

LONDON'S CONNECTIVITY COMMISSION

London, Britain and the world: Transport links for economic growth

February 2012

London First

London's Connectivity Commission

The London First Connectivity Commission was established in early 2011 to consider how best to maintain and improve London's transport links with the UK and the rest of the world in order to support London's continued economic growth.

The Commission was chaired by Peter Robinson, Chairman of Berwin Leighton Paisner. It comprised senior business people from a range of business sectors who expressed their personal views, rather than those of their companies.

The Commission took written evidence from 40 parties, held witness hearings with 20 key individuals and sought the views of a reference group of practitioners and experts. Detailed discussions were held with more than 70 London First members and stakeholders throughout the process.

The Commission's full report is available on the London First website.

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Foreword from the Chairman

We work in a flourishing World City that drives the UK economy. London's ability to attract the best and brightest workers, to export world-beating services and reach customers, clients and suppliers, is one of our greatest sources of competitive advantage. It puts us at the heart of the global economy. We should be in no doubt, though, that London faces increased competition globally for talent and investment. I see this as Chairman of a law firm that has worked in 130 countries in the last two years.

If London is to continue to thrive and grow for the benefit of the whole country, we will need the transport links that befit our World City status – the road, rail and air transport infrastructure to meet growing demand and to overcome the past failures now manifested in gridlocked roads, overcrowded trains and aircraft delayed at Britain's only hub airport. Poor infrastructure that undermines London's competitiveness will lead to new investment and jobs going overseas, not elsewhere in the UK.

Over the past year, London First's Connectivity Commission has considered the challenges facing London's transport links to the UK and the wider world. The composition of the Commission was designed to ensure that the perspective of users – the demand-side view – was at the heart of its analysis. We have met with dozens of business leaders and government stakeholders to canvas their opinions as owners, investors, advisers and users of transport infrastructure, and this report is the outcome of these deliberations. I would like to express my thanks to all of the commissioners and to those who gave evidence.

Our goal is to see tangible progress on the recommendations made in this report. While some of the Commission's conclusions may not be immediately popular, we hope for, at the very least, a considered response from policymakers. Above all, we call on all parties to bring the tenacity, vision and long-term commitment needed to deliver improvements in London's vital transport links. The capacity and quality of these links must grow if London and the UK are to retain their premier global status.

Peter Robinson

Chairman, London First Connectivity Commission

Chairman, Berwin Leighton Paisner

Executive summary

Context

London is undeniably one of the premier World Cities, trading goods and services across the UK and around the globe. It is home to many of the world's leading companies and has globally competitive industries including medical science, creative industries, professional and financial services and design-led manufacturing, as well as a dense cluster of world-class universities. This global talent hub is some 30 per cent more productive than the rest of the UK. It is the powerhouse driving the nation's economic well-being and consistently contributes more in tax than it receives.

Among the key factors in London's historic success has been its connectivity – its transport links with the rest of the UK and the international links that have enabled it to export its skills to new markets as they have emerged. These, in turn, have allowed London to attract talent and investment from around the world.

However, London's ability to maintain these links is under threat. Congested roads, overcrowded trains and aircraft circling above the South East waiting for permission to land at Britain's only hub airport, Heathrow, are all signs of our critical strategic transport infrastructure operating at its limits and lacking resilience when put under pressure.

Significant improvement is therefore required in London's connectivity, both with the rest of the UK and, even more crucially, with emerging international markets. Access to markets, and accessibility for individuals, are fundamental to creating and supporting jobs and enabling the capital to continue to spearhead the UK's growth.

This pressing need is the legacy of historic failures in transport planning. But these failings can be rectified if government grasps the severity of the problem and is prepared to make decisions in the interests of the UK's medium and long-term prosperity. This report proposes a more effective planning framework and a series of policy and practical recommendations to deliver short, medium and long-term improvements to London's road, rail and air links. It does so in recognition of current global economic uncertainties and the constraints on public spending, but with the conviction that these steps must be taken if London's future as a leading World City is to be secured.

This summary is drawn from the full report *London, Britain and the world: Transport links for economic growth*, available at www.londonfirst.co.uk.

Improving the institutional framework for decision making

The Treasury has described the UK’s approach to infrastructure investment as “timid, uncoordinated, incremental, wasteful in its procurement and insufficiently targeted to supporting balanced and sustainable growth in the economy.” The UK’s transport infrastructure has been victim to prolonged underinvestment and a failure by successive governments to plan ahead.

Demand for the UK’s transport links has grown significantly in the past thirty years, and is set to continue rising. Given that London’s key transport links are now operating at or close to capacity, and ‘virtual’ meetings have not – and will not – substantially replace the need to travel, the only rational response is to plan to meet future demand, while keeping changing patterns of demand under review. The Commission identified four areas of institutional reform that government should pursue to result in better plans, together with the funding needed to deliver them.

- i. A strategic, long-term approach to infrastructure policymaking** to provide the policy certainty needed by infrastructure investors. Sectoral policy frameworks should set down how strategic infrastructure is to be planned, evaluated, delivered and funded.
- ii. A more predictable approach to land use planning** to give promoters and investors greater certainty of delivery.

Recommendation 1: The government must now deliver on its planning reforms for infrastructure by ensuring they provide timeliness and predictability, in tandem to improving democratic accountability.

- iii. A joined-up transport policy** that considers, in particular, the interfaces between various modes of transport and from national or international links to local ones.

Recommendation 2: The Department for Transport (DfT) should deliver on its stated ambition to improve end to end journeys for passengers. Its forthcoming national rail and air strategies should contain the practical and policy means to define, measure and benchmark improvements to the interfaces between London’s road, rail and air networks.

- iv. Consistent prioritising of investment** to focus on the provision of infrastructure most likely to yield the greatest contribution to economic growth.

Recommendation 3: In order to prioritise limited public resources to secure the best returns, the government should capture the likely Gross Domestic Product (GDP) impact of investment in road and rail infrastructure, and incorporate it into any analysis of benefits and costs. A new national aviation policy should similarly consider which investment in air transport infrastructure is most likely to yield the greatest contribution to sustainable economic growth.

Increasing the quality and capacity of London's road, rail and air links

Road links

On the strategic road network of motorways and trunk roads linking London to other cities, demand has outstripped supply, particularly at peak. On the major roads converging on the capital, heavy congestion is common for most of the time in the morning and evening rush hours. Last year a fifth of all delays on the motorway network occurred on the M25 alone.

A comprehensive and sustained strategy is needed to improve the reliability of the network. It should combine more efficient utilisation of the current network assets; a framework to provide new capacity where need is justified; and in the longer term a role for charging to ration capacity at times of peak congestion.

In the short term, the only practical way to cut congestion and improve reliability is for the Highways Agency to manage its road assets ever more effectively. Given the value to the economy of those journeys on routes into and around major urban centres at peak, a targeted performance regime should be put in place to cut congestion on these roads.

In parallel, the Highways Agency should be enabled and encouraged to deliver additional capacity from existing roads through accelerating its programme of hard shoulder running. Sections of the network should be prioritised according to a clear framework that incorporates the wider economic benefits of additional capacity.

Recommendation 4: Tailored performance regimes should be applied to those parts of the network of most importance to the economy. The Highways Agency should publish annual statements of delivery against those targets set.

In addition, existing roads will require ever more focused management from the Highways Agency. Alongside current measures to minimise congestion, the Highways Agency should accelerate its programme of hard shoulder running.

An objective assessment should identify those parts of the network facing greatest pressure now. On the basis that all options to relieve those pressures and meet growing demand by sweating the assets have been exhausted, it should establish the benefits of targeted expansion. The government has committed to a strategy to decarbonise surface transport over the next twenty to thirty years. Should there be extensive take-up of low-carbon vehicles, one of the arguments against new road building – its carbon impact – would effectively be removed as would wider environmental concerns over, for example, particulate emissions.

In the medium term, the Highways Agency should seek to procure efficient outcomes from the private sector – including new network capacity – without prescribing the technology or methods to achieve them. It should have greater autonomy in doing so and work at a greater distance from government, with the Transport Secretary playing a stronger client role as a representative of road users and applying greater pressure and scrutiny on performance.

In parallel, the Commission believes that the way in which strategy and funding for the rail network is set has proved effective, and should be replicated. Decisions determining investment in road infrastructure are too short term. Funding is subject to significant variation between and within years, driven not by the needs of the road network but by the needs of the Treasury at any given time to balance the books.

Recommendation 5: The government should put the Highways Agency on a firmer, more independent footing with a wholesale modernisation and a recasting of its relationship with the private sector. The Transport Secretary should play a stronger client role for an agency that has a clearer remit and a greater separation of its functions.

Recommendation 6: In turn, a modernised Highways Agency should be supported by a clearer, longer term policy framework from government. The government should introduce five-year planning and funding cycles, set in the context of a longer term strategy, as exist for rail.

The road network is the one part of our transport infrastructure which is generally free at the point of consumption. The efficient allocation and management of this scarce resource will, in the long term, depend on the introduction of charging, both on the most congested parts of the strategic road network, and in the dense urban areas linked by this network.

A system of charging could target, and differentiate, those parts of the strategic road network or dense urban areas that experience the worst congestion by requiring motorists to pay for access at certain times of the day. Securing public – and thus political – acceptability would require some reductions in other forms of motoring taxation.

Recommendation 7: The Commission believes the economic case for charging to cut congestion and its impact on the environment is strong, and the case for it will grow stronger as congestion grows. The government should identify those urban areas and sections of the strategic network with the worst congestion. It should then, with local authorities, develop and consult on a variable charging system with the aim of cutting this congestion, particularly at peak.

Rail links

The last two decades have seen considerable and sustained public investment in the rail network to boost capacity and improve service quality. However, while London is well served by the range, frequency and, increasingly, the reliability of rail services, demand outstrips supply. Over 500,000 people enter central London by rail in the rush hour – fourteen times more than do in England’s next largest city. The ten most overcrowded rail services in the UK serve the capital and half of rail passengers travelling to London in the rush hour do so in conditions classed as overcrowded.

There is a strong economic case for increasing the capacity of London’s commuter and long-distance rail links, as well as their interchanges with London’s transport. Crossrail and Thameslink, vital additions to London’s transport infrastructure capacity and integral to improvements on the national rail network, must now be delivered, efficiently and on time.

On London’s international rail links, the growth of services is unlikely to be constrained by limits on capacity in the short term. But as the European rail market is opened up, more effective regulation of individual national railways and the Channel Tunnel will be needed to enable competition to flourish.

Recommendation 8: The Intergovernmental Commission (IGC) should complete its review of access charges to the Channel Tunnel swiftly to maintain the long-term stability and certainty required by existing concessions and needed to attract future investment. The IGC should bring greater transparency to the calculation of charges and the investment they support.

In tandem, the government should press for regulatory reform and modernisation to support a competitive market for international rail services, as it has done in modernising the economic regulation of UK airports.

Ahead of its next funding settlement, Network Rail has identified an initial range of options for increasing capacity on key routes serving London in the period to 2019. These are principally incremental improvements to track, signalling, trains and stations rather than major new projects such as Thameslink. They assume the completion of the Tube modernisation programme, which remains unfunded beyond this parliament. In setting high level outputs for the rail network, the DfT should confirm the role the Tube upgrade programme will play in meeting demand.

Recommendation 9: Investment to grow rail capacity in London and the South East will continue to be required, and for the next control period should generally take the form of incremental upgrades rather than major new schemes.

Despite a 57 per cent growth in passengers since 1997, rail industry unit costs in 2010 are in real terms almost exactly the same. Over the same period there has been a 75 per cent real-term increase in passenger revenues and government subsidy has roughly trebled. The industry is running a £4.3 billion operating deficit.

Services in London and the South East generate about half of all fare revenue. They also receive the lowest levels of subsidy in the country. The Commission believes that the delivery of essential new capacity on the national rail network will, for the foreseeable future, continue to depend on a significant contribution from public expenditure. However, the case for this subsidy will need to be accompanied by demonstrable improvement in services, significant efficiency improvements and some continued contribution from fare payers.

Recommendation 10: The high annual fare increases now in place are not sustainable in the medium term. Tangible progress on cost reductions by the industry must demonstrably be made. While investment in new capacity will need to be supported by a contribution from both taxpayer and fare payer, government should review the allocation of scarce subsidy, and ensure that economic growth is being sufficiently prioritised.

In the long term, the Commission believes that if a new high speed rail (HSR) network is to deliver its promise by bringing much-needed new capacity to commuter and intercity routes, and retain the support of London business, certain conditions must be met.

If we are to start, we must finish. The real transformative benefits of HSR come from linking a network of cities to London and to each other: first Birmingham; then Leeds/Manchester; and ultimately Scotland. Moreover, HSR must be an ‘and’ not an ‘or’. This visionary, potentially transformative, grand project must be in addition to other vital work needed to upgrade the existing transport network, to address both historic underinvestment and to meet future demand. This includes completing upgrades to the Tube and rail networks to relieve overcrowding, as well as planning for longer term projects needed to meet demand, such as Crossrail 2.

Recommendation 11: Proposals for a new HSR network should come with commitment from government to sustained and sufficient levels of investment in other essential transport infrastructure; a clear strategy for a link to Heathrow that meets the growing demand for flights; and a comprehensive strategy to reduce forecast congestion at Euston.

Air links

London's international air links are critical to the capital's, and indeed the country's, economic success. The Organisation for Economic Co-operation and Development (OECD) states that GDP, GDP per capita and international trade are the major drivers of demand for travel. It predicts highest economic growth in the next twenty years in the Asia-Pacific region, and expects this to translate into rapid growth in trade and demand for transport.

The International Monetary Fund (IMF) predicts that over the next decade approximately half of all the economic growth in the world will be in the eight largest emerging market countries (including China, Indonesia, Korea, Russia and Brazil). Moreover, emerging market economies are forecast to overtake advanced economies' share of global GDP by around 2024. With much of Europe facing a prolonged period of low growth, business is increasingly looking to these markets for opportunities to expand.

London is served by four major point-to-point airports and the UK's only international hub airport, Heathrow. While Heathrow supports frequent services to established US and European markets, the absence of spare capacity constrains its ability to offer the range of international long-haul routes to the fastest growing economies that its rivals offer. London is currently at a competitive disadvantage as a result of its increasingly poor connections with growing markets in Asia and Latin America.

London has fewer weekly flights than its European rivals to half of the emerging market economies, and seven of the eight growth economies identified by the IMF. And it has no direct air links to the emerging economies of Chile, Colombia, Peru, Venezuela, Indonesia and the Philippines – links that other European cities possess.

London requires new hub capacity now and will require further investment in point-to-point capacity over time. There is no easy course of action to meet this need. All options for new hub capacity present substantial challenges in terms of their financing, funding and local environmental impact, and all will require political will. But without urgent action to meet this need, government runs the risk that investment decisions being taken both by businesses in growing economies and by the airlines that serve them will be difficult, if not impossible, to reverse. Policy drift will lead to a gradual erosion of London and the UK's competitiveness.

The Commission believes that proposals for new hub capacity should be assessed on the basis of their deliverability in the short and medium term (the next fifteen years), given the urgent need to tackle the consequences of Heathrow's overutilised capacity.

In the next five years, the only measure capable of bringing an increase in hub capacity is an operational one, namely enabling Heathrow to use its existing runways more efficiently by allowing planes to land and take-off concurrently on both runways. Freedom to operate in this way could increase runway capacity by 10–15 per cent.

Recommendation 12: Heathrow airport should have greater freedom to operate more efficiently by allowing planes to land and take-off concurrently on both runways. The capacity released should be used both to improve resilience and to provide an increase in the overall number of flights.

Recommendation 13: Freedom to optimise the use of current capacity should be accompanied by credible, deliverable and independently enforced measures to mitigate and compensate for the local impact of additional noise. In support of this, the government should commission expert advice from the regulator on ways to minimise and manage the distribution of noise from different flight patterns.

Additional hub runway capacity is required as soon as possible. The Commission's approach has been to take a step back from the immediate politics of aviation and look at the evidence – what London needs and how these needs can be met. It has sought to understand whether or not London's need for additional hub capacity can be met by proposals in the medium term (the next fifteen years), and in doing has considered the range of options.

i. 'Do nothing'

Economic modelling has estimated the impact on the economy of doing nothing. While there are many variables, and a range of forecasts from £20 billion to £47 billion, the Commission is in no doubt that the cost to the economy of doing nothing would be high. In this scenario, government would come under pressure to intervene to redistribute the use of existing capacity at Heathrow to prioritise flights to certain types of destination. We do not believe such an attempt would deliver acceptable or efficient outcomes; and we believe this would be a distraction from the real need: more hub capacity to provide greater connectivity.

ii. A 'dual hub' involving Heathrow and another airport

It is suggested that a hub at Heathrow could be sustained by expanding capacity elsewhere (for example Gatwick) and improving surface transport links between the sites to enable passengers to connect. The Commission is not persuaded that this could work. In particular it is sceptical that these options could deliver the minimum connection time required by passengers (and for their bags and other cargo), and available at other European hubs with co-located facilities.

iii. A new hub airport

A new hub airport could offer state of the art infrastructure in a location with world-class transport links and the scale to meet London's needs against the most stretching forecasts of demand growth. Depending on its precise location, it also offers the potential to disperse

local environmental impacts, such as noise, over a less populated area. Although there are no comprehensive, fully costed plans in place, the vision for a new hub airport represents the sort of long-term infrastructure planning that London will need if it is to remain competitive.

The Commission believes a new hub airport is likely to take at least twenty to thirty years to deliver and cannot therefore meet the urgent need for new hub capacity that London faces today. The critical constraint is that if it is to be built, even within twenty to thirty years, it will require political leadership and consensus now: not just over its location but over the specific planning process and significant public investment required. And while a new hub airport may have merit, the cost of failing to address the need for new capacity in the short and medium term must be acknowledged, understood and factored into any assessment of it.

iv. The expansion of Heathrow

A third runway at Heathrow is the most developed option for expansion in the next decade, with a planning application, financing and funding in place. It could thus be delivered within the next decade. It is also, in part because it is a developed scheme, the most controversial.

The Commission believes that, overall, the case for expanding Heathrow is strong. Britain faces severe public sector financial constraints and low growth from its traditional major export markets. The need to seek out growth and demand in new markets makes the case for a privately financed, fundable and deliverable means of growing London's connectivity in the next decade even stronger. In its development of a new national aviation policy, government should examine all options including Heathrow and the case for a new hub airport, to meet London's long-term needs.

Recommendation 14: We call on the government to amend the criteria for its review of national aviation policy to include the option of Heathrow expansion and to choose the best option for Britain. A third runway at Heathrow appears to the Commission to be the most credible solution to meeting London and the UK's vital need for increased hub capacity in the medium term (the next fifteen years).

Recommendation 15: The government should similarly consider how further point-to-point capacity in London and the South East should be provided in the next fifteen years where merited by demand.

Given that the delivery of a new hub airport is likely to take at least twenty years, in examining the case for a new hub airport, government should include a calculation of the tangible cost – or opportunity cost – of rejecting each credible proposal, including the costs of failing to expand Heathrow in the intervening period.

Recommendation 16: The government's review of national aviation policy should include the option of a new hub airport and examine the opportunity costs of all credible proposals. It should verify that London and the UK have sufficient hub capacity to support economic growth.

CHAPTER 1

Introduction

1.1 London's need for connectivity

London's unique concentration of economic activity is at the heart of the country's economy. Its success is rooted in a number of sectors – tourism, retail, medical science, creative industries, professional and financial services, engineering and construction – which make it Britain's principal gateway to talent and capital from across the world. It is the most economically vigorous region of the UK and generates more in tax than it receives in public spending – the only region in the country to do so in 2010.¹

London is a major trader with the world. It is home to the European headquarters of one-third of the Fortune Global 500 companies and is a leading European destination for foreign direct investment (FDI),² attracting a fifth of all European FDI.

As well as being the world's sixth-largest exporter of goods, the UK is the second-largest exporter of services,³ a position it has held for the last fifteen years.⁴ Service exports have grown at twice the rate of goods exports in the last decade.⁵ London accounts for over a third of these exports.⁶ In financial services it is a global leader.

Global economic growth is being driven by emerging markets.⁷ The OECD forecasts that the Asia-Pacific region will see the world's largest economic growth in the next twenty years, driven by the Bric countries (Brazil, Russia, India and China). China's GDP is forecast to grow threefold by 2030, overtaking US GDP before 2025.⁸ The IMF forecasts that over the next decade approximately half of all the economic growth in the world will be in the eight largest emerging market countries, such as Brazil, China and Russia.⁹ With much of Europe facing a prolonged period of low growth, business is increasingly looking to these markets, and particularly to Asia, for demand and growth.

As a location for economic activity, London faces fierce competition from other world cities, be they traditional rivals such as New York, Paris, Frankfurt and Tokyo or emerging market cities such as Singapore, Hong Kong, Shanghai and Seoul, which are increasing their efforts to attract investment and talent.¹⁰ Research by McKinsey & Company, which anticipates which cities will lead the world economy by 2025, projects the potential rise of cities such as Tokyo and Shanghai¹¹ and the relative loss of economic power by Western cities such as London.¹²

London's access to markets is a key source of competitive advantage. The capital's ability to remain a leading centre for world trade and commerce will increasingly depend on securing new links with emerging markets than maintaining traditionally strong links with domestic, European and US markets. These links, combined with sufficient connectivity with the rest of the UK, will be critical to the capital's ability to support and spearhead the UK's economic growth.

London's links

At the heart of London's connectivity are the capacity and quality of our road, rail and air links. This transport infrastructure allows London's businesses to reach the rest of the country and the world; it also allows the world and the rest of the UK to reach London. It enables national and international trade, the gathering of workforces and the commercial activity that creates and supports jobs. It also supports tourism, the capital receiving half of all overseas visitors to the UK.¹³

London's connectivity is defined by a diverse and well-utilised range of road, rail and air links:

- London is served by a dense network of local and strategic roads that converge on it. London and the South East's roads carry almost a third of England's traffic.¹⁴
- London is at the heart of the UK's rail network, and by some margin the country's largest source of demand. Three-quarters of all the country's rail journeys start or end in the capital, the vast majority for commuting or business.¹⁵
- Every year, over two-thirds of all the UK's air passengers pass through London's airports. And Heathrow, the UK's only international hub airport, serves two-thirds of all those flying to London for business.¹⁶

London First members have expressed concern that while the range and reach of London's transport links to the UK and the wider world are extensive, much of our critical strategic transport infrastructure is heavily congested and lacking resilience when put under pressure, and some is currently unable to meet demand, particularly at peak. Demand has outstripped supply.

