

Delivering a Sustainable Transport System: Main Report

This document extends to Wales and Scotland in so far as it covers our UK policy responsibilities for regulation of aviation and shipping, and some aspects of road traffic regulation, such as vehicle licensing. It also covers marine, air and rail safety.

With certain exceptions, such as safety, rail policy is a devolved matter for Scotland, so the geographical scope of the document is primarily limited to England and Wales, recognising the powers of the Welsh Assembly Government in relation to Welsh and cross-border services.

It does not cover roads in Wales or Scotland, transport funding programmes administered by the devolved administrations, or transport services which operate solely within Wales or Scotland.

Its proposals do not extend to Northern Ireland.

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Department for Transport
Great Minster House
76 Marsham Street
London SW1P 4DR
Telephone 020 7944 8300
Website www.dft.gov.uk

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Foreword



In my lifetime, transport has transformed people's lives for the better. The range of goods available on supermarket shelves and in e-catalogues has increased beyond recognition. Low-cost air travel, bargain rail-fares and the reducing cost of motoring have expanded people's horizons. Safety has improved, and we have virtually eliminated emissions of lead and carbon monoxide. But there are also obvious problems. Our roads, railways, ports and airports have become more congested. People have become more concerned about noise and about impacts on the natural environment. And, of course, the carbon footprint of transport has risen inexorably.

In last October's *Towards a Sustainable Transport System (TaSTS)*, we defined our transport goals, explained the actions already being taken or planned to advance them, and set out the approach we intend to take to planning the additional measures needed in 2014–19 and beyond. We are now ready to take the next step on TaSTS – the formal consultation on the challenges that will drive the planning process and on network boundaries.

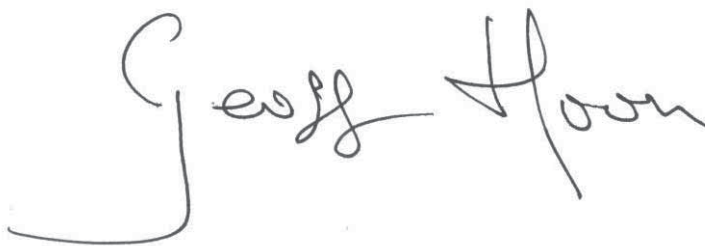
When *TaSTS* was published, economic prospects were good. Today, the global economy is in trouble. Governments, companies and households across the world have to think harder about their priorities. In the UK, we need to support people and businesses through the downturn, and help them emerge stronger on the other side. We have thought hard about transport's contribution to this.

The Government remains committed to investment and to tackling the problems of congestion and crowding. The Eddington study warned that congested cities, crowded trains, delays at ports and queues at airports are not just a nuisance to individual travellers. They are also a tax on the productivity of our businesses and a deterrent to inward investment. If we don't tackle them, they will become a brake on economic growth and on employment.

We still want to cut transport's carbon footprint. It is wrong to think that, in a time of economic difficulty, we can put the climate change agenda on the back burner for a while. We cannot. Global warming requires urgent action. And the Stern report leaves no doubt about the massive economic price we would pay if we failed to address it. But Stern also stresses the importance of tackling climate change in the most economically efficient manner. That means preserving freedom of choice, facing people with the true carbon cost of those choices, forcing the pace of technological change, and helping people reduce their need to travel or switch to lower-carbon modes. It does not mean rationing transport demand by constraining the capacity of our transport networks.

We remain committed to serious long-term transport planning, as set out in *TaSTS*. This is based on specifying clearly the challenges to be addressed, looking cross-modally at a range of options, and backing the solution that has the best fit against our five transport goals and delivers the best value for money. It is based on engagement with stakeholders throughout the process. And it is based on a realistic recognition that we are planning for an uncertain future. In asking taxpayers to support a major transport investment programme, we must be able to assure them that we are backing the best solutions. Given the urgent need to stimulate economic growth and cut greenhouse gas emissions, we shall accelerate the pace of this work, and will start by investigating options for rail electrification, managed motorways and the case for new railway lines. But we shall not cut corners.

We want to continue the debate with you on the fundamentals of our long-term planning system so that they deliver real improvements to this country's transport system. I encourage you to engage with us through this consultation document and help shape the future of our transport system.

A handwritten signature in black ink that reads "Geoff Hoon". The signature is written in a cursive, flowing style with a large initial 'G'.

Rt Hon. Geoff Hoon MP
Secretary of State for Transport

Executive summary

1. Transport plays a key role in all our lives. It has transformed our outlook and has had a massive impact on our quality of life: from the first voyages in the 16th century of sailors circumnavigating the globe; to railway lines spanning the great continents of Europe, America and India in the nineteenth century; to the huge expansion of personal mobility and freight travel in the last century. In our own country, it enables 24 million commuters to get to work every day and delivers five million tonnes of freight every day. It can also affect people's lives in other ways, such as noise, accidents and, increasingly, through emissions of greenhouse gases. Enabling transport to deliver the most benefit to our lives, and to those of future generations, requires careful planning, based on a clear analysis of customer need. Our response needs to be cross-modal and involve not only infrastructure improvements but also innovation and behavioural change.
2. We outlined our proposed approach to long-term transport planning in our publication *Towards a Sustainable Transport System*, which we published in 2007, in response to the Eddington study and the Stern review. This document explains how we are putting this into action in a way that both tackles our immediate problems and also shapes our transport system to meet the longer-term challenges that are critical for our prosperity and way of life.
3. The document outlines our five goals for transport, focusing on the challenge of delivering strong economic growth while at the same time reducing greenhouse gas emissions. It outlines the key components of our national infrastructure. It discusses the difficulties of planning over the long term in the context of uncertain future demand and describes the substantial investments we are making to tackle congestion and crowding on our transport networks. It sets out how we are approaching this through the new National Networks Strategy Group, which we illustrate with the conclusions from our analysis of the London–Manchester transport corridor and container freight. It covers our approach domestically and internationally to tackling greenhouse gas emissions from transport. Finally, it sets out the first steps of our future plans for investment to 2014 and beyond.

Our goals

4. We have already set clear goals that, as Eddington emphasised, take full account of transport's wider impact on climate change, health, quality of life and the natural environment. We want our transport system:
 - to **support** national **economic** competitiveness and **growth**, by delivering reliable and efficient transport networks;
 - to reduce transport's emissions of carbon dioxide and other greenhouse gases, with the desired outcome of **tackling climate change**;
 - to **contribute to better safety, security and health** and longer life expectancy by reducing the risk of death, injury or illness arising from transport, and by promoting travel modes that are beneficial to health;
 - to **promote** greater **equality of opportunity** for all citizens, with the desired outcome of achieving a fairer society; and
 - to **improve quality of life** for transport users and non-transport users, and to promote a **healthy natural environment**.
5. These are enduring goals. All are important for building the sort of society we want to live in. We expect to be able to make progress against all five, but are well aware that there can sometimes be tension between the different goals when considering decisions about future investment. In particular, supporting economic growth while reducing greenhouse gas emissions is likely to be the most challenging to deliver in parallel, at least in the short term.
6. That said, we expect there to be a strong synergy between different goals. For example, measures that improve the links between cities will also benefit the economies of the surrounding regions and help to reduce regional economic imbalance. Measures that encourage modal shift to public transport, cycling and walking are likely to make a positive contribution to economic growth (by tackling congestion), reducing greenhouse gas emissions and enhancing the local environment, as well as improving public and personal health. With proper planning there is no reason why a package that includes new infrastructure need have an adverse impact on climate change, quality of life or the natural environment.

The biggest challenge: tackling climate change and growth together

7. The Government has committed to a reduction of at least 80 per cent in greenhouse gas emissions by 2050 compared to 1990 levels and is also committed to demanding overall targets for 2020. In this context, the pressing need to reduce transport's greenhouse gas emissions (primarily CO₂) is clear. We are developing a specific strategy for transport to address this goal, while also supporting economic growth. We will work closely with other Government departments to identify and exploit synergies, for example with measures to promote low carbon business opportunities.
8. For domestic transport, we shall be looking to maximise the contribution from improving the carbon efficiency of all modes of transport, encouraging behavioural change and supporting the provision of lower-emission transport. This will support freedom of choice about when and how to travel. Moreover, we can expect further progress towards our 2050 destination from road and rail electrification and the decarbonisation of electricity generation. In this timescale, non-transport factors – particularly land use planning – can also have a significant impact on the 'what, where and how' of transport demand.
9. There is no reason why we cannot tackle emissions and achieve continued economic growth. The basic connectivity of the UK transport network is good, but there are acute congestion and crowding problems in key urban areas, on inter-urban corridors and at international gateways, for which we pay an economic price. Improving reliability and reducing congestion will be a priority. The worst option of all – stop-start traffic and gridlock on our roads – is bad for the economy, climate change and our quality of life. We will also want to consider improvements that enable people and freight to shift to lower carbon modes of transport such as the electrified railway. The need to increase capacity in some areas will require us to consider a range of solutions, for example whether any new rail lines, including high-speed rail, or improved road capacity, may be needed along certain strategic transport corridors.

Planning for uncertainty

10. Transport planning can be a very long-term business, and we need to balance the need to provide a stable climate for investment with the need to cater for demand uncertainty. Over the short to medium term, we can be more certain about the nature and scale of movements of goods and people on our transport networks. However, over the long term we can expect big changes that will affect how we live and work, and how we use transport. For example, the decision on where new housing is created has clear implications for the transport infrastructure required to support housing. It is particularly difficult for planners to predict the scale and

pattern of demand for transport. We cannot simply extrapolate current trends, as the reversal in the long-term decline in rail demand over the last ten years shows. Rather, we must understand the drivers of demand and how they are expected to evolve. For example, over the longer term, trend rates for different modes of transport may be heavily influenced by external factors such as technological change, oil prices and our transport and land use policies. Equally, this potential for radical change also means that we have the opportunity to develop new solutions for some of our longer-term problems. This means that we need to plan for a range of scenarios, as we have done in both the air transport and rail White Papers.

11. Despite this uncertainty about aspects of what the future may be, we have a pragmatic strategy for moving forward. We will tackle immediate priorities in ways that, as far as possible, also move towards our five underlying goals. Where we have identified a clear requirement, we will continue to tackle longer-term issues as well, while seeking to build in flexibility to adapt to changing circumstances and exploit opportunities, for example from new technology.

