

Durham E-Theses

Transport governance and the environment: the changing decision making context of road transport in north east England

Tucker, Andrew

How to cite:

Tucker, Andrew (2004) *Transport governance and the environment: the changing decision making context of road transport in north east England*, Durham theses, Durham University. Available at Durham E-Theses Online: <http://etheses.dur.ac.uk/2971/>

Use policy

The full-text may be used and/or reproduced, and given to third parties in any format or medium, without prior permission or charge, for personal research or study, educational, or not-for-profit purposes provided that:

- a full bibliographic reference is made to the original source
- a [link](#) is made to the metadata record in Durham E-Theses
- the full-text is not changed in any way

The full-text must not be sold in any format or medium without the formal permission of the copyright holders.

Please consult the [full Durham E-Theses policy](#) for further details.

Transport governance and the environment: The changing decision making context of road transport in north east England

Andrew Tucker

A thesis submitted for the degree of Doctor of Philosophy

Department of Geography

University of Durham

February 2004

A copyright of this thesis rests with the author. No quotation from it should be published without his prior written consent and information derived from it should be acknowledged.



25 AUG 2004

Acknowledgements

The writing of this thesis would not have been possible without the help and support of a great many people, so much so that it is difficult to know where to start thanking them.

First I must thank *Go-Ahead*, and in particular Chris Moyes, who have by their generosity made the thesis possible. *Go-Ahead* has provided unparalleled access to the personnel of the company and I am indebted to many members of the *Go-Ahead* staff who have given up their time to reflect on the role of their company and its responses to the environment. The generosity of the company in funding the research and my travel to carry out some of the interviews has been beyond what I ever expected. I am also grateful to the many other individuals and organisations that have given their views and their time to contribute to the work.

I must also thank the *University of Durham* and the Geography Department for providing the academic support for me during the last four years. I am especially grateful to Dr Elizabeth Oughton who has supervised the project from its beginning, after persuading me to continue my studies! Liz has been a great source of encouragement, advice and helpful criticism throughout the work. Dr Adam Holden and Professor Ash Amin have also provided additional supervisory support and encouragement and I am grateful too to them. The other members of the Geography Department who have helped in many ways must remain unnamed but this in no way minimises my appreciation for their input and efforts on my behalf. The many suggestions and ideas generated by this group of people have contributed to the production of this thesis. Any errors or omissions are entirely my responsibility.

Finally, I must thank my family for putting up with me during the time taken to complete this thesis. Particular thanks must go to my longsuffering wife Wendy, who has encouraged me throughout the work and shielded me from many other demands that would have robbed me of the time to work. To my children, Dan, Mike, Ben, Holly and JJ I also owe a debt of thanks for the many times I was not available to them when I should have been. They have put up with this almost without complaint. There are also many other friends and family members who have supported me during this work and to them I am also grateful, space does not allow me to name them.

Andrew Tucker

Abstract

The environmental problems originating from transport are considerable, persistent and increasing. In personal travel there is a continuing switch away from public transport towards the private car. Also the proportion of freight moving by road is increasing in volume and distance. These trends reveal that the transport of both people and goods is less sustainable than it was. Altering existing transport behaviour to reduce demand, simultaneously shaping suppressed demand, and achieving both whilst maintaining politically acceptable levels of access and mobility are serious challenges. This thesis explores a part of the complex landscape of transport decision making where these tensions are enacted, focussing on three key groups of organisations within the road transport sector of the north east of England. The thesis assess the salience of 'the environment' within the minds of organisational transport decision makers in the North East. Their views on the environment and its importance within their decisions will affect the success of policy initiatives. Examining transport choices within this context reveals the depth of 'environmental' understanding present within the operational landscape of transport. It is argued that theoretical and conceptual approaches to the processes of transport policy development have matured, whilst the implementation of transport policy resulting from this process remains somewhat patchy with traditional approaches to transport provision remaining dominant. The argument is covered in terms of transport paradigms. Though sustainability policies remain, recent integrated transport initiatives are undermined from the centre by a return to the market paradigm and to 'predict and provide'. Within this research clear evidence has emerged of reinterpretations of 'the environment' taking place. These discoveries illustrate the ability of governance and organisational actors to assimilate emerging policy requirements into existing or preferred programmes and transport behaviours. In support of the aims of recent transport policies the ability to identify economic and environmental 'win-win' opportunities was found to be important. Decisive leadership was found to deliver effective transport policies.

Contents

| | |
|--|------------|
| List of tables, figures, maps and plates | iv |
| List of Abbreviations | vi |
| Chapter 1: Transport, sustainability and the environment | 1 |
| 1.1. Transport trends | 3 |
| 1.2. Transport trends: implications for policy | 5 |
| 1.3. Research objectives | 6 |
| 1.4. Thesis structure | 7 |
| 1.5. Conclusions | 10 |
| Chapter 2: Transport, the Environment and Sustainable Development | 12 |
| 2.1. The proliferation of transport | 13 |
| 2.2. The 'environment' | 18 |
| 2.3. Transport and the environment: the 'sustainability' crossroads | 21 |
| 2.4. The environmental unsustainability of transport | 26 |
| 2.5. Placing the 'environment' in transport decision making? | 35 |
| Chapter 3: Roots of routes and the development of UK transport policy | 38 |
| 3.1. Competing concepts | 38 |
| 3.2. Concepts and policies | 44 |
| 3.3. Restructuring transport governance for new policy approaches | 50 |
| 3.4. Ideology and policy: the route to integration | 53 |
| 3.5. Other key policy developments with transport implications | 64 |
| 3.6. Turning point? | 68 |
| 3.7. Conclusions: step change in transport policy? | 74 |
| Chapter 4: Transport and sustainable development: examining decision making | 77 |
| 4.1. The subjects of the research | 79 |
| 4.2. Research design | 87 |
| 4.3. Interviews | 89 |
| 4.4. Observation within the organisational setting | 90 |
| 4.5. Interview analyses | 93 |
| 4.6. Research questions | 94 |
| 4.7. Decision making and structures of incentives | 95 |
| 4.8. Governance and transport decision making | 98 |
| 4.9. Governance and the market paradigm | 99 |
| 4.10. Governance and unsustainability | 102 |
| 4.11. Green lobbies, 'greening' and environmental governance | 105 |
| 4.12. Conclusions | 109 |
| Chapter 5: The provision, regulation and governance of road space | 111 |
| 5.1. Providing roads to prosperity | 115 |

| | |
|--|-----|
| 5.2. Institutions, approaches and governance arenas | 118 |
| 5.2.1. Multidisciplinary participation? | 118 |
| 5.2.2. Differences in organisations and institutions | 125 |
| 5.2.3. Policy evaluation, monitoring and joined up governance | 129 |
| 5.2.4. Leadership, example and responsibility in policy processes | 133 |
| 5.2.5. Sustainable development and business as usual | 136 |
| 5.2.6. Greenwash: the rhetoric to reality gap | 138 |
| 5.3. Case Study: An analysis of the Road User Charging Scheme in Durham City | 145 |
| 5.3.1. Background to Road User Charging | 145 |
| 5.3.2. Congestion in Durham City | 147 |
| 5.3.3. Details of the Durham scheme | 151 |
| 5.3.4. Comparisons between overall policy themes | 152 |
| 5.3.5. Hiccups of final approval | 158 |
| 5.3.6. success of the RUC scheme? | 161 |
| 5.4. Conclusions: the educative challenge | 163 |

Chapter 6: Wagons role: dilemmas, decision making and divergent roads in NE freight 165

| | |
|--|-----|
| 6.1. The NE road haulage industry context | 166 |
| 6.2. Issues and incentives: a summary of the responses of road haulage organisations | 170 |
| 6.3. Statutory attempts at environmental protection | 171 |
| 6.4. Transport decision making and the European Single Market | 180 |
| 6.5. Decision making processes under competitive pressure | 186 |
| 6.6. Case Study: Transport decision making within a freight transport company | 195 |
| 6.6.1. Company profile and operational niche | 196 |
| 6.6.2. Company decision making structure | 197 |
| 6.6.3. Intermodal innovation at <i>The Freight Group</i> | 202 |
| 6.6.4. Setting standards | 204 |
| 6.6.5. Infrastructure, operational strategies and decisions | 206 |
| 6.6.6. New technologies and the environment | 210 |
| 6.6.7. External and internal development strategies | 211 |
| 6.6.8. Educative efforts | 216 |
| 6.6.9. Summary of the activities of <i>The Freight Group</i> | 219 |
| 6.7. Conclusions | 219 |

Chapter 7: A new deal for buses: better for anyone? 225

| | |
|--|-----|
| 7.1. All change in public transport | 225 |
| 7.2. Opportunities for the bus sector in the new operating landscape | 229 |
| 7.3. The corporate literature of bus sector annual reports | 232 |
| 7.4. Changing operational decisions | 236 |
| 7.5. Effects of altered operational conditions | 237 |
| 7.5.1. Bus priority measures | 240 |

| | |
|---|-----|
| 7.5.2. Congestion | 246 |
| 7.5.3. New technologies | 247 |
| 7.5.4. Public image and the environment | 248 |
| 7.6. Economic incentives and transport decision making | 249 |
| 7.7. Case Study: Transport decision making within the <i>Go-Ahead Group</i> | 257 |
| 7.7.1. <i>Go-Ahead</i> : origins onwards | 258 |
| 7.7.2. Decision making within <i>Go-Ahead</i> | 258 |
| 7.7.3. Background to environmental reporting | 262 |
| 7.7.4. The development of environmental awareness and reporting at Go-Ahead | 264 |
| 7.7.5. Consultants; what role? | 270 |
| 7.7.6. The Way Ahead and consultants | 272 |
| 7.7.7. The economics of environmental decisions | 274 |
| 7.7.8. Environmentally perverse outcomes | 279 |
| 7.7.9. Environmental benefits gained from commercial choices | 283 |
| 7.7.10. Summary of <i>Go-Ahead's</i> activities | 286 |
| 7.8. Conclusions | 288 |

Chapter 8: The way ahead: an uphill struggle 291

| | |
|---|-----|
| 8.1. Routes converge? An analysis across NE transport organisations | 291 |
| 8.2. Transport paradigms | 293 |
| 8.3. Incentives to drive change | 296 |
| 8.4. Maintaining changes in transport behaviour through monitoring | 299 |
| 8.5. Structures of incentives and the environment | 301 |
| 8.6. Commercial priorities and environmental awareness | 303 |
| 8.7. New processes in transport decision making | 306 |
| 8.8. Concluding analysis | 308 |
| 8.9. Issues for further research | 312 |

Appendices

| | |
|------------|-----|
| Appendix 1 | 317 |
| Appendix 2 | 319 |
| Appendix 3 | 320 |
| Appendix 4 | 333 |
| Appendix 5 | 336 |

| | |
|-------------------|------------|
| References | 338 |
|-------------------|------------|

List of tables, figures, maps and plates

| | | |
|-------------|---|-----|
| Figure 1.1. | UK carbon dioxide emissions by end user | 2 |
| Table 2.1. | Selected sustainability issues and associated environmental Impacts | 27 |
| Figure 2.2. | Relationship between 'transport', 'economic, social and Community exchanges', 'sustainability', 'country type' and a range of other 'development' indicators | 28 |
| Table 2.3. | Environmental profile of different modes of passenger travel | 34 |
| Figure 3.1. | The transport continuum towards sustainable development | 39 |
| Figure 3.2. | The general policy landscape affecting transport | 54 |
| Map 4.1. | Location of the research | 80 |
| Map 4.2. | NE transport arteries and major conurbations | 81 |
| Figure 4.3. | Links between selected North East of England governance Institutions | 82 |
| Table 5.1. | Comparison of the roles, responsibility and accountability of NE institutions | 127 |
| Table 5.2. | Development of traffic restrictions within the peninsula area of Durham City | 148 |
| Map 5.3. | Durham city centre congestion charging scheme area | 149 |
| Table 5.4. | Projected Traffic Growth in Durham City (from 1997 base) | 151 |
| Plate 5.5. | 'Pedestrian vehicle conflicts' | 154 |
| Figure 6.1. | Road Haulage Organisations: Relationship between type, niche and style | 172 |
| Table 6.2. | Influence of statutory controls on the processes of organisational decision making and associated environmental outcomes | 173 |
| Table 6.3. | Influence of EU Single Market and globalisation on the processes of organisational decision making and associated environmental outcomes | 181 |
| Table 6.4. | Influence of EU Single Market and globalisation on the processes of organisational decision making and associated environmental outcomes under possible future transport patterns | 182 |

| | | |
|-------------|--|-----|
| Table 6.5. | Influence of increased competition amongst transport providers on their processes of organisational decision making and associated environmental outcomes under possible future transport patterns | 187 |
| Figure 6.6. | <i>The Freight Group</i> – organisational structure | 199 |
| Table 7.1. | Transport Group Operations | 228 |
| Figure 7.2. | Public Transport Organisations: Relationship between type, niche and style | 230 |
| Table 7.3. | Group Financial Performance | 233 |
| Table 7.4. | Influence of operational conditions on the organisational decision making processes of public transport companies and their associated environmental outcomes | 238 |
| Table 7.5. | Influence of financial and contractual support measures on the organisational decision making processes of public transport companies and their associated environmental outcomes | 250 |
| Table 7.6. | Structure of the <i>Go-Ahead Group</i> | 260 |
| Table 7.7. | Structure of <i>Go-North East</i> | 261 |

List of Abbreviations

| | |
|-----------------|---|
| AA | Automobile Association |
| ANEC | Association of North East Councils |
| BC | Borough Council |
| BPM | Bus Priority Measure |
| BQM | Bus Quality Measure |
| CfIT | Commission for Integrated Transport |
| CNG | Compressed Natural Gas |
| CO ₂ | Carbon Dioxide |
| COBA | Cost Benefit Analysis |
| COMAH | Control of Major Accident Hazard |
| COSHH | Control of Substances Hazardous to Health |
| CRT | Continuously Regenerating Trap |
| CSR | Corporate Social Responsibility |
| DCC | Durham County Council |
| DEFRA | Department of Environment, Food and Rural Affairs |
| DETR | Department of Environment, Transport and the Regions |
| DfT | Department for Transport |
| DoE | Department of Environment |
| DoT | Department of Transport |
| DTLR | Department of Transport, Local Government and the Regions |
| EIA | Environmental Impact Assessment |
| EM | Elected Member |
| EMS | Environmental Management System |
| EU | European Union |
| FG | Freight Group |
| FoE | Friends of the Earth |
| FTA | Freight Transport Association |
| GOMMS | Guidance on Methodology for Multimodal Studies |
| GONE | Government Office for the North East |
| GPS | Global Positioning System |
| GTP | Green Travel Plan / Green Transport Plan |
| HGV | Heavy Goods Vehicle |
| HOV | High Occupancy Vehicle |
| IC | Internal Combustion (engine) |
| IPC | Integrated Pollution Control |
| IPPC | Integrated Pollution Prevention and Control |
| JIT | Just In Time |
| JSU | Joint Strategy Unit |
| LA | Local Authority |
| LGO | Local Government Officer |
| LTP | Local Transport Plan |
| LTT | Local Transport Today |
| NE | North East |
| PPG | Planning Policy Guidance |
| PSV | Public service Vehicle |
| PTA | Passenger Transport Authority |
| PTE | Passenger Transport Executive |
| PTR | Public Transport Representative |

| | |
|--------|---|
| RA | Regional Assembly |
| RBG | Rural Bus Grant |
| RCEP | Royal Commission on Environmental Pollution |
| RCS | Regional Civil Servant |
| RDA | Regional Development Agency |
| RDC | Regional Distribution Centre |
| RHA | Road Haulage Association |
| RHIR | Road Haulage Industry Representative |
| RHM | Road Haulage Manager |
| RPG | Regional Planning Guidance |
| RTS | Regional Transport Strategy |
| RUC | Road User Charging |
| RUSG | Road User Sub Group |
| SACTRA | Standing Committee on Trunk Road Approval |
| SHE | Safety, Health and Environment |
| SMMT | Society of Motor Manufactures and Traders |
| SRA | Strategic Rail Authority |
| TENS | Trans European Networks |
| UK | United Kingdom |
| UN | United Nations |
| VED | Vehicle Excise Duty |
| WCED | World Commission on Environment and Development |
| WTD | Working Time Directive |

Chapter 1: Transport, sustainability and the environment

The environmental problems originating from transport are considerable, persistent and increasing. Awareness of the environmental problems caused by transport has also grown and both the quantity and quality of published literature and scientific evidence that concentrates on these issues have grown with and informed this awareness. Despite this, little progress has been made to reduce the overall environmental problems attributable to transport. Most of the environmental impacts are the result of the prodigious use of fossil fuels and their use is unsustainable (Greene & Wegener, 1997). It is the unsustainable use of resources that is at the heart of a worsening environmental crisis within which lies a persistent misunderstanding about the relationship between the environment and the life that it supports (Sustainable Development Commission, 2003).

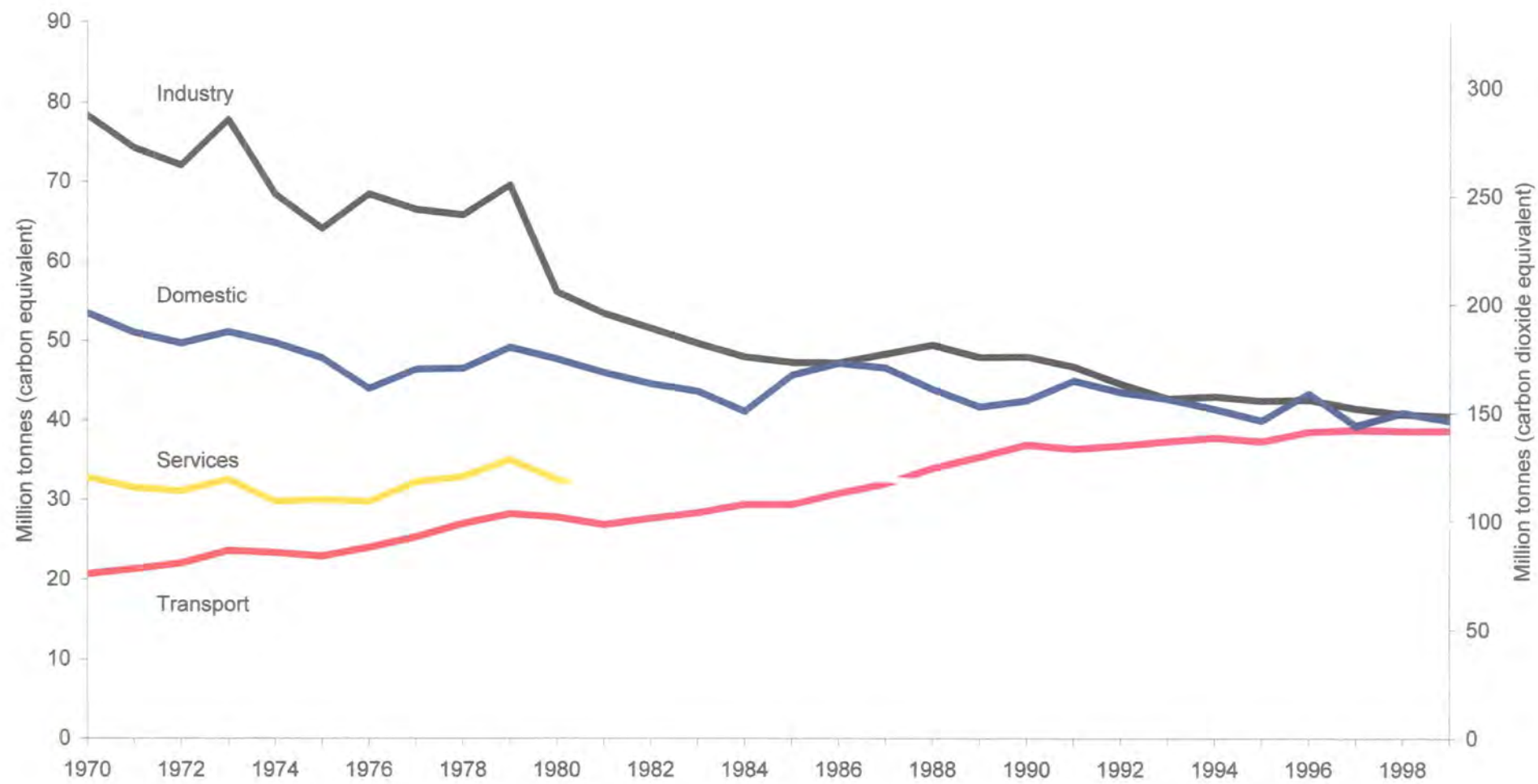
In the developed, industrialised world the impact of transport upon the environment is more severe than elsewhere. Most industrialised world governments have committed themselves to reducing the environmental impacts of human behaviour¹, which in transport terms aims at a reduced draw on fuel resources and a reduction in transport pollution. As part of their response the UK government has set a self imposed target, in excess of its Kyoto requirements, that amounts to a reduction of 20% below the 1990 level of CO₂ emissions by 2010. Total UK CO₂ emissions are down by 5%, however this masks an increase in transport emissions of 7% between 1990 and 2001 (DEFRA, 2003)². Graph 1.1 shows UK transport emissions have grown whilst all other sources of emissions have fallen. This growth is the result of many millions of discrete decisions to use transport and is reflected in the statistics set out below. These detail the changes in the demand for both passenger and freight transport.

¹ In terms of the environmental impacts of transport behaviour the most notable and important exception is the USA who has refused to ratify the Kyoto climate change agreement that commits countries to emissions reductions.

² Recent evidence of an increase in UK traffic levels of 2.5% in 2002 is in addition to this increase (*Local Transport Today*, 07/08/03).



Figure 1.1. UK carbon dioxide emissions by end user: 1970-2000



Source: DEFRA (2003)

1.1. Transport trends

Globally, there are over 810 million vehicles in use with some 23 million of these in use in the UK (SMMT, 2003). The intensity of vehicle use is also up with the total annual distance travelled by all modes, within the UK, rising (DETR, 2000). Currently there are 728 billion passenger kilometres³ (bpk) travelled annually, compared with the 218bpk travelled in 1952 (ibid.) The overall increase in the demand for personal mobility has grown by three and half orders of magnitude, but this masks the relative growth of private car use against declines in public transport patronage. In the same period annual travel by car increased from 58 bpk to 621 bpk, almost an elevenfold increase, while travel by what were the dominant modes, buses and trains, dropped by about a third from 125 bpk to 83 bpk (ibid). For personal travel these statistics reveal a significant switch away from public transport towards the private car.

Over a similar period freight transport reflects these trends. The annual tonnage of UK freight moved by all modes is double the 1953 volume, up from 89 billion tonne kilometres (btk) to 185⁴ btk (DETR, 2000). Within this rail tonnages have halved from 37 btk to 18 btk whilst road freight volumes have increased fivefold from 32 btk to 157 btk. The average journey distances of freight are also some 67% longer than in 1953 (ibid.).

The statistics reveal the unsustainable nature of the transport of both people and goods. This is despite technological improvements in vehicles that have allowed for increases in their energy efficiency. The resource draw on environmental capital, in the form of fuel and materials, has more than cancelled out vehicle efficiency gains (Ayres, 1998). The demand for passenger and freight mobility though, impinges on human society in far greater ways than these statistics reveal. Transport is resource intensive, space consuming and inequitable. It contributes to environmental degradation, community severance, human health problems and disturbance, but it

³(i) Within transport statistics the term 'passenger' usually includes drivers. This convention is maintained throughout the thesis. (ii) 1999 figure.

⁴ 1999 figure.

also makes many activities that were once difficult or impossible relatively convenient and comfortable.

From the transport trends outlined above it is clear that a clash of priorities is taking place. Millions of people with high levels of mobility want to maintain that mobility; millions more want to achieve it, whilst most nations acknowledge the need for human society to become more sustainable⁵. Transport is therefore at the heart of these competing pressures. Altering existing transport behaviour to reduce demand, simultaneously shaping suppressed demand and achieving both whilst maintaining politically acceptable levels of access and mobility is a serious challenge. Meeting this challenge is made more complicated by the role of transport in shaping a broad range of human activities; transport decision making processes feature complex, dynamic inter-linkages between production, consumption, technology, land use, accessibility and mobility (Whitelegg, 1993; Weaver, 1998). Restructuring the incentives around these factors is necessary to produce different decision outcomes.

Such a restructuring of incentives will involve raising awareness around the social, economic, cultural and environmental connections⁶ of all forms of transport use. Altering this structure of incentives, especially through educative efforts and through altering the economic costs of transport to reflect more fully the environmental costs, will make it possible to reduce the environmental impacts of transport choices. A range of institutional, commercial and individual decision makers directly concerned with transport provision and use occupies the landscape where these transport choices are made.

This thesis explores a part of this complex landscape focussing on three key groups of organisations within the road transport sector of the north east of England. The thesis attempts to reveal the salience of 'the environment' within the minds of

⁵ The *Agenda 21* (UNCED, 1992) agreement made at the 1992 Rio Earth Summit provides a detailed explanation of sustainability and sets out the aims of sustainable development. *Our Common Future* (WCED, 1987) provides more detail. Appendix 5 provides an explanation of how the terms 'sustainable development' and 'sustainability' are interpreted throughout the thesis.

⁶ 'Environmental connections' and 'environmentally connected' are phrases used within this thesis to indicate transport decisions with some sort of associated environmental impact. For example all decisions to use motorised transport produce emissions that impact the environment and also reduce the stock of natural resources through the use of fuel.

organisational transport decision makers in the North East. The extent to which ‘the environment’ is considered and included within transport decision making indicates the level of priority attached to it in decision making processes. An improved level of “awareness of environmental problems and issues” (Whitelegg, 1993:1) was recognised over a decade ago. More recent research pointing to the continuing growth in transport demand, as reflected by car ownership, usage and sales trends, suggests that “a fundamental ambivalence is present within individual people” in their attitudes to change (Paterson, 2000:117). Given these observations an analysis of the salience of ‘the environment’ as a factor in transport decision making is necessary. At the heart of the thesis therefore are the operational tensions and choices faced by transport decision makers in the region.

1.2. Transport trends: implications for policy

The emissions burden associated with UK transport use is currently around 26% of the total (see graph 1.1). This share has risen from around 13% in 1970 (DEFRA, 2003). If current trends continue, as looks likely given the rising emissions of the transport sector and the simultaneous reduction from the industrial sector, it is likely that transport will be responsible for a majority of UK CO₂ emissions by 2050⁷. As the principal greenhouse gas CO₂ emissions are a major concern as they are increasing faster than emissions of other environmentally damaging gases, but also because the effects of CO₂ are linked to climate change⁸ and because CO₂ emissions provide a proxy measure of energy use⁹. These trends indicate that analyses of transport decision making are becoming more important over time because environmental impacts are growing in absolute terms *and* as a proportion of the total environmental impacts of human activity.

⁷ Calculated from data in Hughes (1993), DETR (02/2000B) and DEFRA (2003).

⁸ See RCEP (2000) and IPPC (1996). Latest scientific data strongly supports a link between emissions and climate change the effects of which, though contentious, are likely to be global and impact human lifestyles and the natural environment. Since human life is dependant on the functions of the environment this is of concern.

⁹ As an indication of fossil fuel energy use emissions growth indicates increased use of a finite resource. This problem is compounded by the lack of alternative energy sources that could meet current and projected energy requirements (Ayres, 1998).

Recent policy is aimed at a restructuring of transport choices based on voluntary responses to alternatives in the decision making context, for example in responses to restructured transport taxes. Some regulatory controls are also in use, though these often have an associated economic or financial element, for example fines imposed for speeding or, in London, for non payment of the congestion charge. The extent to which these incentives are successful will be a measure of the success of the underpinning policies. Analyses of how this altered structure of incentives is reflected in actual transport choices are relevant. This will allow identification of the particular measures that are successful, those that produce perverse outcomes and the ones that do not contribute to the overall policy aims at all. By inference this will allow recommendations for the design of future transport policies to be made and, within this, whether more restrictive, draconian measures are likely to be necessary.

1.3. Research objectives

The integrated transport strategy set out in the White Paper *A new Deal for Transport: Better for Everyone* (DETR, 07/1998) and the Transport Act 2000 have provided many opportunities for decision makers at different scales to adopt more sustainable, 'greener' transport activities. By and large this has not happened, only the rhetoric has changed (Vigar *et al*, 2000). The thesis introduces the notion of changes in transport decision making paradigms and argues that the current state of transport can be characterised as 'market transport'¹⁰ that reflects the general *laissez faire* style of economic activity. During the 1980s this paradigm replaced the 'regulated transport' paradigm of the post war years. The integrated transport strategy of the White Paper, with its strong emphasis on sustainable development¹¹ and the economic aspects of transport¹², exemplifies the tensions within transport governance and poses the challenge to market transport.

The White Paper and its associated policy documents became a departure point in what policy makers hoped would be a recontextualising of transport decision making. One of the themes of this thesis is to attempt to measure the effectiveness of this fresh

¹⁰ See Ch 3.1.

¹¹ Mentioned nineteen times

¹² Mentioned at least fifteen times in terms of growth and also in other ways.

interpretation of transport policy objectives through decisions taken within ‘on the ground’ transport organisations. Examining transport decision making within the governance networks and operational landscape of NE road transport provides an analytical comment of how decision makers are responding to the new opportunities and constraints of the challenge to market transport. Analyses of these decisions, and the underlying attitudes and priorities that drive them, will contribute to an assessment of the likely success of the integrated transport¹³ strategy. Individual transport decision makers are at the fulcrum of the whole process and the chances of a further paradigm shift to fully embrace the concepts of integrated transport hinge on their collective responses.

In respect of these diverse and sometimes conflicting policy concerns a many research issues arise. This thesis explores the issues through the following three research questions

- What does ‘the environment’ signify to transport decision makers?
- How prominent is ‘the environment’ within the decision making of the organisations participating in the research?
- To what extent are environmental considerations included within decision inputs when making transport choices? What mechanisms are used and what level of priority are environmental considerations given?

1.4. Thesis structure

The thesis consists of eight chapters. The first part of the thesis, chapters 1-4, introduces the research area and the conceptual approaches that underpin the general line of inquiry.

¹³ See Ch 3.1.

Chapter 2 focuses on the literature and debate surrounding concepts of 'sustainable development'¹⁴ and on the environmental effects of transport. The conceptualisation of the principles of sustainable development within policy processes is analysed. CO₂ emissions are identified as of particular concern amongst a wide variety of transport related environmental problems. Some of the compromises made necessary by attempts to reduce these and other transport emissions are discussed.

Chapter 3 builds on the previous chapter by examining the policy literature. The extent to which transport policy has shifted in favour of sustainability is explored alongside an analysis of the possible effects of transport policy 'on the ground'. The competing pressures and paradigms of transport policy are discussed.

Chapter 4 introduces the research participants and sketches the character of the three different groups of research participants and their activities in the NE region. The reasons for the choice of groups and for the selection of the members of the groups are discussed. The design of the research is examined in detail and comments are made on the advantages and disadvantages of the methods. The chapter also examines briefly theories of organisational decision making. Alongside this the subtleties of networked governance are examined together with their effects on policy processes. Governance issues, to the extent that they form a context for transport decision making are also examined. The chapter completes the discussion of the context within which organisational transport choices are made.

Chapter 5 provides an analysis of a number of organisations involved in transport policy delivery. They all have interests in transport governance at a regional, sub regional or local level. The relationships between these organisations and their similarities and differences are discussed in terms of their interpretation and implementation of transport policies. As the providers and regulators of road space they occupy a key space in the NE road transport landscape. The chapter concludes with a case study examining how the environment was constructed in the development and implementation of Durham City's congestion charging scheme, the first in the UK.

¹⁴ See Appendix 5.

Chapter 6 features the region's road haulage organisations. The participants included a range of privately owned road haulage companies and two industry associations. NE road haulage companies are the principal movers of freight in the region and their constructions of the environment will have some bearing on the success of transport policies. In interviews the competing pressures of the freight transport market were discussed with participants. The resulting analysis examines the extent to which environmental awareness and considerations have entered decision making. A case study that investigates the operational niche of the UK's principal private intermodal operators concludes the chapter.

Chapter 7 explores the NE of England passenger transport sector. The organisations featured in this chapter are almost exclusively bus operators, ranging from national groups to small private companies. As the region's passenger carriers their businesses are in direct competition with the private car. Government attempts to restructure transport policy towards more sustainable and environmentally friendly outcomes depend to a considerable extent on the performance of this key transport sub sector. In contrast to the road haulage sub sector, public transport operators have enjoyed considerable state support in pursuance of the government's integrated transport strategy. The analysis of the data collected examines how changes in policy have affected them and their ability to deliver increased patronage. The chapter closes with a case study that investigates a leading UK public transport group based in the region. Senior level responses to a range of operational and policy issues are discussed. The effects of comprehensive corporate reporting and the introduction of 'environmental management systems' have had on the organisation's view of the environment are analysed.

Chapter 8 draws together the research findings and examines them alongside a summary of the research literature. The appropriateness of the data collection methods is discussed. The chapter then presents an overview of the research findings, examines these alongside the original themes of the research, and continues with a discussion of the emergent issues. Finally the implications of the research are analysed and some suggestions for further study are made.

1.5. Conclusions

The UK has many transport problems. The roads are increasingly congested and a series of rail accidents have reduced confidence in that mode. The environmental implications of present UK transport habits are not good. The signs of changes in attitudes to transport demand are present but remain weak. Substantive changes in transport behaviour demand that both wider human society and individuals come to terms with many of their own internal inconsistencies, principally those that connect attitudes to behaviour. This thesis is an attempt to confront some of these issues and to contribute to the argument in support of the case for integrated and sustainable transport.

During the course of the research it became apparent that, in substantive terms, little is changing in transport decision making. Not surprisingly the strongest emphasis remains on conventional economic priorities with only a few organisations beginning to identify strategies that may offer benefits other than to the immediate 'bottom line'. Commercial benefits can be found by including environmental concerns within decision making processes. These centre on identifying inefficiencies caused by wasted energy, poor waste disposal and recycling and being unprepared for opportunities arising from policy developments. Organisations that have benefited from the evolving nature of transport policy have done so by being prepared for emerging regulations and financial opportunities linked to environmental improvements. In essence the more successful organisational strategies hinge on the key characteristics that surround the development of organisational approaches that provide the time and space to think creatively about emerging opportunities and regulatory requirements. Planning commercial priorities around this sort of approach to interpreting policy was encountered in the more successful organisations that took part in this research. At a strategic level this suggests that restructuring transport decision making towards improved environmental outcomes contains a strong educative dimension. In the marketplace of transport operations this translates to raising awareness amongst staff and decision makers. This can be achieved, for example, through the use of proactive environmental management systems (EMS) and by challenging the thinking of young people and children (Pilling *et al*, 2000). These

strategies were found to be a hallmark of the more forward thinking, proactive transport organisations.

