Transport Visions

Economy, Finance and Equity

The eighth of eight reports from the Transport Visions Network

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Preface

Futurology - *the study or prediction of the future of mankind.*

1. At the beginning of the 21st Century, the UK transport profession in all its guises is very active. A Transport White Paper in 1998[1] set a new agenda to address the burgeoning levels of travel demand and motorised traffic. In the face of short-term workloads and objectives it is tempting to put to one side the potentially distracting business of transport futurology. After all, has not the time for debate and imaginative forward thinking now passed with the publication of the White Paper and 'Transport 2010'[2] which outlines the Government's £180 billion spending plan for transport? Is it not now time to begin 'bedding in' the new policies and practices that will serve us for the next decade or two? The answer is no. While action is urgently needed to address present-day problems, debate is also necessary to avoid complacency about the future and the transport challenges it will bring. Hence forward thinking remains crucial.

2. Reports documenting attempts to set out transport visions are not new and examples are plentiful. In the run up to the new millennium, many people contemplated the future of transportation and numerous documents were published presenting predictions and visions. In the UK, the RAC Foundation[3] convened an advisory group in 1992 to assess the relationship between cars and the environment and to identify research priorities. Then in 1997 the Engineering Council[4] set up working groups to examine challenges and solutions for the UK's future transport needs. They started with a simple vision of 'access for all' and 'transport without costs' and identified what was required to realise the vision, including a timetable for action. Within the Department for Trade and Industry's (DTI) Foresight Programme of 1999 a task force examined the implications for transport of four different 'environmental' futures for the period 2010-2040. The task force produced recommendations for policy and research that were designed to be robust against each of the futures.

3. The Institute for Transport Studies at the University of Leeds[5] attempted to provide a vision for the future of transport in Britain for the next thirty years by interviewing transport stakeholders about what might happen and how it could be achieved. The Europe 2020 group[6] considered the future of transport and communications in Europe. They looked at the impacts on population, lifestyles, economy, environment, regional development, urban and rural form, goods transport, passenger transport and communications of three different scenarios relating to economic growth and environmental futures.

4. David Banister[7] presented a 'Eurovision' for sustainable urban development and transport in 2020 developed by specifying environmental, regional development and efficiency targets, tracing two paths towards the targets and back-casting to determine actions required to achieve them. William Garrison and Jerry Ward[8] offered their visions of transportation systems that will better serve the future needs of the United States. They include alternative ways of managing congestion, new types of vehicles, new possibilities for cities designed to meet the varied needs of their inhabitants and different ways of moving people and freight over long distances.

5. What, then, is the justification for yet another transport visions report or indeed a series of reports? There are three principal justifications. Firstly, the world is an ever-changing place and attempts at transport visions must be regularly revisited and revised in light of the developments we experience in society, such as the emergence of mobile communications. Also the uncertainty of the future means that no single vision can claim to be accurate. The only certainty is that transport and travel patterns will always be dynamic. Visions from a variety of perspectives enable a more informed consideration of the future.

6. Secondly, we are at a propitious point in time in the UK. The present and pending acuteness of car dependence, traffic congestion and their associated effects has pushed transport high on the public and political agenda. Longstanding solutions to problems are no longer appropriate (at least by themselves) and politicians and other key decision-makers are prepared to listen to new and possibly radical propositions. The time is ripe for the imaginative thinking and innovation that can be derived from transport futurology.

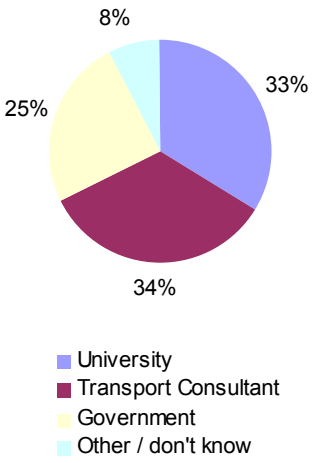
7. Thirdly, almost without exception, all previous vision documents have been the product of senior professionals. Listed in the acknowledgements of such reports are the likes of Professors, Chief Executives, Chairmen and Directors. Conspicuous by its absence is the explicit acknowledgement of young professionals. All the reports in this series have been produced exclusively by young professionals - men and women aged 35 or under. Being 'young' does not give any special insight into the future. However, with young professionals comes the prospect of new ideas and perspectives that can potentially challenge existing mindsets. Furthermore, the young professionals of today will be the decision makers of tomorrow with a responsibility for delivering effective solutions. It is hoped that the act of engaging young professionals in a transport visions debate will in itself be of value to the individuals concerned by assisting in their professional development

and the forging of new professional relationships with important future influence.

8. This report and others in the series are a product of the Transport Visions Network. The Network was conceived by Drs Glenn Lyons, Kiron Chatterjee and Greg Marsden of the Transportation Research Group (TRG) at the University of Southampton. The TRG has been responsible for securing funds for co-ordinating and reporting on the Network. Funding has been kindly provided by the Engineering and Physical Sciences Research Council, the Rees Jeffreys Road Fund and the Department for Transport. The Network was established at the end of 1999 and formally began its operations in February 2000 with the aim of addressing and reporting on eight transport Themes during a 36 month period. Membership of the Network has been open to anyone aged 35 or under. The membership predominantly consists of transport professionals who have a range of background disciplines and experience. Membership has totalled around 260 people with universities, transport consultancies, local authorities, industry and transport operators all well represented alongside other organisations.

9. The reader will find that the discussion is focussed on visions for the United Kingdom, reflecting the fact that the Network's founders are UK based, as are the majority of its members. Nevertheless, during its lifetime Network membership also has had representation from a number of other countries including: Australia; Austria; Bangladesh, Belgium; Brazil; Canada; Chile; Czech Republic; Denmark; Finland; Former Yugoslav Republic of Macedonia; France; Germany; Greece; Hong Kong; India; Indonesia; Iran, Italy; Japan; Malaysia; Mauritius; Netherlands; New Zealand; Norway; Pakistan; Portugal; Republic of Ireland; Romania; Russia; Singapore; South Africa; South Korea; Spain; Sweden; Switzerland; Taiwan; Thailand; Turkey; United Arab Emirates and the United States of America.

Network membership by employer type



10. So, what do we hope the value and impact of our reports will be? Pragmatists might be anxious to determine whether or not the reports can shed any light on solving today's problems. Others might expect that our reports should abandon convention and offer truly provocative and far-fetched forays into a distant future. Perhaps we have been able to reconcile both of these aspirations. Our principal goal is to challenge existing mindsets and to reinforce the importance of forward thinking in transport research, policy and practice. We hope to reach a wide variety of audiences and provoke fresh ideas and perspectives. If we have been successful then our reports should help to influence current policy debate. We hope they will also inspire a stream of adventurous research proposals.

Introduction

To the reader in a hurry -

This report presents the Network's views on economy, finance and equity issues relating to transport. For each of these subjects, the current context and policy approaches to existing problems are considered before introducing the Network's own ideas and solutions which are framed by the following key questions:

- How can transport contribute to a successful economy?
- How should our transport systems be financed?
- How can transport contribute to a more equitable society?

The report concludes by presenting an overview of its key messages and by reflecting on the overall achievements of the Transport Visions Network.

11. The Transport Visions Network has explored the future of transport in the 21st Century. The first report in this series, *Society and Lifestyles*[9], considered a myriad of issues and trends that are shaping, or have the potential to shape, the way that we will live in the future and the influence of future lifestyles upon our travel needs. It presented six different scenarios for the future. In the second report, *Transportation Requirements*[10], the Network set out twelve guiding principles for the design of future transport systems. These principles were designed to guide the development of solutions and ideas during all subsequent themes and are listed below:

Transportation Requirements

1 There should be an equitable distribution of access to a range of key real and virtual destinations that support people's quality of life.

2 The absolute level of resource use for transport activities should be controlled and the resource efficiency of mobility should be maximised.

3 Users should pay the full internal and external costs of transport and these should be made transparent. Where appropriate, transport uses or users providing external benefits should be subsidised.

4 In the provision and operation of transport systems the adverse effects on the environment should be minimised

according to agreed principles and targets.

5 There should be discrimination and prioritisation between different types of trips and activities.

6 Transport should not exacerbate the adverse effects of lifestyle on health and safety and should aim to reduce these effects wherever possible.

7 Electronic and other non-mobile means of communication should be considered as transport options and treated accordingly in policy and practice.

8 Land use efficiency should be maximised and net land take by the transport system minimised.

9 The reliability of the transport system and its operation should be regarded as a fundamental system management goal.

10 Transport should not exacerbate problems of social participation and should aim to reduce these problems wherever possible.

11 Stakeholders should play an integral role in the entire life cycle of problem identification, solution formulation, implementation and evaluation.

12 Transport users should be enabled and encouraged to make fully informed choices.

12. The third report in the series, *Land Use Planning*[11], considered, through four different visions, the role of land use planning in shaping transport. The fourth report, *Vehicles and Infrastructure*[12], presented six visions of how vehicles and infrastructure might change to address current and future transport problems associated with UK surface transport.

13. The fifth report in the series, *Local Travel*[13], offered a range of solutions to problems associated with local travel. Solutions were presented in the form of a 'toolkit for local travel'. The sixth report in the series, *Long Distance Travel*[14], developed four different visions which looked at ways to improve the experience of undertaking long distance travel, to reduce the need for long distance travel and to enable more sustainable long distance travel modes to compete with less sustainable ones.

Economy, Finance and Equity - The Network's Approach

14. The seventh report in the series, *Freight and Logistics*[15], examined present policy approaches and problems relating to the operation of freight and logistics before introducing the Network's own ideas and solutions presented within the contexts of three different scenarios for the future of society.

15. This report, the eighth and final in the series, considers economy, finance and equity – three key determinants of how the future of transport is taken forward. Transport's past has been driven by assumptions and beliefs about the links between transport and the economy. Approaches to financing pursued hitherto have shaped the development of our transport systems and services. The extent to which, to date, we have evolved a transport system that promotes equity within society is questionable.

16. The report has been assembled from the contributions of a wide range of individuals from the Transport Visions Network, through structured email debate and a workshop. The suggestions put forward do not necessarily reflect a consensus of opinion. Quotations appearing in the text of the report without any attribution are statements made by Network members during either email or workshop discussion.

17. During the period of email discussion, Network members were asked to consider a range of issues and problems associated with economy, finance and equity. For each of these topics a focus question was identified which aimed to direct the Network's thoughts and ideas on the subject:

- How can transport contribute to a successful economy?
- How should our transport systems be financed?
- How can transport contribute to a more equitable society?

18. Following the email discussion, a workshop of Network members took place to consider emerging concepts and to develop further ideas. These ideas are presented in Sections 1 to 3. Parallel to this discussion of new and emerging ideas, it was considered appropriate to take the opportunity to consider the implications for economy, finance and equity of some of the ideas generated by previous Network reports: *"We should not be afraid of revisiting issues and the potential exists for developing our existing thinking and taking it in new directions. A lot of our ideas from previous reports have had equity implications as they have had implications for how the ideas would be financed and we've perhaps not reflected too much up until this theme on what the economic effects of some of our ideas would be"*. Accordingly, the report includes relevant examples of many of the ideas and visions from previous reports in the series.

19. In Sections 1 to 3, discussion of the Network's ideas is preceded by statistical and current UK policy context information. The report concludes with an overview of the outputs of Sections 1-3 and some reflection on the achievements of the Transport Visions Network.

1 Economy

The Economic Context

20. The first question that the Network addressed was how transport can contribute to a successful economy. In order to develop ideas it was first necessary to consider existing evidence regarding the relationship between transport and the economy.

21. Irrespective of the significance of transport to other sectors of the economy, it is worth noting the number of people employed directly in the transport sector and different industries within it. Table 1 shows that 1.89 million people were estimated to work in transport and related industries in the UK in 2002. This represented 6.8% of total employment. It has been suggested that the transport sector will need to recruit over half a million new employees over the next decade to deliver the expenditure detailed in the 10 Year Plan[16].

Employment in Transport

Table 1: Employment in Transport[17]

Industry	Employees (000s)
Rail	50
Other land transport	459
Water transport	15
Air transport	97
Cargo handling, storage and other activities	247
Travel agencies and tour operators	117
Manufacturer of transport equipment	369
Retail distribution and filling stations	383
Maintenance and repair of motor vehicles	156
Total	**1893**

Expenditure on Transport

22. In total, households in the UK spend £84 billion per year on transport. This represents about 9% of GDP[18]. The average weekly household expenditure on transport exceeds that for all other categories according to the 2001-2002 Expenditure and Food survey shown in Table 2. In addition to household expenditure on personal transport it is estimated that expenditure on freight transport is £10-15 billion per year[19].

Table 2: Average weekly expenditure (£s) by UK households in 2001-2002[20].

