government Office for the South West

## London to South West and South Wales

### Multi Modal Study

### SWARMMS FINAL REPORT

## Contents Amendment Record

This report has been issued and amended as follows:

Issue	Revision	Description	Date	Signed
20	0	SWARMMS Final Report – 1 <sup>st</sup> Draft	Apr'02	DB/MBr
20	1	SWARMMS Final Report – Final Draft	Apr '02	DB/MBr
20	2	SWARMMS Final Report	May '02	DB/MBr

*The Preferred Strategy will go to the Regional Assemblies for the South West and South East of England, and the Welsh Assembly Government, to consider their recommendations and as an input to the revision of the Regional Transport Strategies in Regional Planning Guidance for the South West and the South East.*

*These bodies will consider whether they wish to support the strategy. They will then, in turn, make recommendations to Ministers. Only then will any decisions be taken on the addition of schemes to investment programmes.*

*The study has been taken forward in an open and consultative manner and the possible options discussed publicly. Many of the proposals are at an early stage in the planning process and if the recommendations were accepted, further work would be required to prepare and consult on detailed designs and route alignments. This will allow specific impacts to be identified.*

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## **Appendix A : Remitted Road Schemes**

# Executive Summary

- E.1 This report provides Halcrow's overview of the London to South West and South Wales Multi Modal Study (SWARMMS), which is one of a series of multi-modal studies being carried out to take forward the policies in the Government's 10 Year Plan. It covers an extensive area between the M25 and South Wales/Penzance and its findings will be considered by the respective Regional Assemblies and the Welsh Assembly Government in formulating their transport policy guidance.
- E.2 The study has wide ranging transport and planning objectives and is focussed on improvements to the whole transport system (for both passenger and goods traffic) that support the economic, social and environmental aims for the area in a cost effective and sustainable manner. It has been guided by a broadly based Steering Group and has included extensive consultation with a wide range of stakeholders. The study has used a forecast year of 2016.
- E.3 As well as the general problems of road congestion and limited public transport services the area suffers from 'economic peripherality' in the far South West and unusual transport pressures from the buoyancy of the Thames Valley in the east. Devon and Cornwall are particularly dependent on tourism and there are many areas where the environment is especially valuable and vulnerable.
- E.4 The process has been a logical one progressing from identification of problems and objectives, through the sifting of a wide range of potential measures to assess four composite strategies. The results of this were then used to develop an Emerging Strategy which, in turn, was refined and tested. From this ten component Plans were formulated comprising:

### *Four Study-Wide Theme Plans*

- Reducing the growth in travel demand
- Tourism
- Rural access to the transport system
- Inter-modal freight

#### *Four Multi-Modal Transport Corridor Plans*

- London (Reading/Basingstoke)-Exeter (including the Berks & Hants and Waterloo-Exeter rail lines and the M3/A303/A30).
- London (Reading)-Bristol & Severn Estuary (including the Great Western rail line and the M4).
- Bristol-Exeter (including the Bristol-Exeter railway and the M5).
- Exeter-Penzance (including the Exeter-Penzance railway, the A30 and the A38).

#### *Two Principal Urban Area (PUA) Plans*

- Greater Bristol
- Swindon

E.5

Together these make up a wide-ranging and balanced Preferred Strategy to improve transport conditions between London and the South West and South Wales. Its key features are:

- **A focus on reducing the growth in travel demand**  
Although not sufficient on its own, reducing the growth in travel demand provides major congestion and safety benefits.
- **Improved reliability on the rail network**  
Additional infrastructure will enable greater flexibility of operations over the rail network, improving reliability of services.
- **Reduced journey times on the rail network**  
The additional infrastructure also allows more rail services to be run, serving both local and longer distance journeys. This in turn permits a revised stopping pattern of services, which reduces rail journey times between key urban areas.
- **More choice and reduced overcrowding on the rail network**  
The increase in rail services will create better conditions for the travelling public and increase rail's mode share.
- **A more robust strategic road network**  
The provision of two high quality routes along the SWARMMS corridor will create a more robust network.

- **Improved reliability on the road network**  
New road schemes and increased use of technology will improve operating conditions on the road network and improve reliability of journey times compared with what they would otherwise be.
- **Improved safety on the road network**  
Local safety schemes and the new road schemes will reduce the number of accidents on the road network.
- **Enhanced coach and express bus services**  
Faster services will be facilitated by the provision of new Coachways, and more comprehensive route networks will increase choice of travel mode.
- **Increased public transport in rural areas**  
New rural transport schemes will be provided to improve accessibility for those without access to a car.
- **Support for improved urban public transport and traffic restraint**  
Proposals within major urban areas for improved public transport and traffic restraint will improve travel conditions on the strategic corridors as well as provide local benefits.
- **Limiting impacts on areas of greatest environmental sensitivity**  
with considerate design to minimise intrusion but careful mitigation will be needed to reduce adverse impacts. In many places, however, the local environment will be improved by the implementation of SWARMMS' recommendations.

E.6

It is estimated that by 2016:

- Use of the rail network is forecast to grow by almost 70% compared to present day levels, and **there will be about twice as many trains** to accommodate the increased number of passengers.
- **Some 1000 fewer people will be killed or seriously injured** on the road network over a 30-year period.
- Although travel on the road network is forecast to grow by over 25% compared to present day levels, **there will be greater consistency of standards on key routes.**
- The travelling public will have **a much-improved selection of coach, express bus and rural transport services** available to them.

- **Interchange between modes will be more convenient** than currently, with improved facilities for travellers.

E.7 The Preferred Strategy has been prioritised and costed and the actions required identified along with those responsible for their delivery. The most expensive component relates to improvements to the railways at a cost of over £2000m. However, approximately £1300m of this sum is associated with rail infrastructure improvements between Reading and London Paddington, outside the SWARMMS direct study area. These improvements are required to facilitate increases in a wide range of rail services and not simply accommodate the SWARMMS service proposals. As such, it is somewhat misleading to attribute all of these costs to SWARMMS. Necessary road improvements are estimated to cost about £400m. Total capital costs for the entire Preferred Strategy will be about £3bn and there will need to be ongoing revenue expenditure of about £200m annually to support the public transport services and operate other transport measures within the strategy.

E.8 Overall:

- SWARMMS has sought to develop a vision for the development of the main transport corridors between London and the South West and South Wales. In doing so, it has been mindful of the practicalities of implementing the strategy.
- The outcome is a strategy that is capable of delivery over the next 15 years, although recognising that some of the larger infrastructure projects may take a little longer to implement, particularly on the rail networks.
- It is a strategy which is comprehensive. It is focussed on reducing congestion accidents in key corridors and underpinning planned land use changes. It provides major investment in the public transport network and services and enhances integration. In doing this it has sought to minimise the adverse effects of transport on the environment.
- As such, the strategy is balanced and wide-ranging. If implemented in full, it will greatly assist in providing a sustainable and integrated transport system for the area which will support the spatial strategy defined within Regional Planning Guidance.

E.9 Ten individual highway schemes were remitted for consideration as part of the SWARMMS study and the advice given on these is set out in Appendix A.

# 1 Introduction

## **1.1 Contents of the Report**

1.1.1 This report brings together the conclusions from the London to South West and South Wales Multi-Modal Study (also known as SWARMMS).

1.1.2 The background to the study is described in the remainder of this introductory chapter and Chapter 2 goes on to describe the objectives and vision of the study in the context of the key transport related problems that the SWARMMS area faces.

1.1.3 Chapter 3 sets out the Preferred Strategy and the content of the key components of the ten individual Plans with Chapter 4 providing an overview, Chapter 5 outlines what the strategy will achieve. Chapter 6 describes what is needed to implement the strategy including the priorities, costs and procedural requirements.

## **1.2 Background**

1.2.1 In July 1998 The Government set out its policies for the future of transport in the UK in the White Paper<sup>1</sup> 'A New Deal for Transport: Better for Everyone'. This heralded a radical change in transport policy with improved public transport and reduced dependence on cars. Rather than proposing new roads the policy is rather one of managing and maintaining the existing system. This White Paper was followed by a number of 'daughter documents' setting out what this meant for the different aspects of transport policy. These identified the need for twenty-one multi-modal studies to be carried out in three tranches. SWARMMS is one of the eleven studies in the first tranche and has been commissioned through the Government Office for the South West.

1.2.2 Subsequently in July 2000 the Government published its 10 Year Plan for Transport<sup>2</sup>. This set out the measures and resources needed to make the Government's integrated transport policy a reality. The 10 Year Plan proposed that £180bn should be spent over ten years on transport of which £60bn should be on the railways, £59bn on roads (local and national) and £59bn on local

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<sup>1</sup> A New Deal for Transport: Better for Everyone, Cm 3950, HMSO, London, July 1998

<sup>2</sup> Transport 2010 The 10 Year Plan, Department of Environment Transport and the Regions, HMSO, London, July 2000.

transport. A key aim of the plan is to substantially increase the use of rail for both passengers and freight.

- 1.2.3 The SWARMMS area is shown in Figure 1.1 and extends from the M25 to Penzance in the South West and the Severn Estuary towards Wales. It includes the M4/M5 Motorways and the M3/A303/A30/A38 corridor to the south. It also includes the rail lines between Paddington, Reading, Swindon, Bristol, Taunton, Exeter and Penzance, and between Waterloo, Basingstoke, Salisbury, Honiton and Exeter.

**Figure 1.1: Map of the SWARMMS Study Area**



- 1.2.4 SWARMMS does not treat the area to the east of Reading and Basingstoke in any detail. This is the subject of the Thames Valley Multi-Modal Study (TVMMS), which is due to report later this year. Moreover, the M25 corridor is the subject of a separate multi-modal study (the ORBIT Multi-Modal Study) which is also due to report its findings later this year.

- 1.2.5 The findings of these multi-modal studies will be provided to the relevant regional assemblies (in the case of SWARMMS the South West Regional Assembly, the South East England Regional Assembly and the Welsh Assembly Government) to assist them in the development and reviews of their regional transport strategies.

### **1.3**

#### ***Study Process***

1.3.1

Halcrow was appointed by the Government Office for the South West in March 2000 to undertake the London to South West and South Wales Multi-Modal Study. The overall aim of the study was to make recommendations for a long-term strategy to address passenger and freight transport needs within the M4/M5/A303/A30/A38 key transport corridors incorporating the parallel rail routes, including where appropriate a plan of prioritised, specific interventions to address existing and predicted strategic transport problems in this area. This looked in particular at opportunities for reducing congestion by better management and modal shift, as well as options for taking forward focused improvements.

1.3.2

The study has been overseen by a Steering Group that included representatives of:

- Government Office for the South West
- Government Office for the South East
- Department of Transport, Local Government and the Regions (Multi-Modal Studies Unit)
- Welsh Assembly Government
- South West Regional Assembly
- South East England Regional Assembly
- South West Regional Development Agency
- South East England Development Agency
- Confederation of British Industry
- Sustainability South West
- Strategic Rail Authority
- Highways Agency

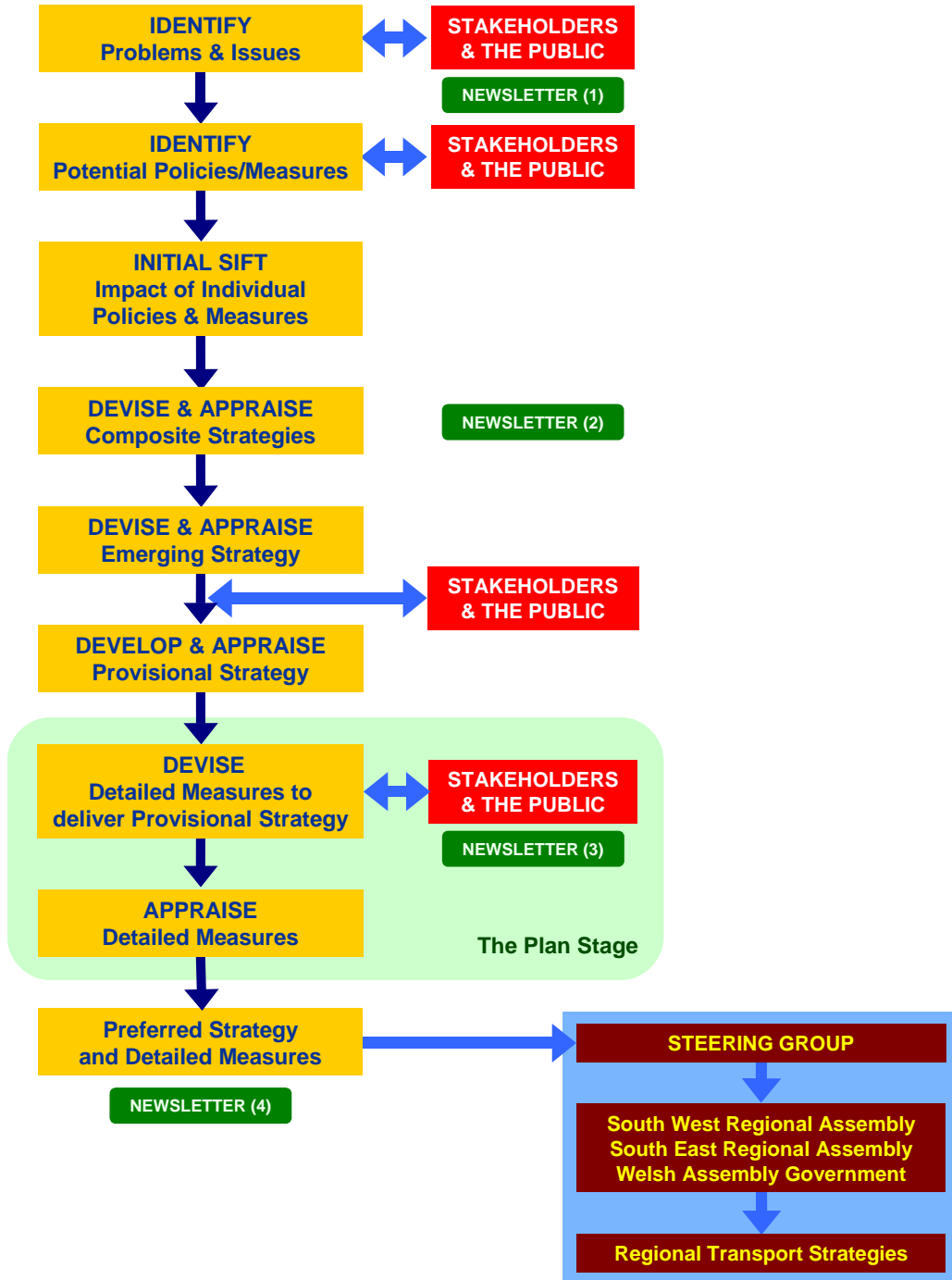
1.3.3

A key feature of the study process has been the extensive consultation that has been undertaken. Twenty-eight exhibitions and workshops have been held along with many meetings with interested parties either individually or in some instances (e.g. the statutory environmental bodies) as groups. The stages at which consultations took place are shown in Figure 1.2.

1.3.4

Substantive Reports have been published on the SWARMMS website <http://swarmms.org.uk> and four Newsletters have been published at key stages in the process. Views of the public have been solicited by a questionnaire to which there were over 1000 responses.

**Figure 1.2: Study Process**



1.3.5 The conduct of SWARMMS followed a logical sequence of identifying problems, reviewing the measures that could be used to solve or mitigate these from which four broad Composite Strategies were compiled. These were then reviewed in the light of the objectives of the study; Government guidance on the new approach to appraisal<sup>3</sup> and the Guidance on the Methodology for Multi-Modal Studies (GOMMMS)<sup>5</sup> was applied and the Emerging Strategy was produced. Following further analysis and consultation this was developed into the Provisional Strategy. Whilst this was seen as the right way forward it needed to be subject to further exploration by a series of sensitivity and ‘what if’ tests and appraisal of the feasibility and effectiveness of the specific theme and corridor Plans that were required to underpin it.

1.3.6 Following the completion of this process the Preferred Strategy has been determined. All the analysis has been based on an horizon year of 2016 but with recognition that the strategy should be robust over a longer period. The planning assumptions reflect Regional Planning Guidance for the SWARMMS area.