Improvement in the environmental aspects of transport decision making is therefore somewhat patchy since raised environmental awareness is dependent upon organisational understandings, attitudes and approaches to the environment. In short improved environmental performance is largely voluntary and closely associated with commercial gain in many instances. The approach exemplified by the White Paper and much subsequent policy encourages a gradual, voluntary restructuring of transport patterns in favour of reduced private road travel and increased use of public transport and rail freight. Very recent evidence points to the failure of this approach as the market continues to dominate decision making outcomes in favour of roads and private travel (*The Guardian*, 10/07/03).

Given the weak status of the environment within decision making, its concomitant importance in the overall well being of human society and the voracious growth of the least sustainable modes of transport, it appears that some increasingly difficult policy choices will have to be made. The details of these are examined within this thesis and some suggestions are concluded. Failure, on the part of human society, to agree solutions to the environmental problems, caused in increasing measure by transport, would be inadvisable if eventual environmental collapse is to be avoided (Ayres & Simonis, 1994). The next chapter begins the thesis with a discussion of sustainable development and its relevance to influencing transport behaviour.

Chapter 2: Transport, the Environment and Sustainable Development

The development of transport and transport systems for both people and goods has occurred over thousands, perhaps even millions of years as humans have sought to subdue natural environments for their own use. Transport developments have increased communication between individuals and communities and the increasing sophistication of transport systems has provided for ever increasing travel distances and the inclusion of additional communities within expanding transport networks. Socio economic factors have driven the technological developments that have made possible increases in commutable distances and provided the opportunity to access markets and peoples previously too remote to reach. Expanded markets have, in turn, encouraged trade over greater and greater distances. This has led to a greater exploitation of natural resources and has led to greater demand for transport and its associated infrastructure.

These transport assisted developments of human society and economic accumulation regimes have not been achieved without environmental consequences. These can be seen in the growth of conurbations, urban sprawl and in 'out of town' developments. Also huge, unsustainable quantities of materials and fossil fuel energy are taken from the natural environment and used to produce and fuel transport systems. The private, individually centred characteristics of the most resource demanding transport¹; developed world road systems, continues to exacerbate these problems. Closely associated with the use of fossil fuel is the emissions output of transport, where CO₂ in particular has been linked to the 'greenhouse effect' and climate change (IPPC, 1996).

Fossil fuel powered transport is therefore an unsustainable² activity. Seen holistically transport 'consumes' the natural environment and deposits wastes in forms and

¹ Road transport is the most demanding mode in terms of its overall draw on resources.

² 'Unsustainable' in this context refers to human activity that could not be regarded as fulfilling the criteria of generally accepted notions of 'sustainable development'. Whilst many aspects of sustainable development remain contested, environmentally altering activities such as resource depletion, pollution deposition and biodiversity loss are generally accepted as unsustainable and it is these activities and those that lead to them that are referred to here.

concentrations that natural systems cannot completely assimilate (Ayres & Simonis, 1994). Transport is not the only human activity associated with environmental degradation. However, its current impacts on the natural environment and, more seriously, its projected growth, demonstrate that it has become a significant part of the overall problem of CO₂ emissions (RCEP, 2000; Stead, 1999). How humankind continues to manage 'emission producing' activities is therefore critical to environmental, economic and societal stability and sustainability.

This chapter examines the link between the use of transport, its effects on the natural environment and how this link impinges upon sustainability issues. The chapter begins with a section that discusses the proliferation of transport into developed world accumulation regimes and social activities. This is followed by a brief description of what is meant by 'the environment' and a sketch of the competing philosophical bases of environmental analyses. The third section introduces the notion of sustainability and the appearance of a 'sustainable development' agenda. The authenticity of this agenda and its place within transport and environmental debates is examined.

2.1. The proliferation of transport

The changes in labour and production patterns within the economy illustrate the highly dispersed, transport-based nature of current economic accumulation and consumption regimes. Transport underpins these activities, which are the building blocks of global economic exchanges. The increased opportunities for social and leisure travel further encourage more transport dependent economic activity, which is epitomised by the tourism sector. The globalisation and, in the European context, the Europeanisation of trade, and also recreation, are stretching transport distances for both freight and passengers. This places transport, especially of the highly flexible and convenient type provided for by roads, at the epicentre of both economic activity and environmental degradation.

In one sense transport has become a consumer of its own and other services to the extent that it has given birth to a separately recognisable transport sub sector of the economy. The growth of all forms of transport, and especially road transport, continues to add to the draw on the 'environmental capital' of natural resources, in the

form of materials, energy and space. Resources are used in the provision, production and operation of all modes of infrastructure, systems and vehicles. In addition to its direct 'contribution' to economic activity, in the form of employment and profits generated in transport industries, it also sustains the smooth running of the rest of the economy. In its present form it plays a significant role in maintaining low production costs and therefore in sustaining supply and demand. Transport pervades economic, social and leisure activities. It is of such size and influence within UK and industrialised world lifestyles that, in the descriptive terms commonly used when discussing economic activity, it is a discrete, trans sectoral sector of the economy. Transport issues remain contentious politically because the considerable negative environmental externalities associated with transport are balanced against positive economic and social externalities³.

Transport systems comprise two basic parts; vehicles and infrastructure. The comprehensive road network of the UK has allowed six separately recognisable aspects of human activity to develop that are each directly linked to transport development.

The first concerns the growth of the infrastructure construction industry, which illustrates transport's heavy draw on natural resources⁴. Vast quantities of soil and stone are excavated and relocated by road engineers in the cuttings and embankments of typical road schemes⁵. The infrastructure construction sector has spawned a mobile plant⁶ vehicle manufacturing sub sector that has developed to provide equipment for road construction. More resources are also used to produce and operate the fleets of lorries used to ferry heavy construction materials to and from road construction corridors⁷. This transport sub sector is a significant resource consumer itself. Its

³ A brief description of positive and negative externalities associated with transport can be found in Beardshaw (1992).

⁴ Since this research is specifically concerned with road transport activity other, non road, modes will not be described here. This in no way implies that other modes are not of relevance or interest when discussing links between transport and the environment.

⁵ Though not common in the UK, even more complex and demanding engineering works are regularly carried out in the more mountainous areas of Europe where motorways raised on concrete stilts and tunnels are a common feature of trans European road networks.

⁶ 'Plant', or more accurately 'mobile plant' are general terms that refer to the wide variety of road and building construction vehicles such as JCBs, dumpers and bulldozers etc.

⁷ Details of the UK construction industry's resource use and emissions burden indicate that the use of transport in the construction sector (including road infrastructure projects) is responsible for energy

activities exist with the single purpose of facilitating its own growth by producing infrastructure that, when used, will add to the demand for more infrastructure. The existence of such a sector exemplifies the negative environmental externalities of road transport in particular.

Secondly, the comprehensive network that has resulted from this demand led construction of high quality trunk roads and motorways has provided the conditions for the appearance of another new industrial sector, the 'service sector'. This sector is in essence a labour dominated activity. The functioning of the service sector is dependent upon a highly mobile labour force able to move skills around efficiently to carry out final work activities. The development of the present UK road transport system in its highly mobile, readily accessible form has provided the service sector with the opportunity to widen the area where services can be offered.

Thirdly, and in a similar vein to the service sector, employees working at fixed locations have been able to expand the area within which suitable employment opportunities can be accepted. According to the DETR, for example, the combined cost of motoring is only 1.2% higher, in real terms, than it was in 1974, whilst disposable income is some 94.3% higher *pro rata* (DfT, 2001). This represents a significant reduction in the impact of motoring costs on household budgets. It suggests that there may be considerable flexibility within those budgets to bear increased motoring costs and allows individuals to make more and longer trips for work and leisure. It also suggests that policies that seek to restrain the growth of personal car travel by fiscal means might offer limited chances of success.

In the UK between 1975 and 1998 the annual total distance travelled by car per person increased by 63%, whilst public transport patronage increased fractionally and walking and cycling distances fell (DfT, 2001). Figures on the daily commute confirm this increase with the distance travelled to work by all modes up 32% in the last ten years (Curran, 1998) though commuting does take the same amount of time as it used to at about an hour (*ibid*). This suggests that higher speeds are possible now and

use equivalent to over 3 million tonnes of oil per annum. This amounts to just under half of all energy used in the construction sector (TRL, 2003).

though drivers are known to break speed limits⁸, it also points to an improved, higher capacity road network and improved accessibility in general. Whilst non 'work related' travel is also increasing all of these factors support the suggestion that employment patterns are more widely dispersed and that labour travels further to the place of work.

Fourthly, the appearance of the service sector has also signalled a shift of manufacturing practices by setting an example to manufacturers that has developed into production strategies known as 'just in time' (JIT) production⁹. Its origins lie in the Japanese automobile industry and today the global car industry is the archetypical, but by no means the only, example of such a mode of production (Fujita & Hill, 1996). In order to function properly industrial manufacturing using JIT methods is, like the service sector, heavily dependent on efficient, reliable road transport.

The fifth aspect of current transport activity that has contributed to the sector's environmental burden is the effect on transport patterns of the 'Europeanisation' of UK economic activity. The EU Single Market and, more recently, the launch of the single currency are the greatest symbols of Europeanisation to date. The Single Market came into being with the signing of the 1993 Maastricht Treaty, which committed members states to stronger economic links in particular, but in doing so provided the rationale for further development of trans European transport networks (Charlton & Gibb, 1998). Article 129 of the Treaty explicitly recognises improved transport links as vital to the success of the Treaty and this effected major changes in the decision making environment of transport companies in particular. Freight transport is particularly affected by the creation of the Single Market as each transport company across the EU has seen its potential market area, customer base and number of competitors increase¹⁰. The wider dispersal of opportunities and the completing of 'missing' links within the trans European networks (TENS) are also likely to increase passenger travel and freight transport across the EU (Charlton & Gibb, 1998). The

⁸ Curran (1998) reports that in 1998, on uncongested sections of motorway 55% of cars were travelling at over 112kph (70mph) and 19% at over 128kph (80mph).

⁹ In JIT manufacturing, sub activities of the manufacturing process are relocated or 'outsourced', often on a sub contract basis, to other satellite operations that make regular deliveries of components or modules to main assembly sites (Hudson & Schamp, 1995).

¹⁰ The transport issues that arise from the creation of the single market are discussed in more detail in chapter 6.

relaxed border controls that form part of the Single Market requirements make it simpler for both individuals and transport companies to engage in trans border activities, which, in reality, almost always involve longer journeys.

The final, sixth, dimension to the growth in importance of transport within the UK economy lies in the social and leisure activities that rely on transport systems and infrastructure. Two different, but related statistics reveal the extent to which private cars now dominate all aspects of personal travel. Of the 44% increase in per person annual travel distances by all modes since 1975 (DfT, 2001) approximately half has been on work related trips. The rest of the increase is largely attributable to social and leisure trips, particularly shopping (DETR, 20000). The average increases across all modes masks the even higher increase in car use, up 63% in the same period (ibid.). In contrast across the UK distances travelled on all types of public transport, per person, have increased by a mere 1.4% since 1975 (DfT, 2001). Together these figures point to significant changes in travel patterns and transport behaviour. The comprehensive, efficient road network that has been created principally to foster and serve economic activity also provides the road space to facilitate the millions of passenger kilometres in non work related travel.

This somewhat abstract description of the proliferation of transport throughout economic and social activities should be evidence enough of how transport dependent human lifestyles have become within the economies of industrialised countries. However, two recent, unconnected and unusual events, have in the UK at least, brought the key role of transport within the economy into sharper focus. The relatively minor disturbance, in terms of duration and inconvenience, caused to the UK road transport system by the fuel price protests of the autumn of 2000 provided a brief glimpse of the pivotal role of transport in UK economic activity. During the week of the fuel 'crisis', panic buying, stockpiling of fuel by drivers, reduced traffic levels and speeds, and even convoys of cars following fuel tankers¹¹ were all seen. These actions reveal the value placed on maintaining the levels of independence, convenience and mobility provided by private cars. The more recent foot and mouth crisis of 2001 also illustrates the quiet, but all pervasive role of road transport in the

¹¹ Various articles in *The Independent*, 16/09/00, 17/09/00.

UK economy as it emerged that the diseased stock that was the source of the wider outbreak was moved some 400km from Northumberland to Essex for slaughter. This reflects the economics of logistical choices (Weaver, 1998). The rapid spread of the disease to other dispersed locations, like Cumbria and Devon, further illustrates the extent to which long distance transport activity has penetrated agriculture¹².

Transport is ubiquitous within industrialised economies. It is the key to the flexibilities of labour, manufacturing, the service sector, agriculture and leisure. With the exception of e-commerce current industrialised world economic activity functions as it does in a fashion that is highly dependent on transport. Such transport activity is seen by many as positive and essential within a successful economy. However, success can be measured in different ways. Efficient, reliable transport certainly facilitates economic growth¹³ and vitality, but most modes of transport rely on technologies and operating practices that continue to cause considerable environmental damage. The paradox underlying the 'success' of transport depends on whether transport activity is an indicator of something positive or negative. It provides positive opportunities for investment and exchange, but it could also be seen as a measure of inefficient spatial arrangements.

2.2. The 'environment'

'The environment' is a broad ranging term encompassing many ideas and theories that usually refer to the natural, physical world of the Earth and its natural cycles, systems and life forms. Many notions, definitions and descriptions of the 'environment' exist. It is also worth noting that the part of the world that is commonly referred to as 'developed' is the part of the world that is usually responsible for the most serious and persistent negative environmental impacts (Whitelegg, 1993) and is also usually the part of the world where such definitions are constructed. For this research, concentrating as it does on the connections between transport and the environment, the roots of the awareness of, and concern for, the environment are of relevance since these inform current constructions of the environment. The possible adoption of an ecostructuring agenda capable of delivering an equitable distribution of resources

¹² *The Guardian*, 21/02/01, 17/04/02.

¹³ In terms of GDP

and an environmentally sustainable future is at the heart of environmental and sustainability concerns.

The terms ‘the environment’, ‘environmentalists’ and ‘environmentalism’ have come into use in their present connotations during the last forty years. Prior to the use of these terms such concerns were often described within the areas of ecology or conservation (Brown, 1990). In philosophical terms, concern for aspects of what is now included within ‘environmental’ headings can be traced through history and grouped under four general headings. The biblical account of Noah is perhaps the earliest written account of conservation activity and illustrates the notion of the ‘stewardship of nature’ from the viewpoint of humans being both exploiters of the natural world and other species, but also as responsible for the management and care of the wider environment. More recently, in the seventeenth century, notions appeared that the natural environment was subordinate to the interests of humans. This view of environmental capital came to be referred to as ‘imperialist’ and found its origin within the writings of the philosopher Francis Bacon. The writer compares the differing motives possible within humans as they attempt to gain power at the expense of their neighbours, other countries and the environment. Whether such an interpretation of his views is fair to Bacon is uncertain since within his thesis he suggests that

“...nature is only to be *commanded* by *obeying* her.” (Bacon, 1620: Book 1, para 129, emphasis added)

In today’s terms, this could be taken as a warning that unless there is sufficient respect and allowance for the functions of the natural environment (obeying) then that environment might fail to continue to provide for, or sustain humankind (be commanded). During the eighteenth century a more ‘romantic’ view of the environment appeared that suggested that the natural world had an intrinsic value of its own. For some this view also developed a religious dimension referred to as ‘pantheism’ where God was closely identified with nature (Brown, 1990). The following century the ‘utilitarian’ view of the environment appeared. It was based on the notion that all that mattered was the pursuit of happiness and contentment and assumed that any thing, or animal, incapable of such feelings did not matter (Mill,

1962). This is just a small step from the accompanying idea that anything that does not have 'feelings' exists to improve the feelings of those who do have feelings, namely humans. This utilitarian view is the basis of the construction of the environment within capitalist accumulation regimes that dominate the present day global economy. There are many complex aspects to environmental problems, not least with regard to transport. Human understandings of environmental problems, and the potential consequences, is greatly enhanced and the utilitarian stance of both governments and corporate business faces a strong, if highly diversified challenge from environmentalists. In terms of overall policy though the utilitarian approach remains dominant. The challenge to the utilitarian remains fragmented as environmentalists emphasise differing aspects of overall environmental concern and also differ on how best to tackle those concerns.

O'Riordan (1989) discusses differing forms of environmentalism, which this analysis draws on. In addition to 'Gaianism'¹⁴, which argues that humans could be 'adapted out' O'Riordan identifies 'communalism' within ecocentric environmentalism. 'Intervention' is identified within technocentric environmentalism. Technocentric environmentalists believe in a gradualist approach to solving environmental problems by using existing political and economic processes. Within this they favour strengthening the role of economic instruments, regulatory controls, political accountability and educational efforts to bring about changes in attitudes and actions. The Integrated Transport White Paper, *A New Deal for Transport*, (DETR, 07/1998) exemplifies this approach. Ecocentric environmentalists prefer a more formal redistribution of power in favour of socio economic actions, participatory justice and decentralised economic structures.

Ecocentric environmentalism forms the theoretical basis for the highly influential environmental movement that has appeared during the last thirty years and whose activities have been characterised by both protest and participation. Protest has included for example, resistance to road schemes, airport extensions, the nuclear

¹⁴ Deep ecology proponents such as Gaia theorists (Lovelock, 1979) look upon the Earth as operating as a single entity of the biosphere that actively alters its environment instead of simply adapting to it. Furthermore it is argued that this process will naturally 'adapt out' humans if they continue to alter the natural environment to a point where it can no longer support them. On this basis it could be argued that transport behaviour provides an example that supports this possibility.

industry, oceanic dumping and resource waste¹⁵. Simultaneously participation has featured involvement in mainstream politics with, for example, the formation of The Green Party (formerly known as The Ecology Party in the UK), and involvement in 'environmental' debates. This is accomplished through lobbying and publication of scientific research to counter approaches to tackling environmental problems that range from the technocentric to ignoring environmental concerns altogether. Despite the considerable influence and successes of the ecocentric environmentalists the technocentric view remains dominant within the politico economic, predominantly capitalist accumulation regimes of the industrialised world. It is self evident from the development trajectories being followed that this form of utilitarian development is fundamentally unsustainable.

2.3. Transport and the environment: the 'sustainability' crossroads

'Sustainable development' and 'sustainability'¹⁶ have become popular terms in the debates of many circles in recent years and especially since the publication of the Brundtland Report, *Our Common Future* (WCED, 1987). The two terms are used within the literature and jargon of, *inter alia*, the environment, conservation, Third World issues, industrial development, economics, transport provision, land use planning, population growth and resource use. The fact that these phrases have entered such a range of debates suggests that multiple meanings and interpretations are likely to have been attached to them. Within the range of published literature on the subject of sustainable development there are warnings against this very problem and many authors emphasise the need for a multidisciplinary approach (Davis, 1996; Greene & Wegener, 1997). What is meant and understood when using terms such as 'sustainable development', 'sustainability' and 'unsustainable' is important since it informs debate and affects policy processes and decision making. A considerable body of academic literature has appeared on the subject of 'sustainable development'¹⁷ and contributions vary sufficiently for some, such as Turner (1993), to develop notions of sustainability on a continuum from 'very weak' to 'very strong'.

¹⁵ Other protest groups such as those associated with animal rights or anti globalisation also share some of the agendas of ecocentric environmentalists.

¹⁶ For a detailed explanation of 'sustainable development' see WCED (1987). Appendix 5 includes extracts from *Our Common Future* (WCED, 1987) and provides an explanation of what is meant by the terms 'sustainable development' and 'sustainability' in this thesis.

¹⁷ See for example Adams (1990), Daly & Cobb (1990), Helm, (1991), Jacobs (1991).

The contribution of academics in developing concepts of 'sustainable development' and 'sustainability' has been significant in advancing such notions into wider policy debates. Some of these ideas will be discussed later in this thesis but, as a point of departure, the WCED's now famous, although highly criticised¹⁸, definition of sustainable development as

"meeting the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987:43)

will be applied to this discussion of the various aspects sustainable development.

The functions of the natural environment and of transport have already been compared and their workings come into tension in the issue of sustainability. This sustainability 'tension' occurs because, in essence, 'transport' and the 'environment' represent two completely different, but interrelated, systems where transport is dependent on the environment for its space, resources and waste disposal demands. Transport therefore, is often 'competing' with the environment whilst remaining a part of it. It is representative of the human economic system of global trade and commerce and facilitates economic exchange at all levels. The tension occurs because all the materials and energy inputs required by the transport system are drawn from somewhere within the other system, the natural 'environment'. Also the tension is magnified because the wastes of one system are deposited in the other.

Economic growth, of which transport has become an integral part, is the stated goal of a great many individuals, communities and nations across the globe. The notion that the economic system can continually grow and provide higher and wider levels of prosperity while drawing from a finite, closed system that is not increasing in size seems fatally flawed (Daly & Cobb, 1990; Sustainable Development Commission, 2003). It is intuitive that limits to this growth must exist at some point¹⁹. This places humans in conflict with their life support system. This conflict is at the core of 'sustainability' debates and possible solutions are more difficult to contemplate because in order for sustainable development to be achieved, the existing

¹⁸ See for example Adams (1990), Daly & Cobb (1990), Helm, (1991), Jacobs (1991, 1999) and with a particular transport focus see Davis (1996) Gudmundsson & Höjer (1996).

¹⁹ See for example Meadows (1972), Ayres (1998).

development trajectories and lifestyle habits of many millions of people must, it is argued, be radically altered (Black, 1998). This appears to be necessary because the minority of people who already enjoy relatively prosperous, comfortable lifestyles²⁰ are doing so with an associated resource draw that is already unsustainable in global terms (Whitelegg, 1993). According to recent evidence published by the World Wildlife Fund (WWF, 2002), projected resource and energy use patterns at the global scale could not be met by 2050 without two more planets full of resources. Though the overall debate around 'sustainability' remains contentious the WWF's report is merely illustrative of an increasingly voluminous body of evidence that points to resource shortages or exhaustion in a variety of areas²¹.

Sustainability in practice remains elusive. Concepts of sustainable development have begun to filter into wider policy debates. However the problem of definition remains and some suggest that the broad statements of the WCED Report have made it possible for many diverse disciplines to embrace 'sustainable development' in their own terms (Adams, 1990; Jacobs, 1991). Though such a strategy contains the risk that the concept of 'sustainable development' can encompass multiple meanings and thereby become somewhat meaningless, it also allows the concept to be more easily accepted. If this was one intention of *Our Common Future* then it has been successful as 'sustainable development' is now a part of policy language.

The debate may never reach a dispute free conclusion though some key tenets of the concept of sustainable development do seem to have become broadly accepted. These may be crystallised into three key points:

- Sustainability implies a continuance into the future and the opportunities for future generations must not be reduced by the actions of those in the present.
- An equitable distribution of resources and opportunities. This is essentially the *intra* and *intergenerational* equity concept that demands social and temporal

²⁰ Industrialised countries of the 'North' or 'West', for example North America, Europe, Japan, Australia and New Zealand

²¹ See for example Meadows (1972), Black (1996), Ayres (1998), Worldwatch Institute (2002).

equity. This implies that uneven development is not sustainable. This is because the 'have nots' will naturally aspire to the position of the 'haves' and if 'the future' and 'the environment' cannot sustain the 'haves' level of development for all, then clearly the 'haves' style of development is not sustainable.

- Development (the human system) can only take place within the environment (the natural system). This requires an acceptance that environmental limits exist and that these limits include finite resources and a limited environmental pollution assimilation capability.

These points are a paraphrased amalgamation of the general thrust of the complex argument and debate around sustainable development made by many authors²². The minutiae of these debates are of less importance here than of the overall direction that sustainable development should take.

Within sustainable development debates the question of a lack of a strategic approach to policy making often appears²³ with the suggestion that narrow approaches to policy are more likely to produce unsustainable outcomes (Davis, 1996). This is not surprising given current development trajectories and because of the essence of what is generally accepted as defining sustainable development. It is, theoretically at least, an all encompassing notion of development that must be taken into account when formulating policy in general. The practical outworking of this in policy development terms is that *any* emerging policy ideas or proposals should be examined against a set of 'sustainable development criteria' that can act as filter to remove or modify proposals that would otherwise result in unsustainable outcomes.

In the transport sector this theme is mirrored in calls for a multidisciplinary approach to finding solutions to transport problems (Hoyle & Knowles, 1998; Potter & Skinner, 2000). Within such a multidisciplinary approach to finding solutions to the environmental and sustainability problems posed by transport it is necessary to

²² See for example; WCED (1987), Adams (1990), Daly (1991), Blowers (1993), Jacobs (1993), Whitelegg (1993), Turner (1993) Davis (1994) and Barbier (1994), though this not an exhaustive list of those who have written on sustainable development.

²³ See for example Daly & Cobb (1990), Potter and Skinner (2000).

include all areas of policy proposal and assess their likely effects on transport outcomes. When considered together suggestions of a need for multidisciplinary approaches to 'sustainable development' and to 'transport decision making' point to a need for a hierarchy of considerations within overall policy development processes in order to restructure for sustainability. Sustainable development considerations, it is suggested, should consider all aspects of the development and use of the infrastructure of human society (O'Riordan, 1989; Davis, 1996) and this would include all aspects of transport provision. Jacobs (1993) highlights the importance of applying sustainability criteria at the planning stage and also to show the importance of assembling any hierarchy of considerations in the appropriate order.

The substance of this discussion points to the need for the development of 'joined up' thinking to enter, and become embedded within, policy and development process. There is some evidence that this has been taking place as some recent policy development documents call for the application of sustainable development principles to shape the design of the resultant policies²⁴. This is particularly true with regard to transport policy documents²⁵. In recent years the UK government has included the concept of sustainable development within the approach to policy development in general and has, for example, required all local authorities to produce *Local Agenda 21* strategies. As an illustration of how sustainable development policy understandings have become embedded within the minds of individuals within policy communities, the Prime Minister, in a speech to the UN General Assembly, called for sustainable development principles to be adopted by all UK local authorities by the year 2000 (DETR, 1997). Progress in assimilating the concept of sustainable development into national and local policy using 'quality of life counts' has been considered a success by the *UK Round Table On Sustainable Development* (UK Round Table, 2000). Success is perhaps misleading in terms of sustainable development since the process of developing sustainable approaches to human activity are probably more realistic than a notional end point of 'sustainability'. What is clear though, is that sustainable development has moved from a generalised concept debated within a relatively small circle, to an internationally recognised and accepted

²⁴ See for example DTi (1996), HM Treasury (1998, 2001), Welsh Office (1999), Public Service Agreements, (1999, Ch13:DFID; Ch16:MAFF).

²⁵ See for example DETR (07/1998; 10/1998; 06/1999B; 03/2000).

way forward for human society as a whole, though arguments persist over definitions. It has taken a quarter of a century for sustainable development to become embedded as a core policy concept and its practical outworking still has far to go. But it does confirm the penetration of the concept of sustainable development into the heart of policy discussion and formulation.

Concepts of integrated transport have evolved in the wake of sustainable development's course through policy debates. The brief discussion of the embedding of notions of sustainable development into policy frameworks illustrates the route concepts of 'integrated transport' may have to take as they settle into the minds of policy makers. The parallels for transport debates are to be found in the calls for a multidisciplinary approach to solving transports problems and especially in calls for the development of an integrated transport system to make progress towards sustainable transport. Like the conceptualising of sustainable development, concepts of integrated transport have also matured over time into broader, and deeper understandings of what is meant by 'integrated'. A discussion of issues surrounding integrated transport is included in chapter 3.

2.4. The environmental unsustainability of transport

In the context of transport and travel some quite specific sustainability issues arise and these contain both environmental and developmental dimensions. These are illustrated in table 2.1. From an environmental sustainability viewpoint the most immediate problematic transport trends are undoubtedly the growth in road transport emissions and the associated draw on non renewable primary resources²⁶. Figure 2.2 illustrates the relationship between sustainability, transport characteristics and a range of 'development' factors. The intention of the figure is to highlight the complexity and interconnectedness of a variety of factors across a continuum of different scales²⁷.

²⁶ Air transport continues to grow but its absolute volume as a proportion of transport demand remains relatively small at only 1% of the total. The annual number of international trips from the UK has risen threefold to 38million in the period 1983-1999. Aviation currently uses around a quarter of the quantity of fuel used by road traffic in the UK indicating the relative unsustainability of air travel. Though this suggests that small rises in air travel volumes will have a greater negative environmental effects, road transport remains the most demanding and polluting mode overall (Compiled from Transport Statistics, DETR, 2000).

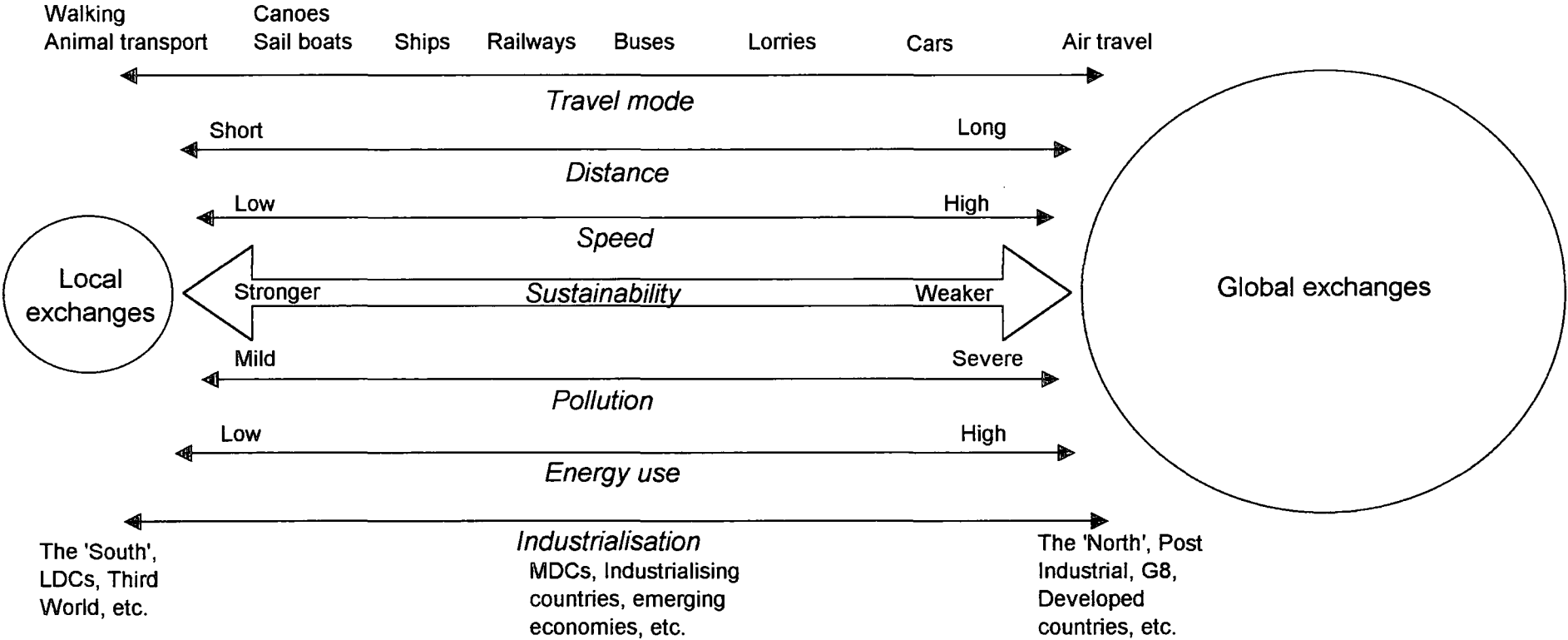
²⁷ For example local, community, regional, national, continental and global.

Table 2.1. Selected sustainability issues and associated environmental impacts

| Pollutants | Transport's share | Impact |
|------------------------------|-------------------------------------|---|
| Carbon dioxide | 22% | Global warming |
| Nitrogen oxides | 60% | Acid rain |
| Sulphur dioxide | 4% | Acid rain, respiratory illness |
| Carbon monoxide | 80-90% | Morbidity, infertility |
| Benzene | 80% | Carcinogenic |
| Lead | 50% | Mental development |
| Hydrocarbons | 50% | Trace substances |
| Particulates | 27% | Inflammation, cardiovascular diseases |
| Resources | Consumption | |
| Oil | 54% | Depletion of natural resources. |
| Land take | | 4.2 ha of land per km of 3 lane motorway. Roads use 1.3% of EU land area. |
| Ecology | | Landscape and SSSIs destroyed |
| Ecosystems | | Water quality, flood hazards, river systems modified |
| Accidents (in UK) | 3900 deaths, 45000 serious injuries | Pain, suffering, grief |
| Environment | | |
| Noise | | Stress, concentration, health |
| Vibration | | historic buildings |
| Community severance | | dividing communities |
| Visual impact and aesthetics | | changes in appearance |
| Conservation and townscape | | Preservation |
| Development | | |
| Regional development | | Location of industry |
| Local economic impacts | | Income levels, employment, social impact |
| Congestion | | Delay, use of resources |
| Urban sprawl | | Traffic generation, induced development |
| Construction effects | | Blight, property prices, compensation |

Source: Banister (1998)

Fig. 2.2. Relationship between 'transport', 'economic, social and community exchanges', 'sustainability', 'country type' and a range of other 'development' indicators.



(Note: The figure is illustrative and conclusions should not be drawn about specific modes of transport, countries or degrees of sustainability etc).

Each line represents a continuum with the left hand side of the figure illustrating 'more sustainable' development conditions based on localities and communities. The right hand side features 'less sustainable' higher intensity activities across greater distances²⁸.

The degree to which these unsustainable characteristics of transport threaten environmental sustainability vary in their seriousness because of the differences in their direct environmental effects. Substances released from vehicle exhausts immediately enter the atmosphere and alter the existing chemical balance of the atmosphere (Alloway & Ayres, 1992). Globally the transport sector is responsible for 15% of CO₂ emissions (Curran, 1998). In the UK transport is responsible for 26% of CO₂ emissions (DEFRA, 2003), with road transport accounting for in excess of 94% of the share (DETR, 2000)²⁹. Other non transport sources of emissions add to this atmospheric burden. The combined effect on the atmosphere of the individual decisions taken daily to use the global fleet of over 810 million cars, buses and lorries (SMMT, 2003) cannot be understated (Guiliano, 1998).