- **Road:** At points, and particularly on routes into and around the capital and other major cities, London's road links are unreliable. Around one in ten journeys in England are taken in very congested conditions.¹⁷ A fifth of all delays on the motorway network occur on the M25 alone.¹⁸
- **Rail:** On London's rail links and in its major stations, overcrowding is common. The ten most overcrowded rail services in the UK serve the capital¹⁹ and half of rail passengers travelling to London in the rush hour do so in conditions classed as overcrowded.²⁰
- **Air:** London's air links are hampered by constrained and overutilised runways. Heathrow, London's hub airport, is full, running at 98 per cent of permitted capacity. Gatwick, London's largest point-to-point airport, is nearly full at peak times. Without headroom for resilience, Heathrow suffers from, on average, 20 per cent longer flight delays than all other major European rivals.

The consequences of inaction are being felt now – unacceptable quality, diminishing access and poor resilience. They represent an immediate threat to London's ability to compete globally for investment and talent, and to extend the benefits of its dense agglomeration of activity to the rest of the UK. London's businesses believe action is needed now if the city is to remain at the heart of the global economy.

Transport and economic growth

A wealth of empirical research and academic studies – including the UK government’s Eddington Study²¹ – shows a strong correlation between transport and economic activity. There is consensus that transport can affect the rate of growth in GDP and the generation of trade and FDI, notwithstanding that the precise causality and scale is debated.

Transport investment can generate wider economic benefits in areas of high population and employment, and particularly in those areas where demand for transport exceeds supply. The DfT defines the largest of these economic benefits – ‘agglomeration impacts’ – as increases in economic output in and between dense concentrations of economic activity, businesses and workers. These concentrations – ‘agglomerations’ – themselves create high levels of productivity and efficiency gains. And while transport investment cannot create them, it can enable their expansion, by increasing access to markets and supply chains, spurring specialisation, lowering costs and expanding choice. All things being equal, the wider economic benefits of transport infrastructure are greatest within and between dense urban areas.

Most industry groupings are a quarter to a third more productive in London than the UK average.²² A third of all of London’s employment occurs in the Central Activity Zone²³ and contributes disproportionately to the UK’s GDP. Inner London contributes 14 per cent of the UK’s GDP.²⁴ Transport infrastructure can, with the right policy framework and sufficient investment, increase the UK’s access to this high level of agglomeration. Equally, London can generate jobs and attract talent from the rest of the UK and wider world, thereby expanding its own concentration of productive economic activity. On both counts, good connectivity – the ability, for example, to meet a client or commute to a place of work – is essential.

The economic well-being of the UK as a whole is firmly linked to the economic performance of London and the South East. London’s principal competitors as a location for economic activity are other world cities such as New York, Paris, Frankfurt, Hong Kong and Tokyo. Poor infrastructure that undermines London’s competitiveness will lead to new investment and jobs going overseas, not elsewhere in the UK, and will weaken London’s ability to create and sustain employment. Our transport networks will need to grow if London and the UK’s competitiveness are to be maintained.

1.2 Trends

Demand for Britain’s transport links has grown significantly in the past thirty years (Figure 1).

Road traffic in the UK has historically increased in line with economic growth. In the last thirty years, car traffic has almost doubled²⁵ (Figure 2), and while traffic within London over the last decade has fallen (largely as a result of congestion charging), in the rest of the South East it has grown by four per cent.²⁶

Figure 1: Index of historic demand: 1980–2010

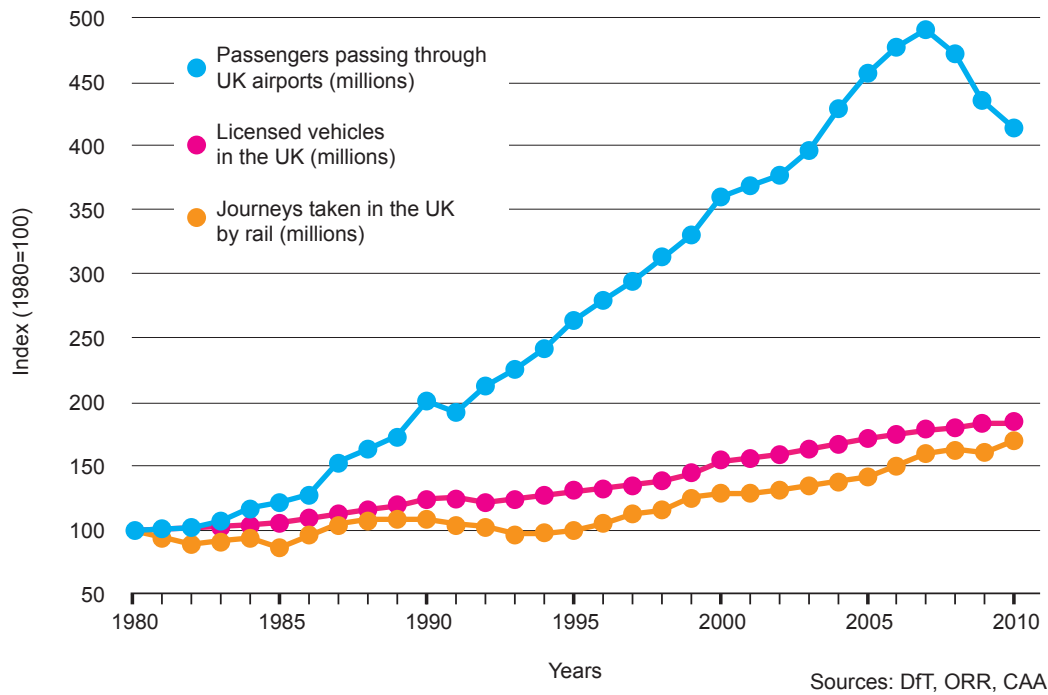
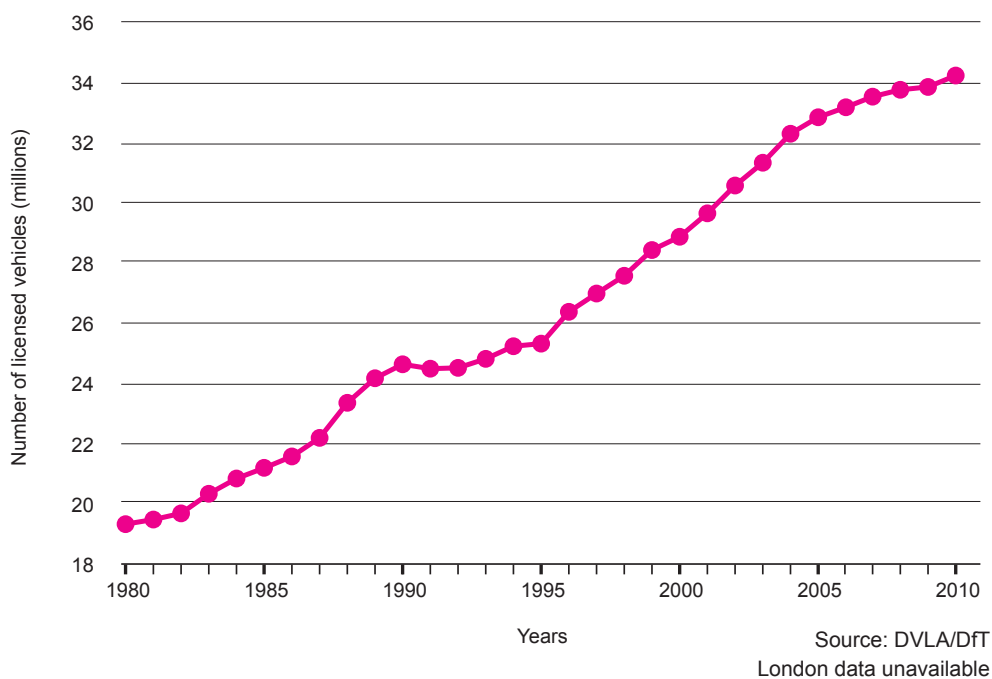
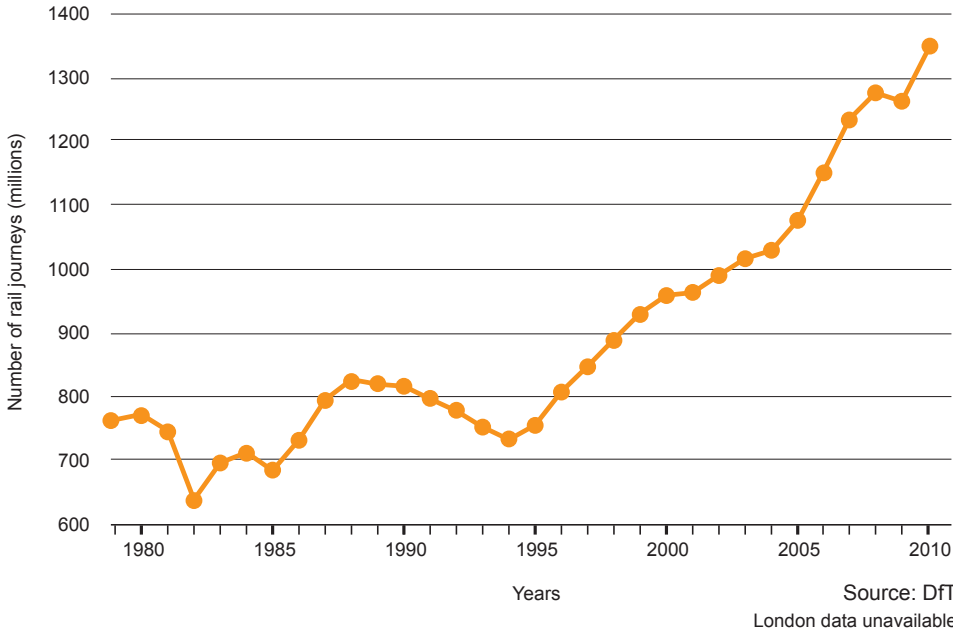


Figure 2: Licensed vehicles – all tax classes (millions): 1980–2010



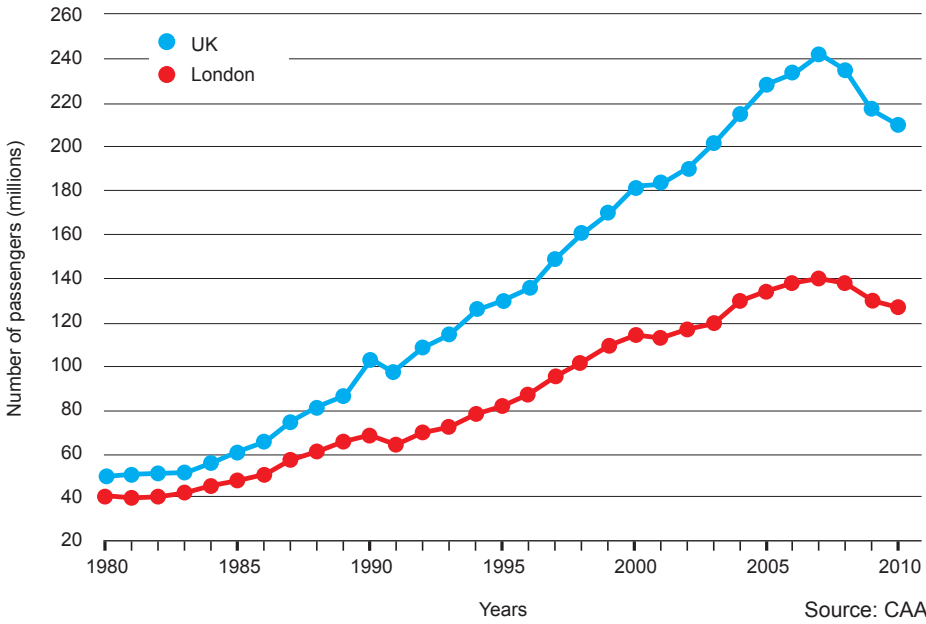
Rail travel in the last thirty years has grown by over 50 per cent (Figure 3). There are few signs of demand dampening over the longer term.²⁷ In 2010 demand for services in and to London and the South East grew at almost twice the rate as the rest of the country.²⁸

Figure 3: Journeys taken each year by rail (millions): 1980–2010



More than 200 million passengers pass through the country’s airports every year. The UK has seen an almost fourfold increase in air travel in the last three decades (Figure 4). In the last twenty years alone, demand for London’s airports has grown 50 per cent.²⁹

Figure 4: Passengers passing through UK airports each year (millions): 1980–2010

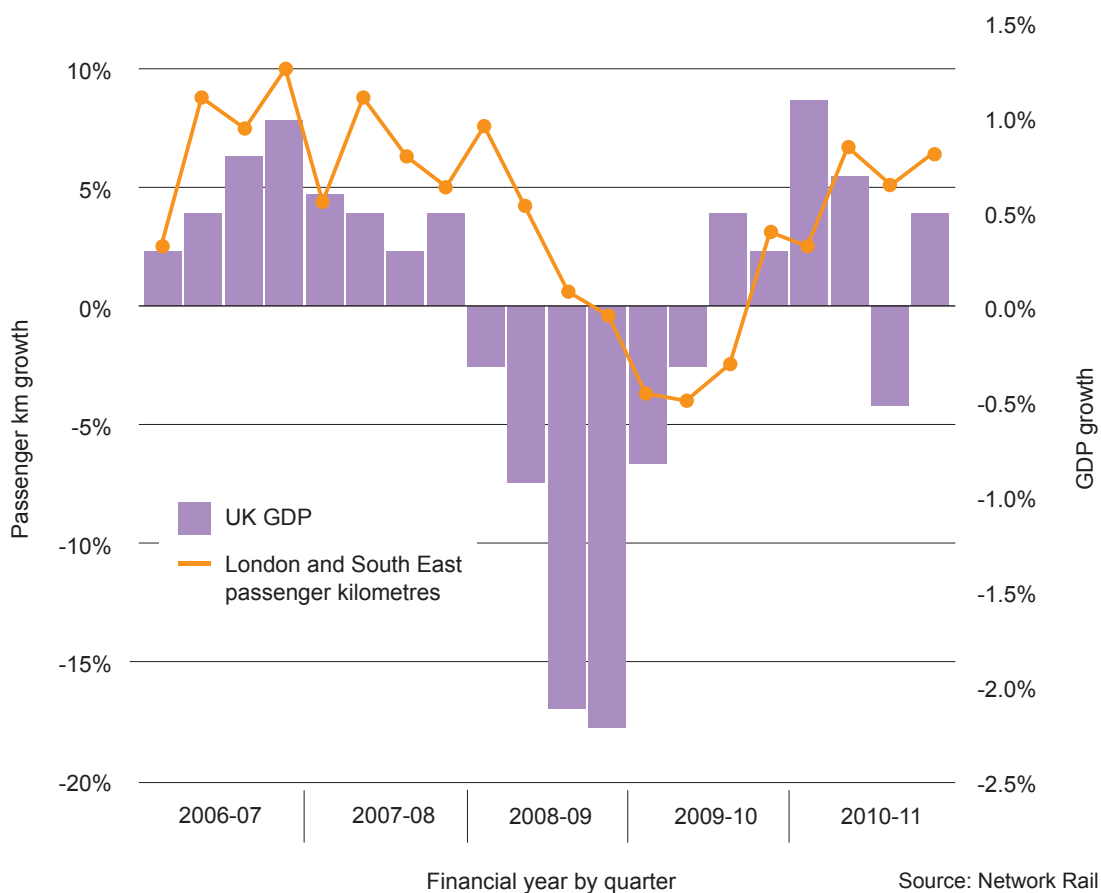


While the recession has dampened demand, in July 2011 Heathrow handled more passengers than in any previous month (up 2.5 per cent on 2010) and in 2011 saw a four per cent increase in passenger numbers.³⁰ In the same year Gatwick saw a three per cent increase in passenger numbers.

Demand for travel is set to continue rising, as a result of London's population and economic growth. The capital is home to 7.6 million people and is at the heart of a wider South East region of around 21 million. Its population has grown almost ten per cent in the last twenty years, the UK's by seven per cent.³¹ The Mayor of London's spatial development strategy (the London Plan) forecasts a population increase in London of over 1.2 million by 2031, which it projects will create 790,000 new households and 750,000 new jobs.³²

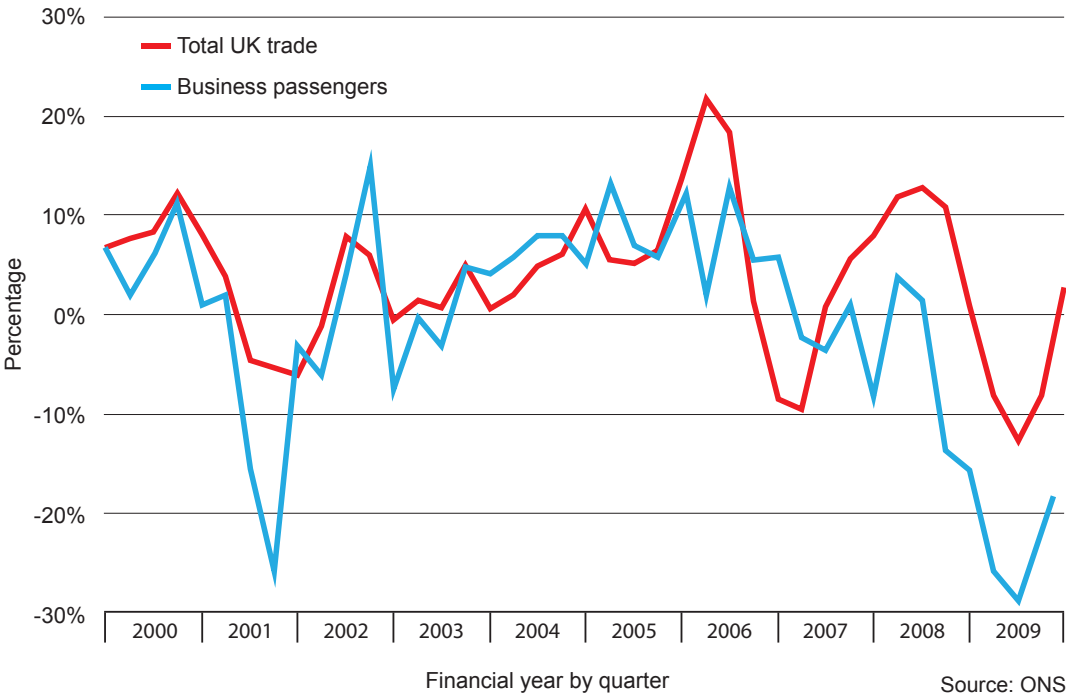
Analysis indicates that GDP is the largest factor determining demand for travel.³³ This applies as much to the international air links that enable global trade as it does to the national transport networks that move workforces and goods (Figure 5).

Figure 5: Growth of UK GDP and growth of rail travel in London and the South East: 2006–2010



The OECD forecasts global GDP growth to 2030 will translate into growing trade and demand for transport, especially within Asia and between Asia, Europe and North America.³⁴ There is a clear correlation between volumes of trade and air travel, and a positive linear relationship between the number of business passengers at UK airports and total trade volume with the UK (Figure 6). Trade and travel are symbiotic.

Figure 6: Growth of UK trade and business passengers at UK airports: 2000–2009



1.3 Forecasting uncertainty

While forecasting long-term demand for travel is, of course, an inexact science, there are two particular objections raised against planning to meet projected growth in demand. The first is that demand will not materialise at projected levels because of the substitutional impact of technology, such as videoconferencing; the second is that the reductions sought in carbon emissions will preclude meeting all demand for travel.

Substitutes to travel

The Commission sought to understand the extent to which business demand for travel is changing as technological substitutes become more advanced and widely available. In this, the Commission was faced with a lack of quantitative evidence indicating long-term trends. The DfT for example, currently has no empirical evidence on the uptake of alternatives to travel and the impact they are having on overall travel taken.³⁵ The Commission therefore gathered evidence directly from businesses.

Not surprisingly, travel is viewed as a key area of focus in cost management. Large international businesses with headquarters in London or major operations in the UK will always be looking for alternatives to travel to cut their costs. The recession has served to intensify these efforts. There is a range of evidence that corporate travel budgets have been cut over the last two years, accompanied by more explicit corporate travel policies, greater scrutiny of the need to travel and enforcement of formal pre-trip approval.³⁶

Corporate travel policies to reduce travel have in many cases been supported by significant investment in videoconferencing and teleconferencing, as well as the increasing use of more low-tech forms of remote communication³⁷ for transactional work.

Nonetheless, it is not apparent from the evidence received that better information and communications technology (ICT) has radically altered aggregate demand for travel. The Commission heard clear evidence that the need for face-to-face meetings is unabated and that ICT remains a complement to face-to-face communication, not a substitute. There is, after all, a range of powerful social and cultural reasons supporting the basic human need to establish contact, trust and relationships face-to-face.

ICT has clearly led to some reductions in both surface and air travel, largely for internal meetings and mostly within the UK. It has also spurred a trend to more flexible working patterns, with about one in ten UK employees now working at least one day a week from home.³⁸ However, improvements in ICT have also generated additional demands for travel. In some instances remote communication has supported greater initial reach into new and growing markets, particularly in Asia and the Middle East, with the consequent opening of new travel routes.³⁹

The Commission heard strong support for the view that with globalisation and growing demand, the tradability of goods and services and the flow of capital between countries and regions will lead to an increase in travel – and particularly to high-growth economies, given that growth in Europe is projected to be relatively flat.

Carbon emissions

The Commission also sought to understand the degree to which cutting emissions from transport will affect future transport policy and the UK's ability to meet demand for travel. Road transport produces 20 per cent of the UK's carbon emissions,⁴⁰ air transport around six per cent⁴¹ and rail less than one per cent.

The UK has a statutory target to reduce greenhouse gas emissions across all sources by 80 per cent by 2050.⁴² The Committee on Climate Change (CCC)⁴³ advises government on how best to meet this target, sets annual carbon budgets and produces a range of practical and policy recommendations to achieve cost-effective reductions. In May 2011, the government accepted in full the recommendations of the CCC's latest budget, which include the rapid decarbonisation of the power sector and the wide-scale deployment of low-carbon electricity for transport and heat.⁴⁴

The government has committed to reducing road transport emissions by around 44 per cent by 2030⁴⁵ and the CCC has recommended a 91 per cent reduction by 2050. Reaching this target will require almost complete decarbonisation of road transport, electric vehicles gaining a 60 per cent market share by 2030 and all new vehicles being ultra low-carbon by 2035. The precise trajectory for such a transition is not yet clear, and would be guided both by the pace at which new technologies come to market and by the decarbonisation of power generation. However, the decarbonisation of surface transport offers a means of meeting future growth in demand for road travel, within an economy-wide cap on carbon.

