



On the Move:

delivering integrated transport in Britain's cities

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Executive summary

Good transport is a critical condition for economic growth and social inclusion in Britain's cities. Yet public transport use and quality in most British cities have declined in recent decades. Following bus de-regulation in the 1980s and rail privatisation in the 1990s, urban transport services have become more fragmented than ever. Both Labour and Conservative Governments have largely failed to stem the tide – and local government lacks the powers needed to shape transport services in a way that meets cities' economic needs.

As a result, different transport services often don't link up properly. Fragmented and poorly coordinated transport networks impact on our cities' employment base, the functioning of local labour markets, the welfare of local residents and the local environment. At a time of economic uncertainty and high fuel prices, integrated urban public transport is more important than ever from an economic point of view – in order to link people to jobs and services – and help cities improve.

This report defines 'integrated transport', explains why it is critical to Britain's city economies, and explores policy changes that would help to create better-integrated public transport networks in city-regions like Greater Manchester and Tyneside. It argues that greater integration is critical to delivering economic growth and prosperity in British cities – whose transport systems are well-behind world leaders in continental Europe and the Far East. It also sets out concrete actions that should be taken by central and local government following passage of the Local Transport Bill, which is expected to receive Royal Assent over the next few months.

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“The most effective short-term way to improve local transport in Britain’s cities is to deliver integrated ticketing systems”

Policy recommendations

This report makes six practical policy recommendations:

Recommendation 1: Develop integrated ticketing schemes together with the private sector

The most effective short-term way to improve local transport in Britain’s cities is to deliver integrated ticketing schemes – like London’s Oyster card. The experience of London, Zurich and Freiburg shows that cities with clear, integrated ticketing can deliver fast increases in public transport use. In other British city-regions, people are put off from using public transport due to complex and unclear ticketing systems.

City leaders, and their transport operators, should partner with private-sector companies – many of which are ready to invest in the up-front capital costs – to overcome the financial and technological barriers associated with the introduction of a common ticketing system. A single integrated standard for smartcards and other technology, such as mobile phone payment systems, will also be critical. In order to achieve economies of scale, city-regions could develop a common smartcard, such as the scheme recently proposed for the North of England.

Together with integrated ticketing, better transport governance, stronger local bus services and greater local control over funding will help deliver improved urban transport systems. As a result, this report also recommends:

Recommendation 2: Compel city-regions to adopt Integrated Transport Authorities

Existing Passenger Transport Authorities (PTAs) are composed largely of back-bench councillors and are dominated by entrenched interests. Left to their own devices, PTAs are not strong enough to deliver integrated transport in English metropolitan areas. As a result, we recommend that the Secretary of State use the reserve powers set out in the Local Transport Bill to require cities to review transport governance and adopt the stronger Integrated Transport Authority (ITA) model, with decisions in the hands of council leaders.

The Secretary of State should expect the new ITAs to demonstrate substantially improved governance and leadership arrangements, take on wider functions, and adopt new boundaries that better reflect the scale of city-regional labour markets. This includes the six existing PTA/E areas - Manchester, Birmingham, Leeds, Newcastle, Liverpool and Sheffield – plus Bristol and Tees Valley.

Recommendation 3: Greater focus on urban buses in the Department for Transport

The Department for Transport (DfT) has made some positive changes in recent years – including a stronger focus on city and regional transport networks. However, the Department needs to provide greater political leadership and expertise to help city-regions improve urban bus services. Ministers need to invest time and political capital in buses – as well as the rail system.



“Government should consider ways to re-focus rail franchises around city-regional geographies”

DfT should establish a clear point of contact for city-regions seeking to develop either Statutory Quality Partnerships or Quality Contracts for bus services. This would demonstrate a clear commitment to overcoming the legal, regulatory, technical, and financial barriers to greater bus integration.

Recommendation 4: Invest more in ‘Smarter Choices’ in major cities

There is a strong business case for ‘soft’ measures that help convince the public that local transport can be an attractive alternative to the private car. Boris Johnson’s move to ban alcohol on London’s transport system is one high-profile effort to boost confidence in public transport. Alongside such measures, comprehensive school and workplace travel planning have been shown to deliver decreases in urban congestion – while providing an economic dividend for local people and local companies.

Despite strong economic evidence in favour, ‘Smarter Choices’ budgets for travel planning remain small. Central Government, councils and operators, who stand to profit from modal shift, should consider additional investment in travel planning in our cities.

Recommendation 5: Reprioritise Transport Funding

Over the medium term, existing sources of transport funding should be reprioritised – enabling city-regions to target resources more directly on integrated public transport projects that deliver clear economic and social benefits. This should include both capital funding (e.g. Regional Funding Allocations, which should prioritise public transport rather than road improvements) and revenue funding (e.g. devolution of Bus Service Operators Grant subsidies to city-regions).

Recommendation 6: Increase city-regional influence over commuter rail services

As the rail franchising system is updated over the next decade, the Government should consider ways to re-focus franchises around city-regional geographies where possible. It should also restore the statutory link between city-regions and rail operators – by giving city-regions shared responsibility for developing and improving commuter rail services. Like the Mayor of London, who has steadily gained influence over rail services, frequencies and operators within and around the capital, other city-regions need similar powers to deliver integration between transport modes.

There is a substantial evidence base showing that better-integrated public transport would bring considerable economic and social benefits to England’s major conurbations. Integration could also help to spark a cultural shift away from the car – just as improvements in public transport have done in London over the past decade. A concerted effort by local leaders and the DfT over the coming months and years is needed to help our biggest cities provide greater integration – and at the same time improve their economic competitiveness and their residents’ quality of life.



Introduction and Policy Context

Lunched with Sir Mark Spencer (M.S.) today. He and the PM are keen to bring in an integrated transport policy. I suggested that Hacker could be the man for the job, as he doesn't know anything at all about the subject. The Secretary of State for Transport, who knows a lot about it, won't touch it with a ten foot barge pole. M.S. and I agreed it was a bed of nails, a crown of thorns, a booby trap – which is why I suggested Hacker of course.

Diary of Sir Arnold Robinson (In Lynn & Jay, 1989)

Implementing an integrated transport policy is not straightforward. Despite White Papers and initiatives drawn up by a range of governments¹, successive Secretaries of State have failed to integrate transport networks in Britain's cities.

This report argues that there is now an opportunity to deliver more integrated transport in Britain's major cities. A considerable evidence base suggests that integrated public transport would be highly beneficial in both economic and social terms.

Over the last two decades, the governance of Britain's transport system has changed dramatically. Local bus services outside London were deregulated in 1986, the national rail network was privatised in the mid 1990s, and the powers of urban transport authorities in the biggest cities have been scaled back.