Technological solutions, in the guise of reduced emissions per vehicle, are unable to deliver sustainability in the face of absolute increases in vehicle use. The growth in vehicle accessibility rates and in global oil consumption, up 400% since 1950, supports this (Curran, 1998). The global private car fleet has multiplied ten fold since 1950 and now consumes 54% of global oil production (ibid). For motorists and politicians the unpalatable nature of the only solutions likely to curb the damage being caused to the environment by increasing transport demand have prompted Owens to state that

“In transport, it seems, we have a situation where both current trends and the policies needed to change them are politically unacceptable” (Owens, 1995:44).

The idea of enforceable restrictions, on car use in particular, are so difficult to accept

²⁸ When trying to aggregate such a variety of factors terminology becomes problematic. Terms such as 'more' or 'less sustainable' and 'development' are acknowledged as being highly subjective and serve only an illustrative purpose.

²⁹ This does not include the polluting effects of military transport activity. No data are available for the level of use of (and therefore emissions from) the considerable quantity of vehicles and equipment operated by the UK or other military forces.

that claims made by those offering 'technocentric' solutions are readily embraced. The technocentric lobby puts the case that improved vehicle engine efficiencies are reducing environmental burdens (Hughes, 1993). Clearly this is not possible under current transport demand. For the technocentric solution to deliver reduced environmental burdens would require individual vehicle fuel efficiencies to double each time the fleet doubled in size.

In fuelling transport systems energy availability underpins a large part of economic activity. Because many of the costs associated with energy consumption can be minimised by transferring them from the 'monetarised' economic system to the other system, the 'non monetarised' environment, the tendency to regard the environment as a cheap, convenient disposal option has developed. This tendency, particularly in the case of the environmental effects of transport, seems to have become sufficiently entrenched in the minds of those who might have to bear such waste disposal costs, for the option of 'free' disposal into the environment to be regarded as a right. The underlying assumption of this 'right' was translated into direct action during the fuel price protests of the autumn of 2000. Protestors, and their millions of passive supporters, were and remain unable or unwilling to make connections between the 'rights' of car owners and their responsibilities as global citizens.

The second significant factor in the unsustainability of transport is that of resource draw. The production of energy commodities causes localised physical environmental damage as a result of mining and drilling activities. Whilst unwelcome the extraction of these resources does not threaten the environment in the same way as the burning of the extracted fuels does. The sustainability aspect to their extraction and use lies in the rate at which they are used. Fossil fuels take many millions of years to form and can be used almost instantly. The problem of the rate of fossil fuel use can be easily brought into perspective by pausing to think of a simple comparison between these two time frames when using a motor vehicle and by the numbers of vehicles burning refined oil products. In the developed, industrialised world with its high vehicle accessibility rates of 400-600 vehicles per thousand people motor vehicle access is almost ubiquitous. In contrast in India and China accessibility levels are around 3-4 vehicles per thousand people (Giuliano, 1998). As a global average only 8% of the population currently enjoys access to motor vehicles (Button & Nijkamp, 1997). The

projected resource draw, if global vehicle accessibility rates mirrored those in the industrialised world, is unsustainable. China and India, for example, would add one billion vehicles to the global fleet, more than doubling its present size making a mockery of any technocentric efficiency gains. Daly and Cobb, discussing sustainability and the distinction between 'needs' and 'wants', state flatly that;

"if 'needs' includes an automobile for each of a billion Chinese then sustainable development is impossible" (Daly & Cobb, 1990:76).

It is therefore possible that;

"...global resource constraints are likely to pose new challenges to this emerging structure (of transport proliferation) and to the social patterns that are accompanying it" (Button & Nijkamp, 1997:218).

In essence this evidence suggests that if the developing world begins to approach the industrialised world's motorised transport accessibility rates other serious consequences for society are likely to arise. These challenges might involve the distribution of global resources by means of armed conflict that could result in a 'winner takes all' scenario³⁰. The discrepancy between mobility rates in different regions of the world, the aspirations of billions of individuals in developing countries and the associated resource demands of these desires, carries with it another problem.

The third aspect of the unsustainability of transport centres on inequalities of provision and access. This is in essence the social dimension of sustainable development. The key characteristics of sustainable development include the principle of equity. For transport to become more sustainable the question of how the social and environmental effects of transport demand relate to each other is crucial. Resolving this question is outside the scope of this thesis. Briefly though the question contains many contentious aspects both inter and intra generationally. Provision for future

³⁰ At the time of writing the USA had recently conducted a war to force 'regime change' in Iraq and to halt the production of 'weapons of mass destruction'. However given the character of the US administration, the business interests of its individual members, its attitude towards emissions reduction efforts and it's national interests in securing it's long term oil supply, an alternative agenda appears to be attributable to the US in dealing with the country that contains the worlds second highest proven oil reserves.

generations is a key aspect of sustainable development. But the questions around the power and dominance of automobile societies, together with the safety and exclusion issues this raises are more important if human society is to continue to develop relatively harmoniously. In an attempt to define 'sustainable development' as accurately as possible Blowers includes an equity dimension within an analysis of five core goals of sustainable development that highlights;

"social equality – (to) prevent any development that increases the gap between rich and poor and to encourage development that reduces social inequality" (Blowers, 1993:6).

Davis echoes Blowers with what he calls;

"a set of primary environmental principles by which policy might be guided. These principles are; the principle of equity (including intergenerational equity)..." (Davis, 1996:67).

It is clear from the link between the above sustainability concerns (resource demand and equity) that an apparently intractable problem occurs, both theoretically and practically. The problem can be summarised as follows; if sustainable development can only be achieved within environmental sustainability that involves avoiding resource exhaustion *and* within an equitable distribution of those resources, then current resource intensive activities must either be restructured for sustainability or curtailed. This includes transport and must be the case since the alternative, of global transport and travel equity *à la* the developed, industrialised world model, is not sustainable. No other alternatives exist without abandoning the principles of sustainable development. This brief analysis of the unsustainable use of energy in the transport sector prompts some to look to alternative energy sources to power global transport. Fuel cells offer the potential to replace the internal combustion engine but the production and distribution of the required fuel, in addition to the probable change over costs make it likely that the uptake of fuel cell powered vehicles will be slow.

The fourth sustainability problem that figures in transport debates is more localised and, whilst also containing equity dimensions, centres on the spatial demand of transport (Goodwin, 1999). The links between transport systems, economic activity, planning, land use, new technology, social, cultural and environmental factors feature

complex interlinkages (Hoyle & Knowles, 1998). The nature of these connections, in terms of causes and effects remains highly contentious. What is accepted thought is that the concentration of resources into the provision of high capacity road networks has increased the economic advantages of roads over other modes (Button, 1999). This has contributed to the decline of these modes and to declines in cycling and walking, further increasing the demand for road provision consuming yet more space. The demand is self sustaining and, to illustrate the rate of land take 'necessary' for vehicle 'needs', between 1985 and 1990 10,500 hectares of land in England, an area equivalent to the size of Bristol, was taken for roads and parking (DETR, 07/1998). The consumption of space on this scale every five years illustrates this further unsustainable aspect of transport and particularly in the case of space intensive modes. It is also a problem that is more obvious in densely populated areas. Densely populated areas compound transport's spatial problems, as does the physical structure of the towns or cities attempting to accommodate traffic³¹, which could be described as 'locality specific unsustainability'. As traffic levels rise and roads become more congested economic argument demands additional relief schemes, and space. These are usually justified to some degree by using cost benefit analyses to value, in monetary terms, the time savings possible for motorists. Though journey times do not appear to be directly connected to environmental sustainability the relatively high values placed on apparently short time spans tend to skew decision making in favour of road schemes. Accordingly the issues surrounding this aspect of transport decision making will be discussed in chapter 5 of this thesis.

In comparison with other modes then, road transport is particularly space demanding. The spatially greedy aspect of road transport provision, particularly aimed at accommodating the private car and road freight, is summarised in table 2.3. When compared with public transport modes and sustainable travel, such as walking and cycling, the table illustrates the clear environmental and sustainability advantages of these modes over cars. From the table it is clear that, per person, car travel requires ten times more space than bus travel and sixty times more than walking. The energy and emissions profile of bus travel is also significantly more sustainable than that of

³¹ Chapter 5 includes a detailed case study of Durham County Council's congestion charging scheme as applied to the historic centre of Durham City. Part of the rationale for this scheme centred on the lack of available space for traffic within the built environment of Durham City.

car travel and this supports arguments that regard public transport modes as more sustainable than private cars (see above). From this evidence it follows that, for each bus passenger changing mode to a private car, the amount of energy required for a journey approximates to that needed for three bus passengers and the emissions burden is roughly equivalent to that of four bus passengers. This table therefore helps to explain the exponential growth in emissions that has been concurrent with the continuing growth of private motor transport that has occurred as public transport patronage has declined.

Table 2.3 Environmental profile of different modes of passenger travel

| | <i>Car</i> | <i>Train</i> | <i>Bus</i> | <i>Bicycle</i> | <i>Foot</i> |
|-----------------------|------------|--------------|------------|----------------|-------------|
| <i>Land Use</i> | 120 | 7 | 12 | 9 | 2 |
| <i>Energy</i> | 90 | 31 | 27 | 0 | 0 |
| <i>CO²</i> | 200 | 60 | 59 | 0 | 0 |

[Note: Land use is measured in m² per person. Energy is expressed in grams of coal equivalent per passenger kilometre. CO² is measured in grams per passenger kilometre. Source: Smith *et al* (1998)]

Freight transported by road has also grown significantly during the previous half century and its transport is also linked to the increased demand for road space. Between 1953 and 1999 road freight increased by five orders of magnitude. The total tonnage lifted doubled, whilst the average length of haul increased two and a half times from 37 to 94 kilometres (DfT, 2001). The gradual modal shift away from rail and on to roads has, for similar reasons of flexibility and convenience, seen the characteristics of freight transport mirroring those of passenger transport. Both have seen frequencies, distances and absolute volumes increase and all with an associated rise in environmental impacts.

This growth in transport has come about because, in general, transport policy has focused on meeting the actual and perceived demand for road space (Owens, 1995). Since the publication of the 1989 road traffic forecasts town planners have been trying to develop transport and development programmes that place more emphasis on the environment and protecting it from spatially demanding road provision. This approach has been taken by planners who have become aware that there is insufficient

space to continue meeting demand in the traditional manner (Goodwin, 1999). This has been especially obvious in the historic cities of the UK where, because of the narrow confines of many historic city centres, the problem of transports' spatial demand has become apparent sooner. Many of these towns (for example York, Cambridge, Canterbury and Oxford) have developed effective 'park and ride' schemes to tackle the problem of urban congestion³². More recently and especially since the publication of the 1997 transport White Paper (DETR, 07/1998) and subsequent Transport Act 2000, transport planners have had more tools at their disposal to control traffic in towns. Powers to levy 'workplace parking charges' and 'congestion charging' were granted to local authorities under the provisions of the Act and, though almost forty years since the Buchanan Report, *Traffic in Towns* (Ministry of Transport, 1963) recommended charging, town planners are now empowered to curb the trend of demand led transport planning. One such example of this trend is Durham City, which has, in an effort to tackle its increasingly unsustainable and environmentally degrading traffic problems, recently begun the UK's first congestion charging scheme³³.

The four facets of sustainability; emissions, resource use, equity and land-take all have clear connections to transport and indeed all are discussed within the debates surrounding proposed changes in transport policies. This inextricably links sustainability, environmental concerns and transport issues and this linkage is at the heart of this thesis as the underpinning rationale for examining how the environment is prioritised within organisational transport choices. However, before moving to any analysis of 'on the ground' transport decisions, an analysis of the underlying theoretical bases and emergence of sustainable development policies, as a filter through which other policies are intended to pass, is included.

2.5. Placing the 'environment' in transport decision making?

The effect on the natural environment of the growth of transport generally has been, and continues to be, profound. The focus of this research is on how organisations construct the environment within their transport choices. Debates around

³² There are 99 operational Park and Ride schemes in the UK (*Local Transport Today*, 26/03/03).

³³ The scheme is the subject of a case study in chapter 5 of this thesis

sustainability and around the environmental impacts of transport must therefore form part of the theoretical background to the research because of the clear environmental implications associated with the decisions taken within transport organisations. The profile of the environment in the minds of decision makers and the importance attached to environmental concerns within transport decision making processes are important as contributory factors in decision making. Other factors undoubtedly exist and especially include economic priorities, though social, cultural and individual concerns will be reflected to some extent within such choices. The thesis explores these inputs in greater detail in its empirical chapters as the balance between these factors is crucial to the outcomes of decision making processes. The extent to which different factors influence processes, and how these influences are altered in relation to each other, determine some of the environmental impacts of human transport behaviour.

The three groups of organisations featured in the research: regulators and providers, freight movers and people movers³⁴, all possess the capacity to affect significantly the environmental outcomes of transport decisions. Arguably the local authorities as 'context setters' are in potentially the most influential position. The wide variety of transport related choices made within these organisations regarding, for example road provision, accessibility arrangements, services, vehicle purchasing and commercial priorities, can affect the subsequent choices made by individuals in their journey or freight decisions. In this way organisational decision making is linked to the environmental outcomes of many millions of discrete, individual transport decisions.

By uncovering some of the key motives and operating practices within the these groups it will be possible to predict which policies are likely to be successful in altering both organisational and individual transport choices. It might also suggest ways in which the environmental implications of transport choices can be raised within decision making processes. Though the aim of the research has not been to gather direct information on private transport decisions, some aspects of the data

³⁴ See chapter 4 for a more detailed examination of the participating organisations.

collection do impinge upon this area and may reveal useful policy possibilities for influencing private transport decisions as part of wider policy initiatives.

One such example is the influence of congestion on private transport choices, as it is known that congestion does tend to influence private travel decisions away from cars towards public transport use (Go-Ahead, 1999; DETR, 1999B). Decisions to create artificial congestion for cars, whilst simultaneously reducing it for public transport, by the use of bus lanes for example, might be expected to stimulate bus patronage. Similarly the provision of safe cycle networks, free from motor traffic hazards encourages cycling (Hartman, 1997). Another example can be found in parking provision; if parking space is restricted or made prohibitively expensive it can affect the trip decisions of individual motorists (GLA, 1999). These three illustrative examples all point to the possibilities of using analyses of organisational transport choices to evaluate likely individual transport preferences. If it can be shown that valid conclusions can be drawn using this methodology it could be useful in reinterpreting existing data collected for other purposes to predict responses to policy proposals.

The next chapter of this thesis examines transport policy and interprets policy developments in the light of the sustainability issues raised in this chapter. Some of these issues have informed recent policy initiatives including, and emanating from, the White Paper (DETR, 07/1998) and the possibilities of the these policies meeting their 'environmental' objectives are discussed.

Chapter 3: The Routes of UK Transport Policy

This chapter explores the development of the UK transport policy framework. The chapter begins with an examination of the competing concepts challenging transport policy makers. The focus then moves to the underpinning conceptual bases of transport policy within and around the recent Integrated Transport White Paper (DETR, 07/1998). The recent history of transport legislation and the more general guidance and advice issued by governments completes the subsequent sections. Throughout the chapter it is argued that theoretical and conceptual approaches to the processes of transport policy development have matured, whilst the implementation of transport policy resulting from this process remains somewhat patchy with traditional approaches to transport provision remaining dominant. The argument is covered in terms of transport paradigms and evidence is offered that UK transport has experienced previous transport paradigms and examines whether a shift is under way. Finally these themes will be drawn together in a concluding analysis of whether or not ambitious proposals for changes in transport policies and behaviours can meet some apparently fundamentally conflicting aims that centre on transport demand and provision, sustainable development and environmental protection. The route through these competing agendas will, at one level, map out the road ahead for the thesis and, at another, point to the direction that UK transport development might take.

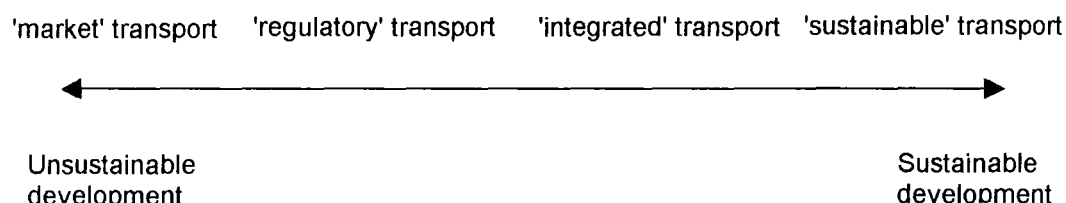
3.1. Competing concepts

At the conceptual level the ways in which the dynamic, diverse and interacting dimensions of policy processes are constructed within the minds of policy makers is important. This is because their underlying attitudes and assumptions concerning the purpose of, and possibilities offered by transport will greatly affect how they approach its policy development. Current transport development, as the servant of economic development contains characteristics that might justify describing what constitutes 'transport', in its widest sense, as 'market' transport, since present patterns of transport and travel are shaped largely by market forces. Since market concepts appear to underpin 'market' transport it is logical to suggest that the ability to shape the concepts should, consequentially, shape the system. Influencing the construction

of the concepts that underpin transport policy would therefore seem to be vital in formulating and shaping policy goals, that might for example include, 'integrated' and 'sustainable' transport policies and, ultimately, sustainable development.

Considerable debate accompanied by wider knowledge, a realisation that existing concepts are no longer satisfactory and, occasionally, the sudden emergence of some new understanding¹ lead to paradigm shifts (Sayer, 1992). Figure 3.1. proposes a continuum of transport paradigms within movement towards sustainable development. Each of the suggested paradigms results from the dominance of a particular approach to transport borne out of the prevailing conceptualisation of transport.

Fig. 3.1. The transport continuum towards sustainable development



What is not suggested is that within the 'market' transport paradigm for example, no 'regulatory' or 'integration' influence exists, rather that one approach or other is especially influential for a period and may at some point give way to a different paradigm. Historical policy evidence suggests that what was in essence a regulatory paradigm of transport decision making shifted to the market paradigm during the 1980s and that pressure is growing for a further paradigm shift. The parallel with sustainability centres on the accompanying overall environmental burden of transport. Evidence points to regulated transport featuring lower levels of car use and higher public transport volumes (Beatty & Heywood, 1997; DETR, 07/1998) and therefore lower environmental costs, hence the order of the continuum. A sustainable transport system is the ultimate goal for transport within sustainable development and therefore

¹ Such as the shift from the Newtonian paradigm to the Einsteinian paradigm in the understanding of physics

integrated transport is placed as a stepping stone from the present transport paradigm towards sustainable transport. The transport White Paper *A New Deal for Transport* (DETR, 07/1998) defines integrated transport as comprising systems that are

“integrat(ed) within and between different types of transport - so that each contributes its full potential and people can move easily between them” (DETR, 07/1998:6).

As

“integrat(ed) with the environment - so that our transport choices support a better environment” (ibid).

Also featuring

“integration with land use planning - at national, regional and local level, so that transport and planning work together to support more sustainable travel choices and reduce the need to travel” (ibid)

and within a system that includes

“integration with our policies for education, health and wealth creation - so that transport helps to make a fairer, more inclusive society” (ibid).

From these criteria it is clear that a ‘joined up’ or holistic system of transport policy development is proposed that will encourage transport choices that, in addition to their explicit aims, feature more sustainable outcomes, in terms of natural resource intensity and pollution². One of the underlying aims of integration is therefore to move towards environmental sustainability, rather than further from it as most indicators suggest is happening (Potter & Skinner, 2000). These aims also reflect those of May (1991) who states that

“resource efficiency, improved accessibility, environmental protection, safety and financial feasibility” (May, 1991:24)

² This would include the materials, energy and spatial demand of transport and the pollution burden associated with infrastructure provision and with the production and operation of vehicles.

characterise integrated transport. What is being suggested in these analyses is that integrated transport should achieve a higher performance in terms of a range of selected objectives than could be achieved by single measures or priorities within transport decision making. The chosen range of objectives is the key factor. Including the environment and sustainability as integrated transport objectives should therefore help move transport decision making towards sustainability. The inclusion of environmental objectives puts integrated transport on the road towards the sustainable transport paradigm in fig 3.1. Later in the chapter it is argued that the proposed current transport paradigm, 'market transport'³, has moved transport further from this objective rather than towards it.

The current 'market' paradigm as a basis for decision making is under pressure from emerging understandings and this makes the theoretical relationships between competing transport themes and assumptions, and wider notions of sustainable development of great interest and importance within transport debates. Sustainable development has been exhaustively debated over many years and competing definitions still remain⁴. Reinterpreted ideas of integrated transport and sustainable transport have had less time to mature and part of this chapter will examine how these emerging themes mirror the path of sustainable development debates. As with 'sustainable development', politicians in particular have found the term 'integrated transport' useful in that it conjures up to electorates a convincing picture of energetic action, whilst lacking any definite statement of intent. Perhaps for this reason it has become a frequent component of political agendas, government programmes and policy language. Whether, or not 'integrated transport' can effectively contribute to reducing transport's growing environmental burden of emissions however, remains in question (Potter & Skinner, 2000). This will depend on the commitment to meeting the environmental a sustainability objectives as stated within integrated transport policy.

The underpinning conceptualisation of transport has, however, wider significance; it is not only critical to transport policy outcomes, but is important to the outcomes of

³ In the context of this research 'market transport' is seen as part of the broader 'market state' thesis advanced by Bobbitt (2003).

⁴ See chapter 2 of this thesis.

many other policy debates. This is because of the unusual relationship between transport and other disciplines, policies and activities. The essence of the relationship between transport and other policy disciplines is symbiotic and circular; transport facilitates change across the economy, environment and human society whilst being influenced by policy developments and activities in these areas (Hoyle & Knowles, 1998). Because transport 'touches' other sectors it is, theoretically at least, already 'integrated' with them to some extent since many of the activities of other sectors could not function without transport. This functional and theoretical integration can therefore provide the rationale for questioning notions of 'integrated transport'.

In summary, the transport sector is, in conceptual *and* practical terms, a trans sectoral⁵ sector. This positioning within the economy and within overall policy processes places transport at the centre of the interactions between political, social and economic activities and how these activities function within, and affect, the physical environment. Transport and transport policies do, after all, exist within a dynamic political and ideological context that can, and does change within parliamentary terms and especially in the aftermath of elections. Governance processes, financial and economic constraints, physical possibilities, environmental considerations and public attitudes also limit transport policies. This chapter attempts to explore the effects of these diverse pressures on the evolution of UK transport policy. But before attempting an analysis of the underlying theories and concepts that inform transport policy development it is important to recognise this unusual place that transport occupies within the interacting areas of social, economic, environmental and governance debates and processes (Hoyle & Knowles, 1998). Failure to recognise and appreciate this characteristic of transport is likely to lead to narrowly conceived analyses.

At the start of a new century UK transport policy is in something of a paradoxical situation. On the one hand it has matured conceptually from a position where linkages to other disciplines were somewhat narrowly conceived within a culture of piecemeal provision. During the last decade transport debates and policy processes have moved on to a position where the concept of 'sustainable development' has penetrated transport policy making processes. More recently concepts of 'integration' have been

⁵ Also See chapter 2

subjected to reinterpretation in the light of the higher profile of sustainable development within policy processes.

On the other hand, during this period of re-conceptualising transport discourses, actual changes in implemented transport policy and transport habits and behaviour have reflected little of the maturing of the underpinning concepts. The physical networks and systems of UK transport remain very much as they have done for decades, though somewhat less integrated⁶. Disintegration has featured structural, administrative, physical and commercial aspects. The state has withdrawn from its former transport role as a service provider and regulatory control has been passed to a range of agencies. Physical disintegration has occurred between modes (Hoyle & Knowles, 1998) and the splitting of bus and rail operations between hundreds of companies has done nothing to foster any unity of purpose in transport.

Conceptually a new theme of 'demand management' has appeared to challenge the severely criticised 'predict and provide' ethos (Owens, 1995; Hunter *et al*, 1998). The new theme, discussed in detail as a 'new realism' by Goodwin (1991 & 1999), emerged after the publication of the 1989 Road Traffic Forecasts (DoT, 1989) but has not replaced the former theme. Rather it exists in competition with it, thereby ensuring that the politics of transport remains highly contentious. The two approaches are fundamentally different; the former sees transport as the servant of the market, a prerequisite for economic growth and regards accessibility to a nominally free, high capacity road network as a right to be enjoyed by as many motorists and freight movers as wish to avail themselves of it. The latter 'demand management' theme recognises the limitations to 'predict and provide', principally on spatial grounds (Goodwin, 1999), but also in terms of policy commitments that embrace the principles of sustainability, and by accepting that the resource draw, pollution burden and economic costs of congestion associated with exponential increases in transport demand cannot be sustained indefinitely (Black, 1996). The 'pragmatic multi-modalism' offered by Shaw and Walton (2001) provides an alternative explanatory theory that attempts to combine the two other approaches and reflects continued

⁶ Deregulation and privatisation have introduced many more participants into the transport arena, each bringing their own agendas and objectives. Because of the essentially competitive nature of markets this has increased the level of dis-integration within transport.

provision within demand management. The 'market transport' paradigm offered in this thesis is broader than all of these typologies and is essentially about the motives that are encompassed within all types of transport decisions. It includes the motives that underpin the provision of road space, the economics of transport services and the demand for and 'consumption' of transport and travel of all types. 'Market transport' reflects the evolution of human society as it moves from a governance and organisational order dominated by the nation state towards that of the market state (Bobbitt, 2003).

3.2. Concepts and policies

The Integrated Transport White Paper, *A New Deal for Transport: Better for Everyone* (DETR, 07/1998), represents the most recent substantial policy document that, in its discussion of the issues around transport, deals with current conceptualisations of transport. The White Paper attempted to explain the then newly formed DETR's rationale for restructuring transport policy within the new institutional context of the amalgamated department. The foreword to the document sets out the overall theme of the White Paper; the creation of an integrated transport system. The strands of this theme, referred to above, and that appear throughout the paper are that integration should encompass all modes and systems and that there should also be integration between policy areas. It also recommends that all policy be developed from the overall perspective of achieving sustainability and integration.

The White Paper represented the culmination of an ambitious re-conceptualisation of transport that was taking place within political and governance elites before an element of policy slippage began to occur⁷. Introducing a discussion of transport policy with an analysis of *A New Deal for Transport* therefore seems an appropriate way to begin an examination of transport's underpinning theories and concepts and as a way of placing current transport issues and policies within wider policy processes.

⁷ See for example the detail of *Transport 2010* (DETR, 07/2000) which contains considerable emphases on congestion reduction through infrastructure projects, but relatively less on social, environmental, health and safety aspects of transport provision.

Integrated transport is intuitively appealing to politicians and the public, but can integrated transport deliver what is expected of it? The case that integrated transport can provide what is needed is far from proven. Like the debate that took place on sustainable development the debate on 'integrated transport' has yet to produce many detailed definitions as to what meant by the term and how it might be achieved in practice. Potter and Skinner have described the clamour for an 'integrated transport strategy' as

“...almost unquestioned accepted wisdom...” (Potter & Skinner, 2000: 277).

But if integrated transport cannot deliver a sustainable transport system can it be described as integrated? Because notions of integrated transport remain largely theoretical it is difficult to identify whether, or not, integrated transport could successfully contribute to solving the environmental problems of transport⁸, even if mobility demands could be met. If these questions are not adequately addressed and if 'integrated transport' is not fully defined and explained there is a danger that it could become a term that means 'all things to all people' in a way that has sometimes happened with sustainable development. According to Davis sustainable development is an

“...holistic concept which requires holistic solutions...” (Davis, 1996:70).

Similarly Potter and Skinner state that

“environmental, fiscal and social measures are working in harmony to reduce the need for travel and reduce the impacts of journeys made...This is a systems led or *holistic* approach. This level provides the best opportunity for a more sustainable transport system and is the benchmark against which all integrated transport strategies should be tested” (Potter & Skinner, 2000:283, emphasis added).

The implication here is that integrated transport too, is an 'holistic concept' that will require 'holistic solutions' if it is to be successfully achieved.

⁸ For example the environmental effects of congestion, pollution and resource waste.

Integration has now become firmly established as a policy concept (and goal) in much the same way as sustainable development became a central part of policy debates during the previous decade. Ideas of integration and sustainable development have become complimentary. An integrated transport system that was not compatible with sustainable development would imply that the overall sustainability framework within which policy processes are supposed to work had failed to adequately include transport behaviour. Therefore, by this omission, it would fall short of the requirements necessary for being described as a sustainability framework. This circular discussion of the issues surrounding concepts that underpin sustainable development and integrated transport at first glance appears to be a frustrating 'chicken or egg' debate that prevents progress. However it could be that the inclusive characteristics of these concepts confirms their mutual importance in attempts to achieve sustainable development. Or in other words; 'if integrated transport is not achieved, sustainable development will not be either, and *vice versa*'.

In the above bulleted list from *A New Deal for Transport* (DETR, 07/1998) the first point proposes improvements in horizontal integration. In the third chapter entitled *Integrated Transport*, the White Paper focuses on the physical integration of journeys. The chapter promises

"more through ticketing; better facilities at stations and other places of interchange; better connections and co-ordination of services; wider availability and provision of information on timetables, route planning and fares; (and) a national public transport information system by 2000 available over the telephone and internet" (DETR, 07/1998:Ch 3:44).

From the considerable detail contained in the chapter it is clear that the 'disintegrated' state of the UK transport system had been recognised and accepted and the White Paper sets out proposals to tackle the problems identified. To date many local transport plans⁹ have appeared that, under further government guidance (DETR, 03/2000), have identified specific locations, systems or interchanges where physical works will be carried out to deliver the substance of the White Paper's aims¹⁰. Integration includes more obvious issues, such as through ticketing and ideas of the

⁹ The Local Transport Plans of some NE local authorities are discussed in more detail in chapter 6.

¹⁰ See for example Merseytravel (2001A), Tyne & Wear (2001). Both reports contain numerous examples of physical works either completed or ongoing.

‘seamless journey’, but there are potential obstacles to its success. For the White Paper’s aims to be fulfilled such integration would have to be achieved within an overall transport system that involves many stakeholders featuring competing modes, competing commercial interests and a competitive, consumer orientated transport market place. Such competitive conditions are not usually conducive to encouraging passengers (consumers) to use other modes or services (operated by competitors) even if doing so would improve the comfort, convenience, reliability or the environmental burden of journeys¹¹. It seems therefore, that UK transport contains some fundamental flaws that must be overcome if the overall aim of transport policy is to continuously improve the supply side of transport through increased integration.

The second of the White Paper’s aims is to support a better environment and within chapter two it is accepted that

“...travel habits are changing our environment for the worse...(and) climate change is one of the greatest environmental challenges facing the world today. Globally the balance of evidence now points to a discernible human influence on the Earth’s climate through the emission of greenhouse gases” (DETR, 07/1998:Ch 2:18, 19).

The detail set out in chapter two, *Sustainable Transport*, implicitly links ‘integrated transport’ with ‘sustainable development’ suggesting that one will not be achieved without the other. Following a reiteration of the now famous quote from the Brundtland Report¹², *Our Common Future* (WCED, 1987), the White Paper presents a definition of sustainable transport that rings of Brundtland, but with a transport theme;

“We need a transport system which supports our policies for more jobs and a strong economy, which helps increase prosperity and tackles social exclusion. We also need a transport system which doesn’t damage our health and provides a better quality of life now – for everyone – without passing on to future generations a poorer world. This is what we mean by sustainable transport...”(DETR, 07/1998:Ch 2:16).

¹¹ On this issue further research was called for by the DETR. This call centred on the difficulties in policy implementation where the government sets the policy framework but relies on hundreds of independent agents setting prices and service levels for millions of users. Understanding the problems and relationships between the principals and agents are key research areas and would seem to be fundamental to effective policy design and delivery (DETR, 06/1999B)

¹² See chapter 2

This notion of integration accepts a link between policy areas and expands the notion of horizontal integration to include sectors beyond the traditional transport remit. This illustrates that, within governance elites, concepts of integration have developed to include the effects of policy decisions taken in other disciplines. Because of transport's causal links with other non transport policies, transport decisions affect these other areas. These areas include health services, education, and industrial and social policies because decisions in these, and in virtually all other policy disciplines, have transport and travel implications. In turn these produce environmental impacts.

Integration with land use planning is the third key aim of *A New Deal for Transport* (see above). The White Paper proposes attempting the integration of transport planning with that of other land uses previously the responsibility of the DoE, but usually administered at the local authority scale. This introduces a third conceptual theme of integration centred on vertical notions of the links and relationships between different scales of decision making in transport. Both the DoE and DoT already had strong links vertically with local authorities, but at both department level and at the local level the horizontal bonds were not as strong (Vigar *et al*, 2000). The creation of the DETR was a policy choice in itself and, at department level, exemplified the practical outworking of the acceptance of the theoretical approach to integration. It was intended to encourage integration between scales by promoting interdisciplinary debate at all scales of working decision making, and between all the participants and stakeholders involved in transport governance across geographical space. The White Paper was therefore ready to claim that even by the date of its publication the merger of the two departments into the DETR had

“...already secured better integration of transport and environmental *thinking* and land use planning policy” (DETR, 07/1998:Ch 4:87, emphasis added).

This also lends credence to the suggestion made elsewhere in this thesis of a gap between transport policy rhetoric and delivery. In the detail of chapter four new and revised planning policy guidance¹³ is promised alongside regional planning guidance (RPG) to facilitate the vertical integration of transport planning. Institutionally

¹³ PPG11 and PPG13

Passenger Transport Authorities (PTAs) and local authorities are also given a role in fostering integration between scales with PTAs seen as

“...well placed to play a leading role in delivering integrated transport objectives in places that face some of the most serious environmental and congestion problems...” (DETR, 07/1998:Ch 4:103).

The involvement of organisations with considerable influence over land use, transport supply and demand management within an holistic system of planning and decision making seems intuitively sensible, but also increases the complexities of integrating so many competing agendas¹⁴.

There are, however, limits to organisational integration. Many different stakeholders exist within the transport sector; operators, regulators, infrastructure providers, the State, businesses, user groups and many more organisations have links to and interests within the transport sector. With so many stakeholders and competing agendas perfect integration is unlikely even if desirable. Attempts to more fully integrate transport decision making with environmental considerations perhaps only mark a beginning to realising ‘integrated transport’. Other issues and priorities that affect and are affected by transport decision making are also worthy of greater inclusion within decision making processes. The dominance in many decision making arenas of the economic imperative, often at the expense of social and environmental concerns is understandable, especially in less prosperous areas, but is nonetheless contra to the aims of an ‘integrated’ transport strategy.