Category	Expenditure
Transport	57.70
Recreation and culture	54.00
Food and non-alcoholic drink	41.70
Housing, fuel and power	35.90
Restaurants and hotels	33.50
Miscellaneous goods and services	30.60
Household goods and services	30.40
Clothing and footwear	22.70
Alcoholic drink and tobacco	11.40
Communication	10.40
Education	5.50
Health	4.50
Other	59.50
Total	**397.70**

23. In 2000/01 the Government spent £8.7 billion on transport (capital and revenue) with this set to rise to £12.3 billion per year on average during the period 2001/02 to 2010/11[21]. In the past, the UK Government has spent proportionally less money on transport than other countries in Western Europe. In 1996, the UK spent 0.6% of its GDP on transport, compared with 1.1% in France, 1.2% in Germany and 1.3% in Italy [22].

24. The figures presented demonstrate that transportation is an important sector of the UK economy, but how important is further transport investment for future economic development in the UK? According to economic theory[23], transport investment is worthwhile if resources saved or generated are more than resources consumed. This is likely to be the case in situations where there is high demand for travel compared to supply and where transport

costs are a significant economic constraint. It needs to be recognised, however, that there will usually be a fixed amount of investment capital available to Government and transport must compete with other sectors for this capital.

Growth in GDP and Traffic in the UK since 1980

25. Historic data shows that growth in traffic has been strongly linked to economic growth (see Figure 1 below). Since 1992, the rate of traffic growth has been substantially lower than the rate of economic growth. A possible explanation for this is the effect of the fuel duty escalator (FDE). This was a policy instrument aimed at decreasing vehicle emissions levels. It involved increases in fuel duty in real terms year-on-year and was in place between 1993 and 2000. It is too early to estimate the effect of the removal of the FDE, but analysis of economic and traffic growth patterns in the post-2000 era will provide valuable evidence of the existence, or not, of links between these patterns of growth.

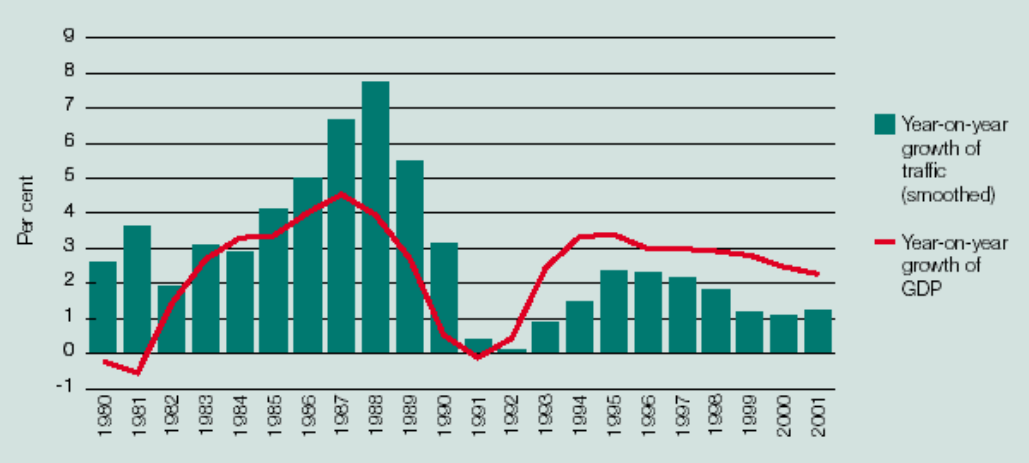


Figure 1: Comparison of growth in traffic and GDP[24]

UK Policy - A Transport System to Support the Economy

26. The UK Government accepts that there is a relationship between transport and economic growth. As can be seen from the discussion that follows, it argues that transport investment is required to promote economic competitiveness and to handle travel demand growth induced by growth in incomes.

27. The 1998 Transport White Paper stated that "we need an efficient transport system to support a strong and prosperous economy"[25]. It noted that congestion and unreliability of journeys add to the costs of business, undermining competitiveness. The document suggests that congestion and unreliability costs the UK economy between £7-15 billion per year. In an effort to reduce these costs, the White Paper sets out a policy framework to:

- Improve reliability for journeys in all modes, helping to support business and economic growth;

- Improve links with international markets;
- Support regeneration and the vitality of urban and rural areas;
- Make more efficient use of the transport system;
- Promote more sustainable UK transport industries.

UK Policy – A Transport System to Handle Growth in Travel Demand

28. The Ten Year Plan[26] states that "Increased economic activity and growing incomes generate higher demand for personal travel and the transport of goods and services… People are choosing to spend more of their increased disposable income in ways that generate transport demand." It goes on to say that "Although new technology and the better-planned location of homes and businesses can reduce the need to travel, it is prudent to plan on the basis that economic growth will continue to generate more demand for travel in the foreseeable future." Indeed, when the Government published its progress review on the Ten Year Plan in December 2002 it announced revised forecasts for congestion. The new forecasts predicted congestion would grow faster than previously expected and attributed this in part to higher than anticipated growth in the UK economy[27].

29. The Plan envisages public and private transport funding totalling £180 billion over the period 2000-2010 with funding split evenly between railways, roads and local transport. The Plan set the following targets:

- 50% increase in passenger rail use and 80% increase in rail freight;
- Road congestion reduced below current levels;
- Widening of 360 miles of strategic road network and 100 new bypasses on trunk and local roads;
- 10% increase in bus passenger journeys;
- Up to 25 new rapid transit lines in major cities and conurbations.

Transport Interventions and Economic Impacts

30. In 1999 a report commissioned by the UK Government was published on 'Transport and the Economy'[28] by the Standing Advisory Committee on Trunk Road Assessment (SACTRA). This report has some important insights on the role of transport investments for the economy. The report addressed the following three questions.

31. **Do transport improvements lead to increased, or more efficient, economic activity?** SACTRA identified that the main mechanism by which changes in transport can affect the economy is through changes in the cost of movement, in particular, changes in travel time. The benefits of travel time savings are measured using

values of time for different traveller types. Economic theory suggests that these initial impacts may be converted to economic impacts via, for example, rationalisation of production, distribution and land use, effects on labour market catchment areas and hence labour costs, increased output resulting from lower costs of production, stimulation of inward investment, unlocking inaccessible sites for development and triggering growth which in turn stimulates further growth. This said, SACTRA found that empirical evidence for such impacts arising from transport improvements is scarce, but the theoretical linkages are well founded.

32. In a country with a mature economy and well-developed transport system, such as the UK, SACTRA suggests that it is likely that transport improvements can only make modest contributions to a sustainable rate of economic growth. The economic impact of each particular scheme will depend upon local circumstances and conditions. In other words, the report suggests that there is no fixed relationship between transport investment and economic growth.

Economic Growth and Transport Growth

33. **Can economic growth be 'decoupled' from traffic growth?** SACTRA's view is that policies intended to change the volume of traffic that will arise from any particular level of economic activity are feasible, in principle. Traffic reduction policies (e.g. capacity reduction measures) can contribute to economic performance in the circumstances where transport prices are below marginal social costs (marginal social cost is the cost to the user and to others produced by one more unit of travel). Transport prices may be lower than marginal social costs if they do not account for external costs such as those due to congestion and air pollution. In these circumstances a better alignment of prices and costs can reduce external costs and therefore increase economic welfare. In order for increased transport prices to be beneficial to the geographical area targeted it will be necessary to recycle the revenue in the area for purposes which are themselves good value for money. In practice traffic reduction polices may be pursued using non-pricing methods such as parking controls or pedestrianisation and it will be important to make sure benefits are targeted at appropriate groups.

Valuing Economic Impacts

34. **Are economic impacts captured in current procedures?** SACTRA suggests that in an economy in which there is 'perfect competition' estimated costs and benefits to transport users (time savings, operating cost and accident reductions) and to non-users (environmental impacts provided that they are quantified in monetary terms) would give a full and unbiased estimate of the overall economic impact of a transport intervention. SACTRA goes on to say that the incomplete treatment of the behavioural responses to transport interventions of individual travellers and of

companies, especially in the longer term, and difficulties associated with quantifying some environmental, social and community impacts in monetary terms, are major weaknesses in current appraisal methodologies.

35. Table 3 is an example of continuing efforts to quantify the marginal social costs of transport. It relates to the overall road sector, aggregating the results for different area types, road types, vehicle types and time periods. It compares the costs of road use (low and high estimates) of an additional vehicle kilometre to the increase in revenues of an additional vehicle kilometre. The results in Table 3 indicate that transport charges would need to rise if charges are to be set on economic efficiency grounds.

Table 3: Comparison of 1998 Road Sector Costs and Revenues in Great Britain (in pence per vehicle kilometre, 1998 prices and values)[29]

	Marginal cost	
COSTS	Low	High
Infrastructure operating costs and depreciation	0.42	0.54
Vehicle operating costs (public service vehicles)	0.87	0.87
Congestion	9.71	11.16
Mohring effect (public service vehicles) *	-0.16	-0.16
External accident costs	0.82	1.40
Air pollution	0.34	1.70
Noise	0.02	0.78
Climate change	0.15	0.62
VAT not paid	0.15	0.15
Sub-total of costs	12.32	17.05
REVENUES	Low	High
Fares (public service vehicles)	0.84	0.84
Vehicle excise duty	0.14	0.14
Fuel duty	4.42	4.42
VAT on fuel duty	0.77	0.77
Sub-total of revenues	6.17	6.17
COST/REVENUE COMPARISONS	Low	High
Difference (cost-revenue)	6.15	10.88
Ratio: revenues/costs	0.50	0.36

* Mohring effect refers to the costs to other users of a scheduled service. These can be negative (i.e. benefits) if additional traffic results in better service provision.

36. In reality, 'perfect competition' does not exist in economies. This means that the value of initial transport impacts (time savings, etc.) will not be the same as the value of final economic impacts. If

transport prices are too low due to uncharged congestion or environmental effects then a transport improvement could lead to additional costs for the economy. Conversely, if transport prices are too high due to monopoly power then a transport improvement, which successfully opens the area to external competition, could lead to additional benefits for the economy. SACTRA concluded that optimal pricing often does not exist, so assessment of price conditions is vital to allow appraisal to identify conditions in which transport improvements may assist the promotion of economic growth.

37. Another issue in the appraisal of the economic benefits of transport appraisal is the spatial area under consideration. It is important to consider the complete area affected by a transport intervention, as a new road connecting a remote region to a central region, for example, may not benefit the economy of the remote region but may benefit businesses in the central region.

Strategies to Decouple Economic Growth and Transport Growth

38. At the European level, the importance of understanding the relationship between transport and economic growth is recognised. The 2001 EU White Paper on Transport states that breaking the link between economic growth and transport growth is central to its proposals[30] and the EU's sustainable development strategy identifies decoupling transport growth from growth in GDP as one of its main objectives[31]. Stead and Banister[32] have examined the prospects for achieving this. They consider that there are some future developments that are likely to help to decouple transport growth and economic growth (e.g. smaller manufactured goods) but there are other factors hindering this process (e.g. increasing number of households and increasing levels of consumption). They suggest adopting a combination of five different forms of policy intervention to achieve decoupling:

1. Information and Communications Technologies (ICT) (e.g. travel information, teleservices);
2. Land use planning policies (e.g. density, parking supply);
3. Macro-economic policies (e.g. energy tax, landfill tax);
4. Transport policies (e.g. road pricing, public transport priority)
5. Dematerialisation and organisational policies (e.g. waste regulations, production processes).

Comprehensive Congestion Charging

39. It has been mentioned previously that to maximise economic efficiency there should be an alignment of transport prices with marginal social costs. The European Commission is seeking to promote this[33]. This issue has been explored in detail in a study undertaken on behalf of the UK's Commission for Integrated Transport (CFIT)[34]. The study looked at the potential benefits of a

comprehensive congestion charging scheme for roads in England. The congestion charges were determined based on the costs that road users impose on each other and their surrounding environment (known as marginal social cost pricing). The charging scheme examined was fiscally neutral with reduction in motoring taxes alongside the introduction of charges on roads where and when congestion occurs.

40. The modelling results predicted that the charging scheme would entail an average charge of 4.2 pence per car mile and would reduce traffic by 4%, increase average travel speeds by 3% and reduce road congestion by 44%. Annual travel time savings would be worth £1.9 billion and increased reliability worth £0.5 billion. Motorists across the country who use quieter roads at quieter times of the day would see their motoring costs fall significantly. Drivers using the busiest roads at peak times would pay more but benefit from shorter and more reliable journey times. The Government's position on congestion charging has remained unchanged after the report's publication. It has introduced legislation allowing local authorities to introduce charging on local roads (taken up in Durham and London to date) but for motorways and trunk roads it considers that there needs to be further research to establish the feasibility of electronic systems to implement comprehensive charging.

Transport and the Economy - The Network Approach

"How can transport contribute to a successful economy?"

