ice
Institution of Civil Engineers

THE STATE OF THE NATION

TRANSPORT 2013

THE STATE OF THE NATION:
TRANSPORT

ABOUT ICE

The Institution of Civil Engineers is a UK-based international organisation with approximately 80,000 members ranging from students to professional civil engineers. It is an educational and qualifying body and has charitable status under UK law. Founded in 1818, ICE has become recognised worldwide for its excellence as a centre of learning, as a qualifying body and as a public voice for the profession.

ABOUT THIS REPORT

ICE's State of the Nation reports have been compiled each year since 2000 by panels of experts drawn from across ICE's membership and beyond. The reports aim to stimulate debate in society, influence governments' policies and highlight the actions that we believe are needed to improve the state of the nation's infrastructure and associated services.

State of the Nation typically focuses on a specific issue, such as water, capacity and skills, defending critical infrastructure, low carbon infrastructure or waste resource management. In June 2010 we also issued an overall assessment of UK infrastructure – and will do so again in 2014. Previous reports are available at ice.org.uk/stateofthenation.

This report has been compiled using a rigorous process, with a wide range of expert contributors providing verbal and written evidence. An extensive programme of engagement with policy and political stakeholders was also pursued to ensure that the report was relevant to its intended audience. We developed our arguments in the context of several areas of interest and activity, including Westminster government's ongoing interest in a national transport strategy, reform of the strategic roads network and devolution of power to cities and locally-based bodies. The report also drew on ICE's continuing work on high speed rail and UK aviation capacity.

CONTENTS

STATE OF THE NATION: TRANSPORT STEERING GROUP: Steven Hayter (Chair), GHD; Chris Chalk, Mott MacDonald; Iain Docherty, University of Glasgow; Alan Hayes, EC Harris; Keith Jones, ICE; John Pelton, CH2M Hill; Howard Potter, Transport Planning International Ltd

WELCOME TO THE STATE OF THE NATION REPORT ON TRANSPORT

As President of the ICE, I am delighted to introduce our flagship State of the Nation report, which this year focuses on transport.

Transport is an issue which is always high on the national agenda. Despite the UK's ongoing economic challenges, the tangible benefits that transport infrastructure bring to our economy, and its power to transform people's lives, are well established.

As a result, all political parties now recognise the full value of this infrastructure. For example, an improved road or new railway line not only creates new jobs and gives a short term boost to the economy, but such investment helps British industry for decades to come.

However, political disagreements over aviation capacity, roads policy and large infrastructure projects such as HS2 mean that despite the publication of the Westminster government's National Infrastructure Plan in 2010 and its counterparts in the devolved countries, substantial progress on improving the UK's increasingly creaking transport infrastructure remains slow. Investors still lack certainty and stability.

In order to tackle the challenges of today and better equip us to deal with those that lie ahead, this report argues that a more strategic approach to transport infrastructure is required by government, especially in England. ICE outlines the immediate action needed to improve transport's contribution now; makes the case for clear national transport strategy across the UK and for its independent oversight; argues for the extension of devolution of power from the national level; and in the long-term, recommends the creation of a Transport Futures Board.

Under our Royal Charter, ICE has a duty to provide independent, expert advice on engineering and infrastructure issues to politicians, industry and wider society. It is our sense of service as a public benefit charity that drives us to produce our annual State of the Nation reports. As a result I am proud that ICE is seen as the authoritative voice of infrastructure.

I would like to thank all of those who contributed evidence to this report. ICE now invites governments, opposition parties and industry to join me in debating how best we can take action on the recommendations put forward.

PROFESSOR BARRY CLARKE, PRESIDENT INSTITUTION OF CIVIL ENGINEERS

EXECUTIVE SUMMARY

Transport is an essential part of our everyday lives. It enables access to work and business, education, health services, and social interaction. The UK's prosperity and wellbeing are inextricably linked to transport.

Decades of increasing population and prosperity have exerted growing pressure on our transport systems. Recent economic weakness has tempered growth in demand, but congestion remains a problem which may worsen with economic recovery. Credible estimates suggest that, within a generation, congestion could cost the UK economy tens of billions in lost output each year.

Transport's dependence on fossil fuels also underpins a long-term trend for rising greenhouse gas emissions, while local pollutants contribute to serious health problems.

Government policy closely affects every aspect of our travel behaviour from the condition of our roads to the price of our tickets. Yet strategic vision and objectives are often unclear, particularly in England. In the five years since ICE's last State of the Nation: Transport report, much has changed politcally. However, many of the most important issues for transport and transport policy are yet to be to be properly tackled.

The need to address the lack of strategic vision was one of the strongest messages emerging from ICE's research and engagement. This report provides recommendations to rectify that weakness in three chronological stages. Across these, we believe that three recommendations stand out as being most important.

THE STATE OF THE NATION:
ICE'S MAIN RECOMMENDATIONS

1:

IMMEDIATE ACTION TO IMPROVE ROAD CONDITIONS, PLANNING AND FUNDING

Governments must move urgently to improve the performance of our economically-vital roads network and place its management and maintenance on a secure and cost-effective footing by:

- Creating a joint programme of work with local highways authorities, drawing on leading practice to reverse the alarming decline in the condition of local roads and facilitate a shift from reactive to planned maintenance regimes
- Ending damaging stop/start investment in England's motorways and trunk roads by providing the Highways Agency with a five-year funding settlement and statement of performance requirements
- Bringing forward long-delayed proposals for options for the future ownership and funding of the Strategic Roads Network in England

2:

ENSURE CLEAR NATIONAL TRANSPORT STRATEGIES FOR ALL PARTS OF THE UK

Devolved administrations have shown how clear strategic thinking can help provide long-term clarity for investment and outcomes. Yet England, outside London, lacks such direction. ICE urges:

- Development of a national transport strategy for England, complementing up-to-date documents for the devolved nations
- Creation of an Independent Infrastructure Commission to inform – initially English – strategy development
- Translation of Government's broad objectives into a performance specification which identifies what is expected from our transport systems
- Create a Transport Futures Board, ideally sitting within an Independent Infrastructure Commission to explore emerging, sensitive and complex issues, starting with how we pay for travel

3:

EXTEND DEVOLUTION TO FULLY-INTEGRATED TRANSPORT BODIES

Government in England has pursued a path of decentralisation in recent years. ICE commends progress to date and recommends extending the process via democratically accountable bodies, particularly for larger city-regions across the UK, to allow:

- Greater responsibility for roads in their areas, allowing more effective multi-modal planning
- More effective powers over bus networks, including service patterns, information, ticketing and fares

1. BACKGROUND: UK TRANSPORT TODAY

Transport underpins almost every activity – access to work and business, education, health facilities, and social interaction. It brings all kinds of goods into the UK and allows exporters to compete in foreign markets. The UK's ability to generate and sustain economic growth and jobs depends on the quality of our transport systems.

The UK has mature and highly-developed transport systems of infrastructure and services, including almost 250,000 miles of roads and 10,000 miles of railways. Connections beyond our shores rely heavily on a relatively small number of major air and sea ports.

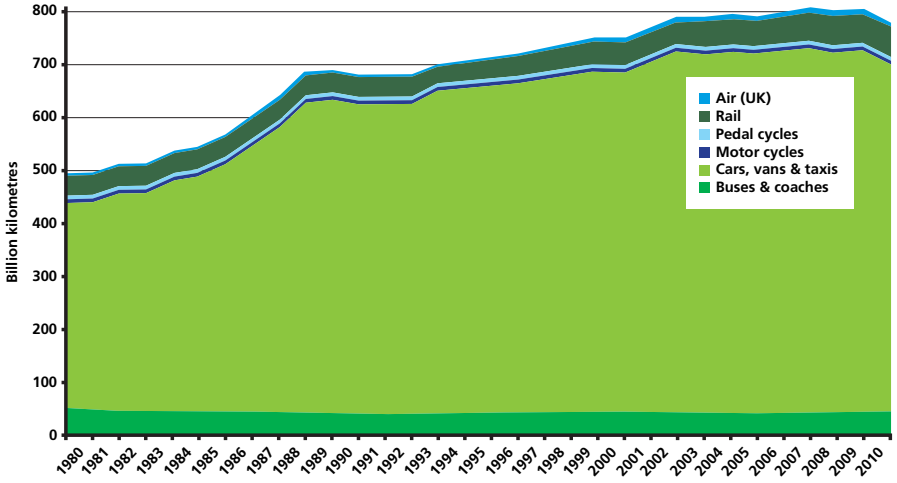
HOW WE TRAVEL

The total distance travelled in the UK almost doubled from 1970 to 2010. The rising trend has eased in recent years and while this may partly be linked to wider changes in travel behaviour, increasing demand could resume with economic recovery and rising population.