The fourth area of integration with other policy disciplines concerned links outside of the scope of the White Paper and of the department. This is, in fact, a bi-directional issue since other policy agendas regarded as cross cutting, principally sustainable development policies, also contain a theoretical approach that involves permeation into other policy areas. Concepts of integrated transport have become enmeshed with sustainable development debates because of the requirement of many notions of sustainable development to include questioning all human activities from a

¹⁴ Governance issues, explored later in the chapter, come into play when dealing with new and controversial policy initiatives.

sustainable development viewpoint (see for example DETR, 1997). Assessing human activity from a sustainability viewpoint requires the drawing together of all policy and passing it through the background 'filter' of sustainable development. Since the UK had already made a number of international commitments to attempt to move towards sustainable development in, for example, the UK's commitment to *Agenda 21* made at the 1992 Earth Summit¹⁵ or, later, in the Prime Minister's speech to the UN in 1997 (DETR, 1997)¹⁶, an external influence on policy was and is apparent.

Bringing together the 'environmental view' and the 'transport view' in the new DETR was the essence of conceptual integration, joined up governance and holistic policy development between transport and the environment. Concepts of integrated transport had become integrated within sustainable development debates; the 'DETR' and 'integration' had become conceptually synonymous. This came about in part, because of transport's increasing, and more widely recognised, environmental burdens and also because of the increased recognition of the demand for transport created in other, non transport, policy decision making (UK Round Table, 1996). Conceptually then the impetus to formulate holistic approaches to policy development were occurring within *and* from outside of the DETR. However integrating transport policies and decision making with other policy areas amounts to more than simply adding in extra decision inputs such as education or land use etc. To meet the requirements of sustainable development a temporal aspect to integration needs to be included that takes into account an integration of transport policy with the needs of future generations. In practical terms this includes *all* the environmental effects of transport.

3.3. Restructuring transport governance for new policy approaches?

The political colour and ideological location of government contributes to the context within which policies are conceived and constructed within the minds of policy makers and across the governance landscape they inhabit. In this analysis of transport policy the dynamic nature of that contextual basis has profoundly affected the underpinning rationale of transport policy development. Transport policies always have associated environmental effects and this section of the chapter discusses how changes in the

¹⁵ See UNCED (1993)

¹⁶ Also see chapter 2.

institutional context within which policy is constructed, promised, and then failed to deliver lasting changes in overall transport patterns or changes in the environmental profile of transport.

The creation of the DETR by the incoming Labour government in 1997 was perhaps the single most significant change in the institutional context within which transport policy was conceived and developed since the Ministry of Transport became a department of state in its own right¹⁷. As such the birth of the DETR also signalled the beginning of a new era in transport governance and represented a

“...significant shift (in transport governance) by adopting the rhetoric of strategy and integration between economic, social and environmental policies” (Vigar *et al*, 2000:148).

The creation of the DETR was an institutionalist attempt to conceptualise transport issues through a wider field of viewpoints and produce holistic, ‘joined up’ solutions to transport dilemmas. The ethos behind the merger of the old DoE and DoT into the new department can be attributed to the emergence of the new realism¹⁸, to the gradual permeation of sustainable development agendas into policy discourses in general and to the intention of the incoming Labour government, with its emphasis on ‘joined up’ governance, to be seen to be different to the previous administration. The move explicitly recognised the links between transport and other disciplines. It was also an admission by the executive and senior policy making circles of the awareness of these links. Not that notions of integrating transport with other disciplines was a new policy idea. Forty years ago the Buchanan Report recommended such an approach through an inclusion of transport within land use planning policy (MoT, 1963). Subsequent policy analyses within the transport department¹⁹ and DoE confirmed the acceptance of the need to integrate transport and land use planning if transport was to be managed effectively (MoT, 1966; DoE, 1992, DoT, 1996; DETR, 07/1998).

¹⁷ The Ministry of Transport was part of the DoE up to 1972 when the Heath government created the DoT.

¹⁸ See Goodwin (1991, 1999)

¹⁹ The term ‘transport department’ is used throughout this thesis to refer to the government department responsible for transport at the relevant moment in time, which could be the MoT, DoT, DETR, DTLR or DfT

During its short life the DETR produced a large quantity of policy documents setting out the government's vision for transport in the twenty first century. Much of this vision remains active within the policies and plans of local authorities and regional institutions, though less so within the institutional successors of the DETR²⁰. The political difficulties in achieving the level of integration necessary to ensure the most socially, economically and environmentally efficient journeys by means of restructuring transport governance, in the form of the DETR, were perhaps underestimated and transport governance has taken a series of steps towards disintegration in the further restructuring of the transport department. The shape and role of the present transport department, the DfT, now closely mirrors the old DoT in that its primary responsibility is transport, which staff can concentrate upon at the expense of any other concerns that they had to consider under the aegis of the DETR. Because of the 'un-joining' of transport from the environmental side of the department this has reduced the originally intended departmental close contact between environmental and transport policy makers. In effect this has removed the 'environmental filter' from the transport policy process at the design stage.

Though much policy rhetoric remains from the legacy of the DETR these restructuring moves have done little to signal an intention to develop actual transport integration 'on the ground'. Rather the reconstructed institutional context suits the continuing underlying trend of meeting transport demand within the market paradigm. The break up of the DETR came about for a variety of complex and interrelated reasons. Undoubtedly the political imperatives of diffusing criticism of the government's handling of diverse issues such as foot and mouth, hunting and other rural issues and in order to focus on the serious problems posed by the railways played a part. But the demise of the DETR was also due, in part at least, because the 'joined up' approach of the emerging integrated paradigm was beginning to impact on established transport demand and the market paradigm. The fuel price protests, calls for the break up the department (*The Independent on Sunday*, 27/11/00) and differences between transport ministers all contributed to the end of the DETR (*The Guardian*, 02/01/01). These can be attributed to the market paradigm in some way,

²⁰ The DETR was broken up following the General Election in June 2001. Its transport successor, the Department of Transport, Local Government and the Regions (DTLR) was responsible for transport policy until its demise in May 2002. The transport department was then restructured again into its present form of the Department for Transport (DfT).

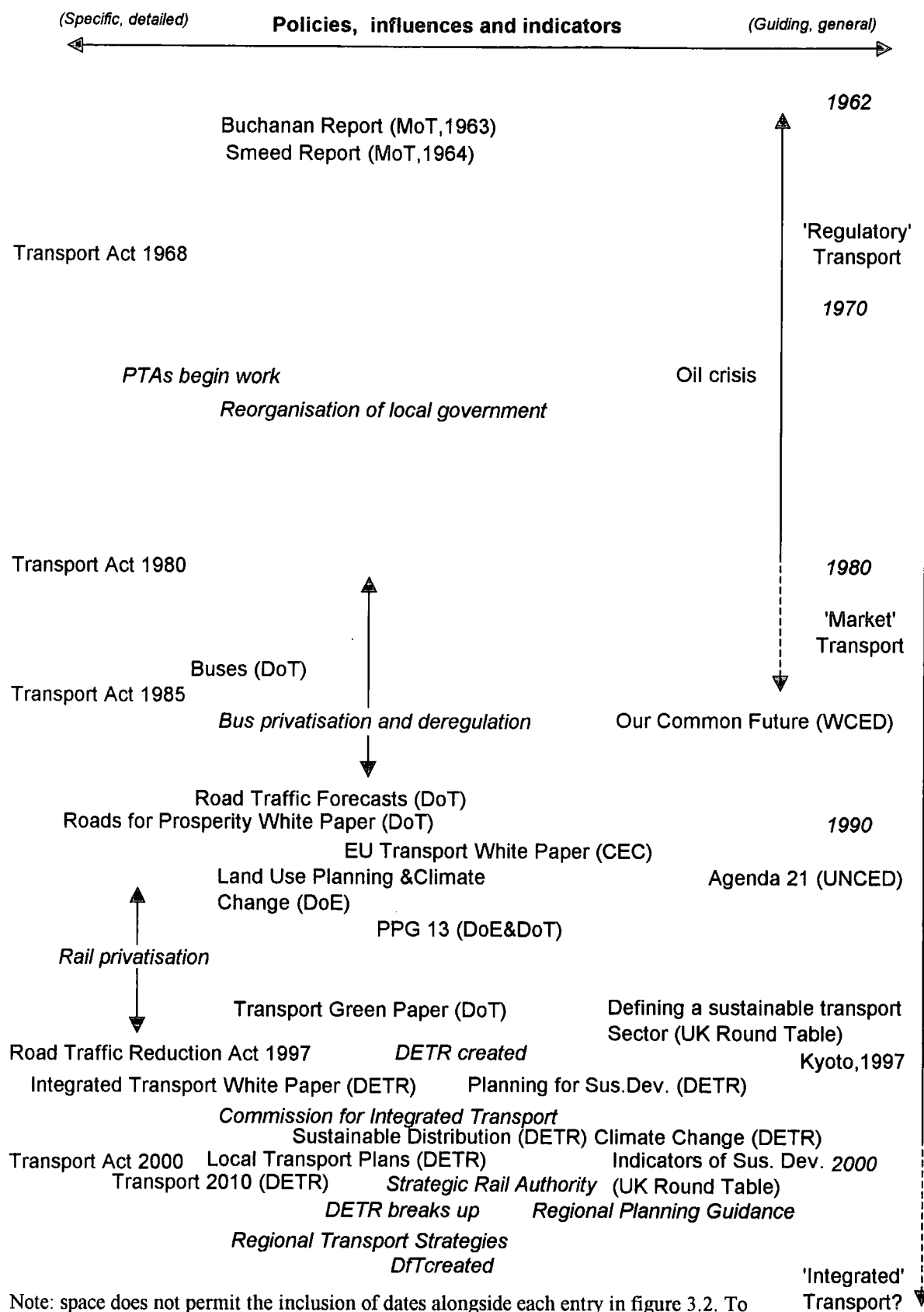
most obviously in the case of the fuel price protests. Calls for the break up of the department were based in part on the perception that 'roads' were being relegated in importance behind public transport. Similarly transport minister Lord MacDonald's decision to begin funding controversial bypasses despite the Secretary of State's²¹ emphasis on public transport priorities (ibid) also reflected a resurgence of the market paradigm. Very recent announcements of road funding support this analysis.

3.4. Ideology and policy: the route to integration

The policy context that predates and informs current policies and notions of integrated transport is that of the 1980s and 90s. The influence of some of the key legislative milestones of this period has been covered above, but other influences also exist. Some of the policy thinking of these decades set the scene for the merger of the DoE and DoT and is explored here. Figure 3.2. illustrates the general transport policy landscape since the 1960s. The figure shows a concentration of all types of transport policies, the creation of transport institutions and the influences brought to bear by other policy developments and institutions. Space constraints restrict the figure to being illustrative rather than comprehensive so only features considered as key developments and influences are included. This does not imply that other events have not affected transport. On the left hand side of fig 3.2. detailed and specific measures are shown on a vertical time line to the present. Moving across the page measures become less specific. To the right hand side, broad and general policy guidance is included alongside the prevailing suggested transport paradigm. The points where institutions appeared and other institutional and administrative processes occurred are shown in italics. The figure shows the association between transport policies and paradigms. A linear scale is maintained and the 'crowding' of the figure illustrates the quantity of transport policy that appeared in the late 1990s. In terms of the paradigms suggested in this thesis this may indicate that the crises of congestion, cost, infrastructure decay, environmental impacts, social and health effects raise the possibility that a paradigm shift is likely to take place in the near future. Hence the placing of 'integrated transport?' in the figure. Alternatively the break up the DETR and the subsequent creation of the DfT may indicate a rearguard action on the part of

²¹ At the time John Prescott was Secretary of State with Lord MacDonald his deputy

Fig.3.2. The general policy landscape affecting transport



Note: space does not permit the inclusion of dates alongside each entry in figure 3.2. To assist with clarity the 'time line' is linear and, where not included because of lack of space, dates are inferred by position on the figure.

the market paradigm and lead to the reassertion of its dominance in the conceptualisation of transport policy. Recent events support this possibility²². The political and policy history since the beginning of the 1980s, some of which is discussed in this section, can be placed within this overall picture of the transport policy landscape.

Since World War II major pieces of transport legislation have been enacted, on average, about every six years²³ with the most recent Act appearing on the statute books in 2000. This indicates the degree of difficulty that governments encounter when attempting to deal with the volatilities of the transport sector (Button, 1999) and also the speed at which transport demand is growing. This section concentrates on more recent policy developments, during the last two decades or so but also draws on some earlier policy.

The effects of four Transport Acts are considered here and the first thing to note is the overall lack of an holistic, joined up approach in the general continuum of transport policy. The legislative objectives are clearly different, with the first of the four Acts, in 1968, maintaining the regulatory approach, though with some exceptions. This was followed by two, in 1980 and 85 with a market approach and the final one, in 2000, featuring elements of both. These differences in the objectives of legislation undoubtedly reflect the ideological leanings of the governments concerned. They also demonstrate a lack of consensus between successive governments in the rationale underpinning their transport policies. Given the dynamic, evolving nature of transport, and the long lead times between policy conception and delivery, the effects of policy choices can outlast the tenure of governments or not have time to take effect before ideologically or politically inspired abandonment takes place. Such a situation is hardly conducive to durable policy or overall integration.

The 1968 Transport Act was ambitious and visionary, setting the context for subsequent transport policy developments and shaped the institutional and administrative arrangements within which transport policies were delivered during the

²² The £7bn road building programme announced in July 2003, itself a £1.5bn increase on the original announcement in December 2002.

²³ For example, 1947, 1953, 1962, 1968, 1974, 1978, 1980, 1985, 1993 and 2000.

1970s and early 1980s (Cullingworth, 1999). Amongst its provisions the 1968 Act deregulated the road haulage industry, with significant implications for the development of the road haulage market. It also created Passenger Transport Authorities (PTAs) in preparation for the forthcoming reorganisation of local government. PTAs were made responsible for the organisation, regulation and operation of public transport services within the 'metropolitan authority' areas and, in altered form, PTAs survived the abolition of the metropolitan authorities. Their creation represented a restructuring of transport governance within an overall regulatory approach to traffic congestion issues. Evidence suggests that PTAs have enjoyed limited success, against the national trend, in slowing the decline of public transport patronage and the associated increase in car use (Beatty & Heywood, 1997).

The 1980 Act was one of early pieces of Thatcher government legislation and represented a cautious step forward into transport policy with its limited reforms of public transport in the UK. The major structural and organisational changes that have taken place in the transport sector throughout the last twenty years began with the provisions of this Act. The overall theme was a market orientated one that was to become familiar in many policy areas over the following decades and it marks the rapid ascent of the market paradigm. The Act principally concerned the privatisation and deregulation of express bus services and abolished fare controls on all bus services. The aim was to encourage new operators to enter the bus market, provide competitive services and drive down costs. The previous regulatory framework of Road Service Licences, that had inhibited market entry to new public transport operators by requiring them to prove that they could meet the necessary standards of organisation and provision, was reversed. Objectors, sometimes existing operators, had often successfully opposed new route license applications. The new arrangements simply required new service providers to register their intended routes with local traffic commissioners with their ability to meet normal operating requirements accepted unless proven otherwise. This shift in emphasis was aimed at encouraging greater rural provision in particular (Knowles, 1989). Twenty years on though, this aim of the Act has not been successfully realised (DETR, 07/1998; DETR, 07/2000B). Encouraged by the apparent *market* success of the 1980 Act, the government pressed on with more widespread reforms.

The 1984 White Paper, *Buses* (DoT, 1984), outlined the proposals for the 1985 Transport Act, which introduced structural and organisational changes on a broader scale allowing for the privatisation of the *National Bus Company* and municipally owned bus operations. Innovation to reduce costs was encouraged, such as the use of mini and midi buses and services were deregulated to allow for 'on street' competition between rival companies (White and Farrington, 1998). The Road Service Licences deregulated in the previous Act were abolished altogether and small scale private bus operations were encouraged by the removal of the requirement for drivers to be holders of PSV licences in some circumstances. This encouraged private minibus operations and allowed taxi companies to operate minibuses with drivers who held only ordinary driving licences. The 'cross subsidy' arrangements that had for so long supported unprofitable, rural services from the profits made on busier routes were abolished (Knowles & Hall, 1998), perhaps suggesting that the aims of the previous Act in increasing rural provision were not particularly serious. Until this Act bus service co-ordination was organised by local authorities and this responsibility also passed from PTAs and local authorities to operating companies.

This development was perhaps the most divisive of the provisions of the Act since, at the operational level, fierce competitive practice ensued locally in many places with rivals undercutting each other and 'racing' for passengers with the stronger companies eventually winning, leading to virtual private monopolies in some areas (Knowles & Hall, 1998). The overall, longer term effects of these legislative moves have been many and varied and have led to greater disintegration of services. Early responses saw a reduction in rural services and an increase in express route use. At the operational level the altered operating conditions led to average fare increases of nearly 30% and a decline in the number of passengers of between 7.5 and 12.5% in urban areas within two years of the 1985 Act (Knowles, 1989). By 1995 clear trends appeared within the bus sector, including reduced levels of patronage, employment and wages and increased fares, and service provision (Knowles & Hall, 1998; Mackie *et al*, 1995). Overall average loads had fallen and these developments have moved public transport further from sustainability for several reasons and are contrary to any of the aims of a sustainable city (Hill, 1993). Firstly, more buses chasing a declining passenger base meant higher emissions per passenger kilometre and greater congestion. Secondly, pressure to reduce costs often meant older, more polluting

vehicles remained in service for longer and thirdly, many rural routes suffered service cuts, or complete withdrawal leading to greater private car use (Knowles & Hall, 1998).

The systematic dismantling of the regulatory approach founded in previous transport legislation adjusted both the policy making context and the operating environment for public transport and accelerated the decline of public transport services. This limited the power of PTAs and local authorities to control public transport and had a disintegrating effect on services (Turton & Knowles, 1998). The present government's White Paper, *A New Deal For Transport* (DETR, 07/1998), is highly critical of the then government's transport policies which, in the light of current understandings of transport behaviour and its associated environmental effects do seem to have been narrowly conceived.

The Transport Act 2000 continued a market orientated theme, but with elements of the regulatory approach and also an emerging technocentric agenda present. It placed an overall emphasis on market mechanisms to control traffic increases and attempted to introduce some restructuring of transport management at and towards a local scale. This featured offering local authorities powers to levy 'workplace parking charges' and 'congestion charges' whilst supporting public transport with financial incentives through 'quality contracts' and 'quality partnerships'²⁴. Though substantively financial, bus quality measures contain an element of the regulatory approach in allowing operators exclusive rights over a particular route or service on a contractual basis. Some of the traffic restraint measures allowed by the Act are based on a technocentric approach to congestion problems²⁵. This mixing of approaches could be seen as an holistic use of policy instruments or as a recognition that the a pure market approach to increasing public transport patronage was unlikely to be successful. At the conceptual level it illustrates a broader approach in the thinking and ideology behind policy design. This may be a reflection of the institutional context within which the legislation was drawn up as the 2000 Act appeared as the legislative

²⁴ Bus quality measures are explored in more detail in chapter 7.

²⁵ The congestion charging scheme for London that came into force in 2003 is a scheme that, though it is clearly using explicit market mechanisms through pricing, and regulatory means through its non compliance proposals, is dependent on number plate recognition technology for the scheme to operate effectively.

conclusion to the Integrated Transport White Paper, *A New Deal for Transport* (DETR, 07/1998) with its strong emphasis on environmental concerns, sustainability and the development of a fully integrated transport system.

The conceptual differences between the Acts reflects the passage of time, which has witnessed considerable change in the transport sector. In the period between the Acts the public sector has withdrawn from operations and relinquished many of its former controls over public transport through widespread privatisation and deregulation. At the same time the size and complexity of governance have grown, in part so that the state retains some 'arms length' influence over areas of the transport sector that it previously held under direct control. The underpinning rationale of the 2000 Act is therefore considerably different to that of the 1968 Act. The depth and complexity of the White Paper (DETR, 07/1998) illustrates the difficulties involved in producing holistically conceived transport policies, both in including a broad enough range of concerns to merit the description of the *Integrated Transport White Paper*, and in designing policy proposals that, if effectively implemented, were capable of altering transport behaviour towards improved environmental outcomes. The issues raised in the White Paper also suggests that governance elites had become sufficiently aware of the limitations of attempting to continue to meet rising traffic demand, and perhaps of the probability of worsening environmental crises, to stir them to propose some alternative transport strategies²⁶. Alongside the continued application of the 'fuel price escalator'²⁷, the contentious issues that arose from the White Paper magnified the policy difficulties of meeting two very different competing agendas that drive current trends. The exponential growth in transport demand and the policies necessary to modify transport towards sustainability are both politically unacceptable (Owens, 1995). The general aims outlined in *A New Deal for Transport* (DETR, 07/1998) were therefore easily applaudable (Button, 1999), but when these aims began to emerge as policies to be implemented the political pressure to return to the traditional approach of meeting demand became intense.

²⁶ See for example the Foreword to *A New Deal for Transport* (DETR, 07/1998).

²⁷ Begun by the previous Conservative government and designed to annually increase vehicle fuel prices by inflation plus 6% it was aimed at suppressing transport demand.

Following the transport White Paper and the Transport Act 2000, the apparent high water mark of the government's intentions to move towards a more sustainable overall transport system came with the publication of *Transport 2010: The Ten Year Plan* (DETR, 07/2000A), with its ambitious objectives on reducing road traffic congestion by 5% and increasing rail passenger patronage by 50%. If seen within the context of more recent transport developments (see below) the rhetorical intentions of *The Ten Year Plan* were only rhetorical. Other analyses see the plan reinterpreting transport policy in favour of 'pragmatic multimodalism', perhaps because of growing political pressure not to be seen as 'anti car', rather than supporting the aims of sustainable development (Shaw & Walton, 2001). Only two months after publication the competing transport agendas came head to head with the fuel price protests of the autumn of that year which tore out the heart of the governments integrated transport strategy; market transport, under challenge from the new paradigm of integrated transport, fought back. Since that time government policy, both in the further restructuring of the transport department and in the resurgence of elements of the 'predict and provide' ethos, has gradually moved away from designing and delivering sustainable and integrated transport strategies. Indeed it is arguable that the influence of the pro roads lobby within transport governance contributed to the break up of the DETR and the associated removal of 'environmentally based' scrutiny from the development of UK transport policy. Recent statements from the present transport secretary, in December 2002 and in July 2003, appear to confirm this trend. Following a second review of *The Ten Year Plan* the Secretary of State announced what *The Guardian* described as a

"£5.5bn road building 'binge' " (*The Guardian*, 11/12/02).

This funding was confirmed and supplemented six months later with a new figure of £7bn granted for road schemes. Despite this apparent victory for pro roads groups the inconsistencies and confusion within transport policy remain, since within the detail of the December statement the government reiterated its commitment to a

"...balanced approach with investment to tackle congestion, improve reliability and make journeys safer. And to do so in a way that is consistent with our wider social and environmental obligations" (DfT, 17/12/2002).

Though this reiteration of environmental policy objectives may owe more to political 'face saving' than it does to a genuine commitment to environmental protection, it is easier for governance elites to forget what they have become aware of in recent years rather than to unlearn it; current transport trends and effective environmental protection are mutually exclusive. Goodwin (2001), in his analysis of the *Ten Year Plan*, sees the emphasis on congestion control as misleading and unhelpful in the way congestion is defined and measured. The Plan's suggested expansion of the roads programme is little different from the previous 'predict and provide' ethos of attempting to build a way out of congestion (Goodwin, 2001). It would seem from this politically expedient withdrawal from the *Ten Year Plan* that the government has returned to where it started from in 1997. This represents a triumph for narrowly conceived demand led, transport solutions at the expense of holistic approaches, or the victory of short term, unsustainability over the *possibility* of long term, sustainability. Examined historically this is a circular trend in transport policy processes that features proposals to curb private transport demand followed by abandonment in the face of political, or electoral pressure²⁸. This time the 'circle' grew a little larger and a began to encroach more quickly on firmly rooted, established public and commercial transport expectations, but abandonment of change does seem be the current position. This also returns transport to a conceptually barren landscape of the 'market' transport policy paradigm that, in merely aiming to meet transport demand, is reactive rather than strategic.

Included within the early 1980s legislative programme of the government was the abolition of the seven Metropolitan Authorities. Regardless of the ideological and political reasoning behind the move the fragmentation of core services within these areas led to a more disjointed approach to transport planning, resulting in less integration and reduced services (Beatty & Heywood, 1997). Legislation enacted before abolition of the Metropolitan Authorities spared London from some of these problems when the 1984 London Regional Transport Act took control of transport in the capital from the GLC. This was done in order to reduce subsidy arrangements, but also had the effect of preserving a regulated bus market in London when regulation

²⁸ See for example the proposals of the Buchanan Report *Traffic in Towns* (MoT, 1963).

was swept away elsewhere by the 1985 Transport Act. This has unexpectedly provided the opportunity for useful comparisons to be made between the ways in which public transport has evolved in both regulated and deregulated operating environments (Mackie *et al*, 1995). Comparisons, from an environmental perspective, appear to favour the regulated, London market where patronage has remained steady since the 1980s, whilst elsewhere it has fallen by about a quarter (DETR, 07/1998). Though it could be argued that the transport requirements of London make it a special case, many other large UK conurbations have similar access problems and transport requirements. The end of cross subsidy arrangements elsewhere have been held partly responsible for the accompanying increases in fares and reduced patronage (Knowles & Hall, 1998). In health services and education reforms encouraged greater travel volumes when, for example, GPs were given 'fund holding' status which allowed them to buy hospital services from anywhere regardless of distance. The development of out of town business parks, shopping centres and, less obviously, hospitals and universities has accelerated the trend towards north American patterns of vehicle use (Tolley, 1996). Similarly when parents were given the right to negotiate school places of their choice outside of normal catchment areas this also added to overall travel volumes (Whitelegg, 1993; Tolley, 1996). These policies confirm that the paradigm of 'market' transport prevailed in UK policy processes and also illustrates that the dominance of 'the market viewpoint' inhibited the emergence of a strategic overview towards transport within government.

The effects of the increasing marketisation of transport were becoming clear to the government in the early 1990s, partly as a result of the 1989 Road Traffic Forecasts (DoT, 1989). These showed that the transport system was inadequate for long term future mobility requirements. In the search for responses to the issues at the time the secretary of State for Transport initiated the so called 'great debate' on the future of transport. The major consultative document of the period, the Green Paper *Transport: The Way Forward* (DoT, 1996), appeared as a response to this debate. The foreword to the Green Paper claims two intentions;

- encourag(ing) key groups with different priorities to talk to each other (and)

- to provide a more informed basis for taking decisions

(DoT, 1996:5).

Not surprisingly, as it is a Green Paper, *Transport: The Way Forward* adopts a general tone and seeks consultation over transport issues, but the overall theme that emerges is one of economic and market interests prevailing over other interests. Familiar neo-liberal ideas of ‘freedom of choice’, ‘increasing the role of markets’ and considering ‘business competitiveness’ feature prominently within the paper (p14, 15,55,71) with environmental concerns regularly being graded behind market considerations throughout the paper. The underlying attitude towards the environment within the paper appears to regard environmental considerations as important within a market context. This ideologically driven theme, which was a familiar trait of 80s and 90s policies, is perhaps best expressed within the ‘key principles’ of the paper which when discussing transport decision making state that

“Within this framework the efficiency of markets needs to be strengthened, providing the minimum necessary regulation, increasing the role of the private sector and offering the best prospects for meeting users needs...(DoT, 1996:15).”

This was despite hard evidence, available at the time, that the liberalisation of transport markets had led to sub optimal social, economic and environmental outcomes (SACTRA, 1977; UK Round Table, 1996). Overall public transport fares, emissions and kilometres travelled were up, whilst passenger numbers had fallen (Knowles & Hall, 1998). Car traffic had increased in distances travelled and in frequency of travel (Curran, 1998). Other sub themes mentioned within the detail of the paper include the possibility of a full environmental impact assessment (EIA) of the trunk road programme. Little mention of this is made in another section that promises new regional planning guidance (RPG) to local authorities, though the paper often emphasises the importance of the role of local authorities as implementers of policy (p7,9, 15,32,94). Also, considering the DoT’s earlier joint role with the DoE in producing PPG 13: *A Guide To Better Practice* (DoE & DoT, 1994B), it is surprising that it is not until p97 that PPG 13 and its explicit reference to ‘reducing the need to travel’ is mentioned. The paper concludes by hiding the possible (or perhaps probable) perverse environmental outcomes likely to result from increasing the

maximum gross weight of lorries, amongst more recommendations of the benefits of 'the market'. The content and underlying ideology of the Green Paper therefore seems conceptually narrow, reflecting only the 'market' transport paradigm and, from an environmental perspective, is disappointing as it takes privatisation as the panacea of all transport ills.

3.5. Other key policy developments with transport implications

Broader analyses of transport commonly see land use planning as one of a number of key issues that significantly affect transport patterns. The former Department of Environment, and its successors, share this view and much has been made of the link between transport and land use planning (DoE, 1992; DETR, 02/2000). This awareness is not new (DoE, 1992; Owens, 1995). It is perhaps, surprising how long it has taken for this link to be exploited in the actual development and implementation of policy. PPG 13 (DoE & DoT, 1994A) provides an early, somewhat isolated example that concepts were changing and explicitly suggests the use of land use policies to affect transport and environmental outcomes.

PPG 13, produced before *Transport The Way Forward* (DoT, 1996), displays a more inclusive approach in its response to the transport planning. This suggests that the conceptual bases of transport policy were maturing into a broader, more inclusive approach to policy making in the DoE at an earlier date than they were in the DoT, where, judging by the Green Paper, the 'predict and provide' ethos remained ingrained. The DoE commissioned research into links between land use and climate change, *Land Use Planning Policy and Climate Change* (DoE, 1992), examining various planning aspects of social, economic and transport policy that are of relevance to climate change debates. A review of the contents of its transport section is of interest here since it is likely that it formed part of the body of departmental literature that contributed to PPG 13. The theme of the transport part of the paper is the long-term contribution land use planning can make to influencing transport emissions and congestion. Beginning by clearly linking transport and land use patterns (p35) and going on to suggest that land use planning

“...may be employed as a policy instrument to influence modal choice or to reduce the need to travel, especially by car” (DoE, 1992:41).

The document focuses on two themes to reduce emissions. Firstly, the possibility of a modal shift away from roads is discussed. The discussion includes infrastructure difficulties, such as the lack of rail alternatives in many places. Also the possibility that some journeys would generate more emissions if modal switches were included and would therefore produce relatively negative environmental outcomes. Policy options reviewed in the paper include the use of restraint policies, for example, ‘Area Licensing’²⁹ to reduce travel demand and the limitations of economic instruments in controlling the travel volumes, due to inelasticities of demand. The second theme of the report covers reducing the need to travel as a means of reducing emissions. This can be achieved within a land planning framework by redistributing development pressure to produce less travel intensive work patterns. The possibility of ‘working from home’ to reduce travel is also mentioned, though the limits to this are acknowledged. Limits include the small number of occupations where this is thought to be practical and evidence that some travel is encouraged by these types of arrangements. Finally the suggestion is also made in *Land Use Planning Policy and Climate Change* that ‘technical fixes’ will be insufficient to deliver emissions reduction in the face of increased traffic volumes (DoE, 1992). This is a familiar theme of climate change and emissions debates and is extensively covered by others³⁰.

PPG 13 is regulationist in its approach and is worthy of examination as a policy guidance tool that is increasingly relevant to attempts to restructure transport planning. The guidance note is revamped from time to time to reflect changes in land use patterns, influence development pressures and generally bring some structure and consistency to the development control process. It is immediately of interest to transport debates as its hybrid origins represent early joint work between the DoT and DoE that were together to become part of the new DETR after the 1997 election. The introductory theme of this edition of PPG 13³¹ is to work planning guidance in with

²⁹ A form of congestion charging that has been applied in Singapore and Norway,

³⁰ See for example Hughes (1993).

³¹ A new PPG13 appeared in 1999.

the government's sustainable development strategy. The guidance note sets out its key aims as

“reducing traffic growth in the length and number of motorised journeys, encouraging alternative means of travel which have less environmental impact and hence; reduce reliance on the private car ” (DoE & DoT, 1994A:2).

The adoption of these policies would, according to the guide to the paper,

“...strengthen existing local centres and aim to protect and enhance their viability and vitality (and) avoid any significant incremental expansion of housing in villages where this is likely to result largely in car commuting” (DoE & DoT, 1994B:50,58)

Like other policy documents PPG 13 acknowledges the symbiotic link between land use and transport. This version of PPG 13 (DoE & DoT, 1994A), along with PPG 6³², has halted the growth in the development of ‘out of town’ shopping centres (Cullingworth, 1999). Also, unlike most of the other work examined in this chapter, PPG 13 seems to place more emphasis on rural aspects of transport and development. Though not usual this would seem to make sense because rural dwellers often make longer commuting trips for work, shopping and leisure purposes. Any positive alteration in their travel habits should therefore yield greater *per capita* benefits in emissions reductions. The rural emphasis also represents a tacit construction of ‘the environment’ as something principally rural rather than urban, or green rather than grey. If such assumptions and constructions were present within the DoE it may also suggest that merger with a transport department staffed predominantly by engineers and infrastructure planners might become difficult.

Salient points raised within the planning advice note stress the need for local authorities to concentrate on demand management and on planning for less travel. The overall theme of this edition of PPG 13 grows out of the introductory remarks about harmonising sustainable development with planning guidance and focuses on the overall theme of integrating land use planning with transport demands and reducing overall travel and congestion. These themes and newer ones associated with an

³² Planning policy guidance on town centres.

integrated transport agenda, are taken up in the draft proposals for the new PPG 13. They are expanded upon in the later documents *Sustainable Distribution* (DETR, 03/1999A) and *Guidance on Full Local Transport Plans* (DETR, 03/2000).

The proposed revised PPG 13 continues along similar lines to the previous edition differing more in style than in substance but with several new areas included within the general advice given. The document again focuses on integration as the key issue but puts the case succinctly stating,

“by influencing the location, scale, density, design and mix of land use, planning can help reduce the need for travel” (DETR, 1999A:6).

and sets out its objectives as

“...promoting more sustainable transport choices (and) reducing the need to travel” (DETR, 1999A:6).