The CCC does not believe it will be optimal to seek to reduce emissions from air transport at the same rate as other sectors of the economy. Alternative technologies that can make transformational reductions feasible in other sectors without major economic cost are unlikely to be available on a similar timescale.

The government has committed to ensuring 2050 emissions from air transport do not exceed 2005 levels and has promoted the inclusion of aviation in the EU's Emissions Trading Scheme,⁴⁶ on the basis that a carbon market, with a progressively tighter cap on free allocations of permits, will incentivise airlines to reduce their carbon emissions.

Taking this into account, alongside improvements to aircraft engines, bodies and fuels anticipated between now and 2050, the CCC has concluded that a 55 per cent growth in flights by 2050 is compatible with achieving overall carbon reduction targets. It has not advised where this growth should occur, but clearly there is a means of meeting a good proportion of future demand for air travel to support London's functions as a World City.

Carbon emissions from rail travel will reduce with the electrification of additional parts of the network and the introduction of more efficient rolling stock. There are in principle some policy interventions to effect a shift from air to rail travel, but of course there is no practical substitute for long-distance international air travel.

Planning for the future

Given that London's key transport links are now operating at or close to capacity limits, and in the absence of compelling evidence to suggest that a fundamental shift in trends has taken place, the only rational response is to plan for ways in which to meet future demand, while keeping changing patterns of demand under review. The consequences of inaction will be the deterioration in the quality and capacity of London's links to the UK and the wider world, with diminishing access to domestic and international markets, and weakened prospects for economic growth.

1.4 The Commission's approach

Taking as its starting point the concerns expressed by London First members about London's future connectivity, this report sets out to examine the road, rail and air transport infrastructure linking London with the UK and the wider world. It seeks to understand the relationship between quality and capacity, and the correlation between service quality and capacity utilisation. In simple terms: is there enough transport capacity allowing Londoners to reach the rest of the country and the world, and the world and the rest of the UK to reach London? Is this capacity sufficiently reliable, predictable (in terms of journey times) and of sufficient quality (in terms of journey experience, given different price points) for the capital to remain at the heart of the global economy?

This report does not assess transport within the M25, an area of examination for London First in 2010 through a sister Commission that considered the provision of strategic infrastructure primarily within London's boundary,⁴⁷ including water, waste, energy and telecoms as well as transport.

This Commission has kept its focus on the peak demand for travel generated by commerce, although it notes the significant contribution made by tourism to the economy, which generates 30 million overseas visitors and 116 million domestic trips a year.⁴⁸ Planning and investment decisions necessarily focus on delivering peak network capacity, usually during the morning rush hour,⁴⁹ on the basis that if enough capacity can be provided in the morning peak, demand can generally be met across the day. The Commission has examined the capacity of London's transport links to meet business demand in the peak.

London's transport links to the UK and the wider world are subject to both public and private provision in their planning, funding and delivery (Appendix 1 gives further detail). They are overseen by several government departments, with sector-specific regulation for road, rail and air, and are delivered by a range of private sector businesses and public sector agencies. The Commission's approach to navigating through this complexity has been to begin with a call for evidence – from businesses, user groups, experts, providers, government and other key parties – which resulted in written evidence from 40 parties. It followed this by holding a set of witness hearings with 20 providers, experts and stakeholders. It also sought the views of a reference group comprised of practitioners and experts (Appendix 2). Detailed discussions with over 70 London First members and stakeholders were held throughout the process. Appendix 3 contains further details on the consultation process.

The following chapter addresses the need for a long-term approach to transport policy, and identifies some of the key institutional reforms that government should pursue to enable better plans, together with the funding needed to deliver them. Chapters 3, 4 and 5 then examine by mode – road, rail and air – the quality of London's transport links, primarily as a function of their capacity to meet demand, and the short, medium and long-term changes required to improve London's links. Chapter 6 summarises the Commission's key recommendations.

CHAPTER 2

**A transport policy
to support effective
delivery**

Over decades, the UK's transport infrastructure has been victim to prolonged underinvestment and a failure by successive governments to plan ahead. As the Treasury itself has said, "the UK's approach to infrastructure investment has in general been timid, uncoordinated, incremental, wasteful in its procurement and insufficiently targeted to supporting balanced and sustainable growth in the economy."⁵⁰

How then can we ensure that transport policy in the future will be more effective than it so often has been in the past?

Recent OECD analysis of countries' future transport infrastructure needs observed that for all the complexity, countries need to get two things right at the same time – a national policy framework and an assured mixture of private and public funding.⁵¹ Applying this to the UK, the Commission identified four areas of institutional reform that government should pursue to result in better plans, together with the funding needed to deliver them.

i. A sustainable national approach to infrastructure policymaking

The infrastructure assets supporting London's connectivity have some common characteristics: their provision generally requires public policy support, they have very long lives and are capital intensive. If they are to be effectively and efficiently provided, there needs to be a policy framework that sets down how such strategic infrastructure is to be planned, evaluated, delivered, financed and funded.

As far as possible, these frameworks need to be evidence-based and command widespread political support. It will of course never be possible to completely depoliticise infrastructure policy. Nor would it be appropriate to do so, given many projects have significant costs, whether generally to taxpayers or more specifically, through charges or local environmental impacts. But equally, individual decisions about strategically important infrastructure can have profound and long-lasting impacts on the national interest.

The government has recently created Infrastructure UK (IUK), within the Treasury, as a unit to advise it on long-term national infrastructure needs and provide commercial expertise to support and coordinate major projects and programmes. The government's first National Infrastructure Plan set out its broad vision of the infrastructure investment required to drive the UK's growth. The update to this plan published in November 2011 sets out the government's view of the infrastructure investment required to support the UK's growth. It provides comparative analysis of the relative performance of key sectors and identifies 40 projects or programmes viewed as critical to growth. It also sets out the government's ambition for attracting additional private sector investment in the UK's infrastructure.

We welcome this approach. The quality of the UK's infrastructure planning and financing has been, at best, variable over recent decades. The road network has suffered from feast and famine, being used almost as a spending control total item rather than an important target for major investment where value can be delivered only against financing constancy. Network Rail's five-year investment review process appears to deliver at least medium-term clarity over objectives, financing and funding which can survive a change of government. By comparison, the economic regulation of major airports, which involves the five yearly process of setting price caps on airport charges, with the regulator judging the efficiency of operating and capital

expenditure, has supported the delivery of additional private investment, but has not been matched by long-term planning certainty. The Commission heard deep frustration that the UK's last national aviation policy took over a decade to develop and adopt, but did not survive one change of administration.

While policy consistency and certainty is important if publicly provided infrastructure is to be efficiently provided, it is essential for the private sector, which simply will not invest in its absence. Capital constraints are set to remain severe in the short and medium term. And attracting private capital may increasingly depend on the private operation and management of infrastructure that is able to generate efficiencies and stable, long-term revenues.

One of IUK's functions is to identify and attract new sources of private sector investment and we welcome this role. Much of the investment in the UK's transport infrastructure is undertaken by businesses which operate internationally and have a choice of markets and projects for their scarce capital. If the UK does not create the right policy framework to make investment in infrastructure attractive, private finance will go elsewhere.

Given constraints on public spending, we welcome the Treasury's review of the Private Finance Initiative to establish a new policy framework for privately financed infrastructure. It should develop a clear and transparent model that unlocks private capital, drawing on successful examples of the private operation and management of road, rail and air transport infrastructure from the UK and globally.

ii. A more predictable approach to land use planning

Clearer national policy frameworks should be supported by reforms to land use planning to give investors greater certainty and confidence in making investment decisions. The government's commitment to a planning system for major infrastructure which is "rapid, predictable and accountable"⁵² is therefore a welcome starting point. Ministers should provide early, clear statements of strategic policy, with independent planning bodies assessing projects against them.

Complaints about the UK's planning system – in particular, the high transaction costs associated with it – have been voiced in recent years by businesses and by a range of independent commentators. Planning consistently ranks as one of the main concerns of companies looking to invest in UK infrastructure. It has also been cited by the OECD as a drag on UK productivity.⁵³

Independent reviews of planning and transport by Kate Barker⁵⁴ and Rod Eddington⁵⁵ recommended reforms to the planning system for major infrastructure projects. These were taken up by the previous government through the Planning Act 2008. The Act included the creation of National Policy Statements (NPSs), to set out national policy on a particular area of national infrastructure; a definition for Nationally Significant Infrastructure Projects (NSIPs); and the introduction of the Infrastructure Planning Commission (IPC) to speed up the process of reviewing NSIPs.

These changes have, in turn, been amended by the present coalition government, which has made two major commitments. First, to abolish the IPC and return planning decisions regarding major infrastructure projects to ministers in order to maintain democratic accountability. The IPC will be replaced by April 2012 with a Major Infrastructure Planning Unit, which will form part of the existing Planning Inspectorate. Second, NPSs will be subject to more detailed parliamentary scrutiny.

Recommendation 1: The government must now deliver on its planning reforms for infrastructure by ensuring they provide timeliness and predictability, in tandem to improving democratic accountability.

iii. A joined-up transport policy

Alongside the call for better coordination between different arms of government, the Commission heard widespread evidence of the need for better coordination and integration in the planning and delivery of different modes of transport.

For example, the Commission heard frequent complaints about the quality of interchange for those transferring between networks – whether from London’s airports to surrounding road and rail networks; at London’s major rail stations when passing between rail, tube or street; or in the transition from the motorway network to London’s roads. These interfaces are often heavily congested and will, without action, continue to impose constraints on the expansion of capacity required across the network to meet demand. In 2006 the Eddington Study⁵⁶ highlighted, amongst other things, the urgent need to improve the UK’s key international gateways with better road and rail access. It is hard to avoid the conclusion that transport policy has paid insufficient attention to the need for better integration between modes.

The DfT should bring a greater focus to bear on the major interfaces between road, rail and air transport infrastructure, as well as the personalised technology that would enable users to navigate these network interfaces efficiently. This should be supported by greater alignment of the planning and investment cycles for road, rail and where possible air transport infrastructure.

Recommendation 2: The DfT should deliver on its stated ambition to improve end to end journeys for passengers. Its forthcoming national rail and air strategies should contain the practical and policy means to define, measure and benchmark improvements to the interfaces between London’s road, rail and air networks.

iv. Consistent prioritising of investment

Finally, a long-term transport policy should be informed by a clear and consistently applied framework for prioritising the provision of infrastructure most likely to yield the greatest contribution to sustainable economic growth. Assessing the total economic benefit of all transport infrastructure investment on a like-for-like basis – in terms of jobs, productivity growth and tax revenues – would provide a strong basis for prioritising limited public resources to achieve the best returns.

There are of course other objectives for transport policy beyond maximising economic growth. They include carbon reduction, and reducing local environmental impacts, which should also be inputs to a credible, transparent and consistently applied framework that underpins long-term decisions. Applying policy in this way would bring greater clarity to the government's attitude towards modal shift.

Recommendation 3: In order to prioritise limited public resources to secure the best returns, the government should capture the likely GDP impact of investment in road and rail infrastructure, and incorporate it into any analysis of benefits and costs. A new national aviation policy should similarly consider which investment in air transport infrastructure is most likely to yield the greatest contribution to sustainable economic growth.

Key challenges facing London's road, rail and air links

Having considered some of the cross-cutting themes affecting future infrastructure provision, the following chapters examine the key challenges facing our road, rail and air transport networks. In each case we propose a number of practical and policy recommendations which, taken in the round, the Commission believes will increase the capacity and quality of London's connectivity.

CHAPTER 3

Road links

A free-flowing road network is an important element of London’s overall connectivity with the rest of the UK. The road network underpins economic activity across the country as a whole. Nearly three-quarters of all commuting trips in England are made by car,⁵⁷ a quarter of these in London and the South East.⁵⁸

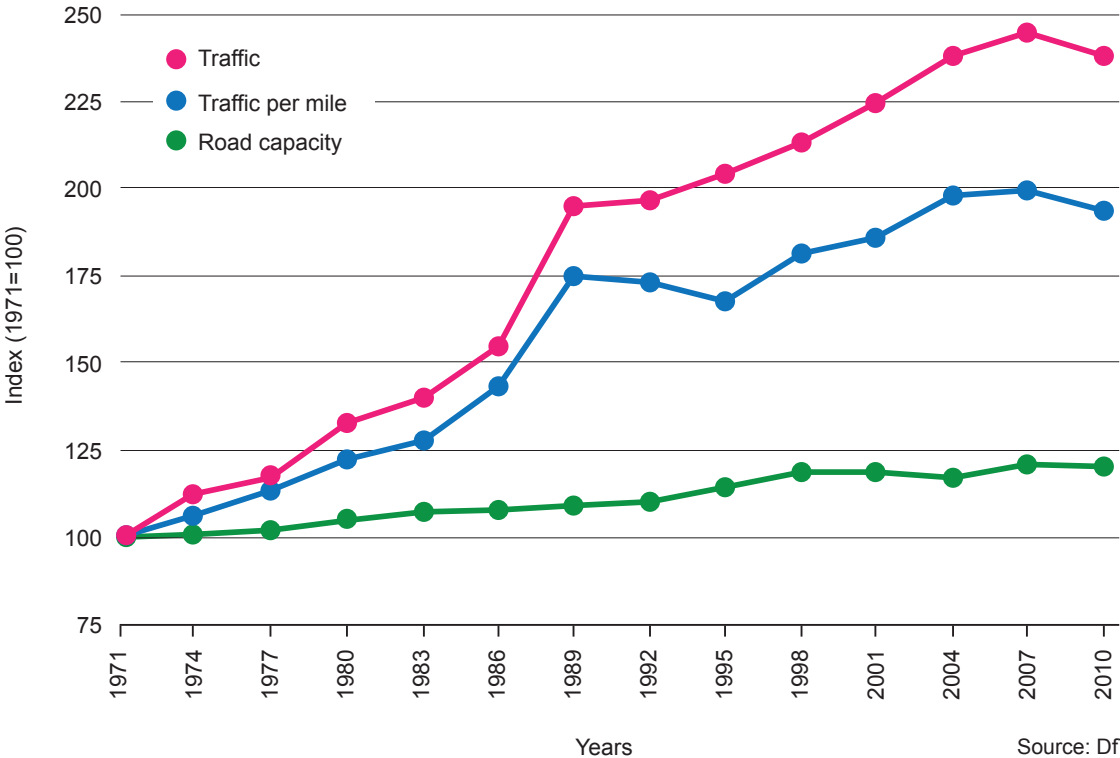
The strategic road network of motorways and trunk roads comprises only three per cent of all England’s roads, but carries a third of all passenger traffic⁵⁹ and two-thirds of all freight. The Commission has focused primarily on the performance of this motorway network and its interaction with London and other major urban areas, rather than local roads, or roads within London per se.

However, it should be noted that a fifth of commuters enter central London by road.⁶⁰ Within London the road network is heavily utilised⁶¹ but is fundamentally lacking capacity to meet demand. Users in the capital experience a fifth of all the UK’s road congestion.⁶²

Capacity

In the decade to 2008, traffic on motorways rose by 17 per cent while the network grew by only four per cent⁶³ and the UK’s total road capacity grew by just 1.3 per cent (Figure 7).

Figure 7: Index of growing road traffic, traffic per mile and road capacity: 1971–2010



A predictable consequence of demand rising faster than supply is increased congestion – which in turn causes delayed and unreliable journeys. Around one in ten road journeys in England are taken in very congested conditions.⁶⁴ Lost time inevitably incurs cost to business, and is compounded by growing congestion within urban centres, which extends to the handover between trunk and local roads.

Road users experience significant delays on routes into and around London and other major cities where space is most constrained. As might be expected, congestion is particularly acute at the times of peak demand. Figures 8 and 9 (pp.36 and 37) indicate where the strategic road network is operating over capacity.⁶⁵ They show that in some places, particularly on the strategic roads converging on the capital, capacity is overutilised for most of the time in the morning and evening rush hours.⁶⁶ Indeed, last year a fifth of all delays on the motorway network occurred on the M25 alone.⁶⁷

The first step to improving reliability on the network is measuring it. This is a complex and challenging task (see ‘Measuring reliability’ below), and current metrics are crude. However, from the information available two points are particularly noteworthy.

First, while delays have fallen overall by 12 per cent since measurements were first taken in 2005,⁶⁸ they have fallen only marginally in the morning peak.⁶⁹ In the evening peak delays have risen.⁷⁰

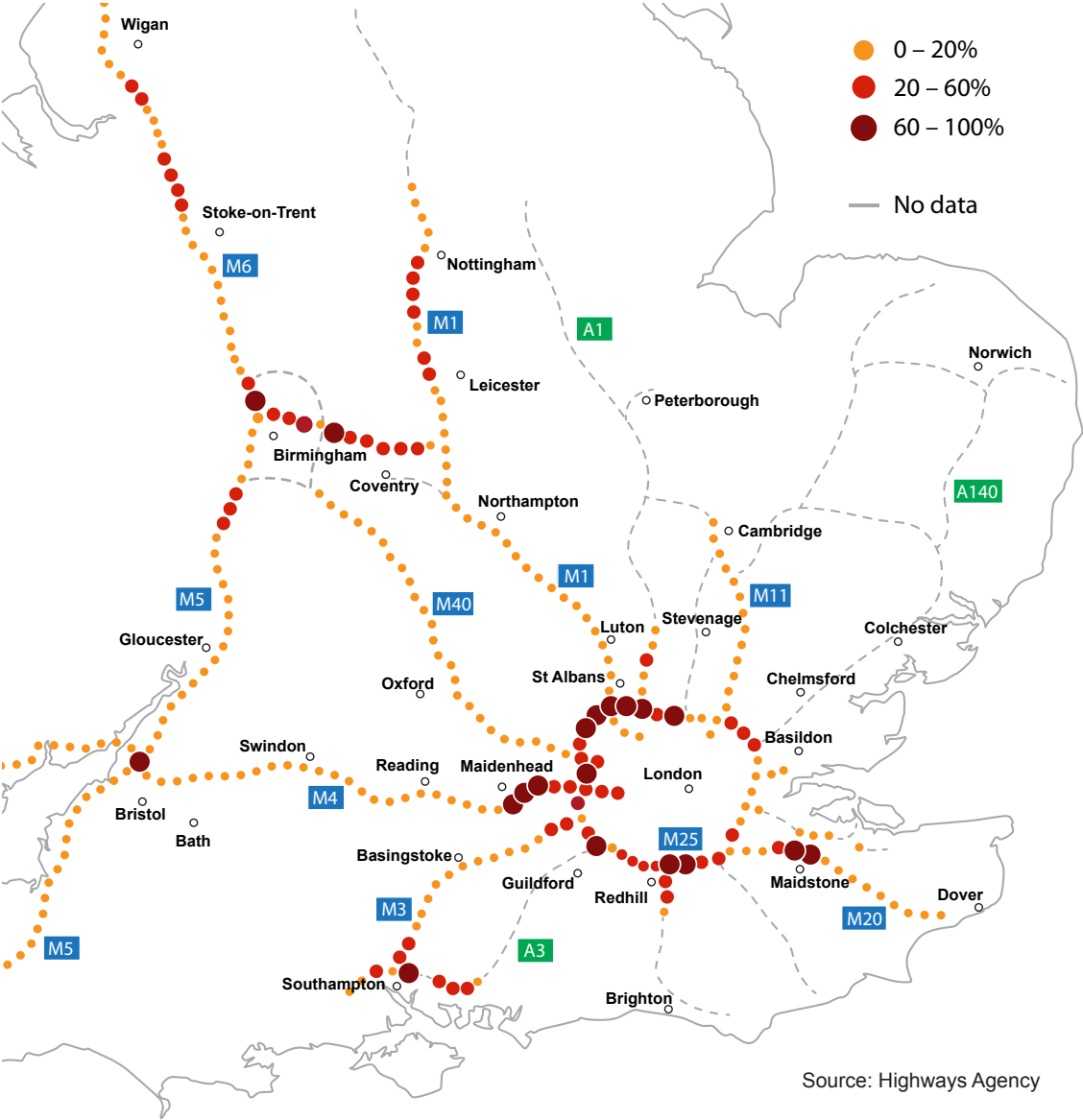
Second, the Highways Agency’s focus on the slowest ten per cent of journeys has identified the routes that suffer the greatest delays – and over half of them converge on or surround the capital.⁷¹

Measuring reliability

The DfT has an agreed target with the Treasury to make journeys more reliable on the strategic road network. The Highways Agency is responsible for meeting that commitment. The methodology is complex, but in simple terms journey time reliability is measured on the slowest ten per cent of journeys across the network. It is described as the difference – in minutes – between the observed journey time and a reference journey time (the time that could theoretically be achieved when the traffic is free-flowing).

This gives an average vehicle delay for the whole network. Since the inception of monitoring in July 2005, the baseline target of 3.78 minutes average delay (for every ten miles travelled) was missed for much of 2006, all of 2007 and some of 2008. Since March 2008, reliability has improved, and the target has been bettered. Average vehicle delay on the slowest journey in 2010 stood at 3.6 minutes for every ten miles travelled.