41. In seeking to address this question the Network identified three aims that would guide its thinking:

1. Encouraging the beneficial impacts of transport upon the economy
2. Reducing the harmful impacts of transport upon the economy
3. Anticipating and addressing the transport consequences of economic growth

Encouraging the Beneficial Impacts of Transport upon the Economy - Facilitating Trade

42. Transport plays a vital role in supporting the UK economy: *"Transport is integral to economic growth because it facilitates trade. Anything from a pizza home delivery to the steel industry getting a coal shipment depends on transport. Indeed, most of the goods and services which we take for granted in the UK and which materially enhance our quality of life would not be available without effective transport services and infrastructure"*. Transport further supports trade by encouraging overseas investment in the UK. As

our ability to travel further and faster increases so the range of goods and services in which we can trade increases also, and the search for and development of new markets stimulates economic growth. The importance of transport in facilitating trade cannot be overstated and supporting this function in as efficient and sustainable a manner as possible guided the thinking behind many ideas generated in the Network's seventh report, *Freight and Logistics*[35]. For example:

Freight Lanes

Increasing demands upon transport infrastructure could radically change the operation of road freight. This might result in dedicated freight-vehicle-only lanes, or a combination of freight and high occupancy passenger vehicles to maximise use, particularly on motorways. Such a regime of lane allocation could be further developed with the aid of electronic enforcement. Use of freight lanes could be restricted to fully laden goods vehicles. This would incentivise a reduction in empty running because use of the freight lanes would ensure more reliable and predictable journey times.

Bus-Trucks

In seeking to provide transport facilities to support distributed, small-scale supply chains at a local level it might prove beneficial to harness some of the flexibility associated with passenger transport. Dual purpose vehicles could be employed to allow passengers and goods to be transported on demand, in a similar way to the present day use of post buses in rural Britain. The vehicles might be compartmentalised into passenger, freight and recycling sections. Concertina seats could press down to create freight storage and there could be sealed and insulated roll cages. Health and hygiene concerns could be addressed by internal power washing of the vehicles. This would make greater public transport provision financially viable by using vehicles off-peak for goods movement. The marginal cost of such operations is already low given the availability of vehicles and drivers. Therefore high asset utilisation would result.

Enhancing Communication

43. Transport also benefits the economy by facilitating communication. The Network has consistently argued that the ability of transport to support communication could be greatly enhanced by the consideration of non-mobile means of communication as an integral part of transport policy[36]. To this end, the offering of all possible encouragement to initiatives to facilitate communication by ICT and reduce or replace the need for physical travel has been advocated and specific ideas to support this generated. For example, in the first Network report, *Society and Lifestyles*[37], the following future scenario was developed:

> Workplace to the Workers
>
> Teleworking will be practiced widely. It will be stimulated by steps taken to make employers bear the travel costs of employees getting to work. Employers will prefer to pay for equipment and energy costs of their employees working at home. At first, employees will only telework part-time but the emergence of widespread community offices will combine the benefit of interaction with other workers and the advantage of not having to travel to distant offices. Community offices will contain 'worker cells', offering advanced communications media to enable workers to effectively interact with colleagues at other sites. Community offices will encourage people to interact more with people from their local area and generate the development of other community amenities (after-school clubs, supermarket/retail delivery points, etc.).
>
> The 'workplace revolution' will enable a larger proportion of the population to work, using a variety of working arrangements. The reduced importance of physical location will also enable companies to maintain required staff levels more easily. The 'paperless office' will become a reality with electronic paper and books revolutionising the way that computers are used. These will be user-friendly devices enabling the reader to sit in an armchair in comfort as with an ordinary book rather than enduring the discomfort of staring at a vertical computer monitor. Further into the future, lightweight headsets will display information directly onto the retina.

44. The Network has also developed a range of ideas to enhance the efficiency of communication that requires physical travel. These have included the development of a strategic network of combined interchange and conferencing facilities at important nodes. An

example of such thinking follows, taken from the sixth Network report, *Long Distance Travel*[38]:

> Station Conferencing Facilities
>
> Businesses could be encouraged to look at the trips they generate through customer and client visits to their offices. Here ICT offers an obvious solution, but where physical meetings are deemed necessary, then options for improvement remain. Businesses could hire meeting and conference facilities near to railway stations in a manner similar to that employed at airports. This would make rail travel the easiest and most convenient choice for attendees, as the destination is closely linked with the mode.
>
> In these circumstances, the long distance travellers using the strategic network have a simpler journey devoid of a local leg, whilst the organisation at the destination only undertakes a short local trip, with which they are likely to be highly familiar. The principle could be carried further still for small companies, which might choose to exist with no fixed office. The rental costs of these conferencing facilities would be likely to be cheaper than having a city centre or out of town office. Companies could exist virtually at station conference facilities around the country, supported by a postal box, operating by email and staffed by teleworkers.

Connectivity and Regeneration

45. The Network was keen to distinguish between communication and connectivity in terms of enhancing the role of transport in supporting the UK economy: *"Connecting people to opportunities is not just about enhancing communication because opportunities are not just communicable issues; connectivity underpins the opportunity to purchase, work and trade, overcoming spatial separation and providing access"*. Connectivity also plays a vital role in supporting regional economic regeneration by enhancing transport links between regions with varying degrees of economic prosperity.

46. In areas where the provision of transport services and infrastructure is considered inappropriate, inadequate, or of poor quality, it can contribute to the economic difficulties faced by the locality or region. By contrast, when transport services and infrastructure are heavily concentrated in a particular area it can contribute to the overheating of the local or regional economy: *"Driving a motorway through an area may reduce house prices, increase*

community severance and harm the environment, all of which harms the economy. However, building a tram system in an area may increase property prices to such an extent that some sectors of the indigenous population, particularly those living in rented accommodation, cannot afford to live there and the community becomes gentrified. In such circumstances, it is likely that the perceived transport benefits of the tram system will be off-set by the fact that people will have to move to areas with less efficient transport services and thereby compound existing problems"

47. The Network has developed a series of ideas to improve connectivity and these include the development of high-speed rail services linking major UK cities and regional airports. Nevertheless, the right political and decision-making structures are needed to ensure that connectivity between regions can take place. The piecemeal devolution of power across the United Kingdom has resulted in a situation where some regions have the ability to develop regional and sub-regional transport strategies in isolation from adjoining regions which do not possess the necessary devolved, political structure. This may well prevent the development of improved connectivity between regions (a further discussion of the transport implications of regional governance takes place in Section 2).

Reducing the Harmful Impacts of Transport upon the Economy - Congestion

48. Transport can have harmful impacts upon the economy in a number of ways. When transport systems are congested they provide inefficient and unreliable services that generate costs to the economy in terms of the loss of productive time and increases in vehicle operating costs for the freight and logistics industry[39]. Tackling congestion and its consequent impacts on efficiency and reliability is central to enabling the economy to operate successfully: *"When you are stuck in a traffic jam you are not contributing anything economically. If it means you arrive an hour late for your meeting you've not only lost that productive time yourself, you've wasted the time of others. If you have a number of subsequent meetings to attend then the knock-on effects can be substantial".*

49. A variety of approaches exist to address congestion. These include attempting to shift traffic onto collective modes; trying to discourage travel by certain modes; and prioritising certain types of travel by mode or journey purpose. Priority can be applied temporally and/or physically in terms of the usage of infrastructure. By regulating access to transport infrastructure and services, it is hoped that a higher level of journey reliability and efficiency can be achieved. The Network's fourth report, *Vehicles and Infrastructure*[40], developed an integrated vision for the future of vehicles and infrastructure encompassing many of these ideas:

After You

In the 'After You' vision of the future, society faces up to excessive demand upon resources and infrastructure by giving priority to certain users and uses. This is reflected in the management of transport network capacity. For example, there are 'Local Lanes', which are only used by bicycles, motorcycles, minibuses and pencil cars (single occupant width vehicles). Roads in residential areas and city centres are designated as 'Local Lanes' and this has helped to reduce accidents. One lane of main roads is also typically designated as a 'Local Lane'.

Whereas previously everyone could choose when and how to travel even if this resulted in inefficient usage of networks, now usage is allocated according to agreed priorities. Between the hours of 10am and 4pm commercial and freight traffic, including driverless vehicles, have priority. Outside those hours other users can access this infrastructure. Users can ensure access to the transport network by booking their travel slot in advance. The reliability of the transport network is enhanced by technological developments and flexible infrastructure. For example, if there is a traffic incident, switchover lanes enable the direction traffic moves on the roads to be changed to alleviate congestion or enhance safety. Users are informed of such developments via head-up-display technology in their vehicles, negating the need for any physical change to road signing.

Demand Management

50. The Network believed that efforts to manage demand for use of transport services and infrastructure would be a critical component of any future transport policy that seeks to support the UK economy. Indeed, without such efforts, the trends in travel behaviour and the consequent growth in congestion and journey unreliability would be almost certain to have adverse consequences for future economic development. The manner in which demand management is applied is of critical importance. If applied in the wrong manner, it could have an adverse economic effect in terms of reductions in footfall in key retailing areas and associated access issues. Increased transport costs may cause businesses to withdraw from peripheral markets.

51. Efforts to manage demand must be sensitively targeted and flexible enough to react to any unforeseen consequences. Of all the

(car) travel undertaken that influences economic development, a proportion must unavoidably be undertaken by car, a further proportion could to varying degrees make do without the car and the remaining proportion could easily be addressed without the need of the car[41]. It is the level of access, not mobility, that impacts upon the economy (for passenger travel rather than goods movement): *"The fuel crisis demonstrated that people are capable of finding other means of addressing important journeys or access needs. We saw increased use of videoconferencing, which also happened following September 11th. We should target restraint policies at car travel which 'could easily be addressed without the need of the car'. I don't think businesses would stand by and lose economic or financial ground. They would diversify in terms of their working practices and notably the uptake of ICT to provide virtual access. Priority for use of the highway network could then be given to that proportion of journeys for which the car really is necessary".*

52. If demand for transport services and infrastructure is managed, some businesses might need to innovate to maintain their existence, possibly through the greater utilisation of alternative means of communication such as ICT. In some business sectors, there is an inherent culture of business travel and face-to-face meetings that could be at least partially replaced by non-mobile communication. For this to be achieved on a wide scale, without significant impacts upon competition, a level playing field would need to be created. Within the EU, there could be economic instruments/legislation backed by strong enforcement to direct certain elements of the economy to be less dependent on transport to fulfil its aims. As a result, more transport services and infrastructure would be released for business activities that are not compatible with non-mobile communications, such as essential goods movement.

53. At the local level, there is a need for greater parity in the application of car parking standards for new development in adjoining local authorities. National and regional government should ensure that local authorities competing for business and jobs, do not seek to make their areas more attractive by allowing significantly higher levels of car parking than neighbouring authorities.

From Single Occupancy to Park and Share

54. It was stated that the current situation in the UK was one of ever-increasing inefficiency in the use of cars and road infrastructure. This is reflected by inexorable growth in traffic, congestion, travel distances and car ownership[42]. A key aspect of this inefficiency is the degree to which travel is undertaken in cars with only a single occupant: *"Our economy seems to revolve around the car… does the economy, reliant on personal transport infrastructure, have the ability to adapt to non-car based infrastructure?"* This is a challenge that is unlikely to be met in the foreseeable future. However, for a more

efficient use of transport infrastructure to be possible in the future, Network members agreed that some form of car restraint would be necessary.

55. Car restraint should not be seen as an end in itself, but as a means to the efficient use of resources. In some situations car use will be an efficient option: *"I was contacted last week by a chap who every day for the last 12 years has shared a car with four others to go to work. They always park on the same road along with about thirty other cars, who obviously all car share. A public notice has been displayed which states that double yellow lines will be placed along this stretch of road. There are no other suitable safe parking places in the area. Quite often we see lines of parked cars along the side of a road. These people are reducing the number of cars on the road and should be encouraged not discriminated against"*.

56. One way to encourage such practices is to create 'Park and Share' facilities, akin to Park and Ride facilities, with safe and secure parking areas on the outskirts of urban centres. Use of such facilities could be incentivised through low parking charges. Technology such as the Internet or SMS messaging could be harnessed to provide bespoke journey matching services. A more radical step to encourage park and share practices would be to realign roadspace in urban centres by allowing vehicles with high occupancy levels (75-100% of seating space) to use bus lanes, so that they become reclassified as High Occupancy Vehicle (HOV) lanes, along the same lines as the Stanningley Road HOV lane in Leeds, which has been in operation since 1998[43]. In this manner, car sharers gain a direct benefit in terms of journey time from engaging in more efficient travel.

Utilising Travel Time

57. The Network acknowledged that alternative approaches to mitigating the negative impacts of congestion exist. In particular it was stated that a great deal of as yet unrealised potential for the utilisation of travel time existed that could reduce the economic costs of road-based congestion: *"It would benefit the economy if you could convert 100% wasted travel time into a certain percentage of productive time. If your car was automated you could work in it"*. Expectations regarding time productivity gains must be tempered by the knowledge that as most journeys are less than 10 miles in length, the capacity to recover wasted time when driving across town to the shops or a meeting or commuting to work is limited because the traveller has insufficient time to use in meaningful activities.

58. However, Network members were concerned about the considerable negative secondary effects of utilising travel time on the road: *"Use of time on the move avoids tackling the central issue of traffic reduction. By using time productively you could afford to be on the move even more, creating more congestion. Cocooned in your car working on your PC you*

are unlikely to be conscious of the increased costs you are imposing in contributing to the overall levels of congestion". There are also safety issues arising from any move towards reducing the amount of wasted time for drivers. In this respect, other transport modes enjoy a considerable advantage over the car since the individual can carry out a range of activities whilst leaving the responsibility of driving and navigation to others. This is something that should be recognised, promoted and exploited in encouraging the use of alternatives modes to the car (particularly for longer distance travel).