While rail use has increased over the last decade – driven principally by commuting into London – bus use in Britain's cities outside London has declined substantially (see Table 1). In part, this is due to greater prosperity and increased car ownership – but the fragmentation and lack of coordination in local public transport services has also played a role.

Table 1: Bus Passenger Journeys (per 10,000 population in 000s per year)

	London	Greater Manchester	Merseyside	West Midlands	West Yorkshire	South Yorkshire	Tyne & Wear
1997/98	1,826	856	1,393	1,435	965	1,152	1,477
1998/99	1,792	880	1,392	1,380	917	1,076	1,431
1999/00	1,809	815	1,204	1,383	955	1,047	1,406
2000/01	1,861	831	1,164	1,392	931	1,058	1,377
2001/02	1,942	847	1,199	1,390	898	1,034	1,334
2002/03	2,074	846	1,180	1,356	893	1,023	1,297
2003/04	2,298	882	1,168	1,299	875	958	1,262
2004/05	2,439	868	1,162	1,266	845	883	1,210
2005/06	2,523	853	1,149	1,237	836	893	1,142
2006/07	2,653	873	1,204	1,242	865	905	1,168
2007/08	2,766	882	1,118	1,256	811	916	1,102
% Growth 97/98-07/08	51.4	3.0	-19.7	-12.5	-15.9	-20.5	-25.4
% Growth 02/03-07/08	33.3	4.3	-5.2	-7.4	-9.1	-10.5	-15.1

Source: Own representation with data from DfT (2008) and Nomis

1. Such as DfT (1996) *Transport – The Way Forward*, DETR (1998) *A New Deal for Transport: better for everyone*, and DETR (2000) *Transport Ten Year Plan*.

“Integrated public transport would be highly beneficial in both economic and social terms”



Previous efforts to integrate urban transport have been well-intentioned but ineffective. John Prescott's 1998 Integrated Transport White Paper (DETR, 1998) and the 2000 Transport Act were meant to address many of the problems arising from the restructuring of Britain's transport system – but failed to make substantial headway. Comparative studies indicate that, apart from London, UK cities lag behind leading continental European cities with respect to a number of integrated transport indicators. There is some evidence to suggest that poorly-coordinated public transport is having a negative effect on city labour markets and on investors' perceptions (Gibbons & Machin, 2006; SEU, 2003).

The drive to integrate transport networks in Britain's cities was given new impetus by the government-commissioned Eddington Transport Study. In his 2006 final report, Sir Rod Eddington argued for a stronger policy focus on cities – particularly urban bus services and transport governance structures.

Eddington's proposals were taken up in Putting Passengers First (DfT, 2006a), which set out the Government's intention to make it easier for cities to regulate local bus services, and the 2006 Local Government White Paper (DCLG, 2006), which hinted at a substantial restructuring of the PTAs that plan local public transport services in England's six largest conurbations.

These in turn have led to the Local Transport Bill, currently being finalised in Parliament. The Bill provides for the creation of ITAs, makes it easier for cities to influence or regulate local bus services and increases councils' ability to use a range of transport measures to support local economic development.

“Poorly-coordinated public transport is having a negative effect on city labour markets and on investors' perceptions”



Defining Integrated Urban Transport

Integrated Urban Transport:

The organisational process through which the planning and delivery of elements of the transport system are brought together, across modes, sectors, operators and institutions, with the aim of increasing economic and social benefits.

For the purposes of this report, we argue that 'integration' is about bringing transport services together to deliver clear economic benefits to a city-region.

Examples of strong and weaker transport integration

Strong: Amsterdam

- Integrated ticketing: Netherlands National Tariff System
- Dense and growing public transport network: bus, metro, train, tram, ferry
- Coordinated bus services
- High levels of cycling provision: 700,000 bikes in the city
- Car use discouraged within city by road limitations and high parking charges



Weaker: Greater Manchester

- Fragmented ticketing system, with minimal cross-operator acceptance
- Commuter rail network. Growing tram network, but small metro/tram system for a city of its size
- Bus use has increased marginally but service is still fragmented
- Low levels of cycling provision: 15,740 travelling to work by bicycle in 2001 in Manchester's Primary Urban Area
- Over six in ten people commute to work by car

Over the years, definitions of integrated transport have varied depending on disciplinary and theoretical perspectives. Key differences exist between engineering, laissez-faire economics and management viewpoints:

- The **engineering** viewpoint, often shared by architects, planners and urban designers, is that integration is best delivered by investing in physical transport infrastructure (Cresswell, 1979; Rogers, 1999). This was the predominant viewpoint in the UK up to the mid 1980s and was particularly influential in the development of transport interchanges in towns and cities such as Bradford, Gateshead and Preston. It remains the dominant viewpoint in continental Europe.

“Integration is about bringing transport services together to deliver clear economic benefits to a city-region”



“Management approaches define integration as a process that results in the provision of better services”

- The **market** perspective, which suggests that coordinated transport services can be provided by competition, came to dominate in Britain from the mid 1980s. It argues that if consumers value integration, the free market will provide it (Ponsonby, 1969; Hibbs, 2000). Public intervention is only justified where wasteful competition, lack of competition and network failures occur. Wasteful competition in deregulated markets will tend to result in competition between only a small number of operators, resulting in too much service being supplied at too high fares.

The main feature in most UK urban transport networks is minimal competition, with many markets dominated by one of the big five transport operators (Arriva, First Group, Go-Ahead, National Express and Stagecoach). In such monopoly situations, economists would expect too little service, provided at high prices – and there is some evidence to suggest this is the case in England’s big conurbations (Glaister, 2001).²

- **Management** approaches define integration as a process that results in the provision of better services (Davidson & Lindfield, 1996). There are three levels at which managers may work together (see Figure 1). The first is co-operation, which is largely based on personal relationships and trust. Voluntary quality bus partnerships (e.g. Bristol and York) are one example. The second is co-ordination through more formalised procedures - statutory quality bus partnerships³ in Dundee and North Sheffield are examples. The third is formalised decision-making through a specific agency or contract – such as Transport for London⁴.