The national framework

12. Our future transport system is not just a matter for government. Although we have responsibility for many crucial policy and investment decisions, most delivery will be through local and regional authorities and the private sector. Government's central responsibility is to ensure that there is a clear strategic framework that reflects our national goals, within which our delivery partners and business have the confidence and certainty to develop their own investment plans. A framework of this sort also allows local government, the transport industry, the wider business sector and not least the individual citizen to plan their lives and work.
13. We are developing a number of overarching policies – for example on safety and emissions reductions – that will advance our goals whatever the precise shape of the future transport system. So far as infrastructure is concerned, our focus is on maintaining and improving the connectivity of a national strategic infrastructure that is critical for the functioning of our transport system as a whole. This strategic infrastructure is made up of a network of 14 national transport corridors connecting our 10 largest conurbations and 17 international gateways and is critical for economic success.

Putting strategy into action

14. We have a clear set of priorities until 2014. There is a significant programme of investment underway to tackle issues such as congestion and climate change and to provide the infrastructure needed to support future prosperity. In the longer term, wherever we can be clear about future requirements we will press ahead with decisions to address longer-term policy and infrastructure needs. Despite the current economic climate, we are planning today so that our transport infrastructure supports economic growth and for more ambitious emissions reduction, while at the same time looking for ways in which transport can contribute towards improved health, greater equality of opportunity and better quality of life and enhancement of the natural environment.
15. Our priority to 2014 is making better use of the existing network, combined with a targeted programme of improvements to improve capacity, reliability and safety in the most congested areas. Next year we will start the generation of options for investment for the period 2014–19 and beyond and we are publishing today a consultation document on aspects of the process for generating options in the future. This seeks views on our definition of the challenges, and on the extent of the transport networks that our strategy will cover.
16. We are confident that the strategy, plans and decisions set out in this document will enable us to achieve our fundamental purpose of transport that works for everyone by delivering our five transport goals. In particular, it will enable us to meet the twin challenge of sustaining a prosperous and growing economy and achieving our challenging emissions reductions.

1 Our goals

- 1.1 Transport brings great benefits to us all. Our prosperity and many aspects of our quality of life depend on it to a greater or lesser extent. Transport can, however, have locally adverse impacts on people and the environment and globally through its greenhouse gas emissions. Our objective is a modern transport system that works for everyone and is truly sustainable, by continuing to provide the benefits and minimise the negative impacts.
- 1.2 This ambition was set out in October 2007 in *Towards a Sustainable Transport System*.¹ This set out the Government's response to the Eddington transport study² and the Stern review³ on the economics of climate change. It also outlined both our immediate plans to 2014 and our proposed approach to the longer term. This document explains how we are putting that approach into practice through a strategy that both tackles our immediate problems and also shapes our transport system to meet the much longer-term challenges that are critical for our prosperity and way of life. We are already putting that strategy into action and building on existing policy.
- 1.3 We begin with the essential starting point for any strategy: a set of clear underlying goals to guide decision makers.
- 1.4 Transport is not an end in itself. It facilitates (or constrains) our ability to achieve wider aims. In *Towards a Sustainable Transport System* we identified five very broad goals that, between them, captured the full range of Government objectives that can be furthered by transport. In particular, as Eddington emphasised, they took full account of transport's impact on the climate, health and our quality of life. We consulted informally with over 250 stakeholder organisations on our goals and approach at the start of this year. The responses we received were very supportive. We have now refined these goals and they will be the basis on which we build future transport and infrastructure policy.

1 www.dft.gov.uk/about/strategy/transportstrategy/pdfsustaintranssystem.pdf

2 www.dft.gov.uk/about/strategy/transportstrategy/eddingtonstudy/

3 www.hm-treasury.gov.uk/stern_review_climate_change.htm

Five goals for transport

1.5 Our five goals for transport are:

- to **support** national **economic** competitiveness and **growth**, by delivering reliable and efficient transport networks;
- to reduce transport's emissions of carbon dioxide and other greenhouse gases, with the desired outcome of **tackling climate change**;
- to **contribute to better safety, security and health** and longer life-expectancy by reducing the risk of death, injury or illness arising from transport and by promoting travel modes that are beneficial to health;
- to **promote** greater **equality of opportunity** for all citizens, with the desired outcome of achieving a fairer society;
- to **improve quality of life** for transport users and non-transport users, and to promote a **healthy natural environment**.

1.6 Clearly, transport is only one among many factors that can contribute to these goals, and its impact and its importance relative to other factors can vary considerably. We want to focus our attention on the areas where transport can make the most difference. As a result of further analysis and consultation with stakeholders, we have looked at each goal and identified a number of key transport challenges. The results are outlined below.

Support economic growth

1.7 The Eddington study demonstrated that there 'has been a compelling link between the transport system and prosperity throughout history' and that this continued to hold true for the UK. Transport's key economic role today (and in the future) is to support the success of the UK's highly productive economic centres in the global marketplace and to enable the efficient movement of goods and people.

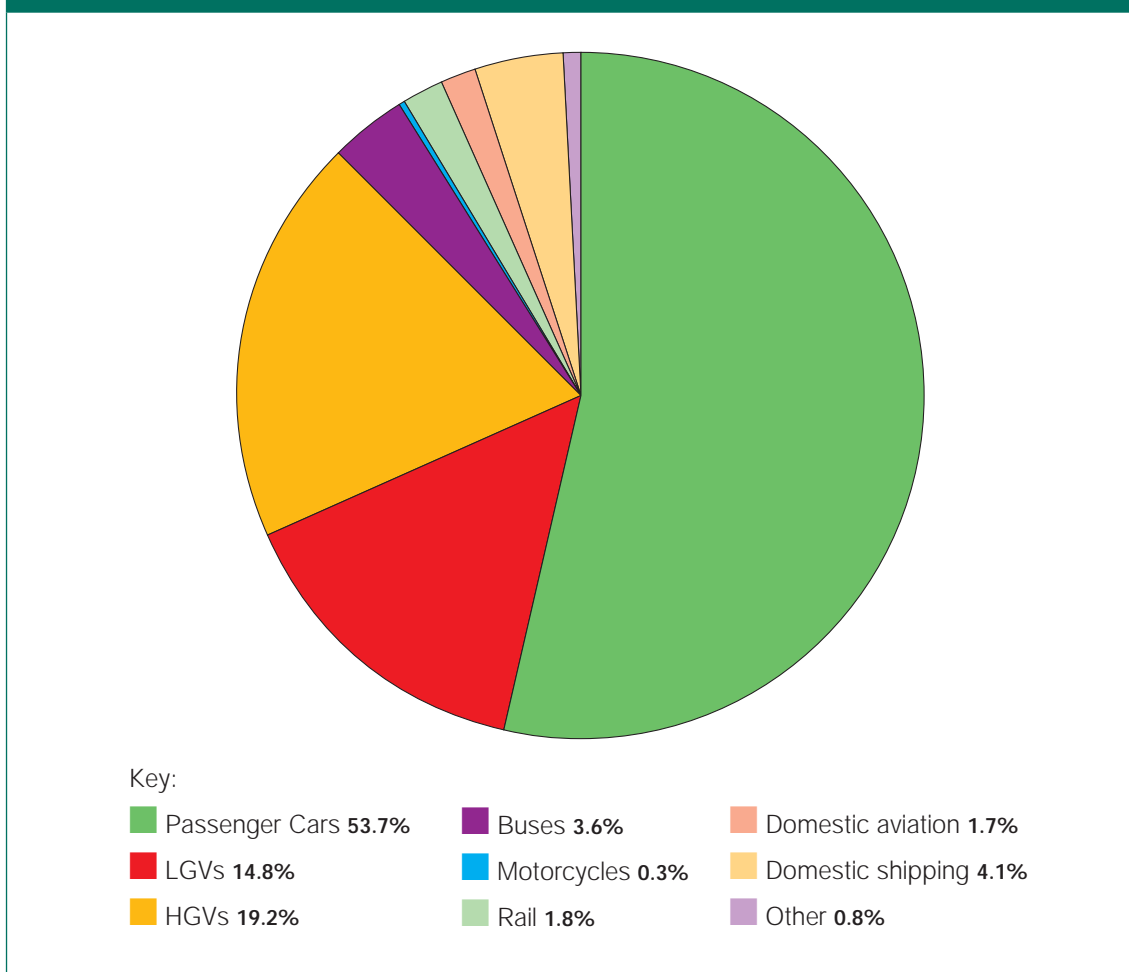
1.8 Eddington also concluded that, while the basic connectivity of the UK transport network is good, congestion and unreliability at certain places at certain times of the day constrain our economic growth. He recommended that our focus should be on improving the performance of existing networks, by targeting additional capacity on where this is needed to meet growing demand. We need to co-ordinate our plans to manage new demand. For example, the Government's plans for a significant expansion of new housing will need to be co-ordinated with the planning of the associated transport infrastructure, to avoid the risk of more congestion and greater unreliability.

- 1.9** Reliability is important to all transport users – for business and freight as much as for commuters and for leisure journeys. Indeed, for business, improving journey reliability will generally have more economic benefit through reducing lost productive time than minor improvements in average journey times, although the potential for reducing journey times may be more significant on some routes.
- 1.10** There are two other important strategic criteria that will guide our choices about networks: the connectivity of the transport system as a whole that allows people to get to work, schools, hospitals and to access a wide range of services and allows the freight sector to deliver goods; and its resilience to cope with, and recover from, potential major disruptions from events such as severe weather, the impacts of climate change or terrorism and more gradual but equally powerful factors such as changes in the pattern of economic activity or in people's lifestyles.
- 1.11** We will, however, have to ensure that our plans for developing our networks to meet our economic goal take full account of the need for the transport sector to reduce its greenhouse gas emissions.