New advice that appears recognises that wider issues and policies that affect transport outcomes. Local authorities are urged to consider the social inclusion aspects of transport and the demands of potentially travel intensive activities such as the siting of health and educational premises. An unusual feature of this paper is the separate treatment of walking and cycling³³. As they are quite different ways of travelling that require different incentives this is important. This confirms the permeation of integrated transport agendas into planning policy guidance. The remaining new feature of this provisional advice centres on the adoption of ‘Green Travel Plans’. Local authorities are expected to require relevant green travel plans to be submitted with planning applications and are, if necessary, encouraged to make these binding within any development permission given. The themes, structure and style of the draft version of the new PPG 13 suggest that its aims are consistent with the recent White Paper (DETR, 07/998A). PPG 13 is therefore likely to be useful to local authorities and regional agencies in producing strategic and integrated, regional and local transport plans.

³³ Cycling provision is singled out for advice covering the provision of dedicated cycle routes. Encouragement is given to link up various cycle routes into unified cycle networks, which include priority space at junctions, cycle bypasses, lanes and gaps as appropriate.

Overall these transport and non transport policy developments reflect the emerging integrated transport agenda that had begun to challenge the market transport paradigm. As figure 3.2. illustrates, the visibility of this challenge was more obvious in the DoE and in the more general, and longer established international policies and programmes of the UN and WCED. Their internationally inspired sustainable development themes existed quite separately to transport policies but their aims and recommendations permeated UK governance arenas and policy processes.

A clear distinction exists between the former DoT and DoE here. The transport policy makers at the DoT are responsible for guiding an activity that is essentially environmentally damaging. In contrast the staff at the DoE are responsible for environmental policy and might be expected to embrace more favourably issues such as sustainable development and a reconceptualising of transport policy based on demand management priorities. Despite these pressures however, market transport remained dominant, though as illustrated by figure 3.2. the policy landscape was beginning to fill with themes from an emerging integrated transport agenda. Joint working, between the departments, the creation of the DETR and policy documents like the Integrated Transport White Paper and PPG 13, have provided an impetus for a deluge of policy initiatives aimed at restructuring transport and development away from the market paradigm and towards integration and sustainability.

3.6. Turning point?

From the substance of the discussion within the White Paper, the theoretical and conceptual bases underpinning *A New Deal for Transport* have clearly been influenced by sustainable development debates. This is reflected in some of the specific policy themes that include a trans sectoral approach to transport. This includes maintenance only for trunk roads³⁴ as one means of limiting traffic growth and closer involvement of local authorities in traffic management. The emphasis on local authorities as key actors in the delivery of transport policy is part of a localisation of policy delivery built around target setting across the public services (Rhodes,1997). Also recommended at the local level are the development of various

³⁴ As recommended in *Defining a Sustainable Transport Sector* (UK Round Table, 1996).

measures, formalised in *Guidance On Full Local Transport Plans* (DETR, 03/2000) and aimed at overall traffic management. These include congestion charging, workplace parking charges, the introduction of 'school travel plans' and the requirement for organisations to produce 'green travel plans' as part of the development control process. Strategic measures to be introduced are the inclusion of Transport Impact Assessments into other policy areas and the White Paper also aimed to raise public awareness of the consequences of current transport behaviour in an inclusive, educative process featuring travel awareness campaigns³⁵.

Two new institutions were proposed in the White Paper that could potentially offer strategic input to transport debates and promote wide ranging changes in transport behaviour and systems; the *Commission for Integrated Transport* (CfIT) and the *Strategic Rail Authority* (SRA). The CfIT was set up in 1999 to continually refresh and enliven transport debate and to provide independent advice to the government on transport policy. The SRA, brought into being following the Transport Act 2000, has a more specific role overseeing the operation of the railways with a remit that includes modernisation, performance and safety themes.

No such independent transport authorities have previously existed in the UK. If these two relatively new bodies can develop into influential transport adviser groups this could contribute to achieving holistically conceived transport policies. These groups could present to governments a broad, inclusive approach to transport policy and infrastructure development. Under such arrangements the chances of achieving successfully the objectives of integrated, more sustainable transport in the UK might be more likely. The CfIT has for example produced a detailed study illustrating how congestion could be cut by up to 44% through the use of a GPS³⁶ based charging system levied on all motorists and according to its latest annual report in

"the year ahead CfIT will focus on raising public awareness of the benefits of fiscally neutral congestion charging" (CfIT, 2002:2).

³⁵ Chapter four of *Defining a sustainable transport sector* provides examples of these campaigns, including: 'Don't Choke Britain', National Bike Week', 'Green Transport Week' and the 'Car Free Day'.

³⁶ GPS – global positioning system. Such systems can map the position of vehicles with an error of less than 10 metres. The technology has been operational for decades in aircraft and shipping navigation systems. Improved versions can cope with more congested networks such as roads.

54% - 58% of respondents surveyed by CfIT favour the introduction of some form of congestion charging (CfIT, 2002). With a similar agenda to introduce congestion charging in the capital, *Transport for London* reports similar support for congestion charging and activated its own scheme in February 2003 (TfL, 2003). Motoring organisations also indicate support for schemes if accompanied by improved public transport (AA, 2000). Support for such schemes indicates that drivers are prepared to consider paying for their motoring in different ways. Placed alongside the acceptance by the CBI of the £20 billion annual cost of congestion to UK business (Telecommuting, 2000), these indicators suggest that the market transport paradigm may be waning.

The market paradigm may therefore be under serious challenge from market forces. Market based policies, attitudes towards charging and evidence of the economic costs congestion, all point to the market working to bring about policy change. Congestion charging, an explicit market tool, is evidently more acceptable in modifying transport behaviour than the traditional tool of higher fuel taxes. Perhaps this is because congestion charges, in London at least, are hypothecated towards public transport improvements. Whatever the underlying economic reasons though this supports the case that the market does indeed work in altering transport demand³⁷ and that the targeting of instruments is a vital ingredient to public acceptability. To continue to attempt to meet demand, through high cost infrastructure provision within the overall aim reducing congestion, when it is widely accepted that this does not work (Whitelegg, 1993; Goodwin, 1999), is not facing either economic or environmental realities.

A key policy theme of *A New Deal For Transport* centred on the integration of transport between scales and of devolving decision making powers to the most appropriate scales. The appearance of the *Guidance On Full Local Transport Plans* (DETR, 03/2000) was trailed in the White Paper and defines the responsibilities the government expects local authorities to take as they produce local transport plans (LTPs). The overall theme of this guidance encourages both responsibility and

³⁷ In June 2003 Transport for London reported a 38% reduction in cars in the charging zone when compared to the same period last year (Local Transport Today, 12/06/03).

initiative from local authorities. It begins by defining the concepts of integrated transport within the local setting and discusses the uneven access afforded to many within current transport regimes. It continues that a change in attitudes to assessment will be necessary if wider policy integration is to be achieved. Interestingly it also requires that local authorities should consider the needs of

“...pedestrians, cyclists, public transport, motorcyclists, taxis, freight...”

and finally

“...the private car” (DETR, 03/2000:31).

The tone then weakens with respect to the environmental implications of transport, as it is pointed out that this is not a priority order for provision, merely for consideration as changing the order of consideration should ensure that transport decisions

“...are consistent with encouraging changes in attitudes (to transport)” (DETR, 03/2000:31).

Perhaps the logic of the paper rests on the hope that though it explicitly states that this is not an order of priorities ‘changes in attitudes’ might eventually make this order an accepted assessment criteria.

Overall the guidance contains similar advice to other contemporary work, which indicates a welcome convergence of policy ideas in moves towards integrated, sustainable transport. It also reflects current transport and planning policy documents as development plans are discussed in conjunction with how LTPs should be drawn up. The discussion ranges from integration with development plans, the importance of interchanges, freight issues, regional transport strategies, integration of policies and plans and, like PPG 13, consistencies at different scales. The guidance provided on major improvement schemes (p61), differs slightly in tone from that prescribed in the 1998 White Paper. *A New Deal For Transport* (DETR, 07/1998), referring to trunk roads, explicitly states,

“our road network is largely complete. *Maintaining the trunk road network will be the first priority in the future...*” (DETR, 07/1998:97: original emphasis).

However, the LTP guidance discusses major road improvement schemes in considerable detail and requires local authorities to include road schemes costing £5m or more within LTPs (p62). This assures local authority transport decision makers that road building would continue despite the overall aims of the White Paper or the LTP guidance³⁸. Further advice on roads is somewhat confusing since the LTP guidance goes on to outline government plans to ‘detrunk’ sections of the trunk road network and pass them from government responsibility to local care. If local authorities are then allowed to upgrade these redesignated roads it could be seen as a convenient way of adding to, or improving what is effectively still the national network under the guise of local authority works. Given the motoring lobby grumbles against some of the White Paper proposals the government may have seen this sort of tactic as a way of backtracking on the ‘maintenance only’ provisions of the White Paper. It may also be a way of passing long term maintenance costs to local authorities.

The other issue within the guidance of particular interest in the context of this thesis deals with climate change issues, air quality improvements and noise. The guidance points out that local authorities currently

“...tend to address climate change issues... under Local Agenda 21...” (DETR, 03/2000:71)

but suggests that local authorities are advised to consider the LTP process as a means of achieving reductions in the growth of CO₂ emissions. Using the LTP process in this way explicitly links it to sustainability issues and confirms the permeation of sustainable development agendas into transport policy. It also represents a shift in emphasis from air quality concerns. Historically, local authority air quality monitoring has involved measuring pollutants and particulates in the air rather than CO₂. The mention of CO₂ (p71) indicates that concerns about greenhouse emissions are now seen as important. This step also represents a sharing of responsibility between scales

³⁸ The South Stockton Link, costing £31 million is one such scheme and a short discussion of the integrated transport aspects of the scheme is found in chapter 6 of this thesis.

in the move towards meeting Kyoto commitments on emissions³⁹. It is also further confirmation of the challenge facing market transport from integrated transport.

On the issue of sustainability, and almost at the same time, the DETR published *Guidance on Preparing Regional Sustainable Development Frameworks* (DETR, 02/2000), which concerns promoting concerted action in the regions to move towards sustainable development. Like other documents reviewed here it aims to draw together transport and non transport policies in an integrated approach. It adds the 'resource' dimension to those of social, economic and environmental considerations, already recommended elsewhere, into the mix of policy inputs. Like *Defining a Sustainable Transport Sector* (UK Round Table, 1996) it also prescribes the development of indicators to measure progress and stresses the need for an integration of issues and institutional efforts to tackle sustainable development problems. Within the annexes to the paper sustainable development frameworks are used to identify areas of policy where action can be taken. Here the guidance found in the DETR paper on full local transport plans is reiterated, encouraging local authorities to

“...secure widespread voluntary adoption of travel plans by major employers...through partnerships with business, transport operators and the wider community; and also to work with schools to develop school travel plans” (DETR, 02/2000:17).

Again the emphasis is on joined up, holistic approaches to move towards sustainability. The guidance provides a useful addition to dedicated transport policy as its contents again illustrate the growing integration of policy processes. Though as noted earlier, 'on the ground' policy implementation of many of the sustainable development or integrated transport discussed earlier still has some considerable way to go before the market transport paradigm is transformed into the integrated transport paradigm.

³⁹ In 1997 at Kyoto the UK agreed to cut emissions by 12.5% from the 1990 level by 2008-2012. The UK also has set its own more ambitious target of a 20% cut by 2010.

3.7. Conclusions: step change in transport policy?

This review of transport and transport related policy that has taken place during the previous two decades demonstrates some marked differences over time in the processes that take place in the development and implementation of transport policy. Changes have been substantive and conceptual. Within this analysis of a sample of recent consultation documents, White Papers and legislation the phrase 'integrated transport' appears more and more frequently and with greater detail attached over time. Transport policy has moved from a narrow agenda characterised by privatisation, deregulation and market forces towards a broader, integrated approach, with a noticeable change towards sustainable development priorities taking place from the mid 1990s. This indicates a maturing of the concepts and increased awareness of the environmental consequences of present transport demand within decision making circles. The transfer of transport decision making responsibilities to more local scales is also significant for this thesis since it forces a questioning and possible reconstructing of the environment within local governance circles. This is useful for promoting integration, but is also very useful politically for the government. It allows the government to avoid dealing with some of the most contentious transport issues that involve choices between the environment and the economy by passing the decisions to the local level.

A considerable volume of government literature proposes far reaching changes to UK transport systems and includes aims of limiting and restructuring car use⁴⁰. Radical new ideas, and a few older ones previously considered politically dangerous, have been raised to promote awareness around issues such as congestion. The aim is to encourage the public to accept that changes must be made to current transport habits. As shown in fig 3.2. the general body of policy, and transport policy in particular, is shifting towards the integrated transport paradigm, but resistance to change remains strong. The policy process has seen some significant steps forward and also some reversals. Progress towards integration and reducing the environmental impact of transport has been made, with the CfIT commenting that the change is reflected in a change in transport funding;

⁴⁰ See for example UK Round Table (1996), DETR (07/1998; 06/1999; 02/2000; 03/2000; 07/2000A; 2001), CfIT (2002), Sustainable Development Commission (2003).

“a step change (has occurred) in the funding for local transport measures” (CfIT, 2002:1).

Funding is not the only issues though and problems do still remain since most of the intellectual conceptions surrounding integrated transport remain just that. Following some policy initiatives little time has passed for tangible infrastructure and service developments to take shape. Some backtracking by policy makers has also taken place. Unexpected circumstances have also not helped in attempts towards an integrated transport system and a greater use of public transport and trains in particular. A series of accidents that caused serious disruption to the rail network has not helped, especially as the cause of two of the most serious was blamed on poor maintenance. Undoubtedly these circumstances will have resulted in increased congestion, resource use and emissions along with reduced air quality and, if the railways fail to regain their passengers, greater negative environmental impacts. If they do nothing else these events graphically demonstrate the links between travel behaviour and environmental outcomes. They also provide a timely reminder that transport cannot be seen in isolation to other policy disciplines if integrated and sustainable systems are ultimately to emerge from policy processes.

Transport debates have become more inclusive and more integrated with other policy disciplines, but the vital step forward to substantial policy delivery remains elusive; the ‘new realism’ is not yet real enough. Some steps are perhaps not being taken because of reluctance to alienate voters. A greater political consensus will be necessary before it will be possible for environmental concerns to be considered important *in themselves* within transport policy since few popular, win-win scenarios appear to exist. Recent proposals by the Opposition to increase motorway speed limits, reduce speed cameras and become ‘the party of the motorist’ (The Conservative Party, 2003) point to clear differences of priorities with the present government. Obviously these views may reflect short term political and electoral opportunity, but such is the nature of the politics of democracy. The detail of the statement, with its overriding emphasis on economic aspects suggests the market paradigm is alive and well within the document.

A political consensus therefore seems as far away as ever and this raises several questions worthy of further enquiry, but beyond the scope of this thesis. These centre on the extent to which democracy hinders sustainable development and on the conflicting optimality of outcomes between different scales within transport decision making.

Signs that inertia and abandonment are beginning to characterise transport policy processes are emerging. The new 'super' department, the DETR, structured with the aim of fostering an integrated approach to transport policy formulation, represented a recognition at the highest level of links between transport and the environment. Its creation was an important step towards a multidisciplinary approach to transport issues. The DETR has passed into history and the current transport department, the DfT, more closely resembles the former DoT, perhaps suggesting a return to (or continuation of) market transport. The ten year plan (DETR, 07/2000A) has been reviewed recently with an admission that targets on cutting congestion will not be met, but also that road building is set to increase. This again suggests that market transport and integrated transport are in conflict. Only time will reveal whether there is a broad enough consensus and the political will for the leap from theory to practice to be made in the promotion of an integrated transport agenda.

The review of transport policy contained in this chapter complements the discussion on sustainable development covered in the preceding chapter and together these chapters form the theoretical and conceptual bases that underpin the rest of the thesis. The next chapter introduces the research participants, discusses the ways in which data were collected and analysed. The chapter also examines briefly some theories of decision making and governance that colour the issues raised in chapters two and three.

Chapter 4: Transport and sustainable development: examining decision making

Up to this point this thesis has concentrated on the core aspects of the theoretical debates and understandings that underpin the research. These debates, centred around and within understandings of 'transport', 'the environment' and 'sustainable development' are highly contentious and continuously evolving. The theoretical bases that underpin these terms inform the specific questions that arise from this discussion of theory, simultaneously ground the practical aspects of the research within relevant theory and provide a context for analysing the activities of transport organisations. Ultimately the implementation of more sustainable transport policies will depend upon actor decision making. This chapter represents the convergence of two perspectives on transport decision making; it brings together the conceptual understandings of the links between transport and the environment with the interpretation of policy as expressed by NE road transport decision makers. The chapter begins by setting out how the practical activity of fieldwork data collection was accomplished and is centred on the practical research methodologies generally applicable to social sciences. The analysis continues with a brief discussion of decision making theory and governance issues as these apply to the study. This is followed by an examination of how the research fits into operational transport choices. This acknowledges the competing interests and pressures present with the decision making networks of the NE governance landscape¹.

Virtually all transport decisions have potential environmental impacts. In an attempt to reduce environmental impacts much current transport policy aims to *persuade* transport users to alter their transport habits rather than *impose* compulsory restrictions. The success of these policy aspirations depends upon transport 'consumers'² receiving the proposed changes in *their own* behaviour positively. The responses of various types of transport users are therefore critical to the policy

¹ The politics of transport choices are contentious and many decision making processes are contextualised within the institutions and networks of governance. It is not my intention within this thesis to perform an analysis of any particular scale or institutions of transport governance, rather to consider governance processes as part of the background context for the study. The issues surrounding the interactions between governance, policy and human behaviour are explored in more detail later in the chapter.

² Consumers in this context refers to *any* consumer of transport services, either individually or collectively, publicly or privately or for freight or passenger purposes.

outcomes. Examining how a range of transport organisations responds to transport policy will reveal the likelihood of the original intentions of policy being reflected in the outcomes.

A key theme of this research is to discover to what extent the environmental impacts of transport decisions are taken into account when making transport choices. Uncovering the extent to which the environment is considered within transport decision making requires subtle interview techniques that, on the one hand, expose the nature and structure of the organisations behind interviewees and, on the other, reveal the Importance of 'the environment' within the mind of the interviewee and the organisation in question³. This second aspect of the enquiry process should reveal what does, and does not, signify 'the environment' to participants and, on this basis, what environmental issues and considerations are taken into account within decision making processes. It will also indicate whether the organisation's structure and hierarchy of decision making reflect environmental concerns, or not. The subsequent analyses of these data will make a contribution to the theoretical debates addressed in this research.

The chapter begins by introducing the groups of organisations involved in the research, the reasons for their selection, their relevance to each other, their niche within the NE road transport landscape and the reason for choosing the NE as the location of the study.

The NE of England was chosen for a variety of reasons. Firstly, public transport patronage is higher and car ownership lower than in other UK regions (Beatty & Haywood, 1997). This means that potential traffic growth is greater in this region than in others. The success of new transport policies aimed at curbing traffic growth and increasing the use of public transport must therefore succeed here if they are to work anywhere. The NE is towards the periphery of the EU giving freight transport additional problems to contend with as the gravity of the market shifts increasingly towards Europe following the introduction of the EU Single Market. The distances to the UK's main economic centre, the south east, and Europe are also conducive to

³ All interviews were carried out by me.

modal switches to rail and this is an issue explored in some detail. The region also boasts the UK's first congestion charging scheme, a major supermarket freight distribution centre and hosts the headquarters of two of the four major UK bus groups. A wealth of potential data therefore exists in the region and it is hoped that producing some research based on NE transport might draw some positive attention to the area.

The organisations chosen are representatives of larger groups and the extent to which their organisational decision making can be taken as representative of their groups and the effect this might have on the validity of the work will be examined. The discussion then moves to the design of the research and puts forward the merits of various approaches, some potential drawbacks and recognises the practical limitations that constrain the project.

4.1. The subjects of the research

All of the organisations that participated within this research are drawn from within the NE road transport sector. Map 4.1. illustrates the area in which the work took place, pinpoints organisations and where appropriate shows the geographical space in which they function. Map 4.2. sets out the major transport arteries of the NE region and its major conurbations. Both maps are useful in contextualising the study geographically and help to explain the connections, both physically and institutionally between some of the participating organisations. Figure 4.3. is included for additional clarity.

Different actors within the roads sector do, of course, have different priorities and viewpoints and it was thought to be worthwhile to choose research participants from three distinct groups of transport organisations⁴. Grouping the research participants in these subsets of transport organisations will allow for differing attitudes and priorities to emerge that reflect the sub-sectoral location of the groups both in the theoretical debates being addressed and in where they are situated 'on the ground' in the road transport sector. From each of the groups a single organisation was selected for a

⁴ Appendix 1 contains a list of participating organisations and the dates of interviews.

Map 4.1 The North East of England: the geographical area of the research



ap 4.2 The major transport arteries of the North East Region

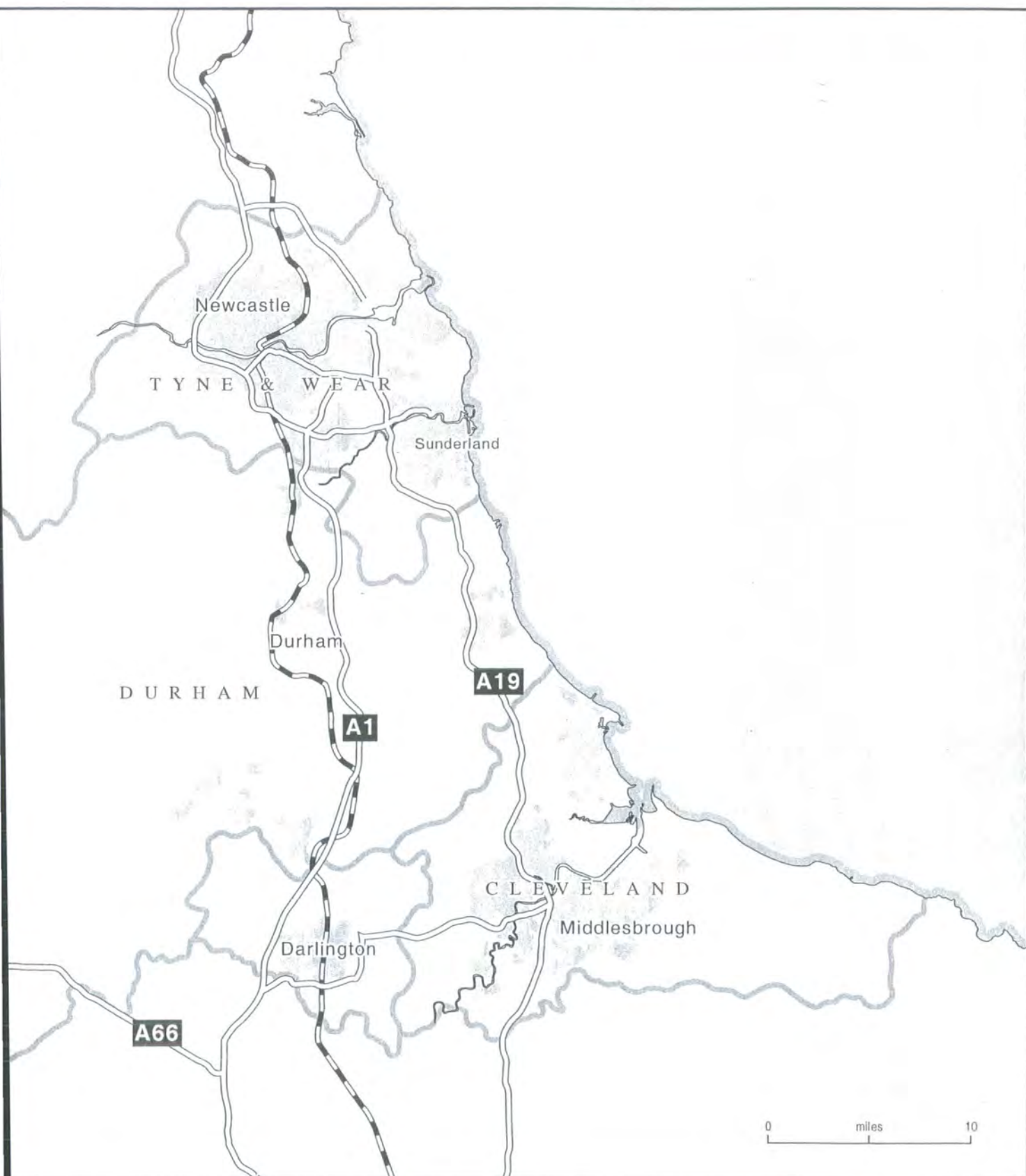
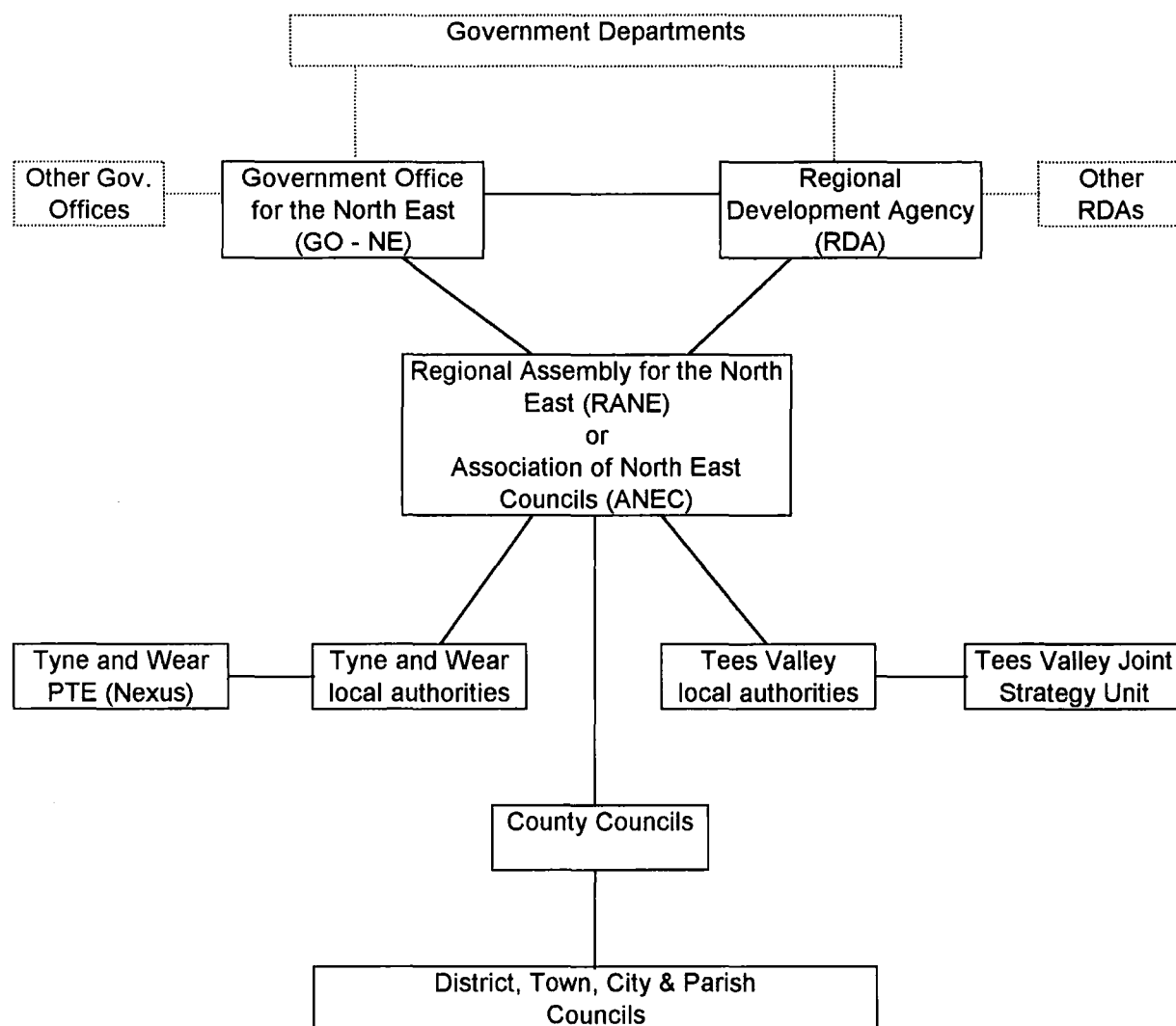


Fig. 4.3. Links between selected North East of England governance institutions



** broken lines show links to institutions not involved in this research*

Note: The organisations represented here have been selected on the basis of their involvement with transport. The ones interviewed represent the core governance actors and institutional authorities within the NE region. Each has an interest in transport in some way, either directly through the provision and regulation of transport systems, or indirectly as a means to meet other objectives. The links between organisations are also a selection as other organisations and links undoubtedly exist.

deeper analysis of the environmental aspects of a specific issue or activity within transport decision making.

Including a case study dimension allows a “comprehensive research strategy” (Yin, 1994:13) to be applied to the research and provides some discrete higher quality information than is available during a single interview. Though the level of involvement did not amount to assuming the role of a ‘participant observer’ it did change the method of data collection with wider contact being made with more individuals during case study data collection. Much of this was not tape recorded but notes taken enrich the taped record. Together with detailed searches of documentary records this assists in the construction of the background context. This research method allowed me to observe the subject organisation on a regular and more intimate basis and allowed for a more accurate ‘feel’ to be gained of operational processes. May (1997:138) terms this as “reflexive rationalisation” or how decision-makers interpret and adapt to their evolving circumstances.

The three categories of organisations selected were planners and providers; freight movers; and passenger carriers. The key group of road users not featured directly within the research are private motorists. This group was not represented for three reasons. Firstly, as a group comprising of individuals they do not constitute an organisation and therefore do not fit into the research aim of analysing organisational decision making. Secondly, even if it were desirable to include the views of private car drivers within the research, the practical limitations of collecting enough data for significant conclusions to be reached are beyond the capabilities of the project.

Thirdly, the implicit general views relevant to this research of private transport users can be deduced with reasonable accuracy from other information gathered within the research process. Ascertaining their detailed understandings of ‘the environment’ are not possible, of course but their general preferences, in terms of their transport choices, are of importance in determining the likely success of much current transport policy. Briefly summarised current road transport policy aims to reduce private car use in favour of increased use of public transport and by reducing the *per capita* demand for travel. Since bus use is the principal, and sometimes only alternative to car use for many journeys, evidence collected from public transport

operators showing increases in patronage implies either modal switching from cars, or increased travel volumes. Statistical information on transport trends⁵ is readily available and can be used to support this data. By combining these data it is possible to analyse whether or not the White Paper (DETR, 07/1998) and its many other associated pieces of the integrated transport policy jigsaw can contribute to solving the environmental problems associated with UK transport behaviour.

Group A, *Planners and Providers*, contains those organisations with a role in the planning, provision and regulation of NE road transport. As a group, these organisations are in an influential position in that they are responsible for the regional and local interpretation and implementation of transport policy. In this sense they set the context within which many other organisations make their transport choices. The principal executors of transport policy, at borough and county levels within the NE, are local authorities and these are responsible for local planning decisions and for managing overall traffic levels and travel demands within their areas. The transport responsibilities of these organisations varies. Local authorities are responsible for the provision and regulation of local road space and they occupy the key interface between policy intentions and outcomes. Their transport role is accomplished through policies such as Local Transport Plans.

The other institutional actors involved in this research have a more strategic responsibility. Figure 4.3. summarises the institutional organisations that took part in the research, the links between them and to other spheres of governance. Institutions with authority over wider geographical space are also represented (see maps) since they constitute an administrative scale between the local and regional levels. The joint local authority body in the south of the region, the *Tees Valley Joint Strategy Unit*, attempts to bring a sub regional focus to transport issues within the area of the Tees valley covered by the four boroughs of the former Cleveland County plus Darlington. *Nexus*, the Passenger Transport Executive for the former metropolitan county of Tyne and Wear remains the organisation responsible for the regulation of public transport in the north of the region⁶. The group also includes regional institutions that have an interest in transport governance; the *Regional Assembly*, the *Regional Development*

⁵ See for example Transport Statistics (DETR, 2000); DfT (2001).

⁶ *Nexus* is also the operator of the Tyne and Wear Metro.

Agency and the *Government Office for the North East*. These are institutions that have amongst their roles responsibility for developing and implementing an overall regional dimension to transport strategy within the north east. The interacting scales and institutional structures that exist and the relationships between the organisations of this group provide useful insights into public sector transport decision making in the NE. Whether, or not, governance structures and arrangements within the NE transport sector are succeeding in including sustainability and environmental concerns within overall transport management will also be revealed. The environmental burden of NE transport is reflected, in part, by this group's understanding and prioritising of, the environment within its decision making. Its ability to deliver those priorities and others passed down from the centre, within wide and conflicting remits also contributes to the environmental profile of NE road transport. All the organisations approached were willing to participate.

Group B, *The Freight Movers*, involves representatives of private sector road haulage operators who are based in the region. This category had a larger number of participants with hundreds of potential subjects based in the NE region. Initial selection was carried out by working through the two editions of *Yellow Pages* that cover the region. Companies were contacted by telephone and, where possible, the key decision maker was identified and the interview arranged. *Yellow Pages* was used to identify contacts because it provided a degree of randomness in the sense that *Yellow Pages* advertisements give little indication of the size and complexity of organisations.

Within this group arranging interviews was difficult as some of the organisations approached were unwilling to set aside time to be interviewed, whilst others seemed suspicious of outside interest in their organisations. Just over half of initial telephone contacts led to an interview. During the initial telephone contact a few questions were asked to identify the most appropriate individual and to ascertain the organisation's general area of road haulage activity. From these a range of organisations were selected to reflect different company sizes and haulage sector niches⁷. All the

⁷ Haulage sector 'niche' is used to differentiate between haulage companies that undertake specialised roles within road haulage. For example one company only operated chemical tankers, another was the

organisations approached are either based in the NE or have a major depot in the region. Though some of the activities of the participating organisations are away from the NE, sometimes as far as southern Europe, their base in the region helps to maintain a NE focus to the data collected. The reasons that underlay the transport decisions of this group are of interest because the transport of virtually everything that is moved involves at least one lorry trip⁸. The participants of this group are drawn from a private enterprise culture and their concept of, and attitudes towards, the environment are reflected in the priorities they include within their transport decision making. The motives of the group, and any differences in priorities uncovered, illustrate differing operational tensions within the transport sector and also provide interesting comparisons with the motives of other case study groups.