Figure 1: Levels of integration and their requirements

		3	
		London	requirements
	2	integration	Institutional & financial integration
	Sheffield & Dundee		&
1	co-ordination		Co-ordination & communication mechanisms
Bristol & York			&
co-operation			Motivation from common objectives / communication

Based on NEA, OGM and TSU (2003)

2. England’s largest conurbations outside London are made up of the six PTEs: Greater Manchester, Merseyside, South Yorkshire, Tyne and Wear, West Midlands and West Yorkshire.
 3. Bus Quality Partnerships represent an agreement between the local transport authority and bus service operators: the authority commits to improving the quality of infrastructure (e.g. bus priority lanes), the operators commit to providing an agreed quality of service. This can include timings, frequencies and maximum fares. (See Pteg Local Transport Bill update and briefing)
 4. Bus Quality Contracts are in effect the franchising of a network of services. (See Pteg Local Transport Bill update and briefing)

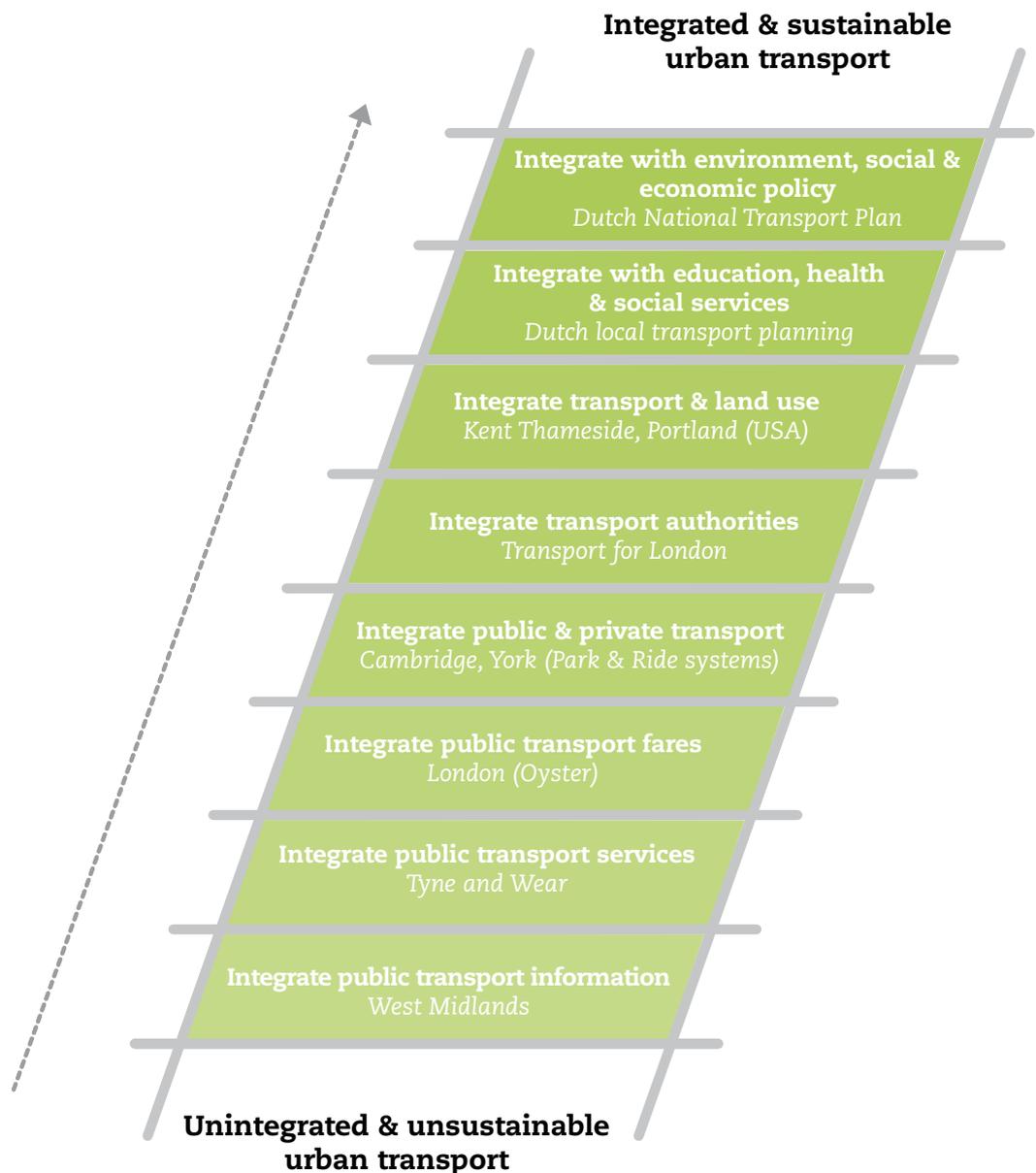


The Integration Ladder

As noted above, integration is a process - with a range of different criteria that need to be fulfilled. Urban transport in British cities can be evaluated against the rungs of an 'integration ladder', which helps to identify those doing well and those falling further behind (see Figure 2). The more integrated and sustainable a city's urban transport system, the more it is able to support local economic growth by linking people to jobs.

Figure 2: The Integration Ladder

“The more integrated and sustainable a city's urban transport system, the more it is able to support local economic growth”



The 1998 Integrated Transport White Paper and subsequent policy initiatives have focused on the lowest rungs of the integration ladder – i.e. better information and improving timetables and interchanges.



Rung 1: The most basic level of integration is the provision of **comprehensive public transport information**, such as route maps, printed timetables and telephone and internet enquiry services covering all operators. Traveline and Transport Direct represent examples of initiatives disseminating journey information - but the provision of fares information remains poor, especially for bus services. Provision of information at homes, at stops and on vehicles is inconsistent, despite the development of real-time information displays, such as the London Underground Countdown system, text messaging services and web based information.

To some, information integration means that the system is perceived as 'one' - through the use of a unified set of concepts, such as a joint logo for all participating public transport companies (as in London), and a common language in communications with users. In most of England, local authorities only provide basic levels of public transport information such as posters on bus shelters. A small number of transport authorities such as Centro, which has rolled out the 'Network West Midlands' brand, or progressive local operators (e.g. Brighton and Hove, Nottingham City Transport, Trent Barton) provide more enhanced levels of information.

Rung 2: Public transport service integration involves the co-ordination of timetables, the creation of interchanges and/or efforts to ensure service stability. These measures often help to move people from private to public transport – and deliver some decongestion benefits to local economies.

- *Timetables:* to deliver reliable services, timetables can be spread out at even clock-face intervals (i.e. every 15 minutes) or organised hierarchically to link up with other modes of public transport⁵. Examples of simplified, high-frequency hub and spoke services include First Group's Overground bus concept (operated in cities such as Glasgow, Leeds and Manchester).
- *Interchange hubs* (such as Heworth on the Tyne and Wear Metro, or Liverpool South Parkway on the Merseyrail network) facilitate connections between services through easy interchanges and the provision of convenience facilities.
- *Service stability* is highly valued by public transport users. In practice, this may mean that major timetable changes (and fares revisions) are limited to one or two dates a year. Today, bus operators can – and do – change schedules and routes with 56 days' notice – leaving many public transport users confused about levels of provision and service quality. This has made it harder to co-ordinate bus and rail services in most major city-regions.