The Health of the Nation

59. The harmful impacts of transport on the health and well being of the nation, both in terms of the environment and the population, have a substantial economic effect. Transport can have severe negative impacts upon the quality of the built and natural environment including air, noise and visual pollution, physical severance and actual destruction of environments through infrastructure development.

Environmental Impacts

60. Environmental impacts result in genuine economic costs such as reduced house prices, urban depopulation resulting in inefficient land use and general economic degeneration as areas come to be seen as undesirable places to live and work. Many of these environmental costs are insufficiently addressed at present, and the Network has consistently advocated that users should pay the full internal and external costs of their transport choices[44]. Indeed, in past reports the Network has developed a range of ideas to enable transport choices to be made that reduce harmful impacts on the environment and consequently upon the economy. For example, in the fifth Network report, *Local Travel*[45], the following idea was developed:

Enviroscore

The Network supported the idea of local authorities measuring the quality of their environments through an 'Enviroscore' process. The Enviroscore measurement process would not be based on national benchmarking but on a local determination of environmental measurements that should be made.

The Enviroscore process would provide information to citizens, businesses and other interested parties concerning the environmental quality of local areas and focus attention on local environmental problems to assist local actors in taking steps to improve quality.

The Enviroscore process would be expected to consider many different aspects of environmental quality and might include the following transport-related aspects:

- Air quality and vehicle emissions
- Proportion of dwellings lying within People Zones (where speed limits of 15 mile per hour apply and there is a specified standard for footpaths, cyclepaths and public space)
- Proportion of school travel undertaken by walking and cycling
- Proportion of travel undertaken by low emission/low energy vehicles
- Visual impact

The Enviroscore would need to be simple to understand for citizens. There should be a headline value covering all environmental aspects as well as separate scores applying to different areas (e.g. transport, energy, waste/recycling, etc). The transport environmental rating would be referred to as the Transport Enviroscore. Regional planning authorities would be expected to prioritise the distribution of transport investment funding to local authorities who have made a sound case for how funding will be used to improve their Enviroscore and who have involved their citizens in the process.

Health and Safety Impacts

61. Similarly, the negative consequences for health resulting from how we undertake travel and transport have substantial knock-on effects for the UK economy. According to government statistics the

average cost of a road accident in the UK is £38,050. A fatality is deemed to cost the economy £1,194,240, an accident causing serious injury is deemed to cost £134,190 and a slight accident £10,350[46]. When health impacts related to air and noise pollution, travel related stress, and general ill health caused by sedentary lifestyles, supported at least in part by motorised transport, are also considered, the economic significance of the health impacts of transport is substantial. Throughout the lifetime of the Network, emphasis has been placed on generating ideas and solutions that reduce the adverse effects of transport upon health and safety. For example, in the fifth Network report, *Local Travel*[47], the following ideas relating to improved personal health and potential accident reduction were generated:

Health and Safety components of a Toolkit for Local Travel

- Footscapes - high quality walking environments created through the provision of amenities and the orientation of infrastructure priority to enhance safety, security and attractiveness of this travel choice.
- Cultivate awareness and first hand knowledge of walking and cycling perspectives on local travel by incorporating both the theory and practice of walking and cycling within the driving test.
- Make the purchase of bicycles free from taxation.
- Help create a cycling culture by provision of park and cycle facilities and the provision of tax incentives for employees to cycle to work.
- Fleets of company bikes should be provided for local business travel.
- Pupils to be educated about the health benefits of walking and cycling to school and schools should commit to providing on-site facilities to enable such travel choices.

Anticipating and Addressing the Potential Consequences for Transport of Economic Growth

62. Economic growth will bring consequences for transport that are likely to represent major challenges in the future. To be prepared for future challenges it is vital that attempts are made to try to anticipate as wide a range of possible future consequences as possible. Throughout its lifetime the Network has attempted to use scenarios for the future of society to ensure that a wide range of possible transport related outcomes are considered. This has been motivated by a desire to enable the collective ideas and solutions

generated by the Network to be robust against a range of future outcomes.

63. It was suggested that if current trends were to continue then economic growth would be characterised by an overall rise in the majority of individual incomes and a consequent increase in leisure opportunities available to the UK population (an increase attributable also to the growing population of time and cash rich retired people). The transport consequences of these assumptions have formed the basis of scenario and vision development in some of the Network reports and led to a number of direct consequences for transport. The following example is taken from the fourth Network report, *Vehicles and Infrastructure*[48]:

Leisure World

In the 'Leisure World' vision of the future, leisure travel will continue to rise and solutions to activity-based congestion will become the most pressing transport issue. As a result, activity centres invest heavily in providing effective transport links to their sites. This involves the introduction of high quality collective transport with on-board facilities, which enable the leisure experience to begin on the journey to the attraction. For example, 'stadia express' services enable sports fans to travel to matches on buses equipped with video and Internet facilities to allow them to keep up to date about their teams. Similarly, train and coach services to leisure attractions will include on-board children's play areas. This cultural trend will permeate down to local levels as swimming pools provide attractive cycle paths to enable local residents to enjoy a pleasant journey to the amenity.

Tourism becomes the most powerful industry in the UK in leisure world. This creates pressure upon many of the nation's heritage attractions that requires a new approach to access to alleviate adverse environmental impacts. One approach, pioneered in the Lake District, known as heritage rings, proves particularly successful in facilitating sustainable access. Tourist traffic is directed to satellite 'park and ride' centres on the edges of the rings where collective transport then takes visitors to the heritage centre. Visitors are then free to travel around on bicycles or electric vehicles rather like golf carts. Global tourism is influenced by the prominence of virtual alternatives to travel. Technological developments enable total immersion so that virtual international holidays can be experienced from the UK.

Land Use Changes

64. Parallel to a rise in incomes and leisure opportunities it is likely that economic growth will continue to encourage trends towards reduced household size. This will lead to an ever-increasing demand for housing that will have to be met through new development. The sheer scale of likely demand renders unrealistic any attempt to try to meet it primarily through brownfield development, unless politicians are prepared to accept dramatically increased residential densities in excess of 50 dwellings to the hectare. However, large cities clearly have more chance of meeting demand by recycling land and by achieving greater densities. The current trend in

London is for high-rise, high quality, mixed-use schemes which must provide significant new supporting transport infrastructure. For example, developers of Imperial Wharf in Hammersmith and Fulham comprising 1,600 new residential units as a mixed use development promised to provide a new train station[49], albeit that the finance to secure this scheme now appears doubtful given the removal of the Strategic Rail Authority's Rail Passenger Partnership grant scheme[50].

65. It was suggested that transport planners should face up to the possibility that there will be radical change to present day assumptions regarding land use planning that will have major transport consequences. The very purpose of Green Belt policy is being questioned, as a policy mechanism, but also in relation to the effectiveness of the policy to prevent development. The need for a particular development and the fact that Green Belt land represents the best option can alone provide justification for allowing development to occur. Between 1998 and 2002 the Government approved 119 out of 250 applications to build on Green Belt land and the Royal Town Planning Institute has called for a review of Green Belt policy[51]. Special or exceptional circumstances need to be demonstrated and, as controls are more stringent, must represent a more sustainable option than alternatives. A further argument to review Green Belts was highlighted: *"The current 'greenfield' - 'brownfield' hysteria is putting urban green space at serious risk (playing fields and informal recreation space). These spaces play a vital role in maintaining quality of life in urban areas. In this climate a trade-off between preserving green space in urban areas for the limited release green belt land may be supportable"*.

Urban Population Growth

66. The Network was keen to explore the potential transport consequences of urban demographic change brought about by economic growth. It was noted that the Mayor of London had predicted that the population of London would increase by over 700,000 between 2002 and 2016[52]. The Mayor has confirmed that all growth will be on brown field land and will not entail release of Green Belt. Growth was also expected in cities such as Manchester and Leeds. Recent announcements by John Prescott confirm guidance in RPG6 and 9 that significant growth (up to 200,000 by 2021) is expected to occur in the M1 corridor (Bedford, Milton Keynes, Northampton, Wellingbrough, Kettering, Corby), the M11 corridor (London, Stansted, Cambridge), Thames Gateway and Ashford. Growth to 2030 will be even more significant[53].

67. The Network suggested that marked population growth in some of the major UK cities could have a profound impact on the operation of transport systems: *"Some UK cities compare with London 100 years ago in terms of population size. In the years to come they might grow to proportions comparable with London in recent decades. Do we want that*

model for our major cities in this country and their transport systems? If cities are all going to start growing at the rate of London there's going to be major consequences, but also opportunities for mass transit. Higher densities in our major cities should make economic development more sustainable with more potential workers and customers close by. Public transport networks should be more sustainable with more users allowing a higher frequency of service. Clearly, however, unplanned economic growth would have an adverse effect on transport systems. You have to anticipate rise in demand for travel and immigration. There are international examples of where it's been done well as well as examples of where it has gone badly awry and the transport problems generated by economic growth have actually slowed down the economy".

68. It was stated that planners and politicians needed to steer a careful course in concurrently planning for economic and transport growth. There will always be unpredictable economic growth in a free market economy and for transport provision to support such events it requires responsive decision-making frameworks with sufficient safeguards in place to ensure that the most sustainable options are taken.

Future Transport Crises

69. The Network also considered the likely consequences of a future in which the transport system struggled to keep pace with economic growth. *"What would happen if we can't tackle the failings of the transport system and it gets worse rather than better? Do we expect the economy to suffer or go into decline, or will that force innovation?"* Perhaps the closest the UK has come to addressing these fundamental issues was during the fuel crisis. In those, albeit short lived, circumstances there was considerable evidence that society was forced to innovate to enable the economy to function through employing solutions such as lift sharing, use of public and/or non-motorised transport, video and telephone conferencing and teleworking[54]. However, even individual innovation requires the provision and maintenance of basic infrastructure. Given the inability of authorities to prepare and treat roads for two inches of snow in January 2003 across eastern England, it is questionable whether there are presently systems in place to cope with either short or long term climate change[55]. It would be difficult to predict how the economy might function in the context of a more serious and long term transport crisis: *"The UK has severe congestion, but individuals and companies don't try to avoid it. There has been a 36% increase in rail passenger kilometres over the last seven years[56], which has been focused on the south east, and now the rail network is overloaded. We've saturated the road network and business is now looking to rail and it's filled that up so it's looking to air and it's running out of places to go. If transport becomes too inefficient will businesses relocate overseas?".*

2 Finance

The Financial Context

70. After considering the role of transport in supporting the economy, the Network looked at the issue of how to finance transport systems and services. Before presenting the Network's ideas some background information is presented on the topic of transport financing.

71. Transport projects can be financed by the public or private sector, or by a partnership between these sectors. A key issue for public sector transport investment is the discount rate (or opportunity cost of capital) used in project appraisal. Discounting is the procedure used to convert future costs and benefits into present day values. If the Government has unlimited access to funds then the discount rate will be the same as the prevailing interest rate. Where access to funds is limited then projects will need to be prioritised. This can be achieved by ranking projects in order of their net present value: cost ratio or raising the discount rate upwards until the capital cost of projects with a positive net present value equals the funding available. The UK Government has recently altered its standard discount rate from 6% to 3.5%[57]. This has the effect of giving a greater weighting to costs and benefits in the future.

Private Sector Investment

72. Private sector finance can be acquired through equity and debt. Equity involves investment made directly by project promoters. Debt involves loans from banks and other institutions at predetermined rates of interest with specified payment schedules. Projects are normally financed by a mixture of debt and equity[58].

73. Two arguments are made in favour of private sector investment in transport.

1. In a perfectly competitive market the private sector will provide the appropriate infrastructure at the appropriate price;
2. If the Government has a fiscal policy to keep public borrowing down the private sector can borrow but at a higher rate of interest than Government could obtain with the Government paying a service charge. In this case the private sector consortia needs to be able to deliver and manage the project at a lower cost than a publicly procured project to offset the extra borrowing costs. The private sector accepts risks of cost overruns. The capital costs of the

road scheme do not get counted against public sector finances.

74. The key issue for the value for money of private sector investment in public infrastructure facilities is the revenue risk transferred to the private sector. When a project is not expected to generate sufficient revenue to pay back costs, the Government may have to guarantee to make up some or all of the revenue before the private sector will agree to finance the project. However, this action will reduce the pressure for the private consortium to act efficiently.

DBFO Road Schemes

75. In 1992 the UK Government introduced the Private Finance Initiative (PFI) aimed at harnessing private sector management, innovation, expertise and resources in the provision of capital assets and public services. As part of the PFI initiative, the Government introduced the design, build, finance and operate (DBFO) approach for roads. For PFI infrastructure projects, there is typically a concession agreement where the government concedes to the private sector the right to own and operate the facility for a fixed period of time and to collect any revenues. For DBFO road projects, payments are made to the project consortia over the concession period through 'shadow tolls' calculated on the basis of traffic flows (normally with upper limits so as not to encourage too much traffic which would reduce quality of service).

