

Towards a Sustainable Transport System

Supporting Economic Growth in a Low Carbon World





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Low Carbon World

Presented to Parliament by the
Secretary of State for Transport,
by Command of Her Majesty

October 2007

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ISBN 978 0 10172262 9

 Printed in Great Britain on paper containing at least 75 per cent recycled fibre.

Cover photo acknowledgements

Top left In-Press: Steve Bates; top centre Rail Images; top right Jochen Tack/Alamy; bottom left and bottom centre www.JohnBirdsall.co.uk; bottom right Alvey & Towers Picture Library/Alamy.

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Foreword

Transport has a vital role to play in supporting sustainable economic growth, but I am clear that it must also play its full part in the UK's overall framework for reducing carbon emissions.

As Sir Rod Eddington's report argued, a well-functioning transport system is vital to the continued success of the UK economy and to our quality of life.

The recent Comprehensive Spending Review has reaffirmed the Government's policy of providing long-term stability of funding for transport by extending the Department for Transport's funding guideline to 2018-19. Public spending on transport will have doubled in real terms over the twenty years from 1998-99. We must ensure that this continued investment in the country's networks, together with our other policies, underpins a nationwide transport system that continues to support the UK's economic prosperity.

And our policy decisions must be firmly based on the evidence of the costs and benefits of those policies. The more we listen to the evidence, the greater the impact our policies will have. The Department for Transport has a strong evidence base and expertise already from which we will build: my priority is to ensure it continues to influence decision-making in the future.

A fundamental goal of transport policy must be to ensure that the transport sector plays its proper role in our fight to tackle climate change.

Professor Sir Nick Stern argued that this does not have to be an either/or choice. A well-designed strategy can support economic growth and tackle carbon emissions. Fundamentally, we need to get the prices right to cover the environmental and congestion costs of transport, to encourage technological innovation, to promote behavioural change, and to be smart with our investment decisions.

If we do that, we can support people's desire for mobility, whilst still ensuring that transport contributes to the overall reduction in emissions which the Government will enshrine in legislation through the Climate Change Bill.

I am also determined to adopt a stronger passenger and user focus in our policies. We must increase our understanding of the needs of pedestrians, cyclists and road users, rail, bus, and aviation passengers and of international and domestic freight transporters. Our policies must improve every part of their travel experience, from leaving their front door to arriving safely at their final destination. If we are to achieve that, we must understand the full end to end journey.

This discussion document responds to the reports of Eddington and Stern, and looks at how we can translate their recommendations into our policy-making process over the short, medium and long term.

It begins a process of debate about how we best ensure that our investment and policies result in real-world improvements that are both sustained and sustainable. And I urge people to join in the debate and have their say.

A handwritten signature in black ink that reads "Ruth Kelly". The signature is fluid and cursive, with the first name "Ruth" and the last name "Kelly" clearly distinguishable.

Rt Hon. Ruth Kelly MP
Secretary of State for Transport
October 2007



Executive summary

1. This document has three aims. Firstly, it describes how the Government is responding to the recommendations made in the Eddington study to improve transport's contribution to economic growth and productivity, and how it is ensuring that transport will play its part in delivering the overall level of reductions in carbon emissions recommended by the Stern Review of the Economics of Climate Change. Secondly, it sets out the Department for Transport's ambitious policy and investment plans for the period to 2013-14. And finally, it proposes a new approach to longer-term transport strategy, building on the model recommended by Sir Rod Eddington, and explains how we will engage with passengers, users, the transport industry and other stakeholders as we develop and implement that process.

History and context

2. People's aspirations are changing, and our transport planning needs to keep pace with that. For much of the post-War period, people were interested in personal mobility and demanded a wider range of goods on supermarket shelves. Road traffic grew inexorably and there was a rapid increase in air travel. Use of 'greener' forms of transport – bus, cycling and rail – all declined. More recently, however, whilst people continue to value mobility highly, they have also become much more concerned about the adverse impacts of transport on climate, health and quality of life and about their own travel experience as congestion mounts. At face value, this appears to suggest a stark choice between being 'rich and dirty' or 'poor and green'.
3. Two recent Government-commissioned reports show that this is a false dichotomy.
4. The independent Stern Review, published in October 2006, makes it clear that the option of being 'rich and dirty' does not exist, because catastrophic climate change would have a huge economic cost, as well as damaging people's lives and the planet. But nor do we have to be 'poor' to be 'green'. Stern says developed countries must cut CO₂ emissions by at least 60 per cent by 2050, but that this can be achieved at a material, but manageable, global cost of 1 per cent of GDP, provided the right policies are put in place, although for developed countries like the UK this cost could be higher. This cost is significant, but is far lower than the costs of inaction. Similarly, the costs of failing to adapt to a changing climate would exceed those of taking early action. The UK Government's climate change goals will be enshrined in legislation in the Climate Change Bill.
5. The Eddington study confirms that transport is vital to the economy. But he does not see a need to criss-cross the country with new links. He argues for a targeted approach to the most seriously congested parts of our urban, national and international networks. And he stresses that an innovative approach, which makes the most of existing networks through good regulation, and which sends the right price signals to users and transport providers, is likely to be just as important as further investment in new infrastructure.

6. Since delivering CO₂ reduction and economic growth are both essential and mutually consistent, we propose for the first time to set explicitly transport goals for both.
7. A lot has been achieved over the past decade to deliver a transport system which can support a growing economy whilst helping us to live within carbon emission limits. The decline in use of the railway has been reversed. The energy efficiency of cars has improved. Local authorities have made much progress in delivering successful local transport packages, although experience, particularly in terms of bus patronage, has been varied across the country. London has shown what can be done to promote bus use and cycling, as part of a co-ordinated transport package of congestion-charging and investment. And transport demand is not growing as fast as it used to. Meeting the transport needs of a modern economy whilst delivering CO₂ reductions is still a challenge, but not an insuperable one.
8. Nor is the challenge one for central Government alone. Private sector transport providers have more responsibility and individual transport users have more choice. Increasingly global markets demand decisions at the international level. Decision making has increasingly been devolved not only to Scotland, Wales and London, but to regions and local authorities, enabling them to take decisions which benefit from a closer understanding of the needs of local travel, and which can be integrated with other decisions on sustainable economic development.
9. We need a new approach to strategic transport planning which reflects the big transport challenges and the proper role of Government and others. The key steps are (1) clarity about policy goals, (2) identifying the transport challenges: the measurable outcomes which support goals and the detailed geographical analysis which identifies specific pressures, (3) generating options to address them and (4) selecting the options that deliver the best value for money in the context of sustainable development.

Our broad goals – and the challenge for transport

10. People travel daily and want a system that gets them from A to B safely, securely and without damaging the environment. If there are problems on their journey, they want to be told about them. They want predictable end-to-end journey times, and expect to travel in reasonable comfort and get a good quality of service. Businesses rely on transport not only so their workforces and customers can use it, but to ensure their goods can be transported quickly and cheaply. Reliability of transport networks, including international networks, is a high priority for freight. This wide range of aspirations mean that transport is necessarily complex, but the Government's agenda can be summarised in five broad goals.
11. Goal 1 is to maximise the **competitiveness and productivity** of the economy. Eddington confirmed that, in broad terms, the UK transport system provided the right connections in the right places to support the journeys that matter to

economic performance, but that delays and unreliability increased business costs, affected productivity and inhibited innovation. Growth in travel demand is densely concentrated on certain parts of the network at certain times of day. The challenge is therefore to improve the performance of the existing network, focusing on the most unreliable, congested and crowded sections in order to improve 'predictable end-to-end journey time' for travel to work, and for domestic and international business trips and goods movements. This will be especially critical as we realise the Government's ambitions to deliver a step-change in housing supply, supported by adequate infrastructure, in line with the Delivery Agreement supporting the Government's long-term housing growth PSA target.

12. Eddington recommended a sophisticated policy mix to achieve this goal:
- Making best use of existing networks (such as traffic flow management on roads or lower-carbon transport choices) and getting the prices right, ensuring that transport planning at all levels draws on a comprehensive assessment of all the impacts of transport policies – economic, environmental and social.
 - Targeted new infrastructure investment (in airports, ports, rail and road), with smaller projects to unlock pinch points potentially offering very high returns.
 - Adapting the delivery chain to meet changing demands: this includes rigorously prioritising those policies which offer the highest returns for each pound of resources, reforming transport governance at local and sub-regional levels, revising powers to help local authorities and bus operators to deliver better bus services, and reforming the planning process for major infrastructure projects.
13. Goal 2 is to address **climate change**, by cutting emissions of carbon dioxide (CO₂) and other greenhouse gases. Stern identified three essential elements of policy for minimising the costs of moving to a low carbon economy and reducing emissions in a way which is achievable, affordable and consistent with high and sustained economic growth. These elements are: establishing a carbon price associated with the emissions of greenhouse gases; encouraging innovation in low carbon technologies; and removing barriers to action. For transport, this means:
- Putting a price on carbon. This can be achieved through tax or through trading mechanisms and will ensure that people are faced with the full social cost of their actions, leading individuals and businesses to prioritise and make informed choices on goods and services. This is particularly important for aviation, where we forecast significant growth, but want to ensure that any increase in CO₂ from air travel is matched tonne-for-tonne by reductions elsewhere in the economy. Emissions trading can achieve that.
 - The development and use of a wide range of low-carbon technologies is essential and urgent. The private sector plays a major role in R&D and technology diffusion, but closer collaboration between Government and industry would provide a further stimulus. Regulation will be necessary to force the pace of change.

- Barriers which prevent people from making informed decisions must be removed. Greener alternatives must be provided and their use actively encouraged. As well as good public transport and better urban design, there needs to be reliable information, labelling and sharing best practice to help people and businesses make sound decisions and stimulate markets for low carbon and high efficiency goods and services.
14. Goal 3 is to protect people's **safety, security and health**. The safety of transport users and workers is critical, and we will continue to seek improvement. But public transport users and workers are also concerned about crime, and there is an enduring terrorist threat to be addressed. We need to address the negative impacts of transport on people's health (for example, from air and water pollution), but also promote the health benefits of cycling and walking.
 15. Goal 4 is to improve **quality of life**, including through a healthy natural environment. Transport's negative impacts on quality of life are obvious – on noise and vibration, on biodiversity and landscape, amongst others. These impacts undermine people's well-being and must be reduced. But transport also has powerful benefits which people value highly – the ability to visit friends and relatives, to enjoy the countryside and see the world, to enjoy a wider choice of goods in shops. Last but not least, people's expectations of comfort, convenience, quality of service, and speed and accuracy of information are rising, and we must be prepared to respond to them.
 16. Goal 5 is to promote greater **equality of opportunity**. Ensuring that our transport systems provide effective access for everyone, including disadvantaged groups and disabled people, to jobs, services and social networks is a core aim of transport policy. And we must also look at transport's wider impacts. People's life-chances can vary hugely depending on birth and geography: average household income varies widely between regions, and there are pockets of deprivation in even the most affluent areas. We will need to consider where transport improvements can help redress inequalities of this kind and we need to target effort to prevent poor accessibility from reinforcing wider social exclusion.
 17. It will take time to implement in its entirety the new approach to strategic transport planning recommended by Eddington. In the interim our ambitious plans for the period to 2014, and the decisions we take between now and then, can make a substantial contribution to the five goals outlined above.

Our plans to 2014

18. Our investment plans to 2014 will focus on the most congested and crowded routes as well as giving additional emphasis to public transport. Although many of our funding commitments during this period, and the options currently being progressed, were developed along traditional modal lines, they rightly reflect the current priority to focus new infrastructure and public transport investment in

and around our most congested cities, whilst also addressing the most important capacity constraints on the other priority links identified by Eddington: our inter-urban and international gateways.

19. With regards to carbon emissions, the Climate Change Bill will set a long-term framework to cut total UK domestic CO₂ emissions by 26-32 per cent by 2020, and by 60 per cent by 2050. The Government will also ask a new independent body, the Committee on Climate Change, to consider whether we should go further. Achieving these goals will require contributions from all sectors of the economy, including transport.
20. We will therefore identify robust emissions reduction pathways for transport, starting domestically. This will include looking at the full range of options for putting transport onto a less carbon-intensive path, and examining, for the first time, potential cost-effective emissions reduction pathways for different types of journey and different transport modes. We will come forward with proposals in due course.
21. We are also strongly arguing for an emissions trading policy which would mean that every extra tonne of carbon from aviation growth above 2005 levels would need to be matched by a tonne saved somewhere else – a saving over and above existing targets. Alongside this, we are also looking at the contribution that behavioural change and improvements to technology and operating practices can make in tackling carbon emissions from international transport.

Urban, regional and local networks

22. Much of our investment, including that on national rail and highway networks, will benefit urban, regional and local networks. But within our plans, we will provide considerable support for local authority investment in transport, taking account of Eddington's advice that small local schemes often represent excellent value for money. This covers local measures to improve traffic-flow, promote buses, cycling and walking, enable effective road maintenance and enhance local travel networks. To address inequality, we are funding the new national off-peak concessionary bus travel arrangements for older and disabled people, as well as working with local authorities as they develop and implement plans to improve accessibility. We are also working with Communities and Local Government to deliver the Government's housing target in a sustainable way, in particular through the identification and creation of up to 10 new eco-towns.
23. We are also making significant funding available to support packages which combine demand-management measures such as road pricing with public transport and actions to support the development of low-carbon transport. The Department has been working closely with ten local areas as they have looked at the problems they face and what package offers the best solution for their area. Greater Manchester and Cambridge have submitted Congestion TIF proposals to

the Department. The authorities in the Bristol area have published their outline ideas for a TIF package and are working these up to submit early in 2008.

24. On our urban rail networks, the recent rail White Paper, *Delivering a Sustainable Railway*, committed the Government to implementing substantial investment to reduce crowding around major cities by ordering 1,300 new carriages between now and 2014. There will also be significant new infrastructure, for example at Reading and Birmingham New Street stations. The Thameslink project will be completed by 2015. We are also looking at how we can transform the rail network around Manchester to unlock more of the region's economic power and address long-term capacity issues. Network Rail will undertake a study to establish what would be required to do this and this will involve partners throughout the north of England playing a key role in identifying needs. This investment is not being bought through any changes to fares policy. Rail fares where the industry has a monopoly position will continue to be regulated as now at 1 per cent over the rate of inflation each year, to support growth.
25. We have concluded a funding deal for the £16 billion Crossrail project, which will bring an estimated 1½ million more people to within 60 minutes of London's key business areas and is expected to carry 200 million passengers a year by 2017. It will provide relief to hard-pressed commuters, support 30,000 jobs and sustain the City's role as a world financial centre, which is critical to our national economy.
26. As Eddington recognised, however, investment alone will not be sufficient to deliver the step-change in transport that is needed in our congested urban areas. Local authorities and sub-regional groups of authorities also need the right powers to co-ordinate all the key parts of their transport network to deliver sustained improvements in reliability and capacity. For this reason, we are promoting the Local Transport Bill to improve local transport governance, as well as giving authorities powers to improve local bus services and to facilitate the introduction of local road pricing schemes alongside public transport improvements, in consultation with local people.
27. Urban areas will also have a role to play in reducing CO₂ emissions. Since two-thirds of trips and over half of car journeys in the UK are less than five miles long, measures to change travel behaviour and reduce the need to travel in urban areas could bring significant benefits. This means that while central Government needs to set the framework on pricing and technology, there is a clear local role in encouraging modal-shift and reducing people's need to travel. Achieving this will require sustained local action, which Government can support financially and via land-use planning. Initial results from the current Sustainable Travel Town and Cycling Demonstration Town projects show the effect that well-designed programmes of this kind can have on reducing CO₂ and air pollutant emissions and improving quality of life.

National networks

28. In the recent rail White Paper, *Delivering a Sustainable Railway*, we set ourselves the long-term goal of doubling the level of demand rail can accommodate. A new generation of inter-city express trains will come into service from 2016, and we are supporting investment in in-cab signalling which will allow more trains to operate per mile of track. We are also supporting a strategic freight network which improves connections between regions and ports. And we expect to secure the 3 per cent reduction in accident risk and 92.6 per cent rail reliability target that were set out in the White Paper.
29. Improving reliability and tackling capacity constraints on the national network of motorways and other strategic roads poses a particular challenge against a background of escalating cost and legitimate environmental concerns. We do not need a roads programme anything like as ambitious as planners envisaged at the height of 'predict and provide' in the 1980s, but we do need targeted increases in capacity. We are spending £1.3 billion a year on this, with 23 schemes under construction now, and a further six (including key stretches of the M1, M25 and M62) due to start by April 2008.
30. We are also continuing to develop ways to make best use of the existing network. Alongside investments in infrastructure, the introduction of traffic officers, supported by a network of Regional Control Centres, has seen rapid improvements in the speed with which incidents are dealt on our strategic roads. And the 'active traffic management' (ATM) pilot on the M42, which uses the hard shoulder as an additional lane during the most congested periods of the day, supported by variable speed limits, has been highly successful. We are now extending the system to the north (onto the M6) and also embarking upon a major feasibility study of the potential for implementing advanced traffic management systems on a wider scale. Of course, there will always be some roads where widening is the best or only option, but in many cases ATM may be able to deliver increased capacity now at lower cost, with lower CO₂ and air pollutant emissions from smoother traffic flows, more predictable journey times and safety benefits.
31. Urban congestion charging, backed by investment in public transport, is our priority. Therefore, whilst it is possible that road pricing could have the potential to be extended to include parts of the national networks, that is a decision for the future, to be informed by the development of local schemes, including London, and clear answers to the technological and system challenges.
32. It is on our inter-urban networks that measures relating to vehicle efficiency and fuel will have the greatest impact (though they will clearly also be relevant elsewhere). Fuel duty already sends a pricing signal about the 93 per cent of UK domestic transport CO₂ emissions from road vehicles, and the Renewable Transport Fuels Obligation will require five per cent of fuel sold on all forecourts to come from biofuels by 2010, leading to a estimated reduction in carbon emissions of about

¾ million tonnes per annum, supported by a sophisticated reporting system to ensure that biofuel production is, itself, sustainable.

33. More ambitiously, the King Review of low-carbon cars concluded in its interim analytical report that average per kilometre CO₂ emissions from new cars could be 30 per cent lower than in 2000 within the next 10 years. By 2030, combined with greater use of biofuels and changes in consumer choices, this could help achieve a 50 per cent reduction in average per kilometre carbon emissions from cars across the UK fleet. In the long term, almost complete decarbonisation of road transport is a possibility if substantial progress can be made in solving electric vehicle technology challenges and, critically, the power sector can be decarbonised and expanded to supply a large proportion of road transport demand. That would mean around a 90 per cent reduction in per kilometre emissions would be achievable across the fleet. As a first step, we have taken the lead from Europe in securing from car-makers voluntary reductions in average CO₂ emissions per new vehicle, whilst at the same time supporting research to improve engine efficiency and new fuels. We are now pressing for stretching mandatory medium-term reductions and have plans to press for emissions levels to be reduced still further thereafter. Additionally, we are working to bring in new European emissions standards relating to air pollutants that passenger cars, vans and HGVs will be required to meet before they can be placed on the market. These cleaner vehicles will also increasingly have positive carbon benefits.

International networks

34. At the international level, the big challenge in terms of CO₂ emissions is growth in business travel by air (vital to our competitiveness) and leisure travel (important to people's quality of life). That is why, with a strong UK lead, the EU has been promoting the inclusion of aviation in the EU Emissions Trading Scheme, which would ensure that any growth in aviation emissions would have to be matched by a corresponding reduction from elsewhere within the trading scheme. By creating a price for carbon through placing a cap on total CO₂ emissions, companies and individuals will need to decide how important to them their air travel is relative to other carbon uses. As Stern suggested, the Government is also looking at how it can accelerate behavioural and technological change in the aviation sector.
35. The Government's other aviation priority over the period to 2014 will be delivery of the sustainable framework for the development of airports capacity set out in 2003 in The Future of Air Transport White Paper. This rejects a 'predict and provide' approach and sets a 30-year strategy to address the global and local environmental challenges, whilst allowing some growth in capacity, particularly in the congested south east of England. The demand forecasts factor in the likely impact of emissions trading. We will shortly be launching a consultation on adding capacity at Heathrow.

36. In the maritime sector, the recent planning decisions taken by the Government will see the greatest expansion in UK ports capacity for decades, with three substantial projects to deliver increased capacity for container ships being given planning approval at Felixstowe, Bathside Bay and London Gateway. We also recognise that shipping emissions are a major and growing issue, both in their greenhouse gas impact and for local air quality.
37. Nonetheless, as Eddington concluded, the current planning system for nationally significant infrastructure projects of this kind has often proved unpredictable and costly, and acted as a barrier to delivery. For this reason, the Government has published a White Paper, *Planning for a Sustainable Future*, with proposals to make the planning process for transport and other major infrastructure projects quicker, more efficient and more predictable, and to improve the accountability and transparency of the system. The proposed new regime would place the main responsibility for decisions on individual projects in the hands of a new independent Infrastructure Planning Commission, with Ministers' key role being to develop National Policy Statements, following thorough and effective consultation, which will set out clearly the Government's policy on infrastructure development in relevant sectors.
38. International passenger transport – particularly aviation – is also a primary terrorist target. September 11 made this an acute issue and the alleged plot to attack aircraft over the Atlantic in the summer of 2006 reaffirmed the terrorist interest. In an increasingly global security environment, it is becoming ever more important to adopt an international approach to transport security, where applicable across all the modes, making use of international negotiations to raise standards globally. In doing so, we must also take into account the security risks on other networks, and particularly in urban areas, where the 2005 London bombings clearly demonstrate the potential dangers we face.
39. Existing plans thus fit in many regards with the recommendations of Eddington and Stern. But it is important, if we are to secure the best sustainable improvements from our investment, that we apply the Eddington principle of giving priority to the interventions which are most cost effective in reaching our goals. In implementing the Comprehensive Spending Review settlement, therefore, we will be looking at all remaining uncommitted funding decisions to ensure that these are supported by reference to the goals we have identified and are consistent with the Eddington study and the Stern review. We will want to ensure that these are informed by any improvements in the evidence base developed more generally in the course of our implementation of the proposals set out in this document.

A new approach to strategic transport planning

40. The investments made and policies pursued to 2014 will make a very substantial contribution to meeting our policy goals. But it is clear that some challenges will remain, and that long-term economic, technological and social changes will create new challenges to which we will need to respond.

41. We need to begin planning for the future now if we are to identify the right interventions and policies to respond to future challenges using the approach set out earlier. Planning and building new transport infrastructure can take as much as a decade or more, and delivering transport change is not quick. The introduction of 10-year funding guidelines for transport in 2000 gives the Department and its partners the ability to plan ahead with confidence. This year's spending review provided for transport spend to increase by 2¼ per cent a year in real terms to 2018-19, meaning that Government expenditure on transport will have more than doubled in the 20 years from 1997-98. The spending plans for 2009-14 are in large part either committed or provisionally allocated, but we have very substantial scope for additional expenditure in 2014-19 and thereafter.
42. We will also face considerable pressures. Our plans to 2014 target some of the most pressing crowding and congestion problems, but they leave more to be done around some key cities and on the inter-urban networks. And the 240,000 new homes a year, announced in the housing Green Paper, will impose demands on local and regional transport networks, requiring us to ensure that transport impacts are managed so as to minimise emissions and improve quality of life. Transport partners at the local and regional level, other local authorities and delivery partners all need to be fully engaged in supporting the housing growth agenda.
43. We must therefore make sure that we achieve the greatest possible benefits from the public funding that is available. To do this, having set out our goals, we need to engage with stakeholders at an earlier stage than ever before to help identify the key transport challenges on local, national and international networks and the full range of potential options to address them. Two elements in the process of identifying challenges are, firstly, being clear about the transport outcomes needed to deliver our policy goals and how these are measured, and, secondly, completing a detailed geographical analysis of pressures on the transport system.
44. In doing so, we will need to tap into users' experience of their end-to-end journey, so that we can focus our efforts on delivering the improvements that matter most to people. We also need to understand better how to make a reality of the prescriptions in Eddington and the Stern Review, and take account of the views not only of transport users, but also of local communities which are adversely affected by transport or have poor transport links.
45. Having understood people's concerns and reflected them in our 'challenges', we must follow Eddington's advice to "listen to the numbers". The best transport solutions will be the ones that make the biggest contribution to our five goals per £1 of taxpayer funding. We are therefore updating our economic appraisal tool to ensure that it captures as many of the positive and negative impacts of transport as possible, giving each its due weight. Eddington was clear that improvements can be achieved through pricing, regulation and making better use of existing capacity. Infrastructure investment will sometimes be needed – but only if other options cannot solve the problem. He also stressed the importance of considering potential

solutions across a range of transport modes. Government has to look at rail and road options for inter-city corridors, such as Manchester-Birmingham-London, alongside one another. And the benefits of joined-up planning at the city level have been clearly demonstrated by London. Finally, making the taxpayer's pound go further will also mean giving fresh impetus to looking at ways of bringing in private sector funding.