5. For example, minibuses feeding into conventional bus lines, conventional bus lines feeding into light rail systems and light rail systems feeding into heavy rail systems.

“The most basic level of integration is the provision of comprehensive public transport information”



“Integrated ticketing and fares remain problematic in most UK cities”

Rung 3: Integrated ticketing and fares are important to increase public transport affordability, and for encouraging modal shift away from private cars. System-wide tickets, such as Travelcards and the Oyster Smartcard in London, that apply to all operators and public transport modes have become key features of integration. As a result of these services, only 3 per cent of bus users in London currently pay cash, compared to 29 per cent in the six English Passenger Transport Executive (PTE) areas (White, 2008). This has been driven in part by differential pricing and the incentivisation of Oyster use. In regional cities, a wide range of operator-specific tickets leads to confusion (in West Yorkshire, for example, there are 37 operators and 88 operator specific ticket types), the perception of getting poor value for money and also less reliable services, as cash payments slow things down.

Fare integration creates a common and easy-to-understand structure, such as flat fares (for a small network), zonal fares (for a larger network) or distance-related fares. It may also include uniform provision of concessionary fares – such as national concessionary free travel for the elderly and disabled introduced in Wales in 2002, in Scotland in 2003 and in England in 2008. Integrated ticketing also *standardises retail distribution*, and encourages off-vehicle sales to speed up travel times. Overall, integrated ticketing and fares remain problematic in most UK cities, with the exception of London.

Rung 4: The integration of public and private transport, such as park and ride facilities, can help decrease congestion and increase public transport usage (WS Atkins, 1998). Physical measures (such as the park and ride facilities themselves), economic measures (such as parking controls in central areas), and management measures (such as information provision and bus priority) are all typical of this approach. Examples of successful bus-based park and ride schemes include Cambridge, Oxford and York, where they are accompanied by tight parking controls. Private transport can also be linked to integrated ticketing schemes, such as the use of SmarTrip cards for parking payment in Washington DC. In the Sustainable Travel Demonstration Towns (Darlington, Peterborough and Worcester) personalised travel planning, and the promotion of public transport, walking and cycling have reduced car trips by over 10 per cent between 2004 and 2006 and achieved a better balance between public and private transport (DfT, 2007b).

The evidence suggests that public and private transport are best integrated when all modes – including the private car – are charged on a pay-as-you-go basis. Studies undertaken in Edinburgh suggest that integrated transport to maximise societal benefit would involve peak-time road pricing, public transport service increases, public transport fare reductions and some expansion in road capacity. Similar results have been found for other cities both in the UK (e.g. Leeds) and in continental Europe (e.g. Oslo, Vienna) (May et al, 2005). Given that motorists tend to consider the car free at the point of use, true integration of public and private transport can only be fully achieved through some form of road user charging or, possibly, a parking charge.⁶

6. For a more detailed assessment of the economic benefits and costs around congestion charging see Tochtermann (2008) *Congestion Charging: A tool to tackle congestion in UK cities?* Centre for Cities



“Institutional integration would help to deliver economic benefit by coordinating policy across transport modes”

Rung 5: Transport integration can also involve the **integration of authorities**. There is a long history of such integration (e.g. London Passenger Transport Board 1933). PTEs were set up in the major conurbations outside London in the late 1960s and early 1970s, working to the Metropolitan County Councils.⁷ These bodies took over responsibilities for public transport from a number of local jurisdictions - but their boundaries have not been redrawn since 1974, despite the shifting economic geography of England’s city-regions. And many city-regions such as Bristol and Tees Valley have never been served by PTA/PTE structures. The Local Transport Bill, currently before Parliament, would provide powers to create new ITAs in both PTE and non-PTE areas.

Institutional integration would help to deliver economic benefit by coordinating policy across transport modes. However, this is challenging as formal transport powers are currently shared between institutions.

- In areas with PTA/PTE structures, there is a split between public transport planning (PTA/Es), service delivery (operators), and road powers (councils), which has hampered the development of bus priority measures.
- In areas without PTA/PTEs, local authorities control both public transport and road powers – but often have to co-operate with neighbouring jurisdictions to deliver clear transport services across an economic area. For some urban areas (e.g. Exeter, Oxford) there is the added complication that transport powers are split between County (upper tier) and District (lower tier) authorities.
- Further difficulties arise from the interaction of locally controlled transport with the Strategic Roads Network, managed by the Highways Agency, and national rail services, managed by the DfT through a series of franchise agreements.
- Regional Transport Boards in England and Scotland and the Regional Transport Consortia in Wales have added a further level of complexity.

Rung 6: Integration between transport and land-use planning policies would help to align infrastructure with jobs – thereby improving city labour markets. This was the intention of Planning Policy Guidance Note 13, which encourages developments within urban centres, limits parking provision, and promotes public transport options. However, there is little evidence that this approach has lessened traffic growth or changed mode shares (Headicar, 2003). Evidence from both Belfast (McEldowney et al, 2005) and Tyne and Wear (Wootton & Marsden, 2001) illustrates the continued dominance of car based land-use development.

At city-regional level, transport, economic and spatial strategies have not been as well integrated as in other countries, where concepts of smart growth and transit oriented development are more deeply ingrained. A UK example can be found at Kent Thameside, where commercial and residential development

7. When these Councils were abolished, Passenger Transport Authorities composed of councillors were recreated to oversee the work of the PTEs.



is underpinned by the Fastrack bus rapid transit system and Ebbsfleet International station. But this is a somewhat exceptional and relatively small-scale case of new development. Overlaying smarter transport and land-use planning in existing cities is more difficult.

Rung 7: There has been little attempt to **integrate conventional transport with transport policies in health care, social services and education**, despite their two-way relationship. Transport, particularly the promotion of walking and cycling, has an impact on public health. The health, social services and education sectors have large vehicle fleets of their own and policies such as the promotion of greater choice of schools, the centralisation of health care facilities and care in the community all have had the impact of increasing transport requirements and particularly the use of the car. These have rarely been appraised when policy decisions have been made.

Rung 8: Sustainability may be viewed as the highest level of integration (George, 2001). For urban transport this means a system that is economically, socially and environmentally robust, with an institutional framework that encourages joined-up government. This might be facilitated by cross departmental working groups (including DfT, DEFRA, DCLG and HMT) setting consistent high level goals – such as those in the recent Towards a Sustainable Transport System (TaSTS) consultation (DfT, 2007a). The Dutch National Transportation Plan represents another example. On present performance, however, UK cities are far from achieving this goal.