#### **1.4 Vision and Realism**

1.4.1 From an early point in the study SWARMMS has been confronted by the two key issues of vision and realism. That is:

- a variety of stakeholders have informed us that any transport strategy must have **vision** if it is to address the serious problems experienced today and in the future on the region’s transport networks, and that any strategy without such vision will merely replicate the short-sightedness of many previous investment decisions; yet
- a variety of stakeholders (often the same as those who commented on the vision) have also informed us that any transport strategy must be capable of **implementation in a reasonable timescale** if the study is not to end up as ‘yet another Consultant’s report sitting on a shelf’, with some stakeholders going further to indicate that there must be a set of clearly identifiable ‘quick wins’ for early implementation.

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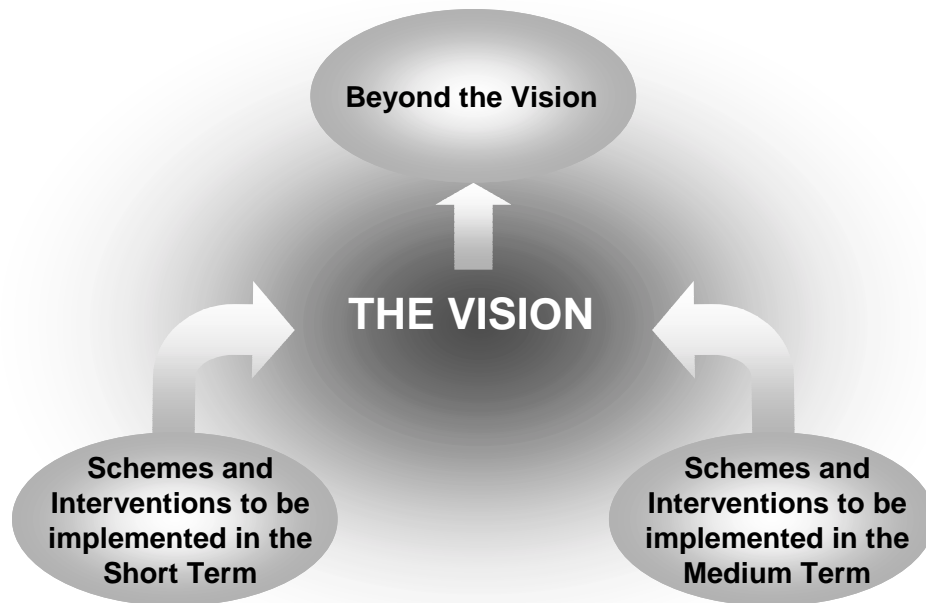
<sup>3</sup> Guidance on the new approach to appraisal, Department of the Environment Transport and the Regions, London, September 1998.

<sup>4</sup> Integrated Transport Economics and Appraisal, Department for Transport Local Government and the Regions, London, March 2002.

<sup>5</sup> Guidance on the Methodology for Multi-Modal Studies, Department of the Environment Transport and the Regions, London, May 2000.

- 1.4.2 There are obvious tensions between these two issues. At one extreme it would be possible to prepare a transport strategy that was so visionary that it was incapable of delivery. At the other extreme it would be possible to concentrate to such an extent on the practicalities of implementation that the strategy comprised a series of early schemes and interventions that contained little cohesion and failed to provide the change in transport provision which the region needs.
- 1.4.3 The aim, therefore, must be to produce a transport strategy that both provides a vision and is capable of delivery. Our approach to meeting this crucial requirement is explained below, and is shown in simple graphical form in Figure 1.3.

**Figure 1.3: The Overall Approach to Delivering the Vision**



- 1.4.4 The pivotal component of the approach is **The Vision**. We consider it essential to have a clear vision of the required transport provision in the future, and, importantly, that this should not be diluted by short-termism views on deliverability. It follows that all schemes and interventions that are proposed must

have a clear role to play within the vision; if they do not, then they should not be progressed.

1.4.5 We accept that realising the vision will take time. Some parts, however, can be implemented quickly as **Schemes and Interventions to be implemented in the Short Term**. These should not be dismissed simply as ‘quick wins’; they are integral building blocks of the vision, which, for a variety of reasons, can and/or should be implemented before others.

1.4.6 The **Schemes and Interventions to be implemented in the Medium Term** are also integral building blocks of the vision. Consistent with and complementary to those implemented in the short term, they will enable the full vision to be realised. Those schemes and interventions to be implemented within this timeframe either have lower priority or require a longer lead-time than those implemented in the short term.

1.4.7 In developing the vision, it is important to retain a sense of realism and recognise that not all transport-related problems will be fully solved in the future, albeit that they will be much reduced. It is therefore important to also look **Beyond The Vision** such that any new interventions (perhaps based on emerging technologies) can be accommodated within the vision at a later date.

1.4.8 In summary therefore:

- the vision is key;
- a clear programme of short and medium term schemes and interventions ensures that the vision can be delivered; and
- we must be aware of longer-term potential within the region’s transport systems.

## 2 Objectives and Vision

### 2.1

#### *Study Objectives*

##### 2.1.1

These were set out in the Terms of Reference as follows:

- To reduce congestion on the key road and rail transport corridors, particularly around the principal urban areas of Bristol, Swindon, Weston-super-Mare, Taunton, Exeter and Plymouth.
- To assess the main land use options for the principal urban areas, and the related transportation options, in particular public transport.
- To improve safety.
- To reduce the impact of seasonal traffic on the key transport corridors, whilst safeguarding regional and local economies.
- To improve modal integration, for passengers and freight.
- To examine broad solutions to the problems at those locations where some road schemes are 'on hold'.

##### 2.1.2

These 'remitted schemes' are listed in Appendix A along with the advice that has been given during the course of SWARMMS on how they should be dealt with.

##### 2.1.3

During the course of SWARMMS we built upon the study objectives to include:

- (a) At the national level, to address the five key criteria of environment, safety, economy, accessibility and integration, as set out in the Government's Integrated Transport White Paper;
- (b) At the regional level, to address the regional planning objectives for both the South West and South East along with those of the two Regional Development Agencies, SWRDA and SEEDA; and
- (c) The specific identification of the range of transport-related problems in the study area to provide a more local and focussed basis against which future Strategies and Plans could be judged.

##### 2.1.4

The Regional Planning Guidance for the South West aims at:

- (a) ensuring that the level, distribution, and nature of development does not further threaten the special character, diversity, and distinctiveness of the Region, and wherever possible benefits the environment
- (b) safeguarding and enhancing the quality and diversity of the natural, cultural and built environment across the Region, while giving the highest level of protection to designated areas and features of national and international importance
- (c) improving the economic competitiveness of the Region by drawing on its strengths and resources, and fostering the development of businesses and skills
- (d) promoting, supporting, enabling, and focusing economic development in ways and locations where it can best contribute to meeting local, regional, national and European objectives
- (e) addressing the wide variations in prosperity between different parts of the Region through regeneration, and so reducing social exclusion and economic disadvantage, particularly in areas of special need
- (f) meeting people's requirements for housing, jobs, and facilities, of good quality and in sufficient measure to provide for future needs
- (g) providing integrated, efficient and environmentally appropriate transport and communications systems to meet regional, national and international priorities
- (h) improving accessibility to jobs and services, and ensuring that patterns of future development maximise the scope for reducing the length and number of journeys, particularly by car, and encourage public transport provision
- (i) recognising and encouraging community identity and diversity
- (j) ensuring that development makes the most prudent use of resources created through past investment, including buildings and other infrastructure especially in urban areas, and contributes to new infrastructure provision in partnership with public investment

- (k) controlling and where possible minimising waste and pollution; also minimising the loss of green fields, bio-diversity, primary minerals, water, and other irreplaceable natural and cultural resources
- (l) ensuring, at all levels of planning, integrated relationships between economic activity and housing, both in terms of scale and distribution

#### 2.1.5

The Regional Planning Guidance for the South East is based on the principles that:

- (a) urban areas should become the main focus for development through making them more attractive, accessible and better able to attract investment
- (b) greenfield development should normally take place only after other alternatives have been considered and should have regard to the full social, environmental and transport costs of location
- (c) the pattern of development should be less dispersed with more sustainable patterns of activity, allowing home, work, leisure and community services to be in closer proximity and minimising the amount of land required in all new developments
- (d) London's World City role and the South East's international connections should be enhanced as a basis for the enhancement of the Region's attractiveness in Europe and the World
- (e) economic opportunities should be increased, by measures to improve the performance of poorer parts of the Region and by reducing or surmounting bottlenecks to sustainable growth
- (f) sufficient housing should be provided for all who need to live and work in the Region, to avoid social exclusion and pressure for housing in adjoining regions
- (g) the development of housing should be more sustainable, providing a better mix of sizes and types, having regard to the structure of households and people's ability to access homes and jobs

- (h) better use should be made of the Region's natural resources, its capacity to deliver essential water, energy, and minerals and its capability to handle its waste
- (i) there should be continued protection to the Region's bio-diversity, internationally and nationally important nature conservation areas and enhancement of its landscape and built and historic heritage
- (j) the life of the countryside and rural areas should be sustained through rural diversification, respecting the character of different parts of the Region
- (k) access to jobs, services and leisure should be less dependent on longer distance movement and there should be increased ability to meet normal travel needs through safe walking, cycling and public transport with reduced reliance on the car
- (l) transport investment should support the spatial strategy, maintaining the existing network, enhancing access as part of more concentrated forms of development, overcoming bottlenecks and supporting higher capacity and less polluting modes of transport.

2.1.6 These both give importance to supporting existing urban areas, reducing pressure on open land whilst providing transport that gives access to jobs for the socially excluded whilst minimising the impacts of transport on the environment. For the South West assisting economic development in the Objective 1 & 2 areas and the special character of the natural environment are important issues.

2.1.7 The approach adopted is also consistent with the European Commission's transport policy White Paper<sup>6</sup>. The Trans European Network extends across the SWARMMS area and this adds to the regional and national requirements for efficient and sustainable strategic accessibility. For rail, the network includes the Great Western Main Line (GWML) and the Waterloo to Exeter rail line. For road, it includes the M4/M5 and A303/A30/A38 routes.

## **2.2 The Vision**

2.2.1 The SWARMMS vision is to develop the strategic transport system in the area to enhance its economic, social and environmental health by providing safe, reliable,

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<sup>6</sup> European transport policy for 2010: time to decide, European Commission, Brussels, 2001.

efficient and convenient transportation for both people and goods. In so doing the needs of all sections of the community should be given due weight and, where practicable, there should be a choice of the more sustainable means of travel. The vision has been built on the more sustainable spatial strategy envisaged by Regional Planning Guidance being in place.

- 2.2.2 On an average day in the horizon year (2016) road traffic, whilst it may be dense, should flow smoothly over the generality of the network during peak periods. This accepts that there will be a few locations where flows break down but this should not significantly affect the operation of the network as a whole.
- 2.2.3 Rail services should be frequent and reliable with overcrowding limited to only local sections for brief periods. Journey times and frequencies, particularly to the far South West, should be improved and the pattern of services should enhance rail accessibility generally throughout the area.
- 2.2.4 Coach services should be reliable and largely freed from the effects of traffic congestion. The pattern of connections, especially between points where there is no convenient rail services, should be strengthened and quality generally should be improved.
- 2.2.5 Generally easier interchange, through ticketing, better information and higher quality of vehicles and infrastructure should make public transport sufficiently attractive to provide a convenient way of travelling for those without access to a car. It should also provide an attractive alternative to car use for a substantial proportion of those with a choice.
- 2.2.6 This vision extends beyond 2016. Although the specific proposals are designed to be implemented by this horizon, the principles on which the policies are founded will continue to provide a sound basis for further developments. It is anticipated that there will continue to be a need to develop the transport infrastructure of the area after 2016 but the precise form will depend on progress in implementing the Preferred Strategy, changes in transport technology, the way in which travel demand develops over the coming decade, and the way in which the spatial strategies of Regional Planning Guidance develop over time.

## 3 The Preferred Strategy

### 3.1

#### 3.1.1

#### ***Problems***

The development of the Preferred Strategy began with the assessment of the transport problems and issues faced in the SWARMMS area. These can be summarised under the five main headings of the Government's appraisal criteria:

- Environment
  - The severance, noise, and poor air quality caused by transport infrastructure passing through or close to communities
  - The extent of areas of high environmental value and vulnerability in the Study Area
- Safety
  - The threat to personal security when using the public transport network, particularly outside peak times
  - High accident rates on some single carriageway sections of the route corridors, notably the A30/A303, and at some junctions
- Economy
  - The congestion on the trunk road network, particularly around the Greater Bristol area, Taunton, Exeter and Reading to M25 in the peak periods
  - The seasonal congestion on the main transport corridors to and from the South West, particularly the A30/A303
  - The peripherality of Devon and Cornwall
  - The unreliability of travel times, on both the road and rail networks
  - The lack of inter-modal freight facilities
  - The uncompetitiveness of rail journey times, particularly west of Exeter
  - The low frequency of public transport services (away from the Bristol–London corridor)
- Accessibility
  - The difficulties in accessing the main public transport networks unless one has access to a car, particularly in rural areas
  - The poor levels of access provision for walking and cycling, and for disabled people, to access the main transport corridors

- Integration
  - The lack of connectivity between different travel modes, particularly bus/rail
  - Poor information and difficulties in achieving ‘seamless’ travel between different travel modes
  - The way that land use patterns accentuate dependence upon the car

3.1.2 These are described in more detail in the Problems and Issues Report<sup>7</sup>, in terms of both the present day and the future.

## **3.2 The Initial Sift**

3.2.1 The first stage of developing the strategy was an ‘initial sift’ of schemes that would potentially mitigate the problems described above. These included:

- Nine highway schemes (e.g. dualling the A30/A303 and adding lanes to the M4/M5 around Bristol)
- Eight road tolling schemes (e.g. 10p per vehicle mile on Motorways)
- Two cordon charging schemes (London and Bristol)
- A fuel duty escalator (6% per year above inflation)
- General reductions in traffic demand (10% and 20%)
- Lower public rail fares (reduction of 20%)
- Nine rail improvements (e.g. a 10% speed increase between Waterloo and Exeter and a Cornish TGV)
- Improved urban transport (e.g. Bristol Light Rail system)
- Improved coach services (transit speeds increased between 30% and 40%)
- Six combinations of these individual measures.

3.2.2 The first set of tests showed the variations in the extent to which the road schemes eased local and strategic traffic problems and the impact they had on the environment through which they passed. In addition to giving information on the value and impacts of individual schemes a number of general lessons could also be drawn.

3.2.3 The fuel duty escalator had a small effect in reducing road traffic (less than the 10%/20% overall reductions in demand which was also tested) and diverting travel to rail, and it was found that the cordon-charging schemes would have little effect on strategic road traffic. Fares reductions led to an increase in rail use and time

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<sup>7</sup> SWARMMS Problems and Issues Executive Summary, Halcrow, Swindon, December 2000.

savings for road travel, but local transport improvements on their own, although of considerable value in their own right, had little effect on strategic road traffic. General reductions in travel demand had the most marked effect on travel conditions and the combined tests illustrated the benefits of bringing together carefully selected schemes and policies. This part of the process also led to a number of potential measures being rejected.

- 3.2.4 Road and rail operations were found to be strongly complementary with rail serving longer distance centre ↔ centre movements and commuter journeys into the centres of large urban areas and road catering most effectively for more dispersed patterns of journeys, especially of shorter and medium lengths. Consequently well-designed improvements to road and rail abstracted relatively little traffic from each other.

### **3.3 *Rejected Measures***

- 3.3.1 The SWARMMS Preferred Strategy is a balanced strategy that includes a wide variety of measures encompassing all modes of transport. As a result of tests carried out as part of the study (including the Initial Sift), a number of measures have been rejected as unsuitable or impractical to be included in the Preferred Strategy.

#### *Selective Tolling of Trunk Roads in the South West*

- 3.3.2 Extensive testing, particularly as part of the Initial Sift, indicated that tolling of sections of Motorways and main corridors displaced significant amounts of traffic to nearby roads, which were usually less able to carry it without causing significant problems. It should be noted that a charging regime that does not result in distortions associated with differential pricing of roads could be appropriate (see Chapter 6).

#### *New High-Speed Rail Line*

- 3.3.3 The amount of travel between London /South East and the West Country is insufficient to make construction of a new high-speed railway line a cost-effective proposition, even if ambitious assumptions are made about traffic generation.