Figure 8: Proportion of time the network is operating over capacity and congested: morning peak, 7–10am (2010)

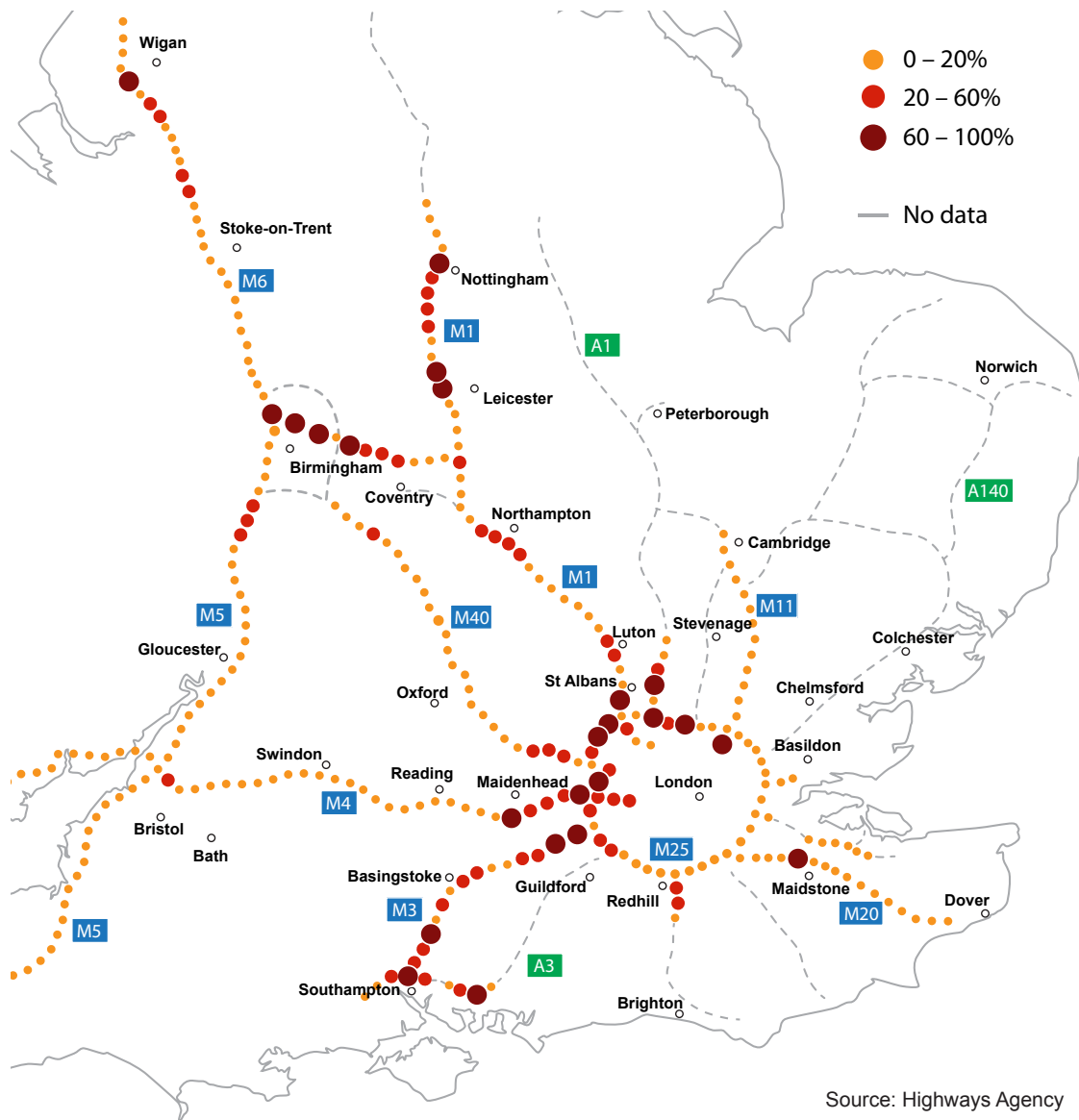


Future demand

Looking ahead, and remembering that forecasting is an inexact science, traffic across the UK is projected to increase by 43 per cent by 2035.⁷²

Moreover, congestion in London is set to grow by 14 per cent.⁷³ It is forecast that congestion in England, if left unchecked, could waste an extra £11 billion worth of time every year by 2025 and increase costs to business by around £12 billion a year.⁷⁴

Figure 9: Proportion of time the network is operating over capacity and congested: evening peak, 4–7pm (2010)



The Commission's analysis

The Commission believes that the economic cost of congestion, delay and unreliability is already too high and will continue to grow as traffic grows. This will impede the movement of goods and services between London and the rest of the UK. A comprehensive and sustained strategy is needed to improve the reliability of the network. It should combine more efficient utilisation of the current network assets; a framework to provide new capacity where need is justified; and a role for charging to ration capacity at times of peak congestion.

Short term

New capacity takes time to build, as would any consensus around the use of charging to cut congestion. Therefore, in the short term, the only practical way to cut congestion and improve reliability is for the Highways Agency to manage its road assets ever more effectively. The agency has adopted a range of strategies to cut congestion (see ‘Ways to manage the network’ opposite), which the Commission welcomes. The agency’s focus on a more reliable network is the right one. We broadly welcome the findings of the review of the Highways Agency instigated last year by the then Transport Secretary, and led by Alan Cook, which examined the agency’s governance and delivery and has recommended efficiencies that could bring sustainable reductions in cost.⁷⁵ We have identified two particular areas in which we believe progress should be made now.

First, the Highways Agency should focus on those areas of the network most important to the economy. Current targets – such as those for responding to unscheduled incidents – are uniform across the network and it is unclear to what degree they are met on those parts of the network facing greatest demand. A more sophisticated set of metrics that relates service performance to demand is needed. Given the value to the economy of those journeys on routes into and around major urban centres at peak, a separate performance regime should be put in place to cut congestion.

Second, the Highways Agency should be enabled and encouraged to deliver additional capacity from existing roads. By opening hard shoulders and releasing extra capacity on congested sections of the network at key times of day, combined with speed limits to optimise speeds across all carriageways, traffic flow can be improved.

Following the success of the pilot of hard shoulder running on a section of the M42 in the West Midlands – which increased capacity by eight per cent and cut average journey times by almost a fifth⁷⁶ in its first 12 months – the DfT plans to apply hard shoulder running to 11 sections of the network by 2015.⁷⁷ This programme should be accelerated so further sections of the network benefit. Sections of the network should be prioritised according to a clear framework that incorporates the wider economic benefits of additional capacity, supported by a better understanding of the routes that facilitate the journeys of greatest value to the economy.

Recommendation 4: Tailored performance regimes should be applied to those parts of the network of most importance to the economy. The Highways Agency should publish annual statements of delivery against those targets set.

In addition, existing roads will require ever more focused management from the Highways Agency. Alongside current measures to minimise congestion, the Highways Agency should accelerate its programme of hard shoulder running.

Ways to manage the network

Traffic officers based in seven Regional Control Centres and 31 outstations respond to almost 27,000 incidents a month on heavily trafficked routes. They aim to arrive to at least 80 per cent of incidents within 20 minutes and, when lanes are blocked, to reopen all live lanes on 80 per cent of occasions within 30 minutes.

The planned replacement of the National Traffic Control Centre with a new service – the National Traffic Information Service – is intended to help increase the speed and effectiveness with which incidents are tackled. It uses live traffic data to feed information services (including travel bulletins) on local and national radio, Google Maps, Twitter, over 300 non-Highways Agency partner websites and Traffic England. It also provides the Highways Agency with the opportunity to reassess how it provides information to motorists and to translate and disseminate the real-time information this service will gather. This should help give users the information needed to avoid congested sections of the motorway and find alternative routes. The Highways Agency has also implemented a technology-based programme to manage motorways through variable speed limits and hard shoulder running. The former controls the flow of vehicles when the route is congested by calculating the most appropriate speed limit based on the volume of traffic; the latter is used as an additional traffic lane during periods of congestion.

Medium term

The short-term measures set out above will not in themselves fully deal with the current cost of congestion, let alone those generated by anticipated demand. We see the principal medium-term challenges for policymakers as being: how to add more capacity, through road widening or the construction of new roads; how best to finance such additions; how to ration the use of capacity through charges; and how to improve the effectiveness of the Highways Agency.

Adding capacity

Over recent decades there has been a policy shift from the road building programme of the last century to a consensus that the environmental costs of increased traffic outweigh the benefits of new capacity. As set out in Chapter 1, the government has committed to a strategy to decarbonise surface transport over the next twenty to thirty years. Should there be extensive take-up of low-carbon vehicles, one of the arguments against new road building – its carbon impact – would effectively be removed as would wider environmental concerns over, for example, particulate emissions.

Of course some local environmental impacts would remain; but in the case of the strategic network this would largely affect new roads. The local environmental impact of widening existing motorways, for example, would in many cases be relatively modest as the local costs have, essentially, already been borne.

An objective assessment should identify those parts of the network facing greatest pressure now. On the basis that all options to relieve those pressures and meet growing demand by sweating the assets have been exhausted, it should establish the benefits of targeted expansion.

Financing capacity

Of course widening or building new roads incurs substantial costs. The private sector has demonstrated a strong appetite and capability for efficiently financing, delivering and maintaining new road infrastructure under contract. Government should explore and propose innovative ways of financing new capacity. It should include in that assessment the application of tolls, by which revenues provide availability payments to the private sector or contribute elsewhere to general Treasury revenue. The government has begun by seeking proposals for innovative funding mechanisms for the A14, and has committed to a new river crossing in the vicinity of the tolled Dartford Crossing. It should in parallel establish a policy framework that enables the next generation of privately financed road schemes.

Greater autonomy and consistency for the Highways Agency

Decisions determining investment in road infrastructure are too short term. Funding is subject to significant variation between and within years, driven not by the needs of the road network but by the needs of the Treasury at any given time to balance the books. This makes it impossible for the Highways Agency to plan ahead effectively and strike the most efficient balance between long-term maintenance and capital investment while procuring effective long-term contracts with private sector providers.

The Commission believes that the ways in which strategy and funding for the rail network are set offer valuable insights, and should be replicated. The government should establish similar five-year investment plans for the motorway network, set in the context of longer term strategic direction statements.

In addition, the Highways Agency should work at a greater distance from government, with a clearer separation between its policy function (advising government on future investment priorities), its delivery function (procuring and delivering the investment programme),⁷⁸ and its operational duties (managing and maintaining aspects of the network). As the conclusions of the independent review led by Alan Cook indicate, the agency should seek to procure efficient outcomes from the private sector – essentially, network capacity – without prescribing the technology or methods to achieve them. And with greater separation, the Transport Secretary should play a stronger client role, applying greater pressure and scrutiny on performance.

Recommendation 5: The government should put the Highways Agency on a firmer, more independent footing with a wholesale modernisation and a recasting of its relationship with the private sector. The Transport Secretary should play a stronger client role for an agency that has a clearer remit and a greater separation of its functions.

Recommendation 6: In turn, a modernised Highways Agency should be supported by a clearer, longer term policy framework from government. The government should introduce five-year planning and funding cycles, set in the context of a longer term strategy, as exist for rail.

It is difficult to see how, as the economy grows, the supply of roads can grow ad infinitum as the one part of our transport infrastructure which is generally free at the point of consumption. The efficient allocation and management of this scarce resource will, in the long term, depend on the introduction of charging, on the most congested parts of the strategic road network, and in the dense urban areas linked by this network. With greater autonomy, the Highways Agency should engage in wider public debate on the objective economic case for charging.

Charging to cut congestion

From the evidence considered, the Commission believes, as many, including the Eddington Study, have argued that there are strong economic, social and environmental reasons for transport users meeting their external costs. Work undertaken by the DfT⁷⁹ in 2004 suggested that widespread charging, targeted on areas with high congestion, could reduce congestion to half of what it would otherwise be in 2025. Time savings and other benefits are estimated at £28 billion a year, and include £25 billion of GDP.

A system of charging could target, and differentiate, those parts of the strategic road network or dense urban areas that experience the worst congestion by requiring motorists to pay for access at certain times of the day. By being forced to pay for the impacts they create – principally through congestion, which results in longer and uncertain journey times for all motorists – users are made conscious of the costs and given a financial incentive to manage them by amending their behaviour. The Commission heard convincing evidence that the technological challenge, while substantial, can be overcome. It also heard that shadow tolls could support a gradual transition to charging. However, securing public – and thus political – acceptability will be harder.

Revenues raised from charges (once operating costs have been recovered), can be treated in a number of ways: to cut other motoring charges; contribute to general Treasury revenue; or be recycled into either road or transport spending. The Commission believes the public case for congestion charging would be supported by some combination of cutting other motoring charges and recycling revenues into transport spending.

Congestion charging in London

London introduced the UK's first congestion charging scheme in 2003. The immediate impact of the scheme was a reduction in traffic by 18 per cent and in congestion by 30 per cent. Although the initial congestion reduction benefits from charging for access to central London have diminished over time, direct comparability is difficult because of the complexity of assessing changes in road use over the period and the impact of utilities digging up roads. Nonetheless, there are 80,000 fewer vehicles entering the Congestion Charge zone per day.

Revenues are collected and retained by Transport for London. In 2009 revenues were £326 million and costs £177 million. The surplus (£148 million) was reinvested in public transport. London First has previously argued that a more sophisticated system of charging reflecting time of day and levels of congestion, extending beyond the central London charge zone, should be implemented in the medium to long term.

It is worth noting that traditional forms of motoring taxation are set to decline as cars become more efficient. The CCC estimates that with the take-up of more efficient conventional vehicles and more electric vehicles, receipts from fuel duty will fall by £3 billion a year by 2030 (currently £25 billion), and that with no change in duty categories, vehicle excise duty of around £7 billion will be virtually eliminated (reflecting the lower rates of duty currently attached to more efficient vehicles).

In dense urban areas, while options to cut congestion with new capacity – via underpasses or flyovers – should not be ruled out, it remains the case that the constraints on adding new capacity are severe. These areas present the strongest case for rationing capacity through charging to cut congestion (see ‘Congestion charging in London’, p.41). However, the Commission is clear that a system of charging should be considered for both the strategic road network and dense urban areas, given that the highest levels of congestion are seen at the handover between trunk and local road.

Recommendation 7: The Commission believes the economic case for charging to cut congestion and its impact on the environment is strong, and the case for it will grow stronger as congestion grows. The government should identify those urban areas and sections of the strategic network with the worst congestion. It should then, with local authorities, develop and consult on a variable charging system with the aim of cutting this congestion, particularly at peak.

Long term

Charging to reduce congestion differs from road pricing. Road pricing is a means of ensuring that motorists pay for the cost of the road infrastructure they consume in a way similar to other services, such as the electricity network, or as a means of raising general taxes for the Treasury. While motorists do not pay for roads as they use them, they do pay duty on the fuel they consume. The total tax take from motorists through fuel duty and other vehicle taxes is unrelated to the amount spent on road building or maintenance.

The introduction of road pricing would provide scope for greater private sector involvement in the ownership and management of the strategic road network, in much the same way that pricing enables the private sector to own and manage the gas, electricity and water infrastructure networks. Experience in other countries suggests that road assets need not be owned by government, while in the UK there is a range of operating models in other transport and utility networks. Over time, a pricing regime could see the evolution of the Highways Agency into an independent network infrastructure company, determining the efficient levels of investment, operating expenses and charges levied.

In the long term, the Commission believes a model could be established that sees use of the roads properly priced, in parallel to reductions in other motoring taxes. Pricing should encourage a more efficient use of resources and thereby cut congestion. It should attract private capital and expertise, and draw on successful precedents since the 1980s in other network industries.

CHAPTER 4

Rail links

The rail network – and the connectivity it provides – enables national economic activity and spurs London’s dense agglomeration of activity. One billion of the total 1.4 billion rail journeys taken every year are made by commuters and business travellers. Three-quarters of all the country’s rail journeys start or end in the capital.

A well-functioning rail network is critical to London’s economy, carrying large volumes of commuters to the heart of the capital at peak. Almost half of all those entering central London in the morning rush hour do so by rail.⁸⁰ Over 500,000 people enter central London by rail in the rush hour – fourteen times more than do in England’s next largest city.⁸¹

The rail network also supports London’s access to international markets, both directly and indirectly. Directly, the high speed services to the Continent from London St Pancras International now cater for 80 per cent of all journeys to Paris and Brussels. 2010 saw over nine million passengers travelling by rail to cross the Channel, a tripling of numbers in the last fifteen years. Indirectly, rail supports London’s international connectivity via the rail services that tie London to its major airports.

Capacity

The last two decades have seen considerable and sustained public investment in the rail network to boost capacity and improve service quality. This has been achieved through major infrastructure upgrades – such as the West Coast Main Line – and the network-wide replacement and renewal of ageing rolling stock, track and signalling to increase frequency and throughput.

Some infrastructure – particularly that supporting operators on ‘third rail’ electrified routes – still lacks resilience in extreme weather. But reliability⁸² across the network has risen since 2000, when only 75 per cent of trains arriving in London and the South East were on time.⁸³ Over 90 per cent of these services are now on time.⁸⁴

However, while London is well served by the range, frequency and, increasingly, the reliability of rail services, demand outstrips supply. Since privatisation, demand has risen by around 50 per cent (Figure 10) and there are few signs of diminution. Last year saw an eight per cent growth in journeys⁸⁵ across the country, while demand for services in and to London and the South East grew at almost twice this rate.⁸⁶

A result of peak demand for services to central London outstripping supply is overcrowding.⁸⁷ The ten most overcrowded rail services in the UK serve the capital⁸⁸ and the data, though not systematically collected, suggests that half of rail passengers travelling to London in the rush hour do so in conditions classed as overcrowded.⁸⁹

Demand is dominated by commuters, who make up four-fifths of all rail passengers entering central London. Almost 500,000 of these commuters travel on suburban services, while 73,000 travel on long-distance services.⁹⁰ Overcrowding is apparent at all London’s stations and on all services serving the capital (Figure 11). One effect of this is that over 90,000 rush hour commuters travel to work by train without a seat (Figure 12, p.46).⁹¹

Figure 10: Index of historic demand for rail, 1971–2010: total distance travelled and length of network

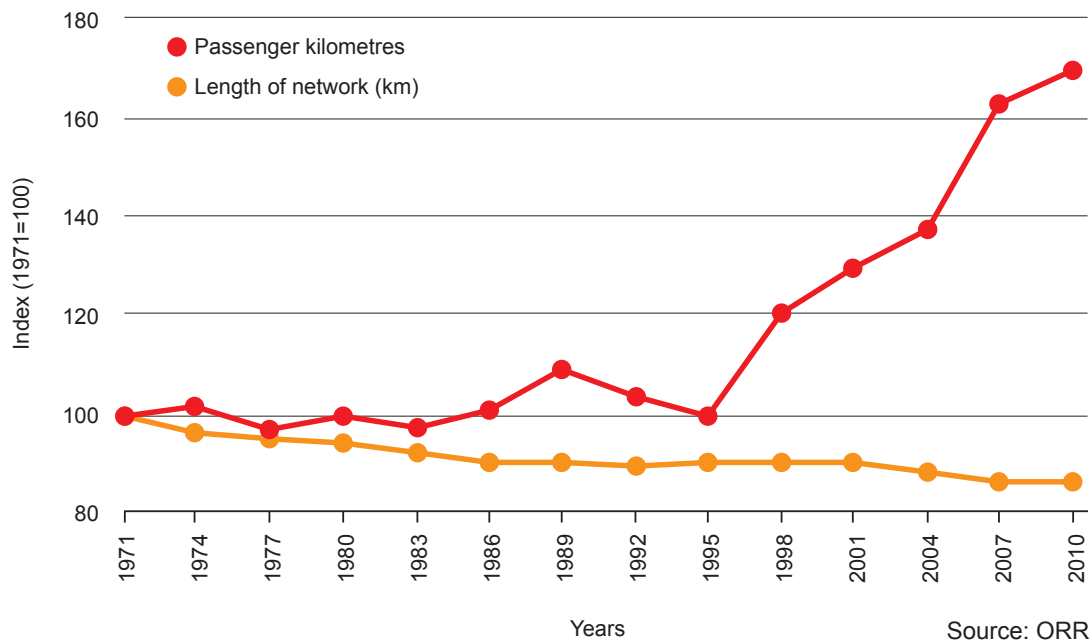


Figure 11: Percentage of services classed as overcrowded, 7–10am: autumn 2010

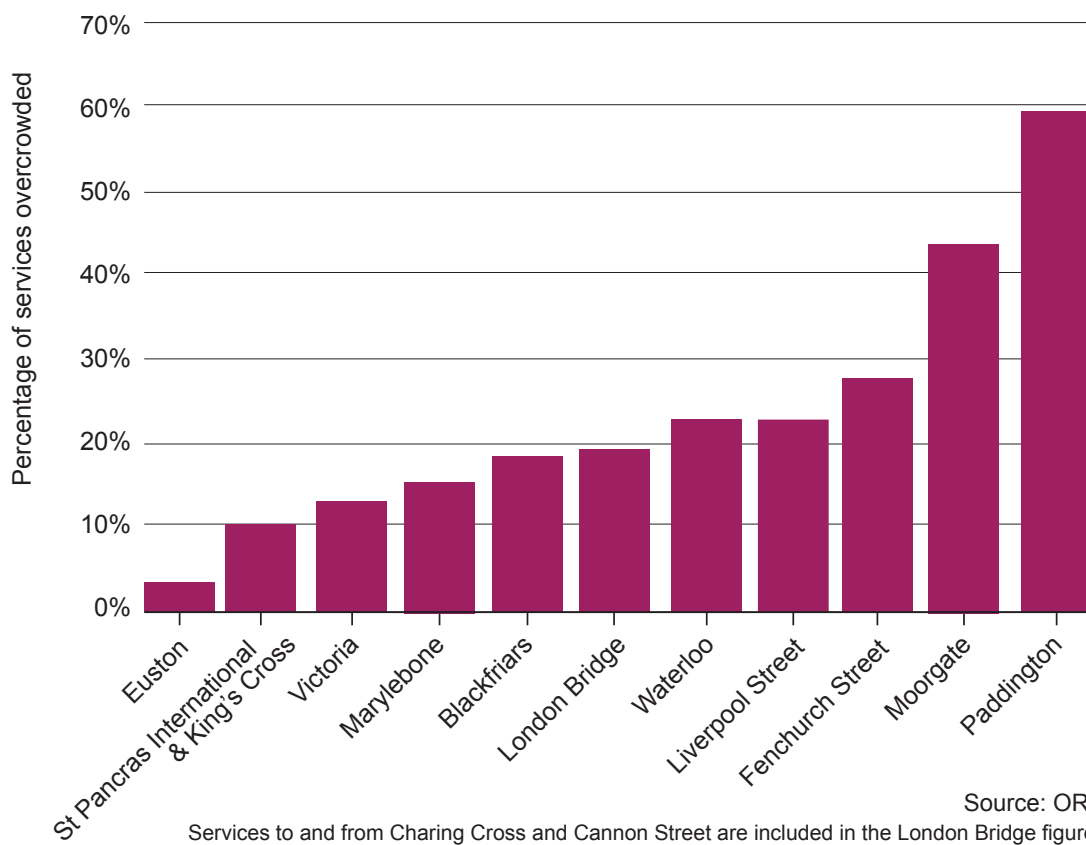
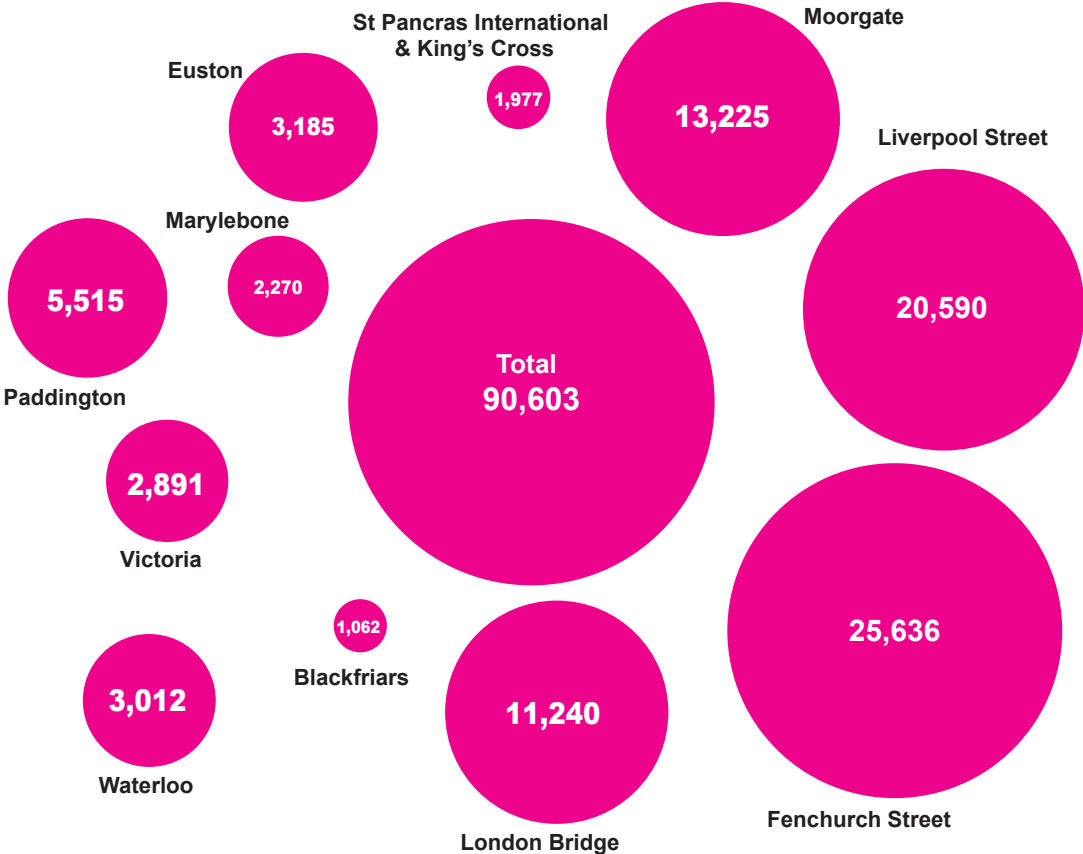