The average number of trips per person is largely unchanged from the 1970s but growth has been driven by longer journeys and a larger population. The volume of traffic on UK roads has risen by around one-fifth in the past twenty years and there are one-third more cars on the roads. They now account for almost four-fifths of distance travelled. In addition:

- Public transport's share of trips rose from 9% to 11% between the mid-1990s and 2011, in large part because of increases in rail patronage and London bus use. The number of rail journeys has doubled in that time but local bus trips outside London decreased by 13%
- Passenger movements at UK airports increased 24% in the 10 years to 2011, due to increased international travel
- Domestic freight movements – mostly by road – were on a rising trend until the mid-2000s but have since fallen back to around 1990 levels
- UK seaports handled 519 million tonnes of freight in 2011, about half imports, the remainder exports and domestic freight
- Greenhouse gas (GHG) emissions from domestic transport account for around one-quarter of the UK total. They rose by 11% from 1990-2010 (Source for all data: Department for Transport)

FIG. 1: Distance traveled in Great Britain, 1980-2010



Source for figure 1: Department for Transport

In recent years there has been some discussion of whether the growth of private motoring has peaked. In addition to the effects of economic weakness, higher fuel prices, tax-inspired reduction in business motoring, a significant decrease in the percentage of young men holding driving licences and modal shift in London have contributed to a reduction and reversal of growth in the past decade. Historic traffic growth estimates have also proven excessive. Overall, however, it is not yet clear that the UK has reached a 'tipping point', or even that it is close in most parts of the country.

HOW DOES THE SYSTEM PERFORM?

Current performance is mixed but successive studies have found significant causes for concern:

- In 2006, a study by Sir Rod Eddington[1] for the UK Government warned that the performance of our transport system presented a threat to future economic performance – in particular, he found that the cost of congestion could rise to £36 billion per annum by 2025
- In 2011, the Organisation for Economic Co-operation and Development (OECD) found that 'Low investment in public infrastructure (in the UK) has contributed to congestion, especially in road transport and airports, hampering productivity'[2]

Individual networks present different challenges, for example:

- On the road network, the National Infrastructure Plan (NIP) reports that for England 'service quality and reliability on the major road network has improved in recent years' but also found that, in the light of longer term pressures, the physical condition of large parts of the road network is a cause for concern
- On the rail network, strong growth in demand has made capacity a prime issue. Over three-quarters of morning peak hour trains into Leeds and London and around half into Manchester and Birmingham had standing passengers in autumn 2011[3]. Reliability and punctuality have improved however, with on-time arrivals rising from 79% in 2000/01 to 94% in 2012[4] . Long distance operators showed most improvement. Passengers' satisfaction levels are also at record highs – 85% overall in autumn 2012, although value for money is rated much lower[5]
- On aviation, the NIP reports that UK airport delays are above the European average, and foresees a significant capacity challenge in South East England unless new runways are constructed
- On ports, the NIP reports that major container port performance has improved in recent years. Capacity margins have, however, diminished (although London Gateway will add substantial new capacity)

THE ROLE OF GOVERNMENTS

Overall, ICE believes governments' priority should be to clearly define the outcomes required from transport systems and align strategy, funding decisions and other policy measures to those outcomes.

Much transport policy responsibility is devolved to the UK's constituent countries. The Scottish, Welsh and Northern Irish administrations have considerable flexibility to develop and implement their own policy. London also has significant devolved power. Otherwise in England, policy remains principally the responsibility of the Department for Transport (DfT). Local authorities play an important role, as do other bodies such as Network Rail, the Highways Agency and – in future – Local Transport Bodies.

1. The Eddington Transport Study, 2006. Figures quoted are in 2002 prices **2.** OECD 'Going for Growth' 2011 Country Notes for the UK **3.** Office of Rail Regulation, 2012 **4.** Office of Rail Regulation, year to May 2013 (within five minutes of schedule, or 10 minutes for long-distance services) **5.** Autumn 2012 National Passenger Survey (NPS) reported by Passenger Focus in January 2013

Unlike the devolved administrations, England does not have a specific national transport strategy. The NIP gives an indication of the Government's goals:

- Inter-city road and rail networks must connect conurbations quickly and cost effectively
- Local transport systems must enable suburban areas to grow
- Rapid and good value movement of goods around the UK must be supported
- The system must be resilient and responsive to infrequent and unexpected pressures
- Improved road and rail connectivity to major ports and airports must support international trade
- The UK must have successful and sustainable aviation and maritime sectors

Where public spending is required, three criteria are to guide infrastructure investments:

- Potential contribution to economic growth – investment that enhances productivity and enables innovation
- Nationally-significant investment that delivers substantial new, replacement or enhanced quality, sustainability and capacity of infrastructure
- Projects that attract or unlock significant private investment

The devolved nations have their own infrastructure investment plans, and all focus on the importance of making best use of scarce public funding – a particular concern given continuing pressure on public expenditure.

ICE AND TRANSPORT POLICY

ICE and its members bring expertise to bear in all aspects of strategy, planning, delivery and operation. ICE focused on transport policy in our previous State of the Nation: Transport (2008), and in our State of the Nation: Infrastructure (2010).

While much has changed since 2008, the issues for transport policy remain remarkably similar:

- Unclear strategic direction and funding uncertainty, particularly in England
- Acute problems of capacity and congestion
- Inadequate approaches to road maintenance and local transport
- Uncertain prospects for modal shift, demand management and reduction of harmful emissions

There are also positives, however:

- The UK's roads are now among the safest in the world
- Our railways have experienced a renaissance in performance and patronage
- Our seaports are generally efficient and successful
- The experience of an integrated approach to transport in London

2008's State of the Nation identified five objectives, which we believe remain relevant and which if achieved will deliver a transport system that is fit for purpose and provides optimum contribution to a successful UK:

- Maximise contribution to sustainable economic growth
- Allow an enhanced quality of life, including by maintaining affordability
- Achieve substantial reductions in harmful local and global emissions
- Deliver an increasingly safe and more resilient network
- Improve the planning and delivery of new infrastructure

To help secure these objectives and build on progress in recent years, ICE has identified a three stage package of measures for governments, industry and other stakeholders.

CASE STUDY 1: ROAD SAFETY IN NORTHERN IRELAND

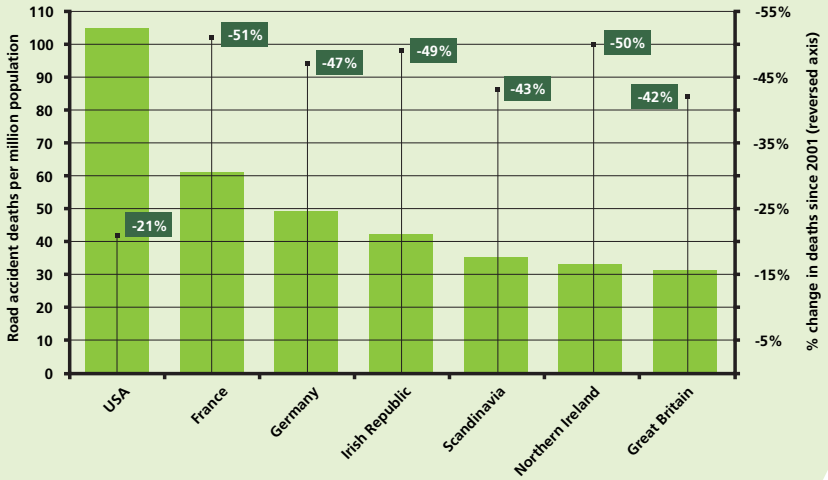
The UK's record on road safety is one of great improvement. Deaths on our roads are around one quarter the level of the mid-1960s and the figures have almost halved in this century.

There are many reasons for the improvements: the 'three Es' of engineering (both infrastructure and vehicles), education, and enforcement are often cited.

The example of Northern Ireland is particularly striking. Road deaths have fallen from a peak of 372 deaths per year in 1972 to 48 in 2012 – the lowest number since records began in 1931.

The improvement has been attributed to a long-running focus on changing attitudes, particularly to speed and drink driving. Award-winning, hard-hitting campaigns have made a major contribution. The latest encourages people to make an online pledge to share 'Vision Zero' to cut road deaths and the Roads Safety Strategy to 2020 targets a 60% reduction.

FIG. 2: Road safety international comparison



Source for figure 2: Department for Transport

2. IMMEDIATE ACTIONS TO IMPROVE TRANSPORT'S CONTRIBUTION TO GROWTH AND QUALITY OF LIFE

Some of the solutions to the challenges facing the UK's transport networks may require a fundamental rethinking of how demand for, and supply of, infrastructure and services can be managed differently.

However, some problems are too pressing and require immediate attention. Government has shied away from decisive action but ICE believes that the time has come for decisions on:

- Reform of the funding and management of the strategic roads network, particularly in England
- The UK's future aviation capacity, particularly maintenance of an effective international hub
- The physical condition of the UK's roads

STRATEGIC ROADS NETWORK

The vast majority of transport uses the roads – largely in private cars, although buses, goods vehicles, cyclists and pedestrians share or adjoin the routes. Decades of rising motor traffic has strained the capacity of the network: population growth and renewed economic growth could do so further. This is particularly the case around our major conurbations and on the main links between them but it is not the whole story. There are still parts of the country where roads do not meet modern standards and where journey times, reliability and safety standards are inadequate. This is particularly the case for Welsh North-South routes, and for some single carriageway trunk routes in Scotland and England.