Tackle climate change

- 1.12** The Stern Review made it clear that reducing global emissions of carbon dioxide (CO₂) and other greenhouse gases is vital if we are to avert dangerous climate change. In response to this, the Government has committed to achieving at least an 80 per cent reduction in greenhouse gases on 1990 levels by 2050. Transport will be required to contribute towards achieving this ambitious target, and addressing climate change is therefore one of our five goals
- 1.13** This is a significant challenge for the transport sector. Transport is responsible for around half of the UK's CO₂ emissions that are not within an emissions trading scheme (or about 40 per cent of greenhouse gas emissions). For domestic transport, the majority of these emissions come from road transport. In developing a strategy to reduce emissions the measures we take will mainly address CO₂, which represents about 96 per cent of greenhouse gas emissions from transport. Our plans for developing the strategy, consistent with our need to support economic growth, are covered in Chapter 2.

Figure 1.1 Greenhouse gas emissions from domestic transport



Note 1: 'Other' includes Liquid Petroleum Gas emissions (all vehicles); other road vehicle engines, and other mobile sources and machinery.

Note 2: Emissions from rail given above are from diesel trains only, consistent with UNFCCC reporting guidelines.

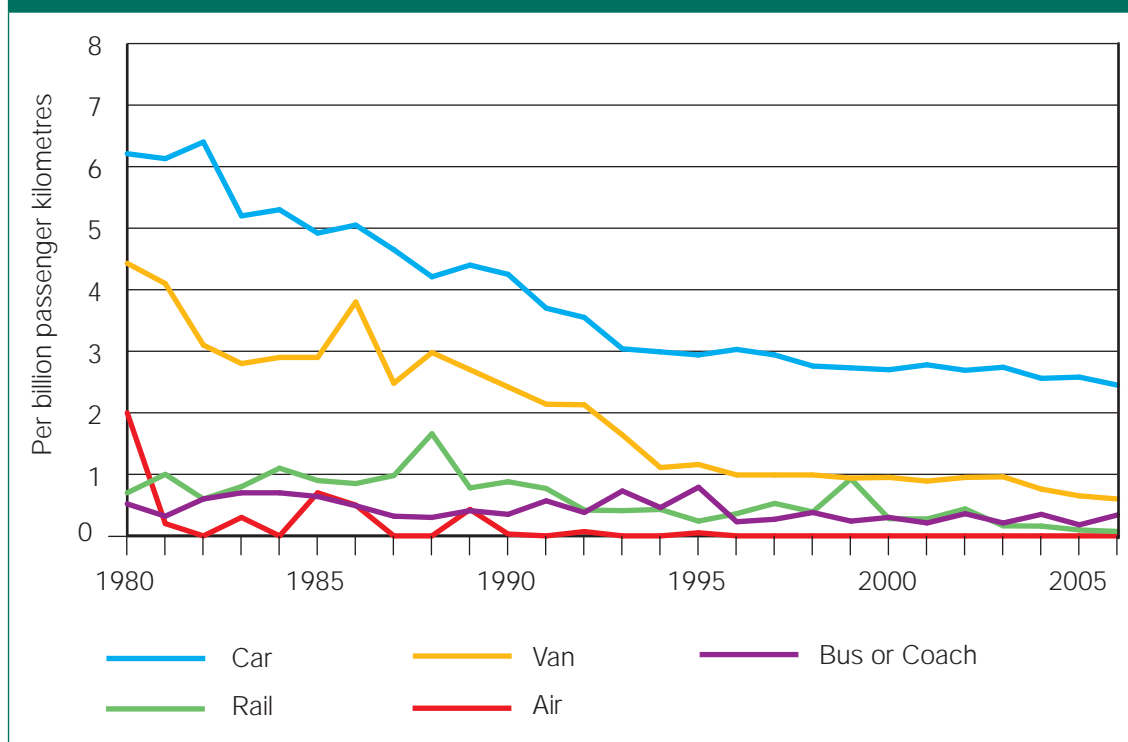
Source: National Atmospheric Emissions Inventory, 2006

Contribute to better safety, security and health

1.14 Transport policy can contribute to better health and longer life expectancy by reducing the risk of death, injury or illnesses arising from transport and by promoting ways of travelling that are beneficial to health. This is important in its own right but the benefits can also be quantified in economic terms. Road deaths and injuries are estimated to cost some £19 billion a year. There is also an economic and welfare cost of the health problems caused by poor air quality (to which transport is a major contributor) and obesity (which better transport choices, such as walking and cycling, can help reduce).

1.15 We have made good progress in the last ten years. The risk of death has fallen on all modes of transport, as Figure 1.2 shows, and we have virtually eliminated carbon monoxide and lead emissions from motor vehicles.

Figure 1.2 Number of fatalities per billion passenger kilometres: 1980–2005



- 1.16** We recognise the value to health that walking and cycling bring, and that there is more to do in this area. In some other European cities, for example, well-considered urban design has brought about significant change. Through our £100m funding of the new cycling demonstration towns, we aim to increase active transport and, through the right combination of planning and highways design, we aim to encourage more people to walk and cycle.
- 1.17** We believe that there is still scope to reduce accidents across all modes but, naturally, emphasis is likely to fall on tackling deaths and injuries from road accidents, which far exceed those in other modes. We will also take into account the safety implications of wider policy decisions that could affect the risk of existing journeys.
- 1.18** It is also vital that steps are taken to protect our transport systems, and those who use and work on them, from terrorist attack. The regulated security regimes for aviation, maritime transport and rail include a wide range of measures designed to reduce vulnerability and deter terrorism, although it must be recognised that the risk of a successful attack can never be eliminated. Both these regimes, and the guidance that we issue to other modes of travel, are regularly reviewed in the light of new intelligence. In addition, longer-term decisions about the design and operation of infrastructure and services may have implications for the security of our transport networks. We will use risk assessments to ensure that vulnerabilities are identified and cost-effective action taken to build in

improved security, for example by incorporating measures to control vehicle access into the design of railway stations.

Promote equality of opportunity

1.19 We want to promote greater equality of opportunity for all citizens, to help achieve a fairer society. Narrowing the gap between rich and poor individuals and regions and improving the life chances of all is at the heart of equality of opportunity. People can be disadvantaged by personal circumstances and by where they live. In practice, the two often overlap. Our aim is to ensure that we have a transport system that not only promotes economic growth of all regions but also provides everyone with access to the goods and services, employment opportunities and social and leisure activities they desire. As well as providing connections to, from and within areas away from the main population centres, such as rural areas and market towns, we need to consider how transport might contribute, for example to regeneration plans. And we need to keep in mind the need for transport to be accessible, affordable, available and acceptable to transport users, and the challenges that will come with an ageing population.

Improve quality of life and a healthy natural environment

1.20 Transport can make a strong contribution to the quality of people's lives. It brings great benefits to us all by making it possible to see the world, buy a huge range of goods and services, enjoy leisure activities, spend time with friends and relatives and have access to the natural environment. However, there is sometimes a tension between the benefits that transport users enjoy and the costs that transport can impose – for example on people who live near roads and railways, ports and airports, and on the natural environment, including biodiversity and landscape. It is clear that a transport strategy that was predicated on a net adverse impact on the natural environment would be as unsustainable as one that failed to deliver greenhouse gas reductions. Fortunately, in the light of Eddington's conclusion that the connectivity of our network is basically sound, with a few exceptions where capacity is already constrained, in the future we would expect to identify a reduced need for major new transport infrastructure. This offers a real opportunity to develop packages of transport measures that actively enhance our environment and improve our quality of life. Where new infrastructure is required, we will seek solutions that mitigate unavoidable adverse impacts such as land-take and noise.

Fitting the goals together

- 1.21** We expect the development of our transport system collectively to support all five goals, and this is a fundamental principle underpinning our approach to appraising transport schemes.
- 1.22** In many cases, there is a strong synergy between our goals. Improving the links between our cities also benefits the economies of the surrounding regions and can help to reduce regional economic imbalance. Improving transport within the regions can also unlock the potential underperforming rural areas and market towns. Measures within cities that encourage people to switch to public transport, cycling and walking, can reduce emissions and delay on the road, benefit both public health (by improving air quality) and personal health (by increasing the amount of exercise people take), and help to improve the quality of the local environment. And, as already noted, improving health and safety has significant economic benefits.
- 1.23** Of course, the goals can create tensions when we consider individual decisions. Transport infrastructure, by its very nature, is likely to involve some difficult choices for transport planners, for example between creating unwelcome local environmental impacts or being unable to maximise economic benefits. However, the Government's commitment to addressing climate change has brought sharply into focus the pressing need to reduce greenhouse gas emissions and the scale of the reduction that is required. The economic impacts of reducing greenhouse emissions clearly needs to be considered across all sectors as well as within the transport sphere.
- 1.24** Despite the potential for tensions between the goals, we think it would be wrong to prescribe any fixed order of priority between them in taking transport decisions, not least because the contribution that transport can make to these goals relative to other factors varies considerably in different situations. Equally, some goals can become more significant in some circumstances than others, for example depending on whether we are considering strategic choices about the national network or alternative designs for a particular road scheme.
- 1.25** Transport's role in support of our economy underpins many of the things we regard as important to our quality of life (from goods in the shops to leisure travel) and, without a strong economy, all the other goals will be much more difficult to achieve – as current economic pressures emphasise. And, unless globally we achieve our climate change goal, there will be immensely damaging consequences for the whole way of life of future generations.
- 1.26** That said, it is clear that sustaining economic growth while at the same time drastically reducing greenhouse gas emissions remains our biggest challenge.

2 Delivering on climate change and growth

Introduction

- 2.1** We said in Chapter 1 that helping deliver strong national economic growth at the same time as cost-effectively cutting greenhouse gas emissions is the biggest strategic-level transport challenge we face. The Stern review set out clearly the relationship between economic growth and climate change. Stern estimated the price of action to avert catastrophic climate change at about 1 per cent of global GDP, but said that the price of not tackling it would be much higher – of the order of 5–20 per cent of global GDP. Developed countries will have to pay a higher price to avert catastrophic climate change. But the economy of a trade-dependent island, such as Great Britain, would also suffer disproportionately from a slowing of global GDP growth.
- 2.2** We encapsulated the Stern message in *Towards a Sustainable Transport System* by saying that the argument that we face a choice between being ‘poor and green’ or ‘rich and dirty’ was a false dichotomy. We do not have to be ‘poor’ to be ‘green’. And, in the longer term, we do not have the option of being ‘rich and dirty’.
- 2.3** Stern’s conclusion about the cost of averting catastrophic climate change depends critically on reducing greenhouse gas emissions in an economically efficient manner. The Government’s approach reflects this and is based on Stern’s essential elements for policy to address climate change. We want people and businesses to have choice about the transport they use, but we also want to ensure that they face the full cost of their choices, including the impact on emissions. We want to encourage low-carbon technology and improve the efficiency of all modes of transport. We also want to ensure that, wherever practicable, there are low-carbon transport options for people to choose, and also solutions, such as better planning, which may reduce their need to travel.