#### *Wholesale Motorway Widening and New Motorways*

- 3.3.4 Tests carried out as part of the Initial Sift indicated that widespread widening of Motorways resulted in substantial traffic generation which reduced the degree of congestion relief that it was designed to achieve. The conclusions from this were

therefore that upgrading the existing infrastructure (although sometimes substantially in some instances), coupled with its more effective management and reductions in the growth of travel demand were the most promising way of providing cost effective additional capacity. New motorway routes would also result in traffic generation, but moreover would also have a significant environmental impact in areas not currently subject to the effects of road infrastructure.

### **3.4**

#### ***Composite Strategies***

##### 3.4.1

Four Composite Strategies were devised. Composite Strategy A was based on improved integration, reducing the growth in travel demand, demand management and only limited infrastructure and service improvements. Strategy B included reducing the growth in travel demand and improved integration but focused on better public transport especially to and from the main urban areas. Strategy C again included reducing the growth in travel demand and improved integration but concentrated on investment for longer distance ‘strategic’ passenger and freight journeys by road and rail. Strategy D involved a higher level of investment applied to those parts of the transport system under the greatest strain.

##### 3.4.2

None of these strategies proved to be sufficient on their own to satisfactorily address the identified problems but their assessment enabled the most cost effective components to be identified as candidate building blocks for the next stage of developing a balanced strategy. The test of Strategy B (Local Action), for example, indicated that local policies to restrain urban traffic and substantially improve local public transport would have significant local benefits. This contained reductions in the growth in travel demand, which also helped ease pressure on the strategic network. An Emerging Strategy was then developed. Taking on board the comments of stakeholders, this became the Provisional Strategy and formed the basis for the Plan stage of the study.

### **3.5**

#### ***Structure of the Preferred Strategy***

##### 3.5.1

So far in the study, we have been deliberate in describing the various SWARMMS strategies in terms of policy measures, and not outlining what these measures might mean in specific detail (‘on the ground’). In essence, the strategy has thirteen component policy themes:

- Reducing the growth in travel demand (especially car – see section 3.7)
- Better integration for public transport
- Promote use of public transport to/from main urban areas

- Traffic restraint within main urban areas
- New road and rail infrastructure
- Provide more opportunities to travel by rail
- More opportunity for freight to use rail
- Improve coach and express bus networks and facilities
- Demand responsive public transport in rural areas
- Smarter use of existing roads
- Local road safety and other measures
- Expand air and sea networks
- Specific measures to assist tourism.

### 3.5.2

Analyses undertaken within SWARMMS reflected the assessment in the 10 Year Plan that it is not possible to build our way out of the region's congestion and other transport-related problems, particularly in terms of those that exist on the highway networks. Such an approach attracts additional traffic to those areas where there is suppressed demand and, unless appropriate action is taken, operating conditions would improve to only a limited extent. Moreover, the analyses have also shown that there are very real benefits to be realised from reducing the rate of traffic growth, particularly in terms of congestion and safety benefits on the highway network. Indeed, when this element is removed from the strategy, sensitivity tests have shown congestion and safety to worsen across the study area. It is for this reason that **reducing the growth in travel demand** forms a fundamental basis to the SWARMMS Preferred Strategy. It is clear that we must be proactive in reducing the growth in travel demand.

### 3.5.3

It is also clear from the analyses, however, that merely reducing the growth in travel demand will not address transport-related problems throughout the SWARMMS study area to a satisfactory extent. Further benefit is provided at the 'local' level by the provision of enhanced **interchanges, urban public transport** and, to act in a complementary fashion, **traffic restraint measures**. These encourage some local journeys away from the major transport corridors, via both the provision of new services and an improved journey experience. The effect of removing this improved 'quality of public transport provision from the strategy was found to be significant, with rail passenger flows typically falling by 5-10%. However, analyses have again shown that such local intervention is not sufficient to satisfactorily address a number of other problems. It followed that it was necessary to undertake direct investment in both the main rail and road corridors.

- 3.5.4 **Enhanced rail infrastructure and services** provide another cornerstone of the strategy. However, significant spend is required in this area if the rail service is to be improved; the Preferred Strategy would reduce some key rail journey times, improve reliability and offer new journey opportunities. The same is true, albeit on a lesser scale, to the **coach and express bus** elements of the Preferred Strategy. An ambitious programme of improvement is put forward, comprising both new Coachways and an enhanced pattern of service.
- 3.5.5 Various highway schemes are also included in the Preferred Strategy, their main focus being to improve journey time reliability and safety rather than reducing journey times. Some involve **new road schemes**, most of which are upgrading a number of single carriageway sections to dual carriageway. Others involve **local safety schemes**. Great emphasis is also given to **Intelligent Transport Systems (ITS)** on key sections of the highway network, the main focus again being to manage traffic flow more effectively and reduce the adverse impact of accidents.
- 3.5.6 SWARMMS has also identified a number of specific issues that are particularly relevant for its study area. Hence, the Preferred Strategy also includes **tourism** measures, schemes to improve **rural access** to the main transport corridors, **Park and Ride** on the edge of some urban areas, and new **inter-modal freight facilities**.
- 3.5.7 We consider the Preferred Strategy to be well balanced. It is founded on the ethos of sustainability, being proactive in reducing the rate of traffic growth and providing significant improvement to local public transport facilities and services. However, the Preferred Strategy also includes significant enhancements to rail, coach and express bus, and the highway networks.

### **3.6 *The Plans Making Up The Preferred Strategy***

- 3.6.1 The Preferred Strategy has been developed through a set of ten Plans. These include four ‘theme plans’ and six ‘geographic plans’ as follows:

#### *Four Study-Wide Theme Plans*

- Reducing the growth in travel demand
- Tourism
- Rural access to the transport system
- Inter-modal freight

### *Four Multi-Modal Transport Corridor Plans*

- London (Reading/Basingstoke)-Exeter (including the Berks & Hants and Waterloo-Exeter rail lines and the M3/A303/A30).
- London (Reading)-Bristol & Severn Estuary (including the Great Western rail line and the M4).
- Bristol-Exeter (including the Bristol-Exeter railway and the M5).
- Exeter-Penzance (including the Exeter-Penzance railway, the A30 and the A38).

### *Two Principal Urban Area (PUA) Plans*

- Greater Bristol
- Swindon

## **3.7**

### ***Recommendations of Plan Stage***

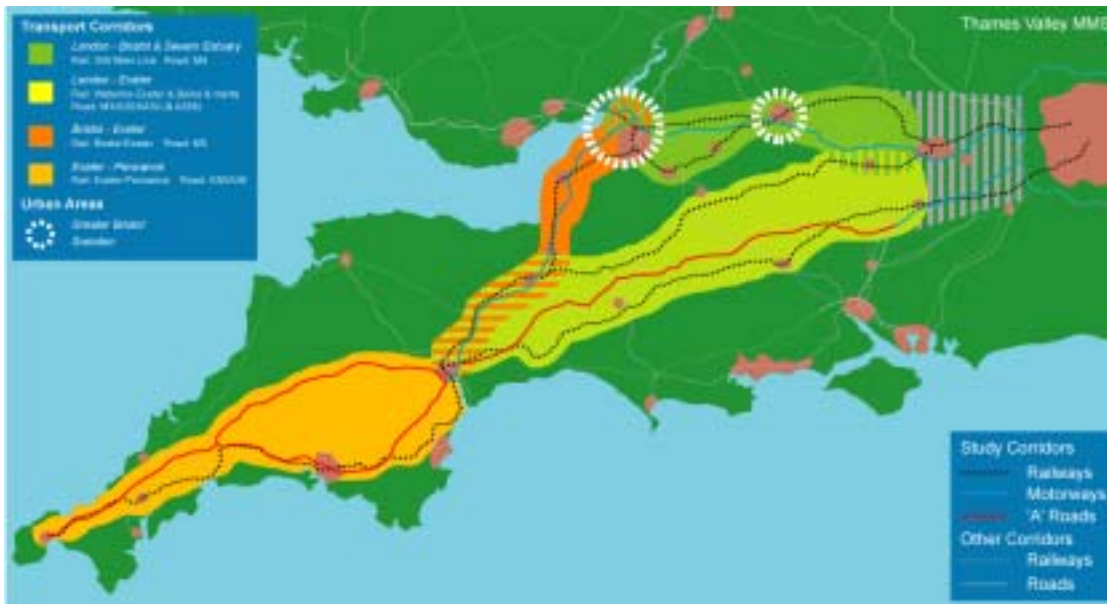
#### 3.7.1

The following pages set out the ten component Plans forming the strategy. For each Plan the problems and issues that it addresses are set out, as are the key recommendations. There is not a simple one-for-one relationship between problems/issues and recommendations. Also some of the recommended measures are required to serve more than one purpose.

#### 3.7.2

There is a degree of interaction between all ten Plans being produced by SWARMMS. By definition, the four corridor Plans interact by reason of geography as shown in Figure 3.1, and specific links are referenced throughout each Plan.

**Figure 3.1: Coverage of Geographic Plans**



### 3.8

#### 3.8.1

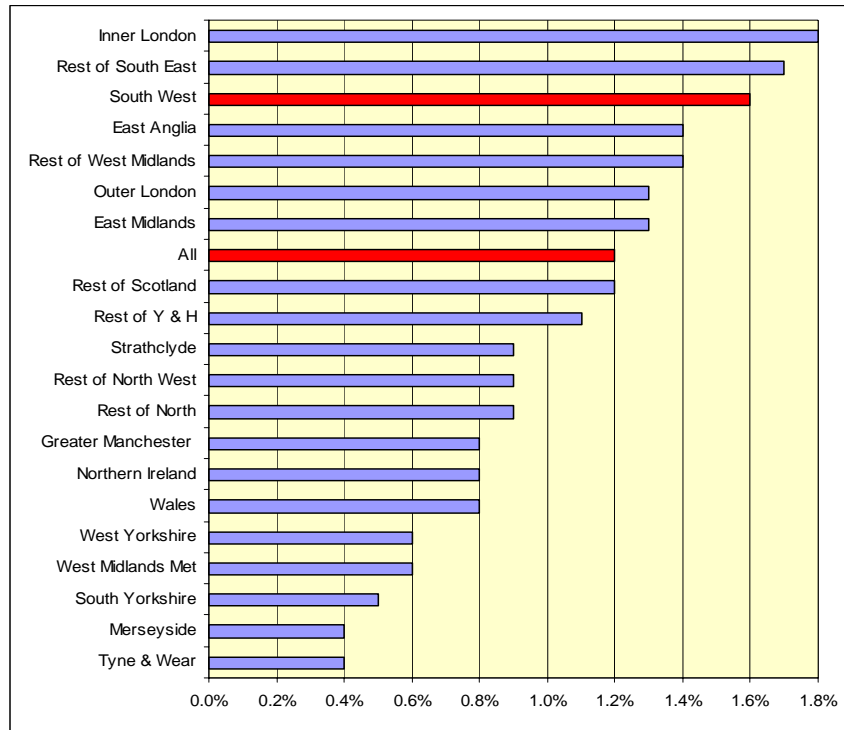
### ***Reducing The Growth In Travel Demand<sup>8</sup>***

This comprises measures that both reduce the need to travel and reduce car use but at the expense of more travel by other means. In some cases (e.g. Workplace Travel Plans) these go hand in hand but overall about half the reduction in car use will be replaced by other forms of travel.

#### *Key Problems And Issues*

- Travel demand (especially for road) already exceeds the capacity of critical parts of the SWARMMS infrastructure and is set to continue to grow
- Some elements of demand are concentrated in peak periods and cause particular strain on the road system
- Whilst there are alternatives to car use for some travel purposes these are not being fully exploited

**Figure 3.2: Teleworking by Region**



<sup>8</sup> SWARMMS Reducing the Growth in Travel Demand Plan, Halcrow, Swindon, March 2002.

### *Key Recommendations*

- 3.8.2 Teleworking should be promoted by the introduction of tax allowances for home offices. It should become a feature of Workplace Travel Plans and the Government should provide additional support to promote teleworking through a new 'one stop shop'. Public agencies should expand their use of teleworking and promote new initiatives including networks of 'tele-cottages'. Figure 3.2 shows the extent to which teleworking already occurs within the UK.
- 3.8.3 Videoconferencing should be promoted through regional partnerships with Local Education Authorities and Health Trusts taking a lead in its use for teaching and other purposes. Government Departments should similarly be active in expanding its use and the role of Videoconferencing and Teleworking should be recognised in Local Transport Plans. The telecommunications regulatory regime should be developed to promote the provision and take up of Digital Subscriber Loop communications and software providers encouraged to expand their range of 'broadband' products.
- 3.8.4 The role of Workplace Travel Plans (WTPs) should be expanded to include all (not just new) commercial development in congested areas. Government guidance should be reviewed to include targets and Regional guidance should be developed to prevent the use of lax parking policies to compete for development. Local authorities should set modal split targets in congested areas and use the introduction of Workplace Parking Levies to secure these where voluntary action fails. The Government's WTP bursary scheme should be extended and a tax allowance of £600 a year introduced for public transport commuting costs.
- 3.8.5 A new approach to public transport marketing should be adopted in the area. This should concentrate on providing information and incentives to specific groups and for those journeys where public transport can provide a reasonable alternative to the car. This should be supported by developments in ticketing that include 'carnet' type tickets and multi-mode/multi-operator availability. Where necessary the transport and competition legislation should be changed to facilitate this.
- 3.8.6 Overall it is considered that by 2016 this policy could reduce peak car use to 5% below the levels it would otherwise have been.

### 3.9

#### ***Tourism***<sup>9</sup>

##### *Key Problems And Issues*

- Seasonal traffic peaks make road travel slow and unreliable
- Public transport is too expensive for family groups
- Friday fares and Sunday engineering works make rail travel for weekend visits unattractive
- Public transport is awkward for parties with bulky luggage
- Facilities for car free travel at destination areas are inadequate
- Resort areas are crowded and congested at peak times
- Information about travel to and at the main destinations is inadequate
- Coach travel is slow and unreliable



<sup>9</sup> SWARMMS Tourism Plan, Halcrow, Swindon, April 2002

### *Key Recommendations*

#### 3.9.1

Some of the key recommendations specific to tourism include:

- Stagger change-over days to spread the access/egress travel
- Provide domestic tourist discount rail tickets, bus 'add-ons' and passes like the 'Brit Pass'
- Promote days out by rail and offer a regional rail pass
- Develop initiatives to make rail travel more 'visitor friendly' such as 'tourist trains' and family carriages
- Encourage package holidays including transport (rail, coach, car and bike hire)
- Provide secure left luggage facilities and help with luggage on the railways
- Provide services suited to the needs of public transport users (e.g. meet and greet, laundry, baggage storage etc.) and offer discounts to public transport users
- Improve facilities for the carriage of cycles on trains and key bus services, reduce costs and provide secure lockers at railway stations
- Develop a network of tourist cycle routes and associated cycle hire facilities
- Provide car hire services based on key stations with joint booking and car/rail packages
- Promote the integration of rail and bus travel to tourist destinations using, for example, linked tickets and themed/branded vehicles
- Provide demand responsive buses serving tourist areas
- Provide bus maps suited to tourist needs and customise for specific locations; distribute these widely through tourist places of accommodation and attraction
- Develop Tourist Attraction Travel Plans (like Workplace Travel Plans)
- Improve travel information with Internet services, 'Tourist Traveline' and free issue of CD ROMs to actors in the tourist industry
- Create more access points for sleeper travel and link to daytime returns and Eurostar services
- Extend and promote Motorail services
- Improve public transport links to airports

#### 3.9.2

See also Corridor Plans for measures to improve access and reduce congestion generally.