Funding for road maintenance and construction is limited as public finances remain constrained. Increased levels of private investment and more efficient delivery by the roads supply chain will both be required if we are to secure a Strategic Roads Network (SRN)[6] that is fit for purpose.

ICE believes that we must break away from the stop/start pattern of investment that has held back the development of the network and in its place establish a long-term pipeline of projects, supported by secure sources of funding. Government in England has begun the process of rethinking its approach to the SRN via its response to Highways Agency Chairman Sir Alan Cook's 2011 report into the network[7]. Government has accepted some of Sir Alan's proposals and we particularly welcome the publication earlier in 2013 of a performance specification for the SRN for the 2013-2015 period. It is however still deliberating on the central issue of the future ownership and status of the Agency and how best to secure long-term funding certainty for investment and operations. ICE has previously suggested that the Regulatory Asset Base (RAB) model already used for Network Rail and some airports is worth consideration.

One way to ensure a clear funding stream would be to hypothecate the proceeds of current taxes on motoring to provide this fund – or to support the activities of a private sector operator under the supervision of an economic regulator. Motorists currently pay far more in fuel duty and Vehicle Excise Duty (VED) than is re-invested in the roads themselves (although this is not the only cost from road use), but income to the Treasury from roads-related taxes is expected to fall in the longer-term even if mileage increases as more fuel-efficient and electric and other non-petrol/diesel vehicles become more common. Against this backdrop ICE believes that in the longer term a more sophisticated system of charging for road use is likely to be the best solution. We do however recognise the enormous political challenge in delivering such a change and the need for a full and open national debate on the different options. In the interim, governments should take steps to prepare for any future change and realise the efficiency benefits of establishing a long-term programme.

To move this situation forward ICE calls on Government in England to:

- Bring forward its delayed consultation paper on the future of the English SRN as a matter of urgency
- Establish a 5 year performance specification and funding settlement for the SRN

AVIATION – FINALLY, IT'S TIME TO CHOOSE

ICE believes that the UK needs an effective national aviation hub with capacity to provide resilience for current levels of air traffic as well as to accommodate future growth. A hub is a strategic national asset, supporting a wider route network than can be supported by point-to-point services. It underpins the UK's international connectivity, which is vital for trade, tourism and inward investment.

Our existing hub, Heathrow, operates very close to maximum capacity and is not adequate for our future needs in its current configuration. To maintain our long-term global economic competitiveness, ICE believes the UK is likely to require a hub airport on a single site with more than three runways and rapid connections to central London. UK Government must therefore choose between expanding Heathrow or ceasing to operate the facility as a hub and quickly develop elsewhere in the Greater South East of England.

ICE believes that:

- The Davies Commission[8], currently examining how any need for additional capacity should be met, must evaluate all options against a range of criteria including cost, economic returns, greenhouse gas impacts, impact on local air quality, integration with other modes, noise, protected ecology and impact on patterns of employment, business activity and urbanisation.
- Neither location decision removes the need for action over the next 5-10 years to address existing constraints at Heathrow and keep the UK from slipping further behind its European rivals. This action will need to overlap with programmes of investment aimed at the longer-term

6. The Strategic Roads Network (SRN) of motorways and trunk roads comprises just 3% of England's road length but carries almost one-third of all traffic and two-thirds of freight **7.** 'A fresh start for the Strategic Road Network' by Alan Cook, Chair of the Highways Agency (2011) **8.** www.gov.uk/government/organisations/airports-commission **9.** 'Local Road Maintenance: Recent trends and prospects' (2012) RAC Foundation **10.** 2013 Annual Local Authority Road Maintenance (ALARM) Survey **11.** For example, a Federation of Small Business (FSB) survey in 2011 reported an average cost to members of around £5000 per year because of the poor state of the road network. However, compensation for damage can only be claimed if the road authority can be shown to have been negligent in its duty to inspect and maintain the roads

ICE urges UK Government to make a prompt and clear decision on where to locate additional capacity following the publication of the Davies Commission recommendations in 2015. Brave political leadership is required – including by opposition parties. In addition, ICE recommends an Act of Parliament to create a special, time limited delivery body like the Olympic Delivery Authority (ODA) to implement the Davies Commission's recommendations. Such a body would be essential in providing focus and leadership for timely and efficient delivery of what will be a hugely complex project.

Government must also acknowledge the vital contribution of regional airports to their catchment areas, including via connecting flights to the national hub. It should ensure regional airports' ability to fulfil this role, through:

- The introduction of a Public Service Obligation (PSO) on Heathrow or any future UK hub, preserving landing slots to key UK regional airports, particularly where a High Speed Rail option is not available. This would need to be accompanied by appropriate compensation arrangements for hub operators
- An urgent review of the impact of current levels of Air Passenger Duty on the competitiveness of UK regional airports

ROAD MAINTENANCE AND ASSET MANAGEMENT

The road network's physical condition is a cause for concern. The 97% of roads in the care of local authorities are a particular problem with around one-third in urgent need of attention or expected soon to be[9]. ICE's research also revealed increasing concern about the strategic network as funding for maintenance is squeezed.

This year's annual ALARM[10] survey reported a continuing major shortfall in local authorities' road maintenance budgets of the order of £1 billion per year – equivalent to around a 12 year backlog based on current spending. It further argued that the shortfall had led to inefficient and ineffective 'patch and mend' regimes, while compensation paid to road users suffering loss and damage due to poor road surfaces is also a substantial drain[11].

Continued failure to plan for the proper resolution of this issue means exacerbating and extending the problem. ICE believes that a focused effort is required to clear the backlog of work as a precursor to implementing a sustainable and cost-effective asset management regime. There will be a short-term cost attached but also significant benefits. An expanded road maintenance programme will deliver cost efficiencies and accessible jobs more quickly and with fewer peaks and troughs than other forms of construction.

ICE therefore urges central and local government to co-operate to create a focused programme of work drawing on experience of leading practice, including the 'South East Seven' group of local authorities[12] five year programme, and the extension of Welsh councils' prudential borrowing powers.

CASE STUDY 2: ROAD MAINTENANCE INNOVATION IN WALES

Faced with current spending pressures and an estimated 14-year road maintenance[13] backlog, the Welsh Government and councils devised an innovative approach, learning from a model devised by Newport City Council.

Whilst the Welsh Government does not have borrowing powers and local authorities do, the latter were uncertain about their future ability to repay loans until the Welsh Government provided assurance of funding over 22 years to repay additional borrowing. The Local Government Borrowing Initiative (LGBI) should see an additional £170 million capital funding being invested in highways over the next three financial years to accelerate:

- Asset condition improvements
- Functionality improvements (to reduce congestion, improve resilience, safety and other levels of service)

The LGBI provides a rapid boost to the construction sector at a difficult time and prevents roads falling into further disrepair.

CASE STUDY 3: TARGETED CONGESTION RELIEF: THE PINCH POINT PROGRAMME

Congestion is a major problem for the performance of England's motorways and trunks roads, and a heavy burden on the economy. With limited public funding for new capacity, and congestion pricing not on Government's agenda, alternative approaches to making best use of available funding are particularly important.

In 2012, the Highways Agency began its pinch point programme, backed initially by £217 million to which the Chancellor added a further £100 million. The programme supports smaller improvements offering strong economic returns by easing congestion and making journey times more reliable. To date, 123 projects have been announced, all to be complete by 2015.

Projects are divided between infrastructure – such as adding lanes and improving junctions – and technology schemes. The latter support road users by improving driver information, signage and incident clear up times. Some projects have been developed in partnership with local authorities and Local Enterprise Partnerships (LEPs), to ensure that local economic and transport priorities are aligned.

The A38, one of the longest 'A' roads in England, running from Cornwall to Nottinghamshire, is the subject of five pinch point projects. One, the £5.5 million Splatford to Wobbly Wheel Improvement, will provide an additional lane for traffic merging with the A38 from the A380, increasing capacity by 25%. The A38 is a vital link for Torbay, Newton Abbot, Teignmouth and Exeter - all areas of significant planned growth and the pinch point scheme has an estimated Benefit: Cost Ratio (BCR) in excess of 5:1.

12. The SE7 Partnership involves Brighton & Hove City Council, East Sussex County Council, Hampshire County Council, Kent County Council, Medway Council, Surrey County Council and West Sussex County Council. They have committed to working together to improve the quality of services and to achieve savings. The five-year Highways programme, led by Surrey County Council, has enabled 16% reduction in costs and creation of apprenticeships in the supply chain **13.** ALARM Survey.

3. MORE EFFECTIVE POLICY MAKING AND DELIVERY TO 2020

The UK already has a well-developed transport network. New infrastructure is often expensive and controversial, and decisions concerning the existing system can appear disjointed and focused on the short-term.

