Commission for Integrated Transport

CfIT'S INITIAL ASSESSMENT REPORT

ON THE

10 YEAR TRANSPORT PLAN

May 2002

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1 Report Summary and Overall Assessment

THE PLAN (Chapter 2)

1. The Government's Ten Year Transport Plan (10YP) was published in July 2000 for implementation beginning in April 2001. The 10YP was broadly welcomed because it offered a long-term framework for transport policy and this remains the case today. The Plan encompasses and integrates the contribution of all land-based[1] modes, providing a commitment to long-term investment.

2. Detailed development and implementation of the Plan is, however, delegated to and reliant upon a large number of authorities and organisations. There are concerns about the ability or willingness of certain authorities and organisations to implement appropriate policies or schemes within the Plan period, and, consequently, whether the expected outcomes of the Plan are deliverable within the 10 year horizon.

3. The purpose of this Report, prepared on behalf of the Commission for Integrated Transport (CfIT), is to assess the progress made to date in implementing the Plan.

TARGETS (Chapter 3)

4. The 10YP includes a number of targets and outcomes against which the success of the Plan can be measured. Targets include, for example, projected increases in passengers carried by buses and the railways and in the proportion of households in rural areas within a short distance of an hourly bus service. The outcomes are the effect that the attainment of these and the other targets should have on reducing congestion, improving accessibility, improving the environment and increasing social inclusion.

5. The Government lays considerable emphasis on attaining the targets specified in the Plan; for example, the SRA was instructed that delivery of the rail targets is its primary objective. We have some concerns that single-minded focus on a small set of targets could lead to misallocation of resources given that the choice of targets is inevitably incomplete, and in some cases appears inappropriate. Some targets can be improved to relate more closely to the Plan's objectives, by linking targets to specific benefits achieved in terms of congestion or pollution reduction, or by adopting more ambitious and better geographically directed targets. For example, the targets for growth in bus patronage can be disaggregated and made more ambitious. A 50 percent growth in bus patronage should be achievable in London (although the Mayor's strategy only commits to a 40 percent growth), whilst a 10 percent target should apply elsewhere.

6. Omissions in quality of life targets, including ones on urban renaissance, health, social exclusion, access for the disabled, and value for money, need to be addressed, either through supplementary indicators or specific detailed research. Government has resisted calls for targets on the amount of walking, despite the fact that its health targets stress the need for the population to take more exercise. We believe that setting a target for increased walking would demonstrate a greater commitment to reducing car use for short distance journeys.

[1] Aviation and Shipping are important elements of a fully integrated transport system, but they are not covered by the 10YP. It is to be hoped that their role and contribution can be included in future updates of the Plan.

MONITORING (Chapter 4)

7. DTLR has provided us with some information about its plans for monitoring the impact of the 10YP, which will comprise separate internal and external reporting. The external report will comprise a review of the Plan and will be published in July 2002, two years after the publication of the 10YP and just over 12 months into the Plan period. The format of that report is yet to be determined, but it is intended to provide a full report of progress to date.

8. The internal reporting will take the form of a management framework covering the headline results indicated in the 10YP and supporting indicators, and featuring baseline values and the latest results, with room for the addition of milestones and actions. The full set of indicators has yet to be finalised, but the general thrust of the framework is admirable, and the latest version we have seen contains some degree of geographic disaggregation, which we believe is essential to understanding trends. However, we would like to see greater disaggregation of indicators, linked to a better understanding of the manner in which targets are linked to the objectives of the 10YP.

THE EXTERNAL ENVIRONMENT (Chapter 5)

9. Transport is an integral part of the world in which we live; implementation of policies and schemes, and the attainment of targets and outcomes, cannot be viewed in isolation from events outside the transport sector. The last two years have been marked by a series of shocks in this external environment: the foot and mouth crisis, floods, the September 11th attack and subsequent military action, and, indeed, economic growth has been slower than expected. These external factors have affected traffic levels and other transport activities in the short run. However, they do not undermine the basis of the Plan, provided that they do not persist in the longer term and have limited impact on public and private sector funding commitments for transport. Despite these changes in the economic climate, investment levels will need to be, at least, maintained in order to deliver the step change in performance promised by the Plan.

10. Nevertheless, the series of shocks that are most likely to have an impact on the implementation of the plan are those that have occurred within the transport sector, such as the fuel protests, the Hatfield accident and its aftermath, the placing of Railtrack in administration, and most recently the accident at Potters Bar. The consequences of these events in the rail industry and the uncertainties they have engendered for investors and passengers give the greatest cause for concern. Whilst the Plan is predicated upon a fall in fuel prices, the widening disparity between motoring costs and the costs of travel by public transport may undermine initiatives to increase public transport usage.

INITIAL PROGRESS (Chapter 6)

11. It is too early to quantify progress towards detailed targets in full, although there are some encouraging developments, including initial progress towards targets for reductions in localised air pollution, improvements in road safety, growth in light rail usage and maintenance of the strategic road network.

12. By contrast, the rapid growth in rail traffic since the mid-1990s has been set back by the disruption of the network post Hatfield, and this has undermined public confidence in the rail system. Whilst rail patronage is now picking up again, there are longer-term concerns about rail industry delivery and performance. In addition, bus service quality remains unsatisfactory; and local authorities continue to struggle with a backlog of road maintenance, despite considerable increases in funding allocations.

13. It is possible to examine background trends, and we have done this both as an indicator of progress and to provide a baseline for future comparisons. However, at this time, it is also appropriate to identify existing and emerging barriers that will need to be overcome if the outcomes of the 10YP are to be achieved.

POTENTIAL BARRIERS TO THE ACHIEVEMENT OF THE PLAN (Chapter 7)

14. **Finance** is the key element of the 10YP, with a strong emphasis on increasing private finance; of the £180bn projected expenditure on transport, approximately one third, or £56.3bn is assumed to come from the private sector. Uncertainties related to the availability of private finance, particularly as a result of problems in the rail industry, and more generally because of the slow down in economic growth are, therefore, of particular concern.

15. The means of attracting private finance to deliver road schemes is relatively simple and well established. The usual model is a concession on a large independent section of infrastructure, measurable risks associated with capital costs and a defined payment stream derived from shadow tolls or some service related factor. The means of attracting private finance to deliver rail infrastructure schemes is, by comparison, not simple or well established; the infrastructure is (in the main) an integral part of a live system, capital risks can be high, and the defined payment stream is yet to be fully understood. The SRA's Strategic Plan, published in January 2002, identified 'Special Purpose Vehicle' companies to deliver rail infrastructure although these are yet to be tried in practice.

16. Private finance is assumed to make up £2.6bn of total investment on strategic roads; by comparison, private finance is assumed to make up £34.3bn of total investment on railways. Hence, any failure to deliver private finance will clearly have a greater effect on the achievement of the railway targets. Uncertainties are increased by the growing escalation of costs for rail infrastructure projects, which will mean that fewer schemes may be implemented within current projected budgets. Additionally, following the placing of Railtrack in administration, the private sector seems likely to require additional risk premiums. It is to be hoped that an early move out of administration (Network Rail) will help to overcome some of these problems, but both the timing and its effects remain to be seen.

17. There have been some concerns, expressed in the media, that there is an element of double counting in the overall financing of the package. We have identified two potential sources of double counting. The first relates to direct revenue support for private investment and is specifically identified and excluded. The second relates to rail subsidies, some of which may find their way through to private sector investment. The precise scale of double counting from this source could only be identified through a detailed analysis of the accounts of the Train Operating Companies, but is anticipated to be a relatively small proportion of the £11.3bn of public resource spend on the railways.

18. Though we are assured that the forthcoming Government Spending Review will not revise the Plan's broad public spending commitments, this is yet to be tested, and pressure on other sources of expenditure has increased since the Plan's publication. In this light it is encouraging to see that the 2002-3 Local Transport Plan allocation has increased by almost 12% on the previous year. However, the introduction of the Single Capital Pot for local authorities means that transport could soon be competing more for funds with other sectors at the local level. The current emphasis on capital expenditure is appropriate in a period of infrastructure development but, for many new initiatives, there is a long-term revenue implication that must be recognised and secured.

19. Many transport problems, for which road schemes, including motorway widening proposals, had been proposed, were referred to **multi-modal studies** (MMS) for a comprehensive appraisal. CfIT supports the MMS process as a means of delivering integrated solutions, which would be expected to result in decisions that are better balanced across the modes, with greater public acceptability. However, the MMSs are perceived on one hand to be contributing to delays to any transport schemes that may emanate from them, while on the other hand recommending rail schemes for which there is no clear delivery mechanism. The Highways Agency has an allocation of funds within the 10YP to implement the recommendations of the multi-modal studies, whilst there is no equivalent allocation for rail. Indeed the

SRA, in its Strategic Plan, states that the recommendations of the multi-modal studies will fall outside the 10YP period.

20. Most crucially, the recommendations of the multi-modal studies are unlikely to be implemented to any significant degree within the timescale of the 10YP. Whilst the Highways Agency are doing parallel work to assist the studies, schemes cannot be progressed until studies have reported, but the normal approval process must then be followed.

21. **Urban charging schemes** are an important contributor to the Plan's congestion reduction targets (we estimate that 20% to 25% of the target may come from this source). We are concerned that few such schemes are being progressed. There would be greater public and political acceptance if early schemes – the congestion charging schemes in London, Bristol and Edinburgh[2], and the proposals for workplace parking in Nottingham are the most advanced - were seen to be successful. Given the timescales required to develop and introduce such schemes, it seems unlikely that even half the number assumed in the Plan will be achieved within the 10-year period. Clear Ministerial support for first mover cities could reap significant dividends. **Workplace parking charging** is not being taken up to any significant degree, and it is not clear whether this is due to perceptions that it will not reduce congestion, or complexities of implementation. A fundamental review of the factors inhibiting its use is required.

22. The impact of **rail restructuring** on the ability of the industry to deliver is as yet unclear. Recent events have not been conducive to the attraction of private investment, a key element of the plan. The precise structure for the industry and the regulatory arrangements will have a significant impact on future levels of private investment but also the ability to deliver schemes. Whilst the expediency of recent short-term franchises is recognised, the private sector needs long-term franchises in order to realise the investment levels required to upgrade the railways.

23. Government is committed to introducing the **Train Protection and Warning System** (TPWS) across the railway network. This system is expected to reduce the number of accidents from signals passed at danger by 70%. We understand that the costs of introducing the European Rail Traffic Management System (ERTMS) over and above the TPWS would be in the order of £3.5billion. If the cost of ERTMS were invested in additional rail capacity, then the accident savings resulting from attracting traffic from roads would be approximately four times greater than the accident savings on the railways. We also understand that the level of the European Rail Traffic Management System (ERTMS) currently proposed for immediate introduction would reduce the capacity of the rail system. This would result in more traffic on the roads, and could result in many more fatalities on the roads than the small number that would be saved on the railways. Whilst safety on the railways is clearly important to customer confidence, the safety implications across all modes must be taken into account.

24. **Buses** remain the primary mode for public transport trips and the role in overcoming social exclusion has been highlighted in a recent study by the Social Exclusion Unit at the Cabinet Office. The Plan relies on buses to deliver many local transport improvements, but reliability of bus services is still not satisfactory – targets set in 1999 have not been met - and there is obvious concern that improvements will not be delivered. Whilst bus patronage grew nationally over the last year, this was primarily due to London (and a few other specific examples), since bus patronage outside London fell overall. There are indications (e.g. Oxford, Brighton) that bus patronage can be increased through the adoption of a package of integrated measures. In other areas, Quality Bus Partnerships are failing to deliver, with local authorities under-spending on bus priority measures and bus companies, in consequence, unable to deliver improved reliability.

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[2] Whilst Edinburgh is not part of the 10YP, it provides a potentially valuable example. Note also that smaller scale charging schemes are being taken forward in Durham and in the Derwent Valley – whilst these are of local importance, they will not have a significant impact on the national targets for congestion reduction.

25. There is still considerable scope for improving the **integration** of transport services. The imbalance in the efficacy of implementation arrangements for road and rail has been highlighted by the multi-modal studies and Regional Transport Strategies: the Highways Agency has funding and a clear delivery mechanism available for such schemes, whilst the Strategic Rail Authority has a much less clear delivery mechanism and a potential shortage of funding. Whilst, in principle, there is scope to move funding between rail and road, the balance in the 10YP is an important target to maintain if a shift in attitudes and mode shares is ever to be achieved. Many of the strategies emerging from the studies will rely on local action to support infrastructure measures, and there is a need to ensure that such measures are appraised properly and that they can be delivered by the local authorities.

26. The means for providing good quality **travel information** continues to be developed by Government (through Travelline and Travel Direct). However, the private sector has been slow to take forward implementation; transport information – essential for much integrated travelling – therefore remains unsatisfactory and seems unlikely to improve unless a stronger role on implementation is taken by the public sector.

27. **London** is a key part of the 10YP with one third of all bus journeys and two thirds of all rail journeys relating to the capital. We estimate that London also accounts for about one third of the congestion in the country. Improvement of public transport services in London is needed urgently and much is being planned in terms of light rail, intermediate modes and the CrossRail initiatives, but it is unlikely that much of this will be on the ground until the end of the 10 year period. In the shorter-term, the London Bus Initiative is providing some significant improvements. There remains a need for progress with increased investment to improve services on the Underground, improvements which have been delayed by the dispute between Government and the Mayor over the privatisation process. Furthermore, the Mayor's Transport Strategy for London suggests a shortfall of about £500 million a year when spending in the Strategy is compared with that for London in the 10YP. This difference clearly needs to be resolved.

28. Many schemes underpinning the Plan will be held back by **long planning chains**. Whilst Government is seeking to shorten the planning process through the current Green Paper[3], we have concerns that the proposed procedures to abolish structure plans will divorce land use planning from transport at the county level whilst failing to provide a strong alternative at the regional level. Indeed, there is a perception that the current system of **regional planning,** primarily due to its convoluted institutional structure, lacks the teeth and resources to bring about the change in attitudes and policy shifts that are necessary to achieve the 10YP. In addition, the revised procedures in the Green Paper do not appear to get to grips with issues such as the long timescales for ministerial determination.

29. Two areas where we have identified significant potential barriers to use of public transport (with consequent implications for achievement of the Plan) are **disabled access**, which we would urge must be considered in its widest sense, and have targets set and monitored, and **safety and security**, which again should be targeted and monitored. Both have the scope to produce significant benefits in terms of quality of life and social inclusion.

30. Schemes may be held up further by **resource constraints**, in particular the shortage of railway engineers, local authority planners and engineers, and bus and train drivers. These constraints limit the rate of renewal and maintenance of the road and rail networks. Numerous studies are currently under way on skills shortages, sponsored by DTLR and the professional institutions amongst others. However, the timescales required to achieve a significant change may have a serious effect on the delivery of the 10YP.

3 DTLR (2001), Planning Green Paper. Planning: Delivering a Fundamental Change, December.

UPDATING THE PLAN (CHAPTER 8)

31. The development of the 10YP was supported by modelling work, primarily using the National Transport Model. The development of this model, co-ordinated by DTLR, has been a significant achievement. Further work on the model has progressed during the last year. However, there are a number of aspects of the model, primarily related to the sensitivities and the lack of a land-use feedback, that should be further developed. These issues are discussed further in Appendix B.

32. It will be necessary to roll the Plan forward beyond 2010. In doing so it will be important to further the debate on how we pay for the use of roads (to improve the relationship between the prices that transport users pay for roads and the costs that are imposed on themselves and others). This could include the introduction of a nation-wide congestion charging system encompassing both inter-urban and urban networks, as suggested in our recent report on Paying for Road Use[4]. In this regard we welcome the move towards distance-based charging for goods vehicles. New technology may also change the future demands for travel because of increased use of e-communications. Network capacity on both road and rail can be improved by greater use of Intelligent Transport Systems. In the longer term, developments in fuel technology may provide alternative, less polluting, fuel sources.

OUR OVERALL ASSESSMENT

33. The 10YP remains an appropriate way forward for transport in England, to meet the needs of travellers, the environment and business, whilst preserving and improving quality of life for all. The Plan contains vision and some aspirational targets. Our initial assessment indicates that, on current progress, there is cause for concern that the Plan will not be achieved. Courage and strong political leadership, at all levels, are needed to deliver all of the interlocking facets of the Plan to ensure that our future transport system is truly integrated and fit for the nation's needs.

34. We are now twelve months into the implementation period of the 10YP, which was published in July 2000 and covers the ten years from April 2001. It is too early to provide a full statistical analysis of whether the Plan is being implemented successfully, and whether the desired outcomes are being achieved. However, we have reviewed progress on a wide range of issues covered by the 10YP and, whilst we have found some positive indications, the overall conclusion is that the intended outcomes of the Plan will not be met without addressing a number of issues.

35. Greater action is required by many of those involved and we have summarised what we judge to be the most critical actions in the panel below.

The early introduction of the successor to Railtrack (Network Rail), and of the rail industry more generally, is essential to restore the confidence of private investors, the travelling public, and rail freight users. The Plan is crucially dependent on considerable investment from the private sector, and Government must keep a watchful eye on the degree to which that is realised, and be prepared to intervene to ensure the full implementation of the 10YP.

Government needs to be clear on the message that an integrated policy for our major cities is likely to include congestion charging in conjunction with improved and affordable public transport.

Government also needs to provide the planning processes and institutional structures to support faster but well balanced planning and implementation of integrated policies at regional and local level. We do not believe that these will develop naturally from the revised procedures proposed in the Planning Green Paper.

Local authorities and bus companies must widen the coverage of Quality Bus Partnerships as part of integrated measures to manage demand and improve quality of service, including information provision, for all sections of the community.

Providers and transport operators must also play their part, both in implementing the measures and in overcoming barriers to implementation.

All those involved in the delivery and implementation of the 10YP need to concentrate on developing the skills and resources that will be necessary.

[4] CfIT (2002), Paying for Road Use, February.

2 THE PLAN

2 The Plan

The Government's Ten Year Transport Plan was published in July 2000[5], and covers the period from April 2001 to April 2011.

The Plan is intended to "deliver the scale of resources required to put integrated transport into practice", and to do this by providing a framework that will bring greater certainty and coherence to decision-making. In this regard it is important to recognise that it is essentially an investment plan, with detailed planning and implementation delegated to other agencies. Key emphasis is on "tackling congestion and pollution", and many of the Plan's outputs are defined in these terms. However, the Plan also aims to contribute to the renaissance of cities and revitalisation of the countryside, to support regeneration, and to encourage economic growth. These wider outcomes are not so directly reflected in targets, but clearly carry weight in the Government's transport thinking.

The Plan aims to reduce traffic congestion from its present levels by 2010 by means of improvements in public transport, congestion charging, and enhancements to the road network. The environment will be improved as a result of better air quality. The Plan aims for a 40 per cent reduction in the number of people killed or seriously injured in road accidents, while public transport safety will also be improved, in particular halving accidental fatalities per train km on the railways.

The Plan reiterates Government's commitment to improve the accessibility of public transport for disabled people by making its provision within new investment a condition for public spending[6]. Government also commits to reduce social exclusion more generally through increased accessibility.

Key mechanisms to achieve these aims are:

- **Integration**, between different transport modes, including development of integrated ticket information and booking systems. Multi-Modal studies under way or planned consider the contribution that all modes of transport and traffic management might make, aiming to take a comprehensive view of solutions in particular corridors or areas. Decisions will then be taken through Regional Transport Strategies as part of Regional Planning Guidance.

- **Partnerships**, both between central and local government, and between the public and private sectors. Partnerships play a key role in encouraging private sector participation and disciplines in transport investment, but are also seen as ways to accelerate integration, and to speed up the introduction of new technologies.

- **Investment**, is a major part of the Plan in regard to rail, road and local transport. The Plan envisages that £121 billion of public and private capital will be invested over the ten years, an increase of nearly 75 per cent in real terms on the previous decade.[7] Of the total, £64.7 billion would come from the public sector, and £56.3 billion from the private sector. This, combined with a further £58.9 billion public sector resource expenditure (including £2.7 billion net revenue from local charging schemes) means total expenditure on transport over the Plan period of £180 billion. The investment budgets allocated over the various areas that are discussed in the Plan is shown in Figure 2.1. Figure 2.2 shows the rate of investment during each of the years in the Plan period.

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[5] DETR *Transport 2010: the 10 Year Plan* July 2000.

[6] 10YP, para 6.5

[7] Public sector investment increases by 31 per cent in real terms, with the remainder being made up of increases in private sector investment. This increase is partly a result of significant fiscal tightening in the late 1990s: the average rate of public sector investment levels for the 10 Year Plan period are actually the same, in real terms, as during the first half of the 1990s, though levels of private sector investment during that time were less than 10 per cent of recent levels.

- **Local charging schemes** in London and other major urban areas, to ensure more efficient use of road space. The Plan assumes that by 2010 eight of the largest towns and cities in England besides London will have introduced congestion charges, while a further 12 will have brought in workplace parking levies. Revenue, at least in the early years, will be retained by the local authorities implementing the schemes as extra expenditure, which is essential if they are to obtain a worthwhile net benefit from such schemes. It is to be hypothecated to spending on local public transport.