### 3.10

## ***Rural Access To The Main Transport Corridors<sup>10</sup>***

### *Key Problems And Issues*

- Low frequency public transport services especially in the winter
- Employment prospects poor for people without access to a car
- Poor accessibility for rural dwellers who are disabled or unable to drive
- Limited 'self help' schemes such as community transport
- Those services that do exist are generally poorly co-ordinated
- Personal security and bus and train station safety perceived as poor

The infographic features a central logo for 'interCONNECT' with a stylized 'C'. Surrounding the logo are six sections, each with a title, an image, and descriptive text:

- InterConnect 505:** Shows a yellow bus. Text: 'The new InterConnect 505 service between Spalding and King's Lynn will offer passengers a quality regular local bus service which is aimed at making travel by bus easier, faster and more convenient. The introduction of easy access low floor buses, new bus stops with raised kerbs, along with through ticketing and guaranteed connections are all key features of InterConnect.'
- LO-LINERS:** Shows a person in a wheelchair boarding a bus. Text: 'InterConnect offers new lo-liner low floor buses. Improved bus stop infrastructure and specialist kerbing allow those with pushchairs, shopping trolleys and mobility problems to board more easily. Easier access to new lo-liners.'
- CallConnect Plus:** Shows a telephone. Text: 'As part of the InterConnect initiative new per-lookable minibus services have been introduced to cover an operating area in and around the towns of Holbeck and Lang Sutton. The minibuses are branded 'Call Connect Plus' and run every hour allowing you to make journeys into town or travel further afield by guaranteed connections with the main 505 route. Call 0845 254 3344 to book your travel from any place in the purple lined area on the map.'
- THROUGH TICKETING:** Shows a ticket icon. Text: 'The new InterConnect 505 network will offer through ticketing between any two points on the 505 network.'
- NEW SHELTERS:** Shows a bus shelter. Text: 'Across the InterConnect network, new bus shelters and improved bus stop information boards are being provided.'
- CCTV:** Shows a CCTV camera. Text: 'CCTV systems will be provided on buses and at interchanges to help passengers feel safer at all times, especially in the evenings.'

<sup>10</sup> SWARMMS Rural Access to the Main Transport Corridors, Halcrow, Swindon, April 2002.

### *Key Recommendations*

3.10.1

Some of the key recommendations specific to rural issues include:

- Provide fixed route bus services such as the 'Helston Branch Line' where sufficient point-to-point demand exists
- Where demand is more dispersed or weaker, provide flexibly routed bus services and link these to interchanges with trunk transport routes
- Where travel demand to the main transport corridors is not sufficient to sustain a viable link on its own account, provide a liveried private hire service similar to the '+Bus' in the Truro area
- In the lowest density areas none of these forms of transport are likely to be cost effective so fixed rate taxi/private hire car services along the lines of the Devon 'fare car' should be offered
- Good quality, staffed interchanges should be provided where local services link with the main transport routes
- Overall, appropriate feeder services should link with about 50 rail stations and Coachways in the SWARMMS area. Implementation should proceed progressively at around fifteen schemes a year, with a continuous programme of monitoring and evaluation.



### 3.11

#### ***Inter-modal Freight***<sup>11</sup>

##### *Key Problems And Issues*

3.11.1

There are a number of general factors that limit the scope for the increased use of rail and water for freight transport. These include:

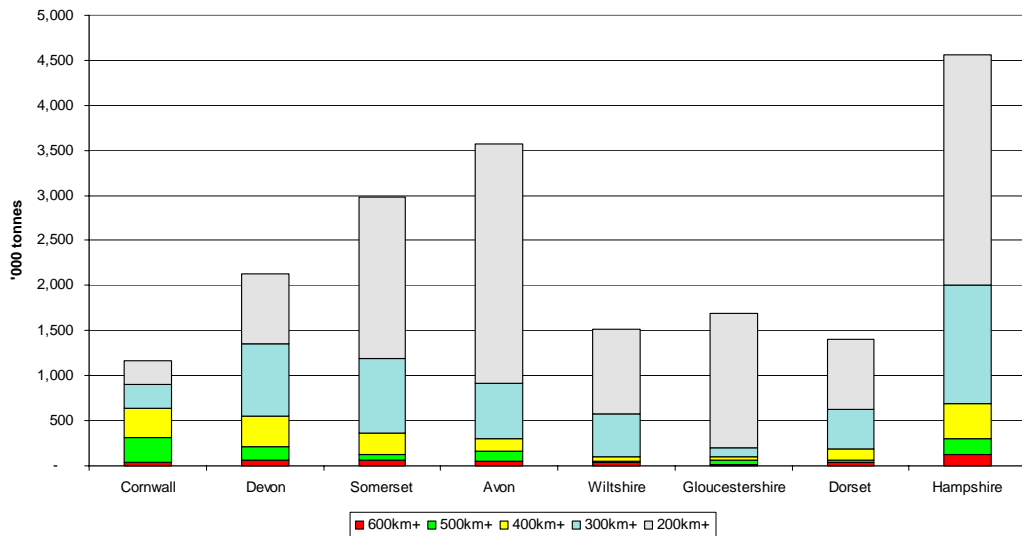
- The very sparse and constrained navigable inland waterway system
- Traditional rail freight markets have declined in the last two decades
- Most freight requires double handling if it is to use rail or waterways

3.11.2

The problems being tackled in this Plan are:

- Containerised traffic requires a larger loading gauge than is commonly found on the railway network
- The SWARMMS area lacks efficient road ↔ rail transfer facilities
- Modern logistics requires frequent and reliable shipments
- The railways are busy carrying passenger traffic

**Goods by Road** annual average (1993-2000) from County, by distance band



<sup>11</sup> Inter-Modal Freight Plan, Halcrow, Swindon, April 2002

### *Key Recommendations*

- 3.11.3 Develop a network of rail lines with a Loading Gauge that allows standard containers on international rail wagons. This includes W12 gauge to be provided
- on Great Western Main Line between London and Filton Junction and on to Cardiff (Wentloog terminal), Avonmouth and mid Cornwall and
  - from Southampton Docks to the West Coast Main Line, via Basingstoke, Reading West, Oxford and Leamington Spa to the W12 network in the West Midlands.
- 3.11.4 Improve Rail Access to Ports in the study area at Bristol (Royal Portbury), Falmouth, Fowey and outside at Portsmouth and Poole.
- 3.11.5 Provide a network of strategically located Road ↔ Rail Transfer Stations. This is to include the existing proposed stations at Cabot Park (Avonmouth), South Marston (Swindon), LIFE (Iver) and a new Road ↔ Rail Transfer Station at Exeter.
- 3.11.6 Operate at least Daily Frequency Trains serving the transfer stations in the SWARMMS area. This should provide two Inter-Modal Trains per day south of Bristol as far as Plymouth.
- 3.11.7 Upgrade the GWML between Reading and Wootton Bassett including four tracks between Didcot and Swindon and grade separated junctions at Reading West, Didcot East and Wootton Bassett (this is required for the combined freight and passenger train movements).

### **3.12 London-Exeter Corridor<sup>12</sup>**

#### *Key Problems And Issues*

- Several communities along the A30/A303 corridor suffer from severance and noise
- Both the rail and road corridors pass through Areas of Outstanding Natural Beauty and other sensitive areas
- Single carriageway sections of the A30/A303 experience significantly higher accident rates than the dual carriageway sections
- M5 junctions experience delays at peak times
- The A30/A303 is a major tourist route and long delays can occur during the peak holiday season
- The existing rail and road links are not sufficient to overcome the peripherality of Devon and Cornwall
- Journey time unreliability is a concern on both rail lines and the A30/A303, particularly at times of peak demand
- Facilities to transfer freight from road to rail are limited
- The coach and express bus networks are limited
- Many rural parts of the corridor do not have public transport services which connect with rail and coach stations
- Interchange is difficult at many locations along the corridor.

#### *Key Recommendations*

The key recommendations specific to this corridor are shown on the Plan opposite. They include:

- A significant programme of road construction to create a high quality dual carriageway route (A303/A358) between the South East and the South West, with the A358 becoming part of the Trunk Road network. The schemes as proposed will provide major safety benefits. Although they will inevitably have some adverse environmental effects, great care has been taken in developing schemes to avoid the most sensitive environmental areas where possible.

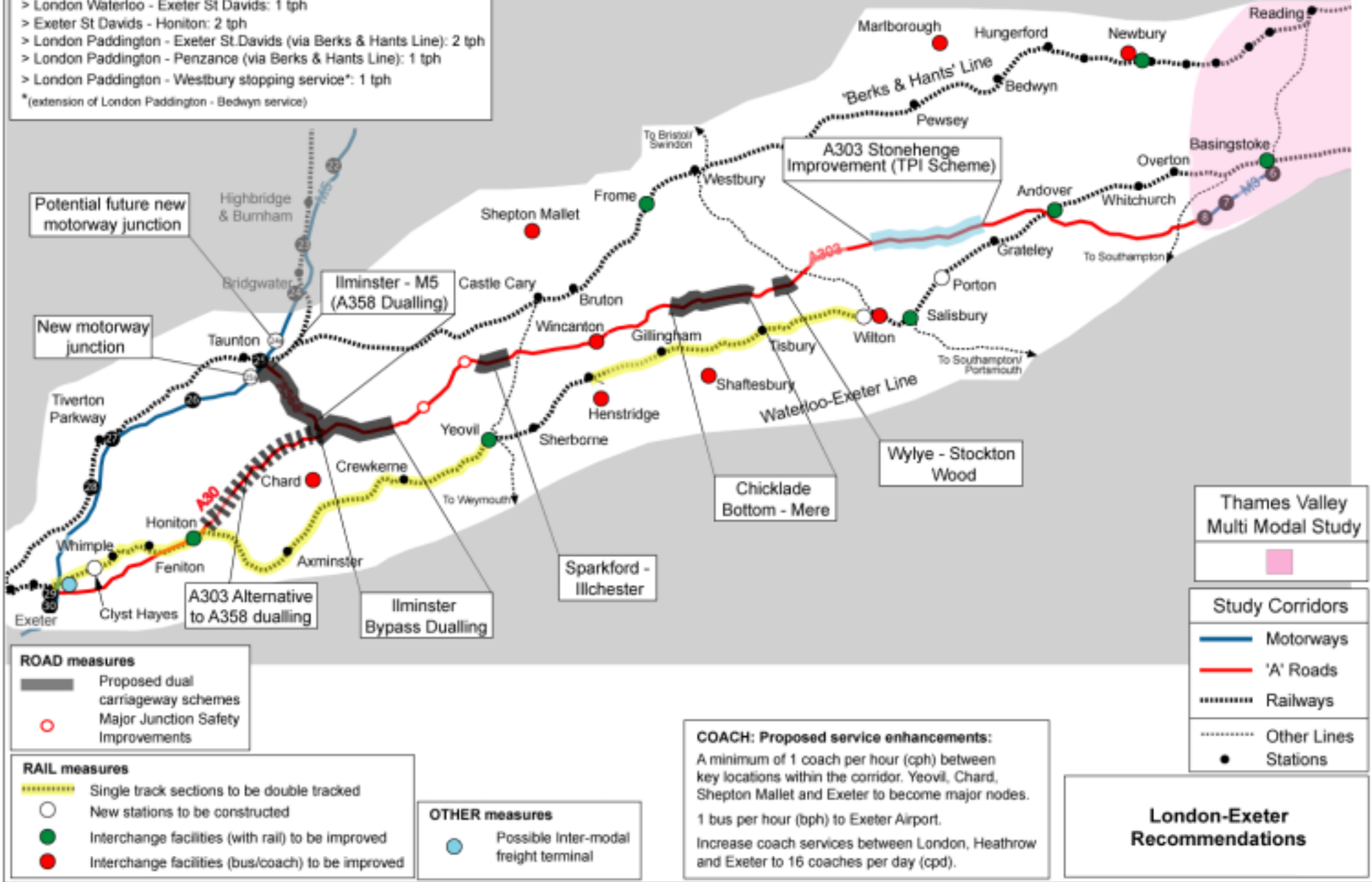
- A new Intelligent Transport System (ITS) is also proposed for the A303 corridor. This will particularly assist in reducing the number of accidents along the route as well as providing better information at times of congestion.
- Re-instatement double track between Exeter and Salisbury (possibly implemented on an incremental basis) to allow more services to run, to improve rail service reliability, to enable new stations to be built at Clyst Hayes and Wilton, and to provide capacity to accommodate new freight services.
- Rail services increased on the Berks & Hants line to 2 trains per hour, with a regular pattern of fast and semi-fast services linking Devon/Cornwall to London. These patterns will enable regular reduced journey times to be achieved between strategic locations within the corridor, without degrading service to intermediate stations. Extend existing London-Bedwyn services to Westbury.
- Major enhancement to the coach and express bus networks serving the London-Exeter corridor and connecting settlements. The proposals are ambitious but, if implemented, would provide both significantly improved accessibility for those who rely on public transport and an increased frequency and improved reliability, which will be of value to all potential travellers.
- Comprehensive programme of upgrading existing public transport interchanges (both rail and coach/bus) is also proposed. There will also need to be improvements at the east end of the corridor and the Thames Valley Multi Modal Study is addressing these.

<sup>12</sup> SWARMMS Corridor Plan: London – Exeter, Halcrow, Swindon, April 2002

**RAIL: Proposed effective service frequencies:**

- > London Waterloo - Yeovil: 2 trains per hour (tph)
- > London Waterloo - Exeter St Davids: 1 tph
- > Exeter St Davids - Honiton: 2 tph
- > London Paddington - Exeter St Davids (via Berks & Hants Line): 2 tph
- > London Paddington - Penzance (via Berks & Hants Line): 1 tph
- > London Paddington - Westbury stopping service\*: 1 tph

\* (extension of London Paddington - Bedwyn service)



**COACH: Proposed service enhancements:**  
 A minimum of 1 coach per hour (cph) between key locations within the corridor. Yeovil, Chard, Shepton Mallet and Exeter to become major nodes.  
 1 bus per hour (bph) to Exeter Airport.  
 Increase coach services between London, Heathrow and Exeter to 16 coaches per day (cpd).

**London-Exeter Recommendations**

### 3.13 London-Bristol Corridor<sup>13</sup>

#### *Problems And Issues*

- Congestion on the trunk road network. This is a particular problem around Bristol (M4 and M5). Peak congestion occurs on the M4 at Swindon. Similar problems occur on the M4 at Reading and near the M25; details in this area are being considered by the Thames Valley Multi-Modal Study.
- Most M4 junctions experience delays at peak times.
- Relatively minor disruptions to traffic flow on the M4 can cause significant delays, as well as problems on surrounding routes.
- The Great Western Main Line is operated very intensively. Relatively minor problems can lead to significant knock-on delays.
- Despite relatively high numbers of public transport services on the corridor, good opportunities for interchange away from urban centres are uncommon.