ICE believes that more effective policy and decision-making over the medium-term would be greatly aided by:

- Clear national strategy for all parts of the UK, informed by an Independent Infrastructure Commission (IIC) and resulting in a strategic performance specification for transport networks
- Extending the current trend towards devolution of powers to integrated transport bodies, learning particularly from the experience of Transport for London (TfL)

Implementation of these recommendations would provide much greater capacity for strategic thinking about transport and is in line with the current Westminster government's growth and decentralisation agenda. In addition, we believe they would create a more effective context for actions in five areas of high importance:

- Reinforcing and extending efforts to achieve greater value for money, particularly on the railways
- Accelerating the delivery of High Speed 2
- Delivering a renaissance for buses so that the successes seen in London become typical rather than the exception
- Unlocking the potential of cycling as an efficient, healthy, safe and mainstream travel option
- Ensuring freight concerns are understood

NATIONAL TRANSPORT STRATEGY

ICE has long argued that investment and delivery of transport policy, as with other infrastructure, should be guided by clear strategy. Others agree – in our extensive research and consultation process, a transport strategy for England was the most frequent 'call'.

Absence of clear strategy has meant that investments and improvement to our transport system have been slower to develop, are more expensive and deliver less. The protracted development process of Heathrow's Terminal 5 – almost two decades from conception to completion - shows the consequences of failing to establish a strategic context to plan within. Conversely, the Olympics showed what the UK can do given clear objectives, consistent political commitment and the right delivery mechanisms.

ICE has drawn on the experience of devolved administrations (including London) in their development and delivery of transport strategy. In the near future we believe that each of the UK's nations should have a comprehensive, up-to-date transport strategy, which:

- Is the product of a national conversation involving all different transport perspectives, not least users
- Is tailored to national needs but takes a UK-wide approach on areas of common interest, particularly climate change
- Is joined-up across modes
- Has a long-term (several decades) perspective with more detailed nearer term objectives pursued through rolling five year plans
- Mandates clearly understood performance specifications and robust delivery mechanisms

Transport strategy should be guided by overarching economic, social and environmental objectives. It should link clearly with spatial planning – transport connects places. In this regard, the devolved administrations offer lessons to England, where continued failure to complete its National Policy Statements (NPS) for national transport networks is particularly glaring and must be rectified as soon as possible.

ICE recognises that government in England has consistently struggled to develop strategy for transport that is capable of surviving multiple political cycles. We have recently made a submission to Sir John Armitt's independent commission on long-term infrastructure planning, setting out our ideas for an Independent Infrastructure Commission to deal with this issue. We believe 'an IIC' would greatly improve the quality of a national transport strategy and is an ideal vehicle for auditing progress with its implementation.

It is important to note that strategy is not the same as planning or delivery. Previous efforts at transport strategy have suffered from glaring implementation deficits. There are however examples in parts of the transport system of strategy being driven forward by more effective planning. In rail, a High Level Output Specification (HLOS) produced by the Secretary of State sets out what is to be achieved over a five-year period. The HLOS is then used to guide the Office of Rail Regulation's directions to Network Rail on its investment programme and charges to users. It is also used to guide ORR's wider instructions to Network Rail on how it should work with train operators, suppliers and others to deliver more for rail users. ICE believes that a 'whole transport' performance specification, forming part of the National Infrastructure Plan would give more specific form to a National Transport Strategy, allowing funding and policy to be better aligned to long term objectives, and facilitate monitoring of progress against SMART[14] objectives. As an example, an indicative performance specification for UK transport networks in the period to 2020 is presented below.

INDICATIVE PERFORMANCE SPECIFICATION FOR UK TRANSPORT 2013-2020

OBJECTIVE:	ACHIEVE THROUGH:
Maximise contribution to sustainable economic growth	■ Reduction in the cost of congestion by 2020 ■ Agreement on a future UK aviation hub in 2013, with a clear pathway to implementation of the preferred solution(s) ■ Development of a workable pathway to introduce road user charging ■ Agreement on journey time standards for speed and reliability on major inter-urban road and rail routes ■ Expanded labour market catchments for major employment centres ■ Improve road and rail connectivity to key ports and airports
Allow an enhanced quality of life, including by maintaining affordability	■ Delivering increased capacity, and less overcrowding on public transport ■ Facilitating greater social mobility by enhancing connections to employment ■ Maintenance of affordable travel options for low income groups
Achieve substantial reductions in harmful local and global emissions	■ Reversal of the long-term trend for increasing greenhouse gas emissions from transport ■ With the EU, introduction of a new round of vehicle emissions targets ■ With sub-national partners, set and achieve reduction targets for local emissions 'hotspots'
Deliver an increasingly safe and more resilient network	■ Reduction in accidents, injuries and deaths for all modes of transport ■ Reduction in disruption due to extreme weather ■ Significant improvement in road condition leading to fewer potholes and related claims and damage
Improve delivery of new infrastructure (time, cost, quality).	■ Reduction in the unit costs of new road and rail infrastructure ■ Longer and more consistent pipelines of projects for future major construction and maintenance projects ■ Longer rail franchises and better alignment of operator and others' objectives and incentives, leading to greater investment, higher standards and lower costs ■ National infrastructure plans' delivery monitored by independent infrastructure commissions

14. Specific, Measurable, Achievable, Realistic, Timebound

MAKING STRATEGY DELIVER – AN INFRASTRUCTURE COMMISSION

ICE has recently developed a proposal for Sir John Armitt's Independent Infrastructure Review[15], and is promoting the idea within the current Coalition Government. Others, such as the London School of Economics (LSE) through its Growth Commission, and the Engineering Employers Federation (EEF) have developed similar thinking.

The case for an infrastructure commission arises in the recognition that simply devising strategy – as much as this is desirable, particularly in transport – will not necessarily deliver improved results. Effective implementation is also required: in infrastructure this demands consistency of vision, stability of resources and process, and the application of deep knowledge and expertise across a broad spectrum of stakeholders (not simply the client).

The mismatch between the long-term nature of strategic infrastructure planning and short-term political cycles has become a commonplace observation. Dealing with the negative consequences of this mismatch has been given a new urgency by the scale of the UK's investment needs over the next decade, the increased pressure on public finances and continued difficulties in securing affordable sources of private investment. These will become particularly acute in transport policy.

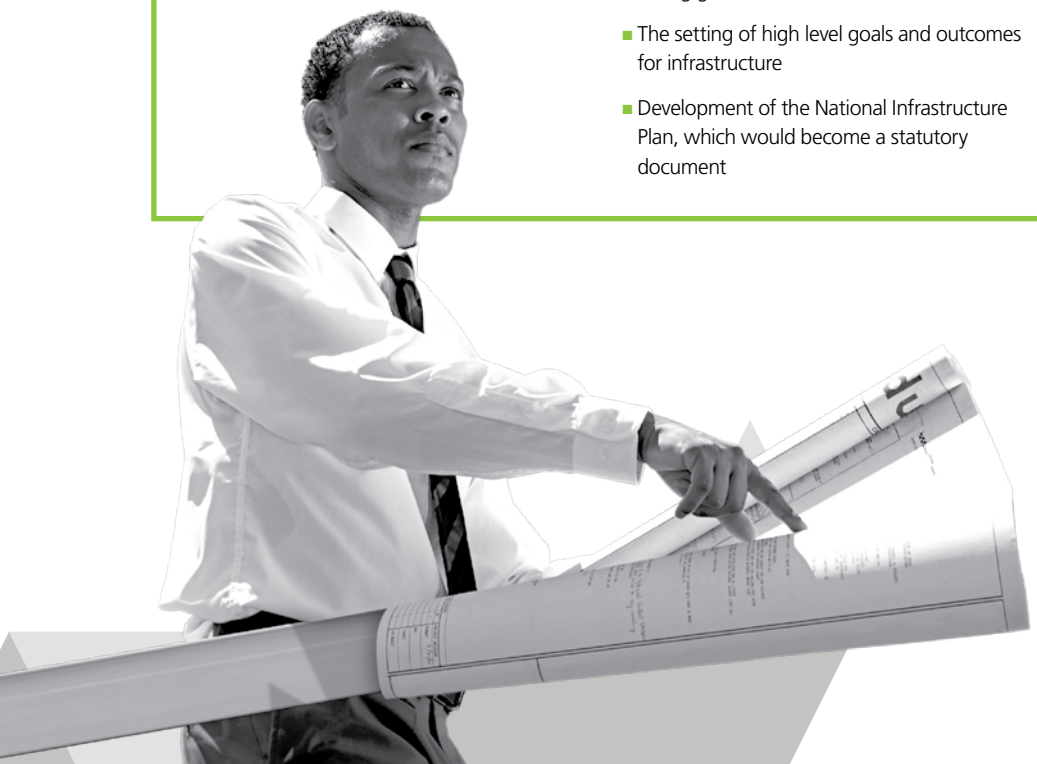
ICE has also noted the trend in recent decades for government to move from acting as the owner, operator and funder of much of our infrastructure to becoming an economic regulator - implicitly the facilitator and ultimate guarantor of high functioning networks.