Figure 2.1: Investment Envisaged under the 10 Year Plan by Sector

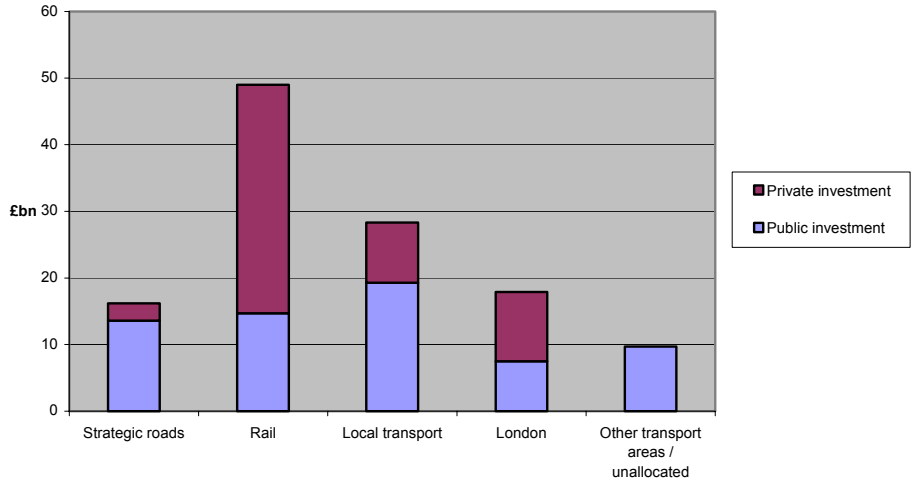
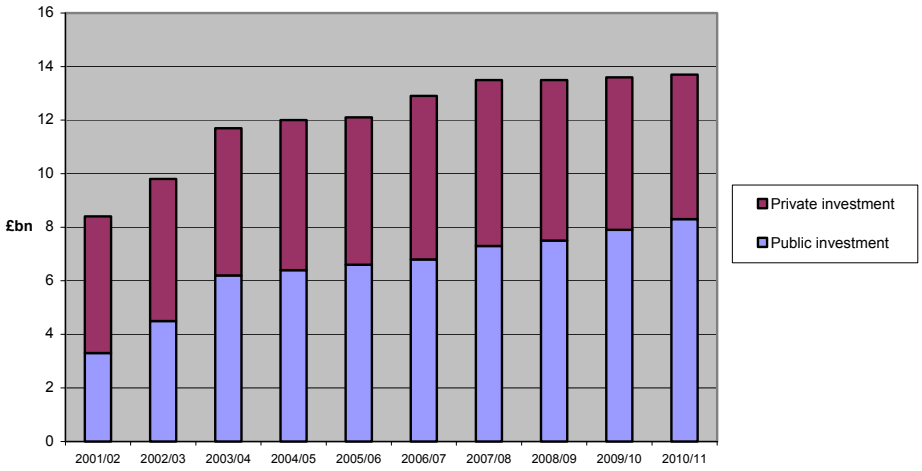


Figure 2.2: Rate of Investment Envisaged under the 10 Year Plan



The Plan places a major emphasis on the **rail sector**, with a projected 50 per cent increase in rail passenger-kms overall, faster journey times and an 80 per cent increase in InterCity patronage. The Plan also targets an 80 per cent growth in rail freight by 2010. The Plan includes total spending of £60 billion on rail[8], with large scale investment in upgrading and expansion of the network, including completion of the Channel Tunnel Rail Link, major enhancements to the West and East Coast Main Lines, other major schemes including Thameslink 2000, enhancement of rail freight links to ports, and complete installation of the Train Protection and Warning System across the network, with full automatic train protection on higher speed

[8] A further £4.5 billion of public sector expenditure has been promised to the railways, to support the cost escalation on existing upgrades and to assist in attracting private sector finance. This consists of £2.3bn of previously unallocated expenditure within the 10YP budget, and an additional £2.2bn increase in the budget.

lines and a promise to implement the recommendations of the Cullen report on rail safety.

Of the original £60 billion of rail spending, £11 billion would consist of current account public spending, mainly support for passenger services, £15 billion of public sector investment, and £34 billion of private sector investment. The SRA, the successor to Railtrack and the Train Operating Companies are charged with delivering these targets.

There have been some concerns, expressed in the media, that there is an element of double counting in the overall financing of the package. We have identified two potential sources of double counting. The first relates to direct revenue support for private investment and is specifically identified and excluded. The second relates to rail subsidies, some of which may find their way through to private sector investment. The precise scale of double counting from this source could only be identified through a detailed analysis of the accounts of the Train Operating Companies, but is anticipated to be a relatively small proportion of the £11.3bn of public resource spend on the railways.

Spending on **roads** is to total £59 billion. Specific schemes will be identified through the Multi-Modal Studies programme, but the resources provide for up to 360 miles of the motorway and trunk road network to be widened. The Plan also provides for completion of 40 trunk road schemes, around 30 trunk road by-passes, and widening and junction improvement schemes to tackle bottlenecks and improve safety. The Highways Agency is charged with delivering these outputs, drawing in private sector finance as appropriate. The funds also include expenditure for improved road maintenance, and investment in local roads including those in London.

In **towns and cities** the Plan anticipates improvements in public transport systems, with better quality bus services, major new bus infrastructure, new light rail lines, extra park-and-ride schemes, and better links to isolated urban estates. These enhancements would be complemented by improved local traffic management, major local road schemes including local by-passes, and congestion charging in 20 of the largest towns and cities. The Plan envisages that these measures would result in a significant fall in traffic congestion in the largest cities, and reductions in congestion growth in the smaller ones, together with safer environments for walking and cycling, and improved air quality. Local authorities, with funding through the LTP process, and drawing in private finance through quality partnerships, are charged with delivering these targets.

London, with one third of the nation's bus trips, two thirds of the nation's rail trips and (we estimate) one third of the nation's congestion, is clearly a major element in the 10YP. The 10YP identifies a total of £25 billion of expenditure for London transport, made up of £8 billion of public investment, £10 billion of private investment, and £7 billion of Public Resource Expenditure. This is to deliver:

- increased public transport capacity and efficiency to cater for London's growing economy and to reduce overcrowding;
- reduced road congestion through improved public transport and a central London congestion charging scheme;
- improved access to jobs, regeneration areas and key local facilities to promote social inclusion;
- a reduction in road accidents and improved environment through town centre and local area improvements;
- better door-to-door journeys for all – including pedestrians and cyclists – through measures to improve safety, personal security, accessibility, integration and information.

Both Underground and commuter rail passengers would benefit from improved quality of service, while there would be substantial investment to improve bus and rail services and provide the infrastructure for a road congestion charging scheme in Central London. The Mayor, in consultation with the Greater London Authority and the 33 London boroughs, is charged with delivery of the 10YP in London through Transport for London (TfL), and the Mayor has produced a strategy for transport in London. However, the strategy highlights a number of differences from the 10YP, both in approach and in funding levels. We return to these issues in Chapter 7, since they may create barriers to the implementation of the Plan.

In **rural areas** the Plan expects there to be improved access to public transport, more flexible transport services tailored to local needs, including those of people with disabilities, better maintained and safer roads, and some major local road schemes. Again these are the responsibility of the local authorities.

The 10YP addresses all land-based modes of transport, but does not cover **shipping or aviation**, both of which could have a major influence on congestion and pollution. Short sea shipping and use of the major inland waterways could play a part in removing freight from the roads, and should be considered an integral part of the transport system, particularly with respect to connections to Europe. The role of the rapidly growing aviation market is much more complex, with its combination of hubs, inter-lining and regional airports. In addition, air travel is the most polluting mode, but airport and related developments add significantly to the economic activity of their localities. The White Paper on aviation is expected in the Autumn, and we assume that it will address these issues and be accompanied by both infrastructure and amelioration measures to ensure that the growing demand for air travel can be integrated within a sustainable future.

3 TARGETS

3 Targets

The Plan contains a set of specific targets and indicators. The progress made so far in meeting these targets is considered in Chapter 6. Meantime, Table 3.1 summarises the main partnership bodies, investment levels, key intermediate outputs, and target final outputs from the Plan. In addition, the Plan sets out the following wider outcomes:

- to promote sustainable development;
- to sharpen the competitiveness of British industry by opening markets, stimulating competition and supporting London's global status;
- to promote the renaissance of towns and cities by supporting regeneration programmes;
- to enhance access and opportunity in rural areas;
- to reduce social exclusion, by improved access for the disabled, and improving access to jobs for all;
- to lessen the impact of transport on the environment at both local and global levels by getting more freight by rail, cleaner and more efficient vehicles and less car-dependency.

The targets identified in the 10YP are essentially headline indicators. Inevitably, such indicators provide only a partial picture of the transport sector, and care is required to ensure that they do not lead to a misdirection of resources, as efforts are made to meet the targets at the expense of other aspects that are not measured. It is important that CfIT monitors the Plan by considering a wide range of indicators and issues, in order to highlight aspects of policy that are in danger of being neglected. To some degree, the targets can be better directed through increased disaggregation, and we make the following comments with respect to the Plan's indicators, given in Annex 2 of the Plan document.

- The targets to increase both total rail passenger km by 50%[9] and total rail freight traffic by 80% are clearly related to the Plan's aims and objectives, but could be achieved to a significant degree by replacing short distance trips by longer distance ones. We believe that a careful review is needed of the rail targets in the Plan to provide targets that are much more closely related to the benefits to be achieved. This would mean a switch away from overall traffic targets and towards targets for specific types of traffic growth that could alleviate road congestion (the Plan's statement that rail improvements should reduce road congestion by 3 per cent is a useful basis here), reduce air pollution and noise, and reduce greenhouse gas emissions. Passenger targets should be related to transfer of passenger traffic from congested roads and environmentally-sensitive areas, and these targets should then be used as one of the criteria in the SRA's decisions about refranchising.
- The target to increase **bus passengers** is more helpful, though again of real interest are those trips which are transferred from car travel, certainly as opposed to attracting walk or cycle trips to use the bus. However, increased bus use in low income areas or through improved access for the disabled can play a major part in increasing social inclusion. As London has a target for increasing bus patronage by 50 per cent, the target implies a fall in patronage for areas outside London of 10 per cent. This **target lacks ambition** and is inconsistent with the role of buses in the Plan's aim to deliver an integrated transport strategy. We believe it should be

[9] The SRA Strategic Plan indicates that the passenger target of 50 per cent increase is now considered to be unattainable, referring to a 40 to 50% increase. No mention is made of the effect on the 80% target for Inter-City traffic, but it is clear that the Strategic Plan places most emphasis on these movements.

replaced by a target of 10% for areas outside London, increasing the overall target to a 20% increase.

- The target to increase **light rail use** encourages implementation of new schemes irrespective of the population they serve or the degree to which they add to the benefits that can be achieved through improved bus provision. However, it can reasonably be expected that the efficacy of schemes will be assured through the funding process. Nevertheless, the target is unchallenging to the extent that it may be met if only around half of the 25 new schemes anticipated by the Plan are implemented. It is crucial that this major programme of infrastructure results in popular and attractive services.

- The target to increase **cycle use** is challenging. Evidence from Europe indicates that accident rates for cyclists decrease as cycling use increases, as drivers become more aware of cyclists. However, there is a need for continued vigilance with regard to safety for these most vulnerable of road users.

- As **congestion** is difficult to measure, is not well defined, and has a variety of characteristics not captured by a single indicator, it will be useful to have a combination of indicators to determine whether congestion reduction targets are attainable. These should include an indicator of journey times and their variability for a selection of typical journeys.

- **Traffic intensity** describes the relationship between traffic growth and GDP growth and, in the past traffic growth has been strongly correlated with growth in GDP. Growth in GDP is an indicator of economic well-being and, to some degree, quality of life and is generally welcomed. Consequently, there is a desire to reduce the seeming dependence of traffic growth on GDP growth. Initial analysis we have undertaken (see Appendix A) indicates that traffic intensity is likely to fall over time as car ownership reaches a stable level and congestion becomes a limiting factor.

- The targets for **greenhouse gases** could be taken to relate to many sectors including transport. We would anticipate that DTLR would clarify the contribution of transport to that target in its review of the 10YP. However, the targets are seriously incomplete within the transport sector because they do not include emissions from air transport.

- It is right that the headline indicators for **safety** include a separate target for child accidents; however the disproportionate numbers of other vulnerable road users involved in accidents - 29 per cent of all those killed and seriously injured in 2000 - remains hidden and in danger of neglect. It will be important to consider pedestrian and cyclist accidents per km separately, particularly given the target for increased cycle use, for which a comparable target of a 50 per cent reduction is appropriate.

- The target for the provision of **rural bus services** is vulnerable to measurement problems and possible manipulation. It does not differentiate between different types of rural area[10], within which there is a great deal of variation in the types of service that are appropriate. It does need to be seen in the context of the demand for rural travel: without any reference for the value for money offered by new rural services, it is not clear whether rural bus grants are being appropriately spent.

- As discussed in the previous chapter, certain important issues, including **mobility in rural areas**, are difficult to measure and so do not have amenable headline indicators. These include the extent to which an **"urban renaissance"** is achieved, the **health impacts** of transport, the level of **accessibility for people with disabilities** and the extent of other forms of **social exclusion** resulting from inadequate transport provision.

10 CfIT (2001). Rural Typology

Their omission as headline indicators means that they could be neglected, even though they relate to the higher order outcomes of the Plan. It is therefore important that these aspects of the Plan are monitored, and CfIT is working with DTLR to define suitable measures.

- The DTLR announced in April 2002 that year-on-year improvements in bus passenger information would be a new performance target for the bus industry.

With regard to **health impacts**, Government does have specific targets, and it will be important to establish the link with transport indicators. In the UK, coronary heart disease (CHD), strokes and related diseases are a major cause of early death, contributing towards 66,000 deaths each year for people less than 75 years of age [11]. Obesity contributes substantially towards human cost, as it causes the onset of disease and premature mortality. Approximately 1 adult in 5 is obese in England and this number has trebled over the last 20 years [12].

Inactivity, coupled with a poor diet is leading to this upward trend in rates of overweight and obesity. This has serious financial consequences for the National Health Service (NHS) and the economy in general. Obesity has contributed to 18 million sick days a year and 30,000 deaths a year resulting in a loss of 40,000 working years[13].

The Government has proposed a number of initiatives to prevent CHD and obesity, particularly through school education and the promotion of healthy eating and physically active travel and recreation. The *Saving Lives: Our Healthier Nation (OHN)* White Paper was published by the Government in July 1999. The aim of this strategy is to improve health and reduce the health gap in the UK and consequently, prevent up to 300,000 untimely and unnecessary deaths by 2010 [14]. The main aim of this strategy includes reducing the death rates from cancer, CHD and strokes, accidents and mental illness. In relation to CHD and strokes in particular, the aim is "*to reduce the death rate in people under 75 by at least two fifths*"[15].

In the light of this evidence, the absence of a **target for walking**, which would fit well with the desire to switch short distance trips away from the private car, is all the more surprising. Walking is both a safer mode of travel than cycling and is more readily available as an alternative to car for the majority of the population. We will seek to define suitable targets, which may need to be disaggregated by type of location, age group and trip purpose to be meaningful, but which must also be amenable to monitoring.

11 Our Healthier Nation (December 2001), www.ohn.gov.uk/ohn/priorities/heart.htm

12 op cit, 10YP.

13 op cit, 10YP.

14 Our Healthier Nation (December 2001), www.ohn.gov.uk/ohn/intro/htm

15 op cit Our Healthier Nation. www.ohn.gov.uk/ohn/priorities/heart.htm

Table 3.1: Summary of 10 YP

	Railways	Strategic Road Network	Local Transport	London
Partnership bodies	Strategic Rail Authority; Railtrack; the Rail Regulator; Train Operating Companies; freight operators.	Highways Agency	Local Authorities, PTAs / PTEs, Regional Planning Bodies, Regional Development Agencies	Greater London Authority and the Mayor of London; London Underground; DLR; Croydon Tramlink; bus operators
Investment	£14.7 billion public investment; £34.3 billion private investment	£13.6 billion public investment; £2.6 billion private investment	£19.3 billion public investment; £9.0 billion private investment	£7.5 billion public investment; £10.4 billion private investment
Key intermediate outputs	Passenger rail franchises awarded for around 10 to 20 year periods; completion of certain major rail projects; capacity enhancements; improved infrastructure and rolling stock; train safety system	Added capacity for congested corridors, targeted widening of 360 miles of the strategic road network; bypasses; junction improvements; smarter road network management.	25 more light rail lines; bus priorities, and park and ride schemes; safer walking and cycling routes; 200 local road improvements. extension of rural bus subsidy grant; extension of fuel duty rebate.	Road pricing; more capacity and fewer delays for the Underground through PPP; higher standards of bus services on all major routes; certain major investment schemes.
Target outputs	50% increase in passenger km overall and 80% increase on Inter-City routes; lower fares in real terms; improved journey time reliability and less crowded trains; improved information; halve the number of fatal accidents per train km; improved customer satisfaction; 80% growth in rail freight.	Reduce congestion 5% below current levels; high quality of road maintenance; 40% reduction in the number of people seriously injured or killed in road accidents; reduced emissions and noise levels.	Eliminate backlog in road maintenance; more reliable bus services supported by customer satisfaction surveys; 10% increase in bus journeys; more fare reductions for elderly and people with disabilities.	50% increase in bus passengers into Central London; 10% reduction in journey times; 15% reduction in traffic congestion across London; reduced crowding on Underground and commuter rail services.

4 MONITORING

4 Monitoring

The Plan itself acknowledges the role of **monitoring**, and stresses the importance of monitoring investment by major transport organisations. It also indicates that the Government will review the Plan from time to time. Indeed the present report is part of this process, since CfIT were charged to provide independent scrutiny by reporting regularly on progress, and identifying further policy measures to help secure the Plan's objectives.

As part of this exercise, we have reviewed the data, plans, and research efforts available from key players in the transport sector, including DTLR, the Cabinet Office, the Strategic Rail Authority, the Association of Train Operating Companies, Railtrack, the Highways Agency, Transport for London, the Confederation of Passenger Transport, Local Government Association, the Freight Transport Association. We have determined that for some inputs, outputs or outcomes there will be widely-accepted indicators that give a clear picture of progress. But for others, standard indicators either do not exist or may not give a clear enough picture of progress.

DTLR has a number of established monitoring activities provided by its Transport Statistics Division[16] and is also engaged in several streams of activity more directly related to the 10YP. The Department has recently made available its plans for monitoring the 10YP, which has two streams of activity: the first consists of a framework that will be used internally to monitor progress on a quarterly basis; the other is an external progress report, published on an annual or biennial basis, the first expected in July 2002. We understand that the contents of this external progress report have not been finalised, but it is expected to provide a comprehensive report on progress in the first year of operation of the Plan.

The internal monitoring arrangements are based on a management framework of key indicators. It is recognised that outcomes are difficult to assess in the short-term, and it therefore concentrates on inputs and outputs, with the expectation that outcomes will be measured in the later years. The framework also contains proposals for milestones, but is cautious about attaching targets to those milestones. We can understand this reticence, given the difficulties of forecasting outcomes and their timing, and the greater the disaggregation the greater will be the error associated with the forecast. However, in our view, if the 10YP outcomes are to be achieved, there will be a need to ensure that certain actions have been implemented by specific points in the period, and these should be identified. To take a particularly pertinent example, if only one or two urban congestion charging schemes were to be implemented by 2005, it would be unlikely that the remaining 6 or 7 assumed in the Plan could be implemented by 2010.

Specific issues which we believe would add to the DTLR framework are:

- the need for more geographical disaggregation (e.g. London, Mets and Shires), such as we have referred to earlier in relation to the differential performance in relation to bus patronage;
- the need for supplementary monitoring on a number of issues, such as congestion, to better illustrate the effects on the travelling public and the contribution to policy outcomes[17]. Particular measures[18] might include a basket of trips or a league table of worst congestion spots, both of which could be monitored on a regular basis;

16 See for example Transport Trends DTLR March 2001.

17 The Motorists' Forum report highlights findings from DTLR research of public scepticism about the use of measurement (of congestion) as a substitute for action.

18 CfIT is reviewing suitable measures with a view to producing regular reports.

- additional indicators to cover issues such as social exclusion, disabled access, health implications of changing transport use, urban renaissance, integrated transport information.

The impact of transport on social exclusion is currently[19] being addressed in a study undertaken for the Social Exclusion Unit in the Cabinet Office, through a series of five case studies of how access can be improved in particular areas. Once that study has been completed, DTLR should build on the evidence to define suitable measures of social exclusion that can be monitored on a regular basis. This will be reviewed as part of CfIT's monitoring programme.

More general observations from our investigation of monitoring activities are:

- indicators are assuming a more prominent role in the management of many of the organisations involved with implementing the 10YP. For example, indicators are central to APRs produced by Local Authorities, much of the work of the SRA and are shaping approaches in parts of TfL[20]. The better use of indicators is being studied by ATOC to increase its effectiveness;

- there is a common recognition of the positive and negative impacts of the use of indicators. The growth targets of the Directions and Guidance for SRA have stimulated activities, although their narrowness has been noted by a number of commentators. For example, policies aimed at increases in off-peak travel on the South East commuter rail network would be one means of achieving SRA and 10YP passenger targets, but only matching SRA and not necessarily wider 10YP objectives. The SRA Strategic Plan does, in fact, indicate a concentration on the main Inter-City routes, and the relief of congestion on London commuter routes.

- the impacts on different social groups are an important aspect of TfL's presentation of the effects of the Mayor's Transport Policy to Londoners, that go some way to incorporating social exclusion effects.

- indicators have a significant part to play not just in monitoring the 10YP, but as a diagnostic tool to identify where additional action is needed. For example, the SRA uses but does not publish, indicators of constraints on implementation and action, and TfL has indicators of 'causal chains';

- the Highways Agency Business Plan[21] sets out both indicators and targets for how it will deliver reductions in congestion and improvements in safety over the next three years, within the context of the 10YP;

- there is a general interest in the establishment of monitoring systems which can help overcome some of the information boundaries within and between organisations, even though commercial sensitivities must be respected. For example, the Road Liaison Group, which brings together local authorities, HA, and DTRL representatives is taking responsibility for the set of Road Performance Indicators that have recently been discussed and agreed. The different elements of the rail industry (SRA, Railtrack, and ATOC) were each aware of the need for better information across the industry although negotiating positions often worked against this.

European experience in respect to monitoring can be drawn from the Ministry of Transport in the Netherlands. The Netherlands has one of the most advanced national planning systems and has accumulated valuable experience in the monitoring of plans, which has highlighted the need for policy makers to understand and appreciate indicators and their uses. The most recent publication draws back from the extensive use of targets and concentrates more on indicators of

[19] The results of this study have just been published, but we have not had opportunity to assimilate those results fully at this stage.

[20] For example, *Best Value Performance Plan* TfL March 2001

[21] Business Plan 2002/03. Highways Agency.

progress[22]. The remaining targets are on safety and the environment linked to congestion. Whilst the report calls for greater use of outcomes rather than outputs, the actual indicators suggested concentrate on immediate transport outputs.

We conclude from our review on current UK work and overseas experience that there is a need for greater cross-modal and cross-organisational perspective in reviewing progress with the 10YP and encouraging integrated transport. CfIT can add value through encouraging the development of a monitoring framework that:

- ensures consistency between transport modes in the indicators that are used, for example, journey-based and quality of service indicators;
- presents attitudinal and subjective indicators in association with directly observed, quantitative indicators. For example, indicators of driver and passenger attitudes towards congestion and overcrowding set alongside recorded levels of these parameters. Similarly, attitudes towards locational characteristics set beside figures on accessibility changes for urban regeneration areas;
- ensures the indicators that are used are the ones that can aid policy decisions, for example, indicators of constrained key resources.

We believe that the general level of support that exists for the 10YP provides a basis on which to make progress in making information more accessible. However, additional work will be needed in the following areas of monitoring:

- lead, lag, and constraint indicators that aid policy decisions, and have relevance to topic areas of urban renaissance, environment, and freight traffic intensity**.** Typical such indicators include, planning approvals (lead), land use and economic changes (lag), availability of skilled staff (constraints). For example changes in land-use patterns will take longer to materialise because there are many historic permissions that have still to work their way through the system;
- indicators that can monitor light rail, bus, and slow travel modes in a coherent way. The monitoring of light rail and bus is fragmented. The new work of TfL on monitoring walk and cycle modes should be noted and its potential assessed**;**
- indicators that provide strong links with modelling as a means of obtaining mutual benefits[23]. Monitoring offers data inputs for exploitation by modelling, while the modelling can calculate estimates of indicators, for example whole journeys, which may be difficult to measure. The time-varying information from the monitoring over time is relevant to enhancing the dynamic aspects of modelling, which is a current general weakness.