46. Following this approach maximises our prospects of getting best value for money. To achieve this, we will improve our decision making, by bringing together as far as possible choices across networks and modes. Building on the success of the recent work to specify rail requirements over the next five years, the Government aims to extend the coverage of the work to drive the best decisions right across transport, leading to a clear cross-modal statement of requirements for 2014-19, to be decided by 2012. This will enable the Government, users and stakeholders at all levels to find the best solutions to our transport challenges. It will not, of course, be possible to align all decisions on one date, not least because some interventions have much longer time frames. Nonetheless, we believe a more transparent and cross-modal decision making process will deliver better transport.

Listening to the people

47. We will consult formally on our proposed goals and challenges for 2014-19 next summer, and publish the results in a White Paper, together with guidance on option generation.
48. But formal consultation is only one way of ensuring that we understand the needs and priorities of the widest possible range of stakeholders, including not only the transport industry, but passengers and other transport users. Between January and April next year, our priority will be to engage widely with interested parties to refine our proposed goals and challenges. And ahead of that, we will be arranging a series of regional events with stakeholders to explain how they can contribute to transport planning all the way through to 2012. In this way, we will involve people in the transport decision making process at a much earlier stage than has been done before.
49. Ultimately, transport is about people – as transport users or consumers of goods, as affected communities, and as individuals concerned about social justice and the future of the planet. The tensions between these goals are not as unresolvable as they seemed in the past, but there are still balances to be struck. And the best way of ensuring that we strike the right balance is to start by listening carefully to what people have to say.

1. History and context

From the 1950s to the 1990s

1.1 In the immediate post-war period, bus and bicycle were the main means of making local journeys, whilst rail dominated the market for longer-distance trips. Cars were a rare luxury, and fuel was rationed. By 1952, car ownership was on the increase, but public transport and cycling still accounted for most personal travel. Table 1.1 shows the dramatic growth in car's market share (measured in passenger-kilometres) from 1952 to 1996.

1952		1996	
Bus and coach	42%	Car, van and taxi	87%
Car, van and taxi	27%	Bus and coach	6%
Rail	18%	Rail	5%
Pedal cycle	11%	Pedal cycle	1%

Source: DfT

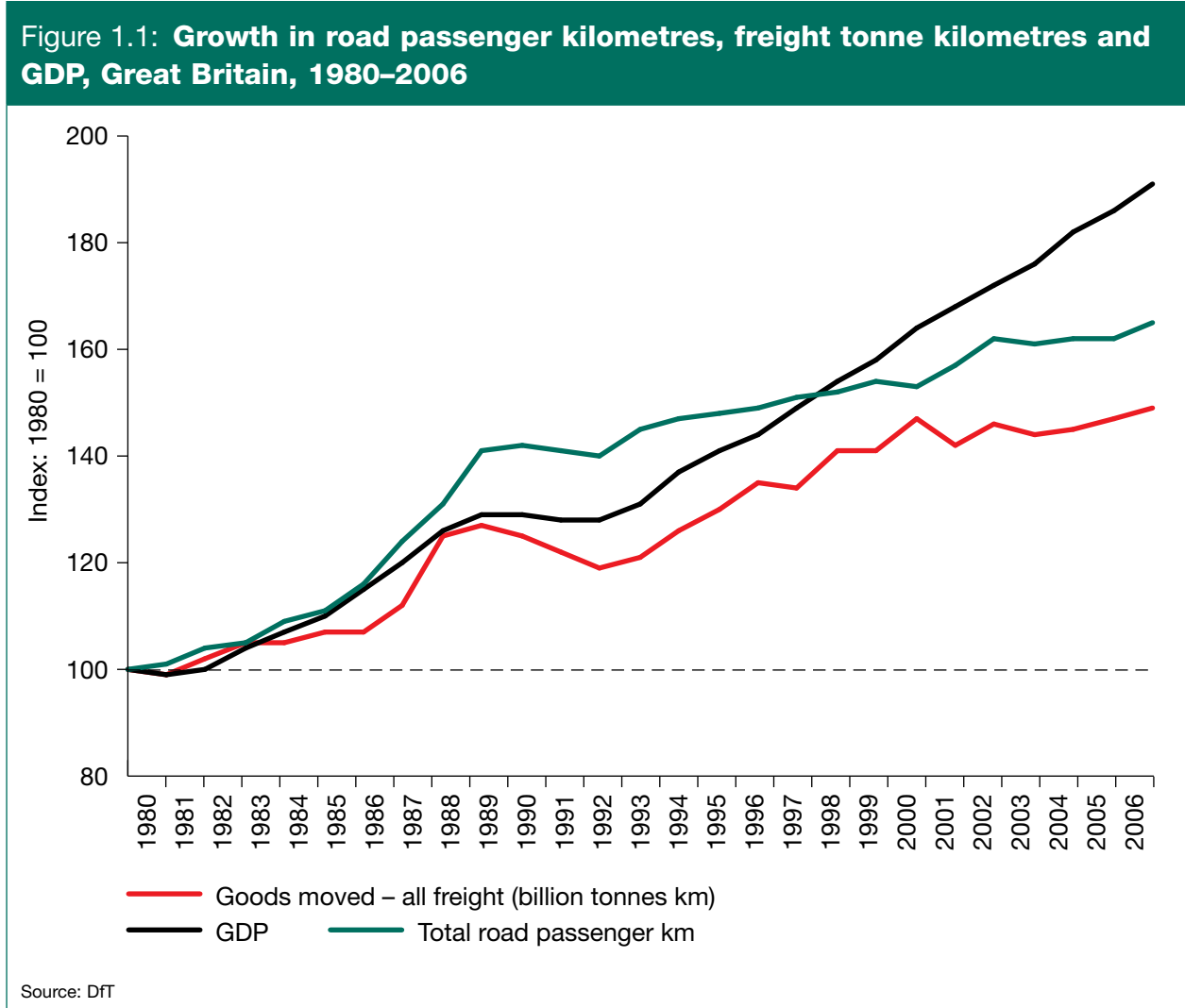
- 1.2 People were not just changing their modes of transport. They were also travelling more often and for longer average distances. The total amount of travel undertaken in the UK more than trebled between 1952 and 1996, from 218 to 719 billion passenger kilometres.
- 1.3 Our shops began to stock a wider range of imported goods, and the balance of our economy shifted away from heavy manufacturing. These changes also had an impact on the level and pattern of transport demand. Road haulage increased and rail freight declined. Traffic through ports increased, and a growing proportion of goods arrived in containers.
- 1.4 The motorway era (beginning with the Preston Bypass in 1958 and the first stretch of the M1 in 1959) was both a necessary response to rising demand and a stimulus to further growth. Motorways were clearly needed to take pressure off trunk roads and the towns and villages through which they ran. But motorways also facilitated long-distance travel and the movement of freight by road.
- 1.5 The 1973 oil crisis drove up petrol prices. This increased the cost of motoring and made the Government more sensitive to the nation's dependence on imported oil. It also did serious damage to the UK economy and public finances. The UK had to seek a loan from the International Monetary Fund (IMF), which came attached with conditions requiring public expenditure restraint. The pace of road-building slowed, and was subject to stop-go decisions in response to short-term changes in public finances.

- 1.6 But car-ownership and road-use continued to grow. People reorganised their lives around the car, and companies changed the way they did business. In their different ways, the ‘school run’, second home, out-of-town shopping centre and ‘just-in-time delivery’ concept are all predicated on cheap and easy road-use. There were some powerful economic and quality of life benefits to these changes, but some social costs – not least the increasing disadvantage at which households without cars were placed.
- 1.7 In 1989, the then Government was ready to re-embark on a large-scale roads programme. Its *Roads to Prosperity* White Paper promised 500 road schemes and was billed as “The biggest road-building programme since the Romans”. It came with a price-tag of £23 billion at 1989 prices (equivalent to about £40 billion today), but this was judged a necessary investment to address a demand-growth forecast of 142 per cent by 2025.
- 1.8 However, the programme encountered increasing environmental opposition. Protests focused primarily on adverse impacts on the countryside and quality of life (for example, impacts on wildlife, landscapes and noise) and on health (for example, the emission of air pollutants such as carbon monoxide and lead). But scientists had for some time warned of a more fundamental problem – the possible impact of human activities on climate change. At the 1992 Earth Summit in Rio, CO₂ emissions were seen as a sufficient risk to justify precautionary measures. As the scientific consensus on the causes and consequences of climate change grew, it became clear that more urgent and radical action was needed.
- 1.9 The growth in international transport was even faster than the growth in domestic transport. The volume of goods moving through ports continued to grow and so did the number of ships moving through our coastal waters. But the most dramatic growth was in aviation. The number of passengers travelling through UK airports increased 100-fold between 1950 and 2005, and air freight increased 70-fold. Globalisation of trade drove up business travel, whilst package-holidays and no-frills airlines opened up Europe and the world to people who had never been able to travel abroad before.

More recent transport trends

- 1.10 The transport history from the 1950s to the mid-1990s was dominated by a rapid growth in overall demand, and the decline of the most sustainable transport options – bus, cycle and rail. Since the mid-1990s, there have been some changes in transport trends, which are potentially very helpful.
- 1.11 Transport demand is still growing but the rate of growth has decelerated since the early 1990s relative to growth in GDP (as illustrated in Figure 1.1). Each percentage point increase in GDP is accompanied by a significantly smaller increase in the movement of goods and people than was the case when *Roads to Prosperity* was published.

- 1.12 Since the mid-1990s, rail travel has grown faster than road. Road's market share peaked in 1996, which is why we have used that year in the table at paragraph 1.1. Rail is still a minority mode, and likely to remain so, because there are many types of passenger and freight movement for which it is not a viable option. But rail's potential to provide a safer and lower-CO₂ alternative to car and lorry is much greater than seemed possible even ten years ago.
- 1.13 London demonstrates what can be achieved by bringing cross-modal transport planning and spatial planning together, and by implementing a balanced package of interventions – investment in public transport, priority for buses and cyclists, a local freight strategy, and congestion charging. Between 1998-99 and 2005-06, bus use increased from 1.27 billion journeys a year to 1.81 billion, bucking the national trend. More trips are made by cycle and on foot, average traffic speeds in central and inner London have increased since 2003 (reversing a long-term trend) and road casualties across London have declined faster than in the rest of the country.



- 1.14 The Government has taken a number of initiatives which have helped support these trends. The Ten Year Plan for transport, published in 2000, provided for the first time a committed stream of long-term funding, addressing the previous stop/start cycle which had blighted transport planning. While continuing to invest in roads, the Government has put much more emphasis on public transport. It has backed the railway financially and addressed the industry's structural problems stemming from a flawed privatisation. And it created a single point of responsibility for transport in London, under an elected Mayor, replacing the patchwork of fragmented responsibility created by the abolition of the GLC.

The Stern Review and Eddington

- 1.15 Despite the slowing of the growth in overall transport demand and the rise in rail-freight and public transport use, the assumption is still often made that we face a stark choice. Since economic growth both requires and generates increased transport demand, we might seem to face a future in which we are either 'rich and dirty' or 'poor and green'.
- 1.16 Two important studies commissioned by the Government move us away from this false dichotomy, and bring out the choices we really face in the 21st century.
- 1.17 The Stern Review on the economics of climate change says developed countries need to cut their CO₂ emissions by between 60-80 per cent by 2050. Stern says there is an economic case for this, and perhaps a moral one. Unchecked global warming would not only lead to increased loss of land and life from flooding and rising sea-levels, but also to drought and malnutrition, and to the extinction of many species. It would also have a huge impact on the global economy. The option of being 'rich and dirty' does not really exist. But nor is it necessary to make ourselves poor in order to avert irreversible climate change. Reducing CO₂ emissions does have an economic cost. But Stern estimates this at a global cost of 1 per cent of GDP, if we tackle the challenge in the most economically efficient manner, although for developed countries like the UK this cost could be higher. The Stern review is not about sacrificing all economic growth to reduce CO₂, but about tackling climate change in the most cost-effective way possible, in order to deliver future economic and social objectives.
- 1.18 The Eddington study confirms that there is a vital link between transport and the economy. But he advocates a focused approach, targeted on congested and growing cities and their catchment areas, and key inter-urban links and international gateways where congestion poses the most serious threat to economic growth. He concludes that national connectivity is good, so there is no need to criss-cross the country with new links or to seek dramatic reductions in journey-times between cities. And he makes it clear that, whilst investment in new infrastructure will sometimes be the only answer to a transport problem, there are other options that should be explored – including pricing, regulation and traffic management, encouragement of smarter travel choices, travel planning and development of

new technologies. Although Eddington is clear that transport capacity will have to increase, the study's prescription is not for wholesale 1989-style tarmac-spreading.

- 1.19 This analysis, combined with the recent transport trends described in paragraphs 1.10 – 1.14, does not alter the fact that increased air, port, rail and road capacity will be needed to sustain economic growth. But it does mean that we need to ensure that transport supports all the key elements of sustainable development.

The role of national Government

- 1.20 The challenge for Government is to frame a transport strategy that supports living within environmental means and sustaining a strong economy. In doing so, we must take account of the fact that the role of Government has changed significantly in recent decades.
- 1.21 At the high tide of nationalisation in the late-1970s, public sector bodies provided air, ferry, bus, coach, road haulage and rail services. They ran airports and ports. They built cars, ships and planes. Whitehall was directly or indirectly involved in decisions ranging from British Airways' choice of aircraft to the level of fares set by the National Bus Company.
- 1.22 This picture has changed fundamentally. Transport services are now provided primarily by private sector businesses. Many key decisions on international aviation and shipping have long been taken by the relevant UN bodies, and decisions on the regulation of road and rail systems are increasingly taken at European level. Devolution means that Scotland and Wales largely plan their own transport networks. Transport for London is responsible for all transport within the Greater London boundary, other than motorways and national rail services. Outside London, local authorities and regional bodies are responsible for planning and procuring most transport services, and proposals in the Local Transport Bill would further the process of local devolution.
- 1.23 Government still has important roles. It specifies the passenger railway and national road network, has a funding role for local transport, takes decisions on whether or not to grant development consent for major infrastructure projects (though this role would change under the planning White Paper proposals), and can influence behaviour through regulation, taxation or information. But many of the key decisions that shape transport 30 years out are going to be taken by the European Union (EU) or by UN bodies such as the International Civil Aviation Organisation (ICAO), in devolved administrations and town-halls, by businesses and by individual transport-users. This changes the nature of a national transport strategy.

- 1.24 It should also change the way in which we go about setting it – hence this document. Our aim is not just to set out how the Government sees Eddington and the Stern Review being implemented, but to start a process of engaging with stakeholders in a way that has not always underpinned previous Government-level transport planning.
- 1.25 At the end of this discussion document, Chapter 5 sets out the next steps, and explains how people can get involved in framing a future transport strategy. But, first, we set out our goals (in Chapter 2) and how our investment plans and policies will further them in the period to 2014 (Chapter 3), taking account of Eddington and the Stern Review’s analysis. Chapters 4 and 5 set out the new approach to transport planning that will drive the choice of actions to deliver the greatest overall improvement for the 2014-19 period and beyond.

2. Clarifying goals

Introduction

- 2.1 Any effective strategy needs to start by being clear on the policy goals and the desired outcomes.
- 2.2 The economic and climate change agendas set out in the Eddington study and Stern Review must be central to any coherent transport strategy. But transport's impacts extend well beyond GDP and CO₂. All of these impacts need to be taken into account and given due weight in framing and delivering a transport strategy. This is important at the appraisal stage, when difficult choices have to be made about the best options to pursue. It is arguably even more important at the option-definition stage, to ensure that opportunities to further important policy goals are not inadvertently overlooked.
- 2.3 For the purposes of this discussion document, we have developed five very broadly defined goals, which capture the full range of Government objectives that could be furthered by transport. They seek to reflect the way in which transport affects people. Above all, they reflect the importance and degree of challenge for transport in the Stern Review on the economics of climate change. We believe that it will be critical in transport planning to think about a climate change goal separately, rather than as a sub-set of a broader environmental goal. It is also the reason why we have devoted more space in this chapter to climate change issues than would have been the case in the past.
- 2.4 These five goals are:
- Maximising the overall competitiveness and productivity of the national economy, so as to achieve a sustained high level of GDP growth.
 - Reducing transport's emissions of CO₂ and other greenhouse gases, with the desired outcome of avoiding dangerous climate change.
 - Contributing to better health and longer life-expectancy through reducing the risk of death, injury or illness arising from transport, and promoting travel modes that are beneficial to health.
 - Improving quality of life for transport users and non-transport users, including through a healthy natural environment, with the desired outcome of improved well-being for all.
 - Promoting greater equality of transport opportunity for all citizens, with the desired outcome of achieving a fairer society.
- 2.5 This chapter expands on these goals in turn. At the end of the chapter we look at how the goals fit together and how they link to the formal objectives set for the Secretary of State for Transport in the recent Comprehensive Spending Review.

Productivity and competitiveness

- 2.6 In the long run, productivity growth is the key driver of wages, profits and ultimately prosperity and living standards. The Eddington Study drew together clear evidence that a comprehensive and high-performing transport system is a key enabler of sustained economic prosperity.
- 2.7 This is particularly important for the UK. As a trade dependent island, our prosperity turns on the ability to export services and high-value manufactured goods to pay for imports of essential raw materials and goods which other countries can produce at lower cost. The UK will have to achieve this in an increasingly competitive and globalised market. Failure to sustain GDP growth would mean lower earnings, a higher risk of unemployment and less funding available for public services.
- 2.8 The Eddington study reaffirms that transport is one of the keys to our continued economic success, and identifies seven ways in which reliable and efficient transport networks can promote increasing productivity and competitiveness. These are set out in the box below:

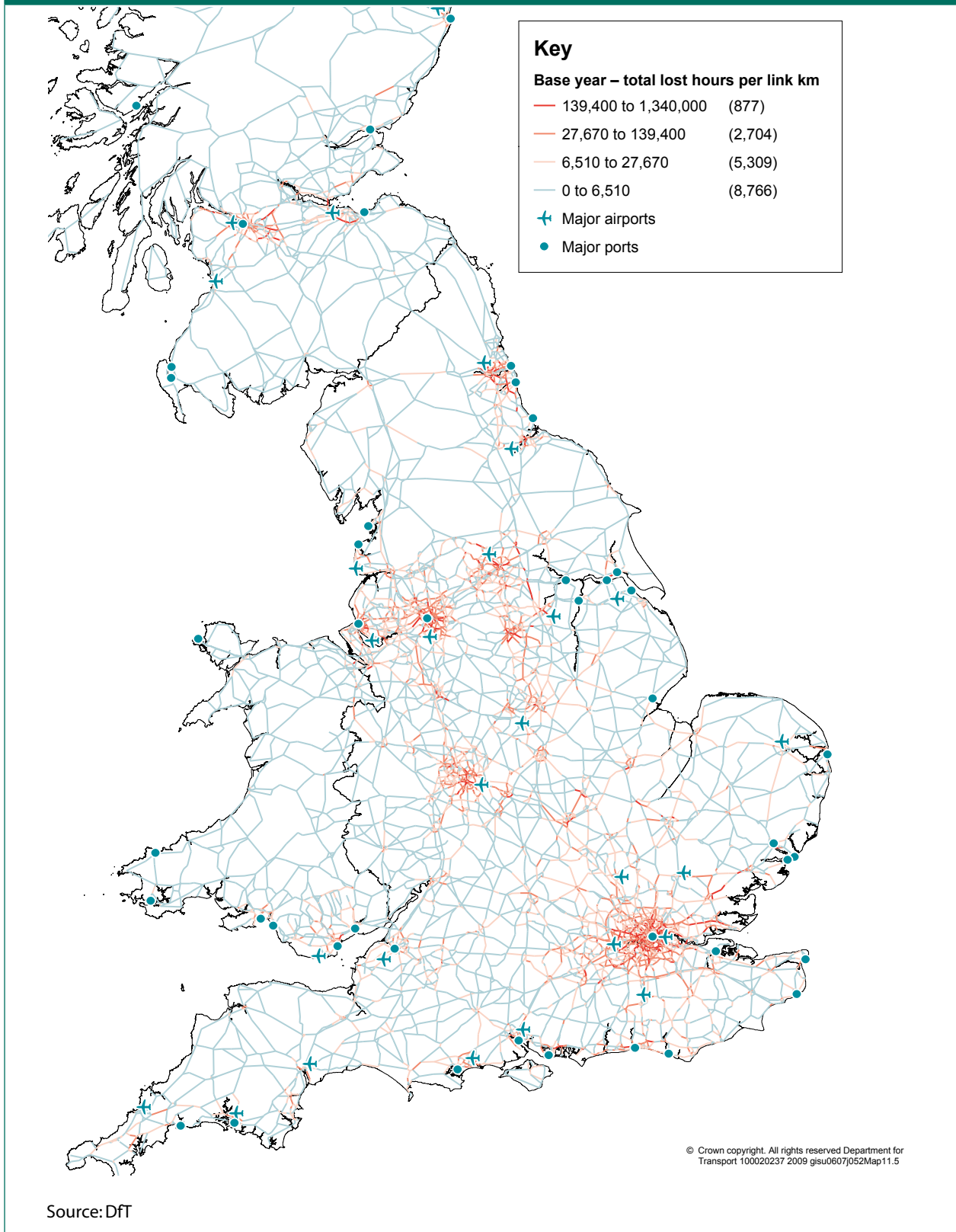
How transport impacts on the economy:

- By increasing business efficiency, through time savings and improved reliability for business travellers, freight and logistics operations.
- By increasing business investment and innovation by supporting economies of scale or new ways of working.
- By supporting clusters and agglomerations of economic activity. Transport improvements can expand labour market catchments, improve job matching, and facilitate business to business interactions. Transport's contribution to such effects is most significant within large, high-productivity urban areas of the UK.
- By improving the efficient functioning of labour markets, increasing labour market flexibility and the accessibility of jobs. Transport can facilitate geographic and employment mobility in response to shifting economic activity, for example in response to the forces of globalisation, new technological opportunities, and rising part-time and female participation in the labour market.
- By increasing competition by opening up access to new markets. Transport improvements can allow businesses to trade over a wider area, increasing competitive pressure and providing consumers with more choice.
- By increasing domestic and international trade by reducing the costs of trading.
- By attracting globally mobile activity to the UK by providing an attractive business environment and good quality of life.

- 2.9 Eddington says that the ‘basic connectivity’ of our transport network is good. Our airports provide links to an exceptionally wide range of destinations across the world. It is possible to make ‘there-and-back-in-a-day’ business trips between our major cities, and same-day deliveries from major distribution hubs in the Midlands to destinations across the country. There are extensive road and rail networks around cities to accommodate travel to work.
- 2.10 The challenge is that in certain places the current capacity of networks cannot meet the demand that is, or will be, placed on them. In those circumstances, the inevitable result is congestion on some roads, overcrowding on some public transport links and lengthy queues at some airports. When networks are over-used, journey times lengthen and reliability suffers. Car journeys and road-freight movements become less predictable, trains and buses run late or are too crowded for passengers to get on, flights are delayed or cancelled because air traffic control slots are missed. This is not just a problem for the individual user. It causes cost and inconvenience to companies. Businesses will not locate in areas where access to suppliers or markets is unacceptably slow or unreliable or where they cannot attract the workforce they need. If we did nothing, this could ultimately become a brake on economic growth.
- 2.11 Eddington concluded that taking action to deal with those areas where unreliability, congestion and crowding are affecting businesses’ ability to meet with their clients or get their goods efficiently to market, or are preventing them from employing the best people for the job, should be a priority. The costs of transport problems of this kind are significant and real: the analysis carried out for the Eddington study showed that 8 per cent of UK road traffic is already subject to very congested conditions, and that, without action, congestion is likely to increase by a further 30 per cent by 2025. This increased congestion could see costs to business and freight rise by over £10 billion a year.
- 2.12 To tackle these problems, and reduce the cost of congestion and unreliability to the economy, he recommended that the focus should be on travel for work in the urban areas which make the biggest contribution to our economy and are experiencing the most rapid growth, on the inter-urban corridors between these cities and on the principal international gateways through which freight and business travellers pass. Evidence of economic and transport future trends and existing transport problems is the best way of deciding where to target interventions. This is the approach adopted in the rail White Paper, where decisions on where additional trains are needed are driven by the current level of crowding and medium-term demand forecasts. A similar approach is appropriate for roads, where Figure 2.1 highlights today’s congestion pinch-points.
- 2.13 For the medium to longer term, it is through the Regional Spatial Strategies, and the Regional Transport Strategies they include, that transport and land use will be integrated to help tackle some of the factors which contribute to increasing congestion. The amalgamation of Regional Spatial Strategies and Regional

Economic Strategies proposed in the Sub-National Review will go further in integrating land use and economic development policies.