Group C, *The People Carriers*, comprises privately owned passenger transport operators, principally public transport operators but also some private 'hire and reward'⁹, passenger transport contractors. The number of potential participants in this group is smaller than the previous group, though the same method for identification was used. A deliberate effort was made to obtain interview access to two of the three major bus groups operating in the region since their views would represent a large number of services and should also be comparable with each other and with the third major operator in the NE, which is the subject of a case study. About three quarters of those approached agreed to be interviewed and the spread of organisations within the group was also felt to be adequate to obtain a range of viewpoints within transport decision making. The input of public transport operators is of interest as they are the deliverers of the transport services envisaged within the strategic planning and policies of national, regional, sub regional and local authorities. Their views are all the more important since the quality of service they provide is likely to be closely associated with public perceptions of the merits of public transport. The degree of success achieved in increasing their patronage also reflects any modal switching towards

only one involved in domestic removals. A third was almost exclusively involved in sub contract container transport and a fourth in heavy haulage.

⁸ One only has to pause for a moment to imagine the transport links involved in obtaining most household items from food to furniture and clothes to 'white' goods. Observing the arrival and departures of lorries at virtually any supermarket confirms this. Note: 'White' goods are usually regarded as consumer electronics, kitchen appliances, televisions etc.

⁹ 'Hire and reward' is a passenger transport industry term used to refer to journeys undertaken in a vehicle exclusively hired for the purpose. This could include excursions, regular private contract travel or taxi operations.

public transport taking place. This places public transport operators in an pivotal position regarding policy delivery and may confer on them added influence within transport policy debates and decisions. Since the fortunes of public transport operators are closely linked to levels of passenger patronage then they are likely to 'have one eye' on public attitudes generally to enable them to exploit new and emerging public preferences, opinions and concerns. In this sense they can also act as a barometer for attitudes towards public transport use. Finally, this group's understanding of, and attitude towards, the environment may be similar to the previous group's since, like that group, many of its operational tensions are firmly embedded within the business communities everyday economic activities.

4.2. Research Design

The transport decisions made by organisations rather than individuals have been chosen for three reasons. Firstly, the environmental burden associated with the transport choices made by organisations is far greater than that of private individuals. Each individual decision to travel, operate a particular type of vehicle or engage in any other transport related activity contains environmental aspects. Collecting data on organisational responses to transport choices therefore, approximates to gathering information on many individual decisions simultaneously. Within the limitations of this project this strategy helps to maximise the quality of the data collected. From this, collecting and interpreting data on the transport activities of a number of organisations should further enhance the accuracy and reliability of the findings. This qualitative approach provides a basis for a deeper analysis of transport decision-making than could be achieved by quantitative survey methods.

Secondly, the subjects of the research form a loose grouping within the road transport sector with a limited number of common connections and many individual¹⁰ characteristics not easily comparable with each other. The combination of similarities and differences introduces difficulties in making simple quantitative comparisons that might be used to analyse individual decisions. Comparisons between organisations therefore demand a more qualitative approach to data collection, which in this project

¹⁰ Individual here is used in an organisational rather than personal sense.

is achieved during in-depth face to face interviews, supported by a few interviews conducted over the telephone. Such a diverse group demands *intensive* rather than the *extensive* research techniques normally reserved for surveying large samples of similar respondents. Intensive research techniques allow questions to probe how processes work in a relatively small number of cases (Sayer, 1992). Intensive research also allows the individuality and character of the participants to survive the data collection stage and to add richness and colour to the research findings (Maxwell, 1996). An analysis of the specific factors that influence changes in actor behaviour and provide the opportunity to identify the underlying causal processes are also possible within this approach. It is worth noting at this point that since the number of actors taking part in the research is relatively small they cannot be taken as a representative sample in a statistical sense. However, the insights obtained from the overall analysis will be a useful starting point in the study of the behaviour of similar, related groups, will suggest alternative policy options that might modify transport behaviour and will raise further questions and research issues worthy of exploration.

One advantage of choosing to gather qualitative information through semi structured interviews and support this with case study analyses, is that it provides the opportunity to assess the information from differing perspectives. The data can be analysed on an individual participant basis examining how each research participant (local authority, association, company, etc.) is affected by the prevailing operating conditions and how it responds. Also responses to a particular issue can be traced across different participants and groups. For example the responses to the idea of say, the provision of preferential road space, or congestion charging could be drawn together for analysis. This enabled conclusions to be reached about the impacts of various ideas and policies on the range of organisations and also suggests, for example, regulatory gaps or alternative policy options. Similarly, choosing a qualitative, case study approach allows comparisons to be made between size, structure, niche and the historical perspectives of organisations. Any identifiable differences contribute to the overall analysis.

4.3. Interviews

The structure of each interview was broadly similar, following the same general lines of enquiry and examining a pre-determined range of themes. The style of interviews was interactive and informal, in the sense that questions were adjusted, added or left out as the interviews progressed¹¹. This enabled issues and viewpoints of interest, that might have arisen unexpectedly, to be explored spontaneously rather than returning at a later date to follow them up.

This flexible single interview approach helped keep information fresh and relevant, took advantage of unexpected opportunities and reduced any tendency for the participants to analyse their own responses in advance of sharing them. Such an approach helped to prevent participants from being forced into one-way communication in which they could only answer in terms of a tightly set question format. It also facilitated the smooth introduction of secondary, existing background information during the interview process. Finally this technique offered a much greater chance of learning from the participants what the different significances of circumstances were for *them* and was especially useful in pinpointing their individual operational tensions.

Following interviewee approval each interview was taped and transcribed for subsequent analysis. If requested, transcripts were sent to participants. This proved to be a useful tactic as two participants forwarded further written information that expanded on interview responses.

Each interview was different and varied in content. How the interviewee was placed within their organisation had a bearing on the data collected, with more senior participants able to offer deeper insights into the overall ethos of the organisational decision making within the particular organisation. The range of standing of individuals within their organisations was not a significant problem in analysing responses as most interviewees contributed to some aspect of the overall analysis. The views expressed by participants also reflect their organisation's particular situation,

¹¹ Appendix 3 contains some examples of the questions used with different groups.

their niche within the transport sector, their working experience and sometimes it was clear that strongly held personal beliefs featured in responses. The last point is important as participants could hardly be expected to be entirely objective¹² in their responses because of their embedded, background assumptions, career experience and understandings of the subjects in question. In addition to more straightforward answers the interview questions were designed to reveal gently the underlying attitudes of the participants to a range of transport issues and problems.

4.4. Observation within the organisational setting

The analyses of the interviews would not be complete without taking into account the setting in which the research participants work. The surroundings of the workplace can reveal a considerable amount about the circumstances of an organisation and have been described as “fundamental to much qualitative research” (Silverman, 1993:9). Visual impressions assist in contextualising the interview and also help to place the interviewee within a wider continuum of organisations and these impressions inform the analytical process. The observation of setting and the social interaction taking place within the interview contributed to the analysis of responses in this research. The following section (4.4.1.) contains my observations, is highly descriptive and is included to illustrate the rich variety of ‘the workplace’. Interviewees spend many hours of their time at *their* workplace, which in time can become highly individualised. Similarly, wider shared office space can also take on a team area possessing team characteristics (Butler, 1991). These surroundings can have a richness of detail about them that is likely to be revealing about their occupants. Though not forming a major part of this analyses of organisations can enable inferences to be drawn about the perspective, meaning and understandings of the interviewee that cannot always be obtained through questioning and conversation (Maxwel, 1996). Such observation can also point to the circumstances of the participating organisation and can shape the direction and content of interviews. A summary of some of the more interesting of these observable organisational characteristics is included here in an attempt to convey the effect of ‘interview setting’ for the reader.

¹² Analysts of social sciences usually argue that true objectivity is impossible. See for example Sayer (1992), Maxwell (1996), May (1997).

Obviously each organisation was different but each place visited could be placed into one of three generalised groups. Firstly, there were large organisations; typically in the public sector like the local authorities, some of the regional agencies, some industry associations and the Police. Observation of these organisations often found them in older office accommodation, with no surrounding 'operational' side to the organisation on the same site. The office environment at many of these organisations seemed to be characterised by a drabness and was sometimes cluttered with piles of documents, plans and files. This could give the impression that the organisation had been in existence for many years and was perhaps slightly understaffed. It was particularly apparent within the local authorities, where staff sometimes gave the impression of being constantly busy and of wanting a reduction in workload or help from extra staff. This may help to explain the relatively long times scales and delays involved in decision making at some local authorities. Arranging an interview with some of these participants confirmed this as it was sometimes found to be difficult to arrange a mutually convenient date. It may be that the stresses of working in such an environment can lead to underperformance or demotivation amongst staff.

The second group of organisations that possess similar observable characteristics are clearly more prosperous since their office accommodation is better located, more expensive and contains high quality finishes and office furnishings. These organisations were usually the more profitable, larger private companies but also included some regional agencies and industry associations. The other noticeable characteristic about these organisations was that most seemed to have time to spare for thinking and planning. This was generally revealed in their interview responses, which were often insightful, more focussed on deeper issues and on longer term planning. Interview appointments were easier to agree and their 'image awareness' also seemed greater as many provided glossy corporate literature and internal newsletters. The internal newsletters provided were particularly interesting from an 'image building' viewpoint for two reasons. Firstly, they were aimed at company staff and usually contained favourable press cuttings of awards ceremonies, company social events and charity activities, all with plenty of pictures of people enjoying themselves. This contributes to notions of pleasant, happy, almost family orientated working environments. This is in clear contrast to the first group. Secondly, these internal, though not confidential documents were given to the interviewer, which is a

communicative and image promoting action in itself. The significance to the 'success' of these organisations that are due to these organisational characteristics is very difficult to assess, in no small way because of the highly subjective nature of the observations. But it remains a potentially very interesting avenue of future enquiry.

The third group of organisations that can be seen within the set of participants is characterised by smaller privately owned companies. These organisations were often totally different from the other two groups in their observable appearance. Many were family run, where the interviewee was the owner of the business and might also be a second or third generation family member. Interviewees often had multiple roles in their organisations, sometimes doubling as receptionists, mechanics, drivers or accountants. Many owner operators arranged loads, drew up contract tenders, ordered spare parts, dealt with advertising and marketing and attended breakdowns. Few of these organisations had more than one member of staff dedicated to office work and, where others were involved, they were often another family member or spouse. Offices were often of a low standard, drab, draughty and cold and slightly dirty due to oil and grease being present on the boots and clothes of staff who moved between workshop and office roles. In some offices photographs of fathers and grandfathers posing with vintage buses or lorries provided a reminder of more successful business eras. Where office heating existed it was often of the portable appliance type and some offices also doubled as meal rooms, containing kettles and microwave ovens. One particular office of a small bus company, and the interview that took place, provided the most interesting amalgam of these characteristics.

4.4.1. The language of premises: an example from a NE bus company

The company's premises comprised of only a single *Portakabin* that had been placed on top of another with a single means of access up a steel stairway, itself shared with an upper store room belonging to another company. The bus company rented some yard space on the same site as its office. The site was shared with at least three other companies, including a fleet of chemical tankers, a tank washing and decontamination facility and a heavy vehicle maintenance workshop. These companies all contracted some work between themselves on 'non monetarised' exchange basis. The interview was scheduled for 9.00am and the interviewee, the proprietor, arrived a little late

driving one of his own buses having just finished a service run. On entering the *Portakabin*, which was divided into a meal room for drivers and the owner's office, it was clear that the company took a 'minimalist' or perhaps highly efficient approach to costs. The office, its contents and the buses were the only capital assets of the company, all other space and facilities being rented. The interviewee took two chairs from the meal room into the office, indicating its probable low level of use and the accompanying pressure to be 'on the road' instead. The only desk was almost invisible under paperwork, spare parts boxes and a computer. The remainder of this space of around ten square metres floor area was almost entirely covered with bus seats, wheels, tyres, brake linings, various shaped boxes of spares, two filing cabinets, a bus bumper and an old bookcase filled with boxes of smaller items such as nuts and bolts. The light did not work and the wind noise made conversation difficult (this was also picked up on the tape recording making transcription difficult!). Undoubtedly the location had character, as did the interviewee who put forward some interesting, well argued, if slightly cynical ideas on the workings and politics of public transport and the local bus sector in particular.

4.5. Interview analyses

The underlying attitudes that are apparent within the expressed views of interviewees are of key importance to this research process as both the overt and implied attitudes to, for example, the environment or sustainability, can be compared with established knowledge in these areas. The way organisations reach their transport decisions, within their prevailing operational tensions, can be assessed alongside the literature and theory of decision-making and differences between theory and practice noted. Any such views that were not immediately obvious or partly obscured by the routine demands of the individuals' role were especially valuable since they are perhaps closer to the core beliefs and attitudes of individuals and every attempt was made to discover why these views were held.

Similarly participants' responses to a range of governance issues that might include, for instance, taxation, regulation or employment law can also be analysed within existing frameworks. By setting the data collected in the context of the theoretical and conceptual frameworks that underpin the project it is possible to make useful

comparisons between established theory and actual practice and, in doing so, make a contribution to the ongoing transport debate.

The research is based on interviewees' understandings of, and attitudes towards, the environment, in essence how important the environment is for them as representatives of their organisation. This will, along with other priorities, affect their transport decision making processes. The research sought to probe the understandings and awareness of individual decision makers regarding the environment. Since organisational decision making is influential, in the sense that decision outcomes carry greater environmental consequences, assessing organisational decision making against the theoretical themes of the project reveals processes, and key institutions or individuals, that are able to shape transport behaviour. In more practical terms it is about who can and who cannot influence transport behaviour, why such influence is possible and how the resultant behaviours match the breadth of policy intentions. In gaining an understanding of transport behaviours and influences it will be possible to assess the likelihood of current transport policies meeting their objectives. It will also help to identify alternative strategies that could be adopted to redirect transport development towards more sustainable, equitable and environmentally benign outcomes.

4. 6. Research Questions

Before outlining the general line of inquiry of the research a brief explanation of the positionality of the researcher is included. In any research the background, experience and understandings of researchers contribute to their perspective and will affect the course of their inquiries.

I am interested in how transport behaviour might be altered in the direction of decreasing the environmental burden of transport. Against a background of an inexorable rise in the demand for mobility if any trend towards environmentally positive transport choices is to begin it will depend on a change in the decision making context for individuals and organisations. Researching the contextual bases of transport choices therefore is logical. If environmental improvement is a serious goal

of policy makers, discovering how 'the environment' is conceived and prioritised within transport decision making is important.

The research questions that arise from within my overall aim therefore centre on the extent to which the environmental impacts of transport decisions are taken into account when organisations make their transport choices. From the responses collected from participants it has been possible to produce varying analyses of the importance of 'the environment' to organisations. An assessment of the tensions faced by organisations as they make their transport choices was also carried out as was an analysis of the ways in which social, economic and environmental concerns are included within the day to day organisational decision-making. From these analyses, and their interpretation alongside other published literature and research, an assessment has been made of the impacts of these decisions on attempts to restructure transport management towards more sustainable outcomes.

4.7. Decision making and structures of incentives

In their simplest form decisions are made by most humans on a virtually continuous basis and may be defined as simply as "the selection of a proposed course of action" (Butler, 1991). Strategically decision-making is a way to cope with and shape uncertainty without which there would be no decisions to make (March, 1988). Given that a range of factors exist as inputs to decision making it is worthwhile at this point, to briefly sketch some decision making theory in order to inform the analyses resulting from the fieldwork.

For the individual a number of assumptions are made within these definitions; that a choice exists within a particular area of uncertainty and that there is the intention to make a choice. For organisations decisions also have to be made on an ongoing basis and organisational decision-making is given greater complexity by the involvement of more people in the process. Another dimension to the complexity of multi participant decision making is based on the ethics of the process. Individuals have different standards and values and are likely to bring these to their decision making and some sort of ethical code or standard may need to be applied to choices at some stage. In

recognition of this a few organisations are beginning to include issues with an ethical dimension to their decision making. In 2001, for example, *Go-Ahead* formed one of the UK's first 'stakeholder boards'¹³ at their Oxford Bus Company. An independent member of this board cites the company's commitment to linking "principles and profits" (*Go-Ahead*, 2003:3) as evidence of their ethical approach to business¹⁴.

In any analyses of either individual or organisational decision making other factors must be considered. These relate to the embedded viewpoints and assumptions that exist in the minds of decision-makers that can affect how decision-makers ultimately make choices. For transport decision-making in the context of this research project the embedded attitudes and understandings of 'sustainability' and of 'the environment' in the minds of decisions-makers will form an important line of enquiry. Other more specific understandings of key components of sustainability and environmental debates relevant to this research will also be explored. These could include, for example how individuals making organisational choices conceptualise 'emissions', 'environmental impacts' and 'recycling' or the difference between 'essential' and 'non-essential' travel.

Organisational decisions are made by groups of individuals and this further complicates decision-making processes. Decision outcomes can be shaped by negotiation and compromise within organisational decision processes and conflict may be resolved or suppressed for the sake of reaching decisions (Collingridge, 1992). Elements of trial and error within decision-making are also particularly relevant in such an analysis since much transport policy is embarked upon with little certainty that the policy outcomes will match the intentions.

There are a number of basic steps taken in virtually every decision whether taken in simple form by an individual, or as complex multi-faceted choices made by large organisations. These steps have been defined in various ways (see for example Butler, 1991; Tonn, English & Travis, 2000) and can be summarised as follows:

¹³ The stakeholder board comprises representatives of the employees, trade unions, employers, management, local government and customers.

¹⁴ More detail is included in chapter 7.

Realisation: This is the point where it becomes clear that a decision on a particular problem is needed.

Diagnosis: Leads directly from the realisation that action must be taken and is the stage where the problem to be tackled is clearly defined. Mistakes made at the diagnostic stage are very likely to lead through subsequent stages to undesirable or sub-optimal outcomes.

Options design: Possible solutions to the problem are sought by gathering information on options and formulating possible solutions. This is a critical stage of the process that relies on full and accurate information gathering. If key information is omitted from the process poor quality decision options are likely to result.

Evaluation: each potential solution is assessed. If a collective decision is to be made then all those taking part should be involved to ensure the fullest possible assessment and to avoid 'fallout' problems if the process reaches a poor final decision.

Choice: From the assessment the optimal decision is made within the set objectives.

Depending on the gravity of the choice that is faced the 'choice' step could be the end of the procedure. However for organisational decision making two further steps are sometimes necessary:

Authorisation: In an organisational decision the final choice may need to be confirmed at a higher level within the organisation. This can be for a wide variety of reasons that could include co-ordination with other decisions and objectives, the time or financial commitment required in accepting the recommended choice or the image projected by the choice. Once these hurdles have been cleared and the implications of the decision for the organisation have been accepted implementation of the choice follows.

Implementation: Decision implementation in an organisational context often requires a commitment to the decision over time. This may include regular audits of the implementation process and the progress of the chosen course of action. An ongoing

commitment of financial and manpower resources may stem from this until implementation is completed.

Transport decisions are made at various scales within the processes outlined above and these decisions fall within an approach to decision making described by Butler (1991) as the “political approach”. This view of organisational decision making recognises that shifting alliances of interests can last for as little as only one decision or evolve over long periods. Within this model some choices are made by participants who are able to bury their differences temporarily for the sake of reaching a decision. This process is obviously highly political and involves compromises and ‘trade offs’ between the participants’ competing interests. This style of decision making is typical of governance processes. For this research it is important to acknowledge the role of actors and institutions within governance processes. The landscape of decision making affects the decisions taken. This attempt to analyse transport choices and links to sustainability therefore includes the contribution of the decision making context of the governance landscape.

4.8. Governance and transport decision making

A substantial body of literature exists on the subject of governance and numerous writers have contributed to the debate and literature that attempts to quantify and explain ‘governance’¹⁵. The reasoned argument of many years has taken the discourse through space and time on a tour of institutions, actors, interests, networks, processes and regimes in an effort to develop the conceptual frameworks of governance. Such frameworks remain contentious, due in part to the transient nature of governance but some key theoretical and conceptual understandings have emerged. Researchers generally accept that a multitude of competing interests, represented in the lobbying and networking activity of a range of governmental and non governmental participants, constitutes the stage upon which governance actors operate. In terms of this analysis what precisely constitutes a governance actor or network is not of primary concern, what is of interest though is the actions of the actors and how they affect each others performance and, to continue the metaphor, the course of the play.

¹⁵ See for example Putnam, 1993; Hirst, 1994, 1994; Cohen&Rogers, 1994; Amin 1996; Smith & Stacey, 1997; Rhodes, 1997; Brinkerhoff, 2000.

Governance analysts therefore generally accept the presence of networked interests operating within and across a variety of contextual scales, spaces and times. Not surprisingly analysts differ in; the importance they attach to the various characteristics of governance; what constitutes good governance; how they see governance developing; and on what they recommend as the most appropriate and effective models of governance. Attempting to bring this wide variety of concerns, interests and perspectives together into some sort of coherent structure remains difficult and, according to Rhodes (1997), the fluidity of the spectrum of 'governance' confers multiple meanings to the term. In recognising the multifaceted nature of governance Rhodes remarks that it has 'too many meanings to be useful' (Rhodes, 1997:14), but adds his own interpretation that amongst its meanings the 'minimal state, corporate governance and new public management' (Rhodes, 1997:14) characterise the current state of governance.

4.9. Governance and the market paradigm

Few would argue that economic concerns, both in terms of individual and collective 'self' interest, represent a powerful influence at all scales in governance processes. Economic or financial motives are the dominant underlying force in much decision making and confirm the old adage that 'money' does indeed 'make the world go round'. In this sense at least all governance actors face a similar problem in that they must all operate within the broad battleground of an economically dominated governance landscape and take their chances against all the difficulties of that place. The financial strength of the actor and that of any supporting organisation or network can, in this context, provide defensive protection by, for example, the use of legal or procedural challenges to slow the processes of unwelcome change¹⁶. Financial strength can also provide the assault weaponry necessary to survive, perhaps by making contributions to political campaigns to curry future favour from elected

¹⁶ The ongoing debate over foxhunting provides a recent example. The 'pro hunting' lobby has drawn successfully on its supporters in both Houses of Parliament to slow the progress of the proposed ban by tabling numerous amendments, which have during a previous attempt to introduce a ban, meant that the legislation failed to become law because the time allotted for debate expired before a vote could be taken.

leaders¹⁷. In these ways it is possible for wealth to buy influence and gain advantage over other governance actors, deliver benefits to constituencies and allow the self interest of the participant to be maintained. Similarly, campaigns of civil disobedience¹⁸ and proactive public protest¹⁹ can also influence debate and policy outcomes. This inevitably affects the balance of reasoned argument within governance debates and allows some governance participants to exercise disproportionate influence within governance processes²⁰. This, in turn, can lead to unexpected and unintended policy outcomes appearing within governance arenas. Within transport debates powerful participants exist and actively try to influence policy outcomes towards their own interests.

The reality of informal and subtle influences on governance processes are likely to reduce the chances of agreeing sustainable policies and create problems within democratic processes for three main reasons. Firstly, since they are unaccountable to the electorate, networking single interest groups may burrow deeply into the system and serve their own interests, which could simply be their own financial gain. Secondly, groups that represent a specific interest can distort the overall policy aims of governments within governance processes by giving disproportionate weight to their own agendas and relegating other, perhaps more widely important interests, behind their own ambitions. Thirdly, the presence of single interest groups that can exert control disproportionate to their size and importance has implications for democracy and democratic accountability. Failure to limit the influence of single interest groups within governance processes denies equitable participation to the community as a whole and is likely to produce a disillusioned electorate (Putnam, 1993).

The observations of researchers suggest that the systems of democratic governance that have endured across the industrialised world for the last half century have

¹⁷ The contribution of £1m from *Formula One* motor racing to the *Labour Party* shortly before a commons vote was taken on whether to ban tobacco advertising from sport was widely interpreted as an attempt to buy influence.

¹⁸ Such as were seen during the 'Poll Tax' riots of 1992.

¹⁹ The protests against various airport expansions and road schemes have attracted significant proactive protest from 'eco warriors' willing to tunnel under key locations or suspend themselves in trees awaiting clearance.

²⁰ For example, concerns of this sort are at the heart of the debate surrounding proposals for UK political parties to receive state funding.

become the hostages of market forces²¹ and have encouraged and maintained a fundamentally unsustainable societal model²². Within this model the characteristics of transport epitomise development trends, in that transport is becoming more private and less public, travelling over longer rather than shorter distances, demanding more and more space for roads and parking whilst vehicles themselves are becoming increasingly unsustainable²³. These trends are made possible because of societies' governance structures that allow and encourage resource greedy transport systems, infrastructure provision and vehicle purchasing. Within this free market the state retains control of the structure of capitalist society, maintaining and supporting the conditions that allow the market to function. Pro car lobbies and interest networks in general, and in particular the vehicle manufacturing and fuel supply sectors, have worked within this liberal system and succeeded in obtaining considerable advantages for their products through general subsidies of road transport (Paterson, 2000). For example the provision of roads has cost billions of pounds of taxpayers money and this represents a subsidy to road users that is not provided to alternative modes²⁴. The subsidy issue is itself highly contentious within transport governance, with opposing strongly held views expressed as to whether motorists pay adequately for their road use through taxation. Regardless of the merits of this particular argument governance regimes have facilitated the growth of the 'great car economy' in permitting economic growth to be based on subsidised, personal mobility whilst also allowing the deterioration of public transport systems. Indeed Paterson cites governance collusion in the

"progressive neglect and downgrading of public transport and non motorised forms of transport" (Paterson, 2000:101)

²¹ See Putnam (1993), Hirst (1994, 1994), Cohen&Rogers (1994), Smith&Stacey (1997), Rhodes (1997).

²² See Whitelegg (1993), Hemple (1996).

²³ For example, vehicle weights are increasing, seen especially in the growth of the Sports Utility Vehicle (SUV) market. SUVs are typically four wheel drive, exceeding 1.5.tonne gross weight and return comparatively poor rates of fuel consumption. This is in part due to additional power consuming equipment, particularly air conditioning (SMMT, 2003). Marketing strategies that promote individual benefits, such as speed, acceleration and cool interiors, without presenting the environmentally detrimental aspects of vehicles to the buying public support increasingly unsustainable trends in vehicle fashions.

²⁴ Air travel is the most unsustainable form of transport and also enjoys subsidies not granted to other modes, the most obvious example being the zero tax rate applied to aviation fuel.



as a key reason for the growth of car based lifestyles. Twenty first century, industrialised world transport has become the transport of the market or 'market transport'²⁵. It is dominated by roads, and the car in particular for passenger transport and by the lorry for the movement of freight.

4.10. Governance and unsustainability

Governance arenas provide the structural setting for institutions and their associated networks to include sustainability and environmental concerns, *if they so wish*, within their discussions and decisions. The processes of governance that are at one level dominated by an economic agenda, and at another by reinforcing and legitimising themselves, face difficulties at this point. Environmentally detrimental activities can have negative economic effects; for example the increasing number of climatic events that cause widespread, and expensive, physical damage to homes, businesses, transport infrastructure and vehicles and cost lives, have been linked to global warming (Tucker, 1997). Global warming itself is associated with fossil fuel burning activities such as transport. The increased use of transport is responsible for increased congestion and reductions in air quality (The Independent, 16/09/00). Congestion is estimated to cost UK business around £20 billion annually (Telecommuting, 2000), whilst poor air quality is associated with the costs of health care to treat respiratory disorders²⁶. Also as the general trend continues towards private personal transport, in preference to walking, cycling and public transport, health complaints associated with reduced exercise, such as heart problems and obesity²⁷ are increasing (Hillman, 1997). These also impose additional financial and social costs on human society. The economic benefits associated with modern transport behaviours are therefore associated with other significant economic disbenefits. The contradiction for governance actors is that a failure to intervene in markets on behalf of the environment raises economic costs, whilst draconian environmental protection interventions, perhaps in the form of restricting environmentally damaging activities

²⁵ Competing concepts of 'transport' such as 'market transport' are explored more fully in chapter 3.

²⁶ For example, asthma where the number of UK sufferers increased by 140% between 1982 and 1994 (Telecommuting2000).

²⁷ Other health complaints associated with a general lack of exercise include hypertension, coronary heart disease, strokes, osteoporosis, loss of muscle mass, weakening of the immune system, some forms of diabetes, some forms of cancer, depression and anxiety. A fuller description of the health benefits of exercise can be found in Morris *et al* (1990).

like travel, through regulatory or fiscal means, might limit economic opportunities or competitiveness. This dilemma is contrary to typical economic models and is further complicated temporally in that, whilst economists well understand the benefits of investing for future returns, they are not so familiar with restricting current economic activity in order to maintain economic activity in the future (Hemple, 1996). Reducing these dilemmas to the individual level reveals a significant ambivalence towards private motor transport. Paterson states that in interview evidence

“cars were identified both as the most visible threat to the environment and as an essential part of life that cannot be done without” (Paterson, 2000:177).

Since private motor transport is virtually ubiquitous in industrialised world society (Whitelegg, 1993) the key actors and participants in governance processes are likely to hold similarly ambivalent views about their own motoring habits. This is confirmed by a members survey carried out by the *Automobile Association* (AA, 1997) in which respondents expressed the view that public transport should be improved, and more widely used, whilst simultaneously making excuses as to why *they* could not use it. In short survey respondents wanted more people on public transport to reduce congestion for *them*. Similar findings were noted by Tolley and Hallsworth (1997).

These ambivalent attitudes are at the heart of the policy dilemmas of governance processes and mitigate against the chances of developing Tocqueville's notions of 'self interest properly understood' (Putnam, 1993) within governance. Dealing with such deeply held conflicting views and moving from car dominance towards more sustainable transport patterns is likely to be very difficult and meet with ingrained resistance. This is because it is not only about changing economic, social and environmental policies and about adjusting to the possibilities offered by new technologies, but it is also about challenging individual and collective identities (Paterson, 2000) that continue to favour the motor car whilst *notionally* supporting protecting the environment from it. A comparison between the present situation and some historical evidence illustrates the point.

“While most (countries) are busily creating pedestrian only spaces and, providing bike routes, applying speed limits and calming traffic, two problems emerge. The first is that these

laudatory efforts occupy only a small fraction of total urban movement space, and the second is that they are placebos – they divert attention from the real sickness, which is the continuing growth in ownership and use of the private car” (Roberts, 1990:302).

Since this view was expressed the Labour government’s integrated transport strategy (DETR, 07/1998) has appeared and been embedded into local authority governance processes with the introduction of local transport plans, regional transport strategies and the voluminous quantity of related policy documents that follow the policy themes of moving towards integrated and sustainable transport²⁸. Guidance on *Full Local Transport Plans* (DETR, 03/2000) for example, states categorically that the government expects a 300% increase in cycling between 1996 and 2012 and detailed guidance on the type of infrastructure and monitoring required to achieve this is given (DETR, 03/2000:38). On the one hand ‘green infrastructure’ provision is clearly continuing and to a greater extent than in 1990. On the other hand though UK new car sales are reaching record levels (SMMT, 2003), congestion continues to increase (TfL, 2003) and the growth in cycling is sluggish (Tolley & Hallsworth, 1997).

Though much of the evidence offered here refers to increases in transport use generally, and to increased demands for private personal transport in particular, the evidence does *by implication* suggest that the pro public transport, integrated transport paradigm is unreachable within present policy design that relies on voluntary changes in human behaviour. The implication of this historical perspective indicates that it is doubtful whether national and local governance arenas are capable of addressing effectively the environmental problems of transport because, behaviourally, little has changed over such a long period. Within local governance arenas Vigar *et al* summarise the percolation of an environmental agenda into the policy processes of local governance;

“The incorporation of environmental agendas was the key change in policy content, but there was little change beyond one of a shift in policy rhetoric and little evidence to suggest that much changed in the way decisions were taken in localities, or in the frames of reference of key policy makers”(Vigar *et al*, 2000:88).

²⁸ Chapter 3 contains a more detailed discussion of transport policy.

In their analysis of economic, environmental and social concerns at the sub national scale of county council planning authorities Vigar *et al* reveal the conundrum of unsustainability within sustainable development policies. Given the observable human ambivalence to transport and the environment within individuals and governance communities 'self interest properly understood' may be incapable of delivering an effective form of governance that can steer human development towards integrated transport and much less, achieve sustainability. Hempel (1996) suggests this in advocating changes in the structure and institutions of governance arenas in favour of 'environmental governance', mentioning the environmental costs of industrialised world lifestyles and the possibilities for significant changes in governance.

"(R)edesign and conversion efforts are unlikely to flourish unless the values and aspirations that have guided twentieth century development are widely re-examined in the light of the unacceptable environmental costs they have created...Major political institutions, policies and markets will have to be deliberately altered to facilitate greater international co-operation. Portions of sovereign state power will have to be redistributed to both ends of the governance spectrum - local and global" (Hempel, 1996:9).

In raising the issue of scale within governance Hempel echoes the 1992 Earth Summit's clarion call of "think global, act local" (UNCED, 1992) and has touched upon an area of governance that continues to raise questions of the appropriateness and relevance of the structures and scales of decision making.

4.11. Green lobbies, 'greening' and environmental governance

The redefining and restructuring of governance towards the minimal state through hollowing out, deregulation, privatisation, agency creation and, more recently, increased public private partnership has radically changed the nature of UK governance (Rhodes, 1997). It has allowed, even encouraged the growth of networks of interests that include influences from lobbyists, pressure groups, quangos and appointee bodies (*ibid.*). This has given the environmental lobby a timely opportunity to increase its influence within rescaled and redefined governance structures and given environmental considerations greater visibility at various political scales. The

absolute growth and growth in influence of 'the environment' horizontally within governance processes has a variety of aspects.

Firstly, there is a wider awareness of 'the environment' and environmental issues across human society (Gardner & Stern, 1996; Hunter *et al*, 1998; Gibbs, 2002). Environmental debates that were once the preserve of small sections of the academic and scientific communities have broken out into the global community. Environmental problems have been debated at two 'Earth Summits' and a number of other global gatherings, by an increasingly diverse range of participants including governments, NGOs, big business, development agencies and environmental pressure groups. Issues discussed have ranged from climate change to endangered species, deforestation to over fishing, greenhouse gases to sustainable development, GM food to rising population, biodiversity and globalisation. Notions of, and debates around, 'sustainable development', 'sustainability' and 'the environment' have entered the language of many arenas of governance, including transport, and this represents a general expansion of environmental awareness (Gardner & Stern, 1996; Vigar, 2002).