Figure 12: Rush hour passengers standing, 7–10am: autumn 2010

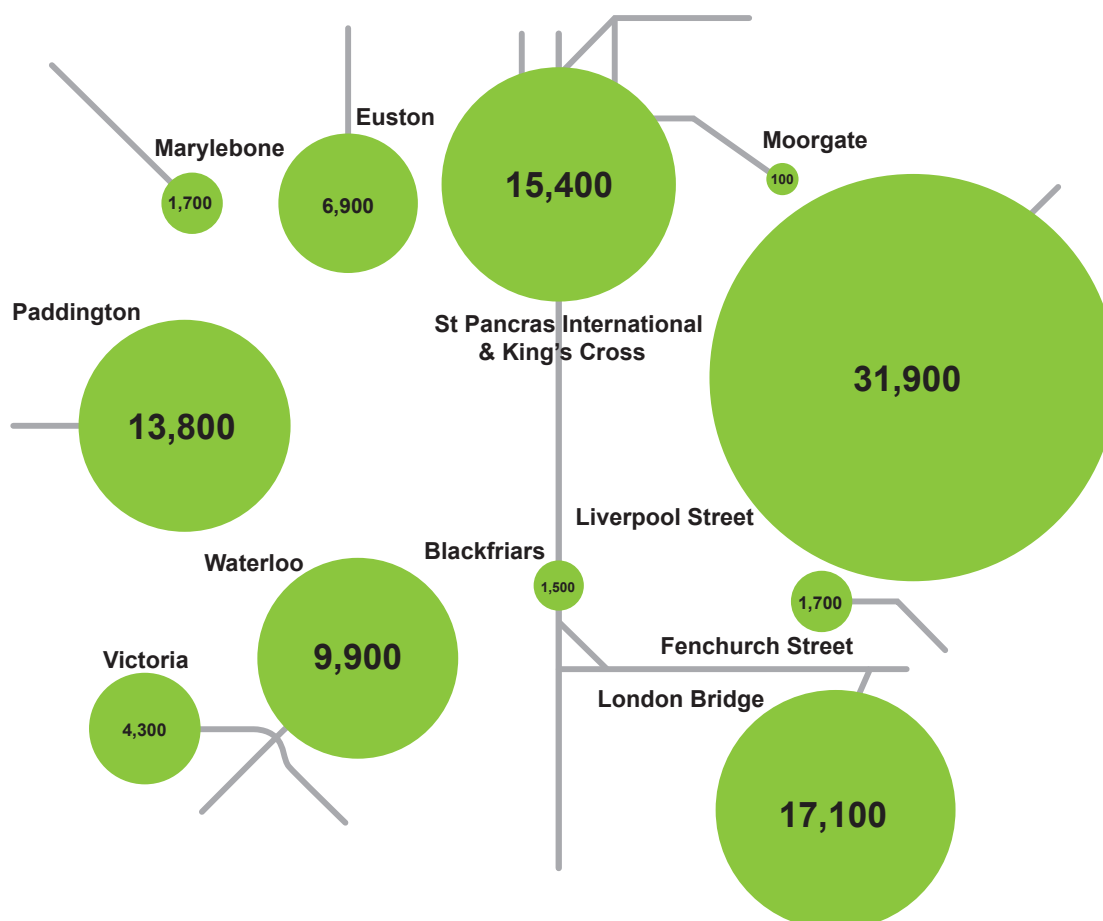


Source: ORR

Future demand

As employment in London continues to grow, demand is set to rise. Network Rail estimates that demand for routes linking central London with the rest of the country will rise by 34 per cent by 2031. Figure 13 shows the uplift in rush hour passengers by 2031 at London’s stations. Demand will outstrip supply, equivalent to almost 40,000 passengers every day being prevented from entering London in the rush hour. Without action, both short and long-distance services will face greater levels of overcrowding.

Figure 13: Forecast growth in demand for services to central London, 2031: additional rush hour passengers per station (7–10am)



Source: Network Rail

Figures for London Bridge include those for Charing Cross and Cannon Street
Data based on 'do-minimum' committed schemes only

The Commission's analysis

Without action, current overcrowding will worsen and future demand will not be met. Planned investment – including the upgrade of Thameslink and the construction of Crossrail – is set to deliver much needed new capacity in London and the South East. But it will not be sufficient to meet forecast demand in the medium term, let alone the long term. And it will of course create additional demand, as people and employers relocate to take advantage of improvements. Moreover, as demand grows, interfaces between the rail network and London's other transport networks – particularly the Tube – will come under further pressure.

There is a strong economic case for increasing the capacity of London's commuter and long-distance rail links, as well as their interchanges with London's transport. Without new capacity, London's ability to grow and extend the benefits of its economic success to the rest of the country will be undermined.

Short term

The Commission welcomes the government's commitment to Crossrail, which when fully opened in 2019 will increase London's rail transport capacity by ten per cent. We also welcome the long-standing commitment to deliver the Thameslink upgrade, which will, in phases, and beginning in April 2012, double London's rail capacity on a north-south rail axis and deliver major station upgrades at Farringdon, Blackfriars and London Bridge by 2018. Major station upgrades are also taking place at King's Cross and Victoria.

Crossrail and Thameslink, vital additions to London's transport infrastructure capacity and integral to improvements on the national rail network, must now be delivered, efficiently and on time, to drive London's long-term growth.

London's international rail links

In the short term the growth of services on London's international rail links is unlikely to be constrained by limits on capacity. However, the European rail market is opening up to greater competition, giving Eurostar and others, including Deutsche Bahn,⁹² the opportunity to compete in domestic markets across Europe. At the same time new high speed rail (HSR) routes are being completed on the Continent, including Brussels to Amsterdam, Brussels to Frankfurt and Paris to Strasbourg.⁹³ Regulation will require reform if it is to support growing competition and release the benefits greater choice can bring to passengers.

International services linking London to the Continent are overseen by the regulatory regimes of each member state – services from London to Brussels, for example, fall under four regulators. Performance regimes vary, in some cases do not exist, and there is little coordination of domestic and international rules. There is moreover a separate regulatory regime for the Channel Tunnel overseen by the Intergovernmental Commission (IGC). The IGC sets access charges per passenger, when on the rest of the network charges are set per train. This may weaken the incentive to make most efficient use of capacity by running fuller trains. The IGC is set to undertake a review of these charges. We believe such a review should be part of wider efforts by the IGC to establish a transparent regulatory framework that promotes competition and the efficient use of capacity.

Recommendation 8: The IGC should complete its review of access charges to the Channel Tunnel swiftly to maintain the long-term stability and certainty required by existing concessions and needed to attract future investment. The IGC should bring greater transparency to the calculation of charges and the investment they support.

In tandem, the government should press for regulatory reform and modernisation to support a competitive market for international rail services, as it has done in modernising the economic regulation of UK airports.

Medium term

Ahead of its next funding settlement, Network Rail has identified an initial range of options⁹⁴ for increasing capacity on key routes serving London in the period to 2019.⁹⁵ These are principally incremental improvements to track, signalling, trains and stations rather than major new projects such as Thameslink. They are driven by analysis of growing demand, and the trend for commuting over longer distances, both from London's immediate hinterland and further afield.⁹⁶ Some of the areas in the UK that are forecast to see the fastest population growth are outside Greater London, but within 45–60 minutes of central London.

These proposals will now rightly be scrutinised and tested in the regulatory review process that sets not only efficiency targets for Network Rail, but also the overall investment programme for the country. The government is due to publish its strategy for rail in July 2012, together with the outputs it expects and its statement of available funds,⁹⁷ ahead of a final regulatory settlement.

In drawing up investment priorities for this period, Network Rail has begun to assess the wider economic benefits of schemes, alongside traditional welfare or user benefits such as time savings. It argues that when this has been done, “it is difficult to escape the conclusion that the true value of rail investment to the ‘real economy’ is not fully captured by current appraisal methods.”⁹⁸

As Chapter 2 sets out, public investment in rail in the next control period should be underpinned by a credible and consistently applied framework that captures its likely impact on GDP and incorporates it into the analysis of benefits and costs – alongside direct benefits to users.

Proposals put forward for Network Rail's next control period assume the completion of the Tube modernisation programme. While the Tube's upgrade is underway – and if completed would increase capacity by 30 per cent to meet growing demand and cut overcrowding – it remains unfunded beyond this parliament. The Commission heard widespread complaints that the experience of transferring between transport networks is slow, unpredictable and poorly coordinated. London's major rail stations, often characterised by severe overcrowding, impede the ability of passengers to transfer seamlessly between the national rail network and the Tube.

The public case for investment in rail will not be strengthened if the hundreds of thousands of rail commuters arriving in London who rely on the Tube to complete their journey find their experience of improved rail services quickly forgotten on cramped, congested and unreliable underground services. The benefits of planned and proposed improvements to the rail network will only be fully realised with completion of the Tube upgrade programme. In setting high level outputs for the rail network that serves London, the DfT should confirm the role the Tube upgrade programme will play in meeting demand from rail commuters.

Recommendation 9: Investment to grow rail capacity in London and the South East will continue to be required, and for the next control period should generally take the form of incremental upgrades rather than major new schemes.

Funding improvements

Improvements to rail services over the last two decades have come at a cost – to the taxpayer through the growing subsidy to Network Rail and the Train Operating Companies and to fare payers who face, on average, higher fares than in other European countries. Despite a 57 per cent growth in passengers since 1996/97, industry unit costs in 2009/10 are almost exactly the same. Over the same period there has been a 75 per cent real-term increase in passenger revenues and government subsidy has roughly trebled (to around £5 billion last year). The industry is running a £4.3 billion operating deficit.⁹⁹

In response to concerns about industry costs, the government last year instigated a major review, led by Sir Roy McNulty (the McNulty Study),¹⁰⁰ to find ways to improve efficiency and deliver greater value for money. There is now a broad cross-party and industry-wide consensus that there are limits to the contribution additional fare rises can be expected to make and that taxpayer subsidy of rail cannot continue to rise at current rates.

The funding for the railways is currently split roughly 50/50 between the taxpayer and the fare payer. Fare revenue raises around £6 billion a year, paying for around half of the industry's £12 billion annual costs. Government has said regulated fares are set to rise at one per cent in real terms in 2012/13 and as a result of high inflation, regulated fares¹⁰¹ will rise on average about six per cent. Season tickets, which form the bulk of regulated fares by value, are expected to contribute most to the revenue increase.

The McNulty Study concluded that the rail industry should aim to achieve an efficiency improvement of 20–30 per cent by 2019,¹⁰² equating to a drop in total industry costs of around £3 billion, from around £12 billion.¹⁰³ The industry's proposals for Network Rail's next control period state that efficiencies and continued revenue growth could reduce the cost of the railway to the taxpayer to £1 billion a year by 2019 (a 66 per cent reduction compared with 2014).¹⁰⁴

Services in London and the South East currently generate about half of all fare revenue and receive around a quarter of all public funding for rail. Figure 14 shows franchise costs across the country – costs here comprising train operating costs and Network Rail's operating, maintenance and long run renewal costs.¹⁰⁵ Franchises serving London receive the lowest subsidy in the country.

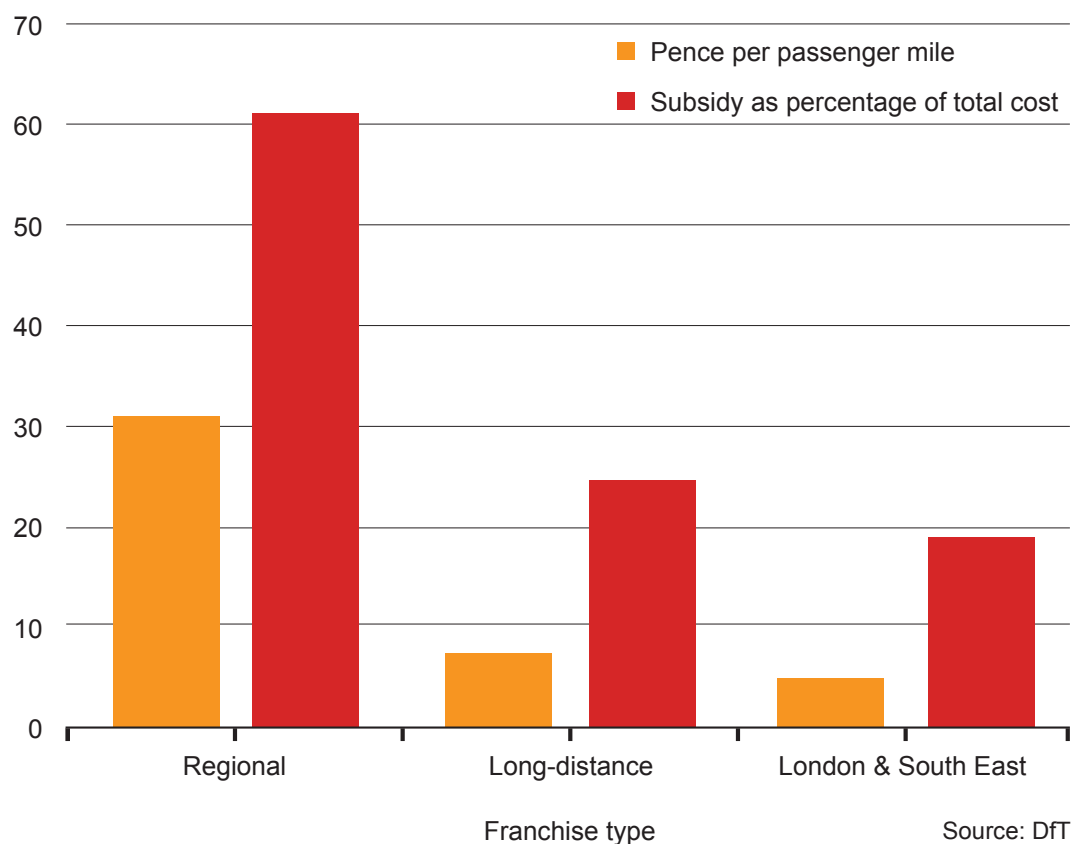
The Commission believes that the delivery of essential new capacity on the national rail network will, for the foreseeable future, continue to depend on a significant contribution from public expenditure. However, the case for this subsidy will need to be accompanied by demonstrable improvement in services, significant efficiency improvements and some continued contribution from fare payers.

The industry's current proposals for investment in the next control period are based on the assumption that fares will rise at an annual rate of RPI plus one per cent for five years from 2014/15. The Commission recognises that fares may need to make an additional contribution in future, but does not believe that the high annual increases currently being experienced are sustainable.

Progress must be made on achieving the cost reductions that McNulty set out. The regulator has a clear role to scrutinise industry plans for cost reduction and measure progress against them. Progress should also be communicated more widely, possibly by the newly formed Rail Delivery Group, which comprises industry leaders and has been tasked with prioritising and directing efforts to implement the conclusions of the McNulty Study. And as set out in Chapter 2, long-term policy certainty will be needed if publicly funded infrastructure is to be efficiently provided. With longer term planning and greater visibility of the work that will be undertaken to improve and maintain the rail network, the supply chain can be more efficiently managed. In a move away from investment and procurement that is currently too transactional and short term in focus, suppliers could – with greater confidence in the long-term strategy for the railway – deliver at lower cost.

Clearly it is for government to decide whether savings from efficiency are reflected in lower subsidy or lower fares. The Commission recognises that there are many services that do not cover their costs and will require ongoing government support if service levels are to continue.

Figure 14: Net cost to government of rail franchises, 2010: pence per passenger mile and subsidy as a percentage of total cost



In a world of constrained public finances, the government should review those services which are used less intensively and require the highest levels of public subsidy – to see whether a better balance can be struck between a more appropriate level of support for infrastructure and operations, social equity and transport efficiency.

Recommendation 10: The high annual fare increases now in place are not sustainable in the medium term. Tangible progress on cost reductions by the industry must demonstrably be made. While investment in new capacity will need to be supported by a contribution from both taxpayer and fare payer, government should review the allocation of scarce subsidy, and ensure that economic growth is being sufficiently prioritised.

Long term

Continued investment to increase the capacity of vital routes linking London to the UK's major cities will be required to relieve anticipated pressures on long-distance services over the medium term. This will be delivered through incremental upgrades of infrastructure and advances in signalling technology. In the long term, new lines will be needed to bring a step-change increase in capacity, and the government plans to achieve this by developing a new HSR network linking Britain's principal cities. The Commission heard convincing evidence that by the middle of the next decade the West Coast Main Line will be full and that options for increasing capacity on this route will be high cost and highly disruptive.¹⁰⁶ We concur with the proposition that the case for a new high speed network rests in large part on its ability to free capacity on existing long-distance and commuting routes serving London.

The Commission believes that, if HSR is to deliver its promise, help drive London's future prosperity and retain the support of London business, four conditions must be met.

First, if we are to start, we must finish. The real transformative benefits of HSR come from linking a network of cities to London and to each other: first Birmingham; then Leeds/Manchester; and ultimately Scotland. A network that goes no further than Birmingham will not deliver the value for money of the full network and it manifestly will not transform the economy of northern England and the UK as a whole. Completion requires long-term commitment from government, both UK and Scottish, across political cycles.

Second, HSR must be an 'and' not an 'or'. This visionary, potentially transformative, grand project must be in addition to other vital work needed to upgrade the existing transport network, to address both historic underinvestment and to meet future demand. This includes seeing through the Tube upgrade programme in London, road improvements in England and the vital upgrades of our current rail network needed to relieve the overcrowding experienced by commuters every day.

Third, the delivery of HSR cannot be a substitute for a coherent national aviation policy. The Commission supports HSR having appropriate links to Heathrow airport and to HS1, and urges further work to identify the most efficient ways of doing so.

An HSR network that puts the cities of Britain in closer contact with our only hub airport will likely increase demand on that airport, and Heathrow is already operating at the limits of its permitted capacity. HSR will, at the margins, be a substitute as some short-haul flights migrate to rail. But around 80 per cent of all journeys to and from London to Manchester are already taken by rail, and there are currently no flights at all between London and Birmingham. Analysis indicates that there is the potential for around four per cent of air traffic movements at Heathrow to be substituted by a HSR network extending to Manchester and Leeds¹⁰⁷ – a marginal release that would quickly be consumed, given pent-up demand. As set out in Chapter 2, an integrated approach to transport policy is required, ensuring HSR dovetails with the provision of sufficient runway capacity in the South East – at our national hub and elsewhere.

Fourth, further investment in London's transport infrastructure must come in lockstep with any strategy for HSR if London is to cope with the increased numbers of passengers expected to arrive on high speed services. At Euston, demand is forecast to rise from around 21,000 in the morning peak now¹⁰⁸ to 38,000 with a full HSR network.¹⁰⁹ This will require completion of the Tube modernisation programme beyond 2014/15 (including the second phase of the Northern line upgrade, which directly affects Euston); and new underground rail capacity at Euston (see 'Crossrail 2' below).

Recommendation 11: Proposals for a new HSR network should come with commitment from government to sustained and sufficient levels of investment in other essential transport infrastructure; a clear strategy for a link to Heathrow that meets the growing demand for flights; and a comprehensive strategy to reduce forecast congestion at Euston.

Crossrail 2

Central London's rail and underground networks are currently heavily congested in the morning and evening peak. Committed investment through Crossrail, the Tube upgrade programme and Thameslink will give a much needed boost to commuting capacity over the coming decade, but with the population and employment growth expected in London over the next twenty years, planning for the next generation of transport improvements post 2020 must begin now.

London First has established a working group of business leaders, chaired by former Transport Secretary Andrew Adonis, to examine the case for a new rail link beneath central London. This group will complement work previously undertaken by Transport for London on a route between Chelsea and Hackney, and examine in parallel the government's development of a new HSR network that terminates in London at Euston. Tube services at Euston are already heavily congested at peak hours and forecasts show that unless additional provision is made for the onward dispersal of passengers, the time savings from a new Manchester to London HSR link would be lost in queuing to access the Tube at Euston. The group will form independent recommendations and report in 2012.

CHAPTER 5

Air links

London's international air links are critical to the capital's, and indeed the country's, economic success. London's trade and commerce are driven by international business and are dominated by the export of services – which are, in essence, people applying their skills. As set out in Chapter 1, the UK is the world's second-largest exporter of services after the US.¹¹⁰ London accounts for over a third of these exports¹¹¹ and in financial services it is a global leader. London's success as one of the leading international service sector economies in the world depends on good connectivity with world markets.

As set out in Chapter 2, there is a clear correlation between volumes of trade and air travel. The OECD states that GDP, GDP per capita and international trade are the major drivers of demand for travel.¹¹² It predicts highest economic growth in the next twenty years in the Asia-Pacific region, and expects this to translate into rapid growth in trade and demand for transport.