76. Progress with introducing PFI projects was sluggish between 1992 and 1997 with insufficient mutual understanding between the government and private sector to allow both sides to benefit from the opportunities presented by PFI[59]. A National Audit Office report in 1998 found that DBFO roads only offered value for money if they include a high capital content. It found that two of the first four privately financed DBFO roads would have cost less if they had been built with public money.

77. After the election of the Labour Government in 1997 the generic term 'Public Private Partnership' (PPP) was introduced for all arrangements involving the introduction of the private sector into an area of service provision formerly the preserve of the public sector. PFI is one method of generating finance for these partnerships. Since 1997 steps have been taken by Government and the private sector to ensure greater progress in introducing PFI projects.

Ingredients of Successful PFI Projects

78. A successful PFI project will involve[60]:

- Transfer of risks to parties best able to manage them;
- The public sector specifies the requirement in terms of a set of services rather than a physical asset through which

services will be provided and these services should form basis of payment made by public sector;
- Private sector is responsible for asset it provides for its whole life cycle;
- Private sector consortia are incentivised to achieve desired performance standards.

79. For the public sector, PFI funded infrastructure projects spread capital expenditure over much longer periods (e.g. a DBFO road project will involve payment of shadow tolls to the private project consortia over many years, whereas a public road project will involve a massive initial capital outlay). Of course, this means there is a long term commitment to these projects and this may restrict future options for the public sector. PFI enables risk to be transferred to the private sector, although this can increase prices tendered by private sector consortia. The tender process will also be more complex and payment may need to be made towards tender preparations. Other advantages may include the private sector project consortia reducing construction times by integrating design and construction and taking on greater legal responsibility.

Hypothecation

80. Another method of funding transport projects is hypothecation, where revenue from transport charges is ring-fenced for use in transport investment projects. In its 1998 White Paper[61], the UK Government argued against funding transport investment at a national level via dedicated streams of taxation income, as this would restrict its ability to use income flexibly across priority areas such as transport, health and education. In 2000, however, the Government gave powers to local authorities to introduce road user charging and workplace parking levies and use the revenue for local transport improvements[62].

81. The UK Government's Ten Year Plan for Transport[63] envisages public and private funding totalling £180 billion over the period 2001/02 to 2010/11 with funding split evenly between railways, roads and local transport. PPP is to deliver much of the investment. Table 4 sets out the anticipated contribution of public and private expenditure to the Ten Year Plan.

Table 4: Ten Year Plan Expenditure in £billions[64]

Public Investment	66.6
Private Investment	56.3
Total Capital Investment	122.9
Public Resource Spend*	59.0
Total Public and Private Investment and Expenditure	181.9

* To avoid double counting with Private Investment, the Public Resource figures exclude direct revenue support for private investment.

82. Some of the private investment will be wholly funded from fare/charge revenues, while the remainder will, at least partly, be funded through direct public funding. The public resource expenditure includes £3 billion of net revenue assumed to be generated from local authority road user charging or workplace parking levies.

Transport Finance - The Network Approach

"How should our transport systems be financed?"

83. In seeking to address this question the Network identified two key elements to consider:

1. Finance Mechanisms
2. Decision-Making

84. In addressing the funding of transport systems the Network recognised that perhaps more than any other subject it had discussed, this was traditionally the territory of senior professionals. However, the Network felt that this should not deter discussion, although it required care to be taken to ensure the discussion was as informed as possible.

85. When considering how the UK's transport systems should be financed, it is important to recognise the scope of finance required. Investment is not solely concerned with creating vehicles and infrastructure, it is also necessary to enable transport systems to operate, be maintained and upgraded. It was stated that a flexible approach to transport finance was likely to be most effective. Projects require bespoke funding solutions. To rule out or in

particular mechanisms or approaches on ideological, rather than economic grounds, would be unnecessarily restrictive.

Transport Finance Versus Transport Investment

86. It was stated that terms like 'transport finance' and 'transport investment' were often used interchangeably and that it would be useful to define these terms: *"Transport investment refers to the question whether we want something or not, the 'yes or no?' phase, whereas transport finance refers to the question of 'how?' after a positive decision. Transport investment is a political question whereas transport finance is more technical. If we mean normal investment calculations it is straightforward. If the figures look good the investor will obtain the money from the bank or stock exchange, build whatever has been calculated, and charge a fee from the users/clients"*.

87. Whilst there was broad agreement amongst Network members that the two stages identified above provided adequate definitions of transport investment and transport finance there was considerable doubt regarding the distinction between political and technical issues. The political decision to invest is often taken with the methods of financing in mind; and the available methods of finance are often politically determined: *"Is the separation between investment and finance clear-cut? In the current UK political climate few people see financing as largely a technical issue of implementation. The decision to invest and the method of financing are so interdependent that it is difficult to see daylight between them. Investment itself is highly dependent on the method of finance being deemed appropriate to the political context. Indeed, methods of financing transport projects appear to be wholly dictated by the prevailing economic and political climate… For example, the UK Government has shown that it will generally finance capital projects only and it is not happy to approve open-ended commitments to revenue based transport solutions. Therefore even though a Local Authority with a responsibility for passenger transport may feel that the best way to improve their local network would be to subsidise routes to peripheral areas, they can't. They are limited to providing more bus lanes, guided busways and light rail schemes and this occurs whether the transport problem is structural or operational. Where the government does provide extra revenue support this can be in the form of Urban or Rural Bus Challenge bids - but these are fixed term grants, which limits their effectiveness"*.

88. Such an approach to transport finance effectively limits the degree of freedom that a Local Authority has to implement bespoke solutions to local transport problems. A complex local problem is probably best addressed by an integrated package of measures e.g. pedestrianisation, awareness campaigns, shopmobility, etc. To deliver such packages would probably require 10 times as many staff as one big project, like an LRT system, which requires a small number of staff and would be likely to be developed and maintained by a contractor: *"The cynical view is that 'New Bridge Built' is headline news whilst 'Old Bridge Maintained' is not. Government is keen to show visible progress. But the danger is that you end up with lots of white*

elephant transport solutions as Local Authorities, denied access to increased revenue, throw capital schemes at the problem in an attempt to do something".

89. This demonstrates that political considerations can limit the finance options available. Differences in political opinion between tiers of government, as witnessed in the Mayor of London's legal challenge to the PPP for London Underground, demonstrate that there is often a lack of agreement between politicians on how to finance infrastructure maintenance and growth[65]. Where the finance mechanism has been chosen before the problems and investment options have been identified, it is often the case that investment cannot be levered in under the Local Authority's preferred approach. The Government is unlikely to cut the strings attached to funding, but might be persuaded to give local authorities with a proven track record more leeway in raising and spending funds. The recent decision to remove the requirement for the best performing Local Authorities to produce Local Transport Plans suggests this path has been chosen[66]. The provision of greater leeway to local authorities has potential to enhance local democratic control over funding decisions, but this could come at the expense of the delivery of a strategic and integrated transport policy at a national level, which is arguably the key reason behind central Government decisions to exercise control over financing decisions.

Investment and Subsidy

90. The Network felt that there were further concerns regarding the terminology of transport investment and finance that impacted upon public perception and funding decisions. An example of this was the inconsistent interpretation of spending decisions relating to public and private transport. When it is decided to spend money on road infrastructure it is generally regarded as 'investment'. However, when such spending is allocated to bus or rail infrastructure or services the term 'subsidy' is often used: *"Public transport is available to a far greater proportion of the population than private motorised transport should they choose to use it. It is a national asset, yet it is obliged to raise significant returns on 'subsidy'. This includes local buses which have had their 'fuel duty rebate' renamed 'Bus Service Operator's Grant' implying that it is grant-funding in the gift of Government rather than an exemption from part of the cost of fuel tax in recognition of the public service performed, and long-distance coaches, of which even scheduled services receive no relief from such taxes. By contrast, private motorised transport is only available to those who can afford a significant initial capital outlay, but the only charge at point of use is on fuel. All road spending is trumpeted as 'investment', the return on which is made out to be some un-provable sum based on values of time saved. The only public transport that receives significant public funding is air travel, by its exemption from fuel tax and massive public funding on access to airports. 'Subsidy' contributes to 30% of the cost of UK public transport. The US is thought to have a laissez-faire approach, but in several major cities like New York and Washington public transport subsidy is about 60%. ".*

Finance Mechanisms

91. A wide range of methods of financing transport exists, from wholly public to wholly private funding, with various combinations in between. The Network has developed a number of different ideas for financing transport, of which the following, taken from the fourth Network report, *Vehicles and Infrastructure*[67], is amongst the most radical:

Annual Mobility Tax

Extract from *Mobility Today*, 13 July, 2023

"The Government has today unveiled an unprecedented new transport policy coupled with a trillion (million, million) pound 15 year investment plan. The vision is called the Silver Shuttle Service (SSS) and will transform the operation of our transport system in the UK. The plan allows public transport to mimic the fixed and variable cost formula of the car.

Every citizen will be charged an annual (fixed cost) mobility tax. It is speculated that this might be in the order of £2000 per year. There will then be a (small) pence per mile charge for travelling using the SSS high quality community mobility service. The substantial revenue stream from the mobility tax will form the basis for funding SSS, which will involve a huge (a figure of over 2 million has been mentioned) national fleet of vehicles and a range of vehicle types. In essence, SSS will provide a high density, high frequency public transport network.

The range of vehicle types will offer choice to the traveller on a 'horses for courses' basis. Silver Shuttle taxis will offer the greatest flexibility with the range running right across to Silver Shuttle coaches, trains and even planes.

The policy is far from economic madness either. We are reminded that towards the end of the last century, at today's prices, business and households were spending 70 billion pounds a year purchasing, maintaining and running cars. The Government believes that not only will its new vision be economically sustainable, but it expects it to substantially strengthen the UK economy and our global competitiveness. Motor manufacturers will be able to turn their businesses from car production to the delivery of the huge fleets of vehicles required for SSS. Huge employment opportunities will be created with the need for SSS fleet drivers".

Finance Mechanisms from the United States

92. The Network was keen to consider some international approaches to transport finance. In the United States (US), funding transport projects through public/private partnerships has been undertaken using mechanisms not yet employed in Europe. One example is Tax Increment Financing (TIF)[68]. When using TIF, the

Government estimates how much future tax revenue through business rates will be generated by improved infrastructure. The public investment market issues bonds against that amount. It was on this basis that funding for the dramatic improvements to the New York subway system was achieved[69]. The TIF approach is now being researched and its potential examined in the UK context[70].

93. Another example, also from the US, is Business Improvement Districts (BIDs)[71]. With BIDs, businesses get together and levy a self-imposed tax on themselves to fund a project and if 50-70% (depending on local laws) of businesses agree, then the tax applies to all businesses in a zone. In some areas, the tax is implemented as a flat fee based on property values, but in other areas it has been implemented in more innovative ways, such as $3 charge per occupied hotel room per night. The funds raised are often used to enhance the local built environment by providing resources to improve cleanliness and security, but revenue has also been used to fund transport projects.

94. The UK Government, through its Local Government Bill, proposes to give greater financial freedom to all councils to borrow capital for major projects within prudent limits. Councils will also be allowed to trade and to charge for discretionary services, as well as work in partnership with businesses to improve town centres and commercial areas through BIDs. It is not clear whether BIDs will provide local councils with the same levying powers as they do in the United States[72].

Land Value Capture

95. Calls for property-related taxes to be used to fund transport infrastructure are increasingly being made in the UK. Dave Wetzel, Vice-Chair of Transport for London, and Fred Harrison, Director of the Centre for Land Policy Studies, argue the case for land value taxation where land values could be treated as a revenue base for funding Britain's transport system[73]. A south London property developer, Don Riley, has estimated that land values around the stations on the Jubilee Line extension have increased by £13.5bn when the cost of the extension itself was only £3.5bn[74]. In other words, under the present system, the public sector invests substantially in transport system improvements, the land value benefits of which are reaped by the private sector. This increase in land value is beginning to be recognised by the Government and is being explored as a means of securing private sector involvement in the delivery of major infrastructure.

96. Taxing land values would ensure that a proportion of the benefits to land owners of improved transport infrastructure is recouped by the public sector, enabling investment in a transport system that can meet the access needs arising from land use

developments. Land value capture can assist regeneration, acting as an incentive to bring unused, idle sites back into use and reduce the extra costs for transport created by urban sprawl. Nevertheless, lessons would need to be learnt from the failure of previous land value taxes, such as the Betterment or Development Land Taxes[75], which deterred development and appeared to be preoccupied with the speculative profits made by dealers and developers.

97. In the Network's third report, *Land Use Planning*[76], the following idea was developed as a result of the Network's own desire to address issues relating to efficient land use and its relationship to transport:

GLUEINS

At present, non-domestic unoccupied property pays 50% rates after 3 months of vacancy. The problem of high land prices in many urban areas is exacerbated by developers leaving buildings empty as they wait for the 'right price' to sell. A solution is that non-domestic unoccupied property pays 110% (or more) of its rates after 3 months of vacancy with a graduated scale where there is an increase of 10% (or more) every 3/6 months, unless evidence of imminent occupancy or the property being made available for occupation at the market rate is provided. If after 3 years the owners have demonstrated no intention to make efficient use of the property then the local authority will require the owner to explore alternative uses to secure use of the land. Following a further year the local authority assumes ownership of the land and determines an appropriate use, which could include social housing, a business incubation centre or other forms of community regeneration initiatives.