We endorse the current research work on monitoring congestion by DTLR, HA, and TfL and on social exclusion by the Cabinet Office and will continue to monitor progress in these areas. There is not agreement on specific indicators for these areas, but reliance on one indicator is generally seen as insufficient.

The ideas advanced by the Motorists' Forum to improve the measurement of congestion are supported, and we consider that measurement and monitoring of congestion should be based on a range of measures. We will be bringing forward specific proposals in the near future.

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[22] *To Measure = To Know" Transport Policy Monitoring in the Netherlands* internal paper from AVV Research Division, Dutch Ministry of Transport (Rijkswaterstaat) October 2001. Reflects 'Signals Report 2000' published in Dutch by AVV February 2001.

[23] This is particularly relevant for the post implementation evaluation of road, rail and LRT schemes, both to understand the impacts of the scheme and to improve modelling techniques for subsequent scheme appraisal

Our further work on monitoring will concentrate on the following areas:

- further scrutiny of DTLR's monitoring framework and associated indicators and milestones, as well as the results of any modelling sensitivity tests which can be made available;
- progress of schemes: local charging initiatives, trends in local transport plans and progress on their delivery as reported in Annual Progress Reports, progress in the development of strategic infrastructure projects; these will be related to assumptions given in the Plan and established milestones where these are available;
- levels of finance allocated to different areas of transport relative to projections given in the Plan, and changes in overall cost estimates;
- initiatives to reduce established barriers: of particular interest will be developments in rail restructuring; other areas to consider are developments in the bus industry structure; initiatives to improve the planning process; and resource constraints;
- transport indicators of outcomes relative to the aims of the Plan; a range of indicators will provide a more complete picture than that provided by headline indicators alone.

5 THE EXTERNAL ENVIRONMENT

5 The External Environment

The two years since the publication of the 10YP have been dramatic times. Business confidence and the tourism industry were harmed by the attacks in America on September 11th. At home the rail crash at Hatfield in October 2000 led to severe disruption of rail services, while Railtrack was placed into administration early in October 2001.[24] The loss of confidence in the rail industry and uncertainty about its future structure could provide a serious threat to the 10YP which we consider in more detail in Chapter 7, where we deal with barriers to implementation of the Plan. Foot-and-mouth disease had a severe impact on the economy of the countryside, and on tourism and travel more generally. Serious flooding increased both road and rail maintenance costs. Road traffic was affected by the fuel price protests in Autumn 2000, and in turn the Government reacted with changes in fuel tax levels. The Government had already abandoned the fuel duty escalator, a central plank of its original policy to deal with greenhouse gas emissions from transport, in March 2000.

The European White Paper on Transport[25] sets a similar policy framework to that of the 10YP, based on the impacts of congestion and pollution, but with a stronger emphasis on long distance travel. Charging for the use of infrastructure, through the internalisation of external costs, is a key part of the policy, as is the 'harmonisation' of fuel duties and competition on the railways. Whilst policy implications are similar to those in the UK, it remains to be seen whether implementation will take place at similar rates, or whether European directives will influence implementation in member states.

The Plan assumes annual **UK economic growth** of 2.5 per cent between 2000 and 2005. Although there has been evidence of some slow-down, in part as a result of the September 11 attacks, real GDP did still grow by 2.2 per cent in 2001. In April 2002, the Treasury comparison of 22 independent forecasts (all updated in April) showed average real GDP growth forecasts of 1.9 per cent in 2002 and 2.5 per cent in 2003.[26] In its latest economic outlook, the OECD expects the UK economy to grow by 1.9 per cent in 2002 and 2.8 per cent in 2003.[27] These forecasts suggest that the slowdown will be limited, with economic growth fully recovering in 2003. There is therefore no evidence that the long-run growth of the UK economy, which averaged 2.5 per cent per year from 1960 to 2000, will be impaired, though a few years of slower growth might require some revisions of the Plan's forecasts and targets.

The 10YP expects that **motoring costs** per km will fall by 20 per cent in real terms between 2000 and 2010, mainly because it expects the price of oil to fall from $28 a barrel to $16 a barrel and that there will be improvements in vehicle fuel efficiency. So far there are no indications that this reduction will not occur: we estimate that the real cost of motoring has fallen by 4.7 per cent in the two years from April 2000 to March 2002. Car purchase costs in the UK came down sharply in 1999 and 2000, largely due to regulatory activity, and since then have stabilised.

The main uncertain factor is **fuel prices**. Figure 5.1 shows pump prices at constant price levels from 2000. Prices have drifted down since their peak levels of mid-2000. But OPEC successfully kept the oil price close to its $25 a barrel target until September 11th 2001. After the attacks, oil prices fell to below $20, although from February they recovered and reached $25 again by the end of March 2002.[28] Long-term trends in the price of oil are difficult to predict, but if OPEC does succeed in securing $25 a barrel until the end of the decade, and real levels of duty remain

[24] These rail issues are, of course, part of the internal transport sector, but are of such importance that they need to be set in this overall context, as do the fuel price protests.

[25] European Transport Policy for 2010: Time to Decide

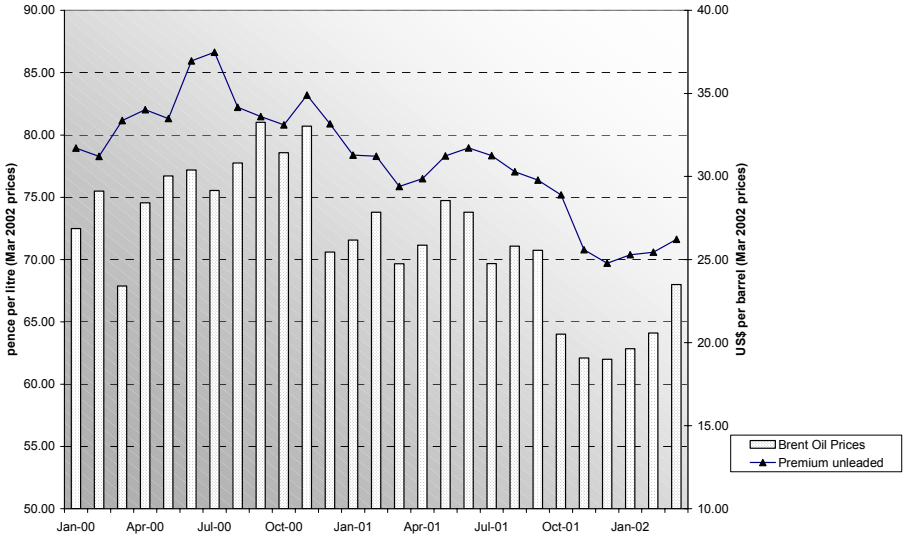
[26] HM Treasury (2002) *Forecasts for the UK Economy – A Comparison of Independent Forecasts* (April).

[27] OECD (2002) *Economic Outlook no. 71* (April).

[28] It should be noted that in Figure 5.1, monthly averages are shown; the average price for March is below the level reached by the end of the month.

at the present levels, then this could depress car traffic growth over the 10YP period by some 3 per cent.

Figure 5.1: Fuel and Oil Prices from 2000 (at March 2002 price levels)



The evidence certainly supports the view that traffic levels *will* be affected by fuel prices. Road traffic has grown slowly over the last few years, and Stephen Glaister has argued that this was primarily due to increases in pump prices as a result of a combination of increases in crude prices and the former fuel duty escalator: "the evidence on traffic is consistent with the view that the government did indeed manage almost to halt traffic growth over a period of two years or so".[29] In the last year, after adjusting for the impacts of the petrol price protests and the foot and mouth disease, traffic growth has been low. In 2001, the underlying growth in traffic is estimated at about 1 per cent with a rise in car traffic of about 1.5 per cent. Motorway traffic was some 3 per cent higher; but goods vehicle traffic levels were about 1 per cent lower than they had been a year before.

Other long-term trends, which will have some effect on the ability to achieve the 10YP, are those towards the centralisation of services provided by the National Health Service, Post Offices and Education Departments and the relaxation of school catchment areas. All will tend to require additional travel, and a fully integrated approach to service provision would require decisions by these authorities to be based on an appraisal mechanism that takes heed of the implications for transport and the environment.

Despite the eventful two years since the Plan was published, **we do not believe that, with the exception of fuel prices, events external to the transport sector in this period pose a serious threat to the Plan**. Economic growth is cyclical, and there is no evidence that the long term assumed growth rates will not be achieved. Foot-and-mouth should be a one-off event, and whilst flooding risks could increase in the next ten years as a result of climate change, we do not perceive that this will have a serious impact on the Plan.

The one issue that we would highlight at this stage is the effects of fuel prices, and the relative change between rising public transport prices and falling motoring costs over recent years, which has been exacerbated by the abandonment of the fuel duty escalator. If this differential change is allowed to continue, it may seriously damage initiatives to change behaviour towards greater use of public transport.

[29] Stephen Glaister *Transport Policy: Retrospect and Prospect* Lectures on Regulation, 2nd October 2001, p.9.

The impact of the problems on the railways, of which Hatfield[30] was much more a manifestation than a unique external event, and which contributed to Railtrack being put into administration, is another matter. We view these problems as being primarily within the transport sector, and as a serious threat to the delivery of the Plan, to which we will return in Chapter 6.

[30] At the time of publication, the causes of the points failure at Potters Bar are not known.

6 PROGRESS

6 Progress

Although it is early days in the implementation of the Plan, the Plan contains a set of some 21 individual targets and indicators, some of which are contained in the DTLR's Public Service Agreement. In Table 6.1 we review progress towards attainment of those targets.

In this Chapter we also review progress on the major rail investment schemes that form an important part of the Plan's rail investment programme, and we note progress in improving the strategic road network. The Chapter also covers lessons from the Multi-Modal studies and developments in local and regional transport plans. We highlight major developments in London.

CfIT's annual survey of public attitudes to transport in England[31], demonstrates that transport is the major local concern and that it ranks at the bottom of service industries by level of satisfaction. Clearly, the 10YP has much to achieve if these attitudes are to be changed.

In regard to the short-term progress towards achievement of the individual targets and indicators, summarised in Table 6.1, progress is mixed. Where possible we have made reference to the latest data, that is for the fourth quarter of 2001[32], but elsewhere we have compared the trend in the years immediately prior to the introduction of the Plan. DTLR's monitoring work, which we expect will be published later in 2002, will have the benefit of the full year's data following the start of the Plan period.

There has been good progress in certain areas, such as light rail use, improving the environment, in reducing road accidents, maintaining the strategic road network, and contributing to improved accessibility in rural areas. For example:

- **passenger journeys on light rail systems** increased by 23 per cent between 2000 and 2001, and 16 other lines are planned to open in the currency of the Plan;
- **air quality targets** are being met, with reductions in vehicle emissions, and plans to strengthen the targets;
- overall UK carbon dioxide emissions fell over the last decade, as did other **greenhouse gas emissions** from the road sector. (But transport's overall contributions over the next decade will be dependent on improved fuel efficiency of new road vehicles.);
- **road safety** is improving with numbers of those killed or seriously injured, especially children, falling;
- the Highways Agency is succeeding in **maintaining the strategic road network** in good condition; while
- the Countryside Agency's survey of rural services and the National Travel Survey show that **access to bus services,** and other forms of community transport, **in rural areas** has increased.

[31] The CfIT Report 2001: Public Attitudes to Transport in England (July)

[32] Data for the fourth quarter of 2001 was released in March 2001 and is included in this analysis

Table 6.1: Progress in Regard to Individual 10YP Targets and Indicators[33]

Target or Indicator	Target on track?	Comment
Congestion reduction targets.	-	At present only baseline data are available for congestion, so it is not possible to assess changes so far. Lower economic growth and higher oil prices will slow the growth in traffic levels, but the congestion reduction target is to some extent reliant on city charging schemes being implemented, and there is considerable concern about progress with these.
Increase passenger rail use in Great Britain from 2000 levels by 50 per cent in 2010, while at the same time securing improvements in punctuality and reliability.	×	Rail use (in passenger kilometres) in the last quarter of 2000, and the first quarter of 2001 was 8 per cent lower than the equivalent in the previous year, following the Hatfield accident in October 2000. This also reduced rail punctuality and reliability. Passenger kms for the second and third quarters of 2001 were still 4 per cent lower than the previous year. However, the recent trend is of increasing rail passengers – rail passenger kms were 12 per cent higher in the last six months of 2001 than they were in the equivalent period in 1999 - indicating that a recovery is taking place.
Increase bus use in England from 2000 to 2010 by 10 per cent, while at the same time securing improvements in punctuality and reliability.	-	Local bus passenger journeys increased by 0.7 per cent in the year to March 2001, compared to an average annual decrease of 1.6 per cent over the ten years to March 2000. This is made up of strong growth in London, and continued decline elsewhere, albeit with considerable regional variation. There are examples of growth in specific cities, such as Oxford, which have embraced 'integrated' planning.[34]
Double light rail use in England by 2010 from 2000 levels.	✓	Croydon Tramlink opened in May 2000, and there was strong growth on DLR and Manchester Metrolink which helped increase total light rail passenger numbers (excluding London Underground) by 23 per cent in 2000/01 compared to the previous year.[35]
Cut journey times on London Underground.	-	Specific targets will be set when the PPP is established.
Improve air quality by meeting National Air Quality Strategy targets.	✓	Most of these targets have already, or will be, met. The Government completed consultation on developing more stringent targets in December 2001. DEFRA is currently considering the responses.[36]
Reduce greenhouse gas emissions by 12.5 per cent from 1990 levels, and move towards a 20 per cent reduction in total CO_2 by 2010.	✓	DEFRA estimates are that carbon dioxide emissions in 2000 were 7.5 per cent less than 1990 levels, and emissions in certain other greenhouse gases had fallen by more than 30 per cent.[37]
Number of people killed or seriously injured (KSI) in road accidents; specific target for children.	✓	Number of children killed or seriously injured fell sharply: in 2000 it was 24 per cent below the baseline, compared to the 2010 target of 50 per cent. The year on year decline is less evident for adults, though that too is 13 per cent below the baseline. Overall, the targets are well on course for being achieved.[38]
Increase rail freight's share of the freight market by 2010, increasing the current level of freight carried by 80 per cent..	-	Levels of freight carried by rail increased by 5 per cent in 2001 compared with 2000. The Rail Regulator confirmed in October 2001 that rail freight access charges would be cut by 50 per cent. Historical data suggest that this will be a difficult target to meet.
Rail Passenger Satisfaction to be monitored.	-	Rail complaints were falling until the disruption that followed Hatfield. However, in the second and third quarters of 2001, complaints were still at a higher level than pre-Hatfield, although the rate of complaints is falling..
By 2010, to triple the number of cycling trips compared with a 2000 base.	×	Levels of cycling fell in 2001 by 4 per cent compared with 2000. There are some positive signs, for example London levels have increased by 5 to 10 per cent a year for the last three years.[39]
Achieve a one-third increase in the proportion of households in rural areas within about 10	✓	Government funding for rural transport has increased substantially since 1997. The Countryside Agency's survey of rural services shows that access to community transport in rural areas has increased, by around 4 to 5 per cent

[33] It must be noted that much of this data, using the latest available published statistics, refers to the period immediately prior to the start of the 10YP in April 2001.

[34] DTLR Statistical Release TR-16.17 September 2001.

[35] Transport Statistics Bulletin of Public Transport Statistics Great Britain November 2001.

[36] DEFRA Digest of Environmental Statistics July 2001.

[37] DEFRA Digest of Environmental Statistics July 2001.

[38] DTLR Transport Statistic Bulletin Road Casualties in Great Britain Main Results 2000, June 2001.

[39] DTLR National Travel Survey 1998/2000 update.

Target or Indicator	Target on track?	Comment
minutes walk of an hourly or better bus service by 2010.		since that year.[40]
Bus Reliability: by June 2001, no more than 0.5 per cent of services cancelled for reasons within the operator's control	×	This target was not met. The percentage of bus schedules lost in Q3 2001 (July – September) was between 1.3 per cent for England excluding London, and 3.7 per cent for London. The amount attributable to operators was 1.2 per cent and 3.5 per cent respectively, higher than the corresponding period in 2001. In Q4 2001 the situation had deteriorated slightly: in London the percentage of services lost had increased to 4.2 per cent, with 3.9 per cent being in the operators' control. The data for England excluding London remained the same. This target was confirmed by the DTLR in April 2002.
Bus Fleet: reduce the average age of buses to eight years by June 2001.	-	There has been a significant reduction in the average age of the bus fleet since 1994. In June 2001, the average age was 8.4 years, a significant reduction since 1994 when it was 9.9 years, but nonetheless above the target. This target was confirmed by the DTLR in 2002.
Bus Accessibility	-	A new indicator was introduced in April 2002 that requires 50% of the full-size bus fleet to be fully accessible by 2010.
Bus Passenger Information	-	A new target was introduced in April 2002 that requires the bus industry to achieve year-on-year improvements in information at bus stops.
Reduce London rail overcrowding to meet SRA standards by 2010.	×	Overcrowding on commuter services to London increased in 2000/01 to 3.6 per cent compared to 2.9 per cent in Autumn 1999.[41]
Passenger satisfaction with London Underground services to be monitored		Customer satisfaction with train services in 2001 was broadly similar to that in 2000, while satisfaction with station services showed a slight decrease.
Maintain our strategic road network in optimum condition.	✓	This criterion was met in March 2001. The Highway's Agency published a wider range of commitments in its 2001/02 Business Plan.
Halt the deterioration of local roads by 2004 and halt the backlog by the end of the Plan period.	×	The condition of local roads continued to deteriorate in 2000, though corresponding maintenance expenditure increased by 4 per cent in real terms.[42]
Produce Benchmarks Profiles for reducing congestion on local roads	-	A Feasibility Report is due to be published by DTLR in Autumn 2002.
Modal Share: changes in modal shares for car, public transport, cycling and walking to be monitored	-	Modal share for mechanised and non-mechanised modes are available from the National Travel Survey. The latest data are for 1998/2000. There is a considerable difference between trip based measures, and distance based measures, especially with regard to walking and cycling. We recommend a distance based measure, because this will highlight any changes in trip lengths by car in particular.
Freight intensity: change in overall freight traffic and lorry traffic relative to GDP to be monitored	-	In the (very) long run, freight transport correlates reasonably with GDP and industrial production. However, short and medium term relationships show considerable scatter. The issue of freight intensity needs further in-depth analysis before a firm conclusion can be reached regarding current and future trends.

Note: Targets and indicators are set out in Annex 2 of the 10YP.

[40] The Countryside Agency Rural Services Survey 2000, November 2001.

[41] SRA Annual Report 2001.

[42] DTLR National Road Maintenance Condition Survey 2000 May 2001.

However, the crisis on the railways following the Hatfield crash has led to reductions in traffic, and serious service quality problems, while there will be continuing uncertainty as to the future for the industry as a result of Railtrack being placed in administration. It is therefore not clear how soon the interrupted growth in rail traffic will resume fully. For example:

- **passenger traffic** on national rail services was growing strongly until the Hatfield accident and its aftermath of speed limits, revised timetables and journey unreliability. In the previous four years up to April 2000 passenger growth was 21 per cent, or just under 5 per cent per annum. However, in the six months following Hatfield, passenger kilometres fell by 8 per cent compared with the same period in the previous year. However, passenger kilometres began to increase again in the second and third quarters of 2001, as speed restrictions were lifted and pre-Hatfield timetables restored. In the second six months of 2001, passenger kilometres were 2 per cent higher than in 1999, indicating that a recovery was taking place.

- **overcrowding** on commuter services into London increased from 2.9 per cent in Autumn 1999 to 3.6 per cent in 2000/01;[43] and

- **freight moved by rail**, Total tonne-kilometres increased by 5 per cent from 2000 to 2001, and by 20 per cent from 1998 to 2001, but much of this increase – 0.7 bn tonne kms of the 0.8 bn tome kms increase - is attributable to the traditional coal market. It is disappointing to see that domestic intermodal traffic appears to have reached a certain level and is no longer growing. In October 2001 the Rail Regulator announced a 50 per cent reduction in access charges, which gives the rail freight companies greater flexibility, although it remains to be seen how much of this will be passed on to their customers. International rail freight traffic levels through the tunnel remain disappointing, even before the current problems with cross-Channel freight train security. The SRA anticipates, that, without considerable policy and service improvements, freight traffic would grow by only 10 per cent in the next decade.[44]

In addition, initial progress in increasing bus use has been slow:

- **bus reliability targets** from the 1999 Bus Summit have not been met: the percentage of scheduled bus mileage in England within operators' control lost was 1.7 per cent in October to December 2001. Although this was lower than a year earlier, it was nonetheless higher than the target of 0.5 per cent by June 2001. The chronic staffing shortages in London, which have contributed to poor reliability, still affect reliability in London to a greater extent than elsewhere: the percentage of schedules lost in London was 4.2 per cent, 3.9 per cent of which was in operators' control;[45]

- **bus passenger journeys** grew by 0.7 per cent in 2000/01, which is consistent with the Plan's target of increasing bus use by 10 percent over 10 years though, we argue in Chapter 7, it is not challenging enough. It masks widely differing patterns: over the past five years, bus use in London has increased annually by on average 2.3 per cent, whereas outside London the annual average fall has been 1.4 per cent. Towns with significant bus priority initiatives have managed to buck this trend, eg the bus mode share for people entering Oxford has increased from 27 per cent to 44 per cent since the introduction of the Oxford Transport Strategy in 1993. Elsewhere, the rate of take up of bus priority schemes has been disappointing, with authorities showing reluctance to reallocate road capacity away from the private car.

[43] SRA Annual Report 2001.

[44] SRA Strategic Plan, 2002, p.63.

[45] DTLR Bus quality indicators April to June 2001.

Further:

- Local Authorities are struggling with a **backlog of road maintenance work** to be undertaken, and the main barrier quoted to delivery of maintenance services is funding. Whilst funding for road maintenance has increased significantly in recent years, there is concern[46] on two counts: first, that there is much catching up to do, and second that the maintenance funding is not ring-fenced, and has been diverted elsewhere. This latter issue is of particular concern in the light of the introduction of the Single Capital Pot next year (evidence from Scotland indicates that the SCP led to a significant drop in transport spending of up to 40 per cent).

In some areas it is difficult yet to assess short-term progress:

- only baseline data are available for levels of **congestion**, though there is considerable concern, to be discussed in Chapter 7, in regard to progress towards implementation of congestion and workplace charging schemes;

- specific targets to cut **journey times on London Underground** await establishment of the delayed PPP;

- **urban renaissance** is an issue which can only be observed over a long period, and must await a range of current land allocations to work through the system; however, we propose to undertake further work to define suitable monitoring measures; and

- indicators of **health** and of **social exclusion** (apart from rural bus access, where satisfactory measures do exist) need to be clearly defined and monitored, and again we propose to undertake further work in these areas.