The IMF predicts that over the next decade approximately half of all the economic growth in the world will be in the eight largest emerging market countries (including China, Indonesia, Korea, Russia and Brazil).¹¹³ Emerging market economies are forecast to overtake the advanced economies' share of global GDP by around 2024.¹¹⁴ With much of Europe facing a prolonged period of low growth, business is increasingly looking to these new markets for opportunities to expand.

Capacity

The UK has seen an almost fourfold increase in air travel in the last three decades. More than 200 million passengers now pass through UK airports every year. Almost two-thirds of them do so through London's airports.¹¹⁵

London is served by four point-to-point airports and the UK's only international hub airport, Heathrow. It also has a network of smaller regional airports which are yet to be recognised in national policy or planning, delivering business and general aviation services to a large number of destinations. London Biggin Hill airport for example supports unscheduled services to over 700 airports, including North America, the Middle East and Asia.

Heathrow is running at 98 per cent of its current permitted limit of 480,000 air traffic movements (ATMs) a year.¹¹⁶ While London's point-to-point airports have some spare capacity, slots at the hub are more valuable because of the significantly higher volumes of passengers to which it has access, and therefore the greater scope it offers to run a diverse range of services profitably (see 'The hub airport model' opposite). Some long-haul airlines from growing economies unable to gain access to Heathrow have sought instead to locate at other European hubs. Chinese airlines have had difficulty securing landing slots at Heathrow, and indeed the Chinese government has approached the UK government on the issue.

London is already at a competitive disadvantage. It has fewer weekly flights than its European rivals to half of the emerging market economies, and seven of the eight growth economies identified by the IMF (Figure 15, pp.58 and 59).¹¹⁷ And it has no direct air links to the emerging economies of Chile, Colombia, Peru, Venezuela, Indonesia and the Philippines – links that other European cities possess.

While Heathrow supports frequent services to established US and European markets, the absence of spare capacity constrains its ability to offer the range of international long-haul destinations to the fastest growing economies that its rivals offer. For example:

- Heathrow has good links with Hong Kong but only three to five flights a day to other cities in China (Beijing and Shanghai only). Paris-Charles de Gaulle has 11 daily flights to four Chinese destinations and Frankfurt has ten daily flights to six Chinese destinations;
- Paris-Charles de Gaulle has 48 flights a week to Brazil, London has 20; and
- There are a further 13 airports in emerging market countries with at least one weekly service to a European hub, but not to London.

The hub airport model

The airport hub and spoke model enables airlines to bring passengers together from a variety of locations and, by concentrating demand in one location, fly efficiently and profitably to long-haul destinations. By pooling transfer passengers with point-to-point passengers, airlines can sustain flights that would not otherwise be viable, reducing average levels of fixed costs per passenger and thereby average cost per passenger. The benefit to London of having an international hub airport is that it enables Londoners to fly direct to a wide range of destinations without having to change planes, while providing a high frequency of flights on key routes.

Airport capacity is allocated via slots. A slot is the right to land and take-off at particular times on particular days. Slots are not interchangeable between hub and point-to-point airports. In the UK's case, airlines are willing to trade landing slots at Heathrow for millions of pounds. The same is not true at Stansted. Indeed, at Stansted passenger numbers have fallen in recent years, and low cost airlines have moved fleets to the Continent to find cheaper landing fees at other point-to-point airports. Some international airlines from growing economies, unable to gain access to Heathrow, have instead located at European hubs, while others remain unable to secure the slots they seek. In recent years, Garuda Airlines (Indonesia), unable to access Heathrow, located at Frankfurt instead;¹¹⁸ Jet Airways (India), unable to gain sufficient access to Heathrow, created its main European hub at Brussels;¹¹⁹ TAM Airlines (Brazil), wishing to fly daily routes from Brazil to London was able only to purchase three slots at Heathrow, and flies more frequently from Amsterdam;¹²⁰ and as noted above Chinese airlines have had difficulty securing landing slots at Heathrow.

London, therefore, already has poorer links to growing markets than its European competitors, and its attractiveness as a destination for new inward investment from those areas which cannot fly here directly is reduced, as is the prospect of creating new trade links.

Moreover, whilst most of London's competitor cities on the Continent have large hub airports with the headroom to operate more flights and, as demand increases, to expand the range and frequency of routes they provide, Heathrow is operating at 98 per cent permitted utilisation. By way of example, Frankfurt opened its fourth runway in October 2011, expanding its total permitted capacity by over 50 per cent.¹²¹

(Continues pp.58 and 59)

The hub airport model (cont.)

Without new hub capacity London is unable to meet current demand – let alone cater for growth. Demand already outstrips supply and as a result airlines have to make difficult choices about where not to fly: one consequence is that regional flights within the UK are being squeezed out; another is that airlines are reluctant to take the risk of starting new services, which inevitably take time to become viable, when they can fill flights to established, profitable destinations.

It has been suggested that government should intervene in the market to optimise the use of scarce capacity through tax, for example by applying Air Passenger Duty to international transfer passengers to, in effect, penalise those using the hub. Analysis indicates that a route can become unprofitable with as little as a 15 per cent drop in transfer passengers.

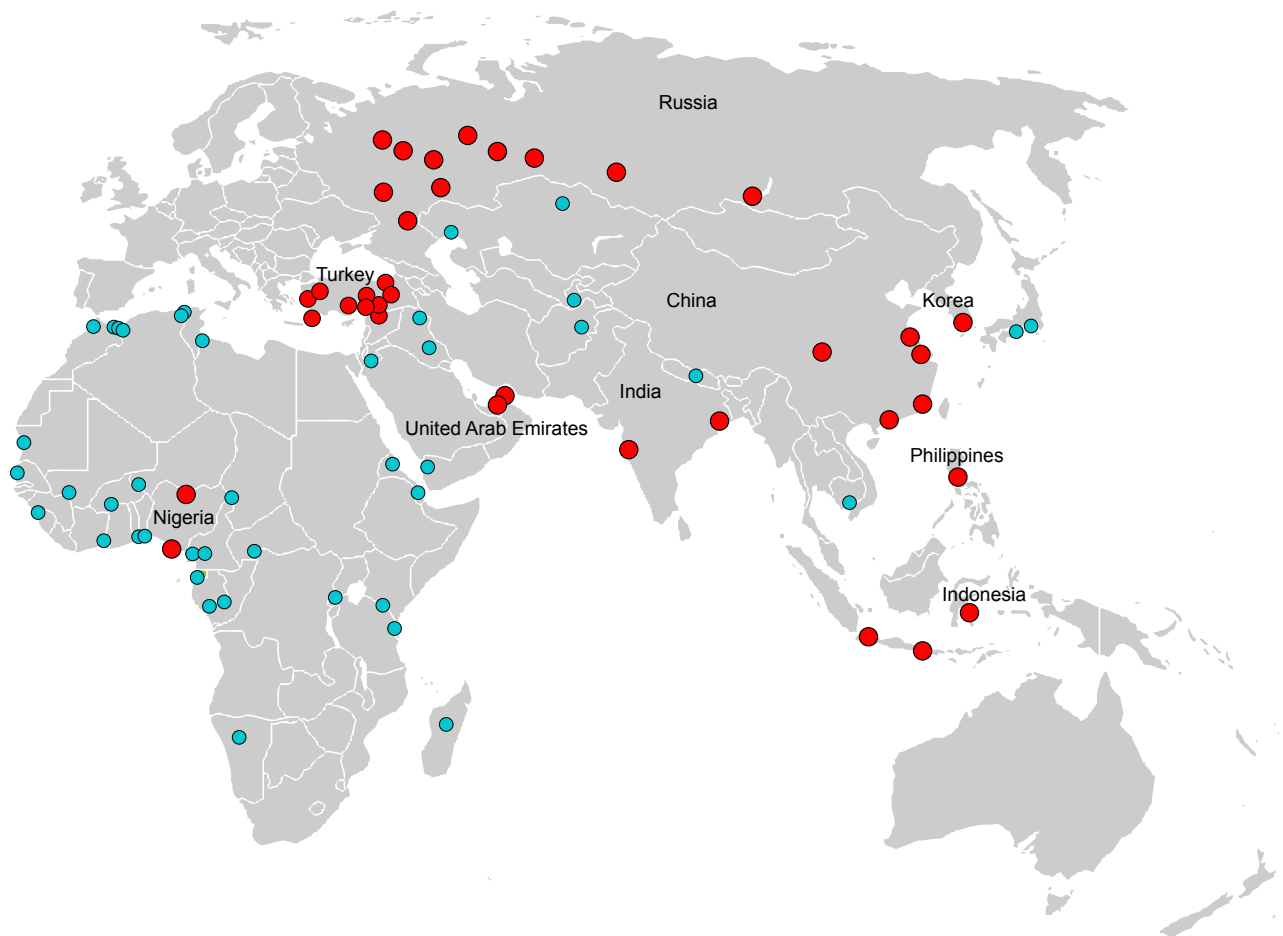
Figure 15: Cities in high growth economies with air links to Paris, Frankfurt, Amsterdam, Munich and Madrid but without air links to London: 2011



The hub airport model (cont.)

Heathrow competes with other European hubs to attract airlines able to pool a critical mass of transfer passengers which enable Londoners to fly direct to a wide range of destinations, at high frequency, without having to change planes.

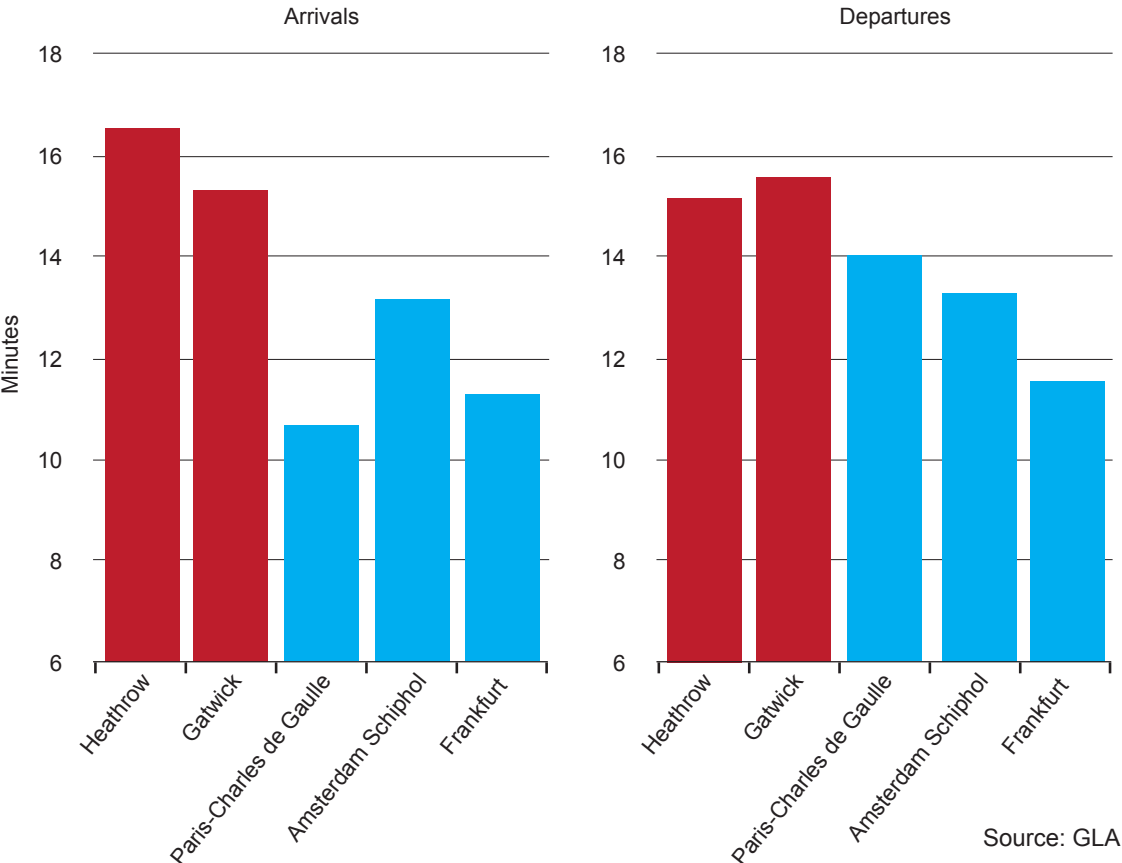
In this competitive international market, the erosion of services from London would lead to a gain for other European cities of the transfer passengers which support their long-haul networks. And as outlined above, these cities already have a competitive advantage over London – they have large hub airports with the headroom to operate more flights and, as demand increases, to expand the range and frequency of routes they provide. They are also far more reliant on transfer passengers than Heathrow to make long-haul routes viable.¹²²



Source: OAG

Heathrow’s lack of headroom capacity also affects the quality of service that passengers experience. Intense utilisation means that adverse events – a technical fault, bad weather or a late arriving plane – create severe knock-on delays. Users of Heathrow face the longest flight delays of comparable European airports (Figure 16). There is a clear correlation between runway utilisation and flight delay. Between 2007 and 2010, as runway utilisation fell by six per cent (as a result of the recession), flight delays fell by 20 per cent. Demand has subsequently returned. In July 2011, Heathrow handled more passengers than in any previous month (up 2.5 per cent on 2010), and in 2010 saw a four per cent increase in passenger numbers.¹²³ In the same year Gatwick saw a three per cent increase in passenger numbers.

Figure 16: Average delays of arrivals and departures at major European airports, 2007–2009: minutes per aircraft



While service quality at Heathrow has improved in recent years, and the airport now consistently meets a number of service quality targets, passengers continue to face both excessively long terminal queues at border control and variability in total waiting time from the moment of entry to exit from the terminal. The government’s proposed Bill to modernise airport regulation,¹²⁴ which will introduce tougher performance management regimes, offers scope to improve the experience of passengers. Significant improvements also need to be made to the management of immigration queues at the UK border by the Home Office, generated in part by

more effective partnership with airport operators. Major investment underway in new terminal facilities at both Heathrow and Gatwick will also help by improving passenger flows through airports. Fundamentally, however, there is a limit to what can be achieved to improve journey times, given the intense utilisation of permitted runway capacity.

Runway congestion at Heathrow also has a detrimental environmental consequence: 60 per cent of arriving flights circle in holding patterns on their approach to London for a total of 55 hours a day, burning 190 tonnes of fuel and discharging 600 tonnes of CO₂.¹²⁵

Future demand

Demand for flights in the UK is forecast to double by 2050, while demand for business flights is forecast to grow 80 per cent by 2030.¹²⁶ All of London's airports¹²⁷ are forecast by government to be full by 2030. And of course, Heathrow's runways are at permitted capacity limits now.

As set out in Chapter 1, forecasting is an inexact science and three particular objections are raised against planning for forecast increases in demand for air travel. The first is that growth on this scale cannot be allowed because of the impact on carbon emissions; the second is that rail, particularly HSR, can meet a much larger share of demand; and the third, that growth will not take place because of improvements in substitutional technology, such as videoconferencing.

In terms of carbon, the UK can meet its overall carbon reduction targets while seeing growth in flights through the decarbonisation of other forms of transport. As set out in Chapter 2, emissions from air transport currently account for around six per cent of the UK's total.¹²⁸ While unconstrained demand for flights in the UK is forecast to double by 2050, in reality this will be constrained; the CCC has stated that growth in the UK's ATMs should not exceed 55 per cent by 2050 if the UK is to meet overall carbon reduction targets. This means a maximum of 3.4 million ATMs a year, up from 2.1 million today. In crude terms, if demand for these extra flights were evenly distributed across all airports in the UK, London's five airports could cater for around 1.5 million ATMs by 2050¹²⁹ within overall carbon limits – and significantly more if the economic case for enabling further growth in London were reflected in policy.

In terms of rail, the combination of improved conventional services between London and cities on the West Coast Main Line and the introduction of direct high speed international services from London St Pancras International to Paris and Brussels has seen significant substitution. Eighty per cent of all journeys between London and Manchester, London and Paris, and London and Brussels are now taken by rail.

As a result, there is modest scope for further substitution to make a material difference to the demand for air travel as there are relatively few air passengers on routes where rail is or will be competitive on journey time. For example, almost half of all domestic air passengers take journeys which would otherwise involve a sea crossing (to/from Northern Ireland, the Channel Islands or the Isle of Man). For travel between the UK and continental Europe, rail can compete on journey time with air travel for journeys up to about four hours, but there are relatively few trips made to such destinations. For longer trips, rail can only attract passengers if it offers other advantages, such as a lower price or a significantly better passenger experience. After London–Paris, the next significant international route for possible substitution is London–Amsterdam, which will require direct services to bring the journey time down to four hours (from over five hours now).

In terms of substitution by new technology, as discussed at greater length in Chapter 2, the view of London business is unambiguously that while substitutes for travel will grow in importance, the need for face-to-face meetings will increase with economic growth.

It may well be that the overall pace of growth in demand will be lower than in previous years. But the only sensible planning assumption is that demand will continue to grow, with a particularly high growth rate in demand for new markets.

The Commission's analysis

The Commission believes that London is currently at a competitive disadvantage to other European cities as a result of both poor service quality, driven by flight delays, and of its increasingly poor connections with growing markets in Asia and Latin America. London requires new hub capacity now and will require further investment in point-to-point capacity over time.

Without urgent action to meet this need, government runs the risk that investment decisions being taken both by businesses in growing economies and by the airlines that serve them will be difficult, if not impossible, to reverse. Policy drift will lead to a gradual erosion of London and the UK's competitiveness.

There is no easy course of action to meet this need. All options for new capacity present substantial challenges in terms of their financing, funding and local environmental impact, and all will require political will. The Commission believes that the options should all be assessed on the basis of their deliverability in the short and medium term (the next fifteen years) – given the urgent need to tackle the consequences of Heathrow's overutilised capacity. It has also looked to long-term options which do not meet this criterion but must be considered.

The Commission notes the political context framing all possible options. In the 2010 general election, the Liberal Democrats pledged to cancel plans for a third runway at Heathrow (on health grounds, because of its impact on local air quality). The Conservatives pledged to cancel a third runway at Heathrow, and to block plans for runways at Stansted and Gatwick, for both local and global environmental reasons. The coalition agreement subsequently committed the government to cancel the third runway at Heathrow and refuse permission for additional runways at Gatwick and Stansted. In 2011 the Labour Party changed its policy on Heathrow's expansion, having supported a third runway while in government, ruling it out on the basis of the local environmental impact. Finally, the Mayor of London, while having no statutory responsibility for aviation policy, believes new hub airport capacity in the South East is essential to maintain London's competitiveness. He is opposed to long-term growth at Heathrow and is actively supporting the case for a new four-runway hub airport in the Thames Estuary.

In global environmental terms, all options to meet growing demand for flights have the potential to lead to an increase in carbon emissions. However, as set out in greater length in Section 1.3, carbon emissions from flights are capped at an EU level within a trading scheme, so limiting capacity in the UK would not reduce the EU's total emissions – they would simply be generated elsewhere in Europe. Additionally, and as noted above, the UK's CCC has concluded that we can increase flights and meet our carbon targets. So the global environmental impact can be managed and will apply equally to any increases in runway capacity.

By contrast, the local environmental impact will vary significantly depending on the geographical location of any expansion¹³⁰ and it is clearly important that appropriate measures are taken to mitigate and compensate for these impacts. For example, the overall local environmental impacts of a new, four-runway hub airport – outlined below – are likely to be at least as significant as a third runway at Heathrow and a second runway at Gatwick, and would include the impacts of greenfield development, as well as of the new road and rail transport infrastructure required to support a new hub airport.

The Commission recognises that the focus of objection to the expansion of any existing airport is the local environmental impact – above all noise, but also local air pollution.

On noise, it is clearly the case that more ATMs will increase the frequency and, potentially, the distribution of noise experienced by local residents and those under the flight paths. While these impacts cannot entirely be obviated for all who might be affected, they can be minimised through a mixture of regulation, investment and new technology. It is worth noting that at Heathrow, for example, between 1980 and 2006 the number of people affected by noise fell from two million to around 250,000¹³¹ despite a 75 per cent growth in flights (with the definition of affected being ‘living within an area subject to a level of 57 decibels’ based on planning guidance and on research, including from the World Health Organisation).¹³² This is primarily because aircraft manufactured today are much quieter than they were twenty to thirty years ago, and these will in turn be replaced by even quieter aircraft in the future.¹³³ Similar levels of noise from road traffic – measured in the same way, on average and across the day – affect over two million people in London; while similar levels of noise from trains affects almost 300,000 people.¹³⁴

On local air pollution, the Commission believes that its principal source – road congestion in an airport’s locality – should be cut. The options set out in Chapter 3 to price congestion – as a means of managing or limiting the use of parts of the network that face the worst congestion, in the absence of options to grow road capacity – should be considered here to improve traffic flow, and thereby reliable access to the airport. In parallel, a coherent strategy is required to improve rail access to Heathrow, as well as to other London airports. The government should set a transparent mechanism for judging the trade-offs between express and commuter services to London’s major airports as part of an overall strategy to improve access to Heathrow, Gatwick and the capital’s other major airports.

Options for new hub capacity

Short term

The Commission has considered the options for delivering new hub capacity, along with the costs of inaction.

In the next five years, the only measure capable of bringing an increase in hub capacity is an operational one, namely enabling Heathrow to use its existing runways more efficiently by allowing planes to land and take-off concurrently on both runways. Freedom to operate in this way – under certain circumstances – is currently in place and could be applied more broadly to increase runway capacity by 10–15 per cent.¹³⁵

This capacity could be used both to provide improved resilience to allow the airport to recover more quickly from any delays, and to provide for new services. The principal objection to such a move is that it would increase and change the distribution of noise for surrounding communities. The introduction of this operating flexibility must, therefore, be accompanied by additional measures to mitigate and compensate for these local impacts.

Recommendation 12: Heathrow airport should have greater freedom to operate more efficiently by allowing planes to land and take-off concurrently on both runways. The capacity released should be used both to improve resilience and to provide an increase in the overall number of flights.

Recommendation 13: Freedom to optimise the use of current capacity should be accompanied by credible, deliverable and independently enforced measures to mitigate and compensate for the local impact of additional noise. In support of this, the government should commission expert advice from the regulator on ways to minimise and manage the distribution of noise from different flight patterns.

Medium term

Additional hub runway capacity is required as soon as possible. A range of options for delivering this capacity have been proposed. These boil down to: a ‘dual hub’ involving Heathrow; a new hub airport at either a new site or through transforming an existing airport; or the expansion of Heathrow.