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Moving cities up the Integration Ladder

Contrary to other European cities and some cities in the US, UK cities are characterised by relatively low levels of transport integration. Cities on the 'lower rungs' of the integration ladder are characterised by lower levels of public transport usage, congestion problems and transport-related social exclusion. This section sets out the evidence in favour of greater transport integration – and argues that there is a strong economic and social case for moving cities up the 'integration ladder'.

Appraising Integration Benefits and Costs

Government and local authorities use the New Approach to Appraisal (NATA) to assess new transport schemes. NATA measures transport interventions against five key criteria: Economy, Accessibility, Safety, Integration and Environment – and is a combination of Cost-Benefit Analysis and Environmental Impact Assessment. The DfT is currently undertaking a NATA refresh exercise aimed at addressing existing criticisms – and to align it with the Government's high-level transport objectives. For example, the 'refresh' will take into account both wider economic benefits and social inclusion benefits – neither of which is currently appraised effectively. It will also re-examine calculations around fuel duty revenue, which have penalised the business case for many public transport projects and supported the case for revenue-generating road projects. Cumulatively, these shifts may have the effect of improving the business case for spending on integrated public transport in major cities.

Recent work has highlighted three sources of additional economic benefit (DfT, 2005):

- **Agglomeration benefits** occur when transport investments encourage industries to cluster together, promoting linkages between firms, access to labour and knowledge transfers (Graham, 2006).
- **Imperfect competition benefits** occur because transport improvements can promote increased competition between transport-using firms.
- **Income tax benefits** occur as transport improvements may encourage greater labour force participation, longer working hours and higher productivity and hence wages.

The Centre for Cities' own analysis suggests these benefits would be greatest in London and the Core City-regions – where inclusion of wider benefits could improve investment business cases by 25 per cent or more. Wider economic benefits strengthen the case for integrated transport – particularly in larger cities. There is also evidence that user benefits, public safety benefits, congestion relief benefits and environmental benefits associated with a shift toward public transport contribute to the economic and social case for integrated urban transport (Sansom et al, 2001; Nash & Preston, 1991).

“There is a strong economic and social case for moving cities up the integration ladder”



“Investing in integrated urban transport is good value for money and provides important economic and social benefits”

The Evidence Base for Integration

Integrated Transport has high benefit-cost ratios

UK as well as international case studies suggest that investing in integrated urban transport is good value for money and provides important economic and social benefits. A starting point for domestic business cases is the evidence base put together for the Eddington Transport Study (DfT, 2006b). A summary of relevant schemes from this study, that include some element of public transport provision, is given in Table 2.⁸

The Eddington data suggests that there is a strong business case for progressing a large number of investment schemes that contribute to the goal of integrated urban transport – including light rail, walking and cycling facilities. Although it is true that road schemes often exhibit even higher Benefit-Cost Ratios (BCRs), they rarely perform well on environmental and social criteria.

Table 2 shows that integration schemes are good value for money – with packages of projects scoring well above the Treasury’s benchmark BCR of 2.

Table 2: Eddington Evidence on Public Transport Integration BCRs

Type	Locations	Mean	Range
Integrated Transport Schemes (3 schemes)	Reading, Scarborough w2emms ⁹	4.97	2.7 - 7.7
Interchanges (6 schemes)	Altrincham, Bradford, Coleshill, Mansfield, Warrington, Wolverhampton	2.57	1.0 - 4.8
Light Rapid Transit (6 schemes)	Coventry, Leeds, London Nottingham, South Hampshire	2.10	1.1 - 3.6
Urban Rail (6 schemes)	Glasgow, London York	2.16	1.1 - 3.0
Bus schemes (13 schemes)	Bletchley, Bristol, Cambridge Doncaster, Leeds, Sheffield Taunton, Warwick	2.51	1.7 - 4.0

Source: DfT (2006b)

Table 3 includes international business cases for public transport integration schemes, examined in work for the European Commission (NEA et al, 2003). All of the schemes listed here have BCRs in excess of 2, including network integration in Bucharest¹⁰ and a Metro extension in Rotterdam. Notably, a 1980s scheme to integrate ticketing in West Yorkshire delivered an extremely high BCR of 5.4.

8. A major constraint of the Eddington study is that Eddington tended to examine individual measures rather than packages of measures, with a strong emphasis on road schemes. In a database of some 170 schemes, over 80 per cent are classified as predominantly road schemes.

9. West to East Midlands Multimodal Study.

10. Based on a contra-flow bus lane in the city centre.



“Investment in integration brings people back to public transport”

Table 3: Public Transport Integration Schemes

Location	Description	BCR
Bucharest	Network integration	2.90
Rotterdam	Bus integration with Metro extension	4.10
Greater Manchester	Tariff and Information Integration	2.53
	Local Transport Plan 2001/2 - 2005/6	4.86
	Major Schemes 2001/2 - 2005/6	3.71
West Yorkshire	Integrated ticketing	5.40
London	Information integration	7.67
Dublin	Area wide integration	2.75

Source: NEA, OGM and TSU (2003)

Integrating Transport has Positive Demand Impacts

Data also indicate that investment in integration brings people back to public transport. As Table 4 shows, cities such as Hamburg, Stockholm and Vienna have increased public transport demand over a long period by as much as 25 per cent, with a rate of increase per annum of around 1 per cent. While it is possible that other factors helped to boost public transport demand, these areas were studied following falls in demand prior to the introduction of integration policies. Paris illustrates the success of integrated ticketing (the Carte Orange) and the Metrebus integrated ticketing and fare system in Rome shows that in the short term increases in public transport volumes of up to 3 per cent per annum can be achieved.

Table 4: Public Transport Integration Demand Impacts

Location	Dates	Overall % change	Annual % change
Greater Manchester	1999 - 2001	4	2.0
Hamburg	1967 - 2002	19	0.5
Stockholm	1973 - 2001	25	0.8
Vienna	1988 - 2001	24	1.7
Rome	1995 - 1997	6	3.0
Paris	1975 - 1993	33	1.7

Source: NEA, OGM and TSU (2003)

Other evidence

- Integrated Ticketing:** In London, it is estimated that the introduction of Travelcards in the 1980s led to a 10 per cent increase in underground trips and a 16 per cent increase in bus trips (Gilbert & Jalilian, 1991). In Zurich the introduction of a transferable season ticket led to a 33 per cent growth in passenger trips between 1985 and 1990 (Fitzroy & Smith, 1994). A similar effect was observed in Freiburg (Germany) where after years of

11. Based on Cottham (1985).



broadly constant demand, the introduction of an environmental travelcard (Umweltschutzkarte) led to increases of around 7.5 per cent per annum - between 1983 and 1995 public transport ridership increased by 138 per cent, whilst the population of the region only grew by 13 per cent (Fitzroy & Smith, 1998).