A strategy for reducing greenhouse gas emissions from transport

- 2.4** We shall build on these principles in further developing a strategy for delivering transport's contribution to the UK economy-wide target of at least an 80 per cent reduction in greenhouse gas emissions on 1990 levels by 2050. The reductions from the transport sector will play their part in meeting the target for the non-traded sector (those sectors of the economy that are not part of an emissions trading scheme).
- 2.5** The strategy will set out DfT's policies and proposals to cover the first three carbon budgets for the periods 2008–12, 2013–17 and 2018–22 required by the Climate Change Bill. To inform the strategy, we are looking at a range of different measures to assess their potential cost and emissions savings. The findings from this work will then be considered in the context of the wider non-traded sector to see where action can be taken most cost-effectively. We will also need to assess how the measures perform against our other transport goals. For example, increasing the efficiency of vehicles supports freedom of choice about when and how to travel, and therefore critically also helps achieve our economic goal. We will work closely with other Government departments to identify and exploit synergies, for example through measures to promote low carbon business opportunities.
- 2.6** Making the most of the opportunities for reducing emissions from city and regional and national networks will also be important. For example, a package of measures for an urban area may involve public transport investment, demand management, promotion of smarter travel choices and the use of land use planning to reduce the need to travel. Substantial work will be needed to inform consideration of the best package of measures for each network, including the impact of greenhouse gas emissions.
- 2.7** Finally, we will build the impact of the proposed measures in our strategy for reducing greenhouse gas emissions into our forecasts of demand for different modes of transport. This will be particularly important for the transport planning process, because these forecasts will provide the starting point for developing infrastructure solutions for city and regional networks and for the national network.
- 2.8** The development of the strategy to reduce greenhouse gas emissions will by necessity be an iterative process, although we will aim to provide as clear a steer as possible about the implications for our stakeholders including business. We will need to keep under review the contributions we expect to be able to achieve from the various cross-cutting measures and the impact of the emerging solutions for the different networks. We will also need to take into account the way people's behaviour is affected by these measures over time and, of course, the potential impact of external factors such as changing oil prices and international action to tackle climate change. Overall, we must ensure that the aggregate level of emissions declines over time in a manner consistent with our greenhouse gas targets.

- 2.9** Over the time horizon covered by the first three carbon budgets, it is likely that improved vehicle and fuel efficiency, as well as encouraging behavioural change, will play an important role, and increasing the carrying capacity of transport networks will be a key element in supporting economic growth.
- 2.10** In the longer term, we can expect further progress towards our greenhouse gas reduction targets from promoting the development and take-up of electric vehicles, rail electrification and from the decarbonisation of electricity generation. But reliance on technology alone may not be sufficient to deliver those targets and will make little contribution to tackling congestion. We will need to find ways of shifting the relationship between economic growth and transport demand, for example by planning cities to bring housing, jobs and services closer. Road vehicles powered by (renewable) electricity, and re-engineering cities, will take a long time, but that makes it all the more important to start now. That is why the Government recently announced the provision of £100 million of support for the development and trialling of ultra-low emission and electric drive vehicles, why the impact on greenhouse gas emissions is being factored into all decisions on public service provision and why our planning policy statements put emphasis on reducing the need to travel.

Economic priorities

- 2.11** The Eddington analysis suggested that the basic connectivity of the UK transport network was good. In particular, he concluded that average journey times between major cities compared favourably with other EU states. He highlighted the most important area of concern as being key urban areas, international gateways and the strategic routes that connect the two. He identified the principal problem as localised, but acute, congestion of roads, leading to delay and unpredictable journey time. Linked to this, there are parts of the rail network that are already operating close to capacity, with serious crowding problems. The combination of congested roads and crowded trains is a cost to business, an obstacle to deepening labour markets around cities and a deterrent to inward investment. Meanwhile, economic activity in remote rural areas is restrained by the distances and connections to major trunk roads, railways and airports.
- 2.12** The Government broadly accepts this analysis. Improving reliability and resilience and providing appropriate capacity in the face of growing transport demand will therefore be our primary focus under this goal, while at the same time delivering transport's contribution to our greenhouse gas emissions reduction targets. In the short to medium term (i.e. 5–20 years), this will inevitably require some increase in the total carrying capacity of transport networks, with an emphasis on concentrating the capacity growth on the lowest-carbon transport mode that can actually meet the requirements of the goods or people movement. We are also looking at the longer term, where patterns of transport demand may shift significantly and we will take forward initiatives that encourage and incentivise such behavioural change.

- 2.13** We are working with local authorities who are developing proposals to manage demand on their roads by congestion charging. We are also continuing to monitor work around the world, looking at new technologies that might make road pricing a practicable option for the future, and to draw on international experience of options such as car-share and toll lanes to consider how better to manage motorways. Only if we have such evidence can sensible decisions be taken.
- 2.14** Nevertheless, we should not forget that Eddington's conclusion about the connectivity of the transport network is a broad generalisation. It is not equally true for all cities and it was based on currently available journey options. The need to increase capacity in some areas will require us to consider the case for new rail lines and the question of the speed to which they would be engineered. Tackling climate change will require us to look at everything from wide-scale electrification to land-use planning and lifestyle choices, to the better use of lower-carbon modes. We also need to look for opportunities to improve connectivity, particularly by facilitating there-and-back in a day or half-day journeys, of the sort that can make a significant difference to business efficiency. We need to consider the role that technology can play, for example by exploiting developments in satellite navigation to improve journey reliability. We need to take all these factors into account when considering the best long-term solutions for the transport corridors that make up our strategic network.
- 2.15** This is why the Secretary of State announced on 29 October a programme of work under a new National Networks Strategy Group chaired by the Minister of State for Transport, Lord Adonis, to ensure that we make the best use of our national transport networks and accelerate the process of identifying where future expansion is needed. This will look at how to make best use of the existing network, for example by the selective extension of rail electrification or the wider implementation of hard shoulder running on our motorways to provide additional capacity for motorists and to give them greater reliability and choice. It will also look at the longer-term needs of our strategic transport corridors, and will consider, among other options, the case for new rail lines, including high-speed rail – see Chapter 4.
- 2.16** Our international networks are also vitally important. As a trade-dependent island, our prosperity depends on our ability to export services and high-value manufactured goods and import goods and raw materials. UK firms are increasingly part of an international supply chain that often spans many different countries. The Department has published an analysis examining the performance of key international networks from an end-to-end perspective. This can be found at: www.dft.gov.uk/about/strategy/transportstrategy/tasts/userexperience/
- 2.17** Aviation and shipping are thus both critical to the national economy, with around 50,000 international business trips made and 1,300,000 tonnes of freight imported and exported on average each day. Our international

gateways enable UK firms to export their goods and services to world markets and give consumers access to a wide range of goods – from computers to food and drink. They ensure the continued availability of our energy supplies and other vital raw materials. And they provide access to international passenger travel for both business and leisure. Eddington identified the need to address capacity constraints around a number of key ports and airports and their associated road and rail links, to avoid damaging economic growth.

Climate change and the world economy

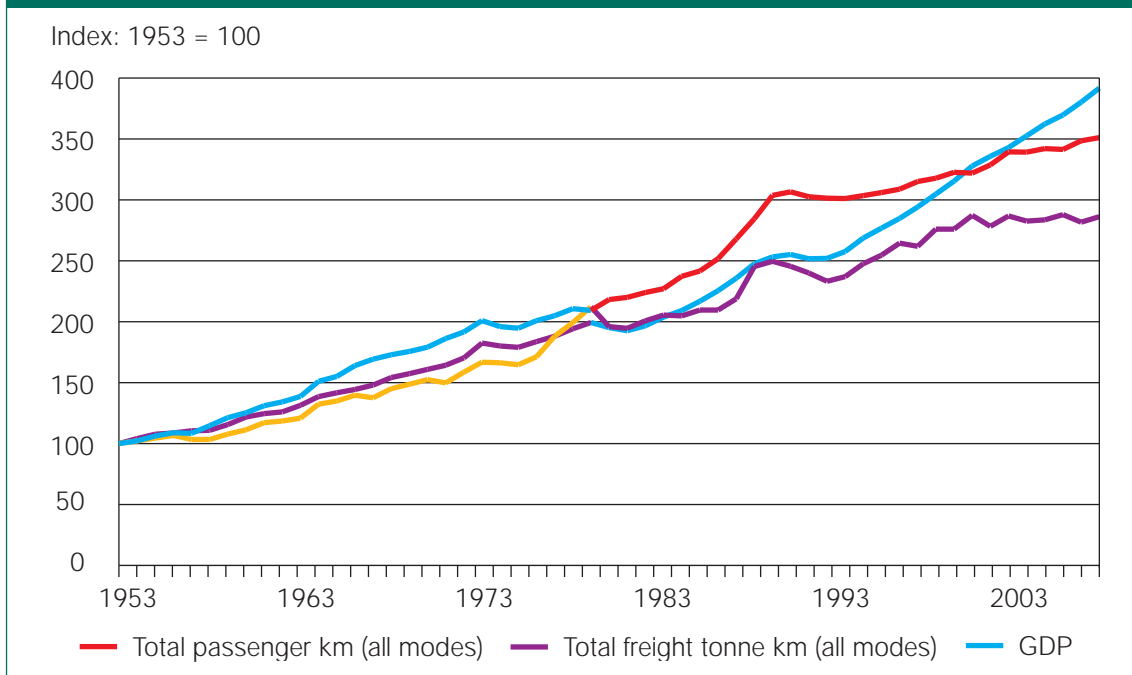
- 2.18** The theme of this chapter has been that we must plan to achieve economic growth *and* reduce greenhouse gas emissions. We have summarised our approach to reducing emissions from surface transport in paragraphs 2.4–2.10 above. These goals apply equally to international transport. While the UK cannot by itself dictate terms in these global industries, we shall continue to use our influence to pursue our objectives. As international trade grows, the world must address the growing climate change consequences of air and sea transport.
- 2.19** Because aviation and shipping are governed by global rules, we must work to address this challenge as part of the international community. In 2007, the European Union agreed to reduce greenhouse gas emissions from all sources by 20 per cent by 2020 from a 1990 baseline, or by 30 percent if an international agreement can be reached. Over the same period, emissions from EU aviation are forecast to rise fourfold to 0.4 billion tonnes. The UK has therefore taken the lead in bringing aviation within the EU emissions trading system (the EU ETS), which will mean that each tonne increase in CO₂ from aviation is matched by a tonne reduction in another part of the economy. We are continuing to push the International Civil Aviation Organisation to take more action at a global level to build on the progress made in the EU. And we are encouraging the International Maritime Organisation to act to reduce emissions from shipping and to consider bringing it within the scope of a global cap-and-trade system. While we continue to press for a global deal in these areas, we must make sure that these remain consistent with our domestic climate change programme.
- 2.20** International aviation and shipping do not form part of the greenhouse gas budgets that will be set under the UK's Climate Change Bill, but they do have a place within the overall framework. The Government and the Committee for Climate Change will have regard to their future growth when setting the UK's greenhouse gas budgets. In this way, the Government will ensure that its domestic approach is consistent with the approach being taken globally.