Figure 2.1: Congestion on the road network, Great Britain, 2003



- 2.14 The right action to address the congestion problem depends on what is causing it. If all modes are congested over a sustained peak period, the solution may well need to involve increased capacity. If the congestion is more localised or concentrated in a short peak period, or if some modes are congested whilst others have spare capacity, the solution is more likely to involve looking at relative prices and service patterns.
- 2.15 More generally, there is a strong message from Eddington that sending the right price signals to transport users is critical. The fact that people pay at the point of use for each air, bus or rail trip they make, whilst use of the road is seen as a ‘free good’, has an impact on how they choose to travel. And, as the Eddington study notes, using pricing signals to improve the way that existing capacity is rationed offers a number of benefits – not only can it reduce congestion, but it can do so in a way that is less damaging to the natural environment and more flexible than solutions based on new infrastructure.
- 2.16 The Government accepts the logic that we cannot simply ‘build our way out’ of congestion. So do many of the public, who regard congestion as an increasingly serious problem. And the congestion charge has been an essential element in the improvement of transport in London.
- 2.17 Attitudes to road pricing are more complex than is currently assumed. The latest Department for Transport attitude survey found that 55 per cent of adults agreed that the current system of paying for road use should be changed (so that the amount people pay relates more closely to how often, when and where they use the roads). The level of support increases to 62 per cent on the basis that any extra money raised is spent only on roads and transport. The survey confirms that there are still serious reservations in many people’s minds about the fairness and effectiveness of road pricing. Londoners (who have first-hand experience of a congestion charge) are more supportive of road pricing than people elsewhere. This reinforces the Government’s view that the best next step is to see whether road pricing is equally effective in other cities.
- 2.18 Action to address unreliability and crowding can also help to improve economic performance at the regional and sub-regional level, and may be able to make a contribution to achieving the Government’s goals to reducing GDP-growth disparity (as set out in paragraphs 2.78–2.79). Well-focused actions to address congestion blackspots have the potential to drive increased efficiency at the local and regional levels, as well as nationally – for instance, by enabling firms of all sizes to access a wider range of markets and employees. But it is important not to overstate transport’s ability to stimulate economic growth in under-performing areas, when in many cases addressing other factors such as skills shortages may have a much more decisive role to play.

2.19 Furthermore, while improving national competitiveness and productivity should be considered alongside the goal of addressing regional economic imbalance, it is important not to confuse the two. The Eddington test of focusing action on the most congested urban networks is likely to produce a different list of priorities from one based on stimulating economic growth in relatively deprived areas. It is important to look separately at how we deliver on national competitiveness and economic imbalance.

Climate change

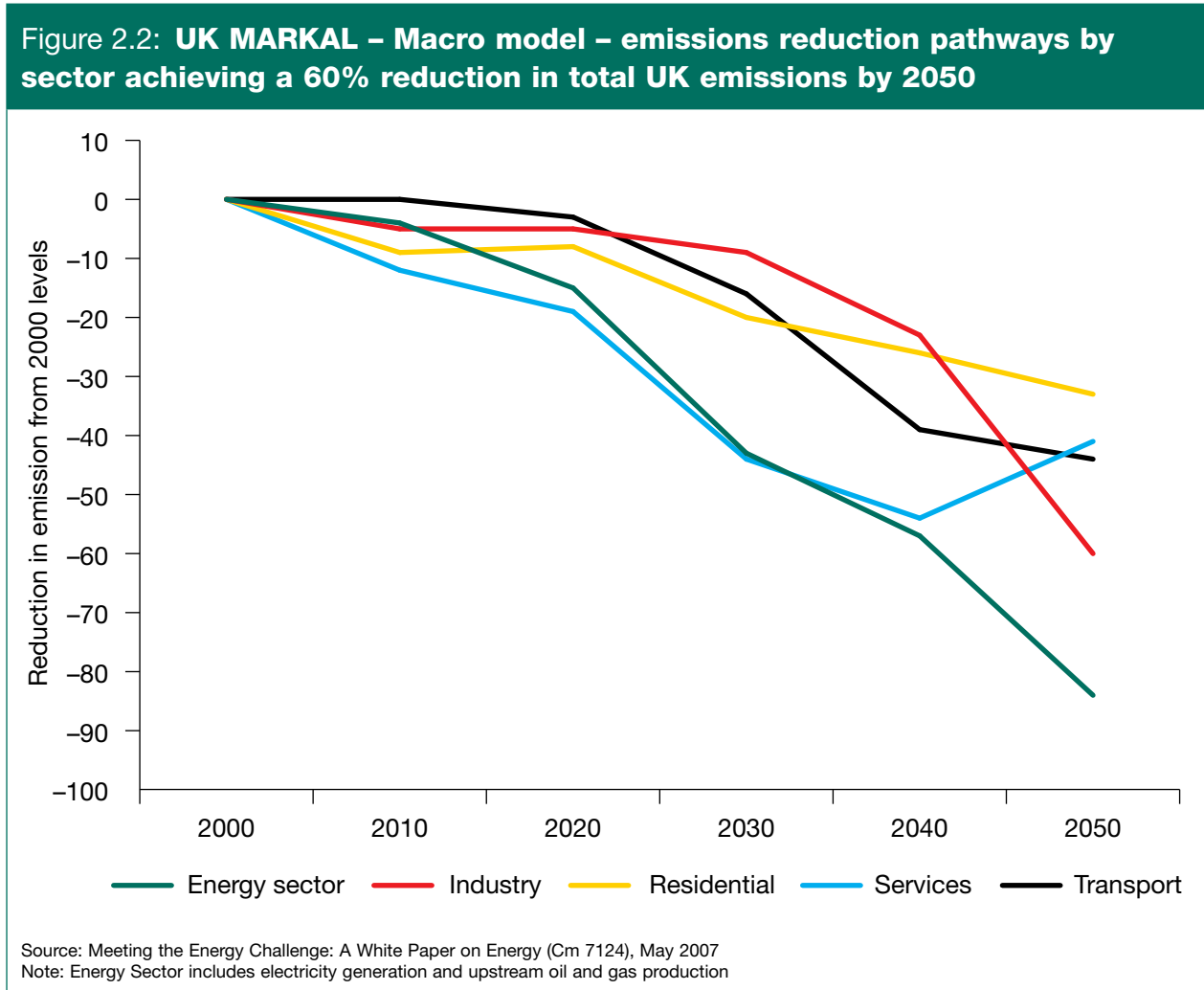
2.20 Climate change, as a result of rising greenhouse gas emissions, threatens the stability of the world's climate, economy and communities. As noted in Chapter 1, the cost of early action is significant, but the costs of inaction could be far worse – temperature increases could lead to damages equivalent to as much as 5-20 per cent of global GDP.

2.21 Transport contributes about 15 per cent of global carbon dioxide (CO₂) emissions and 23 per cent (by source) of UK domestic CO₂ emissions. Urgent action to tackle transport emissions of CO₂ and other greenhouse gases is necessary and we are committed to doing so in a deliverable, measurable, and cost-effective manner.

2.22 The Climate Change Bill will set a long-term framework to cut total UK domestic CO₂ emissions by 26-32 per cent by 2020, and by at least 60 per cent by 2050. We will also ask a new independent body, the Committee on Climate Change, to consider whether we should go further. Achieving these goals will require contributions from all sectors of the economy, including transport. So within transport, we will identify robust emissions reduction pathways, starting domestically. We are also strongly arguing for an emissions trading policy which would mean that any future growth in emissions from international air journeys would be balanced by compensating reductions elsewhere.

2.23 We believe that transport represents an opportunity for significant carbon reductions, while continuing to support our economy and quality of life. This requires inter-governmental action on international transport, partnership working on local transport and changes in the behaviour of individuals and companies.

2.24 Figure 2.2 shows one possible scenario for how domestic emissions might reduce over the period to 2050. This was used in the Energy White Paper 2007 and estimates the most cost-effective pathway for each sector of the UK economy to an overall 60 per cent CO₂ reduction. As this demonstrates, if we are to tackle carbon emissions cost-effectively, it is likely that different emitters and sectors will make different contributions to emissions reduction and to different timescales, and that flexibility will be required across the economy to enable us to respond to unforeseen challenges and opportunities.



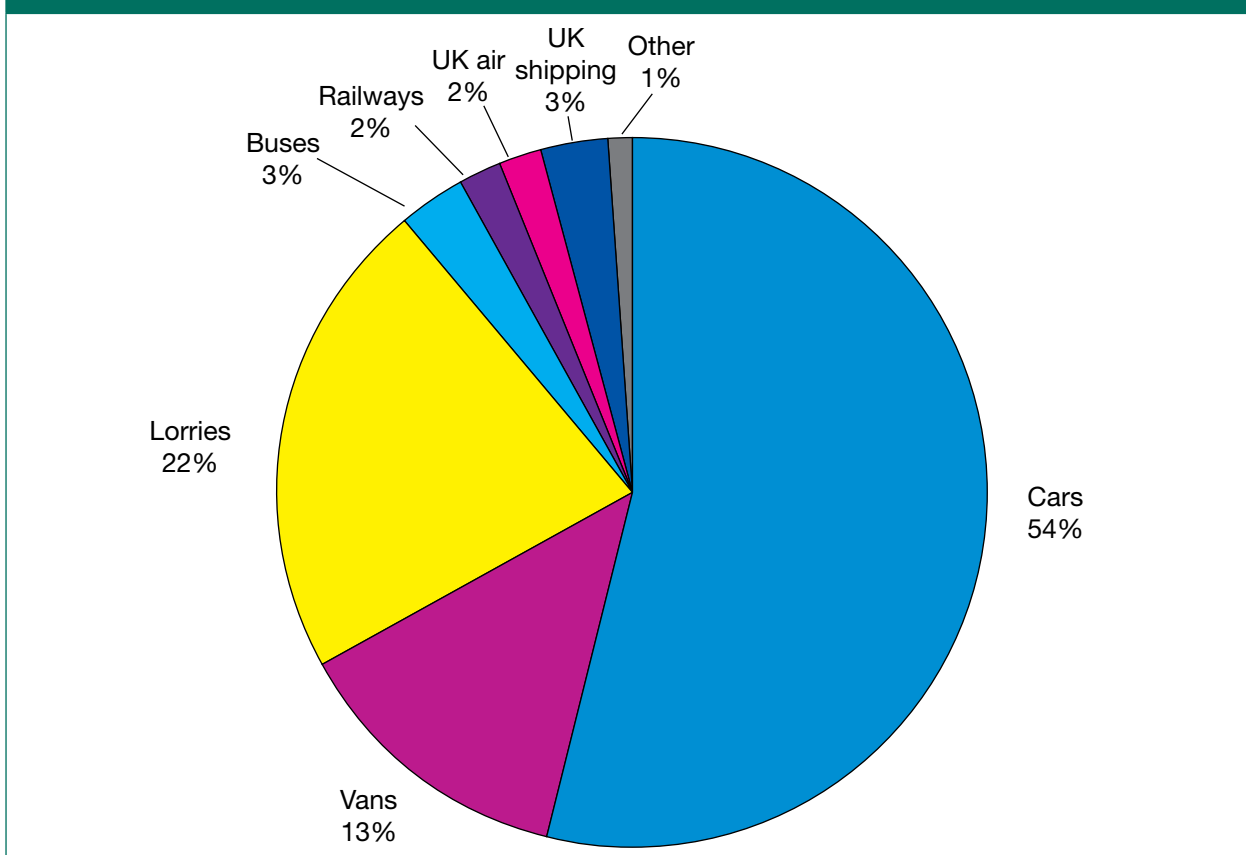
- 2.25 Current Government policies, as set out in the Climate Change Programme and the Energy White Paper, are expected to deliver a level of CO₂ emissions that is broadly consistent with this scenario out to 2020. It may be possible, however, to achieve reductions to a more ambitious timescale. Since earlier reductions in emissions are more effective in reducing the risk of dangerous climate change, the Government is keen to explore this.
- 2.26 For example, a recent report by the Commission for Integrated Transport suggested another scenario with a different profile of costs, which could lead to transport emissions falling by 14 per cent against 1990 levels by 2020.
- 2.27 We intend, therefore, to look at the full range of options for putting transport on to a less carbon-intensive path, and to examine, for the first time, potential cost-effective emissions reduction pathways for different *types of journey* and different *transport modes*. In this way, we will be able to prioritise our efforts and achieve a clear understanding of the level and pace of emissions reductions that can be achieved.
- 2.28 Alongside this, it is also vital we ensure that our transport systems can adapt to those impacts of climate change which cannot be avoided, and that in doing

so we minimise disruption, maintain high levels of safety and ensure transport's continued contribution to the economy. The actions we are taking to achieve this are described in more detail in the next chapter.

Reducing CO₂ from domestic journeys

- 2.29 Our starting point must be to take action now to tackle domestic emissions if transport is to maximise its contribution to our national CO₂ reduction goals, particularly on road transport which currently produces about 93 per cent of all CO₂ emissions from domestic transport – see Figure 2.3.

Figure 2.3: UK domestic transport sector CO₂ emissions 2005



- 2.30 A core component of our strategy will be for the Government to continue giving price signals to encourage lower carbon transport. These can take a number forms.
- 2.31 Fiscal measures are one mechanism for doing this. For example Vehicle Excise Duty (VED) for cars is already banded according to CO₂ emissions – the best-performing cars pay no VED at all and the most polluting pay more. Fuel duty also sends a signal to motorists that driving less fuel efficient vehicles will be more expensive. The Government also levies Air Passenger Duty on domestic flights (see paragraph 2.58 below). And we are improving the way we factor CO₂ impacts into our appraisal process (see Chapter 4).

- 2.32 The Renewable Transport Fuels Obligation (RTFO) will oblige fuel suppliers to source five per cent of fuels from renewable sources or pay a ‘buy-out’ price from 2010 onwards. In June this year the Government announced that from 2010 the RTFO would reward biofuels according to the carbon that they save. In addition, from 2011, the RTFO will only support those biofuels that meet appropriate sustainability standards. This, along with the sophisticated reporting mechanism for carbon savings and wider environmental impacts of biofuels, is a strong signal to stimulate markets for lower-carbon fuels.
- 2.33 Local road pricing schemes could have environmental benefits, such as reductions in emissions of CO₂ and air pollutants, and we expect local authorities to assess what these may be as they develop packages combining local road pricing proposals with public transport improvements.
- 2.34 The application of **technology** will be critical in enabling transport to achieve any future pathway for CO₂ reduction, and we see an important role for Government in setting the frameworks and incentives that will foster the promotion of lower carbon fuels and energy efficiency. With regards to road transport, the King Review recently suggested that new car CO₂ emissions per kilometre can be cut by 30 per cent over the next 5–10 years. By 2030, combined with greater use of biofuels and changes in consumer choices, this could help achieve a 50 per cent reduction in average per kilometre carbon emissions from cars across the UK fleet.
- 2.35 For example, new cars in the UK are now around 12 per cent more fuel-efficient than in 1997, but we know more can be done. We are therefore pressing for demanding mandatory medium-term new car CO₂ limits in Europe, and have plans to press for emissions levels to be reduced still further thereafter, which could lead to carbon reductions being delivered more quickly than indicated in current projections. We will also continue to facilitate research, development and demonstrator projects, including a new Innovation Platform to fund UK R&D into lower carbon vehicle technologies, and a new £20 million programme to support public procurement of innovative low carbon vehicles. The Energy Technologies Institute will also support technology development relevant to lower carbon transport fuels.
- 2.36 Support to technology development will stretch across all transport modes. In aviation we are supporting research in the UK through the National Aerospace Technology Strategy and at an EU level a major new €1.6 billion public/private “Clean Sky” initiative has recently been launched with participation from all the major parts of the European aeronautics industry. The rail industry is actively exploring options for reducing emissions, such as improved train design, greater use of regenerative braking and trialling of biofuel and hybrid trains. And in May 2007 we published a new report examining the technological options for reducing CO₂ emissions from shipping.
- 2.37 It is not just in *vehicle* technology where opportunities are opening up to address our transport challenges and intelligent infrastructure may also have a significant

role to play. For example in managing the roads programme, we are prepared to think in radical and innovative ways. Chapter 3 explains how, following the success of the pilot on the M42, we will examine how Active Traffic Management (ATM) could provide an alternative to conventional road widening in some places. This could potentially bring reductions in CO₂ emissions, as well as reducing congestion, improving safety and improving air quality.

- 2.38 We also recognise the importance for achieving CO₂ reductions of the **travel choices** made by individuals and business. We want to make it easier for people to make low carbon choices about how they travel.
- 2.39 Decisions about small, everyday journeys can make a big difference. 56 per cent of all journeys by car are less than five miles and 23 per cent are less than two miles. A recent CfIT study found that the UK ranked 12th out of 15 European nations in terms of the average distance people cycle each year and 14th on distance walked. The proportion of primary school children taken to school by car has remained above 40 per cent since 2002.
- 2.40 We see Government having a role in removing barriers that prevent people from using lower-carbon transport. The barriers may be that:
- there is no lower-carbon transport option available to them;
 - they may be deterred by concerns about safety or reliability;
 - they may lack good information on what the alternatives are;
 - they may be unable to reduce their amount of travel due to the locations of shops, services, facilities, jobs and housing.
- 2.41 The Government will continue to address this at a number of levels. At one end of the scale, we make significant national investment in transport provision and a significant proportion of DfT's budget is spent on rail and bus services. At a local level, support is provided for local integrated travel initiatives (such as '*Sustainable Travel Town*' demonstrator projects, which have produced very promising early results). And initiatives such as 'Bikeability', and 'Walking Buses' operate at the other end of the scale, as does provision of information directly to individuals (for example, our 'Act on CO₂' media campaign offers practical tips to drivers, which could potentially reduce CO₂ emissions from cars by up to 8 per cent). Chapter 3 discusses these policies in more detail.
- 2.42 We believe that initiatives to address the obstacles to lower-carbon travel work best when pursued in parallel and we are encouraged that current congestion TIF bids include significant expansion of sustainable travel initiatives. As we learn more about what works, we want to ensure local authorities make low carbon travel a priority in their Local Transport Plans, Local Area Agreements and Local Development Frameworks. These priorities will be reflected in the Government's new national indicators for local authorities.

- 2.43 Urban areas cannot be re-engineered overnight to reduce the need to travel – it will take decades. But it is important to make a start now. Paragraph 3.15 explains how we will be taking this process forward.
- 2.44 Finally, companies too have a role to play in cut transport CO₂ emissions. For some time, pursuing reductions in CO₂ has figured on the corporate social responsibility agenda, and there is a growing recognition that reductions in CO₂ make sound commercial and financial sense as well. Government, too, will need to ensure the sustainable operations of its estate.

Reducing CO₂ from international journeys

- 2.45 As a trade-dependent island, aviation and shipping are crucial to the UK economy. Our hugely successful financial services industry, and our position as a world centre of academic excellence, also rely on connectivity with the rest of the world. But, as world trade grows, it is important to tackle the growing climate change consequences of air and sea transport.
- 2.46 Individuals and businesses have **choices** about international transport, just as they do about domestic transport. Technology means that face-to-face meetings for non-essential business purposes can be replaced by modern communication tools. But evidence suggests that international travel is one of the forms of personal mobility that people value most highly, whilst there is an irreducible core of business travel that is critical to our international trade.
- 2.47 The Government supports work to investigate how emissions from air and sea transport can be reduced through improved **technology** and better operating practices. For example, in aviation we welcome the work being done by the Omega Partnership of leading academics on technological solutions to the environmental impacts of global aviation.
- 2.48 We must explore what more can be done. For example, worthwhile reductions in emissions could be achieved if the holding ‘stacks’ above congested airports could be removed. This would require careful examination to ensure that safety and runway capacity were not compromised. We will also consider whether emissions might be reduced if the allocation of newly-created slots for take-off and landing could be designed to reflect the environmental performance of aircraft. This approach to slots has not been tried before and we will work with airports, airlines and regulators to examine its practicality and effectiveness, including compatibility with the EU Regulations which determine slot allocation.
- 2.49 These challenges on the scope for behavioural and technological change mean that getting the **price signals** right on international transport is particularly important.
- 2.50 Because the international transport sector is governed by global rules, treaties and laws, we must work to address this challenge together with the international community. In March 2007, the European Council agreed to reduce EU domestic

CO₂ emissions from all sources by 20 per cent in 2020 compared to a 1990 baseline – a reduction from 5.9 billion tonnes of CO₂ to 4.7 billion tonnes. Over the same period, and without any other action, CO₂ emissions from EU aviation (including all flights departing and arriving in the EU) are forecast to rise from around 0.1 billion tonnes¹ in 1990 to 0.4 billion tonnes in 2020. At that point, they would account for 8 per cent of EU total emissions.

- 2.51 Considering this growth, we are taking steps towards bringing international aviation within the European Union Emissions Trading Scheme (EU ETS).
- 2.52 Encouraged by the UK, in December 2006 the European Commission proposed a new Directive to include air transport in the EU ETS which would:
- Require airlines to have permits/allowances to emit CO₂.
 - Limit permits to the average level of emissions in the period 2004-2006.
 - Require airlines to pay for emissions reductions in other sectors, corresponding to growth in CO₂ emissions from air travel beyond the average 2004-2006 levels.
- 2.53 This would ensure that, although aviation is expected to continue to grow as our economy expands and people become more wealthy, this growth will not result in any overall growth in carbon emissions. Across Europe, the Emissions Trading Scheme would require that each extra tonne of carbon from aviation must be matched by a tonne saved somewhere else – a saving over and above existing targets.
- 2.54 In effect, aviation emissions would be stabilised at 2004-2006 levels, as summarised in the table below. The table shows how aviation emissions would be capped at 0.2 billion tonnes of CO₂, i.e. the average for the period 2004-2006; a further 0.2 billion tonnes of CO₂ emissions arising from growth in air transport will have been matched by a corresponding reduction of 0.2 billion tonnes of CO₂ from elsewhere within the trading scheme.

Table 2.1: Impact on CO₂ of including aviation in the EU emissions trading scheme

	1990 Emissions (BtCO ₂)	2005 Emissions (BtCO ₂)	2020 target (BtCO ₂)
Total EU domestic emissions – EU25	5.9	5.0	4.7
International aviation (total all arriving and departing flights)	c.0.1	0.2	0.2
Total	6.0	5.2	4.9

Source: DfT

¹ Estimate. Actual data for EU-wide aviation CO₂ emissions in 1990 is not available.