- **Quality Bus Partnerships:** A review of quality bus partnerships in 20 areas of Britain indicates short term patronage increases of 18 per cent (15 months or less) and medium term increases of 36 per cent (18 months or more) (Sloman, 2003). A recent study of quality partnerships in Winchester found that a package of improvements on two routes paid for themselves in social terms in four years¹², and in commercial terms in 12 years (Wall & McDonald, 2007).
- **Marketing and Information Provision:** The ‘Smarter Choices’ study (Cairns et al, 2004) found that marketing, in combination with service improvements, can lead to increases in public transport usage of as much as 60 per cent (see also the Ten Percent Club, 2006). Case studies of Brighton and Nottingham suggest that around half the increase in demand is related to ‘hard’ physical measures but the other half is due to ‘soft’ measures such as promotion and marketing. These studies indicate that around 30 per cent of new bus trips would otherwise have been made by car¹³.
- **Travel planning:** Other measures that might promote integrated transport include workplace and school travel plans, personalised travel planning and travel awareness campaigns, car clubs and car sharing schemes and home shopping. Currently, travel planning is a marginal policy instrument. If present practice is largely continued, it would only lead to a 2-3 per cent reduction in nationwide traffic, increasing to 5 per cent at peak times in urban areas (Cairns et al, 2004). However, a major roll-out of these ‘soft’ measures could lead to a 21 per cent reduction in peak period urban traffic (13 per cent off-peak) and a reduction in peak period non-urban traffic of 14 per cent (off-peak 7 per cent), resulting in a nationwide reduction in traffic of 11 per cent. This is likely to have important economic consequences for the productivity of UK cities.

The evidence above suggests that efforts to integrate urban transport can lead to significant economic and social benefits for city residents and businesses. UK cities – where levels of transport integration remain low – could derive significant benefit from efforts to move up the ‘integration ladder’, including smoother commutes, time savings and returns to agglomeration.

12. This means that within four years the total social benefits (i.e. benefits from revenue changes, user and non-user benefits) exceeded the total costs of the package of improvements. Purely financial appraisals do not include user or non-user benefits.

13. Analysis suggests that the public sector costs for marketing of city-wide bus services are about two pence per car kilometre saved. Taking into account that the benefits of reduced car use are on average 15 pence per kilometre, this gives a BCR of around 7.5. See Cairns et al (2004).

“Marketing, in combination with service improvements, can lead to increases in public transport usage of as much as 60 per cent”



“There are still a number of organisational, financial, political and cultural barriers standing in the way of greater integration”

Barriers to Integration and Tools to overcome them

As statistics on bus usage (page 4) and traffic speeds (DfT, 2007c) show, New Labour’s Integrated Transport agenda since the late 1990s and the free-market approach taken by the Conservatives in the 1980s and 1990s have both largely failed to deliver integrated urban transport. There are still a number of organisational, financial, political and cultural barriers standing in the way of greater integration.

Barriers to Integration

Barrier 1: Lack of devolution and local control

Cities lack many of the policy tools required to climb even the lowest rungs of the ‘integration ladder’ such as information, service, and fares integration. Outside London, there is limited public control of the bus industry and despite the fact that the DfT retains strong oversight of private rail operators, local authorities have little input except in the devolved administrations (which for national rail includes London, Scotland and Merseyside). PTAs in the major conurbations lost their co-signatory status on rail franchises in 2005. Councils have to apply for Treasury approval for all major highway and public transport schemes above a threshold of £5 million, effectively preventing city-regions from taking their own transport investment decisions.

Where it has occurred, devolution has proved a stimulus to integration, as it has produced institutions such as Transport Scotland and Transport for London with a clear spatial focus.¹⁴ Devolved transport authorities are able to set a clear rationale for their policies – e.g. economic development in Wales and behaviour change in London.

Barrier 2: Limited ability to incentivise bus services

Although local transport authorities can specify socially necessary bus services, these are typically less than 15 per cent of total vehicle miles. More importantly, councils have little power to determine fares, service levels or service quality on the commercial bus network. They are also required to demonstrate that the support they give to ‘social’ services does not negatively impact on the commercial network.

Evidence from Merseyside (Huang & Preston, 2004) suggests that appropriately specified Quality Contracts in the city-region would lead to net economic benefits of around £13 million per annum. Other research also suggests that in areas where competition is limited – such as the West Midlands and West Yorkshire – reductions in bus fares and increases in service levels would be economically beneficial (Glaister, 2001).

14. Based on MacKinnon et al (2008).



“Partnership working in many areas has been hampered by the limited ability of local authorities to deliver bus priority measures”

Barrier 3: Fragmented ownership

A further barrier to integration is the fragmented ownership of public transport. The more positive examples of transport integration – such as Brighton and Cambridge – tend to occur in areas where there is a dominant operator and good working relationships with local authorities, often forged at an individual level. Some successes have also been achieved in cities where there are two evenly matched and innovative bus companies as in Edinburgh (First and Lothian Regional Transport), Nottingham (Nottingham City Transport and Trent Barton) and Oxford (Go-Ahead and Stagecoach).

However, partnership working in many areas has been hampered by the limited ability of local authorities to deliver bus priority measures. In Greater Manchester, the PTE is responsible for planning public transport, while responsibility for roads rests with individual local authorities. Two-tiered cities like Cambridge face a similar situation – with public transport and roads controlled by the County, but parking and traffic policies largely controlled by the Districts. In part this challenge exists, because local authorities lack a financial incentive to provide bus priority infrastructure and operators are reluctant to enter into any profit sharing type arrangement to help finance such infrastructure (Preston, 2007). Hence, it is little surprise that there have only been two Statutory Quality Bus Partnerships (in Dundee and North Sheffield) established since the passage of the 2000 Transport Act.

Barrier 4: Lack of joined-up working

There is a need to join up transport with other key policy interventions, especially at the city-regional level. A comparison of integration practices in Malmo, Sweden, with those in Bristol and Newcastle found a series of implementation failures in Britain, including duplication of procedures, failures in communication and a lack of clear and resourced responsibilities (Hull, 2005).