The Network proposes that the Government Land Use Efficiency INSpectorate (GLUEINS) is launched to take responsibility of vacant property and wider issues of land use efficiency. GLUEINS inspect all non-domestic property for land use efficiency and provide an efficiency audit. They make obligatory recommendations for improvements and have powers to financially penalise those who persistently ignore advice. Positive financial incentives are given for take-up of recommendations. The efficiency audit includes company car parks and therefore provides financial incentives for Travel Plans to be taken up. All charges/reductions are enforced through the property rate payment system.

Sales Tax

98. In several US cities a sales tax[77] is levied on the purchase of consumer goods. Revenue from this tax is allocated to transport improvements and it accounts for a proportion of transport funding in these cities. Indeed, in Austin the local public transport service operates without charging fares for travel. In the UK, transport related taxation is often seen as little more than a means of cross-subsidy for other sectors, like health and education. This situation is reversed through the application of a sales tax: *"To get to the shops most people use transport services, so it does not seem counter intuitive to pay an*

extra four pence in the pound when buying goods, because that money is being reinvested in the means of accessing these goods".

99. A rebate on the sales tax could be provided to encourage more sustainable means of accessing goods and services, such as Internet shopping. Indeed, sales tax revenue might be invested in ICT infrastructure as well as transport infrastructure to improve access. A sales tax on home shopping could enable you to put in higher bandwidth for your community. Alternatively, retailers could offer a discount to those customers purchasing and having goods delivered via Internet shopping, rather than levying a charge for the service

Hypothecation

100. There are many different models for the financing of transport projects. In the UK, the Birmingham Northern Relief Road, which is due to open in January 2004, is a private design and build finance project with revenue to be provided by the tolling of users[78]. This will be the first toll road in the UK, although there is a long history of road bridge tolls at river crossings in the UK[79], which adhere to the principle of hypothecation, i.e. that the cost of financing and maintaining a scheme is funded by revenue taken directly from users.

101. The Network considered the potential for the application of hypothecation in other contexts. A poll carried out by York City Council in 2000 asked local residents if they would be in favour of congestion charging in the city, if the revenue was used to pay for public transport improvements, including three extra railway stations, improved bus services and cycling improvements. A majority of respondents supported the proposal[80].

102. Under current legislation, such hypothecation is not future proof. The revenue for congestion charging can only be ring-fenced in this manner for ten years. In this context, hypothecation can be viewed as a useful acceptance mechanism in the short term rather than a long term funding mechanism.. Indeed, long-term hypothecation can prove restrictive and counterproductive. For example, it might be decided that a better use of the revenue, in terms of improving local transport, might be to support the redevelopment of brownfield land to provide high density housing with easy access to the city centre. Hypothecation will always require careful external audit and scrutiny to ensure that ring-fenced funds do not displace/substitute for funds that would otherwise be made available.

Decision-Making

103. There are a variety of levels through which transport finance can be provided including Parish Councils, Local Authorities, National Government and its agencies and the European Union. The Network felt that in the current political climate it was unlikely that decision-making structures would persist in their present form. In

particular, the political processes which have led to the creation of devolved government in Scotland, Wales and Northern Ireland had seen a new level of decision-making created between the UK Parliament and the Local Authority. It was likely that this level would be replicated in the English context through the development of regional assemblies.

Regional Powers

104. Evidence of the intention to introduce this new level of decision-making was provided by the publication of the Government's Regional Governance White Paper in May 2002[81]. Prior to publication, it was reported that there were tensions within Government regarding the degree to which the new regional bodies should be given responsibility for transport. The Deputy Prime Minister, John Prescott, was said to be keen to devolve decision-making power, but transport ministers were reluctant to relinquish power from the centre[82].

105. The response of the Campaign for English Regions to the publication of the Regional Governance White Paper reflected the degree to which the transport ministers had won the battle: "In particular, concern has been raised about the lack of real powers in many areas including transport and the environment. Most of the functions in these areas will operate through influence, rather than direct executive responsibility, which could lead to frustration and a temptation to encroach on local authority territory in an attempt to find a role... The transport responsibilities are thin. They do not go far enough in terms of the statutory functions and responsibilities with the key transport agencies such as the Highways Agency and the Strategic Rail Authority. It is difficult to see how, under the current proposals, a region can deliver on transport and this may render an integrated regional transport strategy meaningless"[83].

106. The Government's proposals for the creation of assemblies are dependent on the level of local interest in each region, which will determine whether regional referenda will be held. The Network was concerned that an optional system of devolved government in England might lead to piecemeal devolution and an absence of effective regional and sub-regional planning structures in those areas that opt out.

107. The Network stated that if regional assemblies were to be identified as the key delivery mechanism for transport policy at a strategic level, these new institutions must be invested with responsibility and authority. For regional governance in relation to transport to be effective, central Government must decentralise powers and finance whilst also re-assigning some Local Authority powers to the regional level.

Local Decision-Making

108. The Network was keen to address the potential for better delivery of transport funding decisions at the local level. Government may have devolved responsibility for transport planning, but the rigorous appraisal system restricts the options available to Local Authorities. If a Local Authority believes a policy or economic instrument will solve a local problem, they still have to go through an appraisal process, and if, following that process, the Government decides that the disbenefits outweigh the benefits, it will block the approach: *"I know officers who will automatically discount solutions that they know will work and will have local political support because they are not politically acceptable at a national level. The appraisal process becomes skewed with some of these potential solutions not investigated"*.

109. The appraisal framework considers local objectives, local environmental impact, social evaluation and economic evaluation, but the economic evaluation is likely to be the dominant consideration before other factors are considered and this evaluation is highly dependent on modelling processes and outcomes that can be inaccurate and unresponsive: *"Local Authorities are held hostage by models that are unable to cater for the increasing complexity of the total costs and total benefits to society of schemes. Models make gross assumptions, which may not be valid in 30 years. The technical people say this is the best information and there's no other alternative evaluation method. It's easy for the local or national politician to rely on the modelling. If the model says – 'I think you will make a loss, but I'm not sure, so go for what your heart says' - the politician is rarely going to take a flier. The modelling output is supposed to act only in an advisory context, but politically it's crucial"*.

110. Over the lifetime of the Network a number of ideas have been generated which address decision-making processes relating to the funding of transport. Many of these ideas have been guided by the Network's transportation requirements to both encourage stakeholder involvement in transport decisions and to enable transport users to be able to make fully informed transport choices[84]. The following example of such an approach is taken from the fifth Network report, *Local Travel*[85]:

Citizens' Transport Juries

It was proposed that transport juries, operating on terms comparable with legal juries would be an innovative solution to the current problems of inadequate stakeholder involvement in the process of planning and scheme and policy appraisal. The jurors would have a much heightened sense of involvement and responsibility because they are genuinely involved in the decision making process. Doubts were raised about the dangers of being committed to the decision the jury takes. It was suggested that there should be the safeguard of a kind of senior chamber, a transport committee of councillors and representatives from the citizen's jury who actually make the final decisions.

Community Local Travel Audit

Community members would perform an audit to assess the quality and performance of local travel infrastructure and services using a prepared form. Within the form there would be opportunities for all sectors of the community to contribute their perspective with sections for the general public, children, parents of young children, the elderly, the disabled, etc. The form would incorporate a range of assessment categories such as physical quality of infrastructure, safety and security, coordination of land uses, availability of transport services, and access to amenities. The audit report would conclude with recommendations which would go forward to the local authorities to represent the community priorities for policy and investment decisions.

The Community Local Travel Audit differs from conventional forms of consultation due to its proactive and participative character. Community members would actually go out and perform the audit either as part of their daily travel or as a special trip, perhaps as part of a collective auditing team. This contrasts markedly with the traditional questionnaire received in the post with no associated activity or community pressure to participate. The audit is about active engagement on the ground, not passive box ticking from the armchair.

National Transport Development Agency

111. It is likely that many funding decisions will continue to be taken at a national level, because of their national and/or international importance. However, many of these decisions require long term planning and investment, which is often difficult to achieve within the structure and time frames of UK politics. An alternative approach might be to make national transport funding decisions through a body operating independently from the political process, in a manner comparable to the Bank of England.

112. A National Transport Development Agency based on this model would be a committee of equal representation from each region, with business and environmental representation. The committee would decide the relative allocation of resource between regions in the national interest. The Chancellor of the Exchequer would decide how much money is allocated to transport. At the next level the transport ministry would decide what proportion of that money is allocated to national versus local or regional schemes. The National Transport Development Agency would represent the next administrative layer down. Currently, the EU addresses regional concerns and invests in the poorer regions in the UK, by assigning different Objective status classifications and providing structural funding relative to that status[86]. The National Transport Development Agency might operate in parallel to this activity.

3 Equity

The Equity Context

113. Following consideration of economy and finance issues, the Network felt it was important to consider equity issues of transport. This section of the report begins by defining equity and the transport-related aspects of equity are identified. After this, Network ideas on improving equity are outlined.

114. According to most dictionary definitions, equity means 'fairness and justice'. This is not the same thing as equality. Equality does not take into account whether the existing disparity/gap/difference is fair or just. Inequity is unfair or unjust inequality. Equity tempers equality with a compensatory principle so where things are not equal those who are disadvantaged get compensation, but not equalisation. Before presenting the Network's ideas on increasing equity some background information is presented.

115. The debate regarding equity and transport in the UK has been largely focussed upon the concept of social exclusion and its relationship with transport. This topic has gained significant recognition in UK transport research and, in recent years, in policy development. Academia, government and the voluntary sectors alike have sought to understand the links between transport and social exclusion and the ways in which transport inequity can be reduced, as part of a broader agenda to reduce inequity in society as a whole.

Categories of Transport-Related Exclusion

116. Research has identified seven categories of social exclusion related to transport[87]:

1. Physical exclusion – physical barriers to transport or other services;
2. Geographical exclusion – the lack of transportation provision in the geographical area in which the user resides, alongside the lack of provision of other services in this area;
3. Exclusion from facilities – lack of access to facilities because of lack of access to transport services;
4. Economic exclusion – this can work on two levels. Firstly, someone can be unable to travel because they cannot afford to. Secondly, lack of access to transport can cause income poverty, preventing the user from accessing employment, or training, etc.;

5. Time-based exclusion – people can be excluded from both travel and other activities because of the time that it takes to travel;
6. Fear-based exclusion – exclusion from transport and, consequently, activities requiring travel, because of 'fear' of using transport; and
7. Space exclusion – security and space management strategies that discourage certain individuals from using transport services.

Car Availability

117. As has been stated in Section 1, UK society is highly car dependent. Our physical environment has been constructed around the assumption of car ownership, despite the fact that 28% of UK households do not have access to a car[88]. Table 5 shows that the lowest levels of car ownership are in households that are particularly vulnerable to social exclusion: single pensioner households and lone parent family households. There are always likely to be a proportion of the population who for reasons of age or health are unable to drive, regardless of income or family structure. Nevertheless, of households in the lowest income quintile, 65% do not have a car. Also 51% of people in the 10% most deprived wards do not have cars[89]. However, statistics do not tell the whole story. In those homes where there is a car, not everyone has regular access to it, further increasing the number of people who rely on public transport, walking or cycling.

Table 5: Car Availability of Adults by Household Type[90]

Household Type	Percentage Without Cars
Single adult 65+	74
Single adult 16-64	42
Two adults, head of household 65+	28
Two adults, head of household 16-64	12
Three or more adults	10
Lone parent family	58
2+ adults with children	9
All adults	28

118. People in households without a car make fewer trips (about 765 trips per person per year) than those with a car (about 1,100 trips

per person per year) and travel much lower distances (2,638 miles per person per year) than the national average (6,843 miles per person per year)[91]. People in households with cars make 28% more trips to visit family and friends and 45% more trips for other leisure purposes than households without a car[92]. This suggests that people in households without cars experience less face-to-face social interaction with people outside of their immediate geographical area and/or their immediate social circles. This has implications for access to employment, training and education opportunities, as well as access to shops and other facilities.

Reliance on Buses

119. People in households without cars use buses for 20% of trips and walk for 53% of trips, while those in households with cars use buses for only 3% of trips and walk for only 22% of trips. Bus users have had to face fares rising by an average of almost a third in real terms since 1980[93]. A deteriorating physical environment has increased concern for safety, such that many people are reluctant to make trips where there is a walking or public transport element. The result is that fewer trips are made and that a greater proportion of trips are made by taxi, resulting in 'deprivation by expenditure', that is, poverty induced by expenditure on travel[94]..

120. Table 6 shows that 89% of people live within a 13 minute walk of a local bus service with a frequency of at least 1 bus per hour. For people in households without a car the figure is 94%. They make 160 trips by bus per year compared to the 75 trips by those people in households without a car without this access to bus services. 44% of people live within a 26 minute walk of a train service.