3 Planning for uncertainty

- 3.1** Transport planning is often a very long-term business. Trains and planes are generally built to operate for at least 30 years, and new infrastructure will last even longer. It takes years for changes in attitudes and behaviour or in land-use planning to influence transport demand. Transport planning has to address these long timescales at the same time as tackling immediate issues.
- 3.2** In developing our transport policies and planning improvements in the network, we must cater for uncertainty. A particular difficulty for planners is in understanding the likely future scale and pattern of demand for transport. Over the short to medium term, we can be more certain about the nature and scale of movements of goods and people on our transport networks. Our surface network is already close to capacity at certain times and places, as the rail and roads White Papers have identified. We know that some of our ports and airports are already stretched to full capacity, as for example the air transport White Paper has confirmed. In particular, Gatwick and Heathrow are currently operating near runway capacity, and the container and RoRo (roll on, roll off) sectors face similar pressure, with demand forecast to rise by some 100 per cent in container traffic, and 65 per cent in RoRo, over the next 15 years.
- 3.3** However, over the long term we can expect big changes that will affect how we live and work, and how we use transport. Here, we cannot simply extrapolate current trends, and we need to plan for a range of scenarios, as we have done for example, in the air transport White Paper and subsequent updates. The models we use have been relatively successful at predicting the growth of overall transport demand over the last thirty years. GDP and personal travel both grew strongly in the second half of the twentieth century. This was partly because both are linked to rising population. Increasing household wealth also led to major increases in car ownership and travel. Although the main growth in car ownership now comes from the acquisition of second cars, which leads to a slower

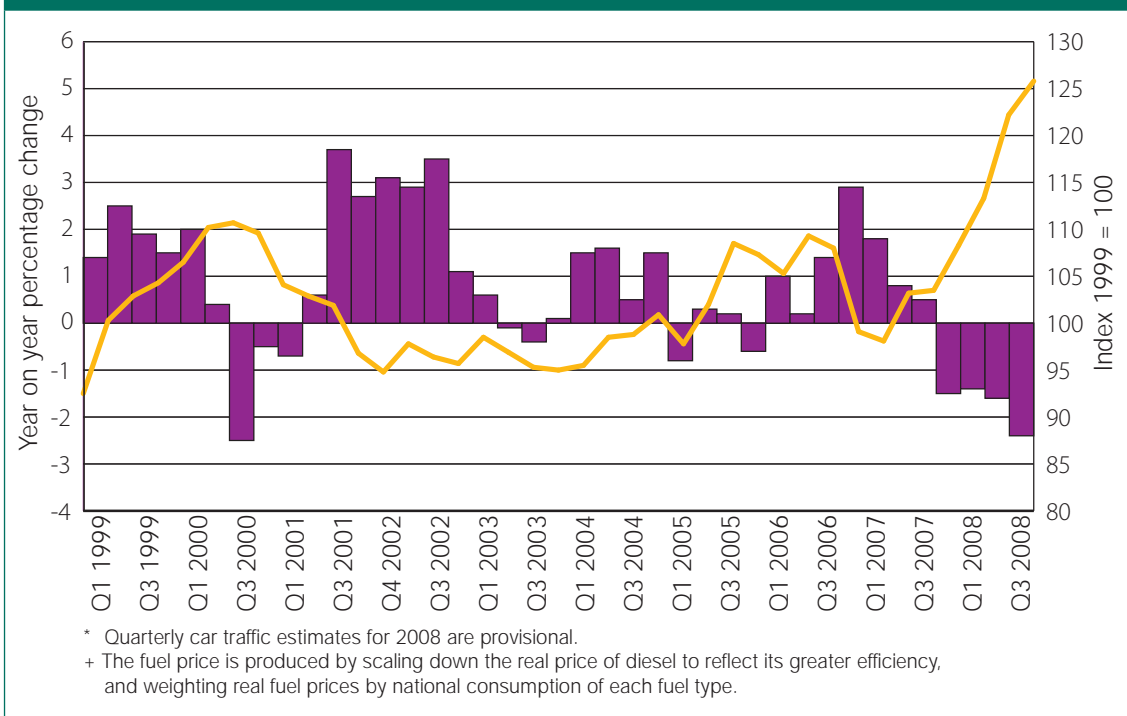
increase in overall personal travel. As Figure 1.3 shows, this pattern – and particularly the degree of correlation between freight and GDP – has weakened over recent years.

Figure 3.1: Passenger and freight traffic versus GDP 1953–2006



3.4 How will this picture be affected by the changing demographics of our society? While we expect population growth to continue, we are becoming an older society. Historically, older drivers have made fewer and shorter trips, but today older people are increasingly likely to own cars and to continue driving for longer. The recent dramatic rise in petrol prices undoubtedly had a short-term impact on demand, and we have seen similar effects on demand at other times when the real price of petrol has risen rapidly, as Figure 3.2 shows.

Figure 3.2: Impact of petrol pump prices on demand

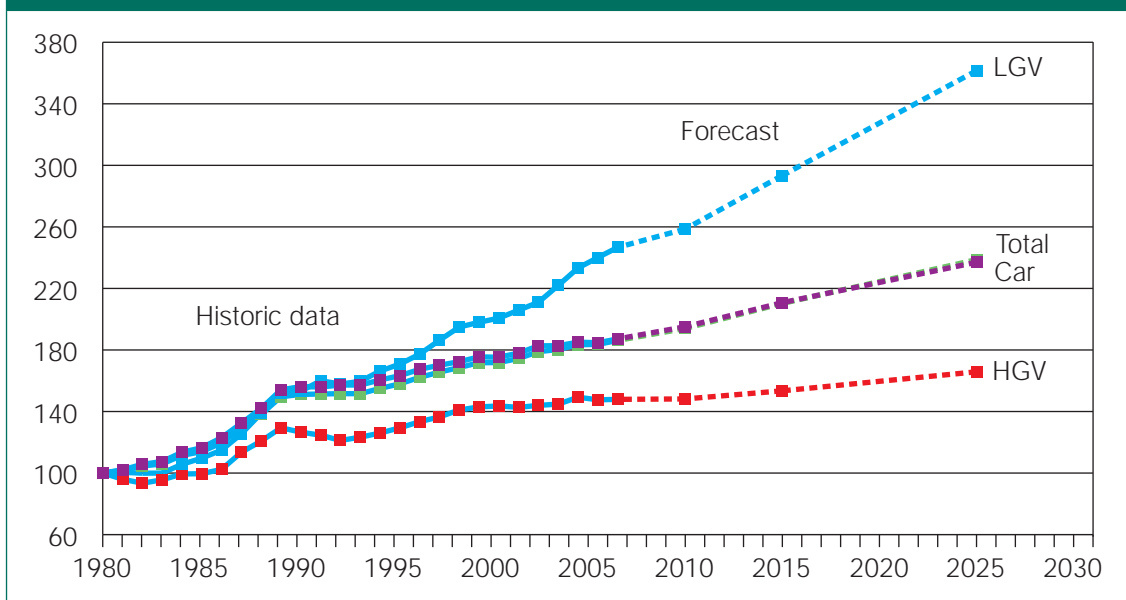


3.5 Nevertheless, the effects have so far always been short-lived and we estimate that, despite a peak price of nearly £1.13 this year for unleaded petrol,⁴ demand dipped by only 1 per cent. So how will people's travel preferences be affected in a world where oil is becoming scarcer and more expensive and where we know that there will need to be radical action to tackle climate change? At present we expect overall traffic to continue to grow over the next twenty years, but our modelling suggests that there is considerable doubt about the rate of growth, with as much as a 25 per cent gap between the high and low estimates.

3.6 It is not just a question of total demand – we need to take account of changing patterns of demand. In the 1980s rail demand had been declining steadily for 30 years. That trend has reversed and, over the last ten years, freight and passenger traffic have grown by 40 per cent (Figure 3.3). More generally, there is a significant difference in the rates of growth of different modes of transport. For example, the significant growth in demand for light goods vehicles (LGV) is in part due to the forecast increase in internet shopping and delivery.

4 July 2008. Automobile Association Monthly Fuel Price Reports: www.theaa.com/motoring_advice/fuel/

Figure 3.3: Growth in demand for different road transport modes in vehicle kilometres



- 3.7** The Department’s modelling projections suggest that demand for travel will continue to grow across all modes – most rapidly for air and rail. Nevertheless, the extent and rate of growth for each could vary considerably and will be influenced, among other things, by our transport policies and decisions. This is particularly important in developing our understanding of what this means for future capacity and for our goal of tackling climate change.
- 3.8** In the longer term, demand will also be affected by changes in where people choose to live, work and carry out leisure activity – hence the importance of making the link between transport and land use planning. A key question is whether people’s attitudes to transport, and the priority they are prepared to give it, will change as well. Increasingly, people accept there is a need for action to address climate change, but facilitating a widespread change in behaviour will require policies that encourage them to make low-carbon transport choices. This will be reflected in our choice of investment in developing our transport system – for example between road and rail – and in supporting new technology to create lower-carbon transport options.
- 3.9** This degree of uncertainty about the future, and particularly the complex interactions between the factors we have discussed, makes it impossible to produce a neat picture of what the transport system should look like in 2050. However, this does not prevent us moving forward. We must in any case address the immediate problems. We have already built a substantial margin for uncertainty into some of our forecasts (for example, in the air transport White Paper and subsequent updates). We can also use

sensitivity analysis to test how much the variations could affect future requirements, so that we can plan against a range of possible outcomes.