The Commission’s approach has been to take a step back from the immediate politics of aviation and look at the evidence – what London needs and how these needs can be met. In considering each option in turn, it has sought to understand whether or not London’s need for additional hub capacity can be met by proposals in the medium term (the next fifteen years).

i. ‘Do nothing’

Analysis has estimated the impact on the economy of doing nothing. While there are many variables, and a wide range of forecasts, the Commission is in no doubt that the cost to the economy of doing nothing, in jobs and growth, would be high. Recent analysis indicates lost GDP of approximately £1 billion per annum¹³⁶ and the equivalent of approximately 15,000 jobs a year.¹³⁷ Equally, the wider economic benefits of new runway capacity in London and the South East are estimated to be greater than claimed for other major new transport infrastructure, such as HSR and Crossrail.¹³⁸

The consequences of doing nothing have been highlighted above, but to recap, the Commission believes they would be:

- continued erosion of London’s competitiveness, with the weakening of London’s attractiveness as a destination for new inward investment from those areas which cannot fly here directly, along with poorer prospects of creating new trade links;
- the squeezing out of further domestic flights at Heathrow and flights to new destinations from Heathrow by more profitable or less risky routes;
- a ceiling on improvements to punctuality and reliability for passengers at Heathrow as a result of a continued lack of operational resilience; and
- continued high CO₂ emissions on the approaches to Heathrow as a result of stacking planes.

In a ‘do nothing’ scenario government would come under pressure to intervene to redistribute the use of existing capacity at Heathrow to prioritise flights to certain types of destination, interposing its own views on the relative value of alternative slot usages. Such a move is fraught with the risk of unintended consequences. Criteria set by government would distort capacity utilisation and lead to airlines gaming around these distortions. The Commission does not believe the government should intervene in this way. There are already in place market mechanisms which allocate scarce capacity. Airlines can reallocate their slots between routes and sell or buy slots from other operators.

The acquisition of British Midland International and its slots by British Airways’ (BA) parent company International Airlines Group may, for example, allow BA to release resources to start new routes to emerging markets. By optimising assets and combining operations it may also be able to maintain services both to European destinations and to domestic destinations that would otherwise be under threat. Airlines have over the last twenty years, in the face of a scarcity of new slots, consolidated their most profitable routes, with a resulting decline in the number of domestic destinations served by Heathrow – domestic services have approximately halved.¹³⁹ The trading of slots will continue to see, at the margin, more economic services prioritised within the existing constrained capacity.

We do not believe any attempt to optimise the use of scarce capacity should be made other than through market mechanisms. Such an attempt would not deliver acceptable or efficient outcomes. Critically, it would serve as a distraction from the real need: more hub capacity to provide greater connectivity.

ii. A ‘dual hub’ involving Heathrow and another airport

The theory behind this option is that a hub at Heathrow could be sustained by expanding capacity elsewhere and improving transport links between the sites to enable passengers to connect.

Two main ideas have been postulated: a link to Gatwick with a second runway; or RAF Northolt, its runway rebuilt or reconfigured for greater use. Both options would require new HSR infrastructure to link split sites. In the case of Gatwick, a high level estimate of £5 billion has been quoted (in addition to the costs of a second runway). Both options would result in greater exposure to noise for existing and new communities in surrounding areas (from either a new second runway at Gatwick or more extensive use of RAF Northolt).

Unfortunately there is no fully developed scheme in place that can be subject to detailed scrutiny. Having examined the general case for linking Heathrow to another airport, the Commission is not persuaded that the theory is likely to work in practice. In particular it is sceptical that options put forward could deliver:

- the minimum connection time required by passengers (and for their bags and other cargo), compared to European hubs with co-located facilities, to make them competitive. No proposal meets the needs of airlines and airports for the minimum connection time between flights to deliver the critical mass of interfaces, and to meet passengers' needs; or
- the economies of scale required by airlines in pooling fleets and generating network benefits, to enable them to be competitive with European hubs, as was demonstrated when BA tried unsuccessfully to split operations in the 1990s.

It has also been suggested that, in the long term, the delivery of a new HSR network linking London and Birmingham by 2026 could create a 'dual hub' between Heathrow and Birmingham airport. The Commission does not believe such a proposal is viable, for the reasons set out above.

In coming to its conclusion on the option of a 'dual hub', the Commission has looked at examples from around the world such as New York and Tokyo – as well as cities such as Berlin, Montreal and Milan that have tried and failed to split their hubs – and has been unable to identify a successful model with potential applicability to Heathrow. It can find no advantage in a 'dual hub' over the other options for expansion set out here – and sees additional disadvantages.

iii. A new hub airport

A new hub airport is attractive because it offers the prospect of state of the art infrastructure in a location with world-class transport links and the scale to meet London's long-term needs against the most stretching forecasts of demand growth. Depending on its precise location, it also offers the potential of dispersing local environmental impacts, such as noise, over a less populated area.

Suggested proposals include a new site in the Thames Estuary or the transformation of an existing airport, such as Stansted, into a hub. Although there are no comprehensive, fully costed plans in place, the vision for a new hub airport represents the sort of long-term infrastructure planning that London will need if it is to remain competitive. The Commission does, however, recognise that delivery of this vision faces significant challenges, including:

- the estimated cost of £50 billion to construct and connect a new airport; and the additional cost of new social infrastructure (such as schools and hospitals) required to support growing communities dependent on the airport for employment;
- the likely requirement for a significant proportion of these costs to be met through public funding, particularly for the airport's transport links to London and the rest of the country;
- gaining planning permission; particularly in light of the high levels of public opposition any major new airport plan would inevitably meet once a site is chosen, given the significant new local environmental impacts;
- the need to manage the consequences for businesses and communities reliant on Heathrow, as well as the 85,000 jobs directly dependent on Heathrow, given the airport would need to shrink radically to create a critical mass of airlines at any new hub; and
- the need to compensate the owners of Heathrow, and possibly Gatwick, for assets which have longer economic lives and may not yet have recovered their investment, given these airports would need to shrink as services relocate.

The Commission believes a new hub airport is likely to take at least twenty to thirty years to deliver and cannot therefore meet the urgent need for new hub capacity that London faces today. The critical constraint is that if it is to be built, even within twenty to thirty years, it will require political leadership and consensus *now*: not just over its location but over the specific planning process and significant public investment required. And while a new hub airport may have merit, the cost of failing to address the need for new capacity in the short and medium term must be acknowledged, understood and factored into any assessment of it.

iv. The expansion of Heathrow

A third runway at Heathrow is the most developed option for expansion with a planning application, financing and funding in place. The Commission believes it could be delivered within the next decade. Of course the option is, in part because it is a developed scheme, the most controversial: indeed, as set out above, it has been explicitly ruled out by the current government and most recently by the Opposition.

The Commission believes that overall the case for expanding Heathrow is strong. Britain faces severe public sector financial constraints and low growth from its traditional major export markets. We need to seek out growth and demand in new markets and this requires access to these markets. We believe this makes the case for a privately financed, fundable and deliverable means of growing London's connectivity in the next decade much stronger.

We have grouped the objections to expanding Heathrow in to three categories.

The first is that expansion should not be pursued because of its carbon impact. This is of course an objection to any increase in airport capacity in London and the South East, and we do not accept it for the reasons set out above and in greater length in Chapter 2.

The second is that expansion at Heathrow would just be a short-term stopgap and that London needs the scale of capacity that can only be delivered by a new hub with four runways. This is an important consideration. But as discussed above, there is currently no choice: there is no new hub which has the political commitment, the financing and funding, and the planning regime to be constructed in the medium term. There are also good grounds for thinking that a third runway might well give Heathrow sufficient critical mass for the foreseeable future.

Heathrow currently caters for 480,000 ATMs a year. By operating both runways concurrently for landings and take-offs, it could cater for around 520,000 ATMs (with headroom built in for resilience), and with a third runway 702,000 ATMs. This is an almost 50 per cent increase and combined with another runway elsewhere in the London area, at either Gatwick or Stansted,¹⁴⁰ London's airports could cater for two million ATMs a year by 2050.

So, a new runway at the hub and another runway at a point-to-point airport in the London area could enable London to increase its connectivity at least until 2050, consistent with our climate change obligations.

The third – and most difficult – focus for objection to the expansion of Heathrow is the local environmental impact. As set out above, more ATMs at Heathrow as a result first of the more intense use of runways and then from a new runway, will increase the noise experienced by local residents and those under the flight paths.

The Commission believes permission to build a third runway at Heathrow should be accompanied by limits on noise levels. The precise levels are a matter for detailed analysis and public policy, but if local communities are to have confidence that the limits will be maintained, we believe they need to be subject to independent enforcement. Technological advances offer scope for improvements, but a credible, independent and transparent mechanism must be put in place for limiting and monitoring noise and air pollution.

While we believe expanding Heathrow is the only credible solution to meeting London's vital need for increased hub capacity in the medium term, we remain open to a better solution. Government should examine all options in its development of a new national aviation policy. It should also examine the case for a new hub airport to meet London's long-term needs.

While there is not yet political leadership and consensus for a new hub airport, let alone its location, there is political consensus that Heathrow should not expand. Indeed the government in its latest National Infrastructure Plan confirmed it will “explore all the options for maintaining the UK's aviation hub status, with the exception of a third runway at Heathrow”.¹⁴¹ The Commission rules out no option on the basis of current politics but, as outlined above, does not believe the development of a new hub airport obviates the need to find a short and medium-term solution to the limits on capacity and connectivity London faces now.

Recommendation 14: We call on the government to amend the criteria for its review of national aviation policy to include the option of Heathrow expansion and to choose the best option for Britain. A third runway at Heathrow appears to the Commission to be the most credible solution to meeting London and the UK's vital need for increased hub capacity in the medium term (the next fifteen years).

Recommendation 15: The government should similarly consider how further point-to-point capacity in London and the South East should be provided in the next fifteen years where merited by demand.

Long term

In examining the case for a new hub airport, government should calculate the opportunity costs of all credible proposals. Given that the delivery of a new hub airport is likely to take at least twenty years, it should factor the costs of failing to expand Heathrow in the intervening period.

Recommendation 16: The government's review of national aviation policy should include the option of a new hub airport and examine the opportunity costs of all credible proposals. It should verify that London and the UK have sufficient hub capacity to support economic growth.

CHAPTER 6

**Summary of
recommendations**

A transport policy to support effective delivery

Recommendation 1: The government must now deliver on its planning reforms for infrastructure by ensuring they provide timeliness and predictability, in tandem to improving democratic accountability.

Recommendation 2: The DfT should deliver on its stated ambition to improve end to end journeys for passengers. Its forthcoming national rail and air strategies should contain the practical and policy means to define, measure and benchmark improvements to the interfaces between London's road, rail and air networks.

Recommendation 3: In order to prioritise limited public resources to secure the best returns, the government should capture the likely GDP impact of investment in road and rail infrastructure, and incorporate it into any analysis of benefits and costs. A new national aviation policy should similarly consider which investment in air transport infrastructure is most likely to yield the greatest contribution to sustainable economic growth.

Road links

Short term

Recommendation 4: Tailored performance regimes should be applied to those parts of the network of most importance to the economy. The Highways Agency should publish annual statements of delivery against those targets set.

In addition, existing roads will require ever more focused management from the Highways Agency. Alongside current measures to minimise congestion, the Highways Agency should accelerate its programme of hard shoulder running.

Medium term

Recommendation 5: The government should put the Highways Agency on a firmer, more independent footing with a wholesale modernisation and a recasting of its relationship with the private sector. The Transport Secretary should play a stronger client role for an agency that has a clearer remit and a greater separation of its functions.

Recommendation 6: In turn, a modernised Highways Agency should be supported by a clearer, longer term policy framework from government. The government should introduce five-year planning and funding cycles, set in the context of a longer term strategy, as exist for rail.

Recommendation 7: The Commission believes the economic case for charging to cut congestion and its impact on the environment is strong, and the case for it will grow stronger as congestion grows. The government should identify those urban areas and sections of the strategic network with the worst congestion. It should then, with local authorities, develop and consult on a variable charging system with the aim of cutting this congestion, particularly at peak.

Rail links

Short term

Recommendation 8: The Intergovernmental Commission (IGC) should complete its review of access charges to the Channel Tunnel swiftly to maintain the long-term stability and certainty required by existing concessions and needed to attract future investment. The IGC should bring greater transparency to the calculation of charges and the investment they support.

In tandem, the government should press for regulatory reform and modernisation to support a competitive market for international rail services, as it has done in modernising the economic regulation of UK airports.

Medium term

Recommendation 9: Investment to grow rail capacity in London and the South East will continue to be required, and for the next control period should generally take the form of incremental upgrades rather than major new schemes.

Recommendation 10: The high annual fare increases now in place are not sustainable in the medium term. Tangible progress on cost reductions by the industry must demonstrably be made. While investment in new capacity will need to be supported by a contribution from both taxpayer and fare payer, government should review the allocation of scarce subsidy, and ensure that economic growth is being sufficiently prioritised.

Long term

Recommendation 11: Proposals for a new HSR network should come with commitment from government to sustained and sufficient levels of investment in other essential transport infrastructure; a clear strategy for a link to Heathrow that meets the growing demand for flights; and a comprehensive strategy to reduce forecast congestion at Euston.

Air links

Short term

Recommendation 12: Heathrow airport should have greater freedom to operate more efficiently by allowing planes to land and take-off concurrently on both runways. The capacity released should be used both to improve resilience and to provide an increase in the overall number of flights.

Recommendation 13: Freedom to optimise the use of current capacity should be accompanied by credible, deliverable and independently enforced measures to mitigate and compensate for the local impact of additional noise. In support of this, the government should commission expert advice from the regulator on ways to minimise and manage the distribution of noise from different flight patterns.

Medium term

Recommendation 14: We call on the government to amend the criteria for its review of national aviation policy to include the option of Heathrow expansion and to choose the best option for Britain. A third runway at Heathrow appears to the Commission to be the most credible solution to meeting London and the UK's vital need for increased hub capacity in the medium term (the next fifteen years).

Recommendation 15: The government should similarly consider how further point-to-point capacity in London and the South East should be provided in the next fifteen years where merited by demand.

Long term

Recommendation 16: The government's review of national aviation policy should include the option of a new hub airport and examine the opportunity costs of all credible proposals. It should verify that London and the UK have sufficient hub capacity to support economic growth.

Commissioners' biographies

Peter Robinson – Berwin Leighton Paisner (Chairman)

Peter joined international City law firm Berwin Leighton Paisner in 1982, became a corporate finance partner in 1985 and was later appointed to the firm's board becoming chairman in 1994.

Peter was born and educated in South Africa and read law at St John's College, Cambridge. As a corporate lawyer Peter specialises in UK and international mergers and acquisitions.

Sir Adrian Montague CBE – 3i

Adrian is currently the non-executive Chairman of 3i, Michael Page International plc, Hurricane Exploration plc, Anglian Water Group Ltd and CellMark Investments AB of Gothenburg, and a non-executive director of Skanska AB of Stockholm. He was Chairman of British Energy Group from 2004–2009 and Friends Provident Group from 2005–2009. From 2001–2004 Adrian was Deputy Chairman of Network Rail Limited, the successor to Railtrack as the operator of Britain's railway infrastructure, and from 2004–2005 Chairman of Cross London Rail Links Ltd, the company responsible for developing London's £10 billion Crossrail project. Adrian is also Chairman of the Advisory Board of the Green Investment Bank, a UK government-sponsored bank to provide specialised financing to the clean energy sector.

John Vincent BSc (Hons), MSc, CEng, FIHT, MICE – AECOM

John is the Director of Strategic Planning and Advisory (SP&A) services for AECOM's Global Transportation business. He is responsible for accelerating the development of a worldwide, world-class consultancy service which encompasses all Transportation market sectors. SP&A employs over 1,200 practitioners with a diverse range of skills including economics, PPP advisory and transportation planning through to ITS (applied technology), and generates net revenues in excess of £70 million per year. Prior to taking up his current position, John was Managing Director of AECOM's Transportation business in Europe with operational responsibility for the integration of merged businesses and expansion into the continent of Europe. John sat on the European Executive Board, chaired the European Strategic Development Group, and remains a Trustee of a number of the company's European pension funds.

John is a Chartered Engineer and has extensive experience in developing transportation programmes and projects gained in both the public and private sectors. He has directed a number of reference projects in the road, rail and aviation sectors, and has given evidence at public inquiries of national importance. Amongst his other interests, John is actively engaged in supporting London First's efforts to promote transportation systems fit to sustain a world-class city and was, up to abolition, a Board Member of Yorkshire Forward, a Regional Development Agency.

Chris Elliott – Barclays Infrastructure Funds

Chris is a Managing Director within Barclays Capital, the investment banking division of Barclays Bank PLC and is currently the Managing Director, Head of Infrastructure Investing and Chairman of the Investment Committee within Barclays Infrastructure Funds. In this role he is responsible for all aspects of infrastructure investment activities. Chris joined Barclays in 1989 when he founded the Infrastructure Advisory Group.

Peter Damesick, MA PhD – CBRE Limited

Peter originally joined CBRE in 1988, having previously worked in management consultancy and as a university lecturer. He is the firm's principal analyst and spokesperson with respect to real estate market trends and issues for Europe, the Middle East and Africa, having formerly directed the company's research and related consulting activity with respect to UK markets for several years. Peter is a member of CBRE's Global Research Executive committee which provides leadership and coordination to the firm's worldwide real estate research and related services to clients in a range of areas including market analysis, demand studies, forecasts, and portfolio analysis and investment strategy. He is a Visiting Professor in the Department of Geography at Birkbeck, University of London.

Mike Redican – Deutsche Bank

Mike is primarily responsible for the structuring, negotiation and execution of structured transactions in the infrastructure sector. He has 30 years banking experience having worked in Corporate Banking, Structured Finance and Project Finance. He has worked on power, infrastructure, oil and gas, mining and utility transactions in UK, Europe and USA.

Andy Street – John Lewis

Andy has spent all his working life in the John Lewis Partnership, joining after graduating from Oxford with a degree in Politics, Philosophy and Economics in 1985. After initial postings in the John Lewis department stores, he ran one of the Partnership's production facilities before returning to the department stores as Managing Director, John Lewis Milton Keynes in 1993. He was the first Managing Director of John Lewis Bluewater from 1998 to 2000 when he moved to Head Office as Supply Chain Director, John Lewis. He was appointed to the Partnership Board as Director of Personnel in 2002. In that role he was responsible for all areas of personnel policy within the Partnership as well as senior talent management. In February 2007 Andy became Managing Director of the John Lewis Division, responsible for all activities within John Lewis.

Andy is also Vice Chairman of The Performances Birmingham Limited Board of Trustees, responsible for running the City's Symphony and Town Halls. He is also on the London First Board, member of the Prime Minister's Business Advisory Group and also recently appointed Chair of the Greater Birmingham and Solihull Local Enterprise Partnership (LEP).

Francis Salway – Land Securities

Francis Salway joined Land Securities in October 2000. A chartered surveyor, Francis was previously an Investment Director at Standard Life Investments where he was responsible for the management of a number of property funds. He was appointed to the Board of Land Securities in April 2001 and as Group Chief Executive in July 2004. He was appointed a non-executive Director of Next Plc in June 2010 and is a past President of the British Property Federation.

Ruby Parmar – PricewaterhouseCoopers

Ruby is a Partner at PwC and Head of the Private Business Practice. She is an active client service partner spending the majority of her time in the market building relationships and advising on her specialist area of corporate and personal taxation.

Appendix 1

Infrastructure provision and funding

There are various forms of transport infrastructure provision in the UK – ranging from privately provided monopoly network infrastructure, which is subject to economic regulation and effectively guarantees a return when efficiently provided; privately provided infrastructure, which is subject to market and policy risk; and publicly provided infrastructure.

Road

Over 97 per cent of England's roads are owned and managed by more than 150 local authorities. The remaining three per cent of the road network – the strategic network that comprises the majority of England's motorways and trunk roads – carries a third of all passenger traffic in England.¹⁴² The Highways Agency, an executive agency of the DfT, is responsible for operating, maintaining and improving the 7,000 km of this strategic road network, working through contractors on behalf of the Secretary of State for Transport. The agency values this network at over £88 billion.¹⁴³

Most funding to maintain and improve the UK's road infrastructure comes from central government. Annual revenue of around £46 billion raised from motoring tax¹⁴⁴ – fuel duty, vehicle excise duty and VAT – is not ring-fenced. Other revenue and charging regimes exist, but they are the exception rather than the rule. They include the London Congestion Charge and tolls on the Dartford Bridge, the Severn Crossing and the M6 Toll. Road-related revenues (fuel tax, vehicle tax and tolls) are on average lower in the UK than elsewhere in continental Europe.¹⁴⁵

Rail

Britain's rail infrastructure¹⁴⁶ is run, maintained and developed by Network Rail, a private sector organisation, established as a company limited by guarantee (for profit but not for dividend). The structure of the rail industry is complex and involves a number of contractual and regulatory interfaces. Government support is delivered through central government grants directly to Network Rail, and through subsidies via franchise agreements to private Train Operating Companies.

The rights and obligations of both Network Rail and the train operators are set out in access contracts; while franchising agreements between the government and private train operators set service levels, fares and ticketing policy, as well as the level and timing of subsidy and premium payments, and risk sharing arrangements.

Government sets high level outputs and available funding. The rail regulator, the Office of Rail Regulation (ORR), translates these into detailed outputs for Network Rail, along with the funding requirements. The regulated review process marks out five-year control periods. The ORR monitors and enforces these outputs through the network licence.

In its October 2010 Spending Review, the government left Network Rail's periodic funding settlement¹⁴⁷ essentially intact, and decided not to revisit Network Rail's gross revenue requirement of around £5.3 billion a year to 2014,¹⁴⁸ which is tied to Network Rail's commitment to meet growing demand for services and delivering greater efficiency.

The government has instigated a major structural review (the McNulty Study) to find significant and lasting ways to reduce cost and deliver an affordable and sustainable railway, noting that in the last decade:

- Reliability – the percentage of trains on time – rose from 79 per cent to 91 per cent;
- Passenger revenues grew from £4 billion to £6 billion a year; and
- Overall taxpayer contribution rose from £2.3 billion to £5.2 billion a year,¹⁴⁹ in part a consequence of costs being 40 per cent higher than those at the time of privatisation.¹⁵⁰

Air

Most of the UK's major airports are privately owned and funded¹⁵¹ and serve a mix of business, leisure and niche markets. The government sets national strategic policy. The regulator – the Civil Aviation Authority – in addition to its duties on safety and airspace management, sets the charges paid by airlines at airports designated by the government, namely, Heathrow, Gatwick and Stansted.¹⁵² The regulated review process marks out five-year control periods. At these airports, price cap regulation allows the operator to keep any profits resulting from efficiency gains beyond the level prescribed in the pricing mechanism.