While spending on **rail investment** increased significantly in 2000/01 the impact will be clouded by the need to increase spending on track renewals after Hatfield, while there have been significant cost overruns on major projects like the West Coast Main Line and the Leeds West End Remodelling. Construction of the Channel Tunnel Rail Link is progressing relatively smoothly and on budget, and major investment projects such as the East Coast Main Line upgrade, Thameslink 2000, London – West Anglia modernisation and East London Line extension are all in the SRA's list of priorities for completion by 2010.[47] Other major projects such as the Great Western Main Line upgrades, London Crossrail, the North – South High Speed Line and improved links to Heathrow, Gatwick and Edinburgh Airports, and rail schemes emerging from the multi-modal studies are designated as schemes for further development, and are unlikely to be implemented before 2010. We recognise the inevitable[48] domination of London related services in the SRA Strategic Plan, but would argue for the continued need to develop services and remove capacity pinch-points in the provinces, to ensure that rail can play an increasing role in the future.

Progress on **major new road schemes** has been limited to those which can be taken forward without pre-judging regional transport strategies or the result of Multi-Modal studies. Only eight major schemes have so far been added to the Targeted Programme of Improvements (TPI) and, although the Highways Agency has met associated targets for this year, there is concern that this rate of progress means that the number of schemes completed in the Plan period will be less than anticipated. However, the Highways Agency anticipates that 50 schemes in the TPI, and two schemes from the Accelerated Roads Review will be completed in the 10 Year Plan period. The Agency has also begun to take forward the preparation of a number of schemes in parallel with the Multi-Modal Studies, which will shorten the planning process should those schemes be recommended.

[46] From a limited survey of LAs undertaken in October 2001.

[47] SRA Strategic Plan, 2002, p.49.

[48] since it accounts for 70% of patronage

A number of the **Multi-Modal studies** have reported to date, and have featured substantial road construction programmes to address the issues remitted to them. In Hastings the road proposals were rejected by the Secretary of State. In the West Midlands, the road construction has been paralleled by substantial proposals for light rail and 'S-bahn type' rail services, but some concern has been expressed about the implied expenditure levels. A major concern from the Multi-Modal Studies and Regional Transport Strategies is the difficulty of delivering new road schemes within the 10YP period, and the even greater uncertainties associated with the delivery of public transport schemes in general and rail schemes in particular. As noted in the previous paragraph, the SRA has designated such schemes as being unlikely to be implemented before 2010.

Table 6.2 highlights these issues in relation to the **Cambridge to Huntingdon Multi-Modal Study**, which has already reported and been approved by the Regional Planning Body and the Secretary of State. Nevertheless, it is clear from the implementation timescales that only a limited amount of the proposals are expected to be delivered within the 10YP period. Furthermore, fiscal demand management is not yet an agreed policy of the Local Authority, casting serious doubts on its delivery, which would reduce the effectiveness of other measures.

The first **local transport** settlement following the publication of the Plan saw significant funding increases for local authorities and was widely welcomed. The number of approved schemes is well on track to reach the 10YP targets for bypasses and major road improvements.

Progress is also well advanced on 16 new **light rail lines**, while the number of passengers on light rail systems rose by 23 per cent in 2000/01. The recent LTP settlements (December 2001) show an overall increase in allocation of almost 12 per cent, with greater emphasis on integrated measures less than £5 million and on public transport.

A road congestion charging system for the Central area of **London** has been announced for introduction in 2003. The Mayor's Transport Strategy for London was published in July 2001. It is clear that substantial improvements to public transport are planned covering light rail, intermediate modes and heavy rail, as well as buses and the Underground. However, improvements to the Underground are delayed by the current disagreement about the PPP, whilst the light and heavy rail enhancements are unlikely to take place until the end of the 10 year period at best. In the short-term, therefore, the principal emphasis will be on the bus, and London has been doing well in this respect, through the London Bus Initiative, with passenger journeys growing by 6% over the last year.

Finally, it is important to note that achievement of the Plan's broader economic, social and environmental objectives depend not just on hitting targets for each travel mode, but also on the way this affects **the balance between modes**. Actual changes in the relative quality and cost of transport choices available will feed into short-term changes in travel behaviour. The expectation that such changes will be sustained into the future has the potential to change not only transport choices, but also choices of location – by both households and businesses. The wider outcomes of the Plan depend on such responses, but these are, in their nature, slower to emerge. It will be important to ensure that monitoring processes can pick up the signs (see Chapter 4).

Table 6.2: Cambridge to Huntingdon Multi-Modal Study Recommendations

Short Term Measures	Implementation Timescale	Implementation Mechanism	Sources of Funding
Bus Priorities	2005	The schemes will be designed by **Cambridgeshire County Council**, but will require the approval of **Cambridge City Council and Huntingdonshire District Council**. Extensive consultation with **bus operators** (of which there are three), and local bodies such as **Chambers of Commerce** will also be required. Funding will be via the Cambridgeshire LTP.	Cambridgeshire LTP
Extensions to the existing bus-based Park and Ride System in Cambridge	2005	The schemes will be designed by **Cambridgeshire County Council**, but will require the approval of the **District Councils** within whose area the schemes fall. Negotiation and agreements with **bus operators** will be required to provide services.	Cambridgeshire LTP, private bus operators.
Safety and Traffic Calming Measures in A14 Corridor	2006	Measures on the A14 will be the responsibility of the **Highways Agency**, in consultation with **Cambridgeshire County Council and the District Councils.** Traffic Calming measures on rat-runs will be designed by **Cambridgeshire County Council**, in consultation with the **District Councils** and **local bodies such as Parish Councils**.	Highways Agency Cambridgeshire LTP
Public Transport Infrastructure			
Guided Bus Phases 1-3. (A high frequency guided bus system linking Huntingdon, St Ives and Cambridge Centre and Rail Station and its southern suburbs is the centrepiece of the public transport measures. Would be complemented by park and ride for both local and longer distance journeys.)	Phase 1 2008 Phase 2 2012 Phase 3 2012-2015	There are several possibilities. 1) The scheme could be wholly provided by the private sector, to its own specification, under the New Roads and Street Works Act. 2) The scheme could be promoted as a PPP with the County Council and District Councils as the public sector partners, with a private sector operator selected after a tendering procedure. 3) The scheme could be specified by the public sector (County Council, District Councils, and Railtrack's successor body) in partnership), an operating franchise let, with potentially a funding requirement under a Section 56 style agreement. Whatever the implementation process, the scheme would need a measure under the New Roads and Street Works Act, and the on-street part of the scheme would be designed by **Cambridgeshire County Council**, but with the approval of **Cambridge City Council and Huntingdonshire District Councils**.	Private Sector Private Sector, Public Sector through Cambridge LTP Private Sector, Public Sector through Cambridge LTP, Central Government through Section 56 Grant. In each of the above cases, SRA/Railtrack funding for those sections of the scheme that use existing rail corridor, plus private developer contributions at new housing areas, and from redevelopment of Cambridge Station.
Highway Scheme			
A14 Southern Bypass for Huntingdon and on-line widening – phased implementation	2011	Design by the **Highways Agency**, with consultation with **County and District Authorities.** Public Consultation and Public Inquiries as required by existing or new Highways Acts.	Highways Agency (National Funds)
Policy Measures			
1. Physical Demand Management in Cambridge 2. Fiscal Demand Management in Cambridge	Ongoing Unknown	1) Physical Demand Management would be designed and implemented by the **County and City Councils** through existing mechanisms, and funded by the LTP process. 2) Fiscal demand management is not, at present, a policy of either **Cambridgeshire County Council or Cambridge City Council.** Any future scheme would require careful design, extensive consultation to obtain the agreement of all stakeholders, a plan to disburse excess revenues, and phased implementation.	Cambridgeshire LTP Cambridgeshire LTP for preparation and implementation, then self-financing.

7 POTENTIAL BARRIERS TO THE ACHIEVEMENT OF THE PLAN

7 Potential Barriers to the Achievement of the Plan

The previous chapters summarised the effects of the external environment and the short-term progress in meeting the objectives of the 10YP. In this chapter we identify the main internal barriers that will need to be addressed if the Plan is to be delivered successfully.

Barriers can be of different types. For example, there may be uncertainty about trade-offs in policy aims, so that it is not clear how the government will decide on priorities where objectives conflict: for example, trebling cycle use may well increase accidents.

More generally, progress is being impeded by processes which seek to deal with both broad issues of national or regional policy and essentially local concerns. This confuscation of national and local issues hinders approval and completion of investment schemes because it lengthens the planning chains. There may be shortages of funding from either public or private sources for investment projects that are central to the Plan. There are resource constraints in terms both of the maximum annual rate of renewal and investment that can be provided by the construction industry, as well as specific shortages of the particular skills required in the transport sector. There is public resistance to adoption of measures, such as road congestion charging, which are an integral part of the Plan, so that there is a need for careful education, and for political will and clarity of message at both national and local levels. There are competing demands for funds within the transport sector, such as those arising from pressure to spend more on rail safety measures. And of course major concerns exist at present in regard to the present and future performance of the rail industry. Finally, performance will always be subject to the effects of external factors, which we reviewed in Chapter 5.

There is a general perception that current **planning procedures** in the transport sector contribute to substantial delays in the implementation of schemes. The recent Green Paper[49] seeks to address this issue, but raises a number of issues with respect to the integration of land-use and transport planning, if County responsibilities for Structure Plans are to be removed[50]. The Green Paper does not appear to address the current long timescales for ministerial determination, which typically occupy half the time taken to obtain approval through Transport and Works Act. There are also a number of other issues that arise, linked to the Multi-Modal studies, Regional Transport Strategies and the LTP process. Having reviewed these issues our conclusion is that the current system of regional planning lacks the teeth and resources to take over the role of integrating land use and transport or to bring about the changes in attitudes and policy shifts which are required if the 10YP is to be achieved. This is primarily related to the lack of clarity and clear leadership inherent in the current institutional framework, but also to the lack of control over organisation and funding across transport modes at the regional level.

There is now considerable uncertainty about **private sector funding for rail investment**. The Strategic Rail Authority's Strategic Plan, published early in 2002, indicates that **public** sector funds for the rail sector will be increased from the £29.1 billion in the 10YP to £33.5 billion, some of which has also been brought forward in time.[51] Of this, £26 billion is meant to sustain the network and deliver existing commitments, and the remaining £7.5 billion will be used to lever in £23 billion of private sector investment. However, the SRA's Plan identifies three milestones that need to be met to deliver the rail plan:

- resolution of Railtrack administration and implementation of any structural and financial reforms that are needed as a consequence;

[49] DTLR Planning Green Paper. Delivering a Fundamental Change. December 2001.

[50] CfIT (2002) Response to the Planning Green Paper (April). At www.cfit.gov.uk

[51] Strategic Rail Authority *The Strategic Plan* January 2002, p.21.

- a significant increase in confidence and stability in the industry to encourage private sector investment; and
- the need to tackle skill shortages in the industry.

It appears that it will take some time to resolve the issue of the final structure of the successor organisation to Railtrack[52], and that there may also be significant changes in the regulatory framework of the industry. It seems that Railtrack's successor will have limited ability to fund major enhancements of the system, and the SRA Plan emphasises the need to set up the procurement framework for Special Purpose Vehicles (SPVs) that will design, build and finance enhancement projects. SPV structures are well-understood in the financial markets and have been extensively used in highway and light rail projects, but there is little experience of using them as a method of funding heavy rail projects. A key justification for the SPV approach is improved risk allocation, and it is clear that Government and the SRA will have to work hard to persuade the private sector that the risks in the transport sector are worth taking, compared to other public sector investment opportunities.

The Plan indicates the importance of a stable environment, which can only be provided by Government and the SRA, in regard to future workload and timing within the overall framework of the rail investment plan, and the importance of increased public sector involvement at the early stages of projects when risks to private sector investors are highest. The overall planning framework for the industry is still being developed, but one key to success in attracting private sector investment will be a stable environment in which risks are allocated appropriately between the private and public sectors.

A further problem is the rising (and uncertain) costs of infrastructure improvements. The Plan notes that "the rising cost per unit of infrastructure investment is a very serious concern". The cost of West Coast modernisation has escalated, and Railtrack's systems for assessing the quality of assets are acknowledged to have been poor, a clear source of concern if private sector investor confidence is to be restored. The Regulator has had an important role here in improving knowledge of the quality of the asset base.

A further necessary factor to restore private investor confidence will be to resume the passenger franchising process to provide a clear pattern of long term franchises. The Plan indicates a preference for merging franchises, for example, franchises running into particular London termini. This too should provide a more stable long-term framework for private investment in the industry. In the appraisal of franchises greater emphasis should be given to the wider objectives of the Plan.

We are also concerned that the pressure for accelerated expenditure on safety measures will impact on funds for those other rail investments that would increase capacity and/or service quality, and thereby contribute to the increased rail traffic levels envisaged in the 10 YP. We have doubts (see box below) as to whether the current balance of spending on safety improvements on rail and road is right. While the expenditure on Train Protection and Warning System is now committed, we think that further upgrading to Automatic Train Protection would have questionable value, and it is worth noting that the SRA's Strategic Plan notes that no effective working system is yet available off the shelf.

The Strategic Plan indicates that the 10YP target of a 50 per cent growth in passenger traffic may now be difficult to achieve – the growth forecast to 2010 is now put at between 40 and 50 per cent – and the Plan indicates that if nothing were done beyond existing programmes, and allowing for the deterring effect of overcrowding, passenger kilometres could rise by about one third. Growth in freight volumes would only be ten per cent under existing programmes, though the measures in the Freight Strategy and the rest of the Plan are said to be sufficient to ensure that the 80 per cent freight growth target would be met – suggesting that

[52] although the recent announcement relating to Network Rail is a positive move to restoring confidence.

freight growth is more dependent on investment than passenger growth. Freight growth will also be dependent on the availability of capacity, and restrictions on West Coast capacity for freight trains would have a significant impact on the ability to reach the 10 YP rail freight target. In any event, we believe that the present broad targets for rail traffic growth, both for passengers and for freight, should be reviewed to ensure that they are more closely aligned to the real benefits that rail traffic growth can achieve. We raised this issue in relation to targets in Chapter 3.

Safety spending on road and rail[53]

The Ladbroke Grove Rail Inquiry, Part 2 Report includes a "Joint statement of experts on risk management" which records that several experts observed differences in government planned and contemplated expenditure on road and rail safety: the actual expenditure to prevent a road fatality is around £0.1 million; and the cost per fatality avoided by fitting TPWS (Train Protection and Warning System) is about £10 million. The installation of TPWS is expected to be completed by the end of 2003 and will prevent approximately 70% of potential accidents from signals passed at danger.

The costs for the proposed implementation of level 1 of the European Rail Traffic Management System (ERTMS) over and above TPWS will be in the order of £3.5bn. The estimated impact of ERTMS would be the saving of, on average, under one fatality per annum. If the money were to be spent in rail investments that provided additional rail capacity (instead of on ERTMS), and attracted car users in the same proportion as the existing 10YP investments are assumed to, the number of extra lives save on our road would be just over four per year. Thus, spending on increasing rail capacity would be, in broad terms, about four times as effective in saving lives as investment in ERTMS.

Crucially, this particular level of ERTMS will reduce capacity of the rail system, resulting in more traffic on the roads, and a significant increase in fatalities.

Clearly, safety on the railways is essential to public confidence. Nevertheless, there is a clear policy issue as to whether a better balance should be achieved between safety expenditure decisions on road and rail, and whether this particular implementation of ERTMS is the most appropriate.

In relation to **freight movements**, quite apart from encouraging more freight to be carried by rail, there are means by which the incidence of freight vehicles in the most congested periods in urban areas could be reduced. Curfews on movements of freight vehicles require deliveries to major stores to be made during the morning peak periods. The removal of curfews, with appropriate noise restrictions, could have a significant impact on peak hour congestion, and CfIT is currently researching this issue.

The Government is committed to improving all public services, with transport being one of them. The **2002 spending review** will be the framework within which the public expenditure content of the 10YP for the years 2003/04 to 2006/07 will be confirmed or revised. It is too early to assess the views of present Ministers in DTLR and much too early to assess in quantitative terms the balance of priorities which will be favoured by the Government as a whole over the wider spectrum of public spending. Several indications are available. Ministerial statements of the Government's priorities for spending have continued to include transport investment, usually following spending on health and education. However we have seen the threats that face railway investment. It is also not yet clear how the new status of Railtrack or its successor will be reflected in public sector accounts. Present indications are that its future borrowing and its investment will be outside public expenditure. However the longer term subsidy implications of the revenue needed to repay its debts will inevitably be an issue considered during the review.

[53] cf CfIT (2002) Fact Sheet 10: The Implementation of Rail Safety Measures – Implications for Overall Safety on the UK Transport System (April). At www.cfit.gov.uk

Road transport implementation appears less problematic, but recent demands for military and security spending will have added to the formidable challenge facing negotiators for continued funding of the outputs envisaged in the 10YP. Indeed, if traffic growth is lower than forecast in these early years, there is a concern that the need for investment may be seen to have reduced. However, given the other concerns expressed in this chapter about barriers to achievement of the Plan, it is clear that there is little leeway for a relaxation of investment plans. As pointed out at the end of Chapter 6, the balance between road and rail spending is critical to the wider outcomes of the Plan.

There may also be pressures on **transport spending by local authorities**. From 2002/03 onwards, local authorities will receive Government funds in a single allocation ("Capital Pot"). Under this, 95 per cent will be allocated to authorities according to needs, with transport needs based on assessment of local transport plans and road maintenance requirements. Local authorities may then spend the money as they wish, although subject to scrutiny. There will be particular safeguards to protect the amount of money spent on education. It remains to be seen how local authorities will deal with the increased flexibility that the Single Capital Pot will grant them, and it would be useful to investigate the expectations in different types of local authority about which programmes will gain and lose as a result of this greater local autonomy. The limited evidence available from Scotland, where the Single Capital Pot was introduced in 1996, indicates that transport was a loser, which led to ring-fenced funding for transport in 2000. It will clearly be important, in the context of the 10YP, to ensure that transport does not lose out to other demands within the local authorities.

A long-standing problem for local authorities has been the availability of **revenue support** for transport. Whilst the increase in capital investment is welcomed, it will create future problems for additional revenue support as new facilities need to be maintained and services have to be supported. Revenue support budgets are not currently ring-fenced, and further consideration is needed on the manner in which facilities and schemes can be supported in the longer term.

Revenue Support
Most capital investments give rise to ongoing revenue costs. In particular bus priority and Quality Bus Corridors will incur costs of:

- maintaining carriageway markings including renewal and coloured surfaces;
- enforcement;
- maintenance of street furniture including stops and shelters;
- maintenance of signal detection equipment;
- airtime costs for real time information systems.

It is estimated that, in Greater Manchester, this will cost about £110,000 per corridor per year. There are 17 corridors in total (200km) and Local Authorities will ultimately be faced with costs of almost £1.9m per year.

Whilst capital expenditure can be provided through Credit Approvals – which for major schemes (>£5m) can be ring fenced, revenue expenditure is not ring fenced.

One important aspect of the 10YP, where local authority attitudes and actions are clearly important, is in the **introduction of local charging schemes**. The Plan assumes that by 2010 central London and most large urban areas - cities with an area of at least 70 to 80 square kms - will have implemented local charging schemes, and workplace parking levies in a further 12 urban areas. These would have a significant effect on Plan outcomes. Over the Plan period congestion is forecast to *fall* by 8 per cent in conurbations (which in general are assumed to have charging schemes), but *rise* by 7 per cent in other urban areas (which in general

are assumed not to have charging schemes). We believe that the full programme of pricing schemes included in the Plan would achieve 20 to 25% of the overall congestion reduction target in the Plan, so they are fundamental to outcomes on congestion.

However, our survey of progress has shown that few authorities are advanced in proposals to implement these new charging schemes. Congestion charging schemes in large urban areas are being seriously progressed in London, where implementation is planned for 2003; Bristol, where implementation is planned for 2005 or 2006; and possibly Edinburgh[54], for 2005. The other large cities where local authorities have been considering charging are Birmingham, Manchester, Leicester and Leeds. It should be noted that the public's reaction[55] to congestion charging appears to have mellowed in recent years. In response to a question about whether they would support congestion charging if the revenue was spent on public transport, 52% said yes in 2001 and 58% said yes in 2002. These results have been endorsed by the RAC Foundation report[56] which indicates that over 70% of motorists would support road tolling if it was part of a package of improved public transport and roads.

Nottingham is most advanced in implementing a workplace parking levy, but is limiting the scheme to employers over a specific size, making administration and enforcement more practicable. Other authorities have fallen back from a workplace parking levy faced with the difficulties of administration, coupled with the need to demonstrate that a reduction in traffic would be achieved. If authorities have found workplace charging unpalatable to pursue, then the possibility of extending the legislation to cover charges for retail establishments, as referred to CfIT in the 10YP, is unlikely to be a priority, however desirable such a policy might be in terms of urban regeneration. Of more immediate importance is a fundamental review of the workplace parking levy to understand whether it can make a contribution to the relief of congestion or whether, as some employers and authorities claim, it is simply an additional cost on business. The review should extend to a consideration of the legislation and the barriers perceived by authorities, to ensure that, if it can offer benefits, it does not remain a tool awaiting an application.

Given that it takes several years to conceptualise, plan and implement charging schemes, we do not believe it will now be possible to have all the charging schemes envisaged in the Plan in operation by the end of this decade. The actual scale of implementation will depend on evolving perceptions about the benefits and problems of charging schemes, which will in turn be influenced greatly by the performance of other schemes as they are implemented, in particular in London, Edinburgh and Bristol. The timescale for implementing the London scheme is ambitious and there is a risk it could be delayed or that severe operational problems could develop. Many other authorities are in the position of "waiting for London". If a city such as Leeds or Leicester were to decide to proceed with a congestion charging scheme in, say, 2005, it is difficult to imagine implementation before around 2009.

Though successful delivery of the 10YP assumption for the scale of local area charging now looks unlikely, the Government needs to act to facilitate the implementation of this policy to ensure that the aims of the Plan (albeit in a longer timescale) are not fundamentally undermined. Of critical importance is to achieve successful implementation of around four schemes within the next four to five years, so as to create some momentum. We suggest concentrating policy efforts in this area on London, Bristol and Edinburgh for road user charging schemes, and on Nottingham for workplace parking levy schemes. These should include the Government's active public promotion and support of the schemes.

Congestion charging can make an improvement to **London's transport problems**, but these will remain severe unless action is taken to improve public transport

[54] The 10YP refers only to England, hence Edinburgh does not contribute to the number of cities targeted.

[55] CfiT Annual Survey 2001 and 2002

[56] RAC Foundation (2002) Motoring Towards 2050 (May).

services. The Mayor's Transport Strategy, published in July 2001, is central to this. The Strategy identified the transport system as the single biggest problem currently facing London, threatening economic prosperity and the quality of life. The Strategy identifies tackling the transport crisis as the Mayor's top priority. The Strategy plans to "increase the capacity, reliability, efficacy, quality and integration of the transport system". Major public transport priorities include overcoming an investment backlog on the Underground, improving bus services and securing better integration with national rail services, although the Strategy does not contain many detailed specific targets against which progress might be monitored.