- 3.10** For example, there is no doubt that the UK will continue to be dependent on imports and that the vast majority by volume will arrive by sea. We know that the movement of containers through our ports and to their distribution centres will remain a central requirement for our transport system. While in the long term there may be considerable variation around our central projections of growth of individual travel modes, for example around car use, these are unlikely to change radically in the short to medium term. And where our forecasts convincingly point in a certain direction or where an option makes sense under a wide range of demand scenarios, we will press ahead, provided this is compatible with our other goals.
- 3.11** Our approach will be to develop our strategy in stages and flexibly, always guided by our five long-term goals, while recognising the need to provide a stable framework for our delivery partners and businesses to invest. We will tackle the challenges we face now and, where we have identified a clear requirement, we will continue to tackle longer-term issues, while seeking to retain flexibility to respond to changing circumstances and to exploit new opportunities. For example, if we were to build a new rail line, we would want to consider how it could be engineered to cater for future generations of high speed trains.
- 3.12** Our priorities for major programmes to 2014 have already been identified, and next year we will be starting to generate options for specific investment packages for the 2014–19 period. As Eddington recommended, these will form part of a long-term transport strategy that takes full account of transport's wider impact on climate, health and the quality of life. But, to deliver on our five goals, we are already looking and beginning to develop practical options for meeting the challenges of the 2020s and beyond.

4 The national framework

- 4.1** Our transport system is not just a matter for government. In fact, it owns or operates very little of the transport infrastructure, and some 85 per cent of the £150bn spent on transport each year is spent by households or by local and regional authorities. Almost all the motor vehicles (including buses), trains, aircraft and ships that use our transport networks each day, and which contribute to the wealth of the UK and serve the needs of its citizens, are privately owned.
- 4.2** Guided by the five goals set out earlier, Government's central responsibility is to set a national policy and investment framework, reflecting the needs of both urban and rural communities, within which our delivery partners can develop their own investment plans. A clear national framework is also important to help local government, the transport industry and the business sector generally to develop their wider plans. This framework includes overarching national policies and standards to influence markets and behaviours, for example in relation to safety, emissions and competition, and of course includes responsibility for shaping the transport infrastructure itself, particularly through decisions about the strategic networks and major investments.
- 4.3** As discussed in Chapter 2, we will look to make the best use of these overarching measures to reduce greenhouse gas emissions to achieve UK targets – for example through measures to improve engine emission standards, encourage investment in cleaner fuels and technologies, and promote smarter and more sustainable travel choices. There will, of course, be infrastructure requirements as well – which might range from investing in improved public transport, to supporting the provision of infrastructure for new technology such as charging points for electric vehicles, or vehicle guidance systems, to ensuring that future towns and cities are planned in a way that reduces their transport carbon footprint. Looking at packages of measures to achieve our five goals recognises that individual measures in isolation may not meet all goals.
- 4.4** As we set out in our July 2008 document, *Roads – Delivering Choice and Reliability*,⁵ innovative measures to manage demand are likely to play an important role in improving journey reliability in our most congested cities

⁵ www.dft.gov.uk/pgr/roads/introtoroads/roadcongestion/roadscommandpaper1.pdf

and road corridors. London has led the way in developing an area-wide urban congestion scheme, and congestion charging could have a substantial role to play in other cities. Through the Transport Innovation Fund, we are making available up to £200 million a year until 2014 to support investment in such schemes. On the strategic road network, a number of schemes are already in use, such as variable speed limits on sections of the M25 and we are looking at a range of other options, such as high occupancy lanes.

- 4.5 Similarly, overarching policies will have an important role in advancing our goals in relation to safety, health and security, equality of opportunity and quality of life. For example, measures to improve road safety include the Highway Code, the THINK! campaign, the use of vehicle safety standards, enforcement of road safety legislation (for example, to tackle drink driving), improvements to driver training and testing and the new road safety strategy and casualty reduction targets due to be published next year. In addition to reducing greenhouse gas emissions, measures targeted at vehicle manufacturers can make a key contribution to reducing the air quality and noise impacts of cars and lorries. And legislative measures, such as the Disability Discrimination Act, can play an important role in ensuring fair and equitable access to goods and services through improved transport.

The strategic national infrastructure

- 4.6 At a national level, the planning, provision and maintenance of transport infrastructure remains one of Government's most important roles. Our focus is on maintaining and improving the reliability of our transport system as a whole, in particular the components that are critical to economic success, but always in ways that support our other goals. As we made clear in Chapter 3, we need to plan for both the short and longer term, tackling immediate priorities while at the same time ensuring that our plans are robust enough to deal with the changes that will take place in the longer term. In particular, we will need to invest in programmes and projects that enable us to adapt the transport system over time to anticipate changing demands, for example in relation to housing, to address future challenges such as energy security, and the changing climate, and to exploit new technology such as electric vehicles and in-car guidance systems.
- 4.7 Where we conclude that further development of the nation's key transport infrastructure needs to be part of our policy response, we expect to make the case for this by way of National Policy Statements under the reformed planning regime to be established under the Planning Bill. We envisage publishing National Policy Statements in due course for national networks (the strategic highway and rail networks), for ports and airports. This will provide a more transparent approach to policy making, link more clearly to our goals and will in turn help to ensure that future investment schemes,

whether promoted by the public or private sector, can be dealt with in a more timely and effective way through the planning system.

4.8 Both Eddington and the recent joint Treasury and BERR report on economic prosperity *The UK economy: addressing the long-term strategic challenges*⁶ highlight the importance of cities and other agglomerations as drivers of national economic growth. The ten largest conurbations in the UK account between them for 38 per cent of its population.⁷ According to the 2006 Local Government White Paper,⁸ globalisation has repositioned cities as drivers of national economies. Between 1995 and 2001, cities have delivered the greatest increases in productivity and Gross Value Added (GVA) within the UK.

4.9 However, cities do not function in isolation, and their relationship with their rural hinterlands is vital in their continued success. Eddington also emphasised the economic importance of the key inter-urban corridors and international gateways.

4.10 Using these start points, our analysis has led us to identify a number of components of the transport infrastructure that, collectively, are critical to the functioning of the system as a whole and to the economic success of the nation. These are:

- the ten ports and seven airports (which together make up our key international gateways) through which most people and goods enter and leave this country;
- our ten biggest conurbations, which contain about one-third of the population of Great Britain; and
- the 14 national transport corridors that connect them and other areas with strong economic growth and inward investment (such as the Thames Valley and south Cambridgeshire) with each other and with the principal freight distribution centres.

The 'strategic core' of our transport system is illustrated in Figure 4.1 and Tables 4.1–4.3.

4.11 This does not mean that we are ignoring other areas of the country – or that this transport infrastructure by itself will contribute to UK's economic growth. To ensure that these transport corridors operate effectively, we must also ensure that they are adequately linked to international gateways and to other parts of the country, and to regionally and locally significant routes. This strategic core of our transport network is as essential to the prospects for individual regions as to our general prosperity, because good connections will benefit all parts of the country, by providing access to goods and services, to markets for their own products and services, and to tourism and visitors.