- 2.55 The great benefit of this approach is that it allows CO₂ reductions to be made at the least cost to the UK economy, and ensures emissions do not exceed the level set by the overall limit. It will also make consumers aware of the costs of their flying decisions, since the CO₂ cost will be reflected in the ticket price.
- 2.56 Aviation's climate change impact is greater than the sum of its CO₂ emissions alone, although the scale of this additional impact is subject to considerable scientific uncertainty. The application of a "multiplier" to take account of such non-CO₂ effects (or the full 'radiative forcing') is an illustrative way of taking account of the full climate impact of aviation. However, a multiplier is not a straightforward instrument. The EU proposal is for the Emissions Trading Scheme to cover CO₂ only, in line with the existing Scheme covering other sectors. However, we recognise that we must take into account the full climate impacts, and we support the European Commission's commitment to bring forward a proposal next year to address nitrogen oxide emissions from aviation.
- 2.57 Whilst the emissions trading scheme mentioned above shows strong EU leadership, the best way forward in this international area is through genuine global action. We have been pressing for progress in ICAO and in the International Maritime Organisation (IMO), but do not believe that these bodies have yet provided comprehensive solutions that respond to the challenge of climate change. Action at the European level therefore enables the UK to show leadership and take practical steps forward.
- 2.58 Agreement on the final scheme should be reached by mid-2008. However, the Government has always maintained the position that there is a role for taxation alongside the EU Emissions Trading Scheme to ensure the industry pays its environmental costs and also pays its fair share in contributing towards the Government's spending priorities, including public transport and the environment. The proposed change to Aviation Duty announced by the Chancellor of the Exchequer on 9 October – switching from a per-passenger to a per-plane duty – will seek to correlate the duty more closely to distance travelled and to encourage operators to fill their aircraft.
- 2.59 Domestically, we will ask the Committee on Climate Change to look at the implications of including international aviation in the UK's targets as part of its overall review of the 2050 target, on which it is due to report in autumn 2009. In addition, once the EU ETS rules have been finalised, we will also ask the Committee for advice on whether there is a methodology for including international aviation emissions in our domestic targets under the Climate Change Bill, as well as of the impacts of adopting it. This would also need to be workable and compatible with the EU ETS, taking account of progress under the United Nations Framework Convention on Climate Change and the wider international context.

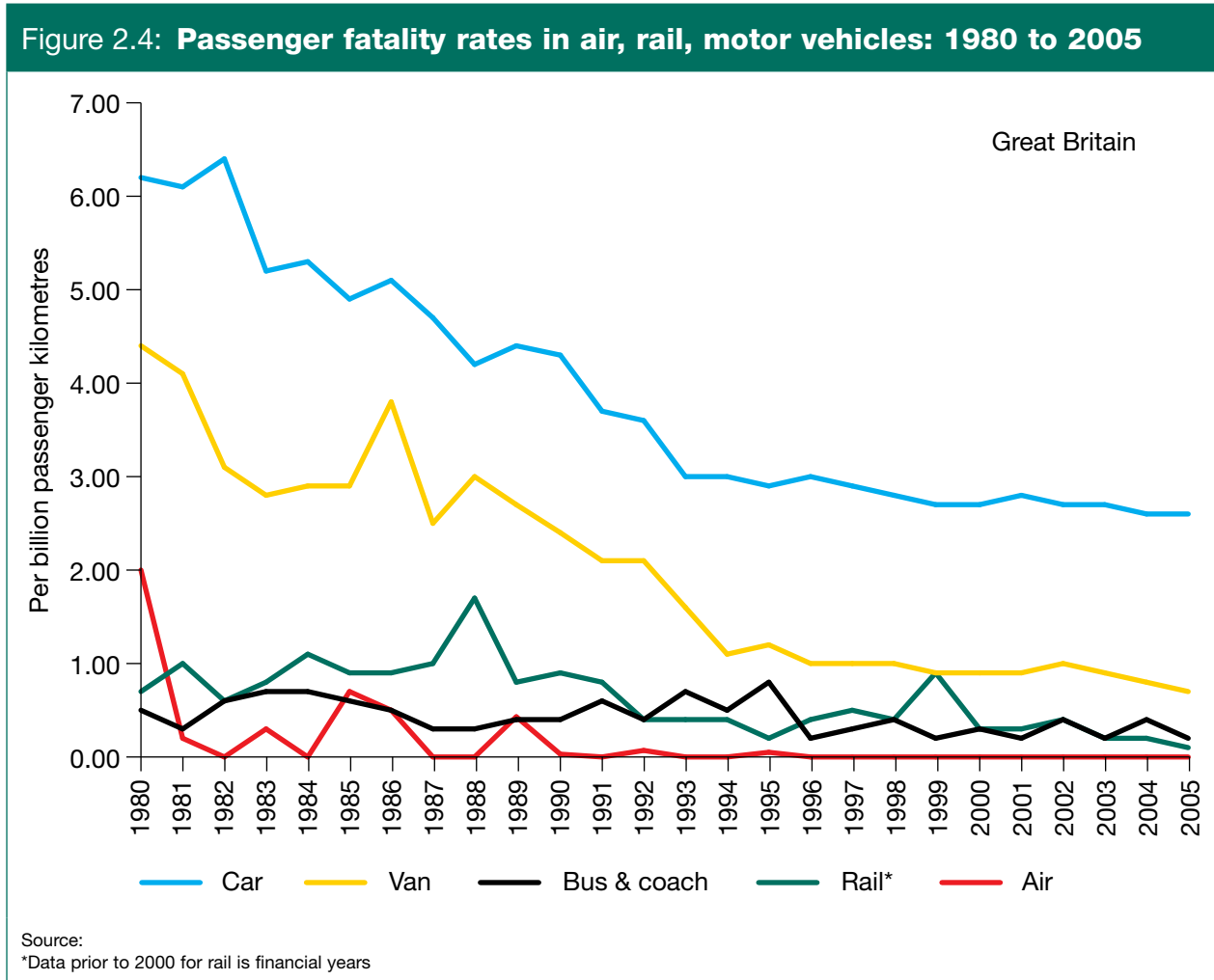
2.60 Maritime transport emissions also require international agreement. The UK is working within the IMO to ensure that strong action is taken on shipping's contribution to climate change. Some states do not share our objectives or are fearful of the impact that any measures might have on their economies. We are working to persuade these states that the costs of deferring action far outweigh the costs of taking decisive action now. At our urging, the next meeting of the IMO's Marine Environment Protection Committee in March 2008 will consider a range of possible technical, operational and market-based measures.

Safety, security and health

2.61 There has always been a strong focus in transport planning on reducing risks to transport users, workers and third parties from transport accidents. And that will remain. But there are many other ways in which transport can impact on people's life expectancy and physical well-being.

2.62 In terms of accident risk, the high-level picture is that:

- the performance of all modes has been improving (see Figure 2.4), but the rate of improvement of road safety has slowed, and it is proving particularly difficult to reduce the number of fatal road accidents;
- all forms of public transport (including bus and coach) are safer than private transport;
- deaths on the road (over 3,000 a year) far exceed deaths on any other mode (for example, 20 deaths were reported on the railways in 2006, none of which were passengers; the recent accident at Grayrigg was the first since 2004 to involve a passenger fatality).



- 2.63** We believe the Government’s objective should be to reduce accident-risk across all modes of travel, with a particular emphasis on deaths on the road. This is likely to require a wide range of interventions, addressing key problem areas of bad driver behaviour, drink driving, excessive speed and seat-belt wearing. Key groups of vulnerable road users will continue to need to be targeted, including motor cyclists, young drivers and those who drive for work. We will also collaborate with our Agencies, local authorities, the police and others to bear down on the minority who flout their legal obligations on the roads, adding to the costs and risks faced by the law-abiding majority.
- 2.64** The sources of accident-risk differ widely between transport modes, but we need to take an across-the-board look at how risk is assessed and safety is handled. For example, our road safety targets are expressed in terms of seeking improvements on historic performance, whilst the rail and London Underground networks express safety performance in terms of risk.

- 2.65 We are also committed to protecting people travelling and transport facilities against the growing range of threats from terrorists. To do so, we need to further develop risk-based regimes, which deliver security and maintain public confidence, but do not stop transport systems operating effectively. Where we need to work internationally to specify these regimes, we will do so, and ensure that they are set at the right level. At home, we will work with stakeholders to strengthen security in ways that minimise as far as possible disruption to travellers and do not unnecessarily impair people's confidence in the safety of transport or the convenience of travel.
- 2.66 There has been a huge reduction in some of the negative impacts of transport on health and life expectancy, including the virtual elimination of emissions of carbon monoxide and lead. The priority challenges going forward are to improve air quality still further by reducing transport-related emissions of oxides of nitrogen and particulate matter. There is also a need to address the risk to public transport users from epidemics or pandemics. And there are difficult issues, such as the indirect impact of transport on health via stress that need more in-depth investigation.
- 2.67 There is also a positive side to the transport-health issue, which we should be promoting. The health benefits of cycling and walking are clear-cut. And research suggests that public transport users have a longer life-expectancy than people who travel only by car. In addition, these forms of transport can contribute to reducing levels of air pollutant emissions, which are damaging to health. There are also some important synergies here with the climate change agenda.
- 2.68 We need to look at the risks across the modes in different ways. We need to review whether we are assessing risk in a consistent way and whether our data support the way we deal with those risks. A joined-up approach to safety, security and health is desirable for two reasons. It is right to factor all the positive and negative impacts into calculations of value for money. And, at the practical level, it is much better to engineer safety/security/health into the design of a train or airport upfront than to retrofit later. The recent rail White Paper said "a key objective for the rail industry over the period of this strategy is to recognise safety, passenger security and well-being as a single agenda and to deliver continual improvement". That conclusion extends to transport generally, and to those who live or work near to transport networks as well as those who use them.

Quality of life

- 2.69 Transport impacts on people's quality of life in many ways.
- 2.70 The negative impacts are often obvious and can be very significant for the environment and people's well-being. They include the noise and vibration of road, rail and air traffic, the loss of wildlife habitats and countryside, the visual intrusiveness of roads and railways, and oil-spills on beaches. That is why we are a key formal delivery partner with Defra in the Delivery Agreement supporting

the Government's PSA target for a healthy natural environment for today and the future. Areas that have been designated as important sites for nature conservation purposes, such as Sites of Special Scientific Interest and Special Protection Areas, benefit from a high level of statutory protection to ensure their conservation value is protected and enhanced. In addition, the Government is preparing strategic noise maps and action plans under the Environmental Noise Directive, to help manage noise and reduce it as necessary, and will consult shortly on a Noise Strategy. The likelihood is that, as society becomes more affluent, people will become less tolerant of adverse impacts on their quality of life.

- 2.71 The positive impacts are more diffuse, and tend to be taken for granted. They include the range of goods on supermarket shelves, the ability to visit friends and relatives, enjoyment of the countryside and seeing the world. These are things that people clearly set a high value on, and which transport must continue to deliver for them. Our carbon-reduction agenda, in particular, needs to take account of these aspirations.
- 2.72 It is also clear that transport users have rising expectations. People will progressively demand higher standards of comfort, convenience and customer service, as well as improvements in quality of information. Customer-focus is primarily a matter for transport providers, but not wholly. There are limits to what a station or airport operator can do to improve the passenger's lot if capacity is inadequate. There is a need (which Government can facilitate) to think about journeys in end-to-end terms. And the Government is, itself, committed to transforming the way it does business with its customers. The Department for Transport is expanding its range of online services to make it easier to tax a car, register a ship or book a driving test. The Transport Direct website provides a journey planning service which helps people find the quickest, cheapest or lowest-CO₂ option for their trip. The Highways Agency will make wider use of mobile technology to keep drivers up to date on delays and is developing a digital traffic radio station.

Equality of opportunity

- 2.73 It is important that – in the drive for sustained GDP growth, CO₂ reduction and an improvement in average quality of life – we do not lose sight of the needs of disadvantaged areas or least mobile people.

- 2.74 The Government is committed not only to improving economic performance in all English regions, but to reducing the persistent gap in growth rates. Average household income (adjusted for cost-of-living) varies from £18,800 in the North East to £26,100 in the South East and £29,200 in London, and there are also wide divergences on unemployment and other measures. There are pockets of deprivation in even the most affluent areas. And there are individuals in all areas whose life-prospects are relatively poor. There are also specific transport issues for rural areas in general and for isolated communities in particular.
- 2.75 Tackling disadvantage in local areas is a Government priority, delivered primarily by local authorities, who best understand the needs of neighbourhoods and of sections of their community. Transport can contribute to achieving wider aims, which will need to be considered as authorities prepare their Sustainable Community Strategies, Local Area Agreements and Local Development Frameworks. The Department for Transport is committed to enhancing access to jobs, services and social networks, including for the most disadvantaged, and will provide advice and assistance to authorities as they plan how best to achieve their goals.
- 2.76 Accessibility is not simply a transport issue. It is about the range of opportunities and choices that people have in connecting with jobs, services and friends and families. Their level of access will depend on where people choose to live, where services are located, the availability of 'home delivery' of goods or services such as medical care, and the availability and affordability of transport. Improving accessibility can be achieved through one or a mixture of these. Different social groups have different transport needs and priorities. For example, good access to healthcare is particularly important for those with children and for older people. People with disabilities are less likely to drive and more likely to be dependant on public or community transport, or lifts from family and friends. In some rural areas access to a car can be crucial to maintaining accessibility. Table 2.2 summarises some of the key accessibility issues identified with stakeholders (it is important to stress that not all members of a 'target group' will have the transport issues mentioned).
- 2.77 Transport providers are generally well aware of the particular needs of disabled users. The projected ageing of the population provides an additional challenge and incentive to focus harder on the needs of users with a range of mobility issues. The number of people aged over 65 will increase from 8 million to 11 million by 2024, and the proportion of the population aged over 85 will more than double.

Table 2.2: Groups most vulnerable to poor accessibility	
Target group	Transport issues
Low-income	Low travel horizons, fear of crime on public transport, some require help with travel costs to work to support job retention and address in-work poverty.
Job-seekers	Require support with job search activities and to prevent transport being a barrier to employment.
Some low-income parents	Access to social and cultural networks, healthcare and healthy food shops for parents and families at risk of social exclusion.
Low-income rural households	Transport-related exclusion in rural areas regarding access to employment, healthcare, healthy food shops, education and social and cultural networks.
Disabled working-age adults	Transport-related exclusion for disabled adults; current multiple forms of transport assistance; to give additional help to job search activities for disabled people.
Disabled children and young people	Assistance needed for families to avoid transport-related exclusion for disabled children and young people.
Older people with limited mobility	Appropriate transport for older people with limited mobility and at risk of social exclusion.
Black and minority ethnic groups	Some groups more likely to be low-income; socio-cultural barriers sometimes a barrier to travelling and using public transport. Some groups likely to be fearful of using public transport because of personal security issues.

Source: DfT

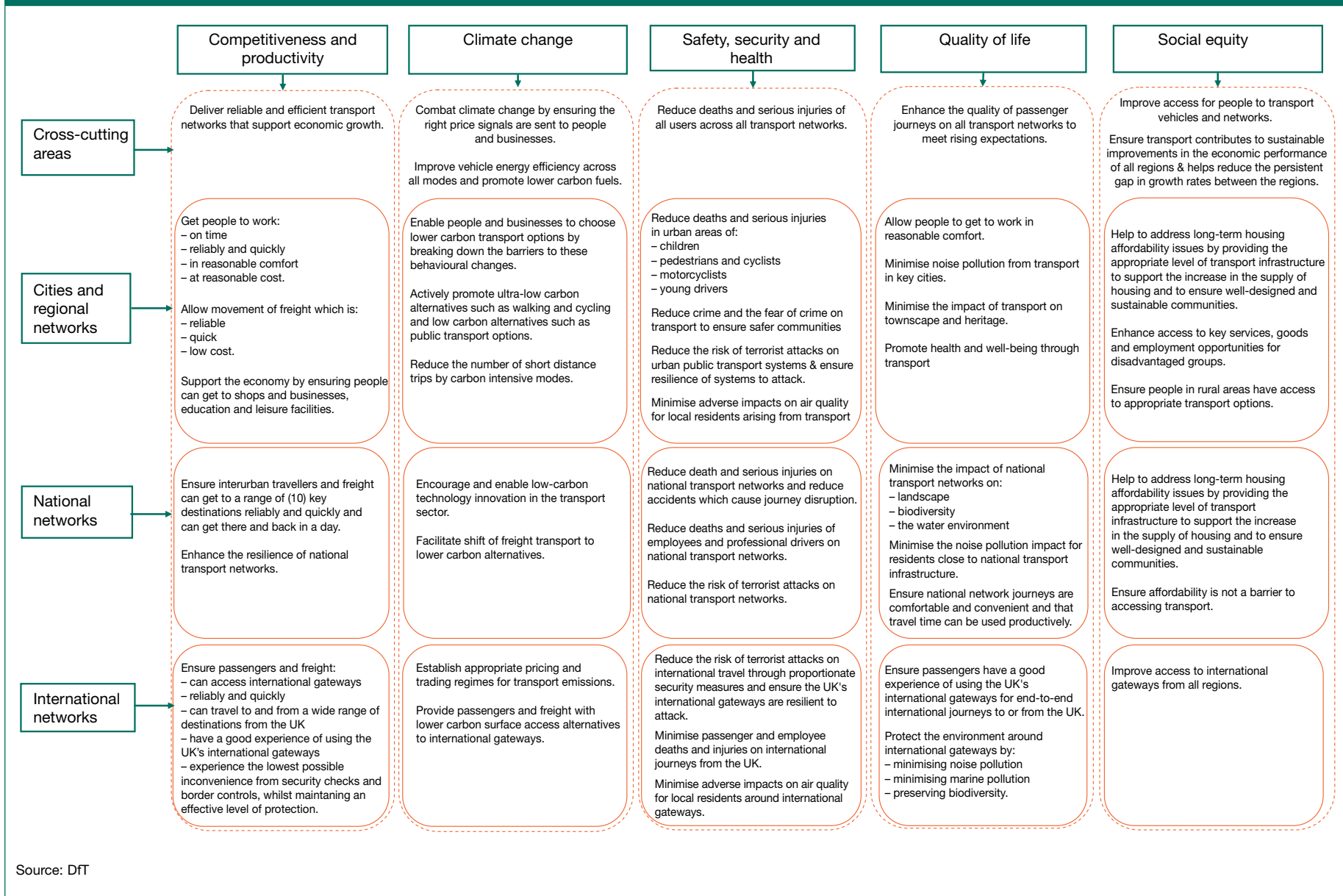
- 2.78 At the level of regional inequality, the Government has formal goals on reducing GDP-growth disparity. Transport’s principal contribution to these is likely to come from tackling emerging congestion problems on national and urban networks, in line with the Eddington principles. The emphasis will be on reducing inequality of outcome (in terms of levels of crowding or reliability, for instance), rather than on inputs or levels of expenditure. Regional input to transport decisions under the Regional Funding Allocation mechanism will continue, and the emphasis given by the Regional Development Agencies to the importance of good rail connections to ports played an important part in the Government’s decision to support a strategic freight network.
- 2.79 The benefits of creating jobs in regeneration areas should be scored in the value-for-money assessment – provided, obviously, that this is not at the expense of other regeneration areas. In this respect, one of the aims of our engagement process will be to strengthen our evidence base, and we will want to draw on work of bodies like Northern Way, whose strongly evidence-based approach has resulted in a better understanding of how connectivity impacts on economic growth in the north.

But, at the same time, there are some important messages in the Eddington study about not exaggerating transport's ability to stimulate job creation. Unless adequacy of skills and other issues are properly addressed, improved transport connections could as easily suck employment from an area as create new jobs in it. Transport measures are most likely to help when they are part of a locally co-ordinated package of initiatives, of the sort that the measures in the local government White Paper aim to promote.

Conclusion

- 2.80** These five goals capture the range of ways in which transport can affect people's lives – both positive, by supporting the economy and enabling them to visit friends and relatives and travel the world, and negative, by contributing to climate change and through pollution and accidents.
- 2.81** In doing so, the goals incorporate the four specific Government objectives set in the recent Comprehensive Spending Review for which the Department for Transport was assigned delivery responsibility for 2008-11 – contributing to sustaining economic growth through reliable and efficient transport networks; improving the environmental performance of transport and tackling climate change; strengthening the safety and security of transport; and enhancing access to jobs, services and social networks, including for the most disadvantaged. These objectives will be central to driving the Department's business over the CSR years. But the five goals also acknowledge that the transport system contributes to other policy goals (for example, health and regional economic growth and the Government's work on noise mapping and action planning) for which other Departments have lead responsibility.
- 2.82** Integrating these different agendas into a clear set of goals is vital to effective long-term planning. Unless we consider the widest range of transport's impacts it is likely that our policies will have unforeseen, and potentially damaging, consequences. Having done so, the next stage in the strategic process is to identify the challenges to achieving those goals, and the best policy mix to address them. In some cases, this will be able to contribute to every one of the five, but in others, informed trade offs may need to be made.
- 2.83** In Figure 2.5 we set out our initial assessment of some of the most important challenges. These are described in more detail in Annex A. As set out in Chapter 5, we want to listen to users, passengers and other stakeholders to develop it further.
- 2.84** The next chapter sets out the Department for Transport's current policy framework over the period to 2013-14 and the actions we will take, together with our delivery partners at home and abroad, to respond to the most urgent challenges. Then Chapter 4 sets out how we will develop our longer-term strategy to ensure an even closer focus on achieving our goals.

Figure 2.5: Initial assessment of challenges underlying transport goals

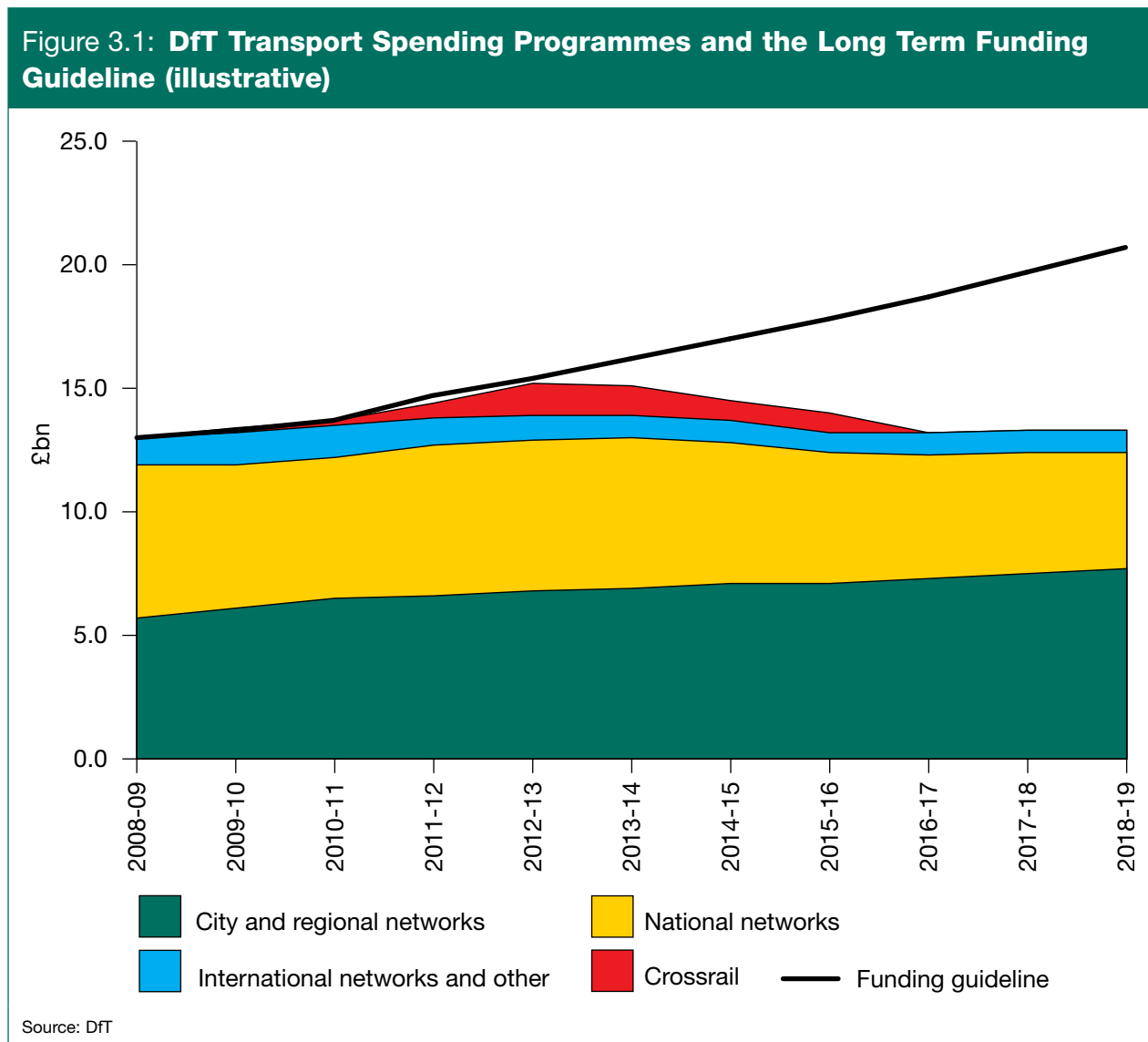


Source: DfT

3. Our plans to 2013-14

Introduction

- 3.1 Decades of under-investment diminished the quality of our transport infrastructure. The Government has shown its commitment to redressing this through sustained increases in transport funding, with a 70 per cent increase in funding in real terms since 1997, and a long-term guideline for transport spending provided by the recent Comprehensive Spending Review (CSR), which grows at 2¼ per cent per annum in real terms to 2018-19.
- 3.2 Figure 3.1 shows the total provision set by the CSR, together with the allocation (relatively firm for early years, but indicative for later years) between transport ‘markets’. There is considerable financial ‘headroom’ beyond 2013-4, and the following chapters explain how we intend to take decisions on the spending and policy priorities for that period.