#### *Key Recommendations*

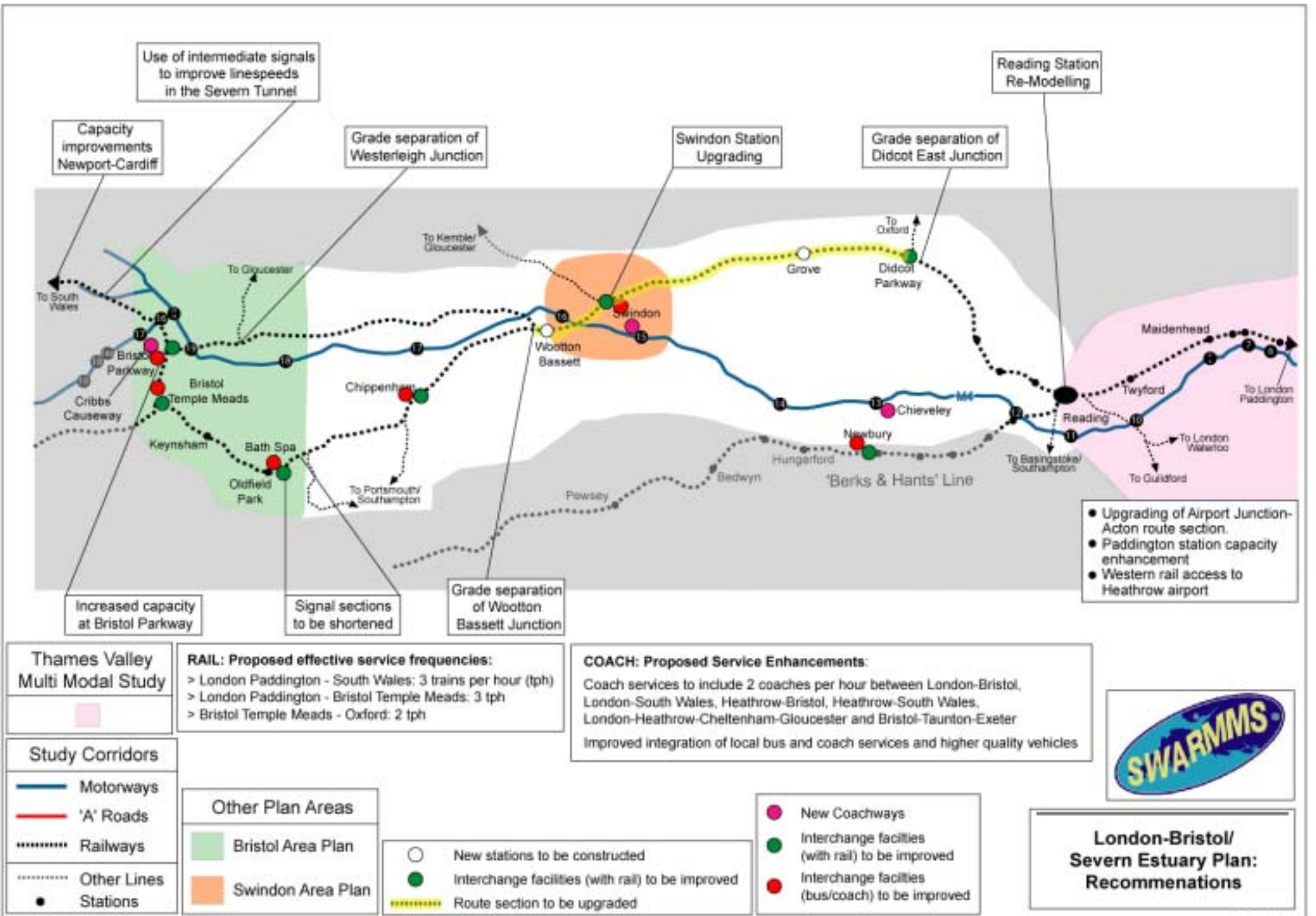
The key recommendations specific to this corridor are shown on the Plan opposite. They include:

- Highway measures along the corridor are focussed on implementation of an upgraded Intelligent Transport System (ITS). This will assist in better management of traffic flow at busy times, providing higher standards of information to the travelling public and reducing the adverse impacts of incidents along the corridor.
- Upgrading of the junctions around Swindon (15 and 16) is required to improve access to the urban area and will help Swindon realise its PUA status.
- Substantial increases in frequencies of both long-distance and local rail services to provide greater opportunities to use rail as an alternative to the

private car. The strategy recognises the existing capacity constraints within this corridor and therefore recommends substantial infrastructure works to increase rail capacity to enable increased rail service frequencies. More importantly increased flexibility in rail operations will improve service reliability. New stations at Wootton Bassett, Grove and Newton are proposed and a direct rail link to Heathrow is also an important objective.

- Significant upgrade to the existing coach services operating along the M4. Three new Coachways are proposed, at Swindon, Chieveley and Cribbs Causeway (on M5), which will significantly improve the attractiveness of coach travel, both in terms of offering new, accessible locations for interchange and reducing some existing journey times.
- A comprehensive programme of upgrading existing public transport interchanges (both rail and coach/bus) is also proposed. A first class transport system demands that travellers have levels of comfort, security and information which are above those that currently exist in many locations. The upgrading of interchanges can have a major impact on people's perception of public transport and is a central part of the Preferred Strategy.
- There will also need to be improvements at the east end of the corridor and the Thames Valley Multi Modal Study is addressing these.

<sup>13</sup> SWARMMS Corridor Plan: London – Bristol, Halcrow, April 2002.



### **3.14 Bristol-Exeter Corridor<sup>14</sup>**

#### *Problems And Issues*

- Congestion on the trunk road network around Bristol, Taunton and Exeter. Particular problems occur around Bristol. At Exeter, the M5 at Junctions 29 and 30 is a key section of the route. Taunton is centrally located on the corridor, and experiences regular peak hour congestion at M5 Junction 25.
- Seasonal congestion on the M5 is especially acute on summer holiday weekends with significant amounts of traffic heading to/from the holiday resorts in Devon and Cornwall (in particular).
- The peripherality of Devon and Cornwall. This corridor is the key link with the Midlands and further north, as well as an important link from the South West to London and the South East.
- Unreliability of travel times, on both the road and rail networks.
- The low frequency of public transport services (away from the corridor); available services operate at irregular and/or long intervals. Also, there is a lack of connectivity between different travel modes, particularly bus/rail. Interchange is difficult at many locations along the corridor.

#### *Key Recommendations*

The key recommendations specific to this corridor are shown on the Plan opposite. They include:

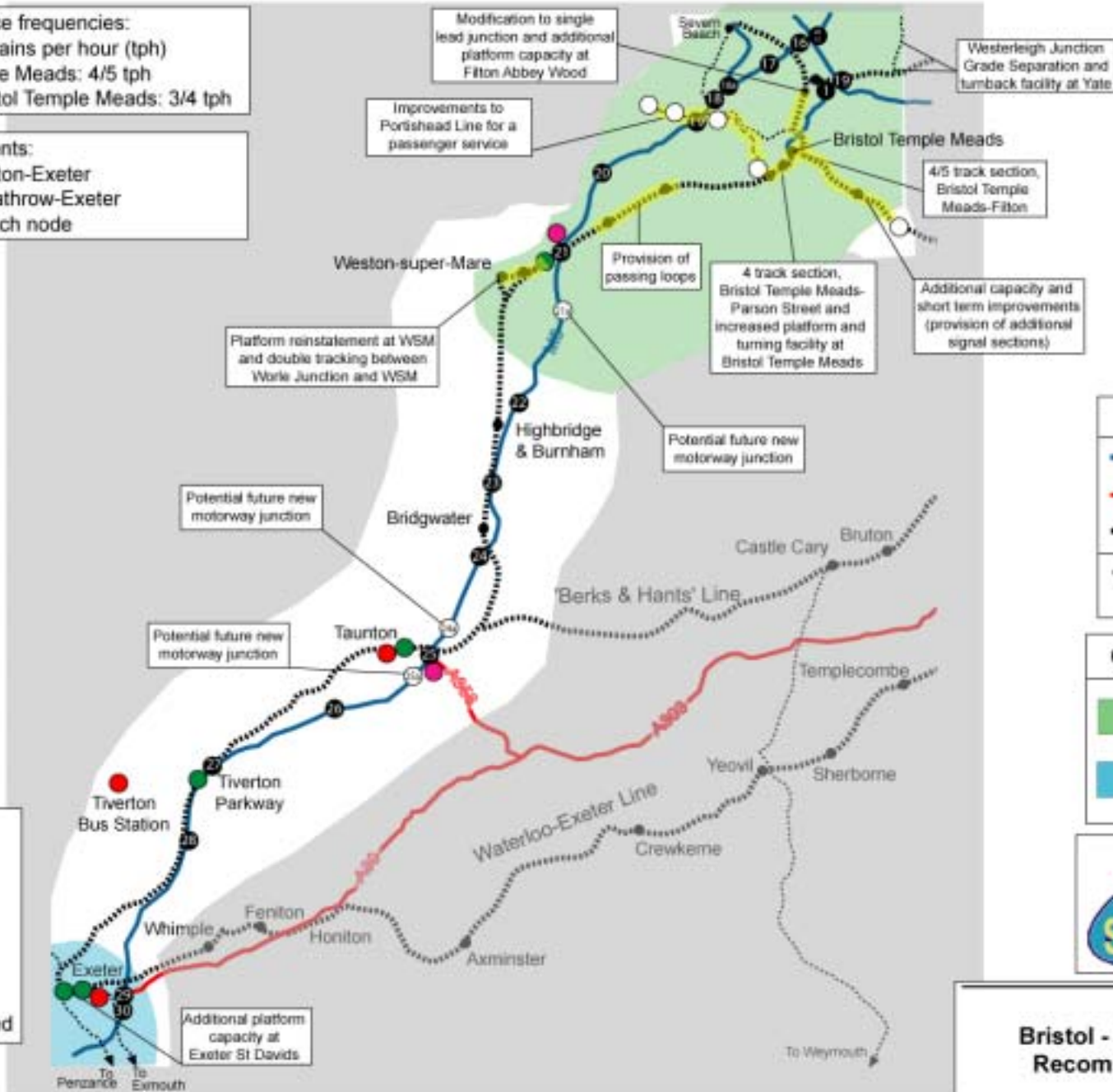
- A new Intelligent Transport System (ITS) is also proposed for the M5 corridor. This will particularly assist in reducing the number of accidents along the route as well as providing better information at times of congestion. Minor junction improvements are also proposed. New junction arrangements around Junction 21 and Junction 25 are dealt with in the Bristol area and London to Exeter Plans.
- A number of additional passenger rail services are proposed for the Bristol-Exeter corridor rail line (including extended London-Bristol services, enhanced direct Paddington-South West services via the Berks & Hants, services centred on Bristol and services centred on Exeter). Services between the South West, the Midlands and further north are already set to improve with existing 'cross-country' franchise commitments.
- Major enhancement to the coach network. Despite the focus of SWARMMS on the main corridors through the region (M5 between Bristol and Exeter), the express bus network proposed also provides significant enhancement for connecting movements off the main corridors.
- A comprehensive programme of upgrading existing public transport interchanges (both rail and coach/bus).
- This corridor will benefit from the rural public transport schemes developed in the Rural Access to the Transport System Plan described earlier.

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<sup>14</sup> SWARMMS Corridor Plan: Bristol – Exeter, Halcrow, Swindon, April 2002

Proposed combined service frequencies:  
 Taunton - Exeter: 5/6 trains per hour (tph)  
 Taunton - Bristol Temple Meads: 4/5 tph  
 Exeter St Davids - Bristol Temple Meads: 3/4 tph

Coach service enhancements:  
 2 per hour Bristol-Taunton-Exeter  
 16 per day London-Heathrow-Exeter  
 Exeter a major bus/coach node



- ..... Rail section upgraded
- New Stations
- New Coachways
- Interchange facilities (with rail) to be improved
- Interchange facilities (bus/coach) to be improved

- Study Corridors**
- Motorways
  - 'A' Roads
  - ..... Railways
  - - - - - Other Lines
  - Stations

- Other Plan Areas**
- Bristol Area Plan
  - Exeter-Penzance Corridor



**Bristol - Exeter Plan:  
 Recommendations**

### **3.15 Exeter-Penzance Corridor<sup>15</sup>**

#### *Problems And Issues*

- The severance, noise and poor air quality caused by roads passing through or close to communities on the A38 corridor.
- High accident rates on some single carriageway sections of the route corridors and some key junctions on both routes on both the A30 and A38.
- Congestion on the trunk road network. The M5 junctions around Exeter experience delays at peak times, as does the A38 around Plymouth.
- The A30 into Cornwall experiences seasonal congestion, as does the ‘coincident’ section of M5/A30 around Exeter.
- The peripherality of Devon and Cornwall.
- Journey time unreliability is a concern on both the rail lines and the A30/A38, particularly at times of peak demand.
- The low frequency of public transport services and (particularly in rural areas) few public transport connections that connect with rail and coach stations. Interchange is difficult at many locations along the corridor.

#### *Key Recommendations*

The key recommendations specific to this corridor are shown on the Plan opposite. They include:

- One new road schemes is proposed, a new dual carriageway between Temple and the Bodmin Bypass on the A30. (The Dobwalls Bypass and Bodmin to Indian Queens TPI schemes are being progressed outside SWARMMS). Elsewhere, the approach is one of limited junction upgrades and local safety schemes. There is also a particular emphasis on the use of ITS measures to better manage traffic flows at periods of high demand.
- Rail services should move towards a clock face service pattern with increased service

frequencies. This requires additional rail capacity (double-track on some existing single-track sections, improvements to signalling and more platform capacity at Exeter St Davids). Branch line rail services are important for both access to the mainline and local journeys; changes to frequency and co-ordination are recommended.

- There are also significant short-term requirements for renewals of existing track and signalling infrastructure, which if not undertaken will lead to a continued degradation of the quality of rail service within the corridor.
- Upgrade the express bus networks in the area to increase opportunities for travel by express bus along the route corridors as well as improve the accessibility of key settlements elsewhere.
- A comprehensive programme of upgrading existing public transport interchanges (both rail and coach/bus) is also proposed.
- Park & Ride measures are proposed that seek to provide strategic links to the main urban centres of Plymouth and Exeter. Parking at railway stations is a key method of provision for longer-distance journeys to use non-car modes.
- Measures from the Rural Access to the Transport System and Tourism Plans are particularly relevant to this corridor.

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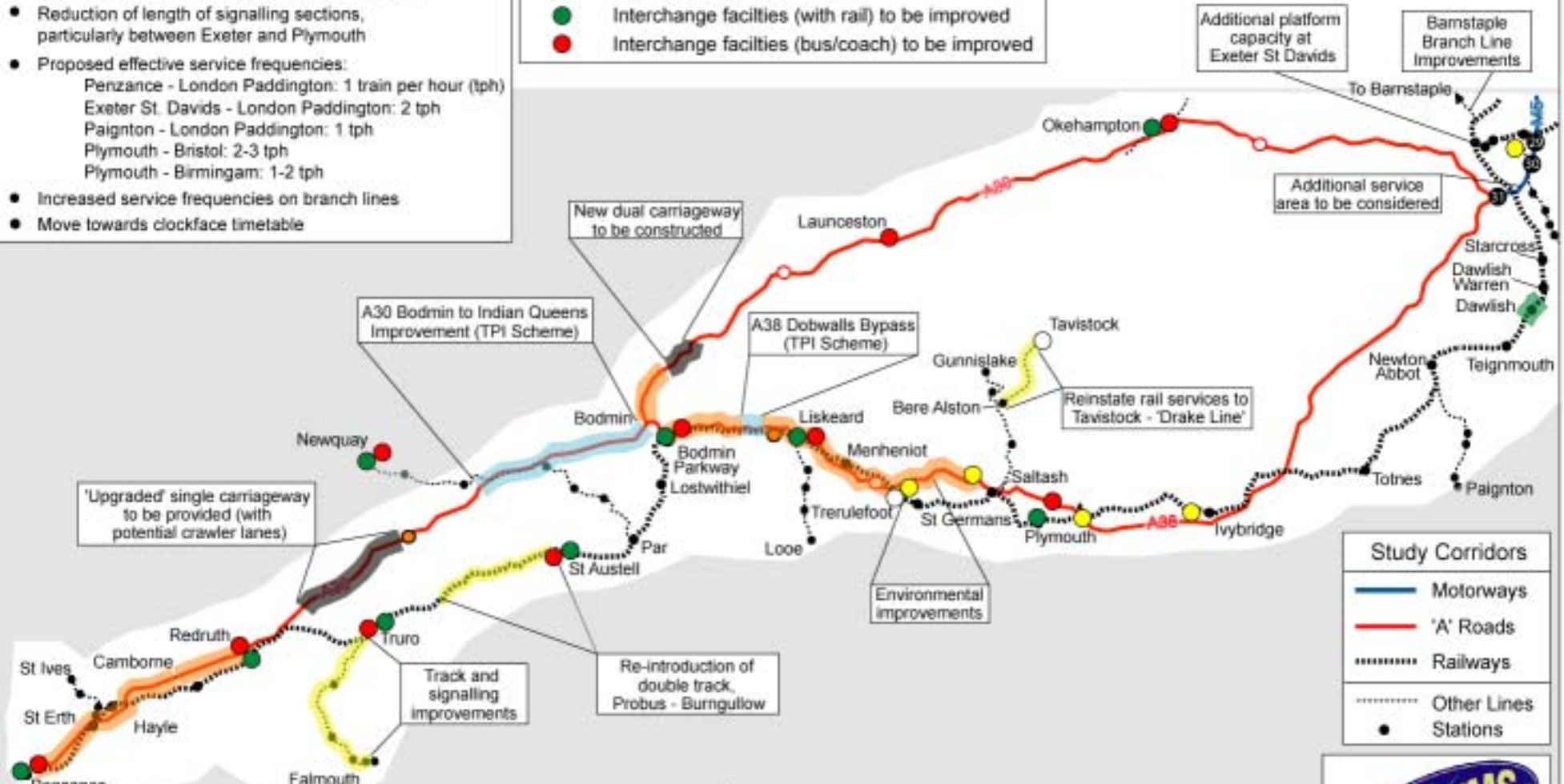
<sup>15</sup> SWARMMS Corridor Plan: Exeter – Penzance, Halcrow, Swindon, April 2002

### General Enhancements:

- Major programme of renewals and maintenance
- Reduction of length of signalling sections, particularly between Exeter and Plymouth
- Proposed effective service frequencies:
  - Penzance - London Paddington: 1 train per hour (tph)
  - Exeter St. Davids - London Paddington: 2 tph
  - Paignton - London Paddington: 1 tph
  - Plymouth - Bristol: 2-3 tph
  - Plymouth - Birmingham: 1-2 tph
- Increased service frequencies on branch lines
- Move towards clockface timetable

### Other Public Transport

- Strategic Park & Ride Sites
- Interchange facilities (with rail) to be improved
- Interchange facilities (bus/coach) to be improved



### Rail Measures

- Rail Enhancements
- New station to be constructed
- Sea wall stabilisation at Dawlish

### Road Measures

- Safety measures to be investigated/introduced
- Targeted safety measures
- Major junction safety improvements
- Other measures

### COACH/EXPRESS BUS Enhancements:

- Targetted at improving integration between express and local bus, coach and rail services
- Minimum service frequencies of 1 bus per hour:
  - Exeter - Okehampton - Launceston - Bodmin - Truro
  - Exeter - Okehampton - Bude
  - Plymouth - Tavistock - Okehampton - Barnstaple
  - Plymouth - Tavistock - Tiverton - Tiverton Parkway



**Exeter-Penzance Plan: Recommendations**

### **3.16 Swindon Area<sup>16</sup>**

#### *Problems And Issues*

There is existing congestion of the road network in Swindon, especially at peak periods, and this will steadily worsen

- Congestion on M4 Junction 16 – with queuing and accidents on the approaches
- Congestion on M4 Junction 15 – blocking of the roundabout will result in extensive queuing on approaches
- Bus services are increasingly affected by traffic congestion
- Rail has only a limited role in catering for longer journeys in the area

#### *Key Recommendations*

Existing plans to strengthen the road network should proceed including:

- Construct D2 distributor road between the A4311 Crickdale Road and the B4534 to the west of Haydon Wick
- Construct the Purton-Iffley Link Road
- Construct the highway schemes associated with the 'Front Garden' development between Okus and the M4
- Construct a bypass to the west of the A419 at Blunsdon along with grade separation of the Turnpike Roundabout
- Grade separation of the Commonhead Roundabout
- Full signalisation of M4 Junction 15.