The business community has also been affected by this increased concern for the environment and many companies now include environmental reporting within their corporate information packages. This is due in part to environmental legislation introduced to control post production wastes and discharges to atmosphere and watercourses²⁹. In order to meet these legislative requirements and to collect data for corporate reporting an accompanying trend has seen the emergence of 'environmental management systems' (EMS)³⁰. These management systems are also rooted in earlier quality control and 'quality assurance' programmes set up in many industries to improve products, reduce costs and increase profitability. These developments in the governance arenas of policy and business communities have resulted in a subtle restructuring of decision making to include environmental concerns. The accuracy of the analysis of Vigar *et al* (2000) that only the policy rhetoric has changed is not in dispute here, but what is occurring is that environmentally aware, or environmentally educated, individuals are being recruited to work in these areas. Their task is to develop policies, strategies and structures for data collection and decision making that

²⁹ Covered in the UK by The Environment Protection Act 1990 and The Environmental Act 1995.

³⁰ EMS are reviewed in greater depth within the cases studies of this thesis.

will accurately reflect the various environmental priorities or concerns of their employers. Obviously engaging such individuals raises organisational awareness and changes in organisational behaviour are likely as a result. Less obviously, the individuals involved also bring their personally held beliefs and preferences to their work and this may, over time, change the the salience of the environment within key organisational decision making circles and have a longer term effect on organisational behaviour.

A second way that 'the environment' has grown in importance within governance processes is centred on the individuals and organisations within the 'green' movement who have drawn attention to environmental issues in a variety of ways. One tactic of individuals has been to relocate themselves within more formal governance circles and in doing so influence processes from the inside. This is similar to the above suggestion but represents a more determined tactic by environmentalists rather than simply one of taking suitable employment. In the case of individuals, it is characterised by dedicated environmentalists seeking influential positions from which to attempt to influence governance debates. Sir Jonathan Porritt, for example, the former executive director of *Friends of the Earth* (FoE) left the campaigning pressure group to head the *Commission on Sustainable Development*. This appointment perhaps signals a personal change in focus for the individual, but also transfers the knowledge and experience gained over many years to a governance participant perhaps more inclined to a statist viewpoint. Regardless of whether the individual has a greater effect on the organisation or *vice versa* environmental awareness is raised and spread as knowledgeable individuals permeate governance arenas.

Thirdly, appointing individuals with expertise in environmental issues is also an implicit recognition within the governance community that it was lacking in some way, that it needed to broaden its skills base and perhaps introduce a shade of green to the polity. The fact that the governance community of the policy and business sectors are prepared to create their own 'environmental' sub sectors within their organisations and recruit into them clearly demonstrates that environmental awareness has already grown significantly. The engagement of prominent individuals therefore represents an image conscious dimension that may help an organisation appear a brighter shade of green.

Fourthly, a quite different tactic of individual environmentalists has been to raise environmental awareness in the public mind through the media and activists have used increasingly bizarre methods to both prevent infrastructure developments going ahead, and to court publicity to further environmental causes. For example, protesters tunnelled under the sites of proposed extensions to Manchester Airport, and in spring 1997, under an extension to the A30 in Devon, where a character known as 'Swampy', who eluded bailiffs in a network of tunnels for seven days, came to symbolise the protests (*The Guardian*, 06/08/1999). Other tactics have included protesters encasing their limbs in concrete filled oil drums, suspended high in trees to make their removal from site as difficult and dangerous as possible for the authorities. This kind of protest has, from time to time placed environmental issues under intense media scrutiny prompting Paterson to note that

"for a few weeks in January and February 1997 Swampy was one of the most talked about figures in British political debate, and his popularity endured throughout early 1997" (Paterson, 2000:94).

The media spotlight contributes to the prominence of the environment and of environmental protection in the public mind (Gardner & Stern, 1996). With new knowledge, individuals, if they are sufficiently interested, can then develop their interest into more complex understandings of environmental issues and transfer these into the social or employment spheres of their lives.

Similarly, organisations, like individuals, have been innovative in developing methods to raise the profile of the environmental lobby and strengthen its arguments. FoE and *Greenpeace*, for example, use sophisticated scientific research, often produced by independent academics to support their campaigns³¹. The use of expert scientific evidence in supporting campaigning strategies is, at face value, helpful since it adds

³¹ The *Greenpeace* campaign against the dumping of the redundant *Shell* oil platform the *Brent Spa* some 200 miles off the NW coast of Scotland produced 'evidence' that the rig contained in excess of 100 tonnes of pollutants including sludges and heavy metals (Gardiner&Matthews, 2000). The company denied the *Greenpeace* claims but the organised boycott of *Shell* fuel stations and products across Europe resulted in the company abandoning the dumping attempt in favour of dealing with the wastes during the dismantling the structure in a Norwegian fjord. Subsequent evidence gained from the dismantling process supported *Shell's* claim that much lower levels of harmful pollutants were present in the structure (NERC, 1998).

credibility to argument. However, in the *Brent Spa* case, despite the fact that the 'evidence' turned out to be incorrect (NERC, 1998) a well organised protest campaign led *Shell* to change its decision in a triumph of image over substance. This case highlights the problem of confusion for the public and electorates in deciding the merits of claims and counterclaims and is at the heart of environmental politics. *Greenpeace's* campaign against a global oil company undoubtedly delivered good publicity for the pressure group, at least initially, but may have had as much to do with raising funds and promoting *Greenpeace* as an organisation.

4.12. Conclusions

These developments within the decision making polity of governance suggest that a long term process of absorbing environmental concerns into governance and policy processes is underway. The accompanying raising of awareness that has affected operational, managerial and recruitment decisions within state and public sectors is having a 'greening' effect on organisations. Within this research interview evidence has been gathered that suggests institutional greening taking place within NE transport governance³². Greening has included changes in the language and style of policies³³, the use of environmental criteria to achieve traditional policy goals³⁴ and the adaptation of regular commercial practices to include green image benefits³⁵. Similarly 'green' bus priority measures have been provided without the back up of monitoring or enforcement to ensure their success³⁶. 'Greenwashing', it seems, is widespread. These developments support Roberts' (1990) observations of a greening of transport infrastructure but without an associated change in transport and travel behaviour. Overall this evidence supports Paterson's (2000) views on the ambivalence of society towards its transport requirements.

Since the same greenwashed governance arenas are the ones that contain the deliberative mechanisms of decision making, discursive engagement within these processes will remain a necessary part of the activities of environmental pressure

³² See chapter 5.

³³ Also noted by Vigar *et al* (2000:88)

³⁴ See chapter 5.

³⁵ See chapter 6.

³⁶ See chapter 7.

groups. Only by remaining engaged will environmentalists be in a position to bring more than fresh coats of greenwash to policy.

Existing environmental protection measures have been organised and legislated upon within the field of governance. An alternative means of moving policy debate forward within a system that features democratic accountable governance is not available. The values and institutional structures currently in use within governance processes will set the priorities for the future of environmental protection. The landscape, and evolving territories within that landscape of governance remain fluid and because of this opportunities to influence governance persist. For green lobbies this is an encouragement for them to challenge the polity of governance and bring environmental priorities to the fore by applying the same tactics deployed by other lobbies. Hempel argues for continued engagement within governance because the principle priority of governance processes; the economy and markets are

“derivatives of politics and probably always will be” (Hempel, 1996:10).

The basis of his point is that, a system of control remains that is able, *if* sufficient political courage exists, to bring about changes within the ‘dominant coalition’ (Rhodes, 1997:39) surrounding economic priorities. This is perhaps why prominent green lobbyists are moving inwards and upwards in the networked governance community.

If transport policies are to be developed that can be applied in harmony with policies that are aimed at improving sustainability then those forming and taking the decisions must be in possession of all the relevant information. This again suggests the need for a multidisciplinary, holistic, or ‘joined up’ approach to solving the environmental problems attributable to transport (Hoyle & Knowles, 1998). In recent years a body of literature has developed around environmental legislation that has encouraged the inclusion of environmental issues into organisational decision making. Much of this work is associated with the environmental impact assessment requirements of planning legislation. Given transport’s close relationship with the environment this offers two distinct possibilities for sustainability and transport decision making. Firstly that some tradition of including transport within environmental decision

making already exists and that this can be built upon more fully to include the long-term effects of transport operations on the environment. Secondly, there are also possibilities for including the concepts and goals of sustainable development into transport decision making within both governance and operational arenas. This is achieved through the consultative processes of decision development. In attempting to discover how the environment is conceptualised within the minds of transport decision makers it may be possible to reveal gaps in the understandings that underpin decisions and suggest ways to fill those gaps.

In summary then, this research project is attempting to draw together some diverse theoretical viewpoints from within debates on 'sustainability', 'decision making' and 'governance', and use these to provide a context in which to focus on transport's relationship with the environment. The following three chapters of this research focus on the three groups of transport organisations outlined in this chapter. The research evidence collected from these organisations is presented as an ongoing illustration of these organisations' interpretation of transport policy.

Chapter 5: The provision, regulation and governance of road space

This chapter introduces the first group of organisations featured in the research. They include local authorities, regional agencies and government agencies that exercise control or influence over NE road space¹. The role of these organisations places them in a strategic position in the transport sector and allows them to influence transport behaviour in a variety of ways. Local authorities use, for example, traffic control measures, road provision and parking space to influence transport patterns. Other more controversial potential incentives are also available to them such as workplace charging and congestion charging. The latter is currently being used by one authority in the region to control traffic flows. Local authorities and other agencies also have a wider policy role and can use this, often in the form of planning controls or in investment and subsidy decisions, to influence transport and travel patterns. The effect of these opportunities on transport decision making will be examined in this chapter. The chapter also includes a detailed case study of the decision making processes of one particular organisation as it dealt with the issues raised during the planning, consultation and introduction of the UK's first congestion charging scheme in the historic centre of Durham City.

Chapter 3 of this thesis highlighted a period of critical re-examination and reconstruction of UK transport policy taking place in response to a growing awareness, both inside government and in wider society, that existing transport systems are increasingly unable to meet the transport and travel demands of twenty first century society. The Transport Act 2000 and the preceding White Paper have set a new policy context in which local and regional authorities are the institutional channels through which the policy aims of central government flow. These organisations have differing roles though overlap does exist; regional institutions are charged with producing strategic, region wide responses to transport policies, whilst local authorities are responsible for policy delivery in their own areas. The Local Transport Plan (LTP) process that emanated from the White Paper has placed local authorities in the front line of efforts to restructure UK transport behaviour. Local

¹ Five local authorities, three regional institutions, one joint local authority group and a PTE took part in this research. Appendix 1 contains a list of the organisations that contributed to the research.

authorities have been empowered with a range of measures and substantial additional funding (CfIT, 2002) to implement the government's five core objectives for transport². Regional Transport Strategies (RTS), also proposed in the White Paper, provide the over arching regional dimension to UK transport policy. The overall policy process, involving different but complementary plans and strategies, at a variety of scales, is a significant step forward in moving towards more fully integrated transport.

Organisations participating in this research are therefore at the interface between policy intention and public expectation, placing them in a good position to relay the concerns of each of these constituencies to the other. Primarily local authorities are responsible for the organisation and delivery of public services, including transport, in their localities³. Another key aspect of their role is to deliver some government policy in their localities and these roles overlap where local public services are provided within a centrally designed policy framework. Though local authorities raise some of their finances through local taxation considerable sums originate from central government and this places local authorities in the position of being accountable to both the government and their local constituency of electors. Because of this they are usually sensitive to both local public and government opinion. For local authorities local transport is one such concern, that is in large part centrally directed and funded, but impacts most clearly on local people with the result that transport issues can be locally specific, highly contentious and politically sensitive. In practical transport terms local authorities are responsible for the organisation, regulation and funding of road space. Theoretically local institutions are highly influential, key participants within governance arenas and policy processes (Pemberton, 2000). How they construct the environment within decision making processes is therefore of great interest to this research since the outcomes of these decisions have the potential to affect the interests and decision making processes of others⁴ in and around their areas. The role of regional institutions within policy processes is similarly important since they provide a spatially wider advisory and decision making context for governance

² See DETR, 07/1998; DETR, 07/2000A.

³ Table 5.1. found later in this chapter illustrates the roles and responsibilities of local and regional authorities

⁴ In terms of local transport 'others' could include any individuals or organisations wishing to use or provide some sort of transport.

participants, though they do not share the same degree of direct local accountability. Regional and local institutions are therefore the bearers of their constituents' agendas in transport debates.

This research project began an examination of transport debates at the point where the 'new consensus' of demand management challenges the 'predict and provide' culture of traditional transport planning and provision⁵. This coming together of these and other transport policy themes with the acceptance in many quarters that policy decisions taken in isolation from other policy disciplines are likely to lead to sub optimal outcomes (Button, 1993) provided the underpinning theoretical context for the research interviews. Despite recent developments in the further institutional restructuring of transport governance at the state scale, current UK transport policy debates centre on integrated transport, demand management, the increased demand for mobility and the spatial, environmental and congestion consequences of present transport and travel behaviour (Hoyle & Knowles, 1998; Smith *et al*, 1998). The transport policy professionals interviewed in the course of this research are working in a decision making environment that seeks to bring these diverse strands of theory, policy, interests and behaviour together.

This fieldwork analysis attempts to examine the tensions of trying to address the demands and concerns of variety of stakeholders as local and regional authorities execute their transport policies. The analysis also examines the extent to which these NE transport institutions have developed inclusive, 'joined up' institutional structures and responses to policy initiatives. This research will therefore present a qualitative analysis of discrete parts of some of the institutions operating within the NE transport sector. It is perhaps also worth noting at this point that without exception all of the institutions discussed here have many other diverse 'non transport' interests and responsibilities that may influence their.

Three core themes, each with various sub themes, emerged during the interviews and these themes continuously colour the different strands of debates explored throughout the chapter. Firstly, an assumption that seems common throughout policy

⁵ See chapter 3.

communities that road provision is a prerequisite for economic development. The second theme centres on the processes of policy making and discusses various problems and challenges faced by policy communities. The third core theme of the chapter explores the 'greenwash' gap between policy rhetoric and the reality of policy delivery.

5.1. Providing roads to prosperity

Most UK transport policy practitioners have followed career paths where the 'predict and provide' approach to transport planning, and its close association in the minds of many with economic development, has gone virtually unquestioned during their professional lives. This traditionally held assumption has become firmly embedded and new policy initiatives that seek to challenge established transport thinking and behaviour face considerable resistance. Many of those interviewed in this research began their careers in an atmosphere such as this and appear to have taken on the assumptions, attitudes and actions that have prevailed within the thinking and behaviour of transport policy communities. Some of these embedded assumptions appear to be increasingly 'out of step' with the overall thrust of emerging transport policy and are perhaps causing some difficulties within transport policy processes, as outcomes appear to be differing from intentions. An example of this is provided by Vigar *et al* (2000), who note that the structure plan of Lancashire County Council proposed a high level of road building whilst simultaneously promoting a sustainability agenda. They point out that the two aims cannot be seen as consistent. The inference, for this research from Vigar *et al*'s evidence, is that traditional, embedded assumptions and viewpoints on transport provision as a precursor to economic development, appear to be promoting traditionally high levels of road provision, on what can only be described as a predict and provide basis, but dressing them in green within a sustainability agenda. This is further supported by the discovery that the draft structure plan had been re-ordered and re-titled in such a way as to give the *appearance* of having a green agenda, but with its substance virtually unchanged (Vigar *et al*, 2000).

For the north east region's transport policy practitioners the ideas and assumptions that have become part of the traditional transport policy landscape contain a common

theme that economic prosperity is linked to road provision. The view of many, that road provision is synonymous with economic development, is firmly embedded as an underlying assumption in transport policy and is clear in interview responses. RCS1, a regional civil servant with the Regional Development Agency (RDA), suggested that;

“If you look at other regions across Europe some of the successful regions have first class road construction, they have other things there as well, but that doesn’t mean that you allow your road construction to decline or not improve it. But it is about opening up the region from an economic point of view and its very important that people perceive the region to be uncompetitive because they can’t get in and out, if the access is poor from all modes of transport then the region will not be able to compete for inward investment” (Interview with RCS1 12/02/01).

This view is not surprising from an organisation with a “predominantly economic focus” (Pemberton, 2000:303). It *specifically* links road provision to economic regeneration and competitiveness and suggests that for a region to be successful it must have *first class* roads. This could in fact be implying that to stand a chance of being economically successful a region not only needs roads but the best roads possible, which in the UK, would mean to motorway standard.

Similarly LGO1, a local government officer with *Newcastle City Council* and also head of the joint local authority group that have produced the joint local transport plan for Tyne and Wear, with an additional emphasis on social conditions put the view more strongly.

“That’s the key issue; that this region has some of the worst social and economic characteristics of any conurbation and a contributory factor in that is its isolation, look at the map of the motorway network and it stops just north of Leeds and that seems to be a far bigger strategic issue than some of the significant regional schemes” (Interview with LGO1 27/03/01).

These comments make the assumption that economic prosperity cannot be separated from transport and particularly road provision and only one interviewee, RCS3 of the Government Office for the North East, questioned the wisdom of this view saying

“in many ways we have had 20-30 years of this traditional approach of road building, of out of town developments and it’s often not done the region any great favours arguably. You know, we’ve done this for 30 years and it’s not worked so why should we think if we do it for another 30 years it would work?” (Interview with RCS3 02/04/01).

Though the interviewee is not arguing against road provision he is saying that the approach is not sufficient. Whether this view from the Government Office will lead to wider questioning in the region of the link between transport provision and economic development, or that other important factors are also involved in regeneration, is not clear. As the leading regional agency of central government the Government Office is in a useful position to encourage such a debate.

In addition to their professional capacities interviewees are also a part of wider society that has become accustomed to motoring benefits. Their established individual assumptions surrounding transport and the environment are not only likely to have been strongly influenced by their career paths *but* also by their life experiences external to their work experience. Some of these individual assumptions are likely to be intuitively, rather than consciously held but within the views of these institutions there may be personally held elements of preference. Commenting on what the interviewee saw as passenger frustrations experienced when travelling by bus LGO1 of *Newcastle City Council* said,

“because you may gain five minutes when you hit the priority lane, but the penalty for that, you’ve got the time for everybody else getting on paying cash and delaying the whole process. There’s been no radical look at the disincentives to use bus travel. Nothing radical has been done, certainly in this area, around speed in boarding, we still have the bulk of passengers boarding, paying a cash fare, which is usually a ridiculous sum of various coins and then the driver has to give you change. My journey to work which is regularly by bus; it’s a twenty minute bus journey and it’s a twenty minute journey waiting for people to get on and exchange coinage and that’s just not attractive” (Interview with LGO1 27/03/01).

It could be that frustrations attributed to public transport passengers may be a real disincentive to use public transport. They may be a reflection, in part, of a personal dislike of delays *he* experiences when travelling to work by bus and also reflects the Automobile Association’s (1997) findings of ambivalent attitudes towards public transport use. Clearly this is somewhat speculative, but it is important as it illustrates

the difficulties that can appear in distinguishing institutional and individual viewpoints within the attempts to analyse how interviewees construct particular viewpoints. Purely objective viewpoints are not possible since elements of subjectivity that are the result of personal and career experiences will always be present. The research aims, as far as possible, to take into account this individual colouring of institutional views, in part by using carefully selected questions and by making comparisons between responses. It must therefore be accepted that there will be some overlap between personally held views and the institutions' views and that institutional views will be complex. However, many assumptions will, nevertheless, be based on the career culture in which interviewees have worked and even allowing for individually added colour, could therefore be described as embedded assumptions. This is particularly clear with the views expressed and implied concerning links between economic prosperity and road provision. Given the pre eminence of economic considerations within policy processes, attempts to introduce sustainability and integrated transport considerations into transport debates are providing a challenge to the traditional transport policy thinking within the subject organisations. The refocussing towards demand management in transport policy circles may therefore be causing a gradual deconstructing of embedded transport policy assumptions and may also be affecting transport policy decisions.

5.2. Institutions, approaches and governance arenas

This section of the chapter examines five aspects of transport policy making processes relevant to the NE of England. Briefly these include the difficulties of developing multidisciplinary approaches; the problems posed by institutional differences; the type, if any, of policy evaluation that is carried out; a perceived lack of leadership and concerted responses to policy initiatives; and the possibilities for developing shared priorities and objectives in economic and environmental debates.

5.2.1. Multidisciplinary participation?

The habitual and embedded responses to transport provision discussed in the previous section are associated with the traditions and experience of the personnel working within the transport policy community. For most people resistance to change and the

tendency to adhere to the 'business as usual' approach is quite natural (Butler, 1991). One of the implications of this is that when new ideas and approaches appear they take time to be accepted and included in decision making processes. The creation of the DETR openly signalled the acceptance within government of a need that had been growing in recognition in regional and local governance processes during the previous few years; that of an holistic approach to policy development. The previous government had created Government Offices for the Regions in 1994 and RCS3 of the Government Office for the North East suggested that the Government Offices, where environment and transport came under a single directorate, had proved a useful model of joined up working and in part provided to government a working example for the structuring of the DETR some three years later.

"In many ways the Government Offices were seen as a model of working between departments, and I think that that was generally seen as good and they have actually encouraged the merging of the two departments" (Interview with RCS3 02/04/01).

However despite this positive spin it became clear in a number of interviews and from some published policy documents that joined up policy development processes have not been fully embraced within the regional agencies at least. Within the Government Office separate small teams work on specific issues and policies and, whilst this is understandable from a practical, organisational viewpoint, unless the work of these small teams is co-ordinated effectively, joined up outcomes are likely to remain difficult to achieve. Despite his earlier enthusiastic suggestion of the example the Government Office was providing of the new policy development processes a certain lack of co-ordination between disciplines was apparent in the Government Office. RCS3's comments on sustainable development policies illustrate that awareness of other teams' activities is limited.

"Yes, we've got a sustainability team, which deals with that and I must admit I am not that well up on the actual details of the guidance...yes the guidance does come through this office, but it's not through *my* team." (Interview with RCS3 02/04/01, emphasis added).

A similar picture emerged during a discussion with RCS1 of the RDA where staff are also organised into separate teams to work on specific issues.

“There are a number of colleagues internally who are *exclusively* focused on sustainable development issues and in terms of economic regeneration we do have a kind of template assessment and (another) in terms of sustainability. It is something that will happen with transport” (Interview with RCS1 12/02/01, emphasis added).

Within the RDA the ‘sustainability unit’ is seen as working exclusively on sustainability issues. This idea of anyone working *exclusively* in an area where *inclusivity* is generally accepted to be a fundamental characteristic of the work is a little difficult to justify within attempts to ‘join up’ policy processes. This may suggest that the concept of joined up, inclusive approaches to policy development have not been fully understood within the RDA and this may in part be due to a narrow interpretation by the RDA of it’s brief from government. The somewhat ambiguous nature of the *Guidance to RDAs on Regional Strategies* (DETR, 03/1999C) provides the clue for this. On the relationship between RDA *Regional Strategies*, *Regional Planning Guidance* (RPG) and *Regional Transport Strategies* the guidance states.

“In developing their strategies, agencies will need to have regard to RPG, and to the developing thinking of the regional planning bodies as they review planning guidance, and *develop* regional transport strategies as part of this guidance” (DETR, 03/1999C:6, emphasis added).

Had the guidance used ‘*developing*’ rather than ‘*develop*’ it might have been clearer that RDAs had only *to give regard* to regional transport strategies rather than a different interpretation that seems equally valid, that they should *take part* in the development of regional transport strategies. The sentences directly following the previous extract of the guidance support the second interpretation.

“Similarly, agencies will provide an important input to the preparation of RPG. A shared understanding of issues, objectives and opportunities will be important. The strategies will need to be complimentary if they are to secure the management of change in a coherent and sustainable way” (DETR, 03/1999C:6).

The ambiguity of the guidance and the chosen interpretation raises two important points. Firstly the guidance appeared less than two years after the creation of DETR and only nine months after the appearance of the White Paper. The possible variations

in interpretation may therefore be partly the result of early difficulties in amalgamating the DoT and DoE into a coherent unit. According to LGO1 of *Newcastle City Council* policy documents from the new department, not surprisingly, showed signs of strain in those early attempts at producing rounded, joined up advice.

“When they first put out the guidance for provisional LTPs it was abundantly clear that these groups hadn’t spoken to one another in certain areas. One strategy suggesting you need to this and another strategy suggesting that you need to do something that is poles apart and potentially conflicting. They did manage to iron most of that out in the guidance that came out last year⁶ and they’re starting to work” (Interview with LGO1 27/03/01).

The second point raised by the RDA’s interpretation of the guidance is perhaps more subtle and rests on the understandable human characteristic of seeing what is expected and of preferring the familiar to the unfamiliar (Butler, 1991). The RDA view of the thrust of the guidance is clear that it does not see the regional transport strategy as its responsibility. When asked if the RDA had any responsibility for the production of the Regional Transport Strategy, RCS1 was explicit.

“Not at all. The establishment of a regional transport strategy is the responsibility of the regional planning bodies and in the north east that’s ANEC⁷” (Interview with RCS1 12/02/01).

Whilst it is true that the Association of North East Councils (ANEC) did commission consultants to produce the Regional Transport Strategy for the North East the tone of RCS1’s response is that the regional transport strategy is *nothing to do* with the RDA. Though the exact interpretation of the guidance may be arguable, it is difficult to justify the view that the RDA is devoid of *any* responsibility or interest in the Regional Transport Strategy, especially in the light of the second part of the section of the guidance quoted above. Such an attitude is hardly conducive to joined up, holistically conceived policy development. The RDA is of course entitled to interpret the document in a way that it can justify, but in its interpretation it does seem to have missed some of the broader intentions within the *Guidance to RDAs on Regional Strategies* that encourage joined up, inclusive policy and strategy development. This perhaps illustrates the difficulties in refocusing policy agendas towards joined up

⁶ Guidance on Full Local Transport Plans (DETR, 07/2000A)

⁷ The Association of North East Councils

processes since the resistance in this case does not seem to be overt but rather the result of a habitual expectancy that, because of its subtlety, is likely to be more difficult to identify and break down.

In addition the aims set out in the White Paper and other follow up, DETR transport publications set out similar objectives aimed at achieving joined up outcomes to policy processes. The *Guidance on Full Local Transport Plans* (DETR, 03/2000) states, for example, that

“LTPs are the vehicle for engaging local communities and other *partners* in the transport planning process... (and that) ...the LTP should be set in the context of wider objectives which authorities may be developing for the economic, social and environmental well being of the area...In putting together their LTPs highway authorities will have to work closely with other local authorities and service providers. The emergency services, Health Authorities, NHS Trusts, local education authorities and schools all have an interest and part to play” (DETR, 03/2000:12, 18, emphasis added).

The guidance goes on to recommend where local authorities can find advice on improving

“...joint working *in* local government...” (DETR, 03/2000:18, emphasis added).

The inference is quite clear that government, in referring to ‘partners’, expects joined up approaches to be developed. The specific charge to local authority departments to consult with each other points to perceived difficulties with the structure of local authorities and their departmental chains of command and responsibility. Until the creation of DETR transport planners had worked to advice from the DoT and land use planners had followed DoE guidance. Land use planning and transport planning share many common objectives locally (Vigar *et al*, 2000) but in practice are largely separate departments. The promotion of DETR inspired ‘joined up’ agendas had therefore to contend with established strong vertical chains of command whilst trying to develop stronger horizontal links within local authorities. The new DETR was in effect being held up to local authorities as a model of how the newly integrated policy agendas were to be institutionally structured at the local scale.

Many local authorities have only recently submitted their Local Transport Plans (LTPs) and this has left little time to evaluate the impacts of LTPs to see how joined up policy processes are working in practice. However, some historical examples of effective joined up working do exist within the area of transport policy and have been uncovered in this research. LGO2, an experienced local government officer working with *Gateshead Borough Council*, described how transport, economic development and conservation priorities were brought together during his time working in York and estimated that it took ten years for the decision making structure in that town to adapt to 'joined up' input.

"Recalling my York experience, we had re-organisation ten years ago and you could see the benefit of having a single Directorate because any problems were always worked out internally... To get to a point where the Traffic Engineers understood what the Transport Planners and Planning Department were doing took a long time, it wasn't an overnight thing and there were a lot of arguments about why people were doing this, designs were changed at last minute because one group hadn't talked to another group and so on, but as time went on the culture changed and those Engineers would go to each group and say 'what can we do to get this right?' " (Interview with LGO2 13/05/01).

Now working in Gateshead he draws a parallel with his current organisation's relatively early attempts to draw together a similarly diverse group of departments to produce cohesive, joined up approaches to local transport, development plans and environmental protection.

"The local transport plan for Tyne and Wear is our most precious tenet and we're hoping that it will contribute to solving transports environmental problems. I think the Government rather hopes that that will be the case for its national transport strategy as well... as to whether we achieve that only time will tell but we've got to start somewhere and I think it is a matter of faith and I think there are examples round the country (that) have shown that you can make a difference and there are plans to increase the amount of walking and cycling in the system, but it'll take a long time, it doesn't happen overnight" (Interview with LGO2 13/05/01).

From LGO2s response he expects a gradual building of trust and consensus to produce the necessary holistic approach. The political tendency to expect speedy results, more recently expressed by the government in the further restructuring of the transport department, is perhaps a little unreasonable and this York example again

illustrates the long lead times between processes of policy development and effective implementation. This particular example also raises a potentially interesting aspect to this research; York and similar historic cities like Oxford and Canterbury have managed to develop efficient, effective integrated transport schemes and have also managed an earlier joining up of policy agendas, at least around transport and development (Roberts, 1998). This raises the question as to whether they provide a useful model on which to base current attempts at introducing joined up responses to the tensions that exist in these areas?⁸ Durham's identification of congestion charging as a possible and perhaps radical solution to congestion problems illustrates this trend within historic cities.

The picture of 'joined up' governance that is emerging so far suggests that two important aspects of 'joined up' policy making are influencing transport policy development in the NE. On one hand the aim is to include a diverse group of interests that *should* ensure many viewpoints are taken into account and *should* produce more cohesive outcomes. On the other hand there are inherent time delays introduced into policy development processes by consulting a wider group of individuals. The delays in the processes can be illustrated in *Gateshead* where the Unitary Development Plan was debated for 3 years before adoption only for a review to begin 2 years later. The early start on the review was necessary to ensure completion before the second round of Local Transport Plans begins (*Local Transport Plan for Tyne and Wear*, 2001). Lengthy processes like this are quite understandable given the number of interested parties involved in the work, but the temptation to streamline the process by consulting less, or by using smaller groups would also be understandable and could take policy development 'full circle' by returning to small specialist groups.

Given the diversity of the organisations involved, the range of experience of staff and the differences in organisational agendas it is perhaps understandable that 'joining up' is taking longer to engender within some organisations than in others. This is perhaps especially true within the Regional Assembly with its history of seconded staff and modular working. Delays and variations in speed in adopting joined up approaches are therefore not surprising and LGO2's anecdotal evidence from York supports this.

⁸ This issue is explored further in the case study section of this chapter.

From the published information produced by the region's local authorities, the regional agencies and from interview contacts in the range of organisations studied, it does suggest that the 'joining up' of policy agendas is making some progress within the local authorities, even though it appears to have further to go at the regional scale.

The formal introduction by the present government of an integrated transport agenda into policy processes has necessitated a re examination within policy development circles of the processes of policy development as well as the policies themselves. For the moment, in the regional agencies at least, the modification of the processes of policy development seems to be where the difficulties lie. New policies are appearing as expected, but the extent to which the actual policies produced are inclusive is doubtful. The conundrum of 'joined up' transport policy though, is that it's final destination may in fact be completing a circle to the point where it started. These difficulties in the processes of producing joined up transport, development and environmental policies suggest that current systems of UK governance are unable to deliver a form of development, characterised by reducing environmental burdens.

5.2.2. Differences in organisations and institutions

The above debates and processes are played out within the various regional and local institutions and organisations of the NE transport policy community. The institutional endowment of NE transport governance is heavy and it has been argued that this "plethora" of organisations has contributed to a disjointed approach to transport policy (Pemberton, 2000:297). The broad and varied context in which these debates are carried forward influences the tone and outcomes of the debates and is likely to be a factor in achieving successfully joined up policy outcomes.

For this research the context of transport policy debates varies between the organisations involved and for perfect, inclusive, 'joined up' policy outcomes to be achieved a contextual 'level playing field' in which the policy processes take place would need to be established. If procedural and operational differences are uncovered within the organisations producing policy then the context can also be said to be different. If contextual differences between organisations are found then joined up outcomes to policy processes, by inference, seem unlikely. Interestingly, for this

research differences do seem to exist within this particular part of the governance arena of the NE.

The Government Office, the Regional Development Agency and the Regional Assembly are all regional organisations in structure, remit and appearance and, judging by the evidence already uncovered on small team working, all appear to be exhibiting fewer joined up characteristics than some of the local authorities. When comparing the local authorities with the regional agencies it is immediately obvious that the local authorities have been in existence for far longer and are therefore very likely to have more established staff bases who are familiar with each other and with the established workings of their particular organisations. In comparison the regional agencies are relatively new. Their relative newness clearly gives less opportunity for these organisations to have built a sense of identity and to have established a sense of community spirit amongst staff. However, relative newness may be advantageous in the pursuit of joined up policy as such a new group of policy makers might be more receptive to new ideas and working practices. Either way the relative youth of these agencies, and the consequences for evolving senses of identity and community within the staff, alters the context of decision making within the organisations. This may suggest that the joining up of policy agendas may either be easier to achieve at a more local scale, and perhaps smaller, scale.

The role set out for an organisation operating in regional governance arenas also contributes to the context in which decisions are made. The traditional focus on economic priorities and the assumptions surrounding the importance of links between transport provision and economic development have been discussed above, but another aspect to the focus on economic priorities also exists. The three regional agencies, the Regional Assembly, the Government Office and the Regional Development Agency all have different roles from local authorities and they also have organisational and accountability differences and responsibilities from local authorities. Table 5.1. summarises these differences.