Table 6: Time taken to walk to nearest bus stop expressed as a percentage of people[95]

Service Frequency	**Walk Time to Nearest Bus Stop**			
	3 mins or less	4-6 mins	7-13 mins	>13 mins
At least quarter hourly	23	10	2	-
At least half hourly	23	11	3	1
At least hourly	9	5	2	1
Less than once an hour	5	3	1	1
All frequencies	60	29	9	3

Transport Policies to Tackle Social Exclusion

121. The UK Transport White Paper included the following objectives for tackling social exclusion[96]:

- Tackling isolation in the countryside;
- Tackling the transport needs of the disabled, women, elderly people and people on low incomes;
- Through-traffic management, calming and reduction, reuniting communities cut in half by traffic (removing severance);
- Monitoring the impacts of policies on different groups in society;
- Producing better public transport and easier access to workplaces and other everyday facilities for all, especially people on low incomes;
- Reducing the need to travel through better planning and technology;
- Reducing the fear of, and level of, crime on the transport system; and
- Promoting better conditions for those working in transport.

122. In 2000 the Government amended transport appraisal requirements to include the following criteria[97]:

- Access to the transport system (a measure of the number of people who have access to a car or live within 250m of a daytime hourly public transport service);
- Severance;
- Option values (availability rather than use of a transport service).

123. In these guidelines, the Government also required that a supporting analysis is carried out for major transport schemes to show the distribution of overall impacts, assessed so that a judgement can be made about the fairness of their impacts across those affected by the strategy or plan.

124. The Transport Select Committee produced a report examining the Government's Ten Year Plan for Transport[98]. It made some strong criticisms with respect to social exclusion. It said that, while the Government recognised the problem of high costs to use public transport, the Plan anticipates the gap between public and private transport costs increasing. This would worsen social exclusion. It also said that concentrating on reducing road congestion meant that the Plan benefits most those who drive more and are invariably the more prosperous members of society.

The Social Exclusion Unit's Advice

125. In 2003, the Government's Social Exclusion Unit (SEU) published a report on transport and social exclusion, which set out a strategy, building on initiatives already in place, to deliver better access to services and activities and to reduce the impact of traffic on communities[99]. The report focused on accessibility, which concerns whether or not people can get to key services at 'reasonable' cost, in 'reasonable' time and with 'reasonable' ease. The report referred to evidence that certain people have difficulty accessing work, learning, healthcare, food and social, cultural, and sporting activities. It noted that lack of access prevents people from being able to break out of the cycle of social exclusion.

126. The SEU has identified five barriers to accessing services:

1. The availability and physical accessibility of transport;
2. Cost of transport;
3. Services and activities located in inaccessible places;
4. Safety and security;
5. Travel horizons (people unwilling to travel long distances or unaware or untrusting of transport services).

Accessibility Planning

127. The proposed strategy to tackle social exclusion revolves around the concept of 'accessibility planning', where local authorities and other agencies systematically assess whether people can get to key activities. This will be undertaken by audits, which will aim to identify disadvantaged groups or areas with poor access to key services and develop action plans to tackle these problems. The strategy also involves the general improvement of public transport, considering accessibility in land-use planning decisions, tackling excessive road accidents in disadvantaged neighbourhoods and tackling crime around transport routes and hubs. The strategy does not, however, seek to tackle the need to travel and its mention of virtual accessibility is scant.

128. The strategy devised by the Social Exclusion Unit involves other Government agencies playing their part. For example, the Department for Work and Pensions will increase the transport-related help it offers to jobless people to enable them to access work opportunities. Help could include the establishment of new bus services to employment sites, or subsidising driving lessons. Prior to the publication of the report, there had already been an extension to the scheme whereby jobseekers on the New Deal were entitled to half price train fares in England and Wales and on tubes and buses in London, all subsidised by the operating companies. The discount was previously available only to people on New Deal for Young People and New Deal 25+. It became available to people on all the New Deal programmes including lone parents, those over 50 and disabled people looking for work[100].

Transport and Equity - The Network Approach

"How can transport contribute to a more equitable society?"

129. In seeking to address this question the Network identified three approaches that would guide its thinking:

1. Economic Instruments
2. Providing Mobility
3. Providing Accessibility

Economic Instruments – Concessionary Fares

130. Economic instruments provide mechanisms by which equity issues can be addressed. An option that has been in favour for many years is concessionary fares. However, the wisdom and equity benefits of this approach have come under question in recent years. This has partly been a consequence of the development of devolved governance in parts of the UK, which has led to a 'postcode lottery' situation whereby the entitlement to concessionary fares is determined by location rather than need. Senior citizens are entitled to free travel on public transport if they live under devolved government in Northern Ireland, Wales and Scotland (and also in parts of England such as Greater London, Merseyside, West Midlands, Crawley, Reading and Redditch), subject to modal, temporal and spatial restrictions. Pressure groups in England are pushing for nationwide application[101].

131. This geographical variation cuts at the heart of the notions of fairness and justice associated with equity. Indeed, a policy of free public transport generates a series of secondary effects that might undermine rather than support equity. Free nationwide travel by public transport would be likely to stimulate a level of hypermobility (senior citizens can travel across Wales free of charge; one man did this travelling 200 miles in 49 hours) which runs counter to a range of sustainability, social, environmental and economic objectives that are more likely to support equity. As one commentator has asked: "is this a cheap gimmick to win votes or a genuine attempt to address social exclusion?"[102]

132. Indeed, the Commission for Integrated Transport has broadened the debate about concessionary fares by suggesting that there may be valid arguments to support the provision of concessionary fares to incentivise bus travel by 16 to 18 year olds (to discourage car use at an early age) and 'socially excluded disadvantaged groups on means tested benefits', possibly at the expense of broadly-applied concessions to senior citizens[103].

133. The Network also questioned the equity implications of the way in which some concessionary schemes are administered. For example, the Young Person's Railcard entitles all young people aged 16-25 (as well as full-time mature students) to a 33% discount on most rail fares anywhere in Great Britain[104]. However, in order to obtain this concession the card has to be purchased up front at a cost of £18. Young People with limited access to mobility may not be able to justify or afford this initial outlay to take advantage of the scheme. Cost is central to many of the problems of social exclusion encountered in the UK.

134. It seems likely that a wider debate regarding concessionary fares, their relationship to different modes and social groups, and the potential role of means testing will follow in policy circles. In particular, there are problems with the operation of concessionary fares in a deregulated bus industry: *"Concessionary fares skew the market and encourage operators to pursue particular client groups. A Local Authority may wish to reduce congestion and provide services that enable residents to access employment opportunities, but passenger based subsidy can obstruct these aims. It gives operators a secure source of income and they often attempt to develop this market rather than provide a universal service. In peripheral areas operators often cut services back, as they devote resources to chasing this more sustainable revenue. This leaves Local Authorities with a need to subsidise key routes. Unfortunately, when put out to tender, the market does not provide the healthy competition needed to keep tenders competitive. Often a large provider may be in a monopoly position whereby they are able to name their own price".*

135. Efforts are being made to combat the problems highlighted above. The Greater Manchester Passenger Transport Authority is working with the Community Transport Association to develop the skills base and capacity of Community Transport Operators so that they can be in a position to enter the market and bid for tendered services. This should increase competition, improving the value for money of services and may help to reduce social exclusion. Already two Community Transport Operators are being funded through Urban Bus Challenge funding to provide 'Ride to Work' and 'Arranged Passenger Transport' (a form of shared taxi) schemes[105].

136. The Network has sought to develop economic instruments in relation to transport to facilitate social participation. In its fifth report, Local Travel, the following ideas were developed:

Social Participation related components of a Toolkit for Local Travel

- Introduce mobility pricing to make local journeys by car disproportionately expensive compared to public transport options.
- Through traffic charging to discourage excessive through traffic and to provide revenue for environmental mitigation measures.
- Public transport for local residents and employees free at the point of delivery and funded through taxation in a manner comparable to the UK National Health Service.
- Introduce parking charges at out-of-town non-housing developments directed at motorists with hypothecation of revenue to provide public transport access to such sites.

Road User Charging and Equity

137. The Network was also keen to consider the equity implications of road user charging. Some people may be 'priced off the road' by road user charging. However, public transport, cycling and pedestrians all benefit from there being fewer vehicles on the road, particularly if the revenue from such schemes is hypothecated to improve services and facilities for these transport options. Even without hypothecating revenue, road user charging is likely to have a significant positive effect on travel time by public and private transport, as well as on congestion, pollution, safety and the general quality of the environment within the charging zone. Each of these effects benefits walkers and those who live within the charging zone.

138. It was questioned whether road user charges should take into account equity considerations, rather than relying on the hypothecation of funds to public transport. This might result in differential charging based on income levels, which whilst undoubtedly a complex tool to deploy, might prove viable with future technological advances. However, attempting to value people's time differently according to economic activity or social class could open up a Pandora's Box. For example, it is likely be easier to justify schemes that benefit the better off rather than the socially excluded. Therefore the implications of such recommendations clearly require further consideration.

Providing Mobility – Community Transport

139. To enable transport to contribute to a more equitable society, issues relating to mobility provision must be considered. Initiatives exist to provide people with access to mobility include community transport such as social car schemes, community minibuses and taxi sharing schemes[106]. Indeed, in its past reports the Network has generated ideas to make mobility provision more equitable. The following example is taken from the fourth Network report, *Vehicles and Infrastructure*[107]:

> Design for All
>
> In design for all, an increasingly diverse and aging population will mean that meeting all the very different mobility needs of the population is a major challenge. The principal vehicle solution which emerges for personal transport is the Plug and Play Vehicle (PPV). This is a modular open architecture vehicle in which users develop their own vehicle design based around the core propulsion technology. For example, they add their own carrying capacity, which because of the modular nature of the vehicle can be changed at will (i.e. from single occupant commute trip to family outing). All internal features (i.e. Internet access, sound system etc.) can be selected and plugged in by the user.
>
> The standard PPV has been followed on the mass market by the Intelligent Diagnostic Vehicle (IDV) which provides personal mobility which transcends traditional barriers of mobility impairment. The IDV diagnoses the degree of manual control which it is safe for the user to have and applies automation to other driving tasks. Alternatively, the IDV can operate as an entirely automated vehicle enabling the user to both enjoy personalised, private travel whilst being able to work, rest or play. In design for all, technology is applied to provide holistic solutions. Therefore those who enjoy communal transport are served by fully automated public transport, staffed not by a driver but a customer information officer. Similarly, walkers and cyclists enjoy greater safety as the IDVs and PPVs detect other infrastructure users through sensor equipment.

Schemes to Provide Mobility

140. Whilst many present-day schemes aimed at enhancing or providing mobility are often viewed in a positive light, there are other initiatives in this policy area that have proved more controversial. These have included the idea of providing low cost

access to cars[108] (15 weeks cheap car hire) and rail travel[109] (half price fares) to job seekers. It was stated that the long term benefit of such initiatives was unclear: *"The thinking behind these schemes is that once the job seekers are in employment their household income will rise to such an extent that they will be able to purchase mobility at the market rate in a relatively short period of time. They increase mobility as a solution to inequity of access to employment without questioning whether it is actually reducing quality of life for everyone. It's a worrying, knee jerk trend, looking one step ahead to solve an immediate problem, but the longer term implications of that decision may create inequitable knock on effects"*.

141. When considering the example of half price rail travel for job seekers the consequences and impacts are such that what appears to be a simple policy response becomes a far more complex issue. The job seekers are allowed to retain the concession for the first three months of employment. Is it then assumed that they will have had sufficient time to move closer to their new place of work? If not, is it assumed that they will now be able to afford full rail fares for their commute and what is the environmental impact of that commute? Or is there an assumption that when they are established in that job, they will be able to afford to buy a car, which may be cheaper than the rail fare? In short, is it genuinely anticipated that these people will be able to afford to sustain or accommodate an increase in the costs of attaining access to employment provided by such mobility provision? Even if the answer is yes, such an approach adds further to society's mobility burden.

142. This mechanism of bringing people into employment by examining opportunities that are not local highlights the very unsustainable patterns of development that exist in the UK today. Current patterns are unbalanced with jobs, houses and facilities inappropriately distributed. The great difficulty will be to rectify this situation in a manner that is politically acceptable, does not have adverse impact on the environment or scarce resource and is not construed as intrusive social engineering. This is a huge challenge that faces future generations of planners, engineers, architects, politicians and others involved in the communities of today and tomorrow.

143. The Network also questioned the level of understanding which informed such policies of mobility provision: *"You'd want to say this is our solution, half price fares, but to which segment of society is it being offered? Who is facing inequity and so likely to benefit? It's been seen in particular areas or wards that there is high unemployment and this has been attributed to lack of opportunities. But it's just an aggregate level of understanding"*. For issues of equity and social exclusion relating to transport to be tackled effectively, a more sensitive and rigorous approach to the measurement of these problems is vital.