- 3.3 This chapter summarises our ambitious expenditure and policy plans through to 2013-14. They support the five goals in Chapter 2 and are informed by the analysis in the Eddington study.
- 3.4 In framing our plans to 2013-14, we have first to make provision for essential and committed expenditure – maintaining national and local roads in decent condition, supporting passenger rail services, funding local authority and Transport for London investment plans. In determining the indicative allocation of discretionary funding, we seek to follow Eddington’s advice by focusing on sections of the networks where congestion, crowding and unreliability pose the most serious threat to economic growth. We are funding Crossrail, Thameslink and an additional 1,300 carriages to increase rail capacity. We have made provision to support local urban areas develop and implement balanced programmes of investment, linked to congestion-charging, to tackle their congestion problems. We are continuing to invest in the national road network and there is also a stronger emphasis on cities and on public transport solutions. This emphasis is consistent with Eddington and Stern.
- 3.5 Although major projects such as Crossrail attract the headlines, they account for only a small part of total public expenditure on transport. Most of the budget will be spent on more modest schemes to increase capacity by widening roads or lengthening platforms, to improve local transport and to reduce accident-risk and adverse impacts on people’s quality of life. And, of course, our plans to 2013-14 are not solely about expenditure.
- 3.6 This is particularly important in the context of the climate change agenda. Well-targeted investment, be it in national rail networks or local cycle routes, can facilitate CO₂ reduction (on top of their physical fitness and air quality benefits) by providing people with an alternative to the car, but cannot actually deliver it unless behaviour changes. Our agenda for the coming years will therefore put a strong emphasis on options for pricing, technology, innovation and behaviour change to deliver more sustainable transport. And, where we do invest to increase capacity, we are ensuring that a sensible balance is struck between the economic benefits and climate change and other goals in Chapter 2, and that potential synergies between these goals are maximised.
- 3.7 The remainder of this chapter provides a brief overview of current transport plans to 2013-14. They combine ambitious levels of investment, a strong drive on pricing, technology and behaviour, and some important structural reforms to strengthen local government transport responsibilities and to make the land-use planning system work better. The Government is confident that this balanced programme will deliver real benefits and advance our five goals. But Eddington argued – and the Government agrees – that there is scope to improve the way we do transport planning both immediately, and, in more ambitious ways, over the longer term.

Urban, regional and local networks

- 3.8** Responsibility for most transport in areas outside London, including urban areas, rests with local authorities, who are best placed to set local strategies and priorities. The forthcoming Local Transport Bill will further empower local authorities to meet local transport needs. It will make it easier for them to improve the quality of bus services or introduce local road-pricing schemes, and assist city regions to strengthen their arrangements for transport planning and delivery. The Government sees this as the next step in a continuing process of strengthening sub-national government, and local decision-making on transport which is integrally linked with economic and social planning.
- 3.9** The Government's Energy Measures report, which was published in September 2007 and which all local authorities must have regard to, contains a chapter specifically on transport. This report contains guidance on how local transport authorities should take account of national climate change objectives, as well as providing advice on influencing transport sustainability.
- 3.10** Many improvements to the national networks will have benefits for urban and local networks as well. In addition to these benefits, we are currently planning to provide very substantial investment in local and regional transport outside of London between 2009 and 2014. Much of this will be for councils to spend on small local improvements which (as Eddington confirmed) often represent particularly good value for money. The Local Transport Plans (LTPs) prepared by local authorities for five years from 2006 include many excellent examples of these small investments, and of the value secured from integrating transport and other policies, such as those of health, education and housing. We shall review the guidance to local authorities on preparation of LTPs to ensure that it reflects both the Eddington priorities and the evidence from the review of take-up of 'smarter choices' in LTPs that was published in June this year.
- 3.11** Over the same period, we are planning to allocate further significant funding to a large number of schemes as part of the regional funding allocations (RFAs), under which the regions identify the investments (in transport or elsewhere) that would best further their wider priorities. Integrated strategies at regional level, multi-area agreements and local area agreements will ensure more effective integration of transport with wider priorities at the regional and sub-regional levels. Schemes going forward, subject to affordability and value for money tests, include public transport investment such as bus stations, guided bus and trams, local road improvements which will benefit both freight and passengers, and traffic management schemes including measures to enable bus priority. To inform the next RFA round, planned for the Comprehensive Spending Review period from 2008/9, the Government will review the guidance on RFAs, to take account of Eddington's conclusions on the evidence that points most strongly to the need for increases in transport capacity and on the productivity benefits that well-targeted capacity enhancements can deliver.

Exploring the scope for road pricing

One of Sir Rod Eddington's strongest conclusions was that the case for exploring the scope to use pricing to address the growing road congestion challenge was compelling. In fact, the Study argues that the potential benefits from a well-designed, large-scale road pricing scheme are unrivalled by any other single intervention. Getting the prices right on roads, as on other modes, is a major prize.

Experience in London since the introduction of the congestion charge gives some support for this. While congestion (delays to road vehicles) appears to be growing again after significant initial gains, it would undoubtedly be much worse without the charge, and charging has also created road capacity that has allowed for more priority to be given to buses, cyclists and pedestrians. It is also delivering benefits in terms of carbon emissions and air quality. And there is experience elsewhere in the world, for example in Stockholm, where the successful congestion charge has recently been reintroduced following a referendum on the initial, pathfinder scheme.

However, Eddington also recognised that implementing road pricing on a larger scale carries very significant risks and uncertainties, particularly around the costs and technology, and the way road users would react to the introduction of a new way to pay for road-use. Hence, Eddington recommended the pursuit of pricing pilot schemes alongside further intensive research.

The Government accepts the Eddington analysis regarding the exceptional case for exploring the potential of road pricing. That is why we have earmarked a significant proportion of the Transport Innovation Fund to support the implementation of locally promoted schemes which combine road pricing with public transport and other improvements to tackle current and developing congestion problems. We have been working closely with ten areas as they have looked at the problems they face and whether a package including road pricing is the right solution for their area. The result is that the first proposals seeking Transport Innovation Fund support have already been submitted – by the authorities in Greater Manchester and Cambridge and more are in development.

In this way, as pricing is explored as an option in different conurbations across the country, we will learn more about the way schemes can be designed to tackle congestion whilst also addressing concerns regarding equity and social inclusion.

Exploring the scope for road pricing (*continued*)

Tackling urban congestion is our priority, and congestion charging has a role in this, backed by investment in public transport. Whilst it is possible that road pricing could have the potential to be extended to include parts of our national networks, that is a decision for the future, informed by the development of local schemes, including London, and clear answers to the technological and system challenges.

We are working with industry to explore the role that more advanced and sophisticated technologies could play in supporting schemes on a wider scale in due course. But any pricing system would need to be robust and trusted by road users. It is important that we demonstrate, for example, how we would deliver safeguards on privacy and against fraud, before taking decisions on any more widespread pricing application.

Alongside this, the Government is fully committed to taking cost effective action now to address capacity constraints on the strategic road network. The policy framework to achieve this is described in paragraphs 3.23 to 3.30 below.

- 3.12** To tackle congestion, as set out above, we have provided pump-priming funding to a number of major towns and cities to develop bids for money from the Transport Innovation Fund to implement road-pricing and complementary supporting transport investment. A number of local authorities are taking advantage of this to develop innovative and strategic approaches, featuring road pricing, major improvements in public transport, and better walking and cycling facilities, backed by 'Smarter Choices' initiatives. Our aim is to have two or three schemes fully operational by 2013-14.
- 3.13** The 'Sustainable Travel Town' demonstrator projects (in Darlington, Peterborough and Worcester) are more modest in terms of expenditure, but potentially just as important. Over a three-year period, Darlington aims to offer bespoke travel advice to all of its 40,000 households. Initial results are encouraging, with a 15 per cent increase in walking and a 65 per cent increase in cycling between 2004 and 2006, alongside a 9 per cent reduction in trips as a car driver. Learning from demonstrator projects like these (and from initiatives such as Bikeability, 'walking buses' and station travel plans) will be critical in the period to 2013/14. The challenge is to find the best package of measures to allow people to reduce the carbon footprint of their travel and the best ways of getting information to them on how they can change their behaviour. Subject to value for money tests, we will be increasing our investment in initiatives like these significantly in coming years, and will publish more detailed plans shortly.
- 3.14** Integrated investment strategies at a regional level, and Local Area Agreements more locally, will help to ensure effective integration of transport with wider priorities, and more effective performance management. To complement better

investment planning, we will aim for more efficient use of existing local transport networks – particularly local road networks. The Department will encourage local authorities to adopt better techniques for managing disruptive incidents and works, and for achieving smoother, more predictable traffic flows. Providing information directly to individuals has been shown to lead to people making decisions about their travel choices that are often greener and healthier, which also ease pressures on road space. The Government will work with local authorities to encourage this, building on the 14,000 school travel plans and the Sustainable Travel Towns, where there have been some significant reductions in car use and increases in public transport, walking and cycling.

- 3.15 Reducing people’s need to travel will be important to both the climate change and equality-of-opportunity goals. It will not be quick or easy, but a start has been made. Planning guidance to local authorities used to stress the need for minimum levels of parking provision in new developments, whereas today’s debate on PPG13 is about where to pitch maximum levels, taking account of the needs of different types of development. Town centre planning policy sets out a town centre-first approach to development, with proposals in town centres favoured over development outside town centres. The new PPS on climate change, which the Government will publish shortly, will reinforce the role of planning in helping to promote sustainable travel patterns.
- 3.16 Communities and Local Government and the Department for Transport are also working with the reformed planning system to ensure that major new developments are located where they can make best use of existing transport links and to facilitate sustainable travel choices. The Government’s commitment to increase the rate of new housing supply to at least 240,000 a year by 2016 provides both a major challenge and opportunity here. The five pilot ‘Eco-Towns’ proposed in the housing Green Paper envisage zero-carbon houses, schools and hospitals, with a strong emphasis on ease of access between them.
- 3.17 The White Paper *Planning for a Sustainable Future* includes proposals to align the planning system as a whole more effectively with the need to address climate change, by ensuring that development and infrastructure needs are considered in a more joined up way. Communities and Local Government and the Department for Transport are working closely on the reformed planning system to ensure that major new developments are located to make best use of existing transport links and to facilitate sustainable travel choices. The Government’s commitment to increase the rate of new housing supply to at least 240,000 a year by 2016 provides both a major challenge and opportunity here. The five pilot ‘Eco-Towns’ proposed in the housing White Paper envisage zero-carbon houses, schools and hospitals, with a strong emphasis on ease of access between them.

- 3.18** The recent rail White Paper specified the improvements in safety, reliability and capacity that the Government wants to buy on the rail network. The capacity increases are focused on London (which has the worst crowding) and on cities such as Birmingham, Leeds and Manchester (which have seen the fastest growth in rail demand). Over 1,000 of the 1,300 extra carriages required under the White Paper will go to relieve pressure on services in and around urban areas. The additional carriages require targeted investment in infrastructure, ranging from lengthening platforms, upgrading electricity supply and providing depots to the larger-scale proposals for Reading and Birmingham New Street stations.
- 3.19** In London and the South East, we have given the go-ahead to Crossrail and Thameslink. **Crossrail** will link Maidenhead and Heathrow in the West, with Shenfield and Abbey Wood in the East. The first trains are expected to run in 2017, and will ultimately carry 200 million people a year. Crossrail will add at least £20 billion to the UK economy, support 30,000 new high-value jobs by 2026, and also boost existing regeneration plans in the Thames Gateway and elsewhere. The **Thameslink** programme is to be completed by the end of 2015, and will enhance the frequency and capacity of services that operate north-south through central London. It will both relieve congestion and provide capacity for growth in the future, so providing significant economic benefits to London and the greater South East.
- 3.20** At the other end of the spectrum, the rail White Paper also reaffirms our commitment to local lines. We have made it clear that our agenda to 2013-14, working with community rail partnerships, is about growth not closure. As a result of the programme of closures undertaken following the 1963 Beeching report, the local and regional rail networks are thin, though increasingly well used. Rural bus networks are more extensive and in addition to the general funds available through Revenue Support Grant to local authorities the Government is providing £56 million of rural bus subsidy grant this year, which supports services that are highly valued by the communities they serve. But the low load-factors and high carbon footprints of many services suggest the need for new thinking on rural accessibility, and the Government welcomes the Commission for Integrated Transport's (CfIT's) intention to study options such as rural taxis.

National networks

- 3.21** On the national rail network, the Government will procure the flagship Intercity Express trains, which will be trialled in 2012 and enter full passenger service from 2015, starting on the East Coast and Great Western main lines. These trains will be lighter and more environmentally friendly than current long-distance trains. They will also be longer and capable of carrying significantly more passengers.
- 3.22** The White Paper set out our intention to support a strategic freight network to increase rail's freight capacity and to take pressure off passenger lines. As set out in paragraph 3.35, we have announced that we will provide funding for a number of rail freight schemes improving access to key ports.

Climate change adaptation

Even though a reduction in CO₂ emissions can prevent dangerous climate change, past and present emissions of greenhouse gases will still mean that some impact from climate change is unavoidable in the decades ahead. Climatologists predict an increase in average temperatures and changes in extremes such as an increase in very hot days that exceed thresholds for transport infrastructure (e.g. rail buckling). They also warn of an increased frequency of the sort of severe-weather events (such as high winds or heavy rainfall) that most disrupt all forms of transport – air, rail, road and sea. There are clear risks here to the safety of the travelling public, but also to our ability to deliver ‘predictable end-to-end journey times’.

The Highways Agency is now identifying the climate change risks to strategic roads, and Network Rail is developing a climate change hazard map of rail infrastructure that may be particularly vulnerable. We need to build from these welcome initiatives a coherent system-wide picture of the biggest transport risks and most cost-effective remedies. And we need to look for synergies between adaptation measures for transport and for other sectors. The Department for Transport will therefore engage closely with Defra’s Climate Change Adaptation Programme to integrate adaptation measures into transport policy and delivery.

- 3.23 We have in place a significant programme of major road improvements, including a number of strategic motorway widening schemes. We are determined to deliver improvements as quickly as possible. During 2008-09 we expect to award contracts for widening most of the rest of the M25 to dual four-lane standards, within the land boundaries of the existing motorway. This massive project will be delivered through a DBFO contract, to include future maintenance of the M25 for a period of 30 years. Construction of the M1 widening between Derby and Mansfield will start soon.
- 3.24 Major road projects typically take up to ten years to deliver, from the point at which a decision is taken to identify options. It is not easy to fix an accurate estimate of scheme costs, far in advance of appointing a contractor and starting construction. In 2006 we commissioned Mike Nichols of The Nichols Group to review the Highways Agency’s approach to cost estimating and project management. One of the findings of the Nichols Review, published in March 2007, was that cost estimates for schemes further away in the delivery ‘pipeline’ were subject to significant uncertainties. Among the Nichols Review recommendations were that, in future, we should adopt an estimate range for these schemes, rather than a specific figure, and that we should determine firm expenditure commitments to specific schemes at a later stage in development, when we have assessed the value for money of different options and the range of uncertainty has narrowed.

- 3.25 The Highways Agency is now engaged in a process of re-examining estimate ranges for existing schemes in the programme, looking rigorously at scheme specifications and costs, to ensure that we continue to maximise value for our roads programme spend overall. In doing so, the Agency will take account of Eddington's analysis of the key transport links which contribute most to national productivity and competitiveness.
- 3.26 In parallel, the Highways Agency has been deploying a number of initiatives to make better use of our existing strategic road network, increasing capacity and improving quality of service by the use of new technology and more effective management of the network day by day. For example, Traffic Officers are now deployed across the whole of the motorway network, supported by seven Regional Traffic Centres. Incidents are being detected and managed more effectively, reducing congestion. Improved information systems provide better real-time information to road users directly, including road-side messages and a traffic radio service. The same information is being used by private sector service providers.
- 3.27 Our pathfinder Active Traffic Management (ATM) project on the M42 has enabled the hard shoulder to be brought into use as an additional running lane at peak congestion times, supported by variable speed limits and close monitoring of operation to ensure high safety standards. In the first six months of operation, the M42 pilot has reduced delays on the worst journeys by 18 per cent, delivered a 7 per cent increase in flow capacity and maintained a good safety performance. This has been achieved at substantially lower cost and with less environmental impact than conventional widening. Similar techniques are being explored in Europe, including France, Germany and the Netherlands.
- 3.28 Looking ahead, we intend to pursue 'making better use' options even more vigorously. Extension of the M42 ATM pilot to improve the M6 around Birmingham was announced by the Secretary of State on 25th October, for completion by the summer of 2011. We are now going to embark upon a major feasibility study of the potential for installing advanced signalling and traffic management systems on a much wider scale, across the strategic road network. The study will examine the benefits which such an investment could bring. The questions to be addressed will include:
- whether new systems could offer additional lanes and traffic flow capacity where needed, within the land corridors of existing motorways;
 - the extent to which they could offer a faster, better-value solution to increasing congestion problems, with less traffic disruption than during the construction phase of conventional widening schemes;
 - whether traffic flow and access could be managed more effectively at congested times, reducing flow breakdown, improving journey reliability and predictability and potentially cutting CO₂ and air pollutant emissions;

- whether slower and faster moving traffic could be better segregated, reducing queuing behind slow-moving vehicles;
 - whether different forms of lane reservation schemes could have a bigger role to play in managing congestion, such as through traffic lanes, high occupancy vehicle lanes, etc;
 - whether better and more timely information could be provided to drivers, responding faster to changing weather or traffic conditions and incidents and enhancing safety;
 - whether new systems could help us to detect and respond to incidents better and faster, improving safety and reducing traffic disruption;
 - what safeguards would be needed to guarantee privacy; and
 - whether it would be beneficial to consider changes in enforcement practices in parallel with the introduction of new traffic management systems.
- 3.29 The study, which will report to the Secretary of State in Spring 2008, will examine the costs, benefits and technical feasibility of extending signalling and traffic management systems on a wider scale and will look at innovative ideas for future traffic management. A stakeholder group will be established to ensure that road users, environmental groups, safety groups and others with an interest in these issues are fully consulted as the feasibility study proceeds.
- 3.30 By the Spring of 2008 we expect to publish an initial assessment of the value which could be delivered through new systems and the potential scope of their application. We intend also to set out how a programme of this kind would fit with the existing programme of road widening and improvement schemes.
- 3.31 Advanced signalling and traffic management systems may have potential to help us 'lock in' the benefits of boosting traffic flow capacity, by managing future traffic patterns and demand growth more effectively. Separately, there is the question of the role which road pricing might play. There may be longer-term potential to extend road pricing to include parts of our national networks, but that is a decision for the future, informed by the development of local schemes, including London, and clear answers to the technological and systems challenges.

International networks

- 3.32 The days when central Government ran ports and airports are long gone. They are now generally owned and run by private sector companies. The question of whether and how to develop facilities is one on which the owners take the lead, responding to customer demand. But Eddington identified our 'international gateways' as critical to our competitiveness and productivity. Their location relative to the markets they serve has CO₂ implications. And they have significant impacts on local quality of life.

- 3.33 Striking the best balance is essential. The Barker review proposed changes to the development consent system for nationally important infrastructure, including major ports and airports, to enable us to take decisions in a way that is timely, efficient and predictable, and improves the accountability and transparency of the system. The Government's White Paper *Planning for a Sustainable Future* proposes creating an Infrastructure Planning Commission which would have the main responsibility for taking these decisions, with Ministers' key role being to produce National Policy Statements, which would be subject to thorough and effective consultation and Parliamentary scrutiny. These would set out the national need for infrastructure and government policy on infrastructure development in relevant sectors. Making this new system work successfully will be one of the key challenges for the Department for Transport to 2013-14.
- 3.34 We have published an interim report on ports policy, reaffirming support for the market-oriented approach, setting in hand new guidance for development appraisal and port 'master plans' and identifying likely future trends in traffic. The demand forecasts confirm strong expected growth of containers and specific bulk traffics including liquefied natural gas. We have already approved a series of major container developments – at Felixstowe, Harwich, London Gateway and Merseyside – capable of meeting forecast demand up to 2020. We have ensured that these developments are subject to appropriate undertakings to secure necessary improvements in inland access, and replacement wildlife habitats.
- 3.35 It is also important to provide effective rail freight access to ports to help reduce the climate change impact of container and other traffic. One key factor is to ensure that rail freight links are capable of carrying the larger 9 foot 6 inch containers that are increasingly used by the international logistics industry. For these reasons, the Government has announced that it will fund a range of improvements through the productivity strand of the Transport Innovation Fund. In addition to the gauge enhancement of the Barking-Gospel Oak line in north London which was announced earlier this year, the following schemes will receive TIF funding:
- Gauge enhancement between Southampton and the West Coast Main Line
 - Gauge enhancement between Peterborough and Nuneaton (providing a second gauge-cleared route between the Haven ports and the West Coast Main Line)
 - Reinstatement of the Olive Mount chord serving the Port of Liverpool; and
 - Rail capacity enhancements between the ports at Humber and Immingham and the East Coast Main Line.
- 3.36 On aviation, the focus will be on implementing its inclusion in the EU Emissions Trading Scheme and delivering the additional capacity required.

- 3.37 All flights departing and arriving from the EU should be included in the EU Emissions Trading Scheme from 2012. As mentioned in Chapter 2, this would ensure that any growth in aviation emissions would have to be matched by a corresponding reduction from elsewhere within the trading scheme, as well as adding incentives to reduce emissions from the sector itself. The challenge is to turn cross-European support for the principle of emissions trading into a practical scheme which is fair and effective, with a well functioning carbon market, and in which the public can have confidence.

Domestic aviation

For longer journeys within the UK, domestic aviation has an important role to play. Many domestic flights to UK regions provide valuable links for business and residents in those areas. Those links are not just domestic – by connecting regions directly to the UK’s hub airports, domestic flights provide access to international destinations and markets. Our environmental measures apply equally to domestic aviation as to international aviation: incorporating aviation into the EU Emissions trading scheme, using other measures such as APD to make sure that CO₂ emissions are reflected in the ticket price, and ensuring that the best available technology is deployed and that attractive alternatives to flying are available where this is feasible. Experience since the completion of the modernisation of the West Coast Main Line between London and Manchester shows that improvements in rail services can contribute to reduced demand for domestic air services.

- 3.38 The Government’s sustainable framework for the development of airports capacity is set out in the 2003 White Paper, *The Future of Air Transport*, and the 2006 Progress Report. It considers the economic and quality of life benefits of air travel alongside adverse local impacts and the climate change agenda. It rejected a simplistic ‘predict and provide’ approach and set out a 30 year strategy which addresses the global and local environmental challenges whilst allowing some growth – particularly in the congested south east of England. The demand forecasts in the White Paper factor in the likely impact of emissions trading, so the two key policies are mutually consistent.
- 3.39 Sir Rod Eddington was clear about “the vital role of aviation” in supporting the international competitiveness of UK high-tech manufacturing and services. He was also clear that “the potential economic benefits from further expansion of airport capacity are significant”. The independent consultancy, Oxford Economic Forecasting (2006) reinforced this position, finding that aviation is particularly important for service industries and other key growth sectors of the economy. These findings support the conclusion we laid out in the 2006 Progress Report that there are significant economic benefits to allowing an expansion of airport capacity in the south east. This is still the case, even allowing for the potential environmental costs that such expansion may cause.