In addition it will be necessary to provide:

- The provision of a new link road from the A3102 across the M4 to ease the load on M4 Junction 16
- Widening the A419 to D3 between Commonhead Roundabout and M4 Junction 15 and alterations to the layout and signalisation of

M4J15 including the grade-separation of the movement from the A419(T) to the westbound M4.

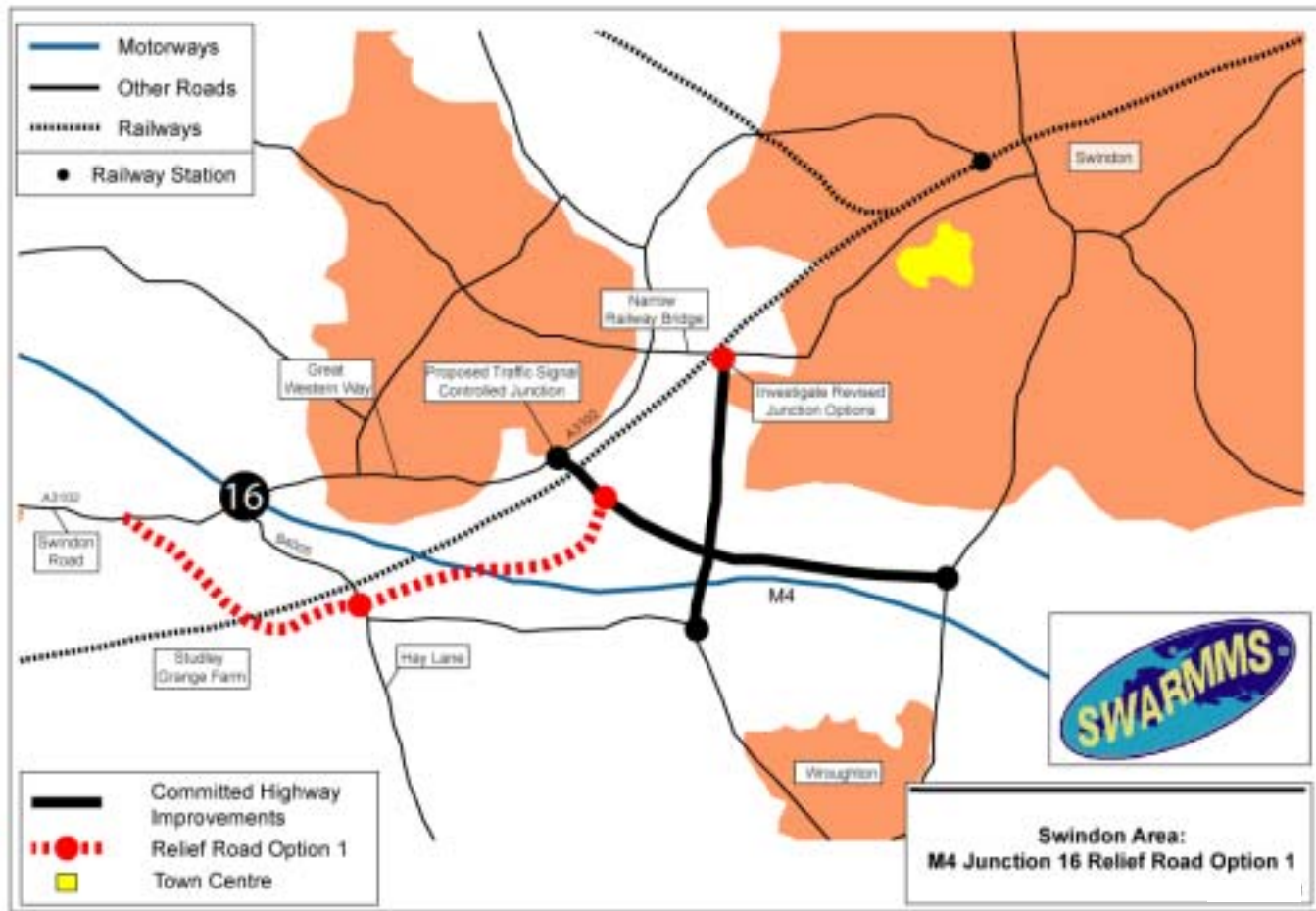
- Very high quality public transport system especially along the main radials which will need traffic priorities
- Convenient public transport interchanges to allow access throughout the entire urban area
- Traffic restraint to moderate pressure on the inner parts of the local road system
- Park and ride sites linked to radial bus services

Consideration should also be given to:

- Providing a new station at Moreton Bridge on the Swindon to Gloucester railway line with an associated park and ride facility

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<sup>16</sup> SWARMMS Swindon Area Plan, Halcrow, Swindon, April 2002.



### 3.17 Greater Bristol Area<sup>17</sup>

#### Problems And Issues

- Congestion on the trunk road network – especially the M4/M5 and particularly at peak periods
- Unreliability of travel times on the road and rail networks – both are under severe pressure and minor incidents can result in major delays
- Poor information and difficulties in achieving “seamless” travel between different transport modes
- Severance, noise and poor air quality caused by busy roads passing through local communities
- Poor conditions for pedestrians and cyclists and inadequate accessibility for the mobility impaired
- Public transport services do not provide adequate or attractive alternatives to private transport for a large proportion of journeys and is perceived as being insecure by some sections of the community

#### Key Recommendations

##### Motorways:

- Provide climbing lanes at M4 J18, M5 J17 → J18 and M5 J19 → J20 & J20 → J19
- Build additional lanes on M4 J19 ↔ J20 and M5 J16 ↔ J17 (J17 ↔ J18 in longer term)
- Improve slip roads at M5 J16 (northbound off), M5 J20 (southbound off) and M4 J18 (eastbound off)
- Implement Highway Agency schemes for M5 J15 ↔ J16 and M4 J19 ↔ J20
- Reconfigure M5 J17 and M5 J21 (or add a new J21a) depending on development at Weston super Mare
- Introduce MIDAS over the Motorway network in the area
- Introduce “Controlled Motorway” between M4 J18 to the east of the M4/M5 interchange down to M5 J19

Rail services infrastructure -

- See plan

##### Other public transport:

- Provide Coachways at Cribbs Causeway and Weston-super-Mare
- Provide bus and coach traffic priorities to limit the effects of congestion.
- Improved interchanges at Bath bus/coach and rail stations, Bristol bus and rail (Temple Meads and Parkway) stations Weston-super-Mare bus and rail stations, Worle rail station and Cribbs Causeway bus terminus
- Implement Road User Charging in central Bristol and strengthen traffic restraint policies in suburban centres. Improve local bus services through bus quality partnerships and develop the proposed light rail system. Line 1 should be started as soon as possible as the first stage of a larger network.
- Improved public transport access to Bristol International Airport
- Provide comprehensive Park & Ride services from locations close to the strategic road network linking to key centres within Bristol.

##### General Recommendations:


- Direct as much new employment to the vicinity of Weston super Mare as is practicable
- Limit residential development in North Somerset and re-focus on the Bristol area
- Restrict further “out of town commercial” developments

##### Further Studies

- The measures proposed for the strategic transport links in the Greater Bristol area alone are not sufficient to achieve the improvements to travel conditions that SWARMMS is seeking. Wider action is needed at both the local and strategic levels including land use as well as transport policies. It is recommended therefore that a comprehensive study along these lines is undertaken as soon as practicable.

<sup>17</sup> SWARMMS Greater Bristol Area Plan: Halcrow, Swindon, April 2002.

### Highway Measures

-  Controlled Motorway
- M5
  - > Auxilliary lane to be added between junctions 16 & 17
  - > New climbing lanes between junctions 19 & 20
  - > 3 new climbing lanes between junctions 17 & 20
- M4
  - > Almondsbury Interchange (M4/M5) proposals by Highways Agency are supported
  - > Auxilliary lanes to be added between junctions 19 & 20
  - > New climbing lane on approach to junction 18






### Coach service enhancements:






- > Coach services to include 2 coaches per hour between London-Bristol, London-South Wales, Heathrow-Bristol, Heathrow-South Wales, Bristol-Taunton-Exeter
- > Improved integration of local bus and coach services and higher quality vehicles

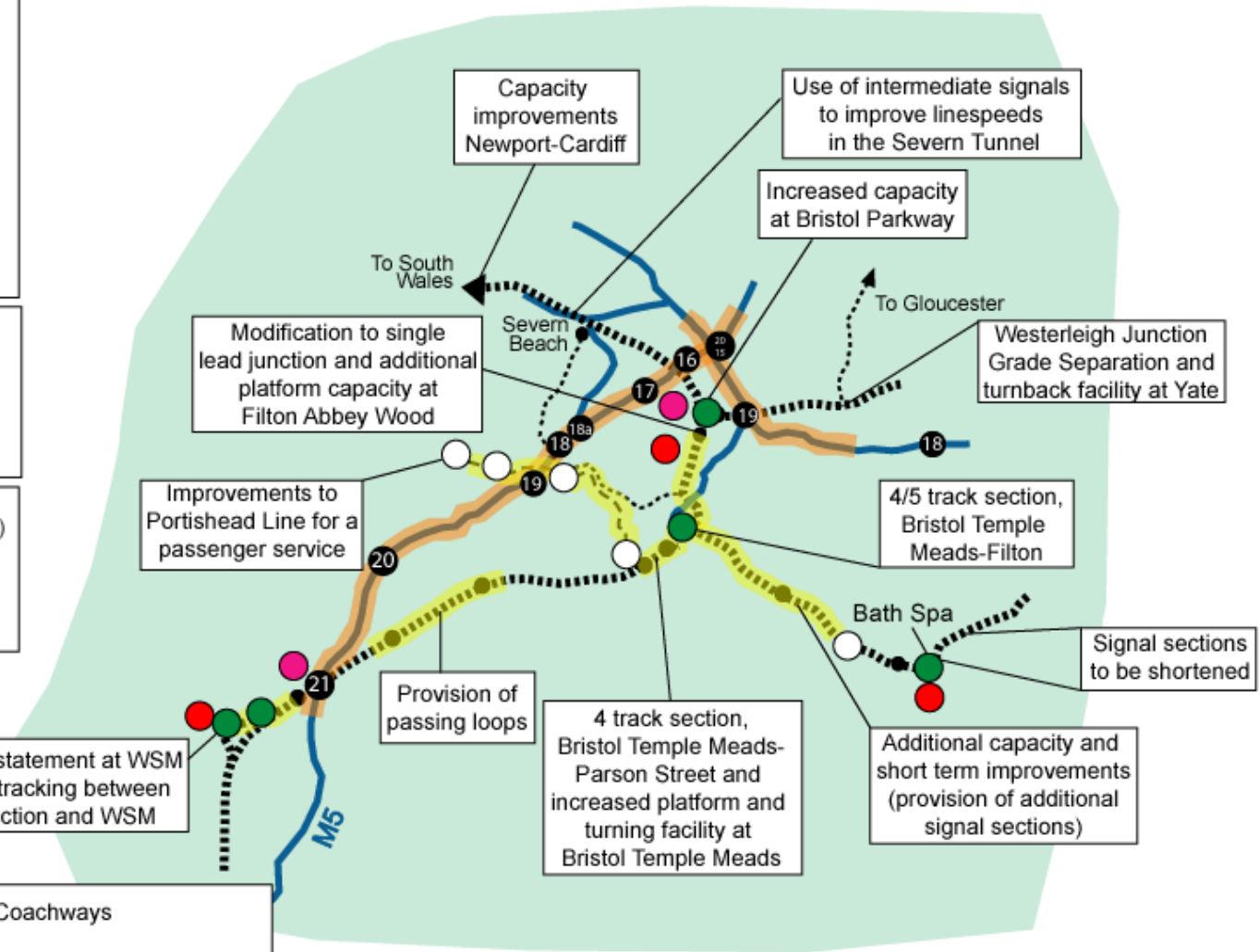
### Proposed combined service rail frequencies:

- > Taunton - Bristol Temple Meads: 4/5 trains per hour (tph)
- > Exeter St Davids - Bristol Temple Meads: 3/4 tph
- > London Paddington - South Wales: 3 tph
- > London Paddington - Bristol Temple Meads: 3 tph
- > Bristol Temple Meads - Oxford: 2 tph

### Study Corridors

-  Motorways
-  'A' Roads
-  Railways
-  Other Rail Lines
-  Stations

-  New Coachways
-  Interchange facilities (with rail) to be improved
-  Interchange facilities (bus/coach) to be improved
-  New stations to be constructed
-  Rail infrastructure enhancements



## Bristol Area Recommendations

### **3.18**

#### ***What If Tests***

3.18.1 In parallel with the Plan formulation stage a series of tests was carried out on the sensitivity of the strategy to changes in the extent to which some of its components were implemented. The findings from the most significant of these were as follows.

#### ***Congestion Charging***

3.18.2 It was clear that tolling motorways on their own would lead to an unacceptable diversion of traffic to more sensitive routes. The introduction of more general road user charges of between zero and 6p per vehicle kilometre for different classes of road had little effect on traffic with reductions of about 3% on average motorway flows, only a 1% increase on local roads and a negligible effect on rail use. Clearly significantly higher charges will be required if direct charging is to have a material impact on congestion levels, although then the concerns of traffic diversion become even more important.

#### ***Failure to Upgrade the A303/A358/A30***

3.18.3 If the proposed dualling into Cornwall were not implemented then congestion, reliability and accidents on the route would worsen and there would be a small, but significant, element of long distance traffic which would remain on the already congested M4/M5. Indeed, motorway flows would typically increase by 4% compared to the Preferred Strategy, with A303 flows falling by 21%. In turn this would have an adverse impact on the economy of the South West.

#### ***Delays in Implementing the Recommended Strategy***

3.18.4 This would have a serious adverse effect on transport and accessibility in the SWARMMS corridor. Traffic growth would be greater and congestion significantly so. Diversion to public transport would be less but crowding of rail services would worsen. The peripherality of Devon and Cornwall would not reduce and their economic prospects would be damaged.

#### ***Delays in Implementing the Rail Improvement Programme***

3.18.5 Already poor railway reliability would deteriorate and overcrowding would increase. The growth in rail travel would be stifled and the role of the railways in carrying more commuting traffic would lessen. As a consequence, road congestion would worsen. The absence of new stations would limit access to the system and improvements in accessibility to the far South West would be much reduced.