Particular barriers in London to progress towards achievement of 10YP targets include the delays in increasing funding for the Underground because of the wrangles over introduction of the PPP, the problem of improving bus services *in advance* of the introduction of road congestion charging in order to provide car users with a better public transport service with adequate capacity, and an apparent shortfall between the funding for transport in London identified in the Mayor's strategy and that allocated in the 10YP. The strategy is based on funding for 2001/02 to 2003/04 from the Government's Spending Review. However, the Strategy Document notes that from 2004/05 to 2010/11, there is a *per annum* shortfall of around £500 million when the Mayor's Transport Strategy expenditure assumptions are compared with the funding allowed in the 10YP. The Strategy forecasts that £200 million *per annum* of this gap can be funded by revenues from the Congestion Charging Scheme, but argues that the Government should increase funding by up to £300 million a year by 2006/07 to make up the rest. This shortfall is confirmed in Transport *for* London's 2001 Business Plan covering 2001/02 to 2007/08, which identifies a shortfall of just under £500 million *per annum* shown by the final year.

There are also barriers to **securing increased use of bus services** throughout the country. Buses continue to be the backbone of local public transport and improving the services is central to the integrated transport strategy[57]. Bus service reliability has changed little in the last few years – targets set in 1999 were not met – and there is obvious concern that improvements will not be delivered on the scale necessary. Under the 2000 Transport Act, the possibilities for local authorities to exert influence over the local bus services operating in their area have been widened significantly. The full implications of these changes are not yet clear, not least because the new provision for quality contracts is as yet untested. However, concerns about the current organisation of the bus market remain with services being deregistered as a result of rising costs, and franchise costs increasing rapidly. With some significant exceptions, there is little evidence that the industry is moving towards the step change in quality of buses and services that is required to turn around the decline in bus patronage in the face of increasing car ownership.

The 10YP makes specific reference to the Government's commitment to public transport that is **accessible to disabled** people, following on from the provisions made in the Disability Discrimination Act. There are over 8.5 million disabled people in Great Britain who face major barriers to using transport generally and public transport in particular (and there are many other elderly or encumbered people who would benefit from more accessible transport). The Plan stresses that the provision of accessibility for disabled people is a condition of public money being spent. However, the Plan contains no specific targets for the provision of facilities for the disabled and (whilst the DTLR plan to monitor the proportion of the vehicle fleet that is accessible) there is a danger that monitoring (and provision) may concentrate only on the number of accessible vehicles. It must be recognised by all those responsible, that the barriers to use start from obtaining information (which needs to be available in several mediums), continue through access to bus stops and stations and the provision of information at those facilities, and culminate in the on-board provision of space and information. The potential benefits to the wider community from increased accessibility and greater social inclusion are widespread and considerable.

[57] The recent study for the Social Exclusion Unit in the Cabinet Office would appear to support the view that improved bus provision is key to overcoming social exclusion.

Another barrier to use of public transport is the poor perception of **safety and security**. Certain groups perceive this to be a greater issue than others, with women and older people feeling particularly vulnerable, especially at night. People from black and minority communities also tend to have more fears for personal safety. DTLR research suggests that over 10% extra patronage could be generated on public transport, mainly at off-peak times, if travellers felt safer when travelling. DTLR has published guidelines[58] for operators on improving personal security. Clearly, this is a difficult area to target and monitor, but we believe that improvements in this area are such an important aspect of 'quality of life' that both provision and perception should be monitored on a regular basis.

Public Transport Information

The use of public transport depends upon potential users knowing when and where it is available. Absence of this knowledge, and difficulties of finding it, reduce public transport use. Information on services, and on costs and quality, also promotes competition between and within modes.

It is now well recognised that markets will not spontaneously provide an optimal information service. The problem is less severe for rail travel, since industry technology requires centrally coordinated timetabling, and the network is very visible. Public road transport – buses and coaches – presents greater difficulties in providing up-to-date and comprehensive information on all services available.

The 1998 White Paper opened the way to a more proactive public sector role. The 2000 Transport Act requires local authorities to develop a bus information strategy, and provides them with some powers to impose reasonable requirements on operators. Public transport information strategies must form a part of local authorities' Local Transport Plans. At the national level traveline, which evolved as a result of the White Paper, provides a comprehensive route and timetable telephone service for public land transport services.

Transport Direct, announced in the 10YP, is a major initiative to take forward the development of an integrated multi-modal information service, covering journey planning, booking, payment and real-time information across the modes. It will involve transport operators, technology providers and local and national government working together. It is an ambitious programme, involving the most modern technology, and it will take some seven to ten years to implement.

These Government initiatives are being pursued energetically, with work that is of high quality and at the leading edge internationally. However, Central Government's role in Transport Direct is described as "an influencing role, engaging the private sector and encouraging it to invest in the service".[59] The Government approach to funding is that it is the consumer or council taxpayer who should pay for information services, once they are in operation. This has obvious virtues, in equity and in administrative appeal. However, given the crucial role of information in the development of integrated transport, it may be that modest spending from general taxation could markedly widen private sector co-operation.

Consequently, we recommend that the Government play a greater role in the funding of information provision, emphasising not just the importance of providing good information to existing public transport users, but also providing information that can persuade car travellers of the availability of good public transport alternatives for journeys that they may wish to make.

[58] DTLR, Personal Security on Public Transport: Guidelines for Operators

[59] www.dtlr.gov.uk/itwp/transdirect/capgem/index, para. 10.

The use of **smartcards** for payment can potentially reduce another barrier to the use of public transport. There are a number of large public transport related schemes under way, and a few smaller combined parking and public transport schemes, but the key to wider use is standardisation of data and security processes. In the UK, this is being addressed by the Integrated Transport Smartcard Organisation (ITSO), which expects to have produced a complete specification and process by the end of 2002. It is anticipated that implementation will expand rapidly following that date.

There is a view amongst many practitioners that behavioural changes as a result of **'soft factors'**, such as changing attitudes and awareness, will have relatively little effect in reducing traffic congestion and pollution. Recent research work undertaken for DTLR[60] concluded that there were some initiatives that "could have material effects on travel demand." These were: Tele-working; Videoconferencing; Workplace Travel Plans; Individualised Marketing Campaigns. Public transport fares and ticketing and Bus Quality Partnerships were also identified, but these only partially fall into the category of 'soft factors'. The concept of individualised marketing campaigns has recently been applied on a substantial scale in Western Australia, and has proved very successful, as described in the box below.

Behavioural Changes Can Work

In Perth, Western Australia, a significant modal change has been achieved through the implementation of a technique known as IndiMark to address individual travel decisions. The process initially involves a benchmark travel survey of existing behaviour, which involves contacting everyone in an area, to identify households that are 'interested' in starting to use alternative modes.

The individual marketing programme is then implemented through intensive dialogues with each 'interested' household. The dialogue investigates each trip to see if there was an objective reason for using the car and whether an alternative mode would actually have been available. The dialogue identifies the real need for information and motivates individuals to think about and change their behaviour.

The project involved 13,500 households in the City of South Perth and cost $A.3m (£420,000). It achieved a 61% increase in cycling trips, a 35% increase in walking, and a 17% increase in public transport. Public transport boardings, monitored by operators in the City of South Perth, have increased by 26% since the scheme has been in operation, implying that the additional fare box revenue would pay for the cost of the project in two years. We don't have any information on the actual reduction in car trips.

The monitoring of the initiative so far indicates that the changes will be maintained for at least two years. The technique is currently being piloted in the UK, in Gloucestershire, and we believe that it could usefully be linked with current initiatives on Green Travel Plans and Safe Routes to Schools elsewhere.

Finally, there is a further barrier to implementation of the 10YP in the form of possible shortages of skilled staff to implement the Plan. It has been estimated that over 100,000 jobs per year will need to be filled in order to deliver the 10YP.

There is an acknowledged shortage of skilled staff across the industry. Particularly acute shortages are in front-line operating staff for train and bus operators, and in skilled workers in rail signalling and maintenance. There does also appear to be a significant shortage of personnel and skills in certain areas of civil engineering,

[60] HFA (2001) Multi-Modal Studies: Soft Factors Likely to Affect Travel Demand. Report to DTLR.

particularly transportation, and jobs that require management and financial skills as well as technical competence.

8 ROLLING THE 10 YEAR PLAN FORWARD

8 Rolling the 10 Year Plan Forward

In rolling the 10YP forward beyond 2010, we believe it is important to take explicit account of relatively new issues such as **developments in technology**, and the ongoing process of relating prices for transport services more closely to costs, which will have longer term effects on travel demand.

With regard to the issue of **pricing for road use**, CfIT[61] believes it is important to build on the approach, highlighted in the Plan's emphasis on urban congestion charging, of relating transport prices to the costs that transport users impose on others. In addition, the structure of costs to road users should be switched from fixed costs to variable costs, which would play a key part in reducing the process of dispersion, car-dependency and urban decline. We welcome the recent proposals to implement a distance based charge for goods vehicles.

In the longer term there will be opportunities to relate prices to costs across the road system by using developments in Global Positioning System (GPS) technology to relate charges by time of day to the types of roads that are being used and the traffic conditions expected to be met. We believe that the Government should pay serious attention to the very real benefits that could be achieved by adopting this approach for the car fleet.

Another issue for the longer term future of transport is the impact that developments in **e-communications** could have on travel demands. The 10YP states that the impacts of increasing Internet use on transport and work patterns are still uncertain, but potentially profound. A major European research study has suggested that the amount of **telework** in the United Kingdom is somewhat higher than the average of the 10 countries studied, but that the UK may lag behind in the awareness of telework. Although it is unknown[62] whether increased levels of telework actually lead to a reduction in the total demand for travel, it is likely that telework does lead to a reduction in peak hour trips. For example, in the Scandinavian context, a study using Norwegian data did not find any impact of the extent of home working on the total number of trips per day, although some work trips were replaced by leisure trips.

Technology including **Intelligent Transport Systems** will also have profound impacts on the capacity of road and rail networks. On the roads, some new techniques are already being introduced at present, including ramp metering and variable speed limits. On the railways, **moving block signalling** can increase capacity by reducing the distance between trains to the minimum required to maintain the necessary separation.

In the longer term, more radical systems may deliver major benefits in terms of road capacity and road safety. It has been argued that road capacity can be doubled or even trebled by so-called **automated highway systems**, which will enable cars to be guided by the road rather than by the driver. It is also claimed that such systems virtually eliminate driver error and hence contribute to higher road safety levels. However, the practicalities of introducing such a system, such as equipping the entire vehicle fleet with a fail-safe system, and dealing with entry and exit from the automated section, imply that this is not likely to be introduced within any relevant timescale.

Both on the roads and on the railways, it appears that technological improvements will result in dramatic capacity improvements, as well as other benefits. It will be very important to take the right steps now to ensure that these technologies become viable as soon as is reasonably possible.

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[61] CfIT (2002), Paying for Road Use, February.

[62] Our interpretation of recent DTLR research on this subject is that the picture from existing evidence is far from clear, with many examples of trip reduction and others of increases in trips; further structured research work is required to get to the bottom of this issue.

One major concern for the longer term is that of achieving **continuing reductions in local emissions** and in **carbon emissions** from the transport sector. Alternative fuel and engine technologies have the potential to reduce local emissions.

Liquid Petroleum Gas (LPG) is cleaner than petrol or diesel and is some 50% quieter than diesel. LPG is already available at approximately 9% of filling stations in the UK and 0.25% of cars are equipped to use the fuel. Given the conversion costs and the lower price of fuel, the break even point in terms of cost is between 10,000 and 15,000 miles per annum, but with current coverage of refilling stations requires a degree of forward planning which may not appeal to the high mileage driver. Grants are available[63] to cover some of the conversion costs, reducing the breakeven point significantly, and it is feasible that there could be a significant increase in use of LPG in the next few years.

Hybrid cars have both an engine powered from a fuel tank and an electric motor powered by a battery. They are more efficient than conventional cars and also avoid some of the key disadvantages of cars that are entirely battery powered, notably their limited range. Manufacturers are currently introducing hybrid cars on a trial basis.

A technology that may become viable in the longer term future is the **fuel cell** technology in combination with fuel processors. Fuel cells produce fewer pollutants than combustion engines, although some CO_2 is still produced. The levels of CO_2 produced are however lower than with combustion engines as the combination fuel cell/fuel processor is more efficient than a combustion engine.

Finally, by converting biomass into ethanol, an **alternative fuel** can be obtained which can be used when blended with gasoline. Unlike fossil fuel combustion, which unlocks carbon that has been stored for millions of years, use of ethanol results in low increases to the carbon cycle.

The main problem with many of the alternative fuel and engine technologies is that they are not currently able to compete with conventional technologies. As these technologies have the potential to reduce the external impacts of transport, Government intervention may be needed to stimulate their development and take-up. An issue, however, is that alternative fuels potentially reduce tax revenue as it might be undesirable to tax alternative fuels (with lower external costs) to the same extent as hydrocarbons. These reservations can of course be overcome if the emphasis of how we pay for our use of roads is changed to a distance-based, rather than a fuel-based charge.

A behaviour-related issue is that of continuing decoupling of economic growth and travel demand. Evidence suggests that there is a secular trend towards reducing the GDP/travel demand elasticity, for both passengers and freight, so directing efforts towards policies which strengthen this diminishing relationship would be beneficial to a rolling 10YP's success.

[63] Through the Powershift Programme of the Energy Saving Trust (www.est-powershift.org.uk)

APPENDICES

Appendix A – Analysis of a Subset of Currently Available Statistics

It is rather early in the life of the 10YP to undertake a rigorous statistical analysis of the performance of the plan in changing the balance between uses of the various modes, or indeed to examine the effect on lifestyles and development patterns. These will be the subject of analysis in future reports produced by Government[64] and by other observers (including CfIT).

However, there is much understanding of the variations underlying the headline figures of traffic, rail and bus statistics that can be gleaned from the statistics which are currently available. This information has all been taken from publicly available sources as at end-May 2002. Rail data, which is reported by financial year, has been transformed to calendar year to provide compatibility between charts, so that Quarter 1 (Q1) always refers January – March, Q2 to April – June, and so on.

ROAD TRAFFIC

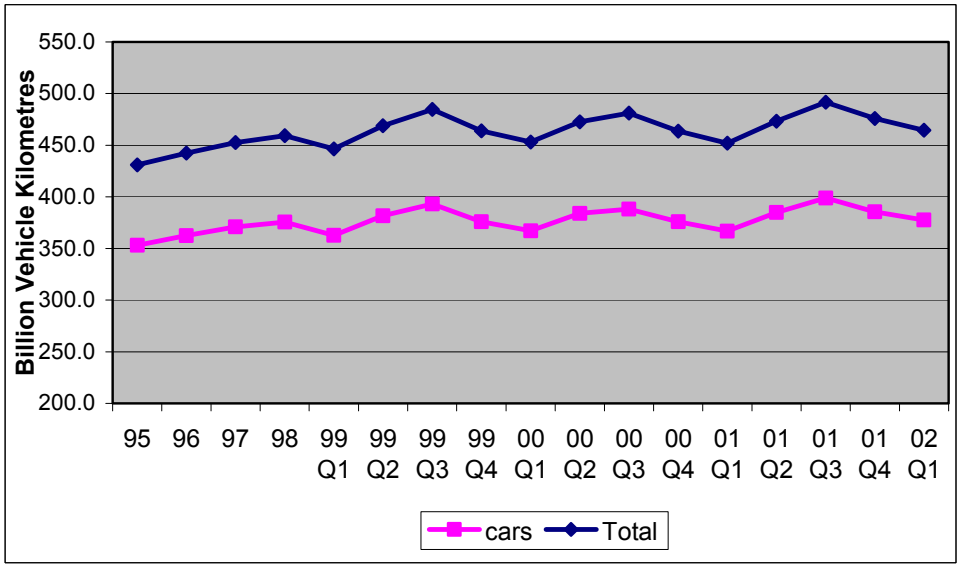
Figure 1 shows the change in total road traffic and car traffic, in terms of vehicle kilometres between 1995 and quarter 1 (January – March) 2002.

It is clear from these data that road traffic in general and car traffic in particular has continued to grow in recent years. The third (particularly) and fourth quarters of 2000 were rather lower than might have been expected because of the fuel crisis in September 2000. This appears to have reduced the overall growth in 2000, so that traffic levels in 2001 were only slightly higher than those for the corresponding period two years earlier in 1999. However, the cyclical profile in 2001 was very similar to that of two years earlier, implying that the previous growth rate has resumed after a temporary slowing. It is too early to be clear whether the slight slowing down of the growth rate observed in recent years, which could be attributed in part to the effect of the fuel duty escalator (fde) will have been released with the removal of the fde, or whether the reduced growth in the economy over the last year has also contributed to lower growth. The most recent data for the first quarter of 2002, suggests that overall traffic levels were 3% higher than in the corresponding quarter of 2001. This increase may in part be due to lower levels of traffic in the early part of 2001 due to the foot and mouth disease.

The relationship between growth in GDP/head and traffic growth is considered in more detail in the next section.

[64] DTLR will be producing a specific monitoring report, based on the full year's data in Summer of 2002.

Figure 1: Trends in Road Traffic, 1995 - 2001

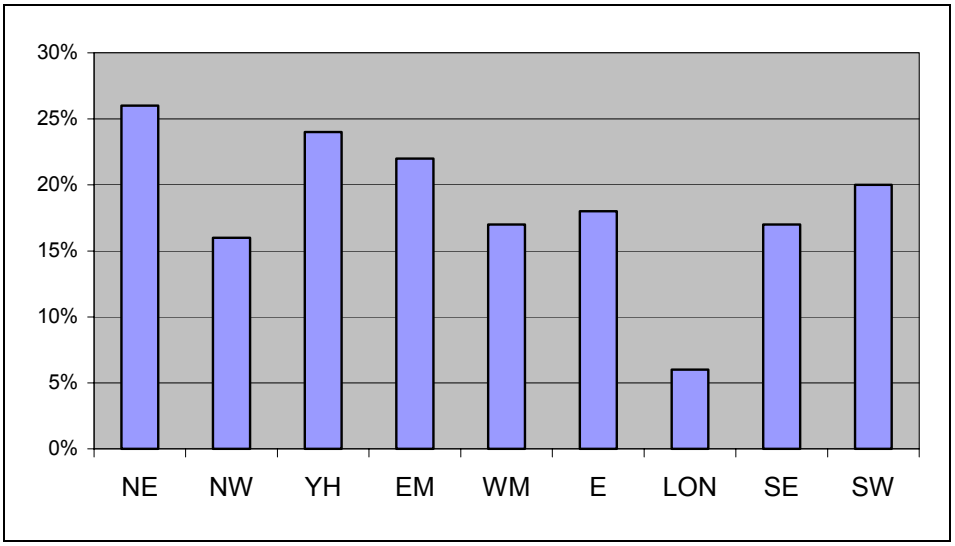


Source: Traffic in Great Britain – DTLR Statistics Bulletin (02) 6 – May 2002

GDP Growth and Traffic Growth

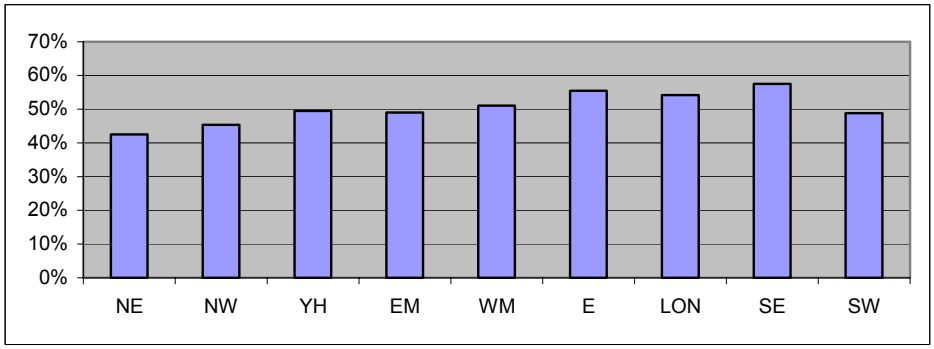
There is considerable regional variation in traffic growth. Regional growth rates of traffic, and regional economic growth rates in terms of GDP/head are shown on Figures 2 and 3.

Figure 2: Traffic Growth on Major Roads (1990 to 1999) by Region



Source: Regional Trends 36 – HMSO 2001

Figure 3: Growth in GDP/head 1990 to 1999[1] by Region



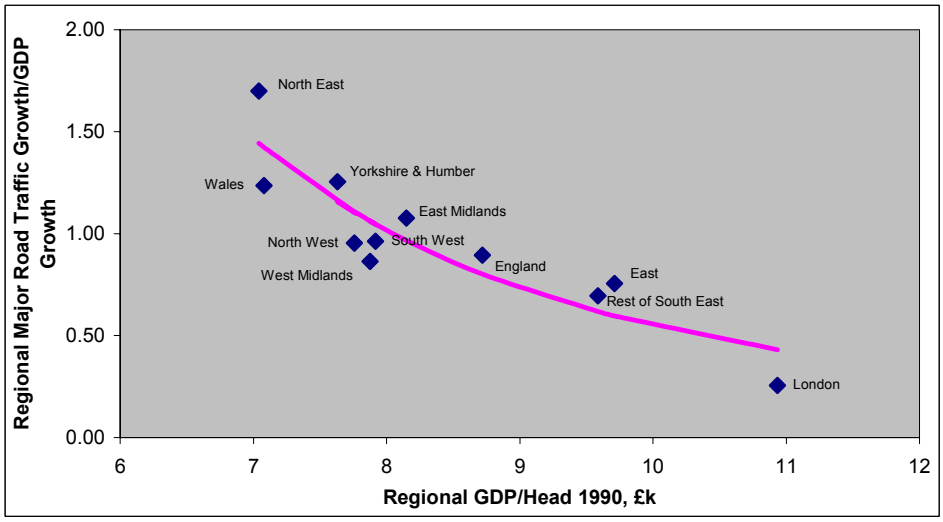
[1]Provisional

Source: Regional Trends 36 – HMSO 2001

At first sight, these figures[65] appear to show an inverse relationship between traffic growth and economic growth across the regions, but it is self evident that a much more complex set of relationships is at play.

If the traffic growth per unit increase in GDP/head between 1990 and 1999 is plotted against the initial GDP/head in 1990, a clear pattern emerges, as the data on Figure 4 demonstrate. This shows that as GDP/head increases, the rate of traffic growth declines. International data support this hypothesis. Interestingly, the data for London do not fit the curve, showing that London is a special case due primarily to the step change in road congestion, lack of parking and good public transport provision in the capital.