6 www.hm-treasury.gov.uk/d/bud08_strategicchallenges_645.pdf

7 Office of National Statistics, Focus on People and Migration 2005

8 www.communities.gov.uk/publications/localgovernment/strongprosperous

Figure 4.1 Strategic National Corridors

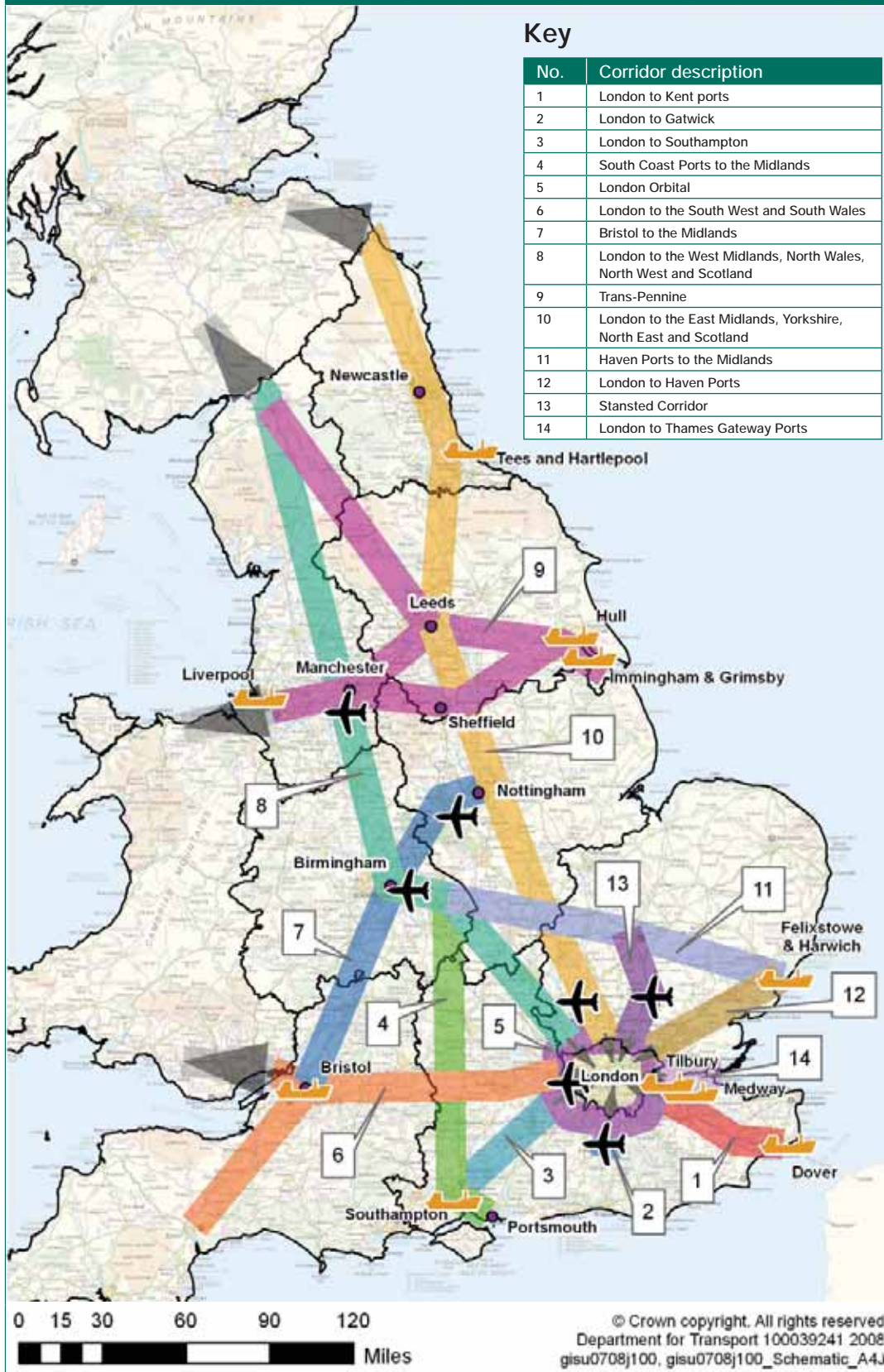


Table 4.1 Origins and destinations served by strategic national corridors**Largest urban areas (based on CLG primary urban measure (CLG, 'State of the Cities' database)**

| | |
|----|------------|
| 1 | London |
| 2 | Birmingham |
| 3 | Manchester |
| 4 | Newcastle |
| 5 | Sheffield |
| 6 | Liverpool |
| 7 | Leeds |
| 8 | Bristol |
| 9 | Nottingham |
| 10 | Portsmouth |

Ports ranked by traffic in million tonnes (DfT, 2006)

| | | |
|----|----------------------------------|------|
| 1 | Grimsby & Immingham | 64 |
| 2 | Tees & Hartlepool | 53.3 |
| 3 | London | 51.9 |
| 4 | Southampton | 40.6 |
| 5 | Liverpool | 33 |
| 6 | Felixstowe (including Harwich) | 24.4 |
| 7 | Dover | 23.8 |
| 8 | Medway | 19.4 |
| 9 | Hull (including Hull and Humber) | 12.5 |
| 10 | Bristol | 12.3 |

Airports ranked by passenger movements (CAA, 2007)

| | | |
|---|------------|------------|
| 1 | Heathrow | 67,852,387 |
| 2 | Gatwick | 35,165,404 |
| 3 | Stansted | 23,759,250 |
| 4 | Manchester | 21,891,723 |
| 5 | Luton | 9,919,361 |
| 6 | Birmingham | 9,134,055 |

- 4.12** This strategic national infrastructure is only part of the picture. We want to enable all cities and regions (including those listed above) to develop their own transport systems to respond to their own particular needs. We also want regional and local authorities to take the lead in tackling challenges in rural areas – for example, the road safety and accessibility problems that can have significant impacts on the economy and the environment.
- 4.13** The transport corridors in this strategic infrastructure are not important simply because they connect key cities. These cities are also transport hubs for their surrounding regions, and the transport corridor that connects them may form part of the longer corridor linking with other cities, airports and ports. For example, the trans-Pennine corridor does not just handle movements of people between the Greater Manchester and West Yorkshire urban areas. It also handles freight with an origin in the Humber ports or Liverpool and a destination well beyond the corridor. And it provides access to Manchester International Airport from a wide catchment area. This multiple role is even more significant for the key arteries that link Bristol, Greater Manchester and West Yorkshire to London and the South East, to the Channel Tunnel and ports and to Gatwick and Heathrow.
- 4.14** Lord Adonis will lead the process of overseeing our plans for this core national infrastructure through the new National Network Strategy Group with senior partners from the Highways Agency, Network Rail, HM Treasury and other Government departments as required. As noted in the Chapter 3, it will consider how to make best use of the existing network, for example by the selective extension of rail electrification or the wider implementation of hard shoulder running on motorways to provide additional capacity and to improve reliability.
- 4.15** Alongside this, the Group will look at longer-term solutions for the strategic transport corridors, including consideration of wholly new rail lines (including high speed rail or improved road capacity along certain strategic corridors). It is likely that all transport corridors will need some action to improve delivery against the transport goals, even where it is only a matter of considering lengthening trains and addressing localised road congestion and safety issues. There will need to be a mechanism for looking across different packages to understand their cumulative impacts and ensure that environmental limits and our climate change goal are respected. But it is sensible to prioritise our efforts by looking first at those transport corridors where the challenges are greatest and the solutions are least clear-cut. In each case, our assessment of the options will also need to take account of the implications for each of our goals including tackling climate change.
- 4.16** We will be looking at all the transport corridors closely, but we have started by doing some initial analysis of the London to the North-West corridor, because it is likely to present some of the biggest challenges. Key conclusions from our case study of the London–Manchester corridor are summarised below and described in more detail in Annex 1.

The London–Manchester strategic corridor

- 4.17** Clearly, a transport corridor that connects London and the South East with Manchester and the North West, via Birmingham and the West Midlands, will be important, especially as it also has major international airports at each end. The corridor assumes even greater importance, because it is also part of the transport corridor that leads to Liverpool, another international gateway and major city. Between them, Manchester and Merseyside generate 57 per cent of the Gross Value Added (GVA) for the whole North West. Manchester is also on one of the two north–south transport corridors that connect Scotland with England and (via England) Wales.
- 4.18** The corridor faces a number of challenges if it is to continue to support our goal of economic growth and productivity. Congestion in and around the Manchester conurbation threatens to hinder growth of the North West region. The London–Manchester corridor is a key artery for freight. It serves the ‘Golden Triangle’ of nationally important freight distribution hubs in the Midlands, which handle some 47 per cent of containers. It also includes some of our most congested railways and motorways. Some 1.5 million passengers flew between Manchester and London in 2007, predominantly using Heathrow, and mainly to transfer to other flights. Demand for air travel at London, Birmingham and Manchester airports is forecast to more than double over the next 20 years. More pressure on those airports will in turn contribute to the pressures on the road and rail network in the London–Manchester corridor, although (partly as a result of the upgrading of the West Coast Main Line) only very limited growth is forecast on the Manchester to London air corridor itself.
- 4.19** There are also challenges in respect of our other goals. Given its high population and traffic flows, the London–Manchester corridor is a significant contributor to greenhouse gas emissions. The North West region performs poorly on social indicators such as health inequalities. There are road safety problems, concentrated on areas of high traffic both in and around the cities and the interurban links. And the quality of life of people living in and served by the transport corridor will be affected by the trips they make to visit friends and family or for leisure, as well as by the air quality and noise they experience, for example where busy roads pass close to or through the West Midlands and Manchester conurbations.
- 4.20** We have already made major investments that are bringing significant improvements to transport in the corridor:
- an £8.9bn investment in the West Coast Modernisation project has trebled the number of trains between London and Manchester and reduced journey times by 30 minutes;
 - the £900m M6 toll road opened to traffic in December 2003, providing additional capacity and congestion relief around Birmingham;

- other road improvements include the widening of the M60 between junction 5 and 8, improvements to the M40/A404 junction at Handy Cross and our pathfinder Active Traffic Management (ATM) project on the M42, which enables the hard shoulder to be brought into use at times of peak congestion;
- the £300m improvements to the M1 between junctions 6a and 10 are due to open to traffic in 2009.

4.21 More improvements are planned for the next five years, including:

- further rail capacity improvements to deal with growth of about 25 per cent expected in passenger demand;
- upgrading the West Coast mainline power supply, to increase resilience and accommodate a higher frequency of service and longer trains;
- in Manchester and Liverpool, improving local services with the addition of between 50 and 70 additional carriages during the peak periods;
- further piloting of ‘managed motorways’ to provide additional road space in the most congested parts of the motorway network at peak times, with a lower impact on CO₂ emissions and the environment than road widening.

The international gateways and freight

4.22 Chapter 3 drew attention to the importance of the UK’s international gateways to the economy. Most of these are privately owned and operated, and the users of these gateways (such as freight and logistic companies and airlines) are also commercial enterprises. Many different organisations are involved with the delivery and regulation of the end-to-end journey. The extent to which the Government can – or should – influence different stages of that journey varies considerably.

4.23 Through national policy, Government can act as a key enabler for private sector investment. For example, the 2003 Future of Air Transport White Paper⁹ (and the subsequent progress report)¹⁰ set out a framework for the sustainable development of air travel out to 2030. The strategy set out in the White Paper addresses the global and local environmental challenges of aviation whilst supporting some targeted airport expansion.

4.24 The Government is also committed to supporting the improvement of surface access to airports and ports, and has a direct delivery role in part-funding schemes to improve the strategic national network. As noted earlier, container traffic into this country has grown rapidly and is expected to continue to grow in both volume and importance.

⁹ www.dft.gov.uk/about/strategy/whitepapers/air/

¹⁰ www.dft.gov.uk/about/strategy/whitepapers/air/aviationprogressreportsection/

- 4.25** We have recently carried out some analysis of the implications of the growth of container traffic for the transport system. This has shown, first, that, while the time spent at container terminals can often be longer than the journey to the next destination, the reliability of the onward journey remains important, because the costs of moving containers are far greater than storing them at ports. Second, and importantly, the analysis also shows that we can expect most containers to continue to arrive at the major container ports and then travel along a relatively small number of national transport corridors to depots where their contents are broken down for wider distribution. We recognise that the impacts of international freight are concentrated on key road and rail links between the ports and distribution centres. We are looking at ways of working with the industry to reduce delays at these ports.
- 4.26** In the case of Felixstowe, for example, around 50 per cent of containers transported by road travel along the corridor that links the port to the West Midlands, providing access for freight traffic to the M1/A1 and East Coast Main Line and to the M6 and West Coast Main Line. We are already addressing the difficult challenge of accommodating an increase in container traffic and tackling congestion on the A14, particularly through South Cambridgeshire, where heavy goods vehicle movements overlap with local travel to work. The Highways Agency's Ellington to Fen Ditton scheme addresses the road capacity issue and is in the roads programme (subject to public inquiry) for early 2010. The first phase of work to increase the gauge of the rail link (so that it can handle 9'6" containers) and to increase rail freight capacity between Felixstowe and Peterborough has been completed, and the second phase (facilitating rail freight movement through to Nuneaton) is funded by Government and in Network Rail's investment programme for 2009–14.
- 4.27** The Department's approach to freight has evolved considerably over the past year. We are now engaging with the industry in a different way to better understand the key issues and to define the main areas of challenge. We are also working with the sector to help them to build on existing capabilities, for example in following up the *Supporting Innovation in Services* report. We are about to publish a freight strategy document, and alongside this we are publishing analyses of the container and RoRO end-to-end journey. These will form the basis for further discussions with industry to develop this analysis and help inform our decisions on policy and investment choices.