ICE has proposed that this model be extended to include the creation of a national Independent Infrastructure Commission – initially in England but possibly replicated in the devolved nations too – charged with advising government on:

- The setting of high level goals and outcomes for infrastructure
- Development of the National Infrastructure Plan, which would become a statutory document
- Audit of implementation and performance

The Commission would operate at arm's length from Ministers, and be able to develop as a centre of infrastructure planning excellence detached from party political constraints. ICE believes that its work should explicitly focus on covering the following time horizons:

- 50-30 years: identify mega trends and options/scenarios for the trajectory of development of key infrastructure networks. This could include early stage planning for major transformational programmes, e.g. the development of a high speed rail network
- 30-15 years: identify options for developing the broad shape of networks and the need for any transformational projects or programmes within existing networks, for example a significant increase in renewable energy generation
- 15-0 years: identify options for maintaining current performance and incremental enhancements including key upgrades, improved asset management, congestion relief etc.



CONTINUE AND EXTEND DEVOLUTION TO POWERFUL, FULLY-INTEGRATED TRANSPORT BODIES

One benefit of a clear national strategy is that it can guide the actions of others. ICE has long favoured devolution of power to the appropriate level. Devolution of transport has been a success in Scotland, Wales, Northern Ireland and London.

The nature of travel means that local authority areas, particularly in metropolitan zones, are often too small for useful transport strategy. ICE believes that city-regions are often the most appropriate 'larger than local' scale for understanding and managing travel behaviour and recommends that the trend towards devolution to English city-regions be accelerated. London is exceptional in many aspects but many of the principles underpinning Transport for London (TfL) are applicable to the UK's other major metropolitan areas with multiple modes in often congested areas.

In England today, Transport for Greater Manchester (TfGM) is leading the way. ICE would like to see it and other city-regions, particularly those which already have Passenger Transport Executives (PTEs), have still more responsibility, especially over roads. This model may also be appropriate for some smaller cities and multi-city-regions, such as in the East Midlands.

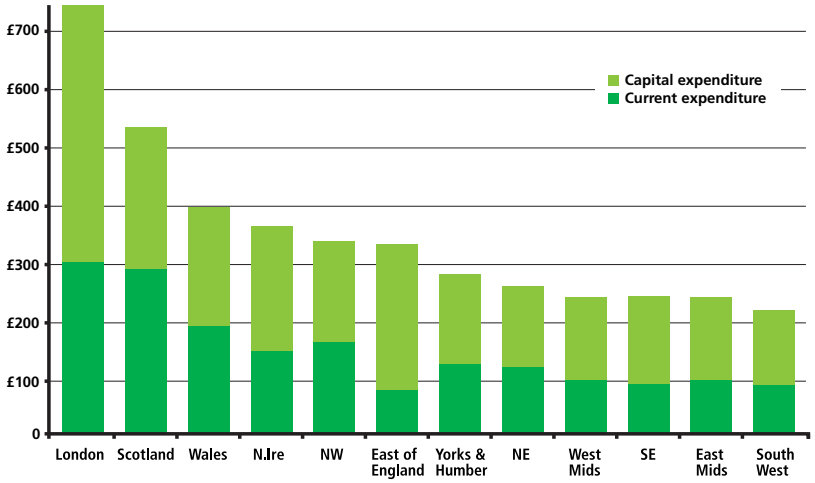
ICE wants to see fully-integrated transport bodies across the UK with with:

- Greater responsibility for roads in their areas, including – in the long run – how they are charged for and invested in
- More effective powers over bus networks, service frequencies, real-time information, ticketing and fares
- Greater influence on local rail services
- Enhanced powers and resources to invest in new light rail or other major improvements
- Democratic oversight via Combined Authorities or similar arrangements

Examples of success already exist but they are too few and reflect limitations in powers and funding. Perhaps the most obvious example is in bus regulation where no area has yet implemented a Quality Contract[16]. A couple of city-regions are edging towards such Contracts but there are major barriers to implementation, including stiff operator resistance.

Powers need to be backed by greater and more flexible resources. London's success can be attributed to many things, including governance and the nature of the city itself – but it also receives far more public spending per head on transport. While London's overcrowding pressure and growth potential make it a special case, ICE believes there is a strong case for increased investment elsewhere and for greater flexibility and devolution of power over that funding.

Fig. 3 Public spending per head on transport by devolved nation and English region



Source for figure 3: HM Treasury

15. www.armittreview.org **16.** Quality Contracts are a form of franchising system, akin to the London model, which can be introduced by local authorities or Integrated Transport Authorities. To date, no area has successfully introduced a Quality Contract.

4. SPECIFIC RECOMMENDATIONS FOR NATIONAL STRATEGIES

ICE's overarching recommendations for national strategy and extended devolution provide the capacity to create and deliver transport policy which is joined-up across modes, and tailored for particular geographies. In the context of the national strategy, we have also identified a number of specific priority areas for attention.

MORE FOR OUR MONEY, ESPECIALLY ON RAIL

Rail passengers travelled almost 60 billion kilometres in 2012, 50% more than in 2002 and double the level of the mid-1990s. Fare revenue also rose markedly, as did rail freight haulage.

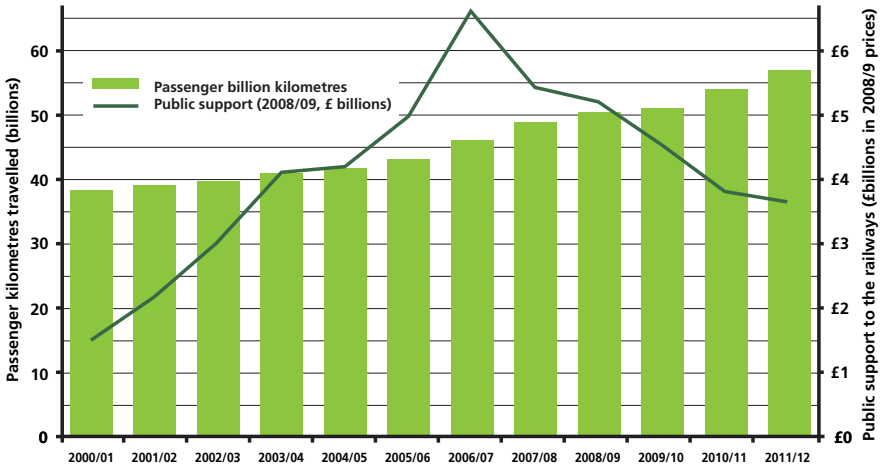
But rail's renaissance has come at a price. The cost to the Exchequer of running Britain's railways is around £4 billion per year – lower than the peak of £6 billion in 2006/07 but around double the levels of the 1990s[17]. Network Rail's borrowings are approaching £30 billion. Government's aim of moving more of the rail's costs to passengers rather than taxpayers has also led to higher fares for many passengers.

Rail strategy and planning is relatively clear and well-developed. The aims and programme of the 2014-19 'Control Period' (CP5) are largely in place, and the industry is gearing up to deliver. ICE endorses Network Rail's focus on achieving greater efficiency[18] while also improving capacity and journey times on key routes.

ICE believes that the first priority for the UK railway industry is to deliver on these promises, and urges progress in:

- More, better and deeper alliances between Network Rail, train operators and contractors. The examples of Reading station's redevelopment, Chiltern Railways' Evergreen project and the more recent 'deep alliance' between South West Trains and Network Rail all offer useful learning

Fig. 4 Rail patronage and public spending



Source for figure 4: Department for Transport, Office of Rail Regulation

- Greater technical innovation to reduce costs and disruption - such as off-site fabrication and automated processes like those being developed for electrification infrastructure. Willingness to invest in innovations will be aided by clearer market information such as longer-term plans, programmes and pipelines of projects
- Continued investment in maintenance and replacement of the network, particularly to provide resilience to cope with an increased incidence of extreme weather events

Beyond measures currently envisaged, ICE recommends:

- An extended strategy and planning process, seven to eight years rather than the current five, identifying further opportunities to provide more capacity more cost-effectively
- Continued efforts to remove unnecessary or duplicate codes and standards, identified as driver of higher costs by HM Treasury's 2010 Infrastructure Cost Review
- Integrated transport bodies to continue to be more closely involved in the future development of rail services into major cities, and their greater integration with other forms of transport, including light rail and possibly tram-trains.

17. Office for Rail Regulation. Comparisons over time are based on data adjusted to 2008/09 prices for consistency
18. Much of this identified in the 'Realising the potential of GB rail' produced by Sir Roy McNulty in 2011

CASE STUDY 4: SCOTLAND LEADS RAIL'S RENAISSANCE

UK rail travel is at record levels. Passenger numbers rose year-on-year through the recent period of economic weakness in contrast to road and air.