Figure 4: Change in Traffic and Change in GDP 1990-1999: Ratio of Regional Traffic to GDP Growth, vs GDP/Head



Source: Regional Trends 36 – HMSO 2001; Population Trends 106 – HMSO – Winter 2001

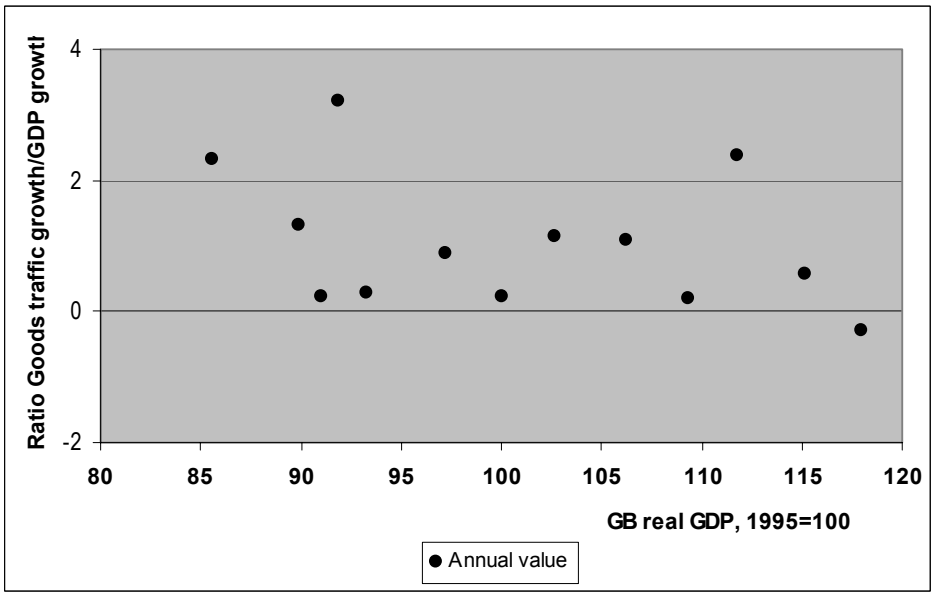
This brief analysis has important consequences for the achievement of the 10YP's targets. We can anticipate that rates of traffic growth will naturally decline, especially in the south, and that the sharp increases in traffic growth in the north will not be sustained, almost regardless of change in policy.

We recommend that a deeper investigation of the causes of these trends, and which policies would be most effective in reinforcing them is made.

[65] Note that regional GDP figures are approximate.

The situation with respect to road freight is shown on Figure 5, where GDP growth and growth in HGV vehicle kilometres at a national level are compared. The analysis has been made for the years between 1986 and 2001, so that the influence of changes in HGV maximum weights, and the re-orientation of the economy towards service industries are reduced. The chart shows annual values (note that two outlying values are not shown).

Figure 5 National GDP Growth and HGV Traffic Growth,



Source: Transport Statistics Great Britain 2001

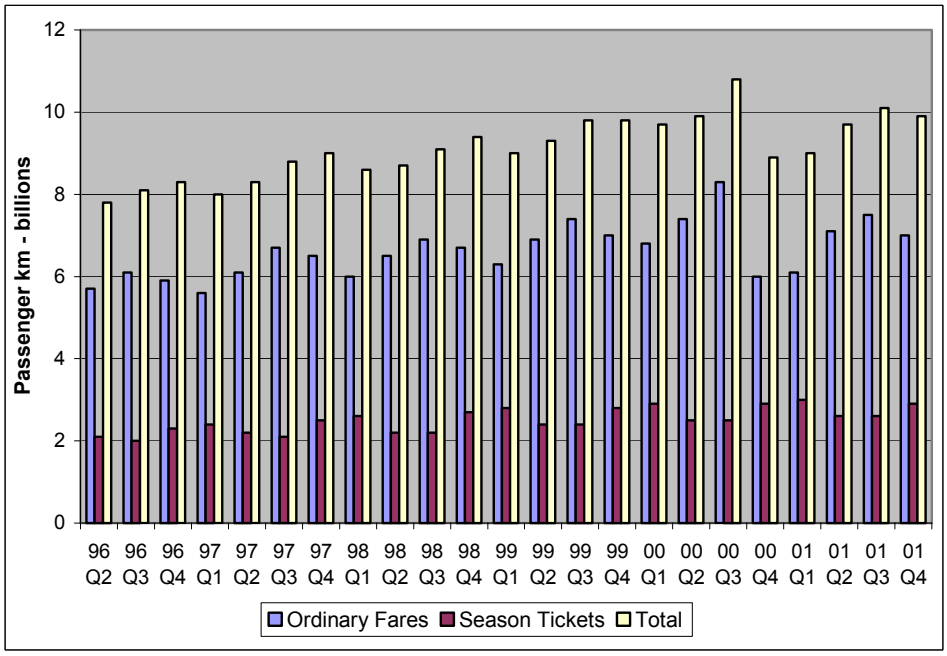
In the long run, GDP and road freight traffic seem to be correlated quite closely. However, the short run data presented in Figure 5 illustrate the variability in the relationship. On this evidence alone, there are some signs that road freight intensity is decreasing as GDP increases, but the subject is clearly quite complex. We recommend that this topic is the subject of further research.

RAIL PASSENGERS

Railway patronage (expressed as passenger kilometres) has generally fallen, with only a few years of relief, since the railways were nationalised in 1947. Between 1982 and 1988, this general trend was reversed, such that the 1948 levels were attained in 1988, for the first time since 1961. From 1988 to 1994 there was a further decline in patronage. However, recent years have seen a considerable upsurge in patronage with the 1947 levels reached and surpassed in 1998.

A more detailed picture of the growth from 1996 to the present day is shown in Figure 6, differentiating between season tickets, which account for approximately a quarter of all passenger kilometres, and ordinary tickets. The cyclical nature of rail travel is apparent, as is the fact that the seasonal pattern is rather different from that for road traffic.

Figure 6: Rail Patronage by Ticket Type, 1996 - 2001



The latest results (2001 Q4) cover the period October to December 2001 based on Q3 figures for the same period in the original source data.

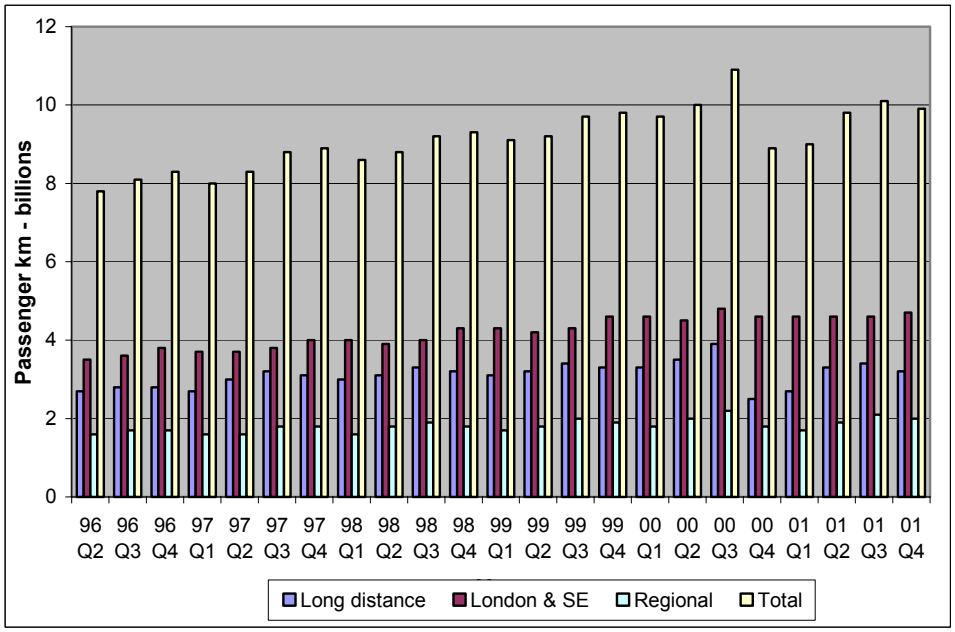
Source: National Rail Trends – Strategic Rail Authority - March 2002

However, the most striking feature of the data in Figure 6 is the higher than trend growth in Q3 2000, followed by substantial declines in the following two quarters. (Q4 2000 and Q1 2001). The increase in passenger kilometres in Q3 2000 is attributable to the fuel crisis, while the decreases in Q4 2000 and Q1 2001 is an outcome of the Hatfield accident (October 2000) and its aftermath. The relatively strong recovery in Q2 2001, with a similar growth rate in ordinary fares to the same quarter of the preceding year was followed by more normal growth in Q3 2001. The results for Q4 2001 are slightly disappointing – a slight increase over Q3 would have been expected if the pattern of previous years had been maintained – whereas, in fact, there was a slight decline.

It is clear that patronage levels in 2001 are below those of the preceding year, an inauspicious start for the 10YP, even if the reasons are clear and, we would hope, unlikely to be repeated. On the other hand, the rail market has shown some resilience, and the trend is that passenger levels are recovering. Passenger kilometres in the last 6 months of 2001 were some 2% greater than the last 6 months of 1999.

Figure 7 shows the patronage figures by sector, differentiating between Long distance services, London and South East, and Regional services.

Figure 7: Rail Patronage by Sector, 1996 - 2001



The latest results (2001 Q4) cover the period October to December 2001 based on Q3 figures for the same period in the original source data.

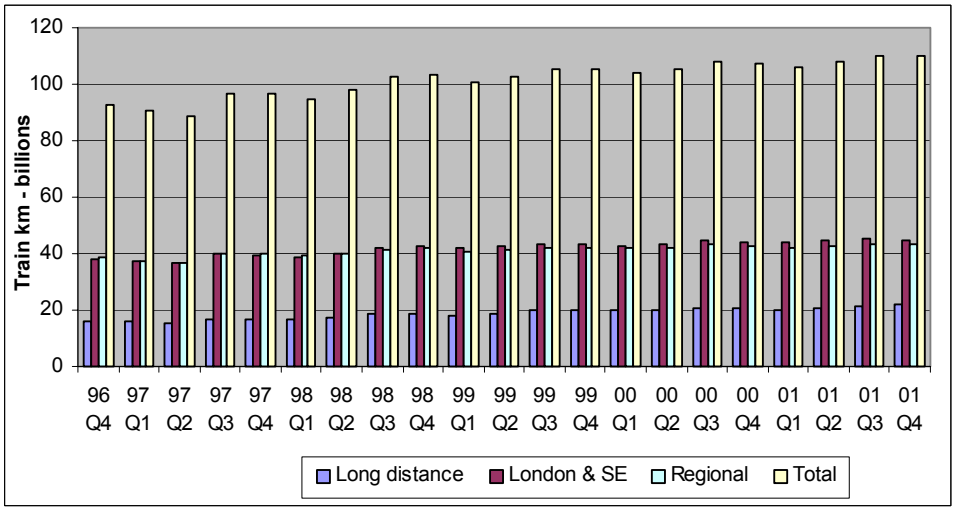
Source: National Rail Trends – Strategic Rail Authority - March 2002

Overall, passenger kilometres were growing significantly until the third quarter of 2000 – growth in passenger kilometres in the four years up to April 2000 was 21%, or just under 5% per annum. However, in the six months following the Hatfield accident in October 2000, rail passenger kilometres fell by 8% compared with the same period in the previous year. However, passenger kilometres began to grow in the second and third quarters of 2001, such that Q3 2001 numbers were slightly above those 15 months earlier.

Journeys in London and SE represent approximately 48% of all patronage, Long Distance approximately 32%, and journeys on Regional services approximately 20%. These proportions have remained steady as the overall market has grown over the last 5 years. However, it is also apparent that Long Distance travel is the most volatile: this market grew most during Q3 2000, during the fuel crisis, and declined most in Q4 2000 and Q1 2001 in the aftermath of Hatfield. This elasticity clearly represents both a threat and an opportunity for long distance rail travel. It is also feasible that it has been adversely affected by September 11 and the consequent decline in US visitors, and indeed passenger kilometres for Q4 2001 were lower than might have been expected, with long distance travel declining relative to the previous quarter.

Timetabled train kilometres are a proxy for service levels. They are shown on Figure 8 for 1996 to 2001.

Figure 8: Timetabled Train Kilometres 1996-2001



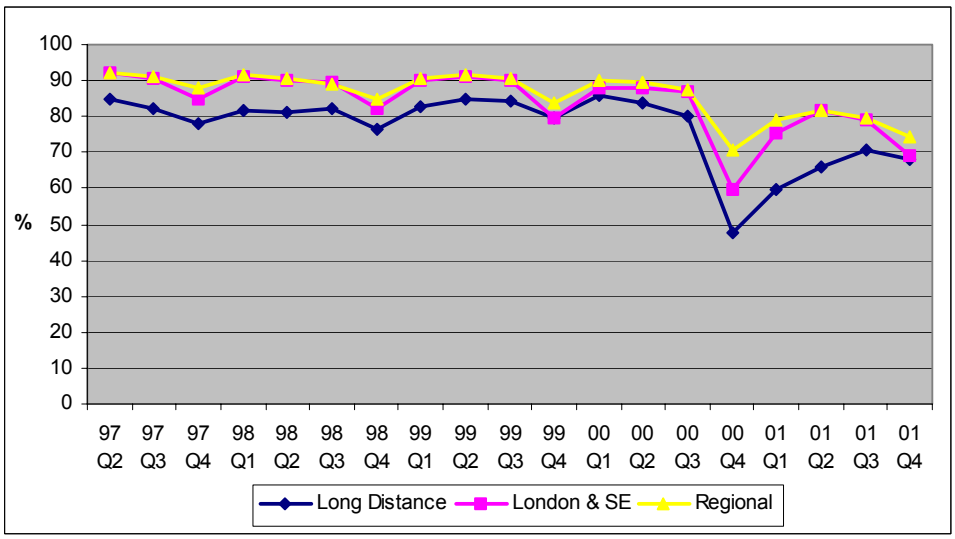
The latest results (2001 Q4) cover the period October to December 2001 based on Q3 figures for the same period in the original source data.

Source: National Rail Trends – Strategic Rail Authority - March 2002

The overall pattern is that of a steady increase in train kilometres between 1996 and 1999, with relatively constant levels since. The impact of Hatfield is much more muted in this measure than in passenger kilometres. Clearly, if the 50% increase in rail passengers is to be achieved, together with reductions in the existing levels of overcrowding, then substantial increases in planned train kilometres will have to be achieved in the next few years.

The medium term increase in rail patronage, and its apparent recovery post Hatfield raises the point of how the railways have been performing in terms of delivery of services, measured by reliability and punctuality. These two criteria are now reported as a single 'Public Performance Measure' and the values of the measure over the last few years are shown in Figure 9.

Figure 9: Rail Public Performance Measure, 1997 - 2001



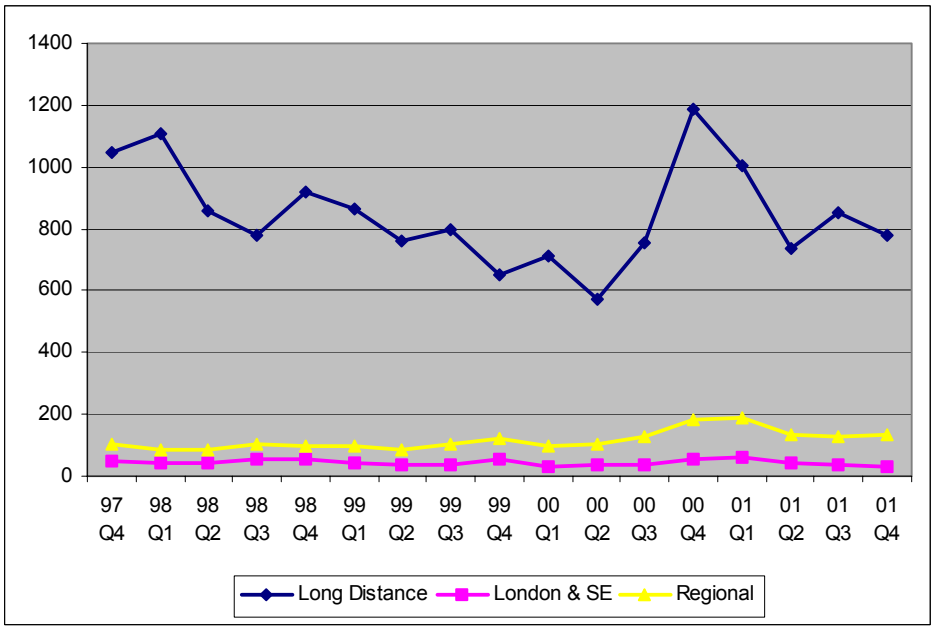
The latest results (2001 Q4) cover the period October to December 2001 based on Q3 figures for the same period in the original source data.

Source: National Rail Trends – Strategic Rail Authority - March 2002

The punctuality of all services has not shown any significant improvement in recent years. Long distance services perform consistently worse in this regard than the shorter distance services. The position for long distance services may be worse in reality than the measure suggests, because lateness is measured at the final destination only, and not at intermediate points, and recovery time tends to be allocated to the final leg of many long distance services. For example, the Reading to London journey is timetabled as taking between 30 and 36 minutes, while London to Reading takes 24 - 27 minutes (according to the public timetable). For non-London cross-country services, very few journeys are end-to-end. A more discerning target for these long distance services would include major intermediate points as well as the terminating stations.

One might expect that rail performance and public complaints would be closely correlated, and that indeed proves to be the case. Complaints made by the public are shown on Figure 10.

Figure 10: Rail Complaints per 100,000 Passenger Journeys: 1997/98–2001/02



The latest results (2001 Q4) cover the period October to December 2001 based on Q3 figures for the same period in the original source data.

Source: National Rail Trends – Strategic Rail Authority - March 2002

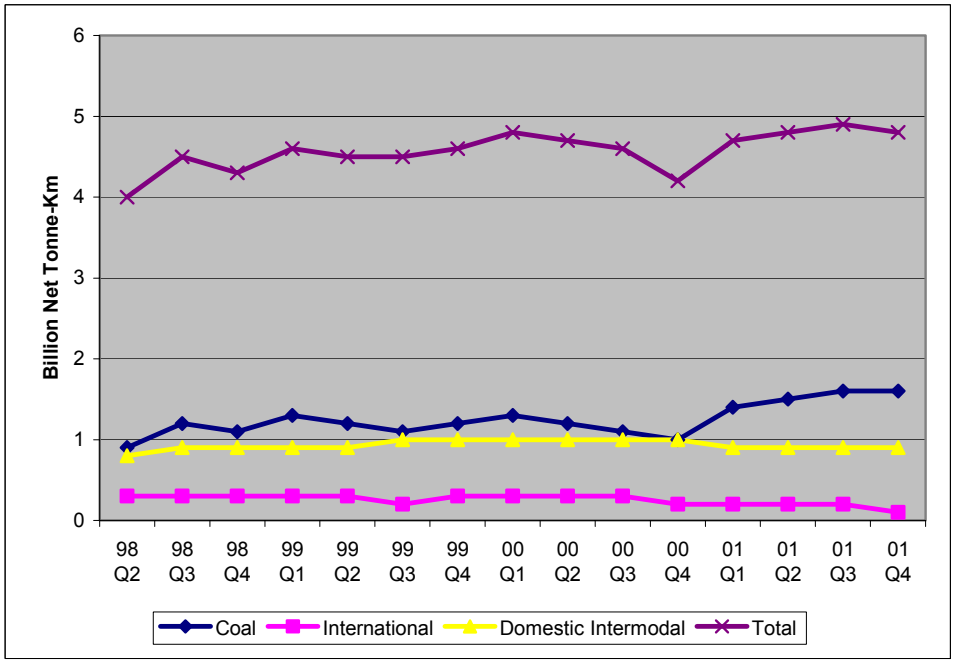
Not surprisingly, the level of complaints rose as the performance deteriorated, and has declined again as performance recovered. However, the overall rate of complaints per 100,000 journeys is still higher than they were pre-Hatfield. The complaints levels for long distance are considerably higher than for the other sectors, reflecting the more loosely defined performance measure - arrival at final destination within 10 minutes of timetable as opposed to five minutes for the shorter length services - the greater potential for delays, the generally more frequent services on London and South East and Regional Services and the less frequent travellers using Long Distance services. In addition, users of the other sectors become inured to delays such that they cease to complain at all except in cases of the most serious delays. This may also be inferred from the lesser impact of the Hatfield consequences on patronage for these other sectors.

Rail Freight

Rail freight moved, in tonne-kilometres, has fallen away since nationalisation even faster than passenger traffic. This is primarily attributable to the reduction in the amount of heavy industry, and reduced coal and steel movements, and the increased efficiency of the road freight services. Whilst rail freight has shown steady growth since 1994, it is only half the level in 2000 that it was in 1952.

Figure 11 shows the total freight moved by quarter for the last three years, and highlights the contribution to that of coal (currently some 25% of the total) international and inter-modal traffic (other types of traffic are not shown).

Figure 11: Rail Freight Moved, Tonne kms, 1998 – 2001



The latest results (2001 Q4) cover the period October to December 2001 based on Q3 figures for the same period in the original source data.

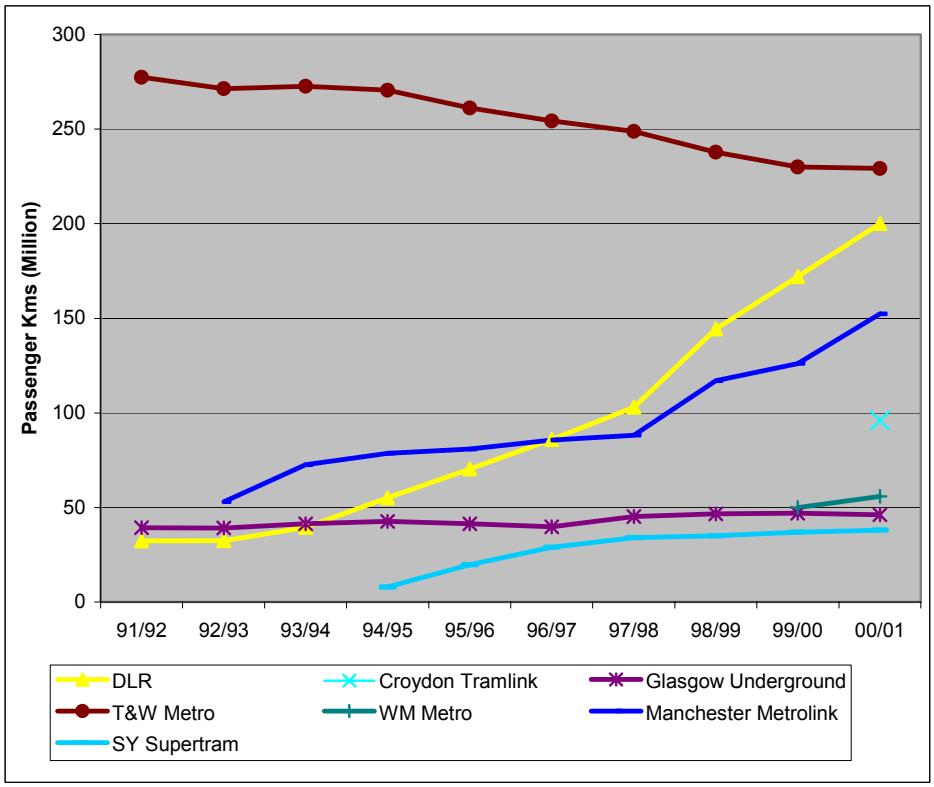
Source: National Rail Trends – Strategic Rail Authority - March 2002

Total tonne-kilometres has grown by 20% in the period, but much of this increase – 0.7 bn tonne kms of the 0.8 bn tome kms increase - is attributable to the traditional coal market. It is disappointing to see that domestic intermodal traffic appears to have reached a certain level and is no longer growing and international traffic is at a very low (and decreasing) level. Whilst recent difficulties to Eurotunnel's operations caused by illegal immigrants has contributed to the decline in international traffic in the very recent past, there has been no real evidence of growth over a number of years.