- 3.40 The first step in the strategy set out in the White Paper is to make the most of existing airports through a process of improvement and modernisation, including making more use of existing runways and building extra terminal capacity, such as Heathrow's new Terminal 5, which is due to open in spring 2008. But it also supports the delivery of additional runway capacity in the South East in the period up to 2030: at Stansted, and subject to meeting strict conditions on air quality and noise, and improving public transport access, at Heathrow. At Stansted, BAA has made progress on the location, layout and operation of a potential second runway and is expected to submit its planning application later this year. A public consultation on Heathrow is due to commence in November, focusing on whether and how the environmental conditions can be satisfied.
- 3.41 We will also consider whether it might be possible for newly created airport departure and arrival slots to be tagged as 'green slots', as outlined in paragraph 2.48.
- 3.42 The Government has recently announced that it will replace Air Passenger Duty with a per-plane duty which will seek to correlate the duty more closely to distance travelled and maximise load factors.

Cross-cutting activity

- 3.43 In addition to actions which are specific to particular networks, there are also a range of actions we will be taking to deliver on our objectives which cut across all three priority links.
- 3.44 We shall be implementing the provisions on the **Climate Change** Bill which is due to be introduced in the next parliamentary session. Before the end of 2008, the Government, with advice from the proposed Independent Committee on Climate Change, will be required to set carbon budgets for the first three five-year carbon budget periods, 2008-2012, 2013-2017, 2018-2022. This process will include an assessment of the contribution to these budgets required from sectors of the economy in trading-schemes, and from the non-traded sectors, of which transport will be a significant constituent.
- 3.45 The Renewable Transport Fuels Obligation (RTFO) will oblige fuel suppliers to source 5 per cent of fuels from renewable sources or pay a 'buy-out' price from 2010 onwards. Mandatory EU targets for engine efficiency of new cars are likely to come in to force at about the same time. We will provide financial support for new technologies under the Low Carbon Transport Innovation Strategy, which will start in 2008-09.

- 3.46 We will be framing a new road safety strategy and targets for the years after 2010. We will continue to monitor trends across all modes, to analyse casualty rates and the effectiveness of different approaches to risk-reduction. Our three accident investigation branches (air, marine and rail) will ensure that lessons are learned and applied. We are funding the Civil Aviation Authority to increase its safety inspections to 1,000 a year by 2009. And our participation in the European Safety Assessment of Foreign Aircraft (SAFA) system allows evidence on safety deficiencies to be pooled.
- 3.47 We will continue to push for improved air quality by negotiating internationally for tighter technical standards for road vehicles, aircraft and ships.
- 3.48 We will reinforce our work to ensure that the drivers and vehicles on our roads are safe, and meet their obligations to be licensed, insured, taxed, tested and meet other specific legal requirements (for example, those for HGVs). We will do this by making compliance simpler and by tougher enforcement, for example against those international haulage operators who put lives at risk and drive down standards by ignoring their legal obligations.
- 3.49 As set out in the White Paper on business rate supplements, published earlier this month, the Government intends to give local authorities a power giving them greater flexibility to invest in economic development, subject to four layers of protection for business. Investment in transport is one of the key ways in which local areas can drive forward economic development. The Mayor of London has said that he anticipates levying a supplement of 2 pence in order to support Crossrail.
- 3.50 We, and the transport industries, must continue to meet the challenges of developing practicable, effective and proportionate **security** measures, and delivering transport systems that remain attractive and affordable for the travelling public. That is a demanding goal in the face of a terrorist threat that is advancing in sophistication (assisted by technology). A fundamental aim is therefore to maintain and, wherever possible, improve our security in the light of the developing threat, taking into account the conclusions of Lord West's review. The key will be the anticipation of how threats may migrate, good engagement with stakeholders (and provision of the necessary levers and incentives) to allow security to be designed into buildings and processes rather than being treated as an add-on, and bringing security much more into the mainstream of consideration rather than leaving it to separate specialist debate.
- 3.51 The Department will make even more of the services it provides to customers easy to use and simple to access via the internet, as we have done with our award winning system for obtaining Vehicle Excise Duty online. Working with our Agencies, local authorities, the police and others, we will bear down on the minority who flout their legal obligations on the roads, adding to the costs and risks faced by the law abiding majority.

- 3.52 We will look to local government and their partners to lead improvements in accessibility – for example through the use of Accessibility Planning, which involves a strategic assessment of the location of key services and how people reach them, by public transport links or on foot, with a view to identifying improvements which would help those for whom transport is a barrier.
- 3.53 The Government will continue to address the issue of affordability through a range of measures including concessionary fares; targeted allowances such as Disabled Living Allowance (DLA), and support for journeys to specific services, for example, travel to hospitals.
- 3.54 The Department will continue its programme to improve transport provision by focussing on improving the accessibility of vehicles and infrastructure – for example, all buses should be accessible by 2017 and all trains by 2020. We will support this provision with travel training schemes to encourage people to use the transport network.

Enabling the system to deliver

- 3.55 The Government is taking several major steps to improve the delivery of transport schemes. Following recommendations contained in the Barker and Eddington reports, the Government has published a White Paper, *Planning for a Sustainable Future*, with proposals to reform the development consent system for nationally significant infrastructure projects, to enable us to take decisions on infrastructure in a way that is timely, efficient and predictable, and which improves the accountability and transparency of the system.
- 3.56 In order to improve the co-ordination and delivery of transport in our cities and regions, the Department for Transport has also published a draft Local Transport Bill, which assists local government to work together to plan transport provision in their areas, primarily through a partnership approach. The Local Transport Bill also introduces new powers to help local authorities improve the delivery of bus services – so crucial to effective city transport networks – in their areas, by allowing greater co-ordination of services and allowing, subject to strict conditions, local authorities to enter into quality partnerships with bus operators to guarantee certain levels of services.
- 3.57 Implementation of the reforms to the planning system for nationally significant infrastructure projects (see box below) set out in the recent White Paper, *Planning for a Sustainable Future*, will also provide greater predictability regarding the development and delivery of transport projects. This new approach to planning approval will, however, also require the Department for Transport to set out clearly its medium- to long-term priorities, and its short-term delivery plans. The new strategic framework set out in this document will help to facilitate this.

Planning for a Sustainable Future – summary of proposals

For key national infrastructure such as major transport projects, major new power generating facilities and facilities critical to energy security, and major reservoir and waste water plant works, we propose to:

- produce, following thorough and effective public consultation and Parliamentary scrutiny, national policy statements to ensure that there is a clear policy framework for nationally significant infrastructure which integrates environmental, economic and social objectives to deliver sustainable development;
- provide greater certainty for promoters of infrastructure projects and help them to improve the way that they prepare applications by making better advice available to them; by requiring them to consult publicly on proposals for development; and by requiring early and effective engagement with key parties such as local authorities, statutory bodies, and relevant highway authorities;
- streamline the procedures for infrastructure projects of national significance by rationalising the different consent regimes and improving the inquiry procedures for all of them;
- clarify the decision making process, and achieve a clearer separation of policy and decision making, by creating an independent commission which would have the main responsibility for taking the decisions on nationally significant infrastructure cases within the framework of the relevant national policy statement;
- improve public participation across the entire process by providing better opportunities for public consultation and engagement at each stage of the planning approval process; improving the ability of the public to participate in inquiries by introducing a specific “open floor” stage; and, alongside the introduction of new system, providing additional funding to bodies such as Planning Aid.

4. Planning for 2014-15 and beyond

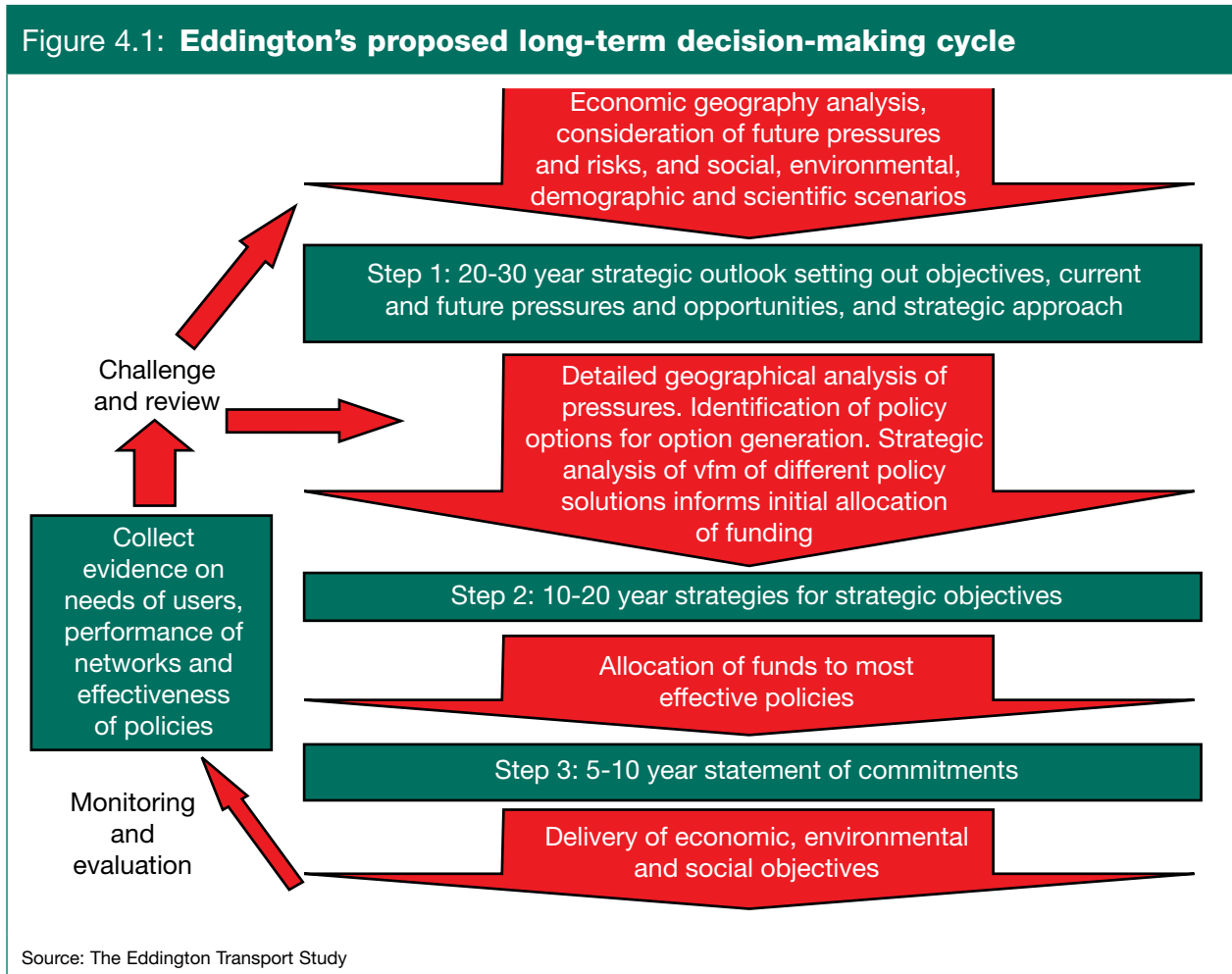
The starting point

- 4.1 The plans set out in Chapter 3 cover the period to 2013-14. But major transport projects can take as much as a decade to design and build, whilst re-engineering cities to reduce the need to travel – and to save carbon – is an even longer-term project.
- 4.2 The Government has already recognised the long-term nature of transport with its creation in 2000 of a ten-year funding guideline for public spending on transport. The original ten-year guideline has now been extended to 2018-19 in the recent Comprehensive Spending Review.
- 4.3 While some longer-term commitments, such as Crossrail and the new Intercity Express trains, have already been allocated funding within this long-term guideline, there still remains very substantial scope for funding for other investment beyond 2013-14. We need to begin planning for that period now if we are to make the best possible use of it. And we also need to plan carefully for the regulatory and other policy developments that will affect transport in the longer term.
- 4.4 Given the critical importance of getting transport right, Sir Rod Eddington made a number of recommendations to improve the way that Government tackles transport planning, both in the short term and in order to ensure the best long-term outcomes. This chapter describes the changes that we are making in response to those longer-term recommendations.

The Eddington recommendations

- 4.5 Decisions on both transport infrastructure and service-patterns need to be got right first-time, because transport access affects people's decisions on where they want to live and companies' decisions on where to locate their businesses. International action is essential to address climate change, but achieving such consensus is not quick or easy. Eddington recognised that transport planning is a long-term process, with a high premium on making the right decisions from the outset. He proposed changes to the way the Government tackles transport planning in order to secure the best long-term outcomes.
- 4.6 Eddington recommended that short-term plans should reflect medium-term options and a long-term outlook. The short-term plans should look 5-10 years ahead, and should set out the transport outputs to be secured (for instance, a reduction in the number of road deaths or an improvement in the reliability of inter-urban journeys), the specific interventions the Government will make, and the funding it will provide. These plans should be backed by a medium-term strategy, which looks 10-20 years ahead, and identifies possible future options to address changes in the level and pattern of transport demand. Last but not least, the Government should produce

a 20-30 year outlook, which takes account of the profound impact that changes in technology and attitudes could have on supply chains and the way people work and travel, and on what they want from transport. The Eddington approach is summarised in Figure 4.1.



4.7 The Eddington study concluded that transport planning has often focused too early on developing and delivering a specific scheme or solution. Planners have concluded too readily that the right answer to congested motorways is to provide more motorway (when there may be more cost-effective solutions or when the congested motorway may be a symptom of other problems) or that the right response to growing rail demand is to build new lines. Planning should be more inter-modal. And it should look at a wide range of possible actions, not just at investment in infrastructure (see box below).

In carrying out long-term transport planning, it is important to consider the full range of policy options in order to identify those which offer the best value for money, alongside other advantages, such as long-term flexibility. This consideration should include (but need not be restricted to) the following types of actions:

- behavioural change (for example, better information about the carbon costs of different journeys or about different ways of getting to work or school can prompt people to change their travel patterns);
- getting better use out of existing infrastructure (such as taking action to deal with incidents more quickly, which can help to cut congestion, using new technology as in the current active traffic management pilot, or using new signalling systems to enable more or longer trains to travel on the same section of track);
- technology and innovation (such as improving safety through better designed vehicles, cutting carbon emissions through new types of fuels and engines, or reducing congestion by providing real-time information to motorists and hauliers);
- pricing signals (for instance, road pricing can help cut congestion by reducing the number of non-essential car journeys at peak times);
- regulation and enforcement (for instance, regulating to ensure motor vehicles are properly maintained can improve safety and cut carbon emissions);
- changes to public transport services (ensuring service patterns reflect people's actual needs, can improve accessibility and quality of public transport, as well as contributing to the carbon goal by promoting modal shift);
- small infrastructure schemes which address a specific need (for instance, rail passing loops, road junction improvements or remodelling streetscapes to promote walking and cycling);
- major infrastructure schemes.

4.8 To achieve the necessary improvement in transport planning, Eddington recommends that the Government should implement a rigorous process for identifying the best policies to meet well defined objectives. He described a four-stage process to achieve this:

- start by being clear on the policy goals and desired outcomes;
- identify the key transport challenges drawing on detailed geographical analysis of pressures, and the improvements in performance sought, focusing on the 'whole journey' rather than particular stages or modes in a journey;

- consider the full range of possible actions for meeting the challenges and delivering the improvements, including different modal options, and policies for making more efficient use of existing capacity as well as small and larger scale capacity enhancements and packages of policy measures; and
- prioritise limited public resources on those policies which most cost-effectively deliver Government's objectives, taking account of the full social, environmental and economic costs and benefits ("listen to the numbers").

The Government's proposed approach

- 4.9 The Government supports the approach mapped out by Eddington. It has therefore developed a set of proposals to improve the way transport is planned in three areas: improving decision-making; strengthening the supporting analysis; and engaging with users, the transport industry and other stakeholders.
- 4.10 Eddington's approach requires a major change to decision-making processes at all levels. In particular, it requires us to align national decision-making cycles, so that we can, for example, compare the merits of different road- and rail-based solutions to inter-urban congestion problems, and decide what funding priority these national networks should have compared with supporting regional and local authority plans to tackle more local congestion. It requires us to develop a 'toolkit' which is capable of informing such judgements. It requires a change in the way in which the Government engages with a wide range of stakeholders, and puts an increased emphasis on the need to build consensus on the way forward for transport.
- 4.11 A benefit of this more systematic approach is that, once a programme of schemes has been assessed in this more rigorous way, the individual schemes should have a more secure place in the Department's future programme. The current system, where individual projects are looked at individually, can tend to lead to late adjustments in timing (or even cancellation) as better propositions emerge, causing inefficiency and disappointed expectations which might have been avoided by a more co-ordinated approach.
- 4.12 To facilitate better decision-making, the Government will embed Eddington's proposals for a more rigorous process to define challenges, and generate and select policy options to address them. It will do so within a framework that provides the short-term (five-year) delivery plans, backed up by a medium-term strategy and a clear long-term outlook, that he recommends.
- 4.13 The Government's proposals build on some of the arrangements already in place for railways. The July 2007 rail White Paper sets the outputs for rail to deliver by 2013-14, together with the funding available to secure them. It funds key investments to be made between now and 2013-14 which deliver benefits in the slightly longer term, such as the new generation of Intercity Express trains and development of radio-based signalling. It also identifies options for further increases in rail capacity (for instance, ultra-long commuter trains or a new London-Birmingham-Manchester line) which can be pursued if growth in demand justifies it.

And it sets these plans in the context of a 30-year forward look at long-term trends and uncertainties. Its limitation is that it identifies rail solutions to rail problems, based on a rail demand forecasting model.

- 4.14 Extending the approach from rail, the Government intends to develop the way decisions are made so as to:
- allow choices to be made across the different modes, for instance considering rail or other public transport solutions to road congestion;
 - provide clarity on the expected availability of public funding, in order to avoid nugatory work;
 - ensure that larger schemes are not allowed to swallow up all the future funding available, just because they are planned further ahead than smaller interventions; and
 - provide enough flexibility to be able to deal with future uncertainties and shocks.
- 4.15 The first step in creating a new approach of this kind is to establish an appropriate cycle for the definition of challenges, the generation of options and timely decision-making, consistent with the production of the stable shorter-term plans on which cities and developers can then rely.
- 4.16 The most convenient way to do this is to build on the five-year cycles which are already in place for the national railway. In practice, this would mean extending the preparations for the next rail High Level Output Specification (due in 2012, and covering the years from 2014-19) to support decision-making not only on rail, but also on other modes of transport. This would make it substantially easier to take cross-modal policy and investment decisions, replacing current arrangements under which – in effect – decisions on different modes are taken sequentially. It would build on the Multi-Modal Studies commissioned in 1999 and learn lessons from them, particularly on the need for clarity on how options are generated and on likely levels of funding available. The box below provides a practical example of how this could work.

Applying the new approach to the Manchester-Birmingham-London corridor

The Manchester-Birmingham-London corridor links the three biggest cities in England. It is served by the M6/M1 and M6/M40, by the West Coast Main Line (WCML) and by domestic air services. It connects to Scotland via the M6 and WCML, and to the Channel Tunnel and ports via the M25 and M20.

Both the road and rail networks experience peak congestion problems, particularly on the approaches to major cities, where commuter and long-distance journeys overlap. Rail demand has been growing by 2½ per cent a year for long-distance travel and by over 5 per cent for travel to work in Birmingham and Manchester. Road demand and London rail commuter demand have been growing more slowly, but start from a more congested position. Demand for domestic air services between London and Manchester has fallen, since the completion of the modernisation of the WCML.

On top of the recent upgrade of the WCML, the rail White Paper has identified further measures that can increase the capacity of the existing line by 50 per cent. Even allowing for that increase, however, if current demand growth continues, very substantial additional capacity will once again be needed by 2024. In line with Eddington, the White Paper concludes that the any decision on additional rail capacity cannot be taken in isolation from the other modes.

The Eddington approach to any transport policy decision involves starting by being clear about the challenges we want to address. This is essential if we are to avoid falling into the trap he identifies of pursuing ‘solutions in search of a problem’. Cutting the predictable end-to-end journey time for goods and people moving through the corridor and reducing the CO₂ footprint of those journeys will be priorities. Impacts on noise and regional economic growth may be particularly important.

The next step is to generate a broad range of options. This might include widening of motorways, active traffic management, road-pricing, or the construction of new rail capacity either through a conventional (c. 125 mph) or a high-speed (c. 200 mph) line. Equally, the right solution might be a combination of two or more of these. Some radical options (double-deck motorways, Maglevs and dedicated freight links) have been considered and rejected as inappropriate or unaffordable, but others may emerge in the option generation process. Value for money will be a key consideration.

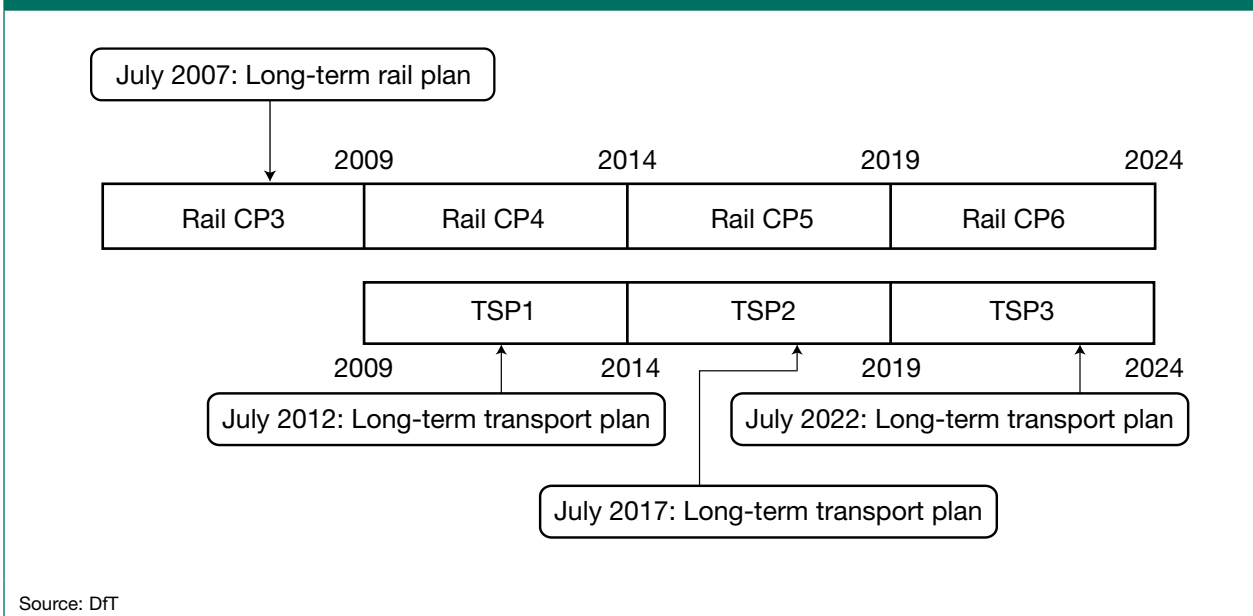
Applying the new approach to the Manchester-Birmingham-London corridor *(continued)*

The right mix of solutions requires an understanding of the origins, destinations and purpose of goods and people movements through the corridor. We need this data – and a transport model capable of processing it – to establish how transport demand will be changed by the policy options considered. Some types of trip will be more readily transferable from one mode to another (air to rail, for example). The modelling needs to be good enough to pick up small shifts from road, which could have a big impact on rail, as the ‘minority mode’. And the analysis will need to look at both medium- and long-term CO₂ implications.

Making a success of this sort of cross-modal analysis of options will not be easy, but it is clearly necessary. We cannot take sensible decisions on one mode without understanding the implications for the others. We will apply a similar approach on other key route corridors, starting with consultation on the key challenges, as described in paragraphs 5.6 to 5.10.

4.17 The proposed alignment between the existing planning cycles for the railway (known as “control periods”) and the new cross-modal planning cycle is shown in Figure 4.2.