Inequitable Secondary Effects

144. In general terms, the Network questioned the wisdom of the underlying philosophy of increasing people's mobility to address problems of equity and social exclusion related to transport. It could appear that the best solution might be for everyone to have a car to give an equal chance of getting from any A to any B, but actually everyone would be worse off because of the environmental and congestion impacts. The improvement in mobility provided by such car use could mean that a community that once had 50 vehicles an hour going past its doorstep now has 500 - is this equitable? Such levels of car ownership and use would make things worse for pedestrians, cyclists and those who cannot drive, who will be in a worse position because if car ownership increases and most people are perceived to have car access, the provision of alternative transport options is likely to be scaled down. The overall impact of a policy aimed at equality would be to lower the quality of life for all: *"Why can people no longer access employment within an area that's accessible by other means than the car? Mobility can be the cause of inequity rather than the solution. Once everyone is perceived to be mobile things move further and further away. We are chasing destinations that are getting further and further away. Will we give people half price air fares to get to work? "*.

145. The fact that there is inequality in mobility does not necessarily mean that it is unfair or unjust. The quality of life of those who undertake less travel than average may be as good, if not better than those who travel more. The Network therefore suggested that an equitable quality of life is likely to be attained by varying levels of mobility, accessibility and material wealth for different people.

Providing Accessibility

146. The Network believed that access to facilities rather than mobility was key when addressing problems relating to transport needs. This has been recognised in some areas of government policy, particularly relating to the use of technology to provide access to services such as telephone and Internet access to healthcare, social care, legal advice and employment information[110]. The Network was also keen to promote accessibility by the provision of actual, rather than virtual goods and services at as local a level as possible and in the fifth Network report, *Local Travel*[111], the following ideas were generated:

Reinventing Localism

Encourage people to conduct more of their activities (social participation) in the immediate vicinity of where they live. This could be addressed by investing heavily in campaigns to reinvent localism. This could teach people of the benefits of being involved in their local community and establish opportunities for local participation. Parallel investment could be made into promoting more local activities rather than just the occasional bring-and-buy sale or coffee morning. Indeed, events like festivals or carnivals could be arranged to act as triggers to local participation. Community websites could be used as a means to promote localism and pride in knowing about and belonging to a local community.

Community Loyalty Schemes

A stimulus to local participation could be provided by the promotion of community loyalty schemes. These schemes could run along similar principles to loyalty card systems run by supermarkets and other large retail companies. Residents would be provided with a loyalty card that would be credited with points whenever they used local goods and services. Points could be redeemed against participation in local activities such as a discount on the price of theatre tickets or swimming pool admission. Allied to the scheme could be promotions such as 'keep it local' campaigns advocating the benefits of community participation.

Access to Public Transport

147. The Network considered that the accessibility of the UK's transport systems raised equity concerns that needed to be addressed. As stated earlier in this section, 28% of UK households had no access to private motorised transport in 2001[112]. The question was then posed, how many people have no/insufficient access to public transport? According to Government statistics quoted earlier, 89% of UK households were within six minutes walk of a bus stop with a service at least once an hour in 2001[113].

148. Whilst such thresholds and standards may be practical assessment tools, the extent to which they offer a fair reflection of the quality of service provision is questionable. People may live within six minutes walk of a bus stop, but this does not mean that they are able to walk to the bus stop over the distance and for the period of time suggested by this criteria. Also, there is no guarantee

that the bus service accessed at that stop actually travels to destinations that people wish or need to access, at the right times. Even if there is a favourable correlation between the destination of the bus and the person's access needs there are a range of secondary issues that may act as barriers to accessibility, including reliability and frequency of bus times.

149. Accessing the vehicle itself can be a problem. The Disability Discrimination Act requires all new buses to be fully accessible (including low-floor access) and all local public transport vehicles to be fully accessible by 2010[114]. In the intervening seven years and presumably in all previous history, a proportion of the UK's population with disabilities will have been unable to access public transport. Whilst the Act is likely to enhance public transport accessibility for a significant proportion of the population with mobility impairments, it seems certain that some people will remain in a position of exclusion, including many people with mental illnesses, learning disabilities and other 'hidden' disabilities.

150. Health problems are not the only grounds upon which people can be excluded access to public transport vehicles. The difficulties faced by those with babies and very young children in accessing public transport has been a major factor in the increase in the number of multi-vehicle households and a corresponding increase in car trips: *"The bus is a problem for me when I have my son with me in a buggy, if there is already someone on the bus with a buggy there is no room for me and I have to wait for the next bus and hope that the same situation doesn't arise"*.

151. Cost of travel can also prevent access to public transport, particularly in the case of those on low incomes. Safety and the perception of risk can render use of public transport unviable, particularly at night, for many sectors of the population including children and teenagers, unaccompanied women and senior citizens. Whilst all of these issues can raise barriers to the accessibility of public transport, which have not yet been addressed effectively in legislation and best practice guidelines, none of these barriers should be insurmountable.

Affordability of Housing

152. The Network noted the irony that sometimes increasing accessibility can actually reduce equity, due to secondary effects unrelated to the transport system itself: *"LRT is being directed to areas requiring regeneration and often characterised by poor transport provision and low property values. Improving accessibility in these areas raises property values. This is presented to local people as 'a good thing' as their house prices will rise, especially important in that some of these areas are suffering from negative equity. The hope is also that this will attract new residents to the area and improve the social mix. However, in practice this does not always improve the*

quality of life for local people. Bringing higher earners into an area can mask the problems faced by the original residents. Also the area can become 'gentrified', which pushes out those who may have had greatest need for the LRT. There has already been a disproportionate increase in house prices in areas of Greater Manchester with a Metrolink stop nearby".

153. The correlation between accessibility and property prices has become a major social issue in recent years, which requires joined-up thinking across government to produce equitable solutions. The problems are perhaps most acute in London and the south east: *"You can't separate the affordability of transport from that of other facets like housing. In London, the average house price is £,200,000 and a grotty one bed flat in a dodgy area will go for £,120,000. I would live closer to work, but I'm priced out of the market, even if I am prepared to rent. People move far away from workplace/everyday destinations because of this lack of affordable housing".*

154. The problems of affordable housing are acutely felt by those employed in key worker jobs (nurses, teachers, police officers, etc.) and their employers: *"At a Local Government Association meeting it was suggested that bus drivers should have key worker status and hence access to affordable housing - i.e. supporting key workers to get other key workers to work! If you cannot provide houses for key workers then provide them with dedicated transport services to access work".* The Network felt that the first priority should be for planners to consider joint transport/housing/land use strategies to address this problem. If regeneration drives land values up, the first priority should be to provide affordable housing in sufficient quantities in the regeneration area, if this is not practicable then good transport links (possibly including dedicated transport services) should be provided to external areas.

Inadequate Assessment of Accessibility

155. In terms of the more general aim of providing accessibility to enable transport to contribute to a more equitable society, the Network felt that a considerable amount of work still needed to be undertaken to assess the scope of the problems faced. Whilst it was relatively easy to measure mobility in terms of travel distance, time or cost, it was much more difficult to define and in turn measure accessibility. However, if an appropriate means of analysing accessibility could be found, it offers the prospect of developing transport systems and services that are better attuned to provide people with the access to opportunities they require to sustain and enhance their quality of life and create a more equitable society. Indeed, the Network welcomed moves in this direction signalled by the Social Exclusion Unit's proposals for accessibility planning[115].

156. A further example of moves to provide accessibility information is the use of a system for scoring Public Transport Accessibility

Levels (PTALs)[116]. PTALs are used by many local authorities in assessing the accessibility of locations for new development and, in particular to assess the application of car parking standards and development densities. Local authority-wide PTAL maps have been developed, based on the quality of and proximity to interchanges and nodes, as well as interconnecting public transport routes. Clearly, however, the potential exists to extend this concept across a range of transport and land-use planning criteria.

Accessibility Direct

157. The Network stated that a crude example of the provision of accessibility information existed in the form of the website www.upmystreet.com. This website enables users to discover the accessibility (purely in terms of distance) of a range of goods and services from a particular location. These services range from schools and hospitals to restaurants and cinemas. The potential clearly exists to develop the definition of accessibility used to include modal options, topography and local conditions. An integrated accessibility service in which users identify an access need and then are provided with integrated transport information could then be provided possibly modelled on 'Transport Direct' and entitled 'Accessibility Direct'. Where possible, this information could be mapped to provide a spatial picture of transport access across an area. This would also assist both transport planners and public transport operators in developing and improving transport access.

158. If such a single, national portal for accessibility information for all communities within the UK can be established then the potential clearly exists for the establishment of criteria and minimum standards relating to accessibility which can be used to determine where there are situations of inequity that need to be addressed. It would also provide a tool by which to judge the potential impact upon accessibility of decisions affecting land use such as the construction of transport infrastructure or the development of new facilities e.g. building an out of town supermarket. If such changes are likely to have a detrimental impact on accessibility, mitigating measures could then be suggested to ensure equity, for example, the supermarket could provide a minibus service to provide access to the store for those whose local store has closed due to the competition, or the supermarket could provide a smaller, in town facility, possibly along the lines of the 'Tesco Metro' model[117].

Conclusion

159. This report has differed from past Network reports in a number of ways. Whilst each of its predecessors has attempted to discuss a single theme, this report has sought to debate three distinct and complex themes. Given this situation, the Network felt that it would be unrealistic and simplistic to attempt to produce integrated visions encompassing ideas generated under discussion in each of the topic areas. Instead the three topics were seen to be best addressed by giving them detailed, separate consideration by engaging in an exploration of ideas centred around the three key questions identified at an early stage of the discussion:

1. How can transport contribute to a successful economy?
2. How should our transport systems be financed?
3. How can transport contribute to a more equitable society?

160. Whilst the Network would not claim to have provided definitive answers to each of these questions, it can confidently point towards a wide range of ideas that could contribute to providing answers to problems associated with economy, finance and equity. A selection of these ideas are summarised below:

Economy

- The ability of transport to support the economy through facilitating access and communication should be complemented and enhanced by the inclusion of *virtual mobility* as an integral part of transport policy.
- Transport plays a vital role in facilitating trade and this should be recognised and supported through prioritisation on transport networks, such as dedicated facilities (e.g. freight lanes).
- Innovative ways of using vehicles and infrastructure such as dual use public service vehicles ('bus-trucks') and park and share facilities bring efficiency and economic benefits and so should be given all possible encouragement.
- Concerted effort should be made to anticipate and address the potential consequences for transport, stemming from economic growth e.g. smaller households and increased leisure time.

Finance

- Many projects involve bespoke solutions and, accordingly, a flexible approach to transport finance must be available. To rule in or out particular mechanisms or approaches on ideological or procedural, rather than economic grounds, is unhelpfully restrictive.
- The potential application in the UK of a wide range of international approaches to transport finance (e.g. Business Improvement Districts and local sales taxes) should be given more extensive consideration and promotion.
- Public investment in transport infrastructure and services improves access and in turn property values. It is therefore appropriate that such value increases be considered as a source of transport funding.
- The appraisal framework for transport projects should give local objectives and environmental and social impacts equal weighting alongside economic evaluation, rather than considering such issues to be of secondary importance.

Equity

- Geographical variation in the availability of concessionary fares is not equitable and should be replaced by a consistent approach nationwide.
- Policies of subsidised mobility provision in pursuit of equity (e.g. cheap car hire and half price rail travel) can have unanticipated *secondary* effects. These should be considered and satisfactory mitigation options developed as a precondition for the introduction of such policies.
- Providing accessibility rather than mobility should be the primary consideration of any transport related policy designed to address equity issues.
- 'Accessibility Direct', a single national portal for accessibility information should be developed along the lines of the forthcoming 'Transport Direct' initiative.

161. This is the final report to be produced by the Transport Visions Network. As such, it is in the unique position of being able to consider the overall output of the Network in its discussion.

162. From the outset, the Network has sought to look at the underlying reasons for society's transport needs and activities. Indeed, a focus on the links between transport, society and social and technological change has become a distinguishing feature of the Network's approach to transport visioning. The territory covered by the Network in its lifetime has been considerable and the set of

Network reports provides a lasting account both of future thinking by young professionals and of their interpretation of past and present developments in transport and associated areas.

163. The Network has benefited from the rich mix of its membership, with strong representation from academics, consultants and public authority officers as well as transport operators and service providers. Perhaps because of this mix, the Network's ideas and visions have been a healthy mix of very pragmatic, more immediate thinking (e.g. ideas for improving cycling and walking environments) through to longer term and more contentious or even outlandish thinking (e.g. the future possibility of male pregnancy and the potential role of smart robots in the home).

164. The Network does not claim to have produced a definitive and integrated outlook for the future of transport in the UK, but it hopes to have offered a wide-ranging and thought provoking set of ideas, scenarios and visions that might aid thinking and policy development when seeking to address the issues we face.

165. Perhaps a lasting contribution to the future of transport will be the diverse community of young professionals that has been created by the Transport Visions Network. With some 260 registered members, the Network has proved to be a healthy environment both for the exchange of views and the enrichment of individuals' views and understandings. Many Network members will continue with a professional career in transport, working with their peers with whom they have become acquainted through the Network.

166. The Network itself, having concluded its formal business of exploring the future of transport across eight themes, will not cease to exist. Agreement has been reached for the Network to migrate into the Transport Planning Society[118] and become the Society's electronic Young Members Forum. The opportunities for young professionals to challenge conventions, debate contemporary issues and contribute their views to the wider transport profession and agenda will continue.

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