LIGHT RAIL SYSTEMS

Light rail systems have shown considerable growth in recent years, as shown in Figure 12.

Figure 12: Light Rail Patronage, Passenger kms, 1991 - 2001

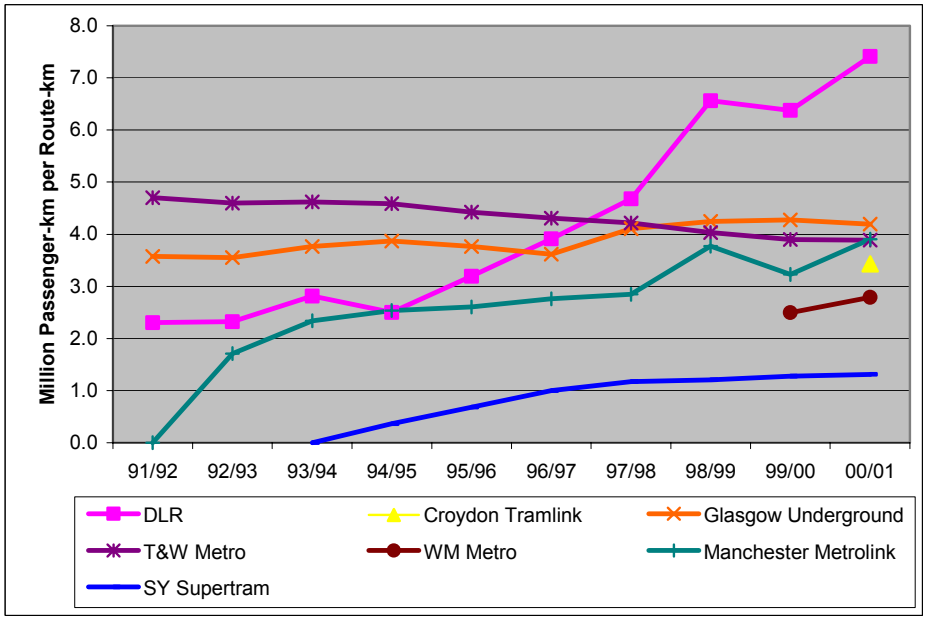


Source: A Bulletin of Public Transport Statistics – DTLR Statistics Bulletin (01) 20 - November 2001

Particular success stories are Docklands Light Railway and Manchester Metrolink, where patronage has trebled and doubled in the last five years respectively. Of the newest schemes, patronage on Croydon Tramlink (opened May 2000) is reported to be growing at 1.5% per month, equivalent to nearly 20% per annum, and Midlands Metro (opened May 1999) grew by 8% in its first year of operation. The decline in passengers on Tyne and Wear Metro, which has been halted in the last year, may be due to a loss of integration with bus services following de-regulation in October 1986, ageing rolling stock and increasing car ownership from a low base. An extension to Sunderland is scheduled to open later this year, which may herald a revival in its fortunes.

To provide a comparison of the performance of the light rail systems we have calculated the patronage per route-kilometre, which provides a more meaningful comparison of usage, and to some degree, of value for money in terms of capital investment. This is shown in Figure 13.

Figure 13: Light Rail Patronage per Route-km, 1991/2 to 2000/01

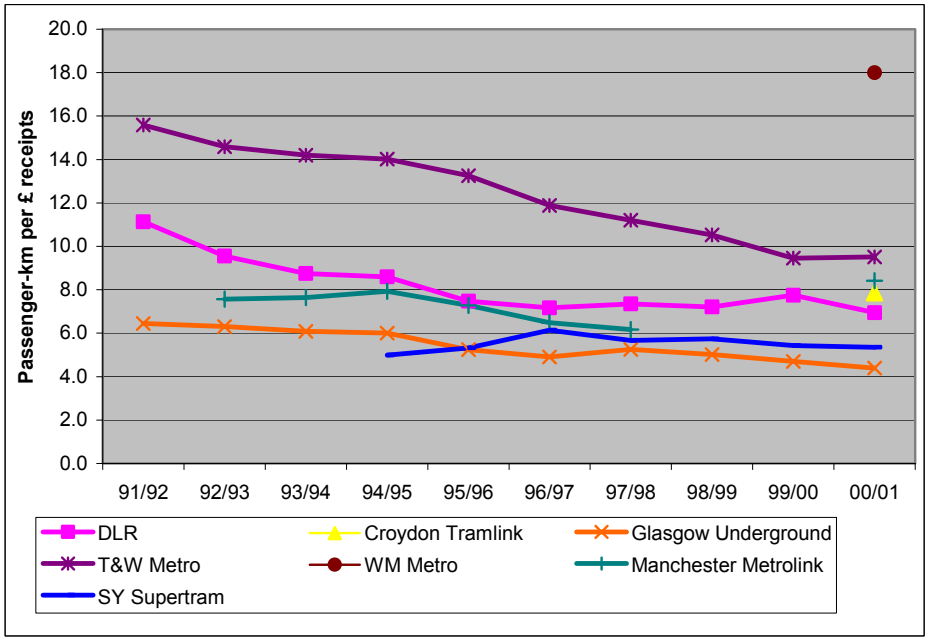


Source: A Bulletin of Public Transport Statistics – DTLR Statistics Bulletin (01) 20 - November 2001

The DLR now carries very heavy loadings, justifying a very high frequency service. Most of the other systems carry similar levels of loading per route-km, although the SY Supertram seems very clearly to be at the lower end, despite considerable improvement in recent years.

It is possible to calculate a measure of the value for money the systems offer to customers offered by the various systems, by comparing passenger kilometres per £ receipt. This is shown in Figure 14. Essentially the y-axis shows the distance travelled that £1 buys.

Figure 14: Light Rail Distance Travelled per £1 Fare, 1991/92 – 2000/01, Current Prices



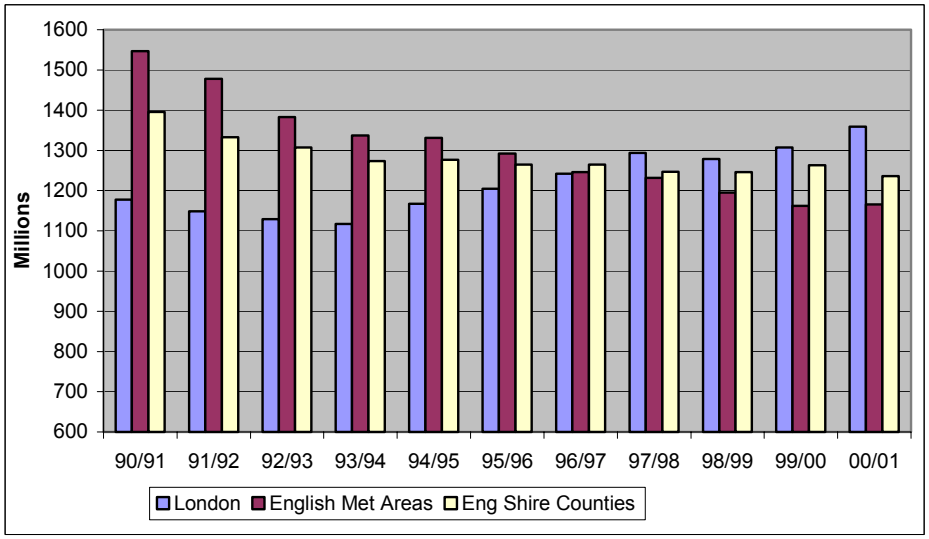
Source: A Bulletin of Public Transport Statistics – DTLR Statistics Bulletin (01) 20 - November 2001

The overall trend on all systems is for significant real fare increases, with the possible exception of the South Yorkshire Supertram. Tyne and Wear Metro has had the largest fare increases in recent years, which perhaps partly explains the decline in ridership shown on Figure 12. No data was available for Manchester for 98/99 or 99/00, otherwise it does appear that the Manchester system may have improved in terms of value for money in recent years.

BUS TRAVEL

The number of bus passenger journeys over the last decade, for London, the English Metropolitan Areas, and English Shire Counties is shown on Figure 15.

Figure 15: Bus Passenger Journeys by Area Type, 1990/91 to 2000/01



Source: A Bulletin of Public Transport Statistics – DTLR Statistics Bulletin (01) 20 - November 2001

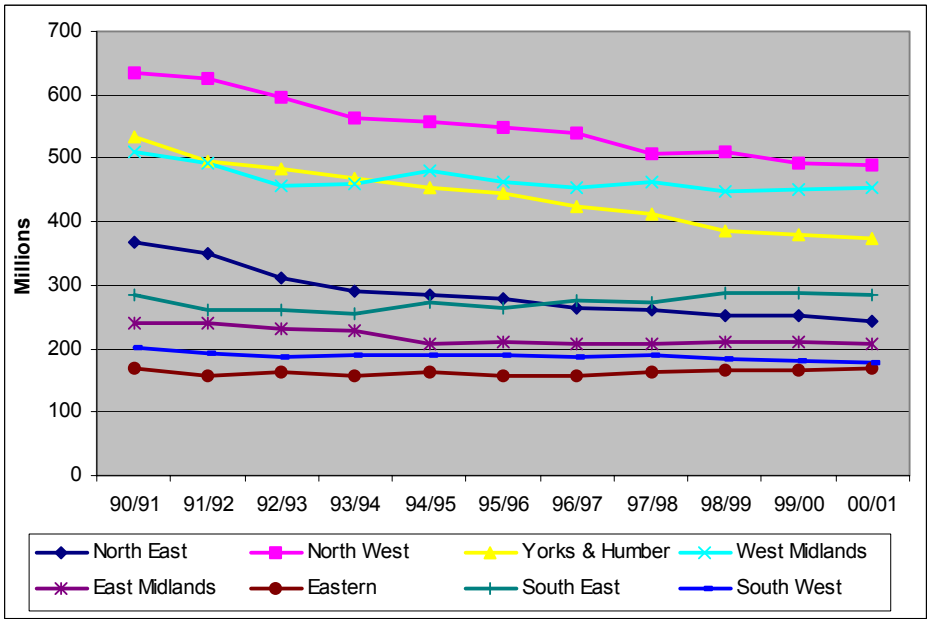
The data show quite different trends for the three types of area.

- In London, patronage has risen by 15% in the period;
- In the metropolitan areas, patronage fell significantly until 1999/00, since when it has stabilised; and
- In the Shire Counties, patronage fell gradually but consistently until 1996/7, since when the situation has more or less stabilised.

Bus travel in London has grown in the last 7 years in excess of 20%, implying that a more ambitious target for growth in London bus use in the 10YP period could be set at 25%. The case for regional targets for bus travel is reinforced by the analyses set out in Figures 16 and 17.

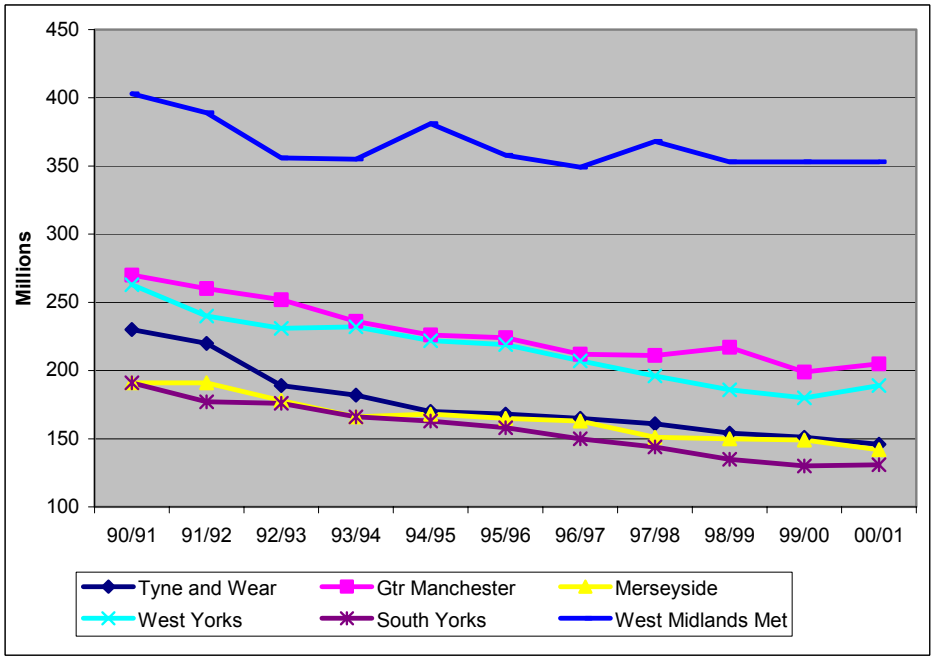
Figure 16 shows bus passenger journeys by region, and Figure 17 shows bus passenger journeys for each Metropolitan Area.

Figure 16: Bus Passenger Journeys by Region, 1990/01 – 2000/01



Source: A Bulletin of Public Transport Statistics – DTLR Statistics Bulletin (01) 20 - November 2001

Figure 17: Bus Passenger Journeys in English Metropolitan Areas, 1990/1 – 2000/01



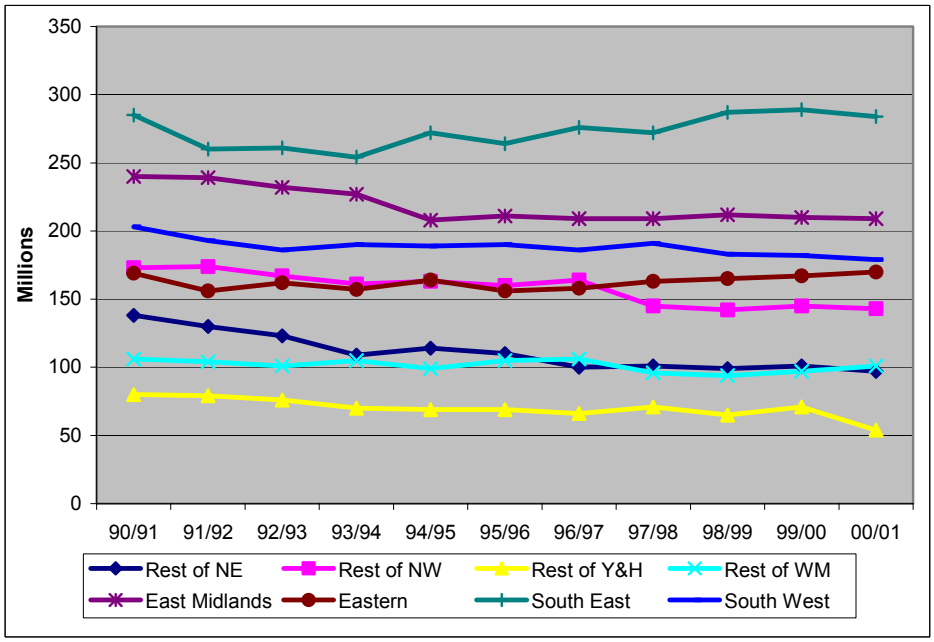
Source: A Bulletin of Public Transport Statistics – DTLR Statistics Bulletin (01) 20 - November 2001

There is a clear picture emerging here. The number of bus journeys by region (Figure 16) over the last decade shows a strong geographical divide, with the North East, North West and Yorkshire and the Humber regions all experiencing a significant decline in bus patronage, the West and East Midland regions declined in the early years but have then stabilised, and the Eastern, South East and South West regions have remained stable throughout.

As far as the Metropolitan areas alone are concerned (Figure 17), the distinction between the north and the midlands is clear, where the northern Mets have experienced significant decline in bus patronage, while patronage in the West Midlands has remained steady for the last eight years or so.

Bus patronage in the Non-Metropolitan areas is shown on Figure 18, for the last 10 years.

Figure 18: Bus Passenger Journeys in Non Met Areas, 1990/1 – 2000/01

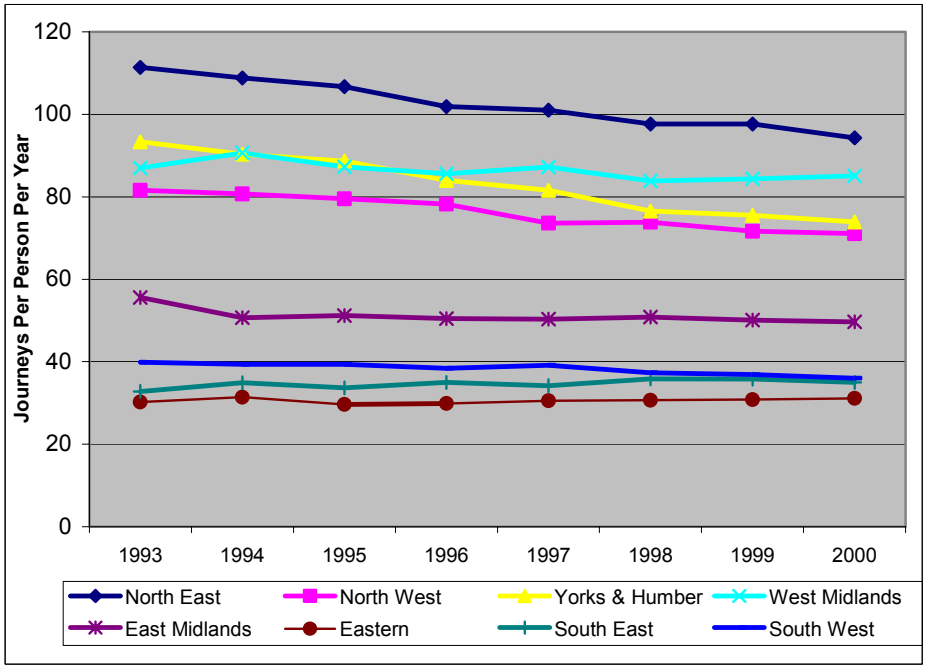


Source: A Bulletin of Public Transport Statistics – DTLR Statistics Bulletin (01) 20 - November 2001

Outside the Metropolitan areas, there is still the same evidence of decline in bus journeys in the North East and North West, although to a less marked degree than in the Metropolitan Areas.

The foregoing analysis may overemphasise the decline in the importance of bus travel in some regions. Figure 19 shows the intensity of use of buses in the English Regions, measured by the number of bus journeys per head per year.

Figure 19: Bus Passenger Journeys per Head of Population by Region, 1993 – 2000



Source: Population Trends 106 - Winter 2001; A Bulletin of Public Transport Statistics – DTLR Statistics Bulletin (01) 20 - November 2001

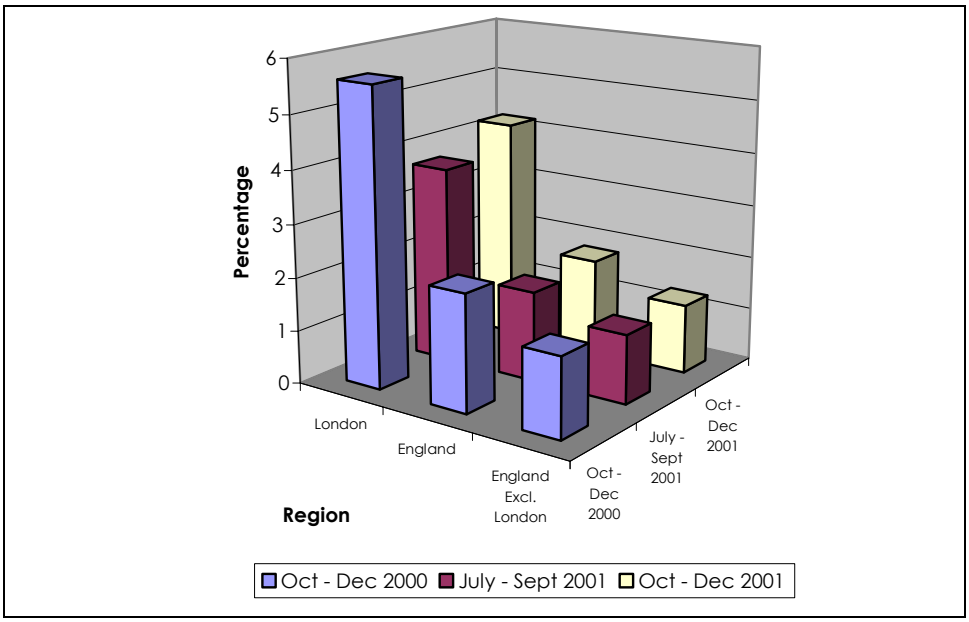
Despite a decline in recent years, bus usage per person is still 2 – 3 times greater in the North East, North West, Yorkshire and Humberside than it is in the South West, South East and Eastern Regions. Some of the decrease in total bus travel in the Northern Regions appears to be related to population decrease. What does seem to be happening is that, without intervention, bus usage may continue to decline until a certain (low) level is reached, at which level it remains relatively stable.

This analysis of bus travel may imply that the decline in bus journeys is related to the economic conditions of the regions, both in terms of employment levels and in terms of the initial low levels of car ownership. A serious potential effect of these declining levels of bus usage is likely to be increasing social exclusion in rural areas and in certain parts of urban areas.

If modal transfer targets are to be achieved, and if social exclusion is to be overcome, then the bus, which carries 68% of all public transport trips, will be an important part of the solution. There is ample evidence to demonstrate that increases in bus patronage can be achieved, and the lessons must be spread from the successful parts of the country to the remainder.

The performance of bus operators in providing their timetabled services is shown by the data on Figure 20.

Figure 20: Percentage of Local Bus Schedules Lost, 2000 - 2001

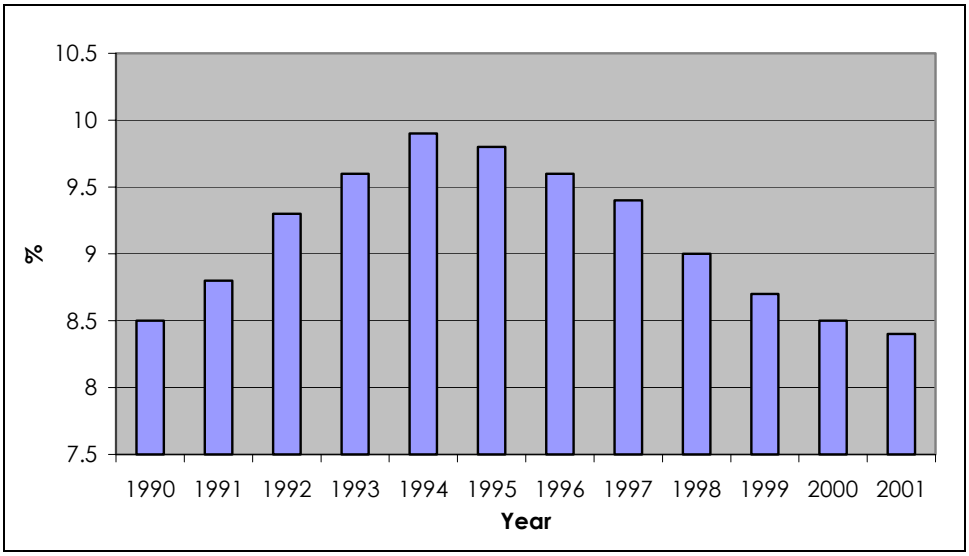


Source: Bus Quality Indicators – DTLR Statistics Bulletin (2002) 02 – April 2002

The time period of the data is relatively short, spanning two years, but in this time some improvements have been made. Bus schedules lost in Q4 of 2001 varied between 1.3% for England excluding London, and 4.2% for London. The majority of this was attributable to operators, being 1.2% and 3.9% respectively.