Figure 4.2: Proposed alignment of transport strategy periods (TSPs) and rail control periods (CPs)



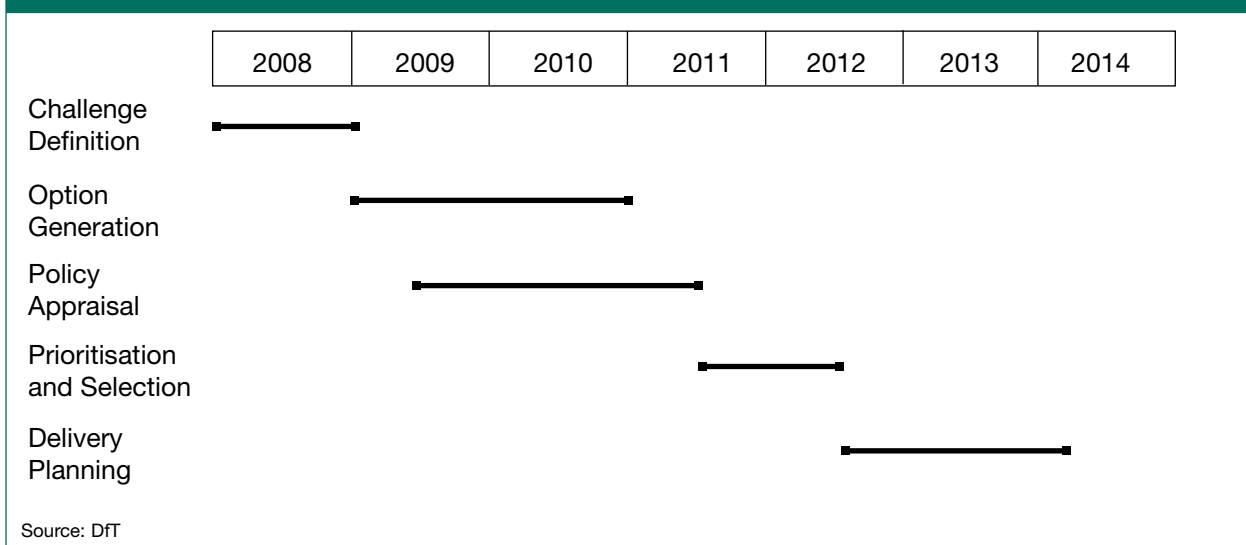
Source: DfT

4.18 This approach will provide clarity to all those engaged in defining transport challenges and assessing options about when they can expect decisions. It will also ensure that the full range of interventions and investments can be properly tested to deliver the best value-for-money outcomes for the nation’s transport. Figure 4.3 sets out an indicative timetable for how the 2012 forward transport plan would be developed.

4.19 To do so, however, two practical issues need to be recognised and addressed:

- Some investments have an even longer timescale than 10 years: for example, the bulk of the cost of the new inter-city trains will fall beyond 2019, yet the decision to proceed needs to be taken in 2009 if the first trains are to be available to enter into service when required in 2015. Government therefore clearly needs to consider the affordability of decisions which may have impacts beyond planning horizons.
- In order to ensure that such allocations of future funding do not undermine the gains from bringing other decisions together wherever possible, the Government will need to ensure that sufficient funding remains unallocated in each five-year period to enable genuinely cross-modal decisions to be taken as plans are finally committed.

Figure 4.3: Indicative timetable for preparation of 2012 forward transport plans



4.20 In order to support this approach, it would be open to the Government to illustrate its funding for future five-year periods in a new way, avoiding modal funding allocations five and ten years out, and distinguishing between schemes under development and those in the process of implementation.

- 4.21 While decisions relating to the national, and in some cases the international networks, can be taken by the Department for Transport, with input from its stakeholders, the approach for regional networks will need to be slightly different. This is because the Government's policy on local and regional networks is that there should be a strong local and regional input into decision-making to help respond to local challenges and improve sustainable economic outcomes. This is the principle that underpins the Regional Funding Allocation (RFA) and Local Transport Plan (LTP) processes, and the Government is committed to maintaining it as it develops its new strategic framework for transport. It is also an approach which is strongly supported by the Eddington study.
- 4.22 This means that for each five-year period, the Government will set out clearly its policy proposals for the national and international networks, as well as its decisions relating to any exceptional schemes which cannot be accommodated within normal funding structures (such as the recent decision on Crossrail). Alongside this, it will provide a clear indication of the level of funding available for regional and local transport investment and delivery, subject to the right proposals coming forward.
- 4.23 The Government will develop its guidance on how this funding will be allocated to regions and to individual authorities over the coming months, in consultation with stakeholders and building on the existing RFA and LTP processes. This will enable Eddington's proposals for effective transport planning to be implemented at all levels. In line with the conclusions of the Sub-national Review and building on the proposals in the draft Local Transport Bill, the Government will also consider whether there are any opportunities for further devolution of transport planning and funding to sub-regions which are often the engines of economic growth and the level at which economic markets operate.

Improving the supporting analysis

- 4.24 There are tensions and synergies between the Government goals set out in Chapter 2. Different transport options will have different impacts on different goals. The Department for Transport assesses the merits of different options through appraisal processes that consider the nature and scale of these impacts. It uses this information to work out the overall value of an option (total benefits less total costs), and also looks at the ratio of benefits to the costs to the public sector. Some benefits and costs can be robustly monetised, whilst for others the evidence is more uncertain (see Figure 4.4).

4.25 In the benefit:cost ratio (BCR) used in the Government’s New Approach to Appraisal (NATA), the benefits side of the equation covers all of the positive impacts on which a monetary value can be set. It includes benefits to transport users, such as improvements to reliability, safety or journey-time. It also includes benefits to society at large, such as reductions in CO₂ emissions, air pollution or noise. All options are likely to have a mix of positive and negative impacts. For example, increasing the speed limit on an urban road might improve journey-times and reduce CO₂ emissions, but have an adverse impact on safety and noise. The negative impacts are netted off in determining the benefit the option delivers. What we are trying to do is to represent and value the things which people care about.

4.26 The cost side of the equation covers all of the costs to the public sector. It includes the funding provided by the Department for Transport, but also financial contributions from local authorities and other public bodies, plus any impact on tax revenues.

Figure 4.4: DfT appraisal system: how impacts are included

Impacts included in value for money assessment			
Qualitative/quantitative assessment		Monetised values (NATA BCR)	
Areas for development	Some valuation evidence		
Townscape	Wider economic benefits*	Risk of death or injury	Time savings
Water environment		Noise	Operating costs
Accessibility	Landscape	Carbon	Private sector impacts
Social inclusion	Reliability	Physical fitness	Cost to the Exchequer
Integration	Air quality		
Biodiversity	Journey ambience		
Heritage	Regeneration		

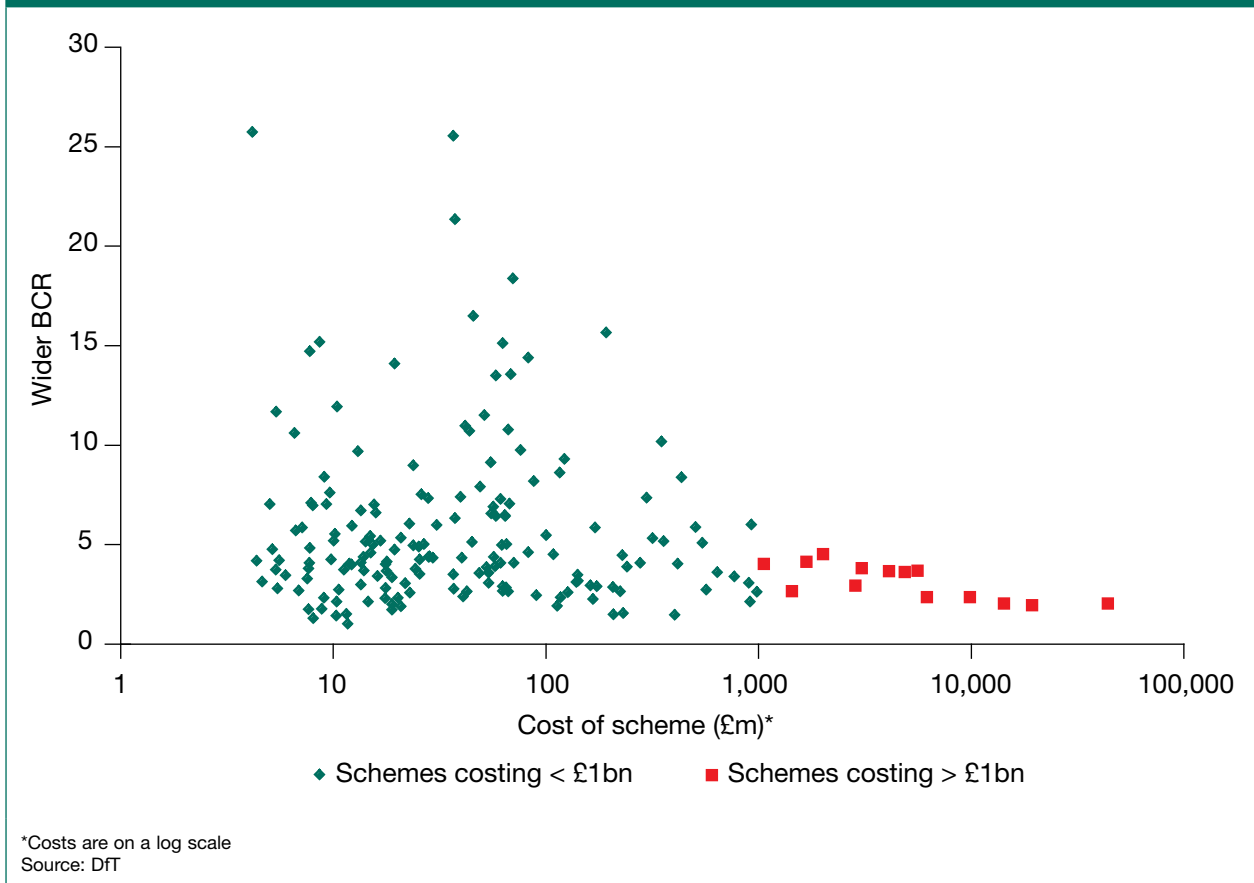
*Reliability and wider economic benefits are monetised in some appraisals.

Source: DfT

4.27 Not all impacts, however, can be easily monetised. So, the value for money assessment also considers whether there are significant non-monetised impacts and how these impacts might adjust the NATA BCR. A high BCR – after taking account of non-monetised impacts – is evidence that an ‘intervention’ is good value for money, and should definitely be pursued if affordable. A BCR of less than 1 is evidence of poor value for money (costs outweigh benefits). Typically, the schemes the Department for Transport is supporting at present have BCRs in the range 1.5 to 5, although some BCRs are much higher.

4.28 The Government is satisfied that the BCR is a useful tool, though it will continue to work to increase the range of impacts that it captures. Eddington endorsed this assessment, and argued for greater weight to be given to the BCR, not least because it helps to ensure that small or incremental improvements (such as cycle lanes, multi-modal freight facilities or new trains), which often have a very high BCR, are not ‘crowded out’ by high-profile mega-projects (see Figure 4.5).

Figure 4.5: Economic returns of smaller schemes relative to larger schemes (greater than £1 billion)



- 4.29 But whilst Eddington acknowledged that the evidence base and methodologies for transport decision-making in the UK are highly developed, there are still challenges posed by the Eddington study and the Stern Review. The existing approach to BCR needs to be refined to meet the new demands that will be placed on it. We need to develop the tool to be assured that it allows for robust comparisons across modes and types of intervention. This will require analytical tools that operate at a more strategic level, as well as the level of the individual project. And it is important that the process of assessment is transparent, and it allows for the uncertainties on estimates of impacts to be clearly presented for both monetised and unmonetised impacts to be fully taken into account in decision-making.
- 4.30 For this reason, the Department is consulting on how its approach to appraisal (known as the New Approach to Appraisal, or NATA) might be revised to ensure that it reflects Eddington and Stern's conclusions, as well as the needs and priorities of passengers and users, and other people who are affected by transport impacts – both positive and negative.

- 4.31 A consultation paper has been published alongside this discussion document, and is available on the Department for Transport’s website at <http://www.dft.gov.uk>. This sets out the Government’s current thinking on the challenges to be addressed as the appraisal framework is reviewed and seeks the views of users and other stakeholders. At the start of next year, we will release some further materials to help people engage with the questions being asked in the consultation, especially focussing on how value for money appraisal can support the policy cycle better.
- 4.32 The Department for Transport has identified the following as some of the key issues that need to be addressed:
- It is easier to set a value on time savings than on improved reliability. However, the evidence from a variety of sources (ranging from the CBI to Passenger Focus) is that reliability is often more important to passengers and freight customers. We therefore need to ensure that the appraisal gives due weight to reliability.
 - Another challenge is to consider whether and how the value of time for freight movements should reflect costs to industry, rather than just the driver’s time (for example, the inclusion of the cost of vehicles and the costs related to delays to the freight carried).
 - Eddington also says that transport has impacts on productivity and competitiveness of the economy that go beyond the benefits to individual transport users. The productivity impacts of domestic transport networks are more straightforward to assess, although there are some unresolved questions at the margins, e.g. about whether travel to work on congested roads or crowded trains has a negative effect on people’s productivity at work. The impacts of transport on competitiveness are more difficult to resolve. For example, there is clear evidence that London’s good international transport links help attract internationally mobile businesses, but it is not easy to set a monetary value on this.
 - There are well-established methods for setting values on most of the impacts that transport has on the economy, on risks to people’s health and safety, and on climate change (where DEFRA has recently updated the guidance on the shadow price of carbon to be used for a tonne of CO₂ emission and for other ‘greenhouse gases’) and on air pollution (where the Interdepartmental Group on Costs and Benefits produced monetary values for a range of air quality impacts earlier this year). The Department has also recently issued guidance on valuing positive health benefits associated with increased physical fitness in the appraisal of walking and cycling schemes, and we are working with CLG to integrate into the appraisal model the wider economic benefits of transport supporting housing growth. However, the scope for taking equality-of-opportunity issues into account is largely unexplored territory.

- The assessment needs to allow for comparison of the different types of intervention. So the methodology must be robust in application, for instance to capital investment projects and to better use or regulation, and to comparison across modes with different financing regimes. For example, the inclusion of impacts on tax revenue in the cost side of the BCR reflects that a reduction in revenue can be viewed as a cost to Government, but it also has the effect that reduction in fuel duty revenues can appear as a cost of interventions that promote lower-carbon modes of transport. We will want to consider the methodology further to ensure that it presents the case for different types of intervention (such as behavioural change projects) in a fair way.
- 4.33 Where we have and can develop robust methodologies to monetise the impacts of transport, there is value in doing so. This puts assessment of impacts on a common basis. And, for stakeholders with a close interest in a specific impact of transport (be it wildlife habitats or social exclusion), it may be reassuring to see their specific concern reflected in this way. We are also working with Defra to help ensure that impact assessments take better account of the natural environment and the services it provides. But where impacts cannot easily be monetised, for example impacts on landscape, biodiversity and accessibility, they can still be taken into account in the VFM-assessment (as is done now). This makes it more difficult, though not impossible, to follow Eddington's advice to "listen to the numbers".
- 4.34 The challenge of ensuring a mode-neutral perspective means that the Department for Transport will also need to update the transport models used for demand-forecasting. The models need to be able to predict the way in which passenger and goods movements through a corridor by different modes will change in response to a wide range of interventions. Equally, the Department has supported the development of a range of local and regional modelling tools to support analysis in urban areas. A business traveller from central London to central Manchester, a family of four heading from Essex to a holiday in the Lake District and a container of exports going from the West Midlands to the Continent may all be using the same route-corridor, but the likelihood that they will switch from road to rail or vice versa is obviously very different. As the importance of analysing these sorts of changes rises, the forecasting tools, data and best practice will need to evolve.
- 4.35 The consultation on improving NATA will also consider the appraisal information needed for packages of measures, including demand management. Through the Department's recent work with local authorities as part of the Congestion Transport Innovation Fund, some advances have been made. Packages of measures, sometimes quite large in scale, are being considered to tackle the most complex urban transport problems. Some of the solutions are innovative, such as road pricing, and the lessons learned for the methods we use have been important. For example, it is clear that appraisal has to recognise the complementarity of interventions with demand management.

4.36 Refining the models and improving the data-collection raises essentially technical design issues. But the same is not true of the BCR calculations and the values used in them. Public valuations already play a big part in the BCR calculation, but there is a broad public interest in getting the BCR tool right. And this is one of the many reasons why the Government believes that this new approach to transport planning also requires a different approach to public engagement.

Engaging with users and other stakeholders

4.37 As well as “listening to the numbers”, Government is clear that it must also improve how it “listens to the people”. Good transport is not a goal in its own right. It is about allowing businesses to operate efficiently, employees to get to work and children to get to school, families to enjoy holidays together, and ensuring that people can enjoy their homes and leisure areas without excessive noise or pollution. A transport system does not work for anyone unless it works for its users. And it will not command consensus support unless it is seen to address the adverse impacts that transport has on climate, health, quality of life and the natural environment as well as the potential positive benefits, for example from cycling.

4.38 The Department for Transport does not come to these issues ‘cold’. It has the views of a wide range of transport user groups as well as those of the transport industry to draw on, alongside extensive research findings. However, there are a number of reasons for thinking that a new approach to stakeholder engagement is required. The Department’s traditional structure is modal, as are most of the strategies it has produced and many of the groups (both of users and providers) who engage most closely with transport issues. The Department recognises that national-level cross-modal planning, of the sort required by Eddington, is more difficult.

4.39 The Departments’s ‘capability review’ found that it was strong on the use of analytical evidence, but several external consultees commented on the need to engage with external views at a much earlier stage in policy-formulation and to maintain dialogue throughout the process. This requires better engagement with regions and local authorities who plan and prioritise transport investment within a broad context of regional and local strategies, and drawing on the work of bodies like Northern Way, whose strongly evidence-based approach has resulted in a better understanding of how connectivity impacts on economic growth in the north and where priorities lie. It also involves drawing on people’s views to inform some highly technical decisions (for example, on approaches to CO₂ reduction) which may seem remote from their experience of transport, but must be influenced by it. We must also ensure that innovation is fully captured through engagement with industry and academia. And we must continue to draw on these views to inform the valuations used within the BCR and VFM assessments.

- 4.40 Chapter 5 sets out how we propose to engage with users, passengers, the transport industry and other stakeholders throughout the process of implementing Eddington, and flags up the questions to which we shall be seeking initial answers in 2008.

Private sector investment

- 4.41 In the interests of making each £1 of taxpayers' money go further, we need to explore the full range of funding mechanisms to ensure that all opportunities to improve the value of our spending, or leverage additional funds, are identified. In particular, in many areas of the transport industry, we have seen the benefits of delivery partnerships between the public and private sectors. Also, in recent years, pension funds and other institutional investors have extended their capacity to invest directly in infrastructure assets, with many of them focusing on transport sectors such as ports, airports, roads and urban transport systems. This is an international trend of medium-term significance which we need to take into account as we maximise investment in support of our transport policies.
- 4.42 Most transport sector investment is, and always has been, provided by the private sector. We believe that there is further potential, as yet untapped, for involving the private sector in improving Britain's public transport systems and networks, and for leveraging private finance to supplement the substantial investment provided by Government programmes, to the benefit of our economy and society. We intend to evaluate and pursue these opportunities enthusiastically, across all transport modes.
- 4.43 One key strand of this is the scope for greater involvement of the private sector in the delivery of projects, building on experience with the M6 toll road and of the use of PFI for national road schemes, as well as a range of local transport investments (such as street-lighting), the London Underground public-private partnership and the extensive role of the private sector in rail investments. Although PFI is not the right answer for all projects, in many cases it can offer two important advantages by allowing investment to be paid for as benefits are delivered and by allowing appropriate risk-transfer to the private sector. In order to identify the most appropriate projects for this kind of funding and to attract a range of international infrastructure investors, orderly roll-out of projects is essential. The budget certainty provided by the extension of the long-term funding guideline plus the improved strategic planning framework described in this document will help provide this. The Department will also enter into dialogue with the infrastructure investment industry in order to identify the full range of options for harnessing sustained support for delivery of the Government's long-term transport strategy.

- 4.44 The private sector also contributes to the funding of transport projects through a number of mechanisms related to new development, including cost-sharing arrangements and Section 106 agreements linked to planning approvals. Whilst these ad hoc approaches have delivered substantial investment in transport, the Government is keen to provide greater certainty for developers. Alongside the proposal for a statutory planning charge being brought forward by Communities and Local Government, we will therefore be seeking to engage stakeholders (as detailed in the following chapter), in developing clear principles for transport schemes to govern the split of contributions from public and private sector.
- 4.45 In addition, alongside the Pre-Budget Report, a White Paper was published on Business Rate Supplements, promising legislation to enable local authorities that wish to levy supplements to do so from April 2010. The Mayor of London has already announced he will be using a supplement to help service debt arising from the Crossrail project.

5. First steps

The importance of clarifying objectives and challenges

- 5.1 Chapter 2 set out the way in which we intend to give effect to the transport-planning sequence recommended by Eddington. This discussion document is the first step in implementing that process.
- 5.2 Eddington stressed the need to be as clear as possible about the objectives of transport policy and the desired outcomes and the practical challenges to be addressed, before identifying, appraising and selecting options. Eddington's comments on the risks of not sticking to this sequence are worth quoting in full.

1.138 The importance of good option generation has already been discussed, and in particular I have argued for policymaking that starts with the policy goal or problem, and then assesses a range of solutions that could be adopted in order to address the situation.

1.139 It is evident from my work that, in transport debates across the world, the opposite process can occur. We see situations where the solution develops first – perhaps driven by the prospect of an exciting new technology, aspirations of transforming the economic fortunes of a region, or even simply because a competitor city or country “has one”. The idea rapidly becomes a solution looking for a problem.

1.140 The risk is that transport policy can become the pursuit of icons. Almost invariably such projects – ‘*grands projets*’ – develop real momentum, driven by strong lobbying. The momentum can make such projects difficult – and unpopular – to stop, even when the benefit:cost equation does not stack up, or the environmental and landscape impacts are unacceptable.

1.141 The resources absorbed by such projects could often be much better used elsewhere. The suggested benefit:cost ratios of such projects, although only estimates, are often lower than many other less-exciting transport projects. International evidence collated for this Study suggests that the claimed transformational impacts of such projects are rarely observed, and any speculative assessment of ‘macro-economic’ benefits would involve considerable risk, particularly in view of the large sunk cost investment that would be required. Furthermore, the projects are rarely assessed against other interventions that would achieve the same goals – it can often seem that, unless Government can somehow demonstrate that the project's costs outweigh the benefits, the project should go ahead. In fact, the question should really be are there better ways to achieve the same goals, or are there better uses of the funds to achieve different, but more valuable goals, for the same cost?

5.3 The Government concludes that it is well worth devoting time at the front end of the transport-planning process to ensuring that we set the right objectives and tackle the right challenges. We are therefore engaging with stakeholders much earlier in the process than Governments have done in the past. We believe that this will result in better planning, built on a more solid consensus than has been the case in the past. The timetable for the next 15 months is set out below and shown in Figure 5.1.

November 2007 to December 2007

5.4 We want to use this period to ensure that all stakeholders understand how and why we are proposing to change the transport planning system.

5.5 The Government Offices will host conferences in each of the nine English regions, where the Department for Transport will explain the proposed new approach to transport planning and how people can become involved in its design or its operation. Anyone with an interest in transport is welcome to attend.

January to April 2008

5.6 DfT teams will undertake an informal dialogue to seek views on whether the goals in Chapter 2 capture all of the interests that a good transport system should advance and to identify the key challenges these goals present. As a stimulus to this dialogue, Annex A presents an initial view of what some of the main challenges might be.