Table 5.1. Comparison of the roles, responsibility and accountability of NE institutions

| | Local Authorities | Regional Agencies |
|----------------|--|--|
| Role | Providers of local public services. Facilitators for local enterprise. Small to medium scale investors. To draw down funds from government and regional agencies for local investment. Local lobbyists | Organisers of inter and intra regional, strategic links. Facilitators for regional enterprise. Medium to large scale investors. To draw down funds from government for regional investment. Regional lobbyists |
| Responsible to | Large numbers of employees. Consumers of public services. Government as service providers. | Small numbers of employees. Local Authorities on some matters Government Departments |
| Accountable to | Electorates Government | Local Authorities on some matters Government |

The differences illustrated in the table are a simplified version of the complexities that undoubtedly exist in attempting to 'place' particular organisations in the hierarchies of governance arenas. There are almost certainly variations in roles and responsibilities outlined here, but the table does serve to illustrate the differences in context within which these organisations operate. The context will effect the priorities of the organisations and therefore the behaviour and decisions taken by them. The Regional Assembly, which is responsible for the production of the *Regional Transport Strategy*, provides an example of how structure can influence the context in which decisions are taken. The *North East Regional Assembly: Rules of Procedure* document sets out the areas of interest for the Assembly and includes

"...areas where there is a demonstrable regional dimension, including:" (Regional Assembly for the NE, 1999:1).

Transport heads the list of ten areas with a regional dimension that the Regional Assembly has some responsibility for. However, the structure of the Assembly does not reflect the list of Assembly responsibilities. Of the 63 Assembly seats 44 (70%) are taken up by local authority nominees, one MP and one MEP. The remaining 19 (30%) are allocated to 'regional stakeholders' and it is in this group is where the

structure of the Assembly might particularly effect the Assembly's focus on issues. The 19 seats are divided up between representatives of the following interests:

| | |
|---------------------------|---|
| • private / business | 5 |
| • TUC | 5 |
| • voluntary sector | 2 |
| • TECs | 1 |
| • higher education | 1 |
| • further education | 1 |
| • culture, sport, tourism | 1 |
| • rural | 1 |
| • health | 1 |
| • environment | 1 |

(source: Regional Assembly for the NE, 1999:2).

No seat is reserved for a transport representative, but ten are available to stakeholders with an economic interest⁹. A brief examination of the other stakeholder groups represented confirms the imbalance in favour of 'economic' representatives. This imbalance in representation is likely to affect policy debates with the Regional Assembly for two main reasons. Firstly, a single representative of an interest will have less opportunity than a group representing a specific interest to raise issues of concern in the first instance. Secondly, once an issue is raised and debate is in progress group interests will almost always hold an advantage over individuals in a democratic process. When questioned about the lack of transport representation in make up of the Assembly and the unbalanced structure, RCS4, a civil servant with the Regional Assembly responded with,

"yes it's true...I think that you've got to look at it (the structure) as in somebody devised the make up before they decided transport was one of our main priorities, that's how its come about" (Interview with RCS4 15/03/01).

⁹ Assuming that trades unions are considered to be interested in economic processes because of the associated employment opportunities for their members.

This comment reveals two difficulties that might affect policy processes. The first rests on the admission by the Regional Assembly that an important interest with an acknowledged regional dimension has not been properly included in the structure of the institution from the outset. The second difficulty is a temporal one and is based on evolving contexts of decision making. The point made by RCS4 that transport considerations had *become* a main priority illustrates the difficulties of maintaining an appropriate context for debate and decision making within established organisations whilst simultaneously attempting a refocusing of the agenda of the debates. Similar concerns could be raised about any other underrepresented agendas, such as health or social perspectives, and decisions in these areas would also contain transport implications.

The evolving context of decision making within which policy processes are played out presents an obstacle to achieving joined up outcomes. This contextual inconsistency is a product of institutional and organisational differences in the roles, remits and responsibilities of organisations. These factors colour the policy priorities of organisations and therefore affect policy outcomes.

5.2.3. Policy evaluation, monitoring and joined up governance

For policy processes to function effectively and deliver agreed programmes it is necessary for systems of checks and balances to be devised to monitor the intentions of policy right through to the implementation of policy and beyond. Monitoring is included as a key part of Regional Transport Strategies and Local Transport Plans, however effective ways of transferring monitoring data back into policy development processes to refine 'up and running' policies may be needed. In a study of rural development policies in Scotland Bristow *et al* (2001) suggest that policy evaluation can go beyond information provision and can be used to unify different interests around particular policy discourses. This observation is based on the extent to which information gathered in monitoring can provide convincing evidence to individuals and organisations to follow agreed policies. This aspect of policy or scheme evaluation processes suggests that monitoring may be more than a means to measure simply the effectiveness of a particular policy or scheme. Monitoring may have a more significant role within governance processes if the interpretation of the

monitoring data gathered is used as a tool by policy developers to assist in building consensus' around policy proposals and, in doing so improve the chances of joining up policy outcomes.

Local transport planners in the NE region have recognised the importance of monitoring the outcomes of the transport policy initiatives within the objectives set out in LTPs. Tyne and Wear's monitoring and performance document, for example, states.

"A monitoring framework has been developed which is intended to demonstrate:

- the effects of the measures implemented
- how these effects match up to the objectives on which the LTP is based."

(T & W LTP, Monitoring Report, 2001:1)

If monitoring the effectiveness of the integrated transport measures contained in LTPs can collect data sets that assist in building consensus within local and regional governance arenas then such data may be able reduce the tendency for impetus to be lost in integrated transport policies. In the longer term monitoring information gathered may allow for body of knowledge to be assembled that can then be used in an educative and persuasive way to alter transport behaviour.

If monitoring has the potential to become a useful policy tool it seems reasonable to suggest that a lack of monitoring will cause a degree of organisational 'blindness' in policy processes. An example of how an expected lack of monitoring might lead to unexpected policy outcomes for a new road scheme was discovered in Stockton.

The first phase of a new road development linking Ingleby Barwick, a modern satellite development of dormitory 'villages' on Teesside, with Stockton centre and the A66, was completed in 2002 and the second phase is currently under construction. The new route, complete with Tees crossing, has been provided to reduce traffic congestion and allow for further development. (*Stockton Borough Council LTP*). Within the LTP much is made of the integrated transport benefits, especially bus use

and 'green route'¹⁰ provision which will be gained from the construction of the road, though no evidence is presented of how such a modal switch might be accomplished in practice. However it has been suggested, by LGO3 a local government officer with *Stockton Borough Council*, that a bus priority lane will not after all be provided, rather

"we've got a high occupancy vehicle lane going in there" (Interview with LGO3 20/04/01).

Though when asked about monitoring of the lane LGO3 did not seem sure what arrangements, if any were proposed.

"Well it'll be interesting to see how that works. I'm not exactly sure it's going to be 2+ occupants per car but I'm not sure, all the discussions are ongoing with the Police to see how that is going to be monitored" (Interview with LGO3 20/04/01).

The inference is clear; the proposed lane would contribute to integrated transport commitments on paper only and this must raise questions about the difficulties of delivering integrated transport solutions and about how policy processes can be managed to ensure outcomes match intentions. Shortly before completion of the first phase of the South Stockton Link, as the project is known, it became clear from the finished road surfaces and signage that neither a bus priority¹¹ lane nor a 'high occupancy vehicle lane'¹² was being provided.

In the executive summary *Stockton B.C.*'s LTP states that

"The South Stockton Link (is) an essential scheme that will fulfil several *public transport*, *environmental* and economic objectives in the south of the borough" (Stockton B.C. LTP, 2001:1, emphasis added).

This document was used to gain government financial support for an 'integrated transport' measure and since the policy outcome varies considerably from the *stated* intention this exposes a fundamental problem within the LTP process. The problem

¹⁰The joint local authorities on Teesside have developed a 'green route strategy' that should eventually link Tees valley conurbations with a series of routes that feature dedicated priority lanes for buses and cycles.

¹¹Bus priority measures (BPMs) are discussed in greater detail in chapter 7.

¹²High occupancy vehicle lanes, or 2+ lanes as they are referred to in the USA have been successfully used in New York and Los Angeles, where they are monitored and enforced.

centres on the difficulty of changing the embedded assumptions of transport policy makers in their constructs of the environment within schemes.

From this case it could be argued that the underlying or embedded assumptions within the transport department at *Stockton* instinctively favour providing 'all user' road space as has traditionally been the case and that the habit is difficult to break. From this it could be suggested that the scheme has been agreed on the back of an integrated transport agenda but that there has been little intention of providing anything more than extra road space for private motorists. This may be because of constituent pressure on local politicians but the economic justification for the scheme suggests that drivers will benefit from journey times that are "reduced to 2.43 from 2.89 minutes" (Stockton B.C, 2001:70) and this seems an insignificant time saving the benefits of which seem unlikely to attract concerted lobbying of local councillors. For a research project that is concentrating on how the environment is viewed and constructed within the minds of transport decision makers this naturally raises questions along the lines of 'is the benefit to travellers of a 2 to 3 minute gain worth the associated environmental damage?' or 'what benefits to public transport in Stockton could be gained by spending the £31.4million cost of the scheme (at 1999 prices) on public transport provisions instead?' Or perhaps it could be that the policy outcome is set to match the *underlying* intention rather than the stated one.

The change in approach to transport within the scheme raises several problems within the local transport plan process. Firstly the aims of an agreed and published document, the LTP, are being altered without consultation, notice or agreement in the notional change to a high occupancy vehicle lane and then to no provision at all. This change represents a weakening of moves encouraged in national policy towards integrated transport and reduced car use. Secondly, and perhaps more significantly, since the costs of monitoring can be high the apparent uncertainty in LGO3's responses was perhaps an indication that the decision not to provide monitoring led to the abandonment of the high occupancy vehicle lane on the grounds that it would not be adhered to by motorists without the stick of enforcement. This eventual policy outcome is in line with more narrowly conceived traditional 'predict and provide' patterns of transport provision as it contains no attempt at restraint measures. These difficulties illustrate that complex 'knock on' effects of what appears to be a small

dilution to the agreed process can produce an overall outcome that is likely to be seriously out of balance with the original intention.

On the subject of traffic monitoring and enforcement the Police complain that at the policy development stage local authorities consult them about traffic management proposals but are under no obligation to listen to their concerns.

“The problem is that they’ll almost parcel it off (monitoring) and push it over to us. ‘It’s in, it’s there, people are parking in it, people are abusing it, you’re the only one to enforce it so do it’ and that’s where we’ve got to say at the consultation stage that it was highlighted at that meeting that the bus lane should be self-enforcing, but inevitably the bus operators will be frustrated by cars parking in it or abusing it. Perhaps some ownership should be put onto them. If they want an enforcement campaign, they should pay the overtime” (interview with civilian manager at Cleveland Police Traffic Division 23/01/02).

Clearly bus priority measures are aimed at increasing bus patronage whilst reducing the attractiveness of private car travel and this evidence suggests that any ‘joining up’ in traffic management policies is in its infancy. The monitoring of implemented policies and the evaluation of the data collected seems to be important, perhaps even vital, to building consensus within policy processes. Attempts to achieve joined up policy outcomes through this strengthening of policy debates and processes will at least become more informed by monitoring. In the example from Stockton the potential institutional blindness likely to result if the status of traffic lanes is not monitored seems to have been fatal to the particular policy.

5.2.4. Leadership, example and responsibility in policy processes

In the information gleaned from field work interviews it has become clear that the creation of the DETR and its activities produced a step change in transport thinking in the region and probably in the UK and that the governance systems and administrative structures that are the conduits of policy delivery are not particularly well suited to the task of such policy shifts. Leadership from government though appears to have been selective and has avoided the more contentious issues. Criticisms levelled by some local government officers that local empowerment on transport issues does have an

element of a lack of leadership about it do seem fair given central unwillingness to become involved in potentially unpopular issues such as congestion charging.

Powers granted to local authorities to introduce congestion charging and workplace parking charges provide an illustration of command and control measures where leadership from central government is lacking. The accusation was made that the government is guilty of ducking the difficult issues and failing to take a lead themselves and that firmer leadership on these issues is needed before local authorities will use the measures. LGO1, a local government officer with *Newcastle City Council*, commented,

“...it’s a very cute piece of political management... ‘we’ve empowered local authorities to do this and the reason it’s not been done is that the local authorities have not been prepared to grasp the nettle” (Interview with LGO1 27/03/01).

His viewpoint recognises that local authorities have been handed the initiative in tackling transport problems locally and it also includes the implicit recognition that the same local authorities will face the electoral backlash should policies be introduced that are a step too far for the public. A second comment on this issue from RCS2, a local government officer with the *Tees Valley Joint Strategy Unit*, reveals that local authorities and their joint groups might first be prepared to risk the likely unpopularity of charging regimes if the debates around charging could gain some political legitimacy through a lead at the regional level.

“...I think what will happen, the way the process will go is that the concept of workplace car parking charges and congestion charging will get raised at the regional level and debate will start off there I think and hopefully it will permeate its way down” (Interview with RCS2 20/03/01).

Interestingly the *Joint Strategy Unit* (JSU) view is slightly more receptive to possible traffic restraint policies than is Newcastle though the JSU is still looking for a lead from a higher tier of authority. Local authorities had complained to government for years that they had nothing but the development control process to use as a stick against rising congestion, but now that they have new, potentially highly restrictive and remunerative powers they are unwilling to use them.

Part of the motivation, within central government, for the devolving of greater responsibility to local authorities may lie in a reluctance to tackle difficult issues for fear of a political backlash. The tendency to devolve, particularly in contentious areas in policy processes in this way, may in fact be leading to a 'lowest common denominator' effect within policy outcomes. The result may be that weaker policies are agreed in order to obtain broader consensus and this may mean that opportunities to relieve environmental stress or damage are reduced or missed altogether. Eventually this may in turn mean that radical, controversial solutions, such as restrictions on private motoring, may become more necessary as congestion and pollution rise. In contrast the strong leadership exhibited in the case of congestion charging in London illustrates the possibilities of decisive decision making. The new scheme has enjoyed general acceptance and success in reducing traffic levels (Local Transport Today, 12/06/03).

Private motoring behaviour exerts considerable pressure against action that would mainly benefit the environment and the wider community. Several of the local government officers and regional civil servants expressed the view that motorists in particular 'would not put up with' further restrictions on private car use and RCS4, of the Regional Assembly, suggested that elected members fought shy of endorsing plans to restrict car use because of the accompanying unpopularity.

"Issues like congestion charging for example, aren't popular in every area and you can see why... they are all very different and all have different kinds of transport problems and they don't all have the same attitude to economic measures to challenge behaviour" (Interview with RCS4 15/03/01).

The Regional Assembly as a regional organisation is aware of the variation in traffic problems between the different localities in the region and the comment reflects this. LGO1 of *Newcastle* is more direct.

"Certainly politically, the disincentive measures around, certainly the price based ones – road pricing, workplace parking charges – are seen to be nothing more than additional taxation at a local level. There isn't a willingness to further burden what is seen to be a fairly struggling local economy with additional tax" (Interview with LGO1 27/03/01).

Both *Newcastle City Council*, as the lead authority in the production of the *Tyne and Wear Local Transport Plan*, and the *Tees Valley Joint Strategy Unit* expressed the view that they were not contemplating road user charging to tackle congestion in city centres because congestion levels were not serious enough to justify such measures *and* because of the likely unpopularity of such moves. Local governance structures then, have been given a new stick with which to control travel behaviour, but are unwilling or unable to use it not because of technical or cost obstacles to implementation but because the functioning of governance processes limits action to that which is broadly acceptable. Few politicians are willing to stand up and take a lead on the issue of traffic restraint measures because of fear of alienating voters. Governance processes within the UK's parliamentary democracy offer the opportunity for wide and inclusive input, by those with access to governance networks, to lobby for their particular interests. However the same structures of UK democracy and political processes mitigate against an informed debate beginning on the remedial measures that could restrain traffic growth.

5.2.5. Sustainable development and business as usual

Policy decisions that can contribute to sustainable development¹³, like all other policy decisions, have to be taken within the existing framework of political decision making and governance processes and these processes are fundamentally economic. Though arguably a derivative of politics (Hemple, 1996), economic considerations are acknowledged by local and regional governance actors as usually being the most powerful in the decision making processes of local and regional governance and this has been seen in this chapter. This suggests that a 'dominant coalition' (Rhodes, 1997) centred on economic considerations has developed within the networks of local and regional governance. This economically centred governance framework provides the structural setting for institutions and their associated networks to include the sustainability and environmental impact of transport decisions, *if they so wish*, within their discussions and decisions making processes. From the published evidence 'sustainable development', 'environmental' and 'integrated transport' agendas have undoubtedly penetrated policy debates and are now an expected part of policy

¹³ See Appendix 5 for a detailed description of the definitions of 'sustainable development' and 'sustainability' that the thesis draws on.

documents. However, it is far from clear that these agendas have penetrated economic processes to any great extent and in the NE region it was admitted by RCS3, a civil servant at the Government Office, that the key issue of possible conflicts between economic agendas and sustainability agendas were not discussed.

“Are sustainable transport and economic development incompatible? I mean that is one of the fundamental things we’re tackling...one of the key issues in regional planning guidance, and it perhaps wasn’t ever discussed as such, it wasn’t ‘let’s have a discussion today about economic development versus sustainability’, but it inevitably is one of the issues that constantly comes back in any debate about the region” (Interview with RCS3 02/04/01).

The comment is ambiguous in that the Government Office claims to be ‘tackling’ the ‘fundamental’ issue of the incompatibilities between sustainable transport and economic development, but also admits that no discussion of the issues has taken place within the organisation. This certainly raises the question of why this debate has not taken place in what is an important and influential regional institution that is the direct representative of central government in the area. It suggests that despite the wording of policy documents the government has not engaged in the debate that attempts to resolve the issues surrounding the compatibility, or incompatibility, of sustainable development and economic growth. It is surprising that a debate on this problem has not been started inside the Government Office given that it is acknowledged by the Government Office as a recurring issue. What will happen next as far as initiating this debate within the Government Office is not clear, as no suggestion was made by RCS3 as to how this might be progressed.

Powerful economic decision making processes are not designed to include the non traditional, unpriced inputs of sustainability and the environment. The joined up, or broad multidisciplinary approach recommended by Hoyle & Knowles (1998) is therefore available, but is not currently fully included within transport decision making. The knowledge, experiences and habits within policy processes of transport governance have been established to further economic priorities and, by most definitions, sustainable development policies do not easily fit into these priorities. These established processes could be reconstructed to include the basic, broadly agreed principles of sustainable development, particularly if economic values were

somehow assigned to aspects of sustainable development. Alternatively sustainable development may undergo a gradual and subtle redefining in order for it to fit with *both* the stated aims of current policy documents that are committed to both sustainable development and economic growth. Decision making within governance arenas is likely to continue to rely on the established 'business as usual' procedures whilst this debate remains unresolved.

5.2.6. Greenwash: the rhetoric to reality gap

If the overall leaning towards economic concerns is taken alongside the relatively poor understandings of the concepts of sustainable development discovered, *and* with the characteristics of the natural environment that are threatened by transport activity, questions of understanding and intent are raised. These centre on the extent to which some of the statements made within interviews, and within the published aims of local, regional and national policy documents, are understood and indeed what effect is intended by their use¹⁴. Clear potential exists for a gap to appear between policy rhetoric and actual delivery. Much interview time centred on how organisations are interpreting new policy initiatives as a 'greenwashing' within the implementation of policy appears to be taking place. This became an interesting additional line of enquiry within interviews as suggestions were made that lip service was being paid to particular to policy avenues, such as Green Transport Plans.

Green Transport Plans or, as they are sometimes known, Green Travel Plans (GTPs) have been introduced as a new policy initiative in the 1998 White Paper as part of attempts to change transport habits. The policy rhetoric surrounding the introduction of GTPs is aimed at reducing private car travel, particularly to workplaces, and at encouraging modal switches to walking, cycling at public transport.

"GTPs are an important part of the government's integrated transport strategy. The strategy is designed to tackle unsustainable patterns of car use, which contribute to congestion, air pollution and global warming. Transport policies are part of a wider strategy for sustainable development. There is a range of other initiatives which complement GTP objectives..." (DETR, 06/1999A:8).

¹⁴ The example based on the lack of monitoring of a HOV lane in Stockton, mentioned above in 5.2.3, provides an illustration of greenwashing.

Essentially GTPs are a control measure that work through the planning system. Local authorities can require the adoption of GTPs as part of development packages and, as the development control process is one of the few control measures available to local authorities, promoting integrated transport measures by adding to controls through this route seems a logical approach¹⁵. Local authority representatives however, mentioned the limitations of GTPs citing the possibility of developers locating in another borough if a local authority limits a planning application by GTP requirements too severely. Analysing the guidance given on GTPs from the operational perspective in *Newcastle*, LGO1 implied that green travel plans are about image rather than substance and as long as developers gain the desired consents from local authorities they are willing to accept green travel plans.

“You could take the view that that’s because they (companies wishing to locate in the area) recognise that ultimately the local authority’s never going to pursue this (GTP enforcement) and we know its going to be relatively meaningless and relatively harmless anyway and I suspect that if you get into the commercial property sector there may be an element of that. ‘Ultimately we need 200 parking spaces and OK I’ll do a green travel plan as long as you give me 200 parking spaces’ and I think there is a risk that the various aspects of development and transport planning are treated a bit like a sausage machine...you slice off your 200 parking places, you slice off your visitor parking and someway down the line OK you do a green travel plan. If you’ve already conceded this ground your green travel plan is relatively toothless and I’m more or less convinced of that” (Interview with LGO1 27/03/01).

From this extract it is clear that *Newcastle* views GTPs in the same light as the DETRs wider feedback suggests, which concludes from review evidence that the vast majority of GTPs are produced solely to obtain planning consents. Controls agreed within GTPs are unenforceable because neither developers nor local authorities are prepared to take them seriously. The rhetoric of the policy is bright green but the reality of implementation suggests that there are real difficulties in applying GTP requirements through development control processes. This view of GTPs was not a unanimous view. RCS2, of the *Tees Valley Joint Strategy Unit* (JSU), offered a softer view.

¹⁵ See chapter 7.5.1. where *Arriva* link the development control process to improved bus patronage (Interview with PTR1 03/09/01).

“It’s a start isn’t it and if you’re raising the profile of environmentally friendly, sustainable modes of transport, even if you’re not forcing people out of their cars... just making people aware that there’s not just the private car to use for work and that there are alternatives. That’s it with a lot of people I think, busy lives and they don’t have time to find out....they’ve got to see a benefit coming out of it and whether it’s a car pooling scheme, or something like that, where they can share with friends and get a dedicated parking place outside of work its cut down on two trips from the network. This goes back to information timetables...if we can just get this to the workplace and people start to think and question their travel, that’s the crux of it, its people thinking twice” (Interview with RCS2 20/03/01).

This local government officer was optimistically suggesting that GTPs are part of an educative process that might produce long term changes in attitudes to travel. However, the more cynical view expressed in Tyne and Wear that GTPs are little more than greenwash seems to reflect the current evidence more accurately.

When discussing the key objectives of the *Guidance on Full Local Transport Plans*: “protecting and enhancing the built environment” (DETR, 2000B) further instances of apparent greenwash were also discovered. RCS2 of the JSU responded to a question on how ‘the environment’ had been assessed as a starting point for ‘protecting and enhancing the built environment’.

“I don’t think that work has been progressed that far, I think its still having difficulty getting out of the ‘scheme led’ mentality be it major or minor schemes that transport needs rather than the built environment as a whole. Obviously there are targets that have been set for air quality, but I suppose traffic management is the way that we’ve gone about it; Middlesbrough’s town centre management, where buses have been banned from Corporation Road¹⁶, are trying to landscape it and improve the built environment as a whole but I think its minor ‘tweaking’ round the edges” (Interview with RCS2 20/03/01).

This amounts to an acknowledgement that image is more important than substance within some traffic management schemes, which is clearly greenwash for public consumption. Another underlying reason for this ‘image consciousness’ may be to satisfy central policy demands, or to project conditions that can bring other benefits to

¹⁶ Cars were excluded from this part of the town centre about 10 years ago.

local authorities or developers such as the release of further funding. LGO5, a local government officer with *Durham County Council*, put it.

“You could say that the local transport plan addresses all the things it has to address to get a road moving scheme through, it could be interpreted as such, but whether the will is there to do integrated transport is uncertain. Yes, they’re doing integrated things, but it may be a means to an end ” (Interview with LGO5 17/04/01).

The image consciousness of those seeking to obtain permission for such developments provides another example of greenwash, but perhaps more importantly, demonstrates the ability of developers to successfully adapt to the changing conditions of development control processes. The only concessions from what appear to be economically driven, ‘scheme led’ agendas would seem to be that developers are being pressurised by local authorities, through the development control process, to pay for some of the environmental enhancement and integrated transport aspects of schemes. This new aspect of development control processes internalises some environmental costs into economic equations by regulatory means.

Perhaps the most obvious examples of greenwashing were clear in the published plans of the local authorities. Most local transport plans promote a ‘sustainability’ or an ‘environmental improvement’ line within their opening sections. For example *Tyne and Wear* aim for

“...a more sustainable lifestyle in a more attractive environment...” (T & W LTP, 2001:4).

Stockton B.C’s LTP seeks to

“...reduce the environmental impact of transport...” (Stockton B.C. LTP, 2001:10).

However at each interview questions of baseline monitoring of the environment and sustainability were raised and it was clear that no local authority had attempted to define or measure sustainability. Though sustainable development is difficult to define, making agreed definitions difficult, it is still possible for an organisation such as a local authority to take its own criteria of sustainable development and measure progress against this standard. So the admission by LGO1 of *Newcastle* that

sustainability was not assessed before the adoption of local transport plans despite the declared intention of these documents to improve sustainability must raise serious questions about the actual intention behind the 'sustainability' rhetoric.

"...(S)ustainability? not directly...we don't have an over arching variable, or criteria where we say 'this measures sustainability'...It's a good point actually as to how you can apply a sustainability audit to a local transport plan or local transport system... No. The honest answer is no" (Interview with LGO1 27/03/01).

The lack of a baseline standard does present serious difficulties in monitoring the effectiveness of local transport plans and statements about improving sustainability are, therefore, difficult to justify in a way other than greenwash. 'Environmental' considerations are a little more genuine in the sense of being measurable. Most local authorities appear to have well developed air quality measuring methods and, more recently, have begun traffic and congestion monitoring, probably to comply with the recent Road Traffic Reduction Act. So improvements or deteriorations in these statistics can at least be measured over time.

The final aspect of greenwash of interest here centres on the use of words or phrases chosen, it would seem, to give an appearance of being 'green'. 'Sustainability' and 'sustainable development' are, not surprisingly, the terms that are most often used in this manner. Increasingly the term 'integrated transport' can also be seen to be experiencing this sort of usage. The RDA response to a question on how sustainability and sustainable development influence RDA decisions taken on where to locate new ventures projected an appearance of being aware and inclusive of sustainable development priorities, and at least acknowledged that there are competing definitions of sustainable development. RCS1 of the RDA stated.

Sustainable development is extremely important...I think that you will see over the coming two or three years some very good examples of economic development in a sustainable fashion. It depends how you mean 'sustainable'. Newburn Haugh will be a good example to watch from a point of view of sustainable development...(it) is expected to create at least 5000 jobs in the longer term. The development will be based around transport systems so you will have an extension of the metro system light railway, bus corridors, cycle ways and all the rest of it. So in it's development at the outset sustainability is very much in mind, so the

agency is fulfilling it's obligation in terms of reclaiming brownfield land. There's an old power station on the site (and) cleaning that land up and putting an infrastructure in to enable the development of high quality office and factory accommodation to entice companies to locate there, built around a sustainable infrastructure" (Interview with RCS1 12/02/01).

Interestingly the only transport link that the interviewee did not mention was the road link and this is the only one actually completed.

When viewed collectively these difficulties do seem to suggest elements of 'greenwash', or the appearance of taking action on sustainability whilst maintaining a traditional, economically centred policy path. When the RDA response is analysed it is clear that variations of the term 'sustainability' are being used. It's not that the redevelopment in question is necessarily any less sustainable than any other it is just difficult to imagine it being more sustainable. It is adjacent to the A1 and not in close proximity to any existing housing. It will therefore be a transport intensive location *by any mode* and is likely to encourage businesses that will maximise their proximity to the A1. The tendency for variations of the term 'sustainability' to be appropriated by those seeking to 'green' their existing activities in this way was also highlighted by *Newcastle C.C* officer LGO1.

"I think that 'sustainable' is probably one of those most misused words. It's an ongoing discussion with a guy at the airport. Airport policy has this laughable phrase of 'sustainable air travel' and I constantly ask the question 'quite what do they mean?' because by any plausible definition of 'sustainability' air travel never fits to me!...But it's become a word and there are words that become almost infectious. Vision is the one at the moment...I'm not quite certain that we all know what we're talking about or if we are talking about the same thing...I think that 'sustainability' has fallen into the same trap" (Interview with LGO1 27/03/01).

At the heart of the issue of the 'abuse' or 'convenience' of the terms based on sustainable development is the notion that the phrase represents a contested concept (Jacobs, 1999), or that it

"...has many meanings (with) no theoretical base." (Adams, 1990:3).

It would seem then, that the only thing sustainable about 'sustainable development' is the phrase itself.

Integrated transport, as a term, is probably suffering from a similar problem and again because of the lack of a clear, agreed definition there is, understandably, a sense of an 'all things to all people' nature about the term. Integrated transport is an intuitively appealing term to politicians and the public because the word integrated gives a sense of it being organised, efficient, cohesive, and 'joined up'. Since most travel is undertaken for a specific purpose, other than the travel experience itself, 'integration' within transport seems to offer benefits that few would turn down. However, like sustainable development integrated transport has yet to produce many detailed definitions as to what is meant by the term and how it might be achieved in practice. The clamour for an 'integrated transport strategy' has been pursued without the concept of integrated transport being sufficiently defined and thought through (Potter & Skinner, 2000). Much use has been made of this term in recent years and it has been heralded as the solution to a variety of transport problems. 'Integrated transport' has become a firm part of the political language of transport debates and features strongly in transport policy documents. As such a central part of current policy debates integrated transport became part of the focus of the interviews of this research. When asked whether, or not integrated transport can contribute to solving transport's environmental problems in their areas the local government officers responded with criticisms of the definitions of integrated transport and of the policies themselves. The officers in Newcastle and Sunderland were unimpressed by the progress of the integrated transport agenda;

"I'm of the mind as to whether integrated transport, in the sense that many people use it, actually exists or whether it's just a flash phrase that is all over the place and will ultimately disappear at some stage" (Interview with LGO1 27/03/01).

Similarly

"...because of a lack of willingness on the part of the public, elected representatives and those responsible for delivering integrated transport it isn't really working..." (Interview with LGO4 11/05/01).

RCS2 of the JSU was more positive when discussing 'integrated transport's ability to improve environmental outcomes and said

“I think that it’s been a very rushed process and there wasn’t always the firm guidance there from government. The (LTP) guidance was at times ambiguous and not particularly helpful” (Interview with RCS2 20/03/01).

This response suggests that the interviewee has found that policy guidance is weak and poorly thought through, which is not surprising given the comments of the previous respondent. But it also supports the idea that integrated transport *as a phrase* is offering far more than it is achieving *in practice*. This gap between reality and rhetoric suggests greenwash is a firm part of integrated transport debates and processes. If the policies outlined in *A New Deal for Transport* (DETR, 07/1998) are given sufficient time to deliver integrated transport ‘on the ground’ then it might be possible to drop the greenwash allegations.

5.3. Case Study: An analysis of the Road User Charging Scheme in Durham City

One of the new measures available to local authorities is congestion charging. This section of the chapter outlines the development of the UK’s first congestion charging scheme. The case study outlines the development of the context within which road user charging has been considered as a policy option, how environmental concerns have been included and how it might successfully challenge the growing traffic problems within Durham City.

5.3.1. Background to Road User Charging

The concept of Road User Charging (RUC) is not new and the idea of charging road users for access to part or all of the road network has appeared from time to time within policy circles over recent decades¹⁷. With the realisation that urban congestion in particular is becoming increasingly unsustainable the evolving integrated transport agenda began to be seen within policy making circles as a means of meeting the two objectives of congestion relief and of reducing the unsustainable environmental burden of transport. Judging by the amount of public and private investment being committed to transport, in, for example, the ten year transport plan (DETR,

¹⁷ See for example, Ministry of Transport (1963), Roth (1967).

07/2000A); the 'demand management consensus' discussed by Goodwin (1999) would seem to be substantive rather than merely rhetorical. If policy delivery matches the rhetoric it would represent a fundamental shift in the overall direction of UK transport policy processes. Recent reinterpreting of the integrated transport agenda suggest otherwise. Road user charging is though, now part of the policy agenda. That RUC is being seriously considered as an option for reducing congestion represents a significant step in transport policy making for four principal reasons.

Firstly, economic dangers may exist as it is alleged by some that businesses within congestion charging zones, especially those in the retail sector, will suffer from reduced investment levels if economic activity within the proposed RUC zones is reduced. Clearly for the retail sector any effects will be largely dependent upon the modal switches to public transport or pedestrianisation that can 'compensate' for the loss of car borne travellers into RUC areas. Secondly, there are potential social effects to be considered and these centre on the possibility that less well off groups will be disproportionately disadvantaged by the cost of travel into the RUC zones and that better off groups will simply absorb the costs into their budgets. Thirdly, the change of emphasis towards a greater role for public transport whilst constraining car use represents a significant challenge to the UK tradition of transport policy development and delivery that has prevailed for half a century or more.

Notwithstanding the inherent political dangers of reorganising government departments described in the next section, the fourth, and perhaps most significant, risk associated with the social and economic aspects of possible RUC regimes is also political. The introduction of RUC schemes pose significant risks since the initial cost of scheme design and implementation, the charges levied and the way revenues are used present clear political dangers for those deemed responsible, in the public mind, for RUC decisions. Political dangers also lurk within the negotiations entered into with the variety of interest groups hoping to make their case for some form of exemption from charging schemes. It is therefore not surprising that the present government has fought shy of introducing RUC and has enshrined congestion charging opportunities within the Transport Act 2000 by empowering local authorities to design and implement schemes. Though the Secretary of State retains the final decision to grant scheme approval this tactic by government is perhaps an attempt to

distance itself from the political effects of potentially unpopular transport provision decisions. Further evidence of this shift of responsibility can be seen in the introduction of the Road Traffic Reduction Act 1997, which places a legal obligation on local authorities to develop a targeted road traffic reduction strategy. RUC schemes are one of the policy instruments available. These changes in transport governance that have taken place since 1997 set the decision making context for the Durham scheme.

5.3.2. Congestion in Durham City