BAA Airports currently owns and operates six UK airports – Heathrow, Stansted, Edinburgh, Aberdeen, Glasgow and Southampton. In 2009, Global Infrastructure Partners became the owners of London Gatwick Airport. The UK has extensive demand for its network of regional airports – including Birmingham (nine million passengers pa), Edinburgh (nine mppa), Glasgow (seven mppa), Bristol (six mppa) and Liverpool (five mppa).¹⁵³ There is a network of smaller regional airports delivering vital business and general aviation services – including London Biggin Hill and Southend – which cater for eight per cent of all flights in the UK.

Appendix 2

Commission's reference group

Robert Evans, Director, Argent Group PLC

David Tonkin, Regional Managing Director, UK, Atkins

Lawrie Quinn, Delivery Manager – Rail Projects, Bechtel

Andrew Comer, Director, Environment & Infrastructure, Buro Happold

Hugh Basham, Managing Director Ireland, Transport Strategy Director UK&I, DHL

Richard Threlfall, UK Head, Infrastructure, Building and Construction, KPMG LLP

Richard Abel, Managing Director, Infrastructure & Real Assets, Macquarie Group

Matt Borrelli, Director, Navigant Consulting

Martin Roberts, Partner, Head of London Office, Pinsent Masons

James Douglas-Hamilton, Managing Director, Rothschild

Appendix 3

Consultation process

Written evidence, which is available from London First on request, was received from:

Arora Hotels
Aberdeen & Grampian Chamber of Commerce
Amey
Arup
BAA Airports
Board of Airline Representatives in the UK
Campaign for Better Transport
CBRE Limited
Chris Smith Aviation Consultancy
Deloitte
FirstGroup
HACAN ClearSkies
Heathrow Airline Operations Committee
Heathrow Hub Ltd
Heron International
Hull and Humber Chamber of Commerce
Invensys Rail
Kingsgate
KPMG
London Assembly Conservative Group
London Assembly Transport Committee
London Biggin Hill Airport
London Borough of Greenwich Council
London Borough of Hammersmith and Fulham Council
London City Airport
London Forum of Amenity and Civic Societies
London Gatwick Airport
National Grid
Nomura
PricewaterhouseCoopers
Railfuture
Siemens UK
Slough Borough Council
Strathclyde Partnership for Transport
Thales UK
The Nichols Group
Town and Country Planning Association
Transport for London
UK Power Networks
Westfield Group

Commission witnesses:

Colin Matthews, CEO, BAA Airports Ltd

Lynne Embleton, Director of Strategy & Business Units, British Airways

Stephen Joseph, Chief Executive, Campaign for Better Transport

Adrian Gault, Chief Economist, Committee on Climate Change

Jonathan Moor, Director General for Civil Aviation, Department for Transport

John Parkinson, Head of UK Aviation Policy Development, Department for Transport

Nicolas Petrovic, CEO, Eurostar International Ltd

Chris Fletcher, Deputy CEO and Director of Policy & External Affairs, Greater Manchester Chamber of Commerce

Alison Munro, CEO, High Speed 2 Limited

Graham Dalton, Chief Executive, Highways Agency

Richard Gooding OBE, Chief Executive, London City Airport

Sir David Rowlands, Chairman, London Gatwick Airport

Peter Trent, CEO, Macquarie Atlas Roads, Macquarie

Paul Plummer, Group Strategy Director, Network Rail

Chris Cain, Principal – Aviation Strategy and Policy Consultancy, Northpoint Aviation Services

Michael Cawley, Deputy Chief Executive, Ryanair

Garry Clark, Head of Policy and Public Affairs, Scottish Chambers of Commerce

Michèle Dix, Managing Director, Planning, Transport for London

Chris Gibb, Chief Operating Officer, Virgin Trains

Jean Leston, Senior Transport Policy Advisor, Climate Change Team, WWF-UK

Discussion sessions were held with:

Abellio	Odgers Berndtson
Amey	Office of Rail Regulation
Arup	Passenger Focus
Ashurst	PricewaterhouseCoopers
Assembly Global Networks	Navigant Consulting
Association of Train Operating Companies	Network Rail
Atkins	Parsons Brinckerhoff
BAA Airports	Pinsent Masons
Bechtel	Quod
Berwin Leighton Paisner	RAC Foundation
Blick Rothenberg	Regional Airports Limited
British Airways	SEGRO
BT Group	Siemens UK
Buro Happold	Skanska
Carillion	SKM Colin Buchanan
CH2M HILL	The Nichols Group
Cisco	Thales UK
City University	Transport for London
Civil Aviation Authority	Turner & Townsend
Clifford Chance	UCL
Common Purpose	Westfield Group
Department for Transport	
Deutsche Bahn	
Development Securities	
DHL	
Ernst & Young	
European Land and Property	
ExCeL	
FirstGroup	
Foster + Partners	
FTI Consulting	
Grosvenor	
Guild of Travel Management Companies	
Halcrow	
Herbert Smith	
Highways Agency	
Institute of Travel & Meetings	
Invensys Rail	
John Lewis	
Jones Lang LaSalle	
Kesslers International	
KPMG	
London City Airport	
London Communications Agency	
London Gatwick Airport	
London Metropolitan University	

We are very grateful to all those who gave generously of their time and experience. The analysis and recommendations contained in this report are of course the Commission's own, and no agreement should be presumed from any of those referred to above. Similarly, so too are any omissions or errors.

Endnotes

- 1 Cf. London's Place in the UK Economy, 2009-10, London School of Economics for the City of London Corporation; Press statement, 25 January 2011, City of London Corporation.
- 2 Ernst & Young European Investment Monitor 2009.
- 3 After the US.
- 4 UK Trade Performance Over the Past Years – Trade and Investment Analytical Papers, BIS/DFID, 2011.
- 5 In the decade from 1998–2008, the UK increased its exports of goods by 72%, to 468bn USD. In the decade between 1998 and 2008, UK services exports increased 156%, to 288bn USD; UK Trade Performance Over the Past Years – Trade and Investment Analytical Papers, 2009, BIS/DFID.
- 6 UK Trade Performance Over the Past Years – Trade and Investment Analytical Papers, BIS/DFID, 2011.
- 7 IHS Global Insight, 2011.
- 8 Strategic Infrastructure Needs to 2030, International Futures Programme, OECD, June 2011.
- 9 World Economic Outlook - Slowing Growth, Rising Risks, IMF, September 2011.
- 10 Cf. Global Financial Centres Index, Z/Yen, Reports 7–10 (March 2010 to September 2011).
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- 12 While London is still anticipated as an important city, it falls behind the emerging cities.
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- 15 National Passenger Survey, Passenger Focus, Spring 2010.
- 16 Flying on Business: A Study of the UK Business Air Travel Market, CAA, December 2010.
- 17 National Transport Model output, DfT; quoted in The Eddington Transport Study, HM Treasury/DfT, December 2006.
- 18 Transport Statistics Great Britain, DfT, November 2010.
- 19 Department for Transport statistics, based on Autumn 2009 figures.
- 20 Increasing Passenger Rail Capacity, DfT/ORR/NAO, June 2010.
- 21 The Eddington Transport Study, HM Treasury/DfT, December 2006.
- 22 Focus on London, GLA, July 2009.
- 23 Inner London: Context for the Draft Replacement London Plan, GLA, June 2010. The CAZ comprises of the City of London, most of Westminster and the inner parts of Camden, Islington, Hackney, Tower Hamlets, Southwark, Lambeth, Kensington and Chelsea.
- 24 The Economic Outlook for London, in Economic Outlook, pub. Wiley-Blackwell, April 2010.
- 25 Traffic has risen by 86%. Road Statistics 2009: Traffic, Speeds and Congestion, DfT, June 2010. Figures are for Great Britain. The unit in Figure 2 – licensed road vehicles – on balance gives a closer comparison with passengers at UK airports, and a better overall description of capacity utilisation – the physical pressures on limited space – than, for example, total distance travelled, or number of journeys taken.
- 26 Transport Statistics, Change in traffic on major roads by region and country in Great Britain, from 2000 to 2010, DfT, June 2011.
- 27 1,354 million franchised journeys were made in 2010-11, a 7.6% increase from 2009-10; National Rail Trends 2010-11 Yearbook, ORR, 2011.
- 28 In 2010-11, franchised passenger journeys in London and the South East increased by 9%, Long-distance by 5.6% and Regional by 4.7% when compared to 2009-10; National Rail Trends 2010-11 Yearbook, ORR, 2011.
- 29 UK Airport Statistics, 1989, 2010, CAA.
- 30 Year ended 30 September 2011.
- 31 Population Estimates for UK, England and Wales, Scotland and Northern Ireland, Mid-2010 Population Estimates, June 2011; Population Estimates for UK, England and Wales, Scotland and Northern Ireland, Mid-1982 to Mid-1990 Population Estimates, March 2003, ONS.
- 32 Driven by demographic trends rather than economic migration. The London Plan: Spatial Development Strategy for Greater London, GLA, July 2011.
- 33 Ref. World Economic Outlook – Slowing Growth, Rising Risks, IMF, September 2011. The Economic Contribution of the Aviation Industry in the UK, Oxford Economic Forecasting, October 2006. For the purposes of business or commuting, cf. Rail Passenger Demand Forecasting Methodology, DfT, April 2009; Demographic Determinants of Daily Travel Demand, David Metz, Centre for Transport Studies, UCL, February 2011.
- 34 Strategic Infrastructure Needs to 2030, International Futures Programme, OECD, June 2011.
- 35 The government recently launched a public consultation on alternatives to travel, calling for evidence on alternatives to travel that reduce the need for commuting and business trips, such as home-working and remote working, making use of teleconferencing and videoconferencing or introducing flexible working and staggered hours in order to reduce travel during peak periods; Alternatives to Travel: a Call for Evidence – guidance document and questionnaire, DfT, April 2011.
- 36 See Flying on Business: A Study of the UK Business Air Travel Market, CAA, December 2010. Cf. surveys undertaken by both the Institute of Travel and Meetings and the Guild of Travel Management Companies, which together represent £15bn of corporate travel purchases a year.
- 37 For example Skype, WebEx, Office Communicator.
- 38 Labour Force Survey, ONS, September 2011.
- 39 It has also enabled better planning and preparation to optimise the time spent meeting in person, increasing the value of doing business face-to-face, and as a result has in some cases driven up the frequency of travel taken. From analysis undertaken by the Institute of Travel and Meetings, which represent buyers in companies who collectively spend over £2bn p.a. on travel and associated services.
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- 41 33 MtCO₂ in 2008.
- 42 Greenhouse gas emissions, Climate Change Act 2008.
- 43 It became a statutory body on 26 November 2008 following Royal Assent of the Climate Change Act 2008. The CCC provides independent advice to the UK government and devolved administrations on how the UK can best achieve its greenhouse gas emissions reduction goals through setting and meeting carbon budgets and targets, as well as other issues on request.
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- 45 At a cost of around 0.1% of GDP in 2030.
- 46 It continues to press for a global agreement on reducing CO₂ emissions from air travel.
- 47 London First's Infrastructure Commission. Further details can be found here: <http://www.londonfirst.co.uk/infrastructure2/infrastructure-commission/>.
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- 49 Unless otherwise stated, weekday, 7–10am. High peak is considered to be 8–9am.
- 50 Foreword, National Infrastructure Plan 2010, HM Treasury, October 2010.

- 51 Strategic Infrastructure Needs to 2030, International Futures Programme, OECD, June 2011.
- 52 Planning Reform, Written Ministerial Statement, Communities and Local Government, 29 June 2010.
- 53 Ref. Going for Growth, OECD, March 2009.
- 54 The Barker Review of Land Use Planning, December 2006.
- 55 The Eddington Transport Study, HM Treasury/DfT, December 2006.
- 56 Ibid.
- 57 Commuting to work – 2011, ONS, June 2011.
- 58 Commuting and Business Travel Factsheet, DfT, April 2011.
- 59 Almost 40% of the strategic road network’s traffic is generated by commuting and business travel, by car miles driven. Highways Agency, 2009.
- 60 Travel in London: Report 3, TfL, November 2010.
- 61 Every year, over half of all journeys are made by road, and almost 90% of London’s freight is carried by road. Travel in London: Report 3, TfL, November 2010.
- 62 London Streets Factsheet, TfL, October 2010.
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- 67 Transport Statistics Great Britain, DfT, November 2010.
- 68 From 4.1 minutes of delay for every 10 miles travelled to 3.6 minutes in 2009/10; Public Transport Statistics Bulletin, DfT, February 2011.
- 69 2004/05 peak time reliability (average of AM & PM peaks): 4.9 minutes of delay for every 10 miles travelled on the slowest 10% of journeys. 2008 peak time reliability (average of AM & PM peaks, latest figures available): 4.6 minutes of delay; Public Transport Statistics Bulletin, DfT, February 2011.
- 70 By 3%. 2004/05 PM peak time reliability: 4.78 minutes of delay for every 10 miles travelled on the slowest 10% of journeys. 2009 PM peak time reliability (latest figures available): 4.93 minutes of delay; Public Transport Statistics Bulletin, DfT, February 2011.
- 71 Road Statistics 2009: Traffic, Speeds and Congestion; DfT, June 2010.
- 72 Transport Statistics Great Britain, DfT, November 2010.
- 73 Mayor’s Transport Strategy, GLA, May 2010.
- 74 In 2002 prices; Out of the jam: reducing congestion on our roads, House of Commons Transport Committee report, September 2011.
- 75 A fresh start for the Strategic Road Network, Alan Cook for DfT, November 2011. The review’s preliminary conclusions are being considered by government.
- 76 Average journey times cut by up to 24% in the northbound direction and 9% in the southbound direction; M42 ATM Monitoring and Evaluation, Project Summary Report, Mott MacDonald, Highways Agency, November 2009.
- 77 Subject to successful completion of statutory processes. There are plans to focus on the most congested parts of the M1, M25, M6, M62, the M3 and M4 approaching London, and the motorways around Manchester, Birmingham and Bristol.
- 78 The current lack of separation, alongside an annualised funding regime, has led to a heavy focus on a small number of large capital projects, which have tended to be lumpy and expensive and vulnerable to political changes or funding cuts.
- 79 The Road Pricing Feasibility Study examined the impact of road pricing in 2025.
- 80 43% of peak journeys into central London; Travel in London: Report 3, TfL, November 2010.
- 81 National Rail Trends 2010-11 Yearbook, ORR, 2011.
- 82 Defined primarily by punctuality.
- 83 Within 5 minutes of the timetabled arrival.
- 84 Performance is mixed – some operators consistently achieve high levels of punctuality, and others below average.
- 85 1,354 million franchised journeys were made in 2010-11, a 7.6% increase from 2009-10; National Rail Trends 2010-11 Yearbook, ORR, 2011.
- 86 In 2010-11, franchised passenger journeys in London and the South East increased by 9%, Long-distance by 5.6% and Regional by 4.7% when compared to 2009-10; National Rail Trends 2010-11 Yearbook, ORR, 2011.
- 87 Demand outstrips supply by almost 10% in the busiest hour. Total peak time capacity in central London is 775,000 passengers. Only 42% of peak capacity is supplied in the busiest hour between 8–8.59am. London and South East Route Utilisation Strategy, Network Rail, July 2011.
- 88 DfT statistics, based on autumn 2009 figures.
- 89 Increasing Passenger Rail Capacity, DfT/ORR/NAO, June 2010.
- 90 Inner suburban services: 304,000 passengers (55%); Outer suburban services: 192,000 passengers (13%); Long-distance services: 73,000 passengers (13%); Airport services: 6,500 passengers (1%). There are a further 100,000 one-off or irregular journeys made to London each weekday morning, many of which are for business.
- 91 In the morning peak. Note that this measure gives an indication of the number of passengers standing at a single point. Figures are not publicly available showing the length of time passengers have been standing. For shorter journeys less than 20 minutes it is seen as acceptable to have passengers standing (provided the number is within the standing allowance).
- 92 Deutsche Bahn plans to open services between London and the Continent by 2014.
- 93 There are also plans to deliver high speed links between Paris and Geneva, Paris and Barcelona, Marseilles and Germany, as well as to develop the northern European corridor.
- 94 Initial Industry Plan 2011, England and Wales, Proposals for Control Period 5 and beyond, Network Rail, September 2011.
- 95 Control Period 5 (2014–2019).
- 96 London and South East Route Utilisation Strategy, Network Rail, July 2011.
- 97 High Level Output Specification and Statement of Funds Available.
- 98 Initial Industry Plan 2011, England and Wales, Proposals for Control Period 5 and beyond, Network Rail, September 2011.
- 99 Passenger revenues minus costs.
- 100 Realising the Potential of GB Rail: Final Independent Report of the Rail Value for Money Study, DfT, May 2011.
- 101 Which comprise a basket of commuter and protected fares – and include season tickets.
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- 104 Initial Industry Plan 2011, England and Wales, Proposals for Control Period 5 and beyond, Network Rail, September 2011.
- 105 Not enhancement or other capital expenditure which relates to future rather than current traffic; Rail Value for Money Study, Interim Submission to Secretary of State, September 2010.
- 106 High Speed Rail Strategic Alternatives Study: Strategic Alternatives to the Proposed 'Y' Network, Atkins, February 2011.
- 107 High Speed Rail Access to Heathrow: BAA 2nd Submission to the Lord Mawhinney Review, April 2010.
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- 109 The full-Y network stopping at Old Oak Common; from analysis undertaken by TfL.
- 110 UK Trade Performance Over the Past Years – Trade and Investment Analytical Papers, BIS/DFID, 2011.
- 111 <http://www.lda.gov.uk/our-work/business-support/accessing-international-markets/index.aspx>.
- 112 International Air Passenger Transport in the Future, OECD/International Transport Forum, December 2009.
- 113 Brazil, Russia, India, China, Mexico, Korea, Turkey, Indonesia. World Economic Outlook – Slowing Growth, Rising Risks, IMF, September 2011.
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- 115 Heathrow, Gatwick, London City, Stansted, Luton; CAA data, 2010.
- 116 In accordance with Terminal 5 Planning Condition A4, the number of air transport movements at Heathrow Airport is limited to 480,000 each year.
- 117 Paris, Frankfurt, Amsterdam, Madrid and Munich.
- 118 'Garuda Indonesia returns to European skies', Business Traveller, 3 June 2010.
- 119 'India's Jet Airways to add European hub in Brussels', USA Today, 3 May 2007.
- 120 'TAM's European Expansion', Routesonline.com, 8 April 2010.
- 121 From 83 ATMs an hour to 126 ATMs an hour.
- 122 Long-haul services with more than half of passengers transferring via the hub.
- 123 Year ended 30 September 2011.
- 124 Draft Civil Aviation Bill - An effective regulatory framework for aviation, November 2011.
- 125 NATS data as reported in The Telegraph article 'Heathrow data shows capacity crisis costing thousands', 28 June 2011.
- 126 UK Aviation Forecasts, DfT, August 2011.
- 127 Heathrow, Gatwick, Stansted, Luton, London City.
- 128 33 MtCO₂ in 2008.
- 129 Heathrow, Gatwick, Stansted, Luton and City Airport; up from 970,000 today.
- 130 Landscape impact, surface access links, the numbers of people affected by noise or poorer air quality.
- 131 This compares to 453,000 in London being exposed to a noise level of 55 decibels or more from railways, and 3,246,000 from road traffic (on average and across the day).
- 132 In planning guidance, and based on research including from the World Health Organisation, this represents the onset of "significant community annoyance"; cf. Environmental Health Criteria Number 12: Noise, World Health Organisation, 1980. The area and population contained within the 'daytime average noise' contour are widely used for assessing for planning purposes. Planning guidance (PPG 24) indicates that a level of 57 decibels (dB) represents the 'onset of significant community annoyance'. There is no recent, major, UK-based research from which to take figures for road or rail traffic. Planning policy is therefore based on guidance provided by the World Health Organisation (Environmental Health Criteria Number 12: Noise, 1980) that "general daytime outdoor noise levels of less than 55 dB (A) Leq are desirable to prevent any significant community annoyance". Planning Policy Guidance 24: Planning and Noise, Communities and Local Government, September 1994.
- 133 The Boeing 787 for example, first brought into service in 2011, produces a noise footprint that is 60% smaller than the 767 equivalent, first brought into long-haul service in the mid 1980s.
- 134 London's Environment Revealed: State of the Environment Report for London, GLA/ Environment Agency/ Natural England/ Forestry Commission, June 2011.
- 135 With sufficient associated infrastructure, such as parking stands.
- 136 A range of £20bn to £47bn in wider economic benefits in present value terms over a period of 30 to 50 years; cf. The Future of Air Transport – White Paper, DfT, December 2003; The Economic Contribution of the Aviation Industry in the UK, Oxford Economic Forecasting, October 2006; Economic Impacts of Hub Airports, British Chambers of Commerce, July 2009; What is the contribution of aviation to the UK economy, Oxera, November 2009; The Importance of Aviation Infrastructure to Sustainable Economic Growth, FTI Consulting, October 2011.
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- 138 A range of £20–£40bn, present value, discounted over 60 years; Economic Impacts of Hub Airports, research by Colin Buchanan, July 2009.
- 139 UK Airport Statistics, 1990, 2010, CAA.
- 140 Gatwick, Stansted, Luton and City Airport currently have combined capacity for 780,000 flights.
- 141 National Infrastructure Plan 2011, HM Treasury, November 2011.
- 142 Highways Agency Business Plan 2010-11, Highways Agency, 2010.
- 143 Highways Agency Business Plan 2010-11, Highways Agency, 2010.
- 144 Taxes and charges on road users, House of Commons Transport Committee, July 2009.
- 145 From austerity to prosperity: Seven priorities for the long term, McKinsey Global Institute, McKinsey & Company, London, November 2010.
- 146 Tracks, signalling system, rail bridges, tunnels, level crossings, viaducts and 18 key stations.
- 147 For the period 2009–2014.
- 148 2006/07 prices.
- 149 1993/94 to 2008/09; 2008/09 prices.
- 150 Unit costs, per passenger-train kilometre.
- 151 With the exception of Birmingham International Airport – a public limited company with shares wholly owned by the seven district councils of the West Midlands county (Birmingham City Council, Coventry City Council, Dudley Metropolitan Borough Council, Sandwell Metropolitan Borough Council, Solihull Metropolitan Borough Council, Walsall Metropolitan Borough Council and Wolverhampton City Council) and Manchester Airports Group – the four airports of Manchester, East Midlands, Bournemouth and Humberside. This group is publicly owned by the ten local authorities of Greater Manchester and is privately managed on their behalf.
- 152 Manchester Airport was de-designated for regulatory purposes from 1 April 2009.
- 153 UK Airport Statistics, 2010, CAA.

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