### *Lack of Adequate Revenue Support*

- 3.18.6 Public transport would suffer substantially if revenue support levels were substantially lower than proposed. Rail, bus and the prospect for LRT services would suffer. There would be fewer improved interchanges and Park and Ride facilities. Rural access to the main transport corridors would continue to be poor for those without access to a car.
- 3.18.7 In the urban areas poorer public transport would mean that reasonable alternatives to car use would be limited and the opportunities to control congestion damaged. In the rural areas the ability of those without cars to go about their daily business would be severely hampered. Apart from the local impacts this would undermine the policies to improve sustainability that SWARMMS is recommending for longer distance travel.

### *Overall*

- 3.18.8 Taken with the results of the initial sifting and assessment of the composite strategies, these tests showed that the most important individual effects were from changes in the reduction in travel demand growth, removal of the A30/A303 schemes, no improvements to public transport quality and delays to improvements in the Great Western Mainline rail services. Overall, delays in implementing the strategy as a whole would be the most damaging.
- 3.18.9 The Preferred Strategy offers the opportunity to slow the deterioration in travel conditions and accessibility in the SWARMMS area and subsequently lead to improvements – notably to public transport. Any substantial delay would mean that the situation would continue to get worse. The effects of this would impact on the entirety of the SWARMMS area but particularly the more remote South West where the need for improved accessibility and the support for economic growth are greatest.
- 3.18.10 The strategy would also bring benefits to the South East, although the degree to which these will be realised is dependent on the final strategy adopted by TVMMS. The movement of goods such as aggregates and agricultural products into the South East will be eased. Access to the recreational areas from Bath out to Penzance will be improved and accessibility along the economically buoyant London/Reading/Swindon/Bristol corridor will be significantly better.

## 4 Overview of the Strategy

### 4.1 *A Comprehensive Approach*

4.1.1 The Preferred Strategy has been formulated in a way that blends its several components together to provide the most effective overall contribution to meeting the objectives set for SWARMMS. It has shown that the proximity of major urban areas to national transport corridors requires a wide range of actions at national, regional and local levels. In the Bristol area these interdependences are so powerful that further work is needed to produce a sufficiently comprehensive set of proposals to produce an acceptable situation. It is important that the SWARMMS proposals are taken forward as an integrated whole as selective picking and choosing individual elements will damage the integrity of the strategy.

### 4.2 *Traffic Demand Growth*

4.2.1 By the forecast year the demand for travel in the area has the potential to grow by over a third. To cope with this in full would require major expansions of capacity that would be unduly disruptive and of questionable economic value. The strategy therefore is based on the introduction of a set of measures designed to reduce the demand for road use at peak times. These are in some respects novel and will require new types of initiatives to implement them. However they can reduce car travel for business and commuting by 10% and reduce peak pressure on the road network by of the order of 5%. This brings substantial benefits at a very small cost.

4.2.2 There will be considerable pressures on the road systems of the Principle Urban Areas and, whilst it is not SWARMMS job to provide comprehensive solutions to these, SWARMMS makes it clear that some form of local traffic restraint must form part of the local transport plans for these areas.

### 4.3 *Roads*

4.3.1 Roads carry the majority of movements in the corridor whether by car, van, lorry, bus or coach. As such they are crucial to providing acceptable mobility. The strategy provides a high standard dual carriageway route between the M3 and Cornwall based on the A303/A358/A30 and significant improvements to the M4/M5 corridor in the Bristol area. The provision of good standard twin routes will improve both the capacity and robustness of the strategic road system through the corridor.

4.3.2 These improvements will still leave problems in the Bristol area and a more comprehensive assessment of what should be done there is needed to provide a full package of measures that will cope with these remaining difficulties.

#### **4.4** ***Rail***

4.4.1 Rail provides quality public transport between major urban centres and for commuting in the larger urban areas. It is also important in reducing the problems of access to the far South West. The strategy again proposes strengthening of two key rail routes across the area; the Great Western Main Line and the Exeter to Waterloo Line. These improvements will provide the additional capacity to carry the forecast increase in demand whilst reducing overcrowding. They will enable higher frequencies and greater reliability and provide direct connections between centres that do not have these at present.

#### **4.5** ***Other Public Transport***

4.5.1 The strategy proposes a substantial improvement in coach and express bus services between urban areas and local bus services generally. As well as improved services there must be traffic priorities to aid reliability, integrated ticketing and information to make public transport easier to use. There must also be better interchanges to enable the services to provide convenient connections so reducing the shortcomings of existing services compared with cars and taxis.

#### **4.6** ***Environment***

4.6.1 The strategy provides environmental benefits in reducing emissions of noxious and greenhouse gases and providing better conditions for travellers. There is however a price to pay and there are some adverse effects on the physical environment from newly constructed infrastructure and from the noise of transport operations. However some communities badly affected by through traffic will be relieved and major damage to particularly sensitive areas has largely been avoided.

#### **4.7** ***Development Patterns***

4.7.1 SWARMMS has taken account of the known development proposals for the area. However it is clear that the levels and location of development in some parts of the study area would bring substantial increases in travel demand on already hard-pressed parts of the network. The Swindon, Bristol (and Thames Valley) areas present particularly difficult challenges in this respect as their expansion could overburden the nearby strategic road network unless steps are taken to prevent this. In developing their regional planning policies the relevant authorities should have regard to these and ensure that major expansions are located and designed to

minimise travel, and located where the transport system has the capacity to cope with them or that additional capacity is provided in parallel.

# 5 The Effects of the Preferred Strategy

## 5.1

### *Appraisal*

#### 5.1.1

The Preferred Strategy and its component Plans have been appraised in accordance with the Government's guidance. This requires them to be assessed under five main headings namely:

- Environment
- Safety
- Economy
- Accessibility and
- Integration.

#### 5.1.2

A series of seven Additional Appraisal Criteria was determined to provide a sharper focus reflecting some of the objectives and problems being addressed by SWARMMS. The seven criteria are:

- **To reduce the need to travel:** SWARMMS contains a range of measures that will reduce car use in the peak hour by 5%.
- **To increase the proportion of journeys made by non-car modes in the study area:** rail use is forecast to be 9% higher than it would otherwise be.
- **To improve connectivity within the study area:** the new coach and direct rail services coupled with improved integration of local transport will be of particular value in this respect.
- **To reduce the peripherality of Devon and Cornwall:** the increased robustness of both road and rail networks and higher rail frequencies to the South West will increase the capacity, reliability and ease of access to Devon and Cornwall.
- **To reduce congestion at key locations on the road network:** the dualling of the A303/A30 corridor will reduce congestion and improve safety. Although parts of the M4/M5 corridor will still be congested at peak times this will be less than would otherwise be the case.
- **To reduce congestion at key locations on the rail network:** The proposed improvements to both the GWML and Waterloo to Exeter lines will eliminate all the main bottlenecks in the rail corridors.

- **To reduce seasonal congestion at key locations on the road network:**  
the dualling of the A303/A30 corridor will much reduce seasonal road congestion in this corridor.

5.1.3 The findings of the appraisal are reported in a separate Appraisal Report <sup>18</sup> and the extent to which different elements of the strategy address the key problems and issues is summarised in Figure 5.1. The following paragraphs summarise the effects the strategy is forecast to have on travel on the strategic transport networks in the SWARMMS area.

## **5.2** *Travel Demand*

5.2.1 A key element of the strategy is to moderate the growth in travel demand below the level to which it would otherwise rise. It is estimated that the amount of travel in the study area would, by 2016, be 30% higher than 2000 without the strategy in place. However, the Preferred Strategy has the effect of reducing this to 21%. This is the single most important element of the strategy in helping to balance the demands made on the overall transport system and the capacity of the network to carry them. As such this component of the strategy is very important.

## **5.3** *Road Conditions*

5.3.1 The road network will continue to be hard pressed although the strategy will provide relief to many of the busiest strategic links in the SWARMMS network. The provision of a second good quality route between London and Cornwall will increase the robustness of the network. Traffic densities on the M4/M5 around Bristol will remain high and need addressing through a more comprehensive approach.

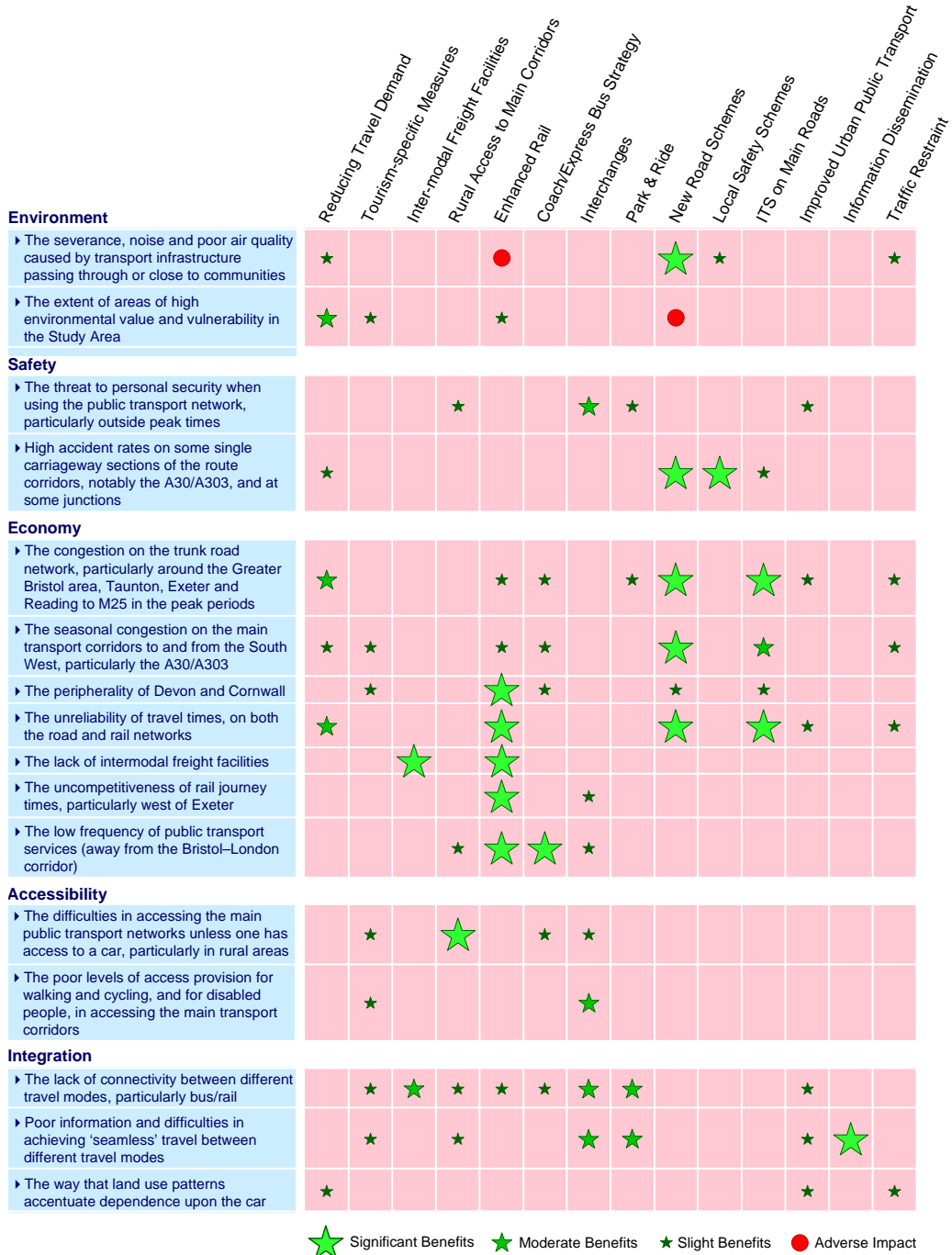
5.3.2 The M4 around Reading will just about be able to cope without further measures, but with lower speeds than currently, and this must be an issue for the TVMMS to address. Over all its length in the SWARMMS area the M3 should be operating within capacity although speeds will be lower than currently.

5.3.3 Congestion will not normally occur on the improved A303/A358/A30 and traffic conditions at the western end of the route will be good. Whilst traffic levels at the eastern end of the A303 (east of Andover) will be busier even here traffic will normally be free flowing.

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<sup>18</sup> SWARMMS Appraisal Report: Halcrow, Swindon, April 2002.

**Figure 5.1: Summary Appraisal of the Preferred Strategy**



- 5.3.4 There will however remain some problems of peak seasonal congestion. On the holiday routes average August traffic in 2016 will generally be within capacity although some sections will see lower speeds than currently; on Saturdays the M5 will be badly congested between Junctions 29 and 30, as will the A303 east of Andover and the Ilminster Bypass.
- 5.3.5 Whilst some congestion will remain the introduction of improved traffic information systems will allow motorists to anticipate this more effectively and, for those who are able, to rearrange their travel times and/or routes to minimise their exposure to traffic delays. Road safety will be much improved with about 35 fewer serious injuries and deaths annually by 2016.

#### **5.4 Rail Travel**

- 5.4.1 This will be much improved by the strategy and the amount of travel by rail will increase by 69% although it will remain a relatively small proportion of total travel across the study area. The capacity provided will be increased and, with the average load factor falling by 15%, the number of overcrowded trains will be halved across the network as a whole compared to the case without the strategy implemented. Reductions in overcrowding will be particularly marked between Bath and Swindon, Westbury and Newbury, and Exeter and Plymouth.
- 5.4.2 This additional capacity will be associated with substantially increased service frequencies, especially between the main centres of population. Between London and the two stations in Bristol there will be an effective ten-minute service and between Exeter and Bristol the service will only be slightly less frequent. Even between Exeter and Penzance the average headway will be only three quarters of an hour.
- 5.4.3 There will be a regular pattern of fast and semi fast services linking Exeter to London (Waterloo) with improved reliability and services to new stations at Clyst Hayes and Wilton.
- 5.4.4 More frequent express trains will mean that average long distance journey times will be reduced and more stopping services will improve connections between intermediate stations. New stations through the study area will improve access to the rail network and new stopping patterns will increase the level of service to these and a number of other less busy existing stations.
- 5.4.5 New rail infrastructure will make all services more reliable.

## **5.5**

### ***Coach Travel***

- 5.5.1 The strategy contains ambitious proposals for better coach services. New Coachways at Taunton, Weston-super-Mare, Cribbs Causeway, Swindon and Chieveley will substantially improve access to the network, especially where these are served by feeder bus services, including the proposed new demand responsive local public transport services.
- 5.5.2 The system of Coachways will allow a proportion of services to avoid congested urban areas so reducing journey times for passengers and costs for operators.
- 5.5.3 Improvements to coach stations and interchanges and higher standards of vehicle comfort, coupled with more frequent services to the more popular destinations, including airports, will make coach travel more attractive to those sections of the market that rely heavily on this form of transport and provide a valuable travel option for others.

## **5.6**

### ***Public Transport Generally***

- 5.6.1 The strategy places considerable emphasis on improvements to public transport in its own right and as an attractive option for potential car users. Improved interchanges, stops and stations, more through ticketing, convenient information on fares and services and an expansion of public transport services into lower density rural areas should all contribute to this.
- 5.6.2 Buses are the main form of local transport in the SWARMMS area and, although they do not provide for longer distance travel, they are important in providing access to the strategic public transport network and providing an alternative to car use for some local journeys that might otherwise use the strategic road network. The strategy recommends an increase in revenue support for buses to allow improved higher quality services. It also recommends traffic priorities for the busier bus and coach corridors where otherwise these would be adversely affected by congestion. Although bus journey speeds will still be limited, improved reliability should make the bus an increasingly attractive option.

## **5.7**

### ***Movement of Materials and Goods***

- 5.7.1 The improvements to the road and rail networks would also help the movements of freight traffic. The 50% of inland freight that goes by trunk road will benefit from the improvement schemes, the traffic management and information systems. That which goes by rail will be able to enjoy a higher level of service as the system's capacity constraints (which particularly affect freight traffic) are eased.

The expansion of multi-modal freight facilities and services will give many shippers an increased opportunity to use rail for heavy medium/long haul trunk movements.