Barrier 5: Implementation hurdles

The planning process is costly in terms of time and money, due to the large number of organisations involved and despite ways to streamline it put forward by Barker (2006) and Eddington (2006). Particular problems exist in integrating transport and land-use at both the local (Wootton & Marsden, 2001) and regional (MVA, 2004) levels. Delivering the solutions put forward by multi-modal studies has floundered on the fact that delivery agencies are structured on modal lines, particularly the Highways Agency and the Strategic Rail Authority (now DfT Rail), and, as a result, measures that would have integrated transport became fragmented (Goodwin, 2003).

Barrier 6: Funding constraints

Funding constraints are faced by both central and local government. Although transport expenditure and investment currently stands at historically high levels – increasing by over 22 per cent in real terms between 2002/03 and 2007/08 (HM Treasury, 2008), the sector has been affected by cost inflation, and most funding has focused on rail maintenance and renewal.



“Integration could be facilitated by the adoption of an Integration Contract”

Barrier 7: Culture

Over the years, people in the UK have developed a strong preference for individualised transport – which has resulted in a high degree of car dependency and a reluctance to use collective transport due to a variety of reasons including concerns over personal security (Stradling et al, 2000). Both Ken Livingstone and Boris Johnson, as Mayors of London, have taken steps to reduce these barriers. As a result, 90 per cent of central London workers use public transport to get to work. Livingstone encouraged modal shift onto buses through major quality improvements. More recently, Johnson has focused extensively on crime and security concerns, to ensure that those modal gains are not undone in future years.

Tools to Overcome Integration Barriers

There are a number of tools that cities, PTA/Es and the DfT could use to overcome the above described barriers to transport integration.

Tool 1: Integrated Transport Authorities

The establishment of ITAs in major city-regions would help to address many of the coordination failures mentioned above, and they would act as a powerful advocate for improved bus governance. The Secretary of State will need to use the reserve powers included in the Bill to promote sensible boundaries for ITAs, aligned with local labour markets. This will require tough negotiation with some two-tier areas, so that districts are included in ITAs where appropriate. ITAs are discussed further in the recommendations.

Tool 2: Integration contracts

Integration could be facilitated by the adoption of an Integration Contract – a public document which would allow local residents and business to hold politicians and operators accountable for the quality of transport services in their city. This would also enable residents of Birmingham to compare the quality of their public transport services to that of other cities – such as Manchester or Newcastle.

Such a contract could include an Integrated Network Statement, with regular progress reports and clear performance indicators. An example of such a contract, based on research undertaken for the European Commission, is given by Figure 3.

This would assist in the development and implementation of integrated transport strategies – and allow businesses and residents to compare cities’ relative performance.



“There are substantial political disagreements on whether national agencies would be best placed to speed up infrastructure delivery”

Figure 3: Sample Integration Network Statement

A simple system might rate integration on a scale of 0 (no or little integration), 1 (some integration) and 2 (full integration). Indicators might include:

Information Integration:

- Information on routes, times and fares.
- Availability of real time as well as static information.

Ticketing and Fare Integration:

- Existence of integrated tickets and modal coverage.
- Availability of tickets at stops, on vehicles, central sales points, other public places and from home.

Network Integration:

- Investment in appropriate technologies (heavy rail, light rail, trolley bus, guided bus, conventional bus, demand responsive transport etc).
- Design of timetabled interchange points to permit seamless travel.

Wider Integration:

- Integration of public transport with other modes of transport.
- Integration of transport with other services (social services, education, health care).
- Integration of transport with urban and regional planning and with environmental policy.

Source: NEA, OGM and TSU (2003)

Tool 3: Using national agencies to speed up integration

The infrastructure required for integrated transport often takes decades to plan and deliver. Integration could be improved if this process were speeded up. Possible solutions that have been mooted include an Infrastructure Planning Commission (Eddington, 2006; Barker, 2006), which is being considered as part of the current Planning Bill; a Major Transport Infrastructure Project Directorate (after Transport Scotland); or bodies based on the Northern Ireland Strategic Investment Board or the Olympic Delivery Authority (Beecroft et al, 2008). The RAC Foundation have suggested that co-ordination could be based on price, with the establishment of a National Pricing Agency, primarily to administer a national road user charging scheme (Banks et al, 2007).

To date, however, no national body for major infrastructure has been established. There are substantial political disagreements on whether national agencies would be best placed to speed up infrastructure delivery, with the Conservatives arguing firmly against the introduction of a new Planning Commission.

Tool 4: Levers for additional funding

Financial barriers to integration could be tackled through the use of specific funding tools – such as Section 106 agreements, the Community Infrastructure Levy Fund, Business Rate Supplements, Workplace Parking Levies and the Transport Innovation Fund.



“The ‘paralysis by analysis’ that has afflicted urban transport for much of last decade needs to be avoided”

However, the current economic downturn is likely to restrict cities’ ability to raise additional revenue through these tools in the short term. Over the next few years, city-regions will need to consider alternative funding models – such as the use of Asset-Backed Vehicles to unlock supplementary capital and revenue funding.

Tool 5: Reform existing funding arrangements

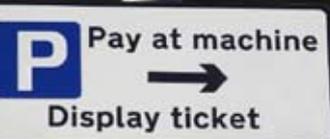
Another possibility is to reform existing funding streams and subsidies to provide incentives for integration. For example, the Bus Service Operators Grant (BSOG) could be replaced with some form of locally-controlled subsidy per passenger or per passenger kilometre, which would allow England’s urban areas to spend bus subsidies in a way that generates greater economic and social benefit. If the BSOG were devolved, city-regions and operators could work together to devise a subsidy regime that suits the specific needs of local labour markets.

Tool 6: Use ‘Smarter Choices’ to overcome cultural barriers

Socio-cultural barriers may be overcome through the promotion of smarter choices, including a series of awareness and marketing initiatives – such as Workplace Travel Plans – and the development of a consensus in favour of more sustainable transport choices. New forms of participative planning which promote bottom-up consultation may also have an important role to play. To date, these measures have been largely carried out by local transport authorities. There is a case for operators to become more involved, as travel planning is likely to increase their patronage and their revenues.

Tool 7: Decision support tools

Decision support tools such as option generators, transport models and appraisal frameworks may assist in promoting integrated urban transport but they may also provide technical barriers to implementation themselves (Hull & Tricker, 2005). There is a need for action, and the ‘paralysis by analysis’ that has afflicted urban transport for much of last decade needs to be avoided. A priority for the NATA refresh, as well as the revised Transport Analysis Guidance used to take spending decisions, should be to focus on practical recommendations that cities can actually implement.