One of the initial targets in the 10 YP was to reduce the average age of the bus fleet to eight years by June 2001. This indicator is regarded as a proxy for some aspects of quality of service. Figure 21 shows how the average age of the bus fleet has reduced in the last 10 years.

Figure 21: Average Age of Bus and Coach Fleet in GB (9+ seats)

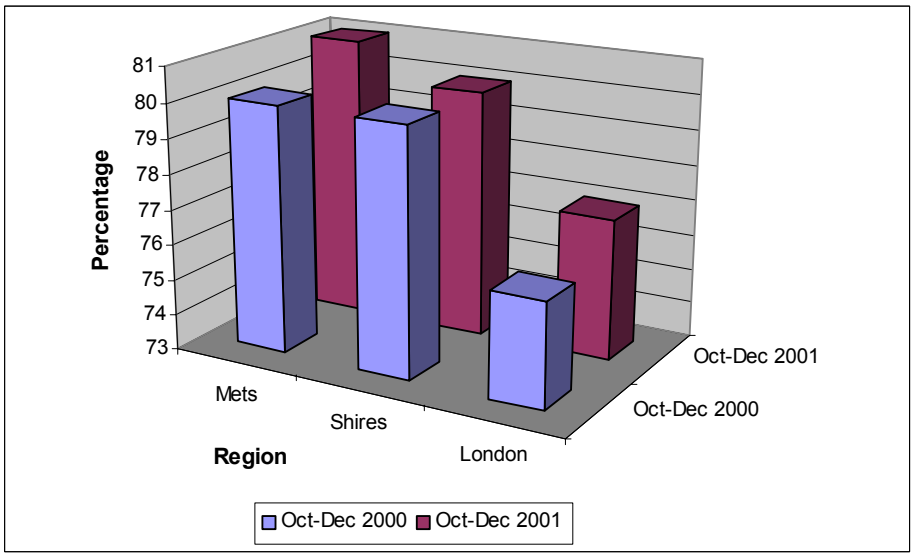


Source: Bus Quality Indicators – DTLR Statistics Bulletin (2002) 02 – April 2002

The target was nearly met: the average age in mid 2001 was 8.4 years, a reduction of 1.5 years from the 1994 figure, and an indication of the considerable investment made by operators in recent years.

From the regular bus passenger surveys undertaken by DTLR, summarised in Figure 22, measures of bus passenger satisfaction indicate a very small improvement between the forth quarter of 2000 and the equivalent period in 2001. More notable is the fact that the growth in patronage in London has been achieved despite much lower satisfaction with bus services than elsewhere.

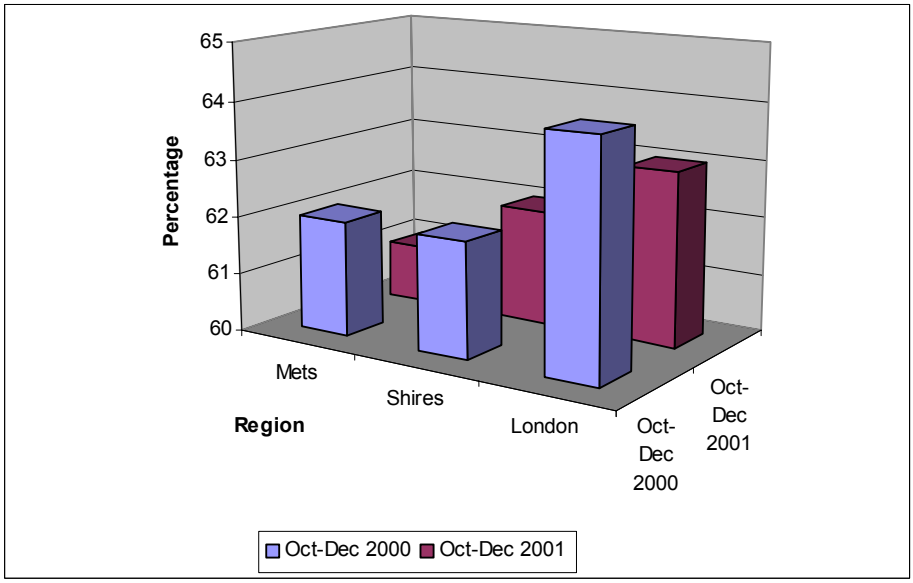
Figure 22: Bus Passenger Satisfaction: Composite Average of Service Ratings



Source: Bus Quality Indicators – DTLR Statistics Bulletin (2002) 02 – April 2002

A particular aspect of the quality of services is perceived reliability. This aspect is shown in Figure 23.

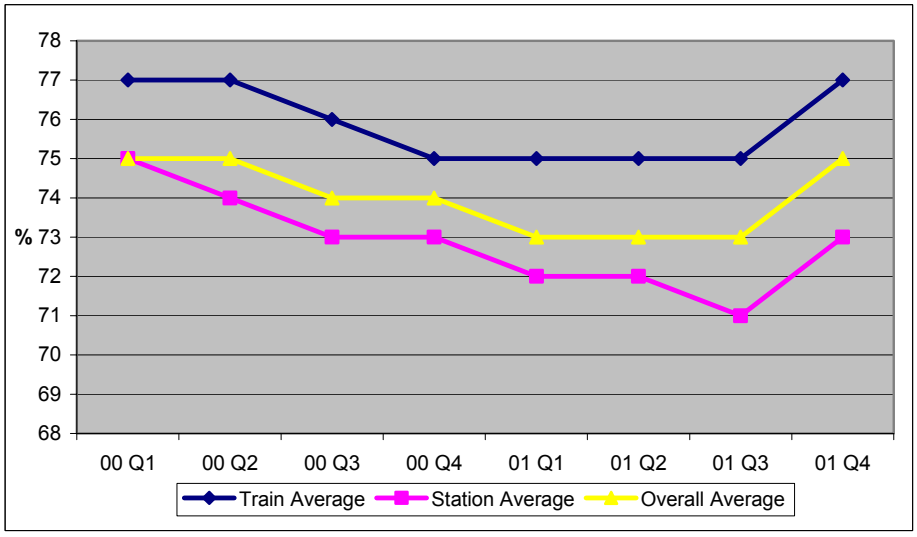
Figure 23: Bus Passenger Satisfaction - Reliability



Source: Bus Quality Indicators – DTLR Statistics Bulletin (2002) 02 – April 2002

The overall performance here is quite poor: less than two-thirds of respondents felt satisfied with bus reliability. Despite poorer overall perceived levels of satisfaction, and actual poorer performance in terms of scheduled services lost, London performs better than other areas in this particular respect. Overall, these limited data indicate a slight decline in public perception of reliability.

Figure 24: Customer Satisfaction with London Underground services



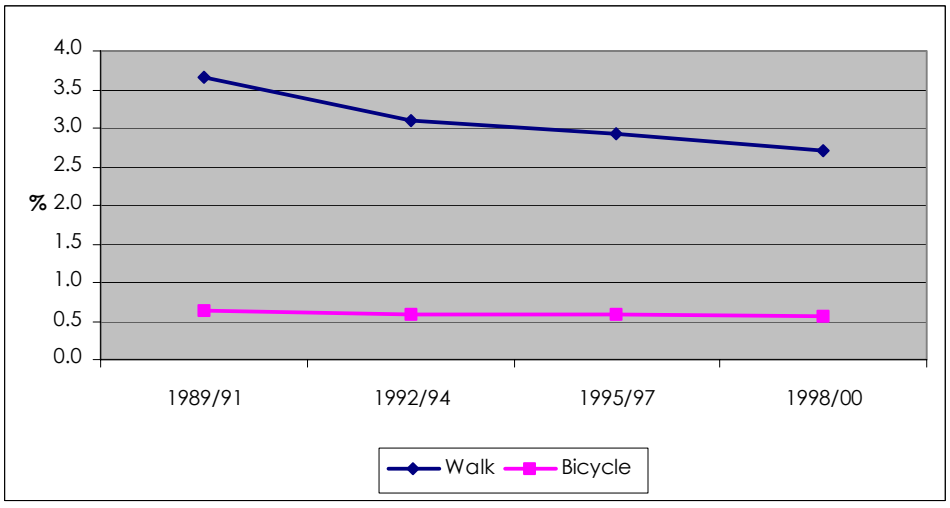
The latest results (2001 Q4) cover the period October to December 2001 based on Q3 figures for the same period in the original source data.

London Underground passenger satisfaction is monitored every quarter by means of market research with a sample of travellers. Figure 24 gives details for the past two years. In broad terms, customer satisfaction with LUL train services was about the same in 2001 as in 2002, while for station services, there was a slight decline in satisfaction in 2001.

MODE SHARES

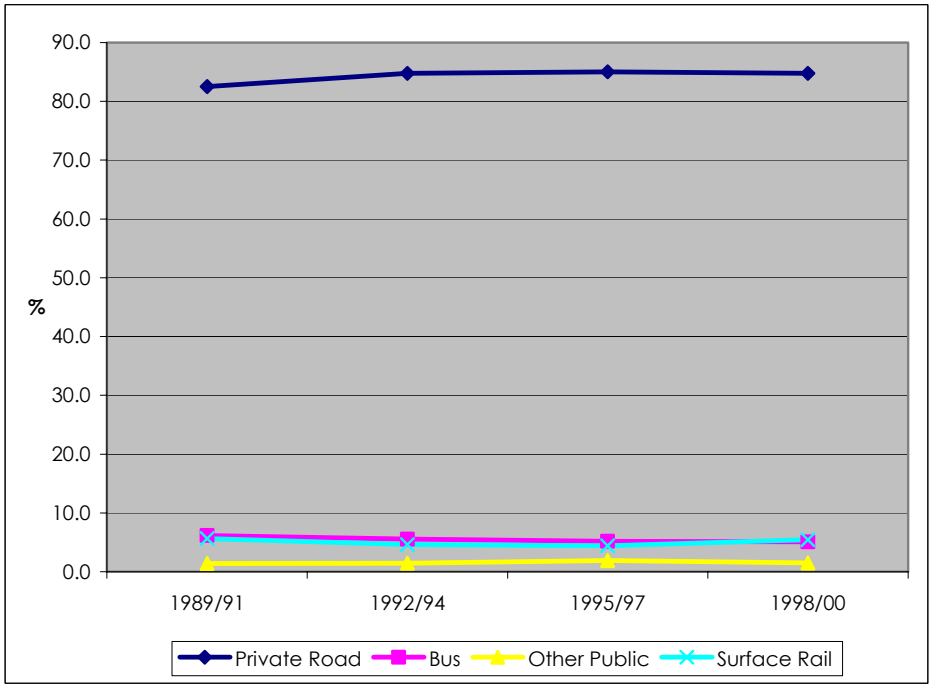
Mode shares in terms of distance travelled (person kilometres) are shown on Figures 25a and 25b for non-mechanised mechanised modes respectively, and in terms of numbers of trips on Figures 26a and 26b.

Figure 25a: Percentage of Modal Share (person kilometres): Walking and Cycling



Source: : National Travel Survey: 1998/2000 Update: DTLR Statistics Bulletin (01) 17 – July 2001

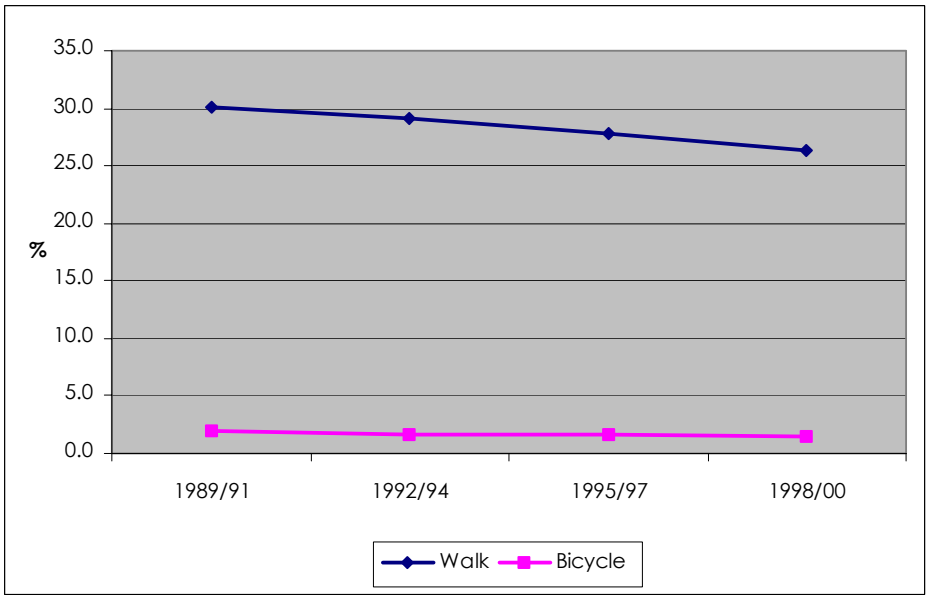
Figure 25b: Percentage of Modal Share (person kilometres): Car, Bus and Rail



Source: : National Travel Survey: 1998/2000 Update: DTLR Statistics Bulletin (01) 17 – July 2001

In terms of mileage, however, the situation is much different with car being by far the most dominant mode, with 84.7% of person mileage, followed by surface rail (5.4%) and bus (5.1%). By this measure, the contribution of walk and cycle is small, at 1.6% and 0.6% respectively, but this merely reflects the shorter journeys made by non-mechanised modes. This analysis emphasises the dominance of the car, but does demonstrate that the car share has remained constant in the last 5 years.

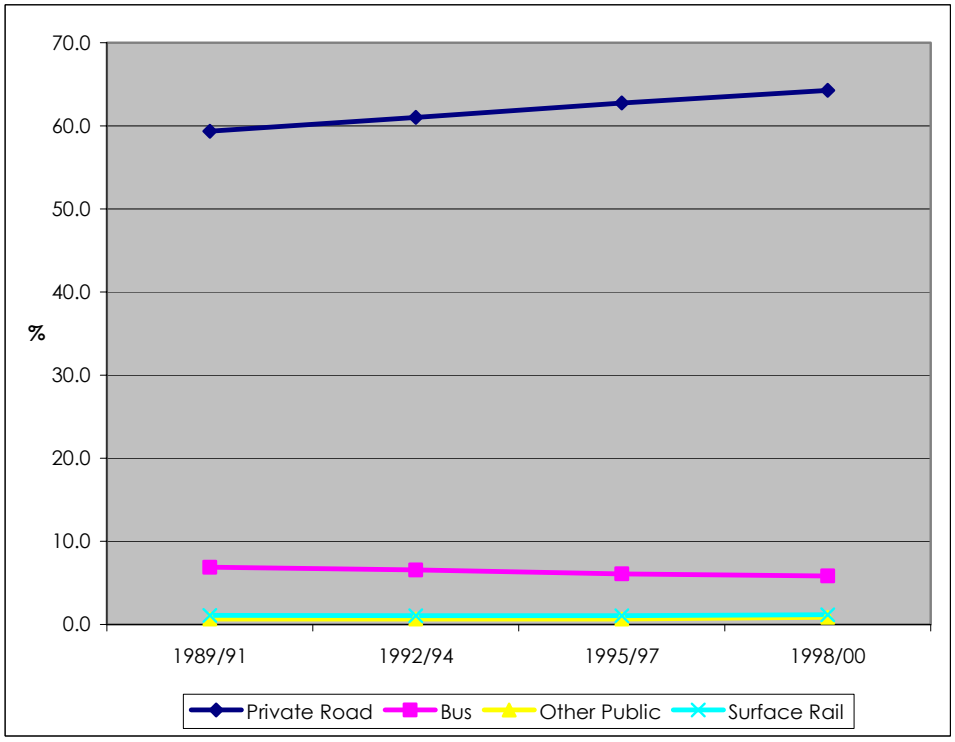
Figure 26a: Percentage of Modal Share, Number of Trips, Non-mechanised Modes, 1989/91 – 1998/00



Source: : National Travel Survey: 1998/2000 Update: DTLR Statistics Bulletin (01) 17 – July 2001

In terms of trips made, car now accounts for nearly two-thirds of trips (64.3%), followed by walk (26.3%), and then the Public Transport modes (7.9%). Cycling accounts for 1.6% of trips, more than surface rail. The increase in car trips appears to have been made at the expense of walk trips.

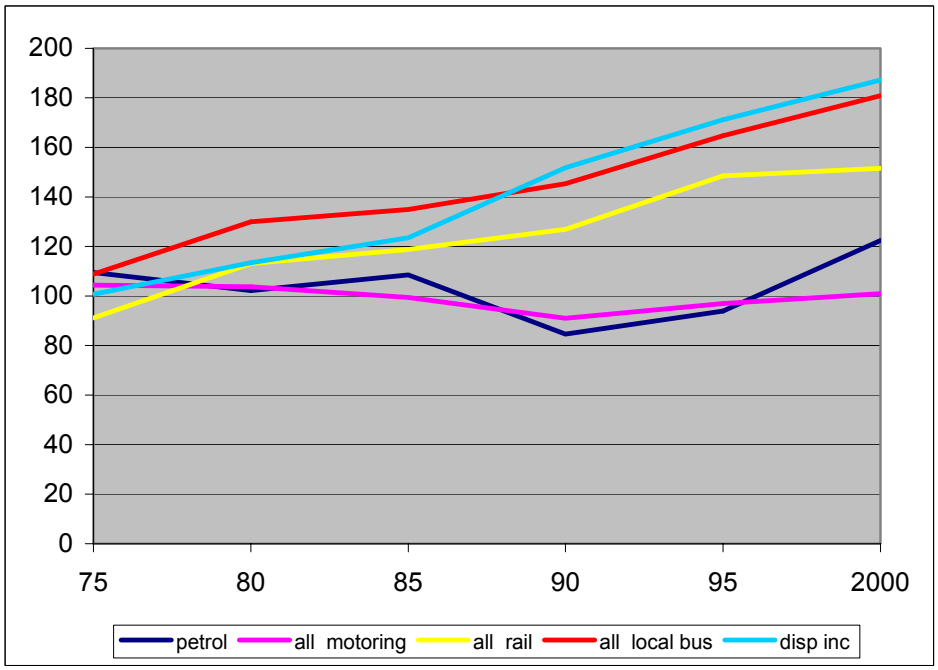
Figure 26b: Percentage of Modal Share, Number of Trips, Mechanised Modes, 1989/91 – 1998/00



Source: : National Travel Survey: 1998/2000 Update: DTLR Statistics Bulletin (01) 17 – July 2001

RELATIVE COSTS OF TRAVEL BY MODE

Figure 27: Relative Costs of Travel by Mode



Source: : National Travel Survey: 1998/2000 Update: DTLR Statistics Bulletin (01) 17 – July 2001

The relative costs of travel by mode, and the level of disposable income are shown, for the past 25 years, in Figure 27. It is clear that public transport costs have risen much faster than motoring costs, helping to explain the rapid growth in car ownership and use over the period. It is also evident that costs of travel by bus, on which the lower income groups depend, have increased at least as fast as the average level of disposable income. This has clear implications for those out of work or in low paid jobs without opportunity for progression, diminishing their opportunities to travel and increasing social exclusion.

Appendix B – Modelling

The 10YP was supported by modelling work, notably that of DTLR's National Transport (Policy) Model (NTM), but also the LTS model of London. It is therefore relevant to assess the effect that modelling has had on the Plan and the forecasts for its outcomes. In particular, it is necessary to consider whether the model assumptions, methodology or parameters have had the effect of distorting decisions in some way.

The NTM was reviewed earlier this year by Mott MacDonald and ITS Leeds, on behalf of DTLR, and a number of potential enhancements were proposed[66]. In particular, it was recommended that the model should include more explicit recognition of network details. A new version is currently being commissioned that has improved modelling of the rail network, and DTLR has recently engaged consultants to develop a national freight model, NTM being currently confined to person transport. At the same time, DTLR asked Southampton University and Mott MacDonald to examine possible future scenarios that could feed into the modelling work.

While there are a number of areas where improvements in NTM are desirable, the basis of the model has not been strongly challenged by commentators. The Mott MacDonald/ITS Leeds study included comparisons with other European national models. The main concern has been for better understanding of its characteristics, notably the range of expected outputs from changes to inputs. Some of the questions that have arisen from commentators are:

- is the generative effect of new capacity as strong as it should be?
- is the sensitivity to road user charges correct?
- does the model distort the picture of congestion as traffic levels grow?
- are the sensitivities to changes in the quality and levels of service in other modes (e.g. rail) appropriate? and
- are the scenario packages realistically portrayed in the model, for example the possible limited geographical extent of congestion charging schemes?

The complexity of the model, with its various internal interactions, makes **assessing sensitivities** a more critical matter. We see this as a crucial issue in monitoring and reviewing the 10YP, since without such information, we are not readily able to appreciate the effects of changes to the assumptions such as fewer urban charging schemes or lower economic growth. This is also of concern to DTLR, who are planning work to define better the characteristics of the new version of the model. There have been calls for DTLR to make the modelling more transparent in general.

The model conforms to standard practice of most transport models in providing predictions for a point in time, based on an assumed disposition of land-use. At a time when Government is seeking to encourage greater integration, and the 10YP is founded on integrated land use and transport solutions, it is perhaps surprising that the effects of transport on patterns of economic activity, residential choice and new development are not represented in the model. We appreciate the difficulties in the development and application of land-use interaction models. However, in seeking to reflect a policy based on a more coordinated approach, the model should take account of the **interactions between land-use and transport**, and the **time dependent effects** of the introduction of new policies. The DTLR has taken on a challenging task in developing the NTM and can be commended for what it has achieved. The NTM can be used to provide guidance on the adjustments that

[66] T van Vuren *et al From NRTF to National Transport Model – a new national transport forecasting tool* Proceedings of European Transport Conference September 2001

will be required to the Plan to ensure that the original outcomes are realised. However, there is a need to gain the confidence of those charged with implementing the Plan, that the strategy, outcomes and targets are well-founded.

We believe that the sensitivities of the model should be explored and exposed to independent peer review prior to the use of the model in reviewing the 10YP