5 Putting strategy into action

- 5.1 In Chapter 3 we said that we would build our long-term strategy in stages: tackling current and near-term issues in ways that also advance our five underlying goals. Wherever we have sufficient clarity about future requirements and their compatibility with our goals, we will press ahead with decisions that begin to address longer-term policy and infrastructure issues, recognising the need to retain flexibility to adapt if forecasts change. This chapter describes how we are putting that approach into practice.
- 5.2 Although it is convenient to group investment activities by planning period, in reality we are putting together a single picture stretching out towards 2050. Some parts of the picture have already been painted in more detail than others, and we will fill in the gaps progressively. The way we are approaching this is well illustrated by the London–Manchester strategic transport corridor discussed in Chapter 4.
- 5.3 As explained in Chapter 4, where our proposed approach involves development of national transport infrastructure, the planning process for these schemes will be supported by the production of National Policy Statements for the relevant sectors. These will be subject to a separate process of consultation, appraisal of sustainability, and Parliamentary scrutiny, as provided for by the Planning Bill.

Investment to 2014

- 5.4 More generally, as explained earlier, our focus to 2014 is on making better use of the existing network, combined with a targeted programme of improvements to improve capacity, reliability and safety in the most congested areas.
- 5.5 For example, in London and the South East, we have given the go-ahead to Crossrail, due to open in 2017, which will ultimately carry 200 million people a year and add at least £20bn to the UK economy bringing 1½ million people within 60 minutes of central London. And work is already under way on Thameslink, due to open in 2015, which will allow longer trains (12 carriages) to operate a more frequent service (24 trains an hour) north–south through central London. Across the UK, we are investing in the provision of 1,300 additional carriages to increase rail capacity, most of which will relieve pressure in and around urban areas.

- 5.6** Over the same period, we are allocating significant additional funding to a large number of schemes as part of the Regional Funding Allocations (RFAs), which will support targeted investment in public transport schemes such as bus stations, guided bus and trams, local road improvements to benefit freight and passengers, and traffic management schemes. We have already spent over £1.4 billion on these. In 2007/08 alone, 25 schemes were successfully completed and opened to the public, including:
- Barnsley Public Transport Interchange, facilitating bus: rail interchange;
 - Sunderland Southern Radial Route, a bypass linking Sunderland city centre and port with the A19 trunk road;
 - a new rail station at Coleshill Parkway with bus interchange facilities; and
 - the A30 Bodmin India Queens improvement, a new stretch of dual carriageway.
- 5.7** We issued revised guidance to the Regions on Regional Funding Allocations in July 2008, which asked regions to put forward advice on the allocation of block funds (including capital highways maintenance and smaller scale projects), as well as major schemes from 2011 to 2012. This gives regions the opportunity to advise more widely on the distribution of transport funds within their region, to help target the funding to where it is most needed to meet the Government's five transport goals.
- 5.8** At the city and regional level we will be providing about £300 million for the modernisation of the Tyne and Wear metro. The scheme will modernise overhead power lines, overhaul bridges and tunnels, refurbish the Metrocar trains, provide new ticket machines and barriers, a new station at Simonside, rebuild Haymarket station and refurbish Sunderland station. This will create a more modern and reliable service. We have also given funding to extend the Manchester Metrolink system to Rochdale, Oldham and Chorlton, which will increase passenger numbers by 50 per cent to 30 million passengers a year from 2011.
- 5.9** We are now launching a programme of funding for small high-value international gateway schemes (see text box below) to address some long-term problems in congested areas.

High value international gateway schemes

The Department has identified a small number of high value for money schemes offering strong international and national productivity benefits and is prepared to contribute funding to secure their delivery, subject to support also being forthcoming from regional and local partners.

This programme reinforces our commitment to invest in improved access to our key international gateways in line with the strategic priorities identified in the Eddington study in 2006. It acts on some of the conclusions emerging from first round of end-to-end journey work. It reflects the new draft principles for developer contribution and international gateways, on which the Department recently consulted. It also pilots the principle of co-funding in delivering our investment programme, where the Department funds national benefits, and regional and local partners fund sub-national benefits. We will seek to mainstream this approach as we develop our investment plans for the period 2014–19.

The four potential candidates identified are:

- the A555 Relief Road (Stockport and Manchester Metropolitan Borough Council, Cheshire County Council) – to enhance access to Manchester airport from the east;
- the A160/A180 (Highways Agency, regional scheme) – delivering additional grade separation on the main access route to Immingham Port;
- A12 (Highways Agency, regional scheme) – a large-scale package of traffic management measures to address reliability, congestion and safety issues the freight route to the Haven Gateway Ports;
- the North London Line Freight Enhancement (Network Rail) – to increase the long-term capacity of this key rail link to the Thames Gateway and the London Ports.

The Department will be discussing the co-funding opportunities for each of these schemes with the relevant regional and local partners.

- 5.10** On the national rail network, we have already announced that we will procure the new Intercity Express trains, which will be capable of carrying significantly more passengers than current long-distance trains when they enter service in 2015. On the national road network, we have in place a £6bn programme of major road improvements up to 2014, aimed at supporting economic and housing growth and improving safety. Details of the programme, including those sections of motorway where we will be adding capacity by opening the hard shoulder to traffic, are expected to be announced in early 2009. Schemes currently being prepared include the provision of additional capacity on most of the remaining three-lane sections of the M25 and major improvements to the A14, the M1, and the A1(M) in North Yorkshire.

- 5.11** On the whole, major projects such as these account for only a small part of total public expenditure on transport. Most of the budget up to 2014 will be spent on maintenance and smaller local schemes such as platform lengthening or junction improvements. Taken together, these will make a significant contribution to our transport goals by easing congestion and making journeys more reliable, reducing the risk of accidents, and by improving the local environment. An assessment of the impacts on greenhouse gas emissions is included within the appraisal of infrastructure schemes and will continue to feature fully in future appraisal. Measures to pursue greenhouse gas emissions reductions will be a necessary part of transport's strategy towards meeting its carbon budgets as set next year.

Supporting private sector investment

- 5.12** As we mentioned in Chapter 4, the Government has an important role as an enabler of private investment. All possible funding mechanisms are considered, with the leveraging of private finance to deliver best value for money a key element. Mechanisms such as public-private partnerships have been used more frequently in recent years. The current nature of the global financial markets inevitably raises questions about the funding of all sorts of investment, including those in transport. Nevertheless, because the transport sector is characterised by long asset lives and demand that is likely to remain relatively steady, even in less favourable economic conditions, our assessment is that investment continues to be a relatively secure long-term opportunity for the private sector, including pension funds and institutional investors. There is scope for private investment across the range of transport projects, in particular where users will pay real charges for an asset.
- 5.13** For our key international gateways, we have taken a number of recent decisions that will enable port and airport providers to address capacity constraints. The Government has recently given permission for up to 35 million passengers per year to use Stansted's existing runway, and BAA has submitted an application for a second runway, which will be considered at a planning inquiry next year. We also expect shortly to announce decisions on our consultation *Adding Capacity at Heathrow Airport*. This year we gave the green light for construction of the London Gateway container port in Thurrock, which will be capable of handling the largest deep-sea container ships. In recent years we have also agreed expansions at Felixstowe South, Bathside Bay (Harwich) and Teesport.
- 5.14** The Department has recently consulted on new guidelines to deliver greater clarity on the Department's approach to developer contributions for surface access transport links to strategically significant infrastructure projects, such as ports and airports. The guiding principle is to develop cost share arrangements between the public and private sector, where there is a compelling case to do so and where there are significant national benefits to schemes.

- 5.15 We are investing in improvements to the M25 via a Design, Build, Finance and Operate (DBFO) contract. The M25 DBFO contract encompasses the capital works to enhance capacity to most of the remaining three-lane sections of the M25, as well as responsibility for maintaining the motorway and its structures over a 30 year period.
- 5.16 Private finance also plays an important part in funding investment in rail infrastructure and trains, for example the recent investment by Angel Trains in Pendolino carriages for the West Coast Main Line and current multi-billion pound procurements of new rolling stock for inter-city routes and for Thameslink.

Investment beyond 2014

- 5.17 Many transport schemes have long lead-in times and need to be planned a long way in advance. Next year we will be starting the generation of options for specific investment packages for the period 2014–19, and we are today publishing a consultation document on our plans for this. But, as this document has emphasised, this is only part of a much longer-term strategy.
- 5.18 Earlier we described some of the uncertainties we face, particularly about demand. Beyond 2014, the underlying growth of national rail passenger demand is expected to be around 2½ per cent per annum. We are already looking at how this might be accommodated through improved rail signalling and radio-based cab signalling technology, but we also have to take into account the possibility that the continuing improvements in our rail services will lead to a greater growth in demand. Indeed, we want to encourage the use of the railways as a lower-carbon transport mode in comparison to road. As we have announced, the National Networks Strategy Group will therefore also consider the case for whole new lines, including high speed rail.
- 5.19 Similarly, we are already preparing for the long-term changes that will be needed to deliver greenhouse gas emissions reductions on the scale we need. We are putting in place measures to regulate vehicle and fuel standards, investing in new technology and encouraging smarter travel choices.
- 5.20 We are confident that the strategy, plans and decisions set out in this document will enable us to achieve our fundamental purpose of transport that works for everyone by delivering our five transport goals. In particular, it will enable us to meet the twin challenge of sustaining a prosperous and growing economy and achieving our challenging emissions targets.