“The Local Transport Bill is only the first step in delivering integrated transport in England’s major urban areas”

Conclusions and Policy Recommendations

With the exception of London, Britain’s cities are currently stuck on the lowest rungs of the transport ‘integration ladder’. Most cities are currently unable to do more than provide improved information, or minimal integration of services and fares – when they need to deliver fully integrated ticketing, clearer transport governance and better links with land-use and economic development policies.

Over the past two decades, a succession of Transport Acts and White Papers has delivered only incremental improvements to local public transport networks. The existing policy architecture does not enable cities to deliver the level of transport services needed to boost jobs and local prosperity.

The Local Transport Bill is only the first step in delivering integrated transport in England’s major urban areas. While many of the measures outlined in the Bill – ITAs, the opportunity to expand transport authorities’ boundaries and stronger local oversight of bus services – could help improve cities’ economic performance over time, they will prove extremely difficult to implement without a concerted push by city leaders supported by the DfT. Both ministers and council leaders will need to invest serious political capital – and prioritise resources – to ensure take-up of the Bill’s provisions over the next few years.

On the basis of the evidence reviewed above, there is an important economic and social case for pursuing transport integration – especially in England’s largest city-regions, where existing arrangements have failed to deliver transport networks that support economic growth and improved life chances for local residents. Accordingly, this report makes six practical policy recommendations. Some are achievable in the short term – e.g. over the next few years – while others will require a more long-term policy shift:

Short-term measures

Recommendation 1: Develop integrated ticketing schemes together with the private sector

Integrated ticketing across an economic area has been shown to reduce boarding times, thus increasing service reliability and the use of public transport. England’s city-regions, and their transport operators, should partner with private-sector companies – many of which are ready to invest in the up-front capital costs – to overcome the financial and technological barriers associated with the introduction of a common ticketing system.

Lessons should be drawn from the Oyster system in London, as well as on-going work on the Yorcard scheme in South and West Yorkshire, to ensure compatibility with the Integrated Transport Smartcard Organisation (ITSO) standard and value-for-money. The DfT could help to speed the development of integrated ticketing by assisting city-regions with the various legal and competition policy issues.

Together with integrated ticketing, better transport governance, stronger local bus services and greater local control over funding will help deliver improved urban transport systems.



Recommendation 2: Compel city-regions to adopt Integrated Transport Authorities

Following passage of the Local Transport Bill, the Secretary of State should make immediate use of powers to force local authorities in all major city-regions to review transport governance – and to take up the ITA model. Such a move would require substantial governance changes in Manchester, Birmingham, Leeds, Newcastle, Liverpool and Sheffield. We also recommend the inclusion of Bristol and Tees Valley in the first phase of reform.

The Secretary of State should require the new ITAs to demonstrate substantially improved governance and leadership arrangements, take on wider functions, and adopt new boundaries that better reflect the scale of city-regional labour markets – including districts where required. A swift move toward ITAs will prevent cities from getting bogged down by entrenched political interests and ensure a speedy transition to a governance model that facilitates integration and economic growth.

Recommendation 3: Greater focus on urban buses in the Department for Transport

The DfT needs to build on its strong reorganisation, and provide greater political leadership and expertise to help city-regions improve urban bus services. Ministers need to invest time and political capital in buses – as well as the rail system.

The Department should establish a clear point of contact for city-regions seeking to develop either Statutory Quality Partnerships or Quality Contracts for bus services. This would demonstrate a clear commitment to:

- overcome legal and technical barriers to better bus networks
- identify funding sources for enhanced services
- help transport authorities and councils to navigate and overcome the regulatory issues associated with new bus infrastructure
- consider the optimal mix of area-based and route-based solutions
- develop integrated ticketing and improved public transport information, and
- ensure that transitions occur with a minimum level of disruption.

Recommendation 4: Invest more in ‘Smarter Choices’ in major cities

Given the success of travel planning in schools and workplaces, there is a strong case for additional investment in this and other ‘soft’ measures – which help to convince the public that there is a financial and economic pay-off for leaving their cars at home. Ministers could help to enable this by increasing the resources available for travel planning in England’s biggest cities – supplemented by additional revenue funding from councils. Private-sector investment should also be encouraged from operators – who would benefit from increased revenues as people switch to public transport options.

“Given the success of travel planning in schools and workplaces, there is a strong case for additional investment in this and other ‘soft’ measures”



“Re-prioritise transport funding to enable city-regions to spend resources on integrated public transport projects that deliver clear economic and social benefits”

Longer-term Measures

Recommendation 5: Reprioritise existing transport funding

Reprioritise transport funding to enable city-regions to spend resources on integrated public transport projects that deliver clear economic and social benefits. This should include:

- Focusing future rounds of Regional Funding Allocations on major public transport projects that promote integration, rather than on road-building
- Replacing the BSOG with a locally-controlled and deployed revenue subsidy with a greater focus on urban areas
- Exploring the possibility of capital/revenue flexibility at the margins
- Raising the ‘major schemes’ threshold for Treasury approval from £5m to £25m – which would speed up key local transport infrastructure projects. This change would also enable city-regions to proceed with relatively low-cost, but high-impact, integration schemes without having to go through cumbersome central government processes.

Recommendation 6: Increase city-regional influence over commuter rail services

As the rail franchising system is updated over the next decade, the Government should consider ways to:

- Re-focus franchises around city-regional geographies where possible, and
- Restore the statutory link between ITAs and England’s rail operators – giving city-regions the power to require specific commuter rail services.

These moves would incentivise greater integration between local rail services and other modes, and could benefit city-regional economies by promoting more efficient commuting. For public transport to compete on a level playing field with the private car, commuter rail services must be fully linked with local buses, trams, walking and cycling. Where possible, ‘vertical integration’ of rail infrastructure and services at city-regional level should also be investigated.

As noted at the start of this report, integrated transport has long been seen as ‘a bed of nails, a crown of thorns, a booby trap’ – but it need not be any longer. We now have a window of opportunity to promote greater integration in England’s major cities. There is a substantial evidence base showing that better-integrated public transport would bring considerable economic and social benefits to England’s major conurbations. A concerted effort by local leaders and the DfT over the coming months would help our biggest cities to progress up the ‘integration ladder’ – and at the same time improve their economic competitiveness and their residents’ quality of life.



Glossary

BCR	Benefit: Cost Ratio
BSOG	Bus Service Operators Grant (previously known as Fuel Duty Rebate)
DCLG	Department of Communities and Local Government
DEFRA	Department of Environment, Food and Rural Affairs
DfT	Department for Transport
ITA	Integrated Transport Authority
ITSO	Integrated Transport Smartcard Organisation
NATA	New Approach to Appraisal
PTA	Passenger Transport Authority
PTE	Passenger Transport Executive
TaSTS	Towards a Sustainable Transport System

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