Rail's resurgence demands increased capacity. Attention has focused on making more of the existing network, but now also includes additional lines. High Speed 2 may be the highest-profile example but Scotland has already blazed a trail, re-opening routes closed decades ago.

Most notable is Airdrie-Bathgate, opened on-time and on-budget in 2010. It is the longest railway and stations project in the UK for over 100 years. Work included laying 22km of new track, upgrading of 31km of existing line, three new stations and relocation or upgrading of existing ones.

The line enhances access from North Lanarkshire and West Lothian to Scotland's largest economic centres, Glasgow and Edinburgh. Their rail commuting markets were forecast to grow by 24%-38% and 90%-118% between 2008/09 and 2024/25.

Airdrie-Bathgate has contributed to this: data showed large increases in passenger numbers at existing stations, with some achieving projected 10-year growth figures in the first year.

The route's popularity echoes the experience of other Scottish rail re-openings, with the Larkhall and Stirling-Alloa routes both seeing demand well ahead of forecast.

ICE would like to see more flexible franchises to incentivise greater operator investment and innovation, specifically:

- Longer franchise periods (at least 7-10 years) so that operators have more incentive to invest in the Network Rail-led industry planning process
- Greater flexibility in the specification of franchises so that bidders can suggest alterations where these can more efficiently meet governments' strategic objectives

ACCELERATED HIGH SPEED 2 (HS2)

HS2 has the potential to usher in a new era for UK rail, bringing huge new levels of capacity, and re-shaping urban geography. As a recent report by the National Audit Office[19] has highlighted the economic case for HS2 is stronger when it is considered as a more extensive network, connecting London with Leeds and Manchester and ultimately Glasgow and Edinburgh. In addition, long experience shows that greater continuity between phases of the project will reduce overall costs.

To ensure that HS2's potential is fully realised government and HS2 Ltd should:

- Review options for accelerating delivery of phase 1 (London-Birmingham) of the project. There is no fundamental engineering reason why this phase of the programme could not be delivered more quickly – potentially in the lifetime of the next parliament – though we acknowledge this would require several legal and financial hurdles to be overcome
- Press ahead with detailed design work for phase 2 (the 'Y shaped' route to Manchester and Leeds) and as a precursor to establishing greater continuity between phases of the programme
- Establish plans, in partnership with the Scottish Government, for an earlier extension to Glasgow and Edinburgh

MAKING BUSES AN ATTRACTIVE ALTERNATIVE

In contrast to rail, local buses have not – with a few exceptions – seen significant increases in patronage. In England's metropolitan areas (excluding London), ridership has halved since the mid-1980s. Nevertheless, more people use buses than trains and in many areas they are often the only option for those without cars.

ICE would like to see changes to ensure a better, more attractive, bus service that in urban areas offers a competitive alternative to the private car and congested rail for many trips. We recommend:

- Enhancing metropolitan areas' effective powers over routes, fares, frequencies and vehicle standards (particularly with respect to emissions). To this end, UK Government should review the effectiveness of Quality Partnerships[20] and particularly Quality Contracts, making the latter a more practical option if other means prove inadequate
- Reviewing compulsory concessionary fares schemes in order to optimise their considerable budgets against clear transport and other objectives. While understandably popular with beneficiaries the scheme's equity and long-term value for money appear unclear
- Requiring operators to accept multi-operator smart ticketing as a condition of operation (as is the case in London, and for concessionary fares in Scotland)

19. National Audit Office (2013) High Speed 2: A review of early programme preparation **20.** Quality Partnerships are agreements between the public sector and bus operators, usually over operating standards (e.g. service frequencies, vehicle standards) in return for provision of bus lanes or other measures. Partnerships can be voluntary or statutory.

- Ensuring that reliable, accessible real time running information is universally available via simple mobile applications
- Future rail franchises should require much better integration of on-train and in-station bus service information to facilitate 'joined-up' journeys and encourage modal shift

Outside of London, current arrangements work well in places (Oxford and Brighton, for example) but such good practice needs to become the norm, rather than the exception.

We recognise that a more regulated approach to bus services could impose costs on the public purse – and that budgets are already under pressure. However, with around £2.5 billion of public money being spent on bus operations in England each year, representing a large part of operators' income, there is also scope to achieve more from current spending.

A CYCLING REVOLUTION

Cycling could make a much greater contribution to our journeys – two-thirds of which are five miles or less. Cycling's share of trips in the UK is extremely low (around 2%) compared with the best Northern European nations and usually chosen by only a few groups – a recent All Party Parliamentary Cycling Group (APPCG) report described frequent cyclists as 'typically white, male, between 25 and 44, and on a higher than average income'. ICE believes that cycling should be an attractive option for all.

Clear national objectives and targets need to be established and backed with appropriate resources, leadership and will, so that local interpretation and implementation is effective. In addition, ICE makes the following specific recommendations:

- The limited extent, continuity and quality of cycle infrastructure should addressed by:

– Roads authorities in major metropolitan areas being required by national policy to promote a comprehensive, high quality cycling network

– More segregated space on routes where the scope for conflict between cycling and motorised traffic is greatest

– Greater use of traffic calming measures, including 20mph speed limits, on residential streets and roads where segregation is inappropriate

- Widespread concerns over safety and conflict with motorised users, particularly heavy vehicles, should be addressed by:

– Drivers of heavy vehicles undergoing specialist training and certification

– Heavier penalties for careless or incompetent drivers who cause injury or death to cyclists – alongside wider enforcement for cyclists' transgressions

– More consistent and comprehensive enforcement of traffic regulations on all users

– The construction industry, whose vehicles pose a particular hazard to cyclists, should adopt the same level of health and safety standards in its off-site operations as on-site

FREIGHT FORWARD

The importance of freight is sometimes overlooked in discussions about car use, airport runways and passenger rail. Yet we rely on it to keep us fed, clothed and generally functioning in almost every sense. It's time freight came to the fore.

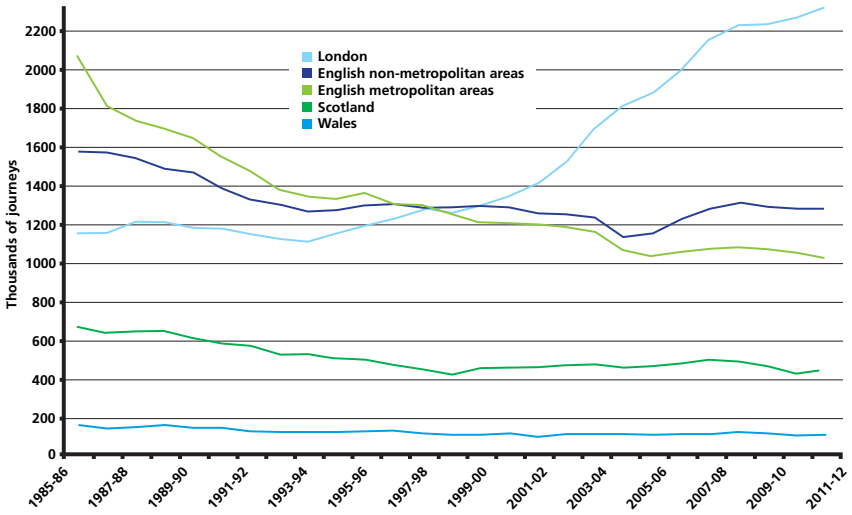
The vast majority of domestic freight moves by road. Congestion and journey time unreliability are among the greatest problems for hauliers. In this regard, the Eddington Study identified that targeted investment to relieve existing pinch points often offered the greatest economic return. Eddington also recognised the importance of freight and the right priorities for transport investment generally:

- Urban networks
- Key inter-urban links
- International gateways (sea and air ports)

ICE urges that national transport strategies explicitly recognise these priorities, as well as the value of freight. In order to make best use of road freight, and to mitigate its challenges, ICE calls on governments to:

- Ensure that the reform of the strategic roads network (which carries two-thirds of freight) has freight concerns at its core. Road haulage will remain dominant – just a 10% percentage modal shift would overwhelm the rail network
- Prioritise improvement to sea port connections. The UK's ports are a quiet success story - handling the highest tonnage in Europe, and without public subsidy - but land connections are one of their biggest issues. Governments should facilitate ports' expected growth
- Use goods vehicles as the basis for introducing a sophisticated national road pricing scheme (the forthcoming 'vignette' scheme (a flat daily charge offset against Vehicle Excise Duty (VED)), which takes no account of distance, route or time of travel, is a missed opportunity)

FIG. 5: Bus ridership



Source for figure 5: Department for Transport

- Support continued mode shift from road to rail, short sea shipping and inland waterways where these represent cost-effective ways of reducing congestion and emissions. On rail, further electrification and gauge enhancements (particularly to allow more large containers to be carried) are especially important
- Tackle road freight emissions – both greenhouse gases and locally-harmful nitrogen oxide (NOx) and particulate matter (PM) by facilitating rapid roll-out of infrastructure for gas-powered heavy goods vehicles (HGVs) and accelerating the transition to electric power of rapidly expanding light van operations[21], coupled with renewed encouragement of the use of Low Emission Zones[22] outside London
- Improve planning regulations to ease development of freight interchanges (including ports) and the introduction of night-time 'quiet deliveries' in built-up areas
- Require hauliers to improve safety for cyclists, particularly in urban areas

CASE STUDY 5: BWCABUS: DEMAND-RESPONSIVE PUBLIC TRANSPORT

Like many rural areas, Mid and South Ceredigion and North Carmarthenshire faced difficulties in maintaining a viable public transport service. Patronage and revenues were falling despite subsidy. The solution was a demand-responsive, flexible service - Bwcabus - launched in 2009.