## 6 Implementing the Strategy

### 6.1

#### *Implementation*

##### 6.1.1

The purpose of this, and the other multi-modal studies, is to provide a comprehensive approach to solving the transport problems it addresses. However, its recommendations apply to a wide range of agencies. These include:

- The Government (DTLR and other Departments)
- The Regional Assemblies
- The Regional Development Agencies
- The Highways Agency
- The Strategic Rail Authority
- Railtrack
- The Train Operating Companies
- The Coach and Bus Operators
- Local Authorities
- As well as a wide range of other actors in the public and private sector

##### 6.1.2

The SWARMMS findings and recommendations will be passed over formally to the South West Regional Assembly, the South East England Regional Assembly and the Welsh Assembly Government to assist these bodies in developing policies and guidance for transport and planning in their areas. The recommendations and findings will also be available to local authorities and other statutory agencies with an interest in transport in the SWARMMS area, along with other interested parties. At this point the SWARMMS project will have done its job and it will be for these other bodies to carry its proposals forward as they see fit.

##### 6.1.3

However SWARMMS will have been of limited value if it does not lead to improved coherence and co-ordination of actions on transport by these bodies. For this to happen there will need to be a continuing process of co-ordination in respect of transport policies, programmes and projects. The Regional Assemblies are best placed to act as the focus of this for their respective areas but they do not have the powers or resources to ensure that all these measures are carried out according to their programmes.

##### 6.1.4

The Highways Agency and the national railway industry, led by the Strategic Rail Authority, will be responsible for implementing most of the infrastructure schemes

in the strategy and the local authorities have an important role in supporting the strategy through their Local Transport Plans. All these organisations have their own planning, programming and budgeting procedures into which the SWARMMS policies and proposals will have to be woven if they are to be implemented in a timely fashion.

6.1.5 SWARMMS has developed the strategy by treating all modes on their merits and taking full account of a wide range of transport, environmental, social, economic and land use criteria. The remit of individual implementation agencies does not always include all these and there is a danger that the overall coherence of the strategy will suffer if steps are not taken to ensure that the full range of factors affected by particular proposals and their relation to other components of the strategy are brought into account.

6.1.6 It is suggested that the process for achieving the required co-ordination should comprise:

- Publication by the Regional Assemblies of their transport guidance and policies in the light of SWARMMS (and other relevant MMSs).
- A statement by the relevant transport authorities and operators, following consultation with the Regional Assemblies, on their programmes and priorities for schemes included in the Regional Transport Strategies.
- A review by the Government of the Regional Transport Strategies and the authorities/operators proposals and an indication of what changes, should there be any inconsistencies, are needed either to the policies or the implementation programmes.

6.1.7 Whilst it is important for Government not to intrude unduly into the area of responsibilities of the Regional Assemblies and transport providers there may be issues, such as the priorities in the Trunk Road Programme, that can only be dealt with effectively at this level.

6.1.8 The Government has already embarked on the monitoring and review of the 10 Year Plan and it is suggested that the process outlined above should be incorporated into that procedure.

## **6.2** *Priorities and Costs*

6.2.1 Priorities for implementation have been developed according to the following principles:

- The lead-time for implementation must be realistic
- The better the value for money the earlier the measure should be carried out
- Operational dependencies between projects must be taken into account
- Where there are uncertainties over how effective a policy might be it should be 'piloted' initially to assess its cost effectiveness
- Expenditure should not be bunched in a short period of time

- 6.2.2 The need to improve the transport infrastructure in the SWARMMS area is such that those schemes that have reached a stage where implementation can proceed should go ahead.
- 6.2.3 There are some initiatives – particularly in respect of reducing the growth in travel demand that will bring substantial, general and progressive benefits with little capital cost. The programmes for these should commence quickly.
- 6.2.4 The remitted road schemes are all on the A30/A303 corridor and these could be packaged as a set into a DBFO venture. This would allow early progress without creating too great a public expenditure burden. The rail schemes on the GWML and in the Bristol area that are not particularly dependent on increases in capacity east of Reading should also be given priority so as to enhance local reliability and help to facilitate the Bristol Light Rail project. Given the likelihood of the GWML capacity problems east of Reading not being eased for some years, the first stage of the dualling of the Waterloo to Exeter Line should be started early.
- 6.2.5 The phasing of the transport schemes recommended in SWARMMS must also take account of other development proposals and local needs and circumstances. It is essential therefore that the Regional and Welsh assemblies address the issue of phasing in this broader context to assist the implementation agencies to incorporate the SWARMMS schemes into their programmes in a way that takes full account of local needs and circumstances.
- 6.2.6 A priority listing is shown in Table 6.1, with its justification being described below.



**Table 6.1: Priorities**

	Short Term Present day – 2011 <i>Cost</i>	Medium Term 2011-2016 <i>Cost</i>	Longer Term 2016 > <i>Cost</i>	<i>Total</i>			
<b>ROAD MEASURES</b>							
	Local safety schemes	15	A303 Sparkford-Ilchester	15	A303 Ilminster Bypass	15	
	ITS Bristol area	30	A358 Ilminster-M5	60	M5 Jn24a	15	
	A303 Chicklade-Mere	30	M5Jn16-M5Jn17 Auxiliary Lane	15	A30 Temple	12	
	A303 Wylde-Stockton Wood	5	Other ITS/Communications (part)	100	Misc. junction upgrades	27	
	M4Jn19-M5Jn16	10			Motorway climbing lanes	25	
	M5 Jn31	3			Other ITS/Communications (part)	55	
<i>Sub-Total</i>		93		190		149	432
<b>RAIL (Infrastructure &amp; Services)</b>							
	Service imps: WSM-Bristol	7 pa	Service imps: Cardiff-London	20 pa	Station: Newton	2	
	Capacity: Bristol: junctions, Filton bank and WSM access	113	Service imps: Devon/Cornwall-London	34 pa	Capacity: Portishead line passenger upgrade	27	
	Capacity: London-Bristol: Reading	500	Capacity: Bristol: Temple Meads area & passing loops	17	Capacity: Devon/Cornwall branches	35	
	Capacity: Exeter-Penzance	40	Service imps: Bristol-London	16 pa	Service imps: Devon/Cornwall branches	5 pa	
	Station: Worle Parkway	2	Stations: Wootton Bassett, Grove, Clyst Hayes, Wilton	6	Service imps: Portishead line	1 pa	
			Capacity: London-Bristol: other	1370	Service imps: Paddington - Westbury	2 pa	
			Service imps: Greater Bristol area	14 pa			
			Capacity: Exeter-Salisbury (2-track)	164			
			Service imps: Exeter-Salisbury	5 pa			
			Freight gauge enhancement	43			
	Total Capital Costs	655		1600		54	2309
<i>Sub-Total</i>	Total Operating Costs	7 pa		7+89 pa		7+89+8 pa	

	Short Term Present day – 2011 Cost	Medium Term 2011-2016 Cost	Longer Term 2016 > Cost	Total
<b>COACH/EXPRESS BUS (Coachways &amp; Services)</b>				
	Express bus service enhancements C	Coach Service enhancements (including all Coachways) C		
		Coachways 6		
<i>Sub-Total</i>	C	6		6
<b>REDUCING THE GROWTH IN TRAVEL DEMAND</b>				
	All initiatives should be promoted in the short-term, but the effects will become increasingly apparent with time (as they are taken up in the medium and longer terms).			
<i>Sub-Total</i>	Capital Costs 20			20
<i>Sub-Total</i>	Operating Costs 24 pa	24 pa	24 pa	
<b>TOURISM-SPECIFIC MEASURES</b>				
	Capital costs are required to establish key initiatives and develop facilities, also requirement for on-going operation and support of measures			
<i>Sub-Total</i>	Capital Costs 30			30
<i>Sub-Total</i>	Operating Costs 5 pa	5 pa	5 pa	
<b>RURAL ACCESS TO THE MAIN TRANSPORT CORRIDORS</b>				
	Pilot Schemes 13	Full implementation 1 13	Full implementation 2 14	40
<i>Sub-Total</i>	13	13	14	40
<b>FREIGHT FACILITIES</b>				
	Completion of planned terminal at Swindon C	Exeter terminal C		
<i>Sub-Total</i>	C	C		C
<b>INTERCHANGES</b>				
	Rolling programme to upgrade interchanges across the study area			
<i>Sub-Total</i>	London-Exeter, 5; Exeter-Penzance, 6; London-Bristol, 2; Bristol-Exeter, 2			15
<b>PARK &amp; RIDE</b>				
	Development of P&R sites and services around Bristol, Exeter and Plymouth			

	<b>Short Term Present day – 2011</b>	<b>Medium Term 2011-2016</b>	<b>Longer Term 2016 &gt;</b>	<b>Total</b>
	<i>Cost</i>	<i>Cost</i>	<i>Cost</i>	
<i>Sub-Total</i>	Capital Cost 30			30
<i>Sub-Total</i>	Operating Cost 3 pa	3 pa	3 pa	
<b>COMPLEMENTARY URBAN MEASURES</b>				
	Support to Local Transport Plans (improved public transport and demand management) – additional revenue support for local transport included to reflect its role within the Preferred Strategy			
<i>Sub-Total</i>	Operating Cost 25 pa	50 pa	50 pa	
<i>Grand Total</i>	Capital Costs 841	1809	217	2867
<i>Grand-Total</i>	Operating Costs 64 pa	178 pa	186 pa	

Key : C = Commercial

- 6.2.7 There will also be costs for proposals such as the tax allowance on public transport season tickets and offices at home. However it is assumed that these will be introduced at the national level compensated for by other changes in the tax system. As such they are not included in the SWARMMS costings.

### **6.3 Funding**

- 6.3.1 The costs of implementing the Preferred Strategy in the SWARMMS area over fifteen years at less than £½bn a year are modest compared with the proposed expenditure on transport in the 10 Year Plan averaging £18bn a year, or total national expenditure on transport of the order of £100bn annually. The achievement of the strategy however does require substantial expenditure outside the SWARMMS area – particularly in respect of the GWML east of Reading. Nevertheless it would be surprising if there were not difficulties in securing the necessary funding. For example, the 10 Year Plan includes a substantial amount of private finance especially in respect of the railways. The introduction of road user charging could substantially change this picture depending how much would be offset by reductions in other road and fuel taxes.

- 6.3.2 Because of the relatively low densities of much of the SWARMMS area and the policy objectives of promoting regeneration, reducing rural inaccessibility and the peripherality of the far South West, the prospects for truly commercial projects are likely to be worse than in many other parts of the country. This means that the need for public funding, either directly or in support of Public Private Partnerships, will probably be greater for schemes in the western half of the SWARMMS area. This will not be the case for the area east of Reading where population and travel densities are higher. It is anticipated nevertheless that opportunities will arise for developer contributions to transport enhancements and planning authorities should work with transport providers to secure these.

- 6.3.3 This problem will be especially acute in respect of revenue support for public transport services. At present the available funds are insufficient to secure a public transport network that offers an acceptable alternative for the overwhelming majority of car journeys. In addition some of the recent initiatives supporting rural public transport are uncertain and time limited and so cannot provide a suitable basis for the long-term development of an attractive public transport system. At present this is most obvious in the rural areas but as authorities seek to introduce restraint on the growth of car use the problem will become more severe in urban areas also. There is little prospect of the necessary services being provided

commercially and there must be recognition of the level of public funding required if this essential foundation to the SWARMMS strategy is to be provided.

### *Reducing the Growth in Travel Demand*

6.3.4 A related implementation problem is that of reducing the growth in travel demand. The SWARMMS analysis has shown this to be a very beneficial set of measures to implement. Such policies would be of even greater value nationally and should be pursued by Central Government as a matter of urgency. At present, however, there are limited effective public policy instruments for implementing these. Their benefits would not be confined to the SWARMMS area but would extend to the whole of the UK and it would not be sensible to attempt to introduce the required incentives and promotions in one or two regions alone, although specific initiatives can be developed at the regional level. The first steps to promote these policies should be the changes in the tax system to favour commuting by public transport, the spread of home offices and revenue support for new individualised public transport marketing initiatives. These should be accompanied by an investigation as to how best promote increased teleworking and business videoconferencing.

6.3.5 A clear government steer is needed in this area. This should set out the national policies and actions that are needed to promote demand growth limiting policies and to provide the framework for partnerships, including the private sector, at regional and local level.

### *Road Pricing*

6.3.6 SWARMMS does not include road pricing amongst its recommendations, except in supporting the proposed scheme for central Bristol, for reasons of practicality. However, a policy of more general road pricing, provided a scheme can be introduced that does not produce the sorts of distortions associated with charging just for one class of road, could bring the twin benefits of moderating demand efficiently and raising revenue to help fund the proposed infrastructure and service improvements. If the Government does get to the point of considering such a scheme, and it could be implemented without significant distortions, we recommend that this should be introduced in the SWARMMS area. We do not believe that the case for any of the infrastructure schemes included in the Preferred Strategy would be adversely affected.

6.3.7 The benefits of area wide road pricing would vary substantially in different parts of the SWARMMS area. For example there would be few areas where it would bring

much benefit outside the busy tourist season. However in the Bristol, Swindon and Reading areas there is a much stronger case. Indeed, it seems that area-wide road pricing, including those parts of the Motorway network in the area, may well be a key component of an integrated transport and land use strategy for the Greater Bristol area in the longer term.

# Appendix A

Remitted Road Schemes

# Appendix A

## Remitted Road Schemes

The road schemes remitted in the SWARMMS brief are listed below along with a summary of the advice given on them.

### *A30/A303 Marsh-Honiton*

This section has been considered, along with the A303 Ilminster-Marsh scheme, against an alternative scheme that would upgrade the A358 between Ilminster and the M5 at Taunton. Providing the feasibility of the A358/M5 connection is established, an upgrade to the A358 is preferred. In this instance, the A30/A303 Marsh-Honiton scheme in its current form would be dropped.

However, it has not been possible within SWARMMS to establish the absolute certainty of finding an acceptable means of connecting an upgraded A358 at its northern end with the M5. Therefore, it is recommended that both options, to upgrade either the A303/A30 (March-Honiton and Ilminster-Marsh) or A358, are retained until greater clarity is established on feasibility.

### *A35 Honiton Eastern Bypass*

The A35 Honiton Eastern Bypass is not part of one of the main corridors covered by SWARMMS, but was previously coupled with the A303/A30 Marsh-Honiton scheme. SWARMMS reported earlier in the study that the Honiton Eastern Bypass had no role to play within a strategy that focussed on the main A303/A30 corridor. It was advised that a decision on whether or not to proceed with the scheme depends on local need and/or accessibility to the A35/A31 route. Both issues fall outside the SWARMMS remit.

### *A38 Saltash-Stoketon Cross Improvement*

The SWARMMS strategy is that the A38 between Plymouth and Bodmin, whilst performing an important role linking Cornwall with Plymouth and South Devon, does not perform a major strategic role within the wider SWARMMS area. As such, the emphasis within the strategy is on better management of traffic flow and accident prevention, rather than the provision of a significantly upgraded route. It follows that any changes to the route network in the vicinity should be dictated by local need.

### *A38 Dobwalls Bypass*

This scheme was assessed to have minimal significance to the overall strategy and therefore could be dealt with on its merits as a local bypass. The Highways Agency has since added the scheme to its Targeted Programme of Improvements.

### *A303 Ilminster Bypass Improvements*

The study recommendation is that the scheme previously promoted by the Highways Agency should be taken forward in its current proposed form. However, improvement of the Hayes End Roundabout should be considered as part of the further detailed design work on the Ilminster Bypass, including possible grade-separation.

### *A303 Ilminster to Marsh Improvements*

See comments on A30/A303 Marsh-Honiton above.

### *A303 Sparkford to Ilchester Improvement*

The study recommendation is that the scheme previously promoted by the Highways Agency should be taken forward, albeit that the setting of Hazelgrove House and its parkland should be considered further during the detailed design process. Also, the existing at-grade Podimore Roundabout should be improved, for safety reasons.

### *A303 Wylve-Stockton Wood Improvement*

The study recommendation is that the scheme previously promoted by the Highways Agency should be taken forward, with a number of specific issues to be addressed during the detailed design process. These include detailed consideration of junctions and crossings and the provision of grade-separated crossing facilities for non-motorised traffic, and possible realignment to reduce the impact on Stockton Wood SSSI.

### *A303 Chicklade Bottom-Mere Improvement*

The study recommendation is that the scheme previously promoted by the Highways Agency should be taken forward, with a number of specific issues to be addressed during the detailed design process. These include minimising the impact on the 'Ox Drove' track and reviewing a number of Public Rights of Way, bridleways, minor road junctions and individual accesses for safety reasons.