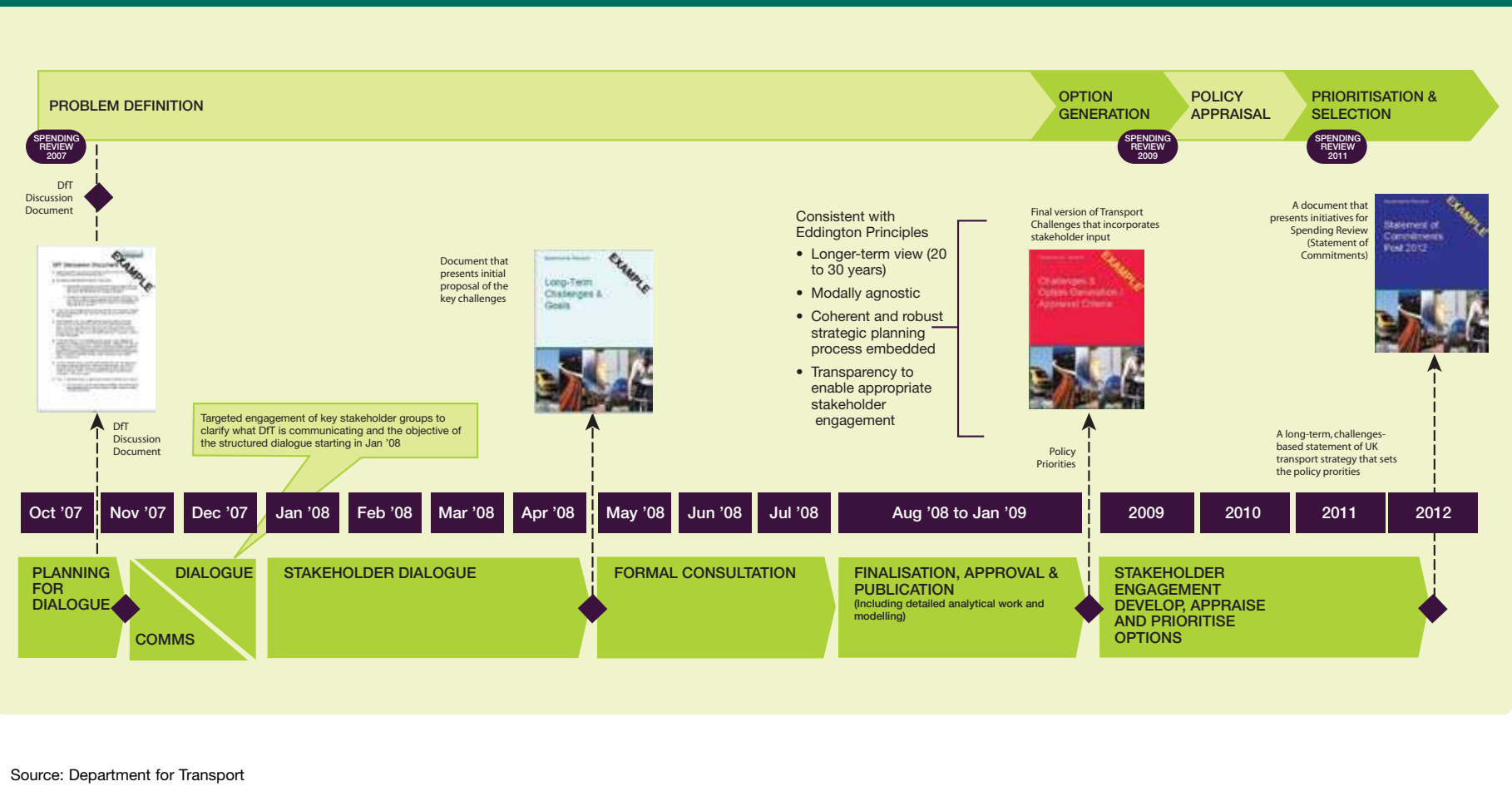
5.7 We will be particularly interested, during this phase, in the views of two main groups. The first comprises those who are directly affected by transport – this includes transport users, employees and companies which depend on transport for their success, as well as those who have to endure the adverse impacts of transport or feel that current transport provision neglects their needs. The second group comprises colleagues in devolved administrations, local government and regional bodies, who face the same transport planning issues that we do. The questions for discussion include:

- Are there important aspirations that are not captured in the policy goals in Chapter 2?
- What are the problems or opportunities that need to be captured in the challenges?

5.8 We will also be seeking views on the issues addressed in Chapter 4. The questions for discussion here include:

- Is the alignment of decision-making cycles desirable and achievable?
- What are the priorities for improving our VFM approach to allow genuinely cross-modal decision-making?

Figure 5.1: Proposed stakeholder dialogue and engagement



- 5.9 The first question is addressed primarily to regulators, local authorities and others whose decision-making cycles we would need to align with. The second question raises a mix of issues for experts and non-experts.
- 5.10 The Department and agencies already has an extensive programme of research which covers overall levels of customer satisfaction and underlying attitudes to key policy issues. Increased use is being made of deliberative methods and we will make full use of the existing evidence in gauging the views of transport users. We will also be reviewing how to strengthen our understanding, in conjunction with stakeholders, in order to gain a greater understanding of the end to end journey experience, overall priorities and trade offs.

May to July 2008

- 5.11 During this period, the Government will undertake a formal consultation exercise. We will publish a Green Paper which sets out for comment the Government's proposals on the challenges which it thinks should be addressed in the 2012 transport plan, with suggested quantifiable goals for each challenge wherever practical. The Green Paper will also make proposals on the approach to be followed in generating options.

By December 2008

- 5.12 We will publish a White Paper, setting out our decisions on the objectives and challenges, and on option-generation.

From January 2009

- 5.13 The focus will then shift to generating a range of options to address the challenges on the local, national and international networks. In this phase of the work, the views of transport 'practitioners' will assume greater importance. We will need the input of providers of transport services, suppliers (such as vehicle or rolling stock manufacturers and construction companies) and financiers. Their expertise is critical, because they know what solutions are most likely to be practical and affordable.

Continuing to deliver

- 5.14 As Chapter 3 set out, we already have firm delivery plans and objectives in the short term, before a long term transport plan is published in 2012, resulting from the process outlined in this chapter. We will continue to work with the transport industry, user groups and other delivery partners to implement our short- to medium-term plans, alongside our work with them and others to define the future challenges and policies.

Annex A

Identifying challenges – an initial view

Introduction

- A1 This new strategic process will be driven by the five very high-level goals described in Chapter 2, which will inform the practical decisions on the best package of interventions to improve transport around an individual city or on a particular inter-urban corridor or on access to international gateways, as well as their connectivity.
- A2 The five goals will throw up slightly different ‘challenges’ for local, long-distance and international journeys. We use ‘challenges’ in a neutral sense. It encompasses both problems that have to be overcome and opportunities
- A3 In this annex, we set out an initial view of the key challenges, drawing on existing evidence and past dialogues with users. This view should not be considered an agreed Government position, but is rather provided as a stimulus to further discussion and debate, and to inform the process of dialogue and engagement set out in Chapter 5.
- A4 We have deliberately not attempted to provide a comprehensive inventory of all the challenges, as they will vary substantially between areas. At the end of Chapter 2, we have set out the matrix of markets and objectives that we aim to populate with an agreed set of priority ‘challenges’ during 2008, first in informal discussion with experts and users, then by formal consultation.

Urban, regional and local networks

- A5 Regions and local authorities face many different challenges, and priorities vary extensively. In 2002 the Government agreed with the Local Government Association a set of seven shared priorities, with a shared priority for transport including improving accessibility and public transport, and reducing the problems of congestion, pollution and safety, and a sustainable communities priority which included a number of quality of life issues to which transport can contribute.
- A6 These priorities fit well with the high level objectives defined above. For example, the key challenge under the **productivity and competitiveness** objective is still likely to be reducing congestion and improving accessibility, both to facilitate travel to work and to assist local freight journeys. This means providing a predictable end-to-end journey times, and allowing passengers to travel in reasonable comfort.
- A7 The concept of a ‘predictable end-to-end journey-time’ is best illustrated by a practical example. If a shop opens at 9:30 in the morning, the manager will expect sales staff to be on duty at that time. An excuse that “The bus was late” or “The train was cancelled” might be accepted once a fortnight, but not more often than

that. From the sales staff's perspective, this means that they have to leave home at a time which gives them 90 per cent confidence of reaching their workplace on time (i.e. they are late no more than one day in ten). That may well mean leaving home at 07:30 and arriving, on average, at 08:30. The early departure hour is a disbenefit to staff and the early arrival is no benefit to the shop. The issue is a familiar one to all transport users, especially in the freight sector where operators are forced to plan to take account of unreliable networks, resulting in extra costs for consumers. The two important messages from users are that an improvement in predictability of journey-time matters more to them than a reduction in average journey-time and that transport planners and providers need to think in the same 'end-to-end journey' terms that transport users do.

- A8 The impact of local travel on **climate change** is very significant. In 2006, 57 per cent of all trips (excluding cycling and walking) were of less than five miles, including 56 per cent of car journeys. Furthermore, as well as people making many more short trips than long ones, those trips tend also to be less energy efficient as cars do fewer miles-per-gallon in urban conditions than they do on motorways and their fuel efficiency is lowest when engines 'run cold'. Balancing this, there is much more scope in urban areas to reduce the need to travel by locating services closer to users (which also has important social inclusion benefits) and to promote cycling and walking as alternatives to the car (which also has health benefits).
- A9 Although working patterns may change and home-working increase, most people face the prospect that travel to work is likely to be an inescapable fact of life for the foreseeable future. Facing commuters with the true carbon cost of this travel will achieve little (and will be understandably resented), if they have little real choice about reducing the length of their journeys or switching mode. The location of housing relative to transport connections and jobs is therefore critical. The Department for Transport and colleagues in Communities & Local Government are working together to ensure that the additional 240,000 houses a year proposed in the recent housing Green Paper are located as close as possible to workplaces or to existing transport (preferably public transport) links. It is obvious that the climate change benefits of the new Eco-Towns, for example, will be eroded or negated if the people who live there have no alternative but to travel long distances to work by car.
- A10 We also need to consider changing patterns in the way logistics and freight services are consumed by people. Increased levels of internet shopping with home delivery and the increased consumption of imported goods (reflected in observed increases in the number of containers handled at UK ports) are two contemporary examples of major shifts in distribution patterns that are expected to have significant impacts in the medium term.
- A11 The **safety, security and health** objective also poses a range of challenges on these networks. Some of the groups most vulnerable to deaths and serious injuries from road accidents, such as those who are economically disadvantaged, are concentrated in urban areas. Most car drivers involved in road accidents are

within 5 kilometres of their own home at the time. Cycling and walking have health benefits, but cyclists and child pedestrians are amongst the groups most vulnerable to road accidents. Urban areas are where transport has the biggest adverse impact on health via air pollution, but many measures to reduce the carbon footprint of urban transport (by promoting public transport or smoothing the flow of road traffic) will also have air quality benefits.

- A12** Although the focus of international terrorism has been on international transport (particularly aviation), there has also been an increase in terrorists' willingness to attack urban rail or metro targets – the 1995 Tokyo Sarin attack, the 2004 Madrid rail bombing, the 2005 London tube bombs. Crime is a serious issue for urban public transport, and the fear of crime is a deterrent to the use of public transport (particularly in the late evening) on urban and rural routes alike.
- A13** The impact of transport on **quality of life** can differ depending on several factors. For example, some sources of noise are reduced when vehicles are travelling at lower speeds on urban networks, but on the other hand more people are likely to be affected in urban areas. A major challenge in terms of improving the lot of transport users is providing commuters with 'reasonable comfort', which involves some difficult decisions on how long it is reasonable to expect people to stand and what is an acceptable amount of space per passenger to provide. The ideal is that all buses and trains are full (furthering the climate change objective) and no bus or train is crowded. This ideal is unachievable in practice, but transport planners will want to get as close to it as possible.
- A14** Under **equality of opportunity**, there are some obvious challenges in terms of urban deprivation and rural accessibility. The rural issues are particularly difficult. The disadvantage of not having access to a car is greater in rural areas than urban ones, but public transport provision can both require high subsidy and be inefficient in climate change terms because of the low passenger numbers per bus or train. A sustainable solution will require a clearer consensus on what constitutes a reasonable level of access to services, an increased emphasis on 'home delivery' of services and innovative thinking (learning from best practice around Britain and abroad) on carbon-friendly ways of meeting rural transport needs.
- A15** An issue that distinguishes the urban, local and regional networks from the national and international ones is the extent to which decisions are devolved to local government. For this reason, we will need to engage closely with local government and other stakeholders, including regional bodies, on the challenges and options which should inform national decisions on priorities and resource allocation. We have also recognised the need for greater cross boundary working in and around our major cities and conurbations to ensure that transport is supporting economic growth in a sustainable way. We are providing a stronger framework for local transport, especially in our major cities, through measures in the draft Local Transport Bill; through Regional Funding Allocations; and through incentives for well designed TIF packages. Local Area Agreements, Multi-Area Agreements

and integrated regional strategies will provide a basis for integrating transport considerations with broader questions of economic development, land use and housing. We are also looking for ways to facilitate the development of local rail investment packages; encourage a more strategic approach to local transport plans; and, above all, engage more closely with local stakeholders and listen to their views on what the main challenges are in their areas.

National networks

- A16** The main challenges under the **productivity and competitiveness** objective are to facilitate business travel between major cities and the flow of goods around the country.
- A17** Predictable end-to-end journey time is at least as important for inter-urban travel as it is for travel to work. The time which business travellers have to allow for a door-to-door journey between Cardiff and London is not the average time, but the time that gives them sufficient confidence that they will arrive punctually for their meeting. The higher the risk of a train delay or traffic jam, the more unproductive time they will have to allow. If reliability on a route deteriorates too far, connectivity suffers – for example, the ‘there-and-back in a day’ trip may be possible at average journey-times, but travellers may have to factor in an overnight stay to allow for service unreliability. Freight movements are generally less time-critical than movements of people, but there is still a ‘delivery envelope’ within which goods must arrive. If components arrive late at a factory, manufacturing capacity is lost. If goods arrive late at a shop, sales are lost.
- A18** Congestion is increasing on many motorways. Inter-city rail services are less reliable than local and commuter services. And, although the statistics are less robust, reliability of domestic air services appears to be poorer than for rail. A key source of problems is the sheer number of users – commuters, freight distributors, business and leisure travellers – who all want to use the same parts of the inter-urban network at the same time. Traffic concentrations, on both road and rail, are heaviest in the morning peaks on routes used as approaches to major cities. The Birmingham and Manchester motorway ‘boxes’, the rail approaches to Paddington and Birmingham New Street and the M25 are examples of routes under particular pressure. ‘Network resilience’ (the ability of air, rail and road networks to return to normal service patterns following incidents or disruptions) has a significant impact on reliability, and will become more of a challenge with the increasing frequency of severe-weather events caused by global warming. So does our ability to both manage the day to day operations while planning and delivering ongoing maintenance of networks or increasing their capacity.

- A19** As some impacts of climate change are unavoidable due to past and present greenhouse gas emissions **climate change adaptation** is also an important issue for transport. As a major provider of infrastructure, as well as a regulator and policy maker, we will work with DEFRA as they produce the Adaptation Policy Framework (APF), to co-ordinate adaptation measures across Government. And action has already begun with our transport delivery partners, for example with the Highways Agency now identifying climate risks and vulnerabilities relating to safety and reliability; and Network Rail is developing a climate change hazard-map to identify infrastructure that may be particularly vulnerable.
- A20** The reliability of national networks is probably the biggest contributor to the **equality of opportunity** objective, because of its impact on regional economic growth. There is a strong message from the business community that the quality of a city's transport links to other cities and to international transport connections has a key influence on location decisions. Business trips account for only a small proportion of all travel, but have a decisive impact on where service industries, in particular, are prepared to locate – the risk of being unable to make key meetings with customers, suppliers or financiers is not one that companies are prepared to run. Several RDAs have also identified the quality of freight access to ports as important to the economic prospects of their regions.
- A21** In terms of **quality of life**, the national networks play a key role in personal mobility, which people value highly. The dominant use of the national networks is almost certainly for 'leisure' purposes. Although such trips are generally less time-critical than business travel, there are important exceptions to this (for example, hospital visits or trips to catch flights from airports) and serious delay is a major headache for any traveller, regardless of trip-purpose. Again, maintaining and improving reliability, whilst accommodating demand-growth, is critical.
- A22** The two main negative impacts of national networks on quality of life are on the countryside and on noise pollution. Building new roads or railways or widening existing ones inevitably has an impact on the country through which it passes, with impacts on landscape, soundscape and wildlife habitats. These are important considerations when the VFM of different options is being appraised, but also at the option-generation stage. Other things being equal, a national network solution which avoids land-take will be preferable. National networks tend to create different noise problems from local networks. For example, because of the higher speeds at which vehicles tend to travel on a national network there is likely to be more tyre-noise from vehicles on motorways and more aerodynamic noise from trains. Preliminary results from the noise-mapping exercise suggest that the problem is most acute where national networks enter urban areas.

- A23** Customer expectations of service-quality will increase, and are higher on the longer trips that are made on national networks than on more local trips. There is a higher premium on comfort, convenience and the ability to use travel time productively. Accurate real-time information is also important, so people can adjust their travel or route plans, although it is no substitute for improved reliability.
- A24** In terms of **climate change**, our national networks produce a lower share of CO₂ emissions than the local and international networks. This is partly because they account for a small proportion of trips, and partly because energy-efficiency is better. The biggest improvement to CO₂ performance of national networks will probably come from improving the energy-efficiency of cars, lorries and trains. Other considerations are the maximum speed at which vehicles travel and avoiding alternating periods of acceleration and deceleration. A driver doing a steady 60 mph along a motorway is likely to get to the destination sooner, more safely, less stressfully and with a lower carbon footprint than a driver who proceeds at 80 mph from jam to jam.
- A25** National networks perform relatively well in **safety, security and health** terms. In comparison with the other transport networks, inter-urban links have lower levels of accidents. The higher speeds of national networks increase the risk that an accident will have fatal consequences, but this is more than offset by other factors, such as the exclusion of pedestrians and cyclists from motorways and the prevalence of 'grade-separated' junctions, rather than traffic-lights or roundabouts. There is generally a much lower risk of crime and terrorism than in urban areas. And emissions are less likely to have adverse health impacts in the countryside, where they are rapidly dispersed, than in heavily built-up areas.
- A26** Future quality of life challenges will be to ensure that specific network modes continue to provide an acceptable level of service quality, whether through even better information to inform choices, or through meeting the ever increasing standards expected by passengers and travellers.

International networks

- A27** Our international networks are the routes through which international traffic flows. They comprise our ports, airports and the Channel Tunnel, together with the approaches to them. There is an overlap here, because some routes (the A14 or Channel Tunnel Rail Link, for example) cater for both local and international traffic, just as airports serve domestic and international routes.

A28 But we believe it is important to think separately in terms of international networks, because they make a critical contribution to the **productivity and competitiveness** of our economy. Eddington concludes that our survival in an increasingly competitive global market will turn on our success in exporting services and high-value manufactures to pay for imports of raw materials and lower-value goods. The international gateways through which we import and export are therefore vital. No amount of effort to improve our local or national networks will preserve our competitive position if our international networks let us down. This is less obvious for services than for manufactures, but just as true. Business travel by air (and by rail for nearer destinations in Northern Europe) is not a 'luxury' that we can somehow afford to dispense with, but the means by which our services get sold abroad. Poor international networks add to the cost of doing business, and are a powerful disincentive to inward investment.

A29 Eddington confirms that we start from a relatively strong position:

“Heathrow is the best connected international airport in the EU. Although the number of destinations served by some regional airports is below the EU average, the UK has four cities amongst the top 20 best-connected cities in Europe – more than any other country. Nearly two-thirds of the UK's 73 large towns and cities are within an hour's free-flow travel time of a major international airport; and the ten biggest UK ports on the British mainland all have rail connections to the main interurban rail networks.”

The challenge is to maintain and improve our position in the face of the continued growth in international trade in goods and services.

A30 As with local and national networks, it is important to think about journeys and goods-movements in end-to-end terms. For instance, the flight from Heathrow to Frankfurt lasts only 1½ hours, but the office-to-office journey-time from the City to central Frankfurt will be closer to 5 hours. For outbound passengers, delays can occur on the journey to the airport, at check-in and at security, as well as to take-off (where 28 per cent of departures from Heathrow are late by 15 minutes or more). For the inbound passenger, there can be delays whilst the plane circles waiting for a landing-slot, in securing access to a ramp, at immigration, at baggage reclaim and on the journey into the city. These are factors that the individual business traveller has to take into account when deciding how much time to allow for the journey, and which internationally mobile companies take into account in deciding whether to base themselves in the UK.

- A31** For freight arriving by sea, the maritime leg of the journey will be the longest in terms of duration, but congestion at the port or on the surface access routes serving it can sometimes have the greatest impact on predictability of arrival time at the UK end-destination. As growth in container and other traffic continues, these issues are likely to be exacerbated, particularly at peak times for retail businesses, such as the period before Christmas. It is also important to note that, whilst airfreight accounts for only 5 per cent of imports and exports by tonnage, it accounts for about a quarter of visible trade.
- A32** Our conclusion is that the challenge for international networks is essentially the same as for local and national networks, i.e. it is about improving the predictable end-to-end journey-time. The key differences are the criticality of international links to a trade-dependent island and the fact that the demand-growth forecasts (particularly for business travel and container traffic) are particularly high.
- A33** In terms of the impact on **climate change**, the positions of air, sea and international rail transport are very different. Although it is difficult to obtain hard statistics, sea transport is clearly one of the most carbon-efficient means of moving goods and carbon emissions from international shipping have been fairly constant since 1990, whilst rail is a comparatively carbon-efficient means of moving people. The main climate change challenge lies with aviation. Although the aviation sector is seeking to improve fuel efficiency through new technology and more efficient operations, aviation emissions are forecast to continue rising, reflecting large continued growth in air travel. The Government is clear (as is the Eddington study) that the principal solution to this international challenge is emissions trading, but there may be options that help accelerate the pace of change. And there is, of course, the need to find the best solution to access to and from ports and airports.
- A34** In terms of **safety, security and health**, the picture is mixed. Risk of accidents to passengers is very low – air travel, in particular, is one of the safest modes of transport. Ensuring that levels of operational safety remain high is, however, of ongoing importance for both staff and passengers of the maritime and aviation industries.
- A35** Security is a more formidable challenge. International passenger transport – particularly aviation – has long been a primary terrorist target. September 11 made this an acute issue and the alleged plot to attack aircraft over the Atlantic in the summer of 2006 reaffirmed the terrorist interest. In an increasingly global security environment, it is becoming ever more important to adopt an international approach to transport security, where applicable across all the modes, making use of international negotiations to mobilise cooperation and raise standards globally. This strengthens UK bilateral and multilateral relations, with the aim of achieving better security for UK travellers and transport operators overseas and harmonisation of international security measures and programmes.

- A36** International networks have a major impact on **quality of life**. Around 44 per cent of the population take an international leisure flight each year, and it is clear that people set a high value on foreign holidays and the ability to visit friends and relatives abroad. Even in a world where we have to achieve a 60 per cent reduction in carbon emissions, many people would probably regard foreign travel as one of the ‘carbon luxuries’ they were keenest to protect. The other, less obvious impact of international transport is on the range of produce and goods now available in our shops, which would not be possible without an efficient international freight system.
- A37** International networks also have negative impacts on quality of life, of which the most significant is probably aircraft noise. Although nobody would under-estimate the noise-nuisance from aviation, the trends here are positive, reflecting the progressive tightening of aircraft noise certification standards since the 1970s. Both port and airport developments can also have negative impacts on natural habitats and biodiversity. These should be minimised wherever possible.
- A38** Finally, international travel faces the same challenge of rising customer expectations as the domestic markets. Business and leisure travellers alike judge their end-to-end journeys not only in terms of reliability, but also by its comfort and convenience, and the quality of information provided to them. The quality of the ‘passenger experience’ is primarily a matter for airports and airlines, but it is clearly strongly influenced by factors not wholly within their control – airport capacity, the quality of connections to airports and the measures needed to counter terrorist threats.
- A39** Under **equality of opportunity**, airports are generally one of the best designed parts of the transport system in terms of facilitating access for people with mobility problems, and residual problems tend to be at the interface with public transport services to airports. Accessibility of international transport links – both ports and airports – is identified by RDAs and other regional stakeholders as critical to their economic growth prospects. Eddington recognises that this aspect of international connectivity is important. The challenge is to identify economically efficient ways of delivering it. These are more likely to involve improving access to ports and airports than redirecting aviation or shipping movements, which is not (in any case) within the gift of either central or local government.



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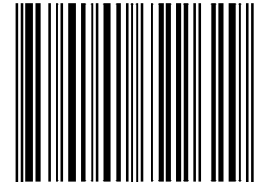
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ISBN 978-0-10-172262-9



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