Bwcabus operates in response to pre-booked journey requests. Satellite technology and a sophisticated mapping and scheduling system allows isolated passengers to be picked up at a convenient time and location. The service runs 7am-7pm, Mondays to Saturdays and operates as a feeder to the regular 460 bus service along the A484 corridor.

The concept has proved successful. Against a forecast of around 9,000 passengers in its first year, Bwcabus carried 13,000. It has around 1,000 registered users and very high levels of passenger satisfaction. By serving a number of interchanges, Bwcabus has also increased patronage on the 460 service and improved its journey times by reducing the number of diversions it makes from the main road.

Bwcabus was extended in 2012 and patronage continues to increase. Its £2 per passenger subsidy is around one-third of previous services.

Bwcabus was developed by the Wales Transport Research Centre at the University of Glamorgan and the service is supported by Carmarthenshire and Ceredigion County Councils, the Welsh Government, Traveline Cymru and private bus operators. It received support from the European Union.

TRANSPORT EMISSIONS

Domestic transport accounts for around one-quarter of the UK's greenhouse gas emissions, and its share is rising. Nitrogen oxide (NOx) and particulate matter (PM) emissions from diesel engines are also responsible for tens of thousands of premature deaths, typically in congested and built-up areas.

Governments envisage a transition to non-fossil fuelled vehicles as the long-term solution to both problems but progress has been slow. Electric vehicles have not advanced as hoped and improvements in internal combustion efficiency have made the transition less predictable.

Uncertainty around technological innovation, consumer attitudes and hard economics make a definitive transition pathway unclear at present. But there are a number of useful actions ICE commends to policymakers:

- Redouble efforts to promote electric vehicles through the Plugged In Places programme, with greater focus on fleet (particularly public sector) and light commercial operations where range, resale and status anxiety is less of a concern and where clearer and more compelling business models could be developed
- Continue effective European collaboration on internal combustion engine efficiency. EU Directives have delivered major improvements in CO^2, NOx and PM - but much more can be realised
- Include clear objectives and incentives for modal shift in national transport strategies, including greater rail capacity and much more attractive bus, walking and cycling options
- Give greater encouragement to the conversion of heavy passenger and freight fleets to renewable natural gas and – possibly – hydrogen power
- More clearly link transport and spatial planning and land use policy to reduce the need to travel and/or promote low carbon options where possible

21. Greenhouse gas emissions from light vans increased by 21% from 2000-2010. HGV and car emissions fell by 8% and 9%
22. Low Emissions Zones (LEZ) are areas in which specific emissions standards apply. London has the world's largest LEZ, covering most of the city. Vehicles failing to comply with the 'Euro 4' standard for particulate matter (PM) emissions set must pay a daily charge

5. IMPROVING CAPABILITY FOR DECISION MAKING FOR THE LONG-TERM

Looking beyond the specific short-term and medium-term recommendations in this report, our research has identified a number of emerging, sensitive or complex issues that are beyond the sensible scope of ICE or government policy to prescribe solutions at this point. But they will – in time – inevitably have a major impact on transport strategy.

In most cases there is great uncertainty around the possible impact and appropriate responses. Such issues include:

- The growing need for emissions reduction, particularly CO^2, in contrast to the long-term trend
- The pressures of a growing population and other demographic change coupled with long-term travel growth pressures
- The rising cost of fuel and fares, coupled with a long-term decline in public funding
- The potential effect of new (and increasingly ubiquitous) communications and materials technologies on travel behaviour, network management and vehicle design

None of these issues are new, nor are they entirely unexplored, but they often fall into the categories of 'important but not urgent' or just 'too difficult'. UK government could ignore these questions for as long as possible and hope to muddle through, or wait until economic or political crises force hasty responses - or it could begin a national conversation about how to deal with the risks and opportunities they present.

ICE recommends that as part of developing a national transport strategy for England, government creates a Transport Futures Board (TFB). This board should operate independently of government and investigate a small number of the most significant and sensitive topics, engage widely with the public and make practical, costed proposals for dealing with them. The Committee for Climate Change already performs a similar role in its field and provides a model of an organisation that has been able to gather a critical mass of expertise, gain authority, assess competing claims and call on international best practice.

A TFB would sit naturally as part of an Independent Infrastructure Commission.

The obvious first role for the TFB would be to explore how we pay for travel in the future. It has been very apparent to ICE and many others that current funding and management models for UK roads are unlikely to be sustainable in the long-term yet the concept of road user charging is politically toxic. As a result, any recommendation for road user charging is likely to be dismissed as unrealistic – but maintaining the status quo in perpetuity appears equally unrealistic. What is required is a process by which the arguments can be properly aired, options identified and pathways mapped, including the development and public debate of realistic scenarios for travel in 2030.

ROAD PRICING: ICE'S VIEW

The current model of charging for road use is not fit for the future. From the motorist's perspective, road-related taxes are not clearly related to expenditure on maintaining and improving a congested and crumbling network or providing effective alternatives. Conversely, Treasury officials must be concerned at the prospect of long-term decline in income from Vehicle Excise Duty (VED) and fuel duty as more efficient internal combustion and non-petrol/diesel vehicles become more prevalent. The question is how and when to reform the system, not whether.

ICE, with many other organisations, believes that the best solution to charging for road use is a nationwide road user charging scheme designed to:

- Reduce congestion and delay, making journey times more reliable and enhancing economic performance
- Reduce emissions, particularly in local hotspots where nitrous oxide (NOx) and particulate matter (PM) emissions are responsible for tens of thousands of early deaths
- Link road use with funding for maintenance, management and improvement of the network to a higher standard
- Provide a clear source of funding for alternatives to driving, particularly public transport and cycling
- Be revenue-neutral overall, with increased costs on motorists offset by reductions in fuel duty, VED and possibly other costs such as insurance – particularly for low mileage drivers and those able to alter their travel behaviour

ICE understands that road user charging is a politically-sensitive topic which has aroused strong opposition. Public trust in government good faith on motoring taxation and on the availability, practicality, pricing and safety of alternative modes is low. For those reasons, we do not recommend the early or blanket implementation of any scheme but suggest that its design and implementation be made the focus of the proposed Transport Futures Board. Their research should illuminate a set of options and pathways by which road user charging could be phased in, while including appropriate safeguards for essential car use and protection of privacy.

The research should be conducted in the spirit of a national conversation, and as part of national transport strategy including many other measures – such as support for alternative fuels and modes.

Introducing a road user charging scheme may well be difficult. But as identified by the Eddington Study, should traffic growth return to trend, the consequence of continuing with 'business as usual' will be tens of billions in congestion and delay costs to the UK's economy.

THE STATE OF THE NATION:
SUMMARY OF ALL RECOMMENDATIONS

MAIN RECOMMENDATIONS

- Immediate action to improve road conditions, planning and funding
- Clear national transport strategies across the UK
- Extend devolution to fully-integrated bodies

IMMEDIATE ACTIONS TO IMPROVE TRANSPORT'S CONTRIBUTION TO GROWTH AND QUALITY OF LIFE

STRATEGIC ROADS NETWORK (SRN)

- Bring forward the delayed consultation paper on the future of the English SRN
- Five year performance specification and funding

AVIATION – FINALLY, IT'S TIME TO CHOOSE

- Expand Heathrow or cease to operate it as a hub and develop elsewhere in greater SE England
- Legislate for a time limited delivery organisation, particularly if a new site is to be developed
- Introduce a Public Service Obligation (PSO) on the future hub, preserving landing slots to key regional airports
- Review the impact of Air Passenger Duty (APD) on regional airports' competitiveness

ROAD MAINTENANCE AND ASSET MANAGEMENT

- Clear the backlog of work before implementing sustainable, cost-effective asset management
- Draw on leading practice, including the 'South East Seven' and Welsh Councils

MORE EFFECTIVE POLICY AND DELIVERY TO 2020

- Clear national strategy for all parts of the UK
- An Independent Infrastructure Commission to inform strategy and implementation
- Outcome-based performance specification for transport networks
- Extend devolution to fully-integrated bodies, learning particularly from TfL
- Complete the National Policy Statements (NPS)

SPECIFIC RECOMMENDATIONS

REINFORCE AND EXTEND PURSUIT OF VALUE FOR MONEY ON RAIL, BY:

- More, better and deeper industry alliances
- Technical innovation to reduce cost and disruption
- Continuing investment in maintenance and replacement, particularly to improve resilience
- Extending rail's planning period to 7-8 years
- Involving integrated transport bodies more closely in rail's future development
- Removing surplus/duplicate codes and standards
- 7-10+ year franchises to incentivise investment
- Greater flexibility in franchise specification

ACCELERATE HIGH SPEED 2'S DELIVERY PROGRAMME BY:

- Reviewing phase 1 delivery options
- Pressing ahead with detailed phase 2 design
- Planning earlier extension to Scotland

MAKE BUSES AN ATTRACTIVE ALTERNATIVE BY:

- Enhancing metropolitan areas effective powers on routes, fares, frequencies, vehicle standards
- Reviewing Quality Partnerships and Contracts
- Reviewing concessionary fares schemes
- Requiring multi-operator smart ticketing
- Ensuring reliable, accessible real time running information
- Requiring future rail franchises to include better on-train and in-station bus information

UNLOCK THE POTENTIAL OF CYCLING THROUGH:

- Clear national objectives and targets
- High quality networks in metropolitan areas
- More segregated space in areas of conflict
- More traffic calming measures elsewhere
- Certified training for drivers of heavy vehicles
- Heavier penalties for careless or incompetent drivers injuring or killing cyclists
- More consistent and comprehensive enforcement of traffic regulations on all users
- On-site safety standards in off-site vehicle operation

ENSURE FREIGHT CONCERNS ARE TO THE FORE BY:

- Ensuring SRN reform has freight at its core
- Prioritising port connections
- Facilitating ports' growth
- Using goods vehicles to introduce sophisticated road pricing
- Supporting continued mode shift from road to rail, short sea shipping and inland waterways
- Tackling emissions through infrastructure for gas-powered heavy vehicles, accelerating transition to electric power for van and encouraging use of Low Emission Zones
- Improving planning for freight interchanges and promoting night-time 'quiet deliveries'
- Requiring hauliers improve cyclist safety

TRANSPORT EMISSIONS

- Redoubling effort on 'Plugged In Places' through focus on fleet operators
- Continue European collaboration on internal combustion emission standards
- Clear objectives and incentives for modal shift in national transport strategies
- Greater encouragement to conversion of heavy vehicles to renewable natural gas and – possibly – hydrogen power
- Clearer transport and spatial planning links

IMPROVING CAPABILITY FOR LONG-TERM DECISION-MAKING

- A Transport Futures Board (TFB) within an Independent Infrastructure Commission
- TFB to explore the future of paying for travel

		2013-15	2016-18	2019+
MAIN RECOMMENDATIONS		▪ Immediate action to improve road conditions, planning and funding ▪ Clear national transport strategies across the UK [timeline applies to England] ▪ Extend devolution to fully-integrated bodies		
IMMEDIATE ACTIONS	**STRATEGIC ROADS NETWORK**	▪ Bring forward the delayed consultation paper on the future of the English SRN ▪ Five year performance specification and funding	▪ Introduce new ownership and funding mode	
	AVIATION		▪ Decision on future hub ▪ Legislate for a time limited delivery organisation ▪ Introduce a Public Service Obligation (PSO) on the future hub ▪ Review the impact of Air Passenger Duty (APD)	
	ROAD MAINTENANCE	▪ Clear the backlog of work ▪ Draw on leading practice in proactive asset management		
MORE EFFECTIVE POLICY AND DELIVERY TO 2020		▪ Clear national transport strategies across the UK [timeline applies to England] ▪ Outcome-based performance specification ▪ Complete the National Policy Statements (NPS)	▪ Independent Infrastructure Commission ▪ Extend devolution to fully-integrated bodies	
SPECIFIC RECOMMENDATIONS	**RAIL**	▪ More, better and deeper industry alliances ▪ Technical innovation to reduce cost, disruption ▪ Continuing investment in maintenance and replacement, particularly to improve resilience ▪ Remove surplus/duplicate codes, standards	▪ Extending rail's planning period to 7-8 years ▪ Involving integrated transport bodies more closely ▪ 7-10+ year franchises to incentivise investment ▪ Greater flexibility in franchise specification	
	HIGH SPEED 2	▪ Review phase 1 delivery options	▪ Press ahead with detailed phase 2 design	▪ Plan earlier extension to Scotland
	BUSES	▪ Enhance metropolitan areas effective powers ▪ Review Quality Partnerships and Contracts ▪ Review concessionary fares schemes	▪ Require multi-operator smart ticketing ▪ Ensure reliable, accessible real time running information	▪ Future franchises incl. better on-train/in-station bus info
	CYCLING	▪ Clear national objectives and targets ▪ Heavier penalties for careless or incompetent drivers injuring or killing cyclists ▪ Wider enforcement for cyclists' transgressions	▪ High quality networks in metropolitan areas ▪ More segregated space in areas of conflict ▪ More traffic calming measures elsewhere ▪ Certified training for drivers of heavy vehicles ▪ On-site safety standards in off-site vehicle operation	
	FREIGHT	Ensuring SRN reform has freight at its core Prioritising port connections Facilitating ports' growth Supporting continued mode shift from road to rail, short sea shipping and inland waterways Infrastructure for gas-powered heavy vehicles; electric power for vans; more Low Emissions Zones	Using goods vehicles to introduce sophisticated road pricing Improving planning for freight interchanges and promoting night-time 'quiet deliveries' Requiring hauliers improve cyclist safety	
	EMISSIONS	▪ Redoubling effort on 'Plugged In Places' through focus on fleet operators ▪ Continue European collaboration on internal combustion emission standards ▪ Clear objectives and incentives for modal shift in national transport strategies ▪ Encouragement to conversion of heavy vehicles to renewable natural gas and -possibly-hydrogen ▪ Clearer transport and spatial planning links		
IMPROVING CAPABILITY FOR LONG-TERM DECISION-MAKING			▪ Transport Futures Board within Independent Infrastructure Commission ▪ TFB to explore the future of paying for travel	

ACKNOWLEDGEMENTS

ICE is grateful to the following individuals and organisations for their assistance in producing this report.

INDIVIDUALS

Christopher Bolton; Noel Burton; John Davison; Richard Fish; Peter Glass; David Gregg; Alistair Hitchcock; Derek Jones; Roger Juer; John Mather; Anthony May; Ronald Rakusen; Robert Taylor; Colin Wheeler; Bill Winter; John Wootton

ORGANISATIONS CONSULTED OR SUBMITTING EVIDENCE

- Airport Operators Association
- Arup
- Association for Consultancy and Engineering (ACE)
- Association of Directors of Environment, Economy, Planning & Transport (ADEPT)
- Association of Train Operating Companies (ATOC)
- Atkins
- Balfour Beatty/Parsons Brinkerhoff
- BAM Nuttall
- Birmingham Friends of the Earth
- British Chambers of Commerce
- Campaign for Better Transport
- Centre for Cities
- CH2M Hill
- Chartered Institute of Highways & Transportation (CIHT)
- Civil Engineering Contractors Association (CECA)
- Confederation of British Industry (CBI)
- Department for Energy and Climate Change (DECC)
- Department for Food and Rural Affairs (DEFRA)
- Department for Business, Innovation & Skills (BIS)
- Department for Transport (DfT)
- Department of Communities and Local Government (DCLG)
- Federation of Small Business
- Freight Transport Association
- Gatwick Airport
- Highways Agency
- Centre for Transport Studies, Imperial College London
- Independent Transport Commission
- Infrastructure UK
- Institute for Public Policy Research (IPPR)
- Institute for Transport Studies, University of Leeds
- Institution of Mechanical Engineers
- Jacobs
- KPMG
- Living Streets
- Local Government Association
- Macquarie Infrastructure and Real Assets (MIRA)
- Network Rail
- Transport Operations Research Group, University of Newcastle
- Northamptonshire County Council
- Passenger Transport Executive Group (pteg)
- RAC Foundation
- Royal Academy of Engineering
- Royal Town Planning Institute (RTPI)
- Engineering and the Environment, University of Southampton
- Stagecoach
- Steer Davis Gleave
- Stobarts
- Sustrans
- The Bristol Port Company
- Topcon GB Ltd.
- Transport for London (TfL)
- Transport Planning Society
- UK Major Ports Group
- School of Civil Engineering, University of Birmingham
- School of Architecture and the Built Environment, University of Westminster
- Windsor Link Railway Ltd
- Wynns Ltd.

ICE also met with parliamentarians from the three main Westminster parties, including Ministers, Shadow Ministers and Select Committee members.

Institution of Civil Engineers

One Great George Street
Westminster
London SW1P 3AA
t +44 (0)20 7665 2152
f +44 (0)20 7222 7500
e stateofthenation@ice.org.uk
ice.org.uk/stateofthenation

Registered charity number 210252
Charity registered in Scotland number SC038629
This paper is made from elemental chlorine-free pulp from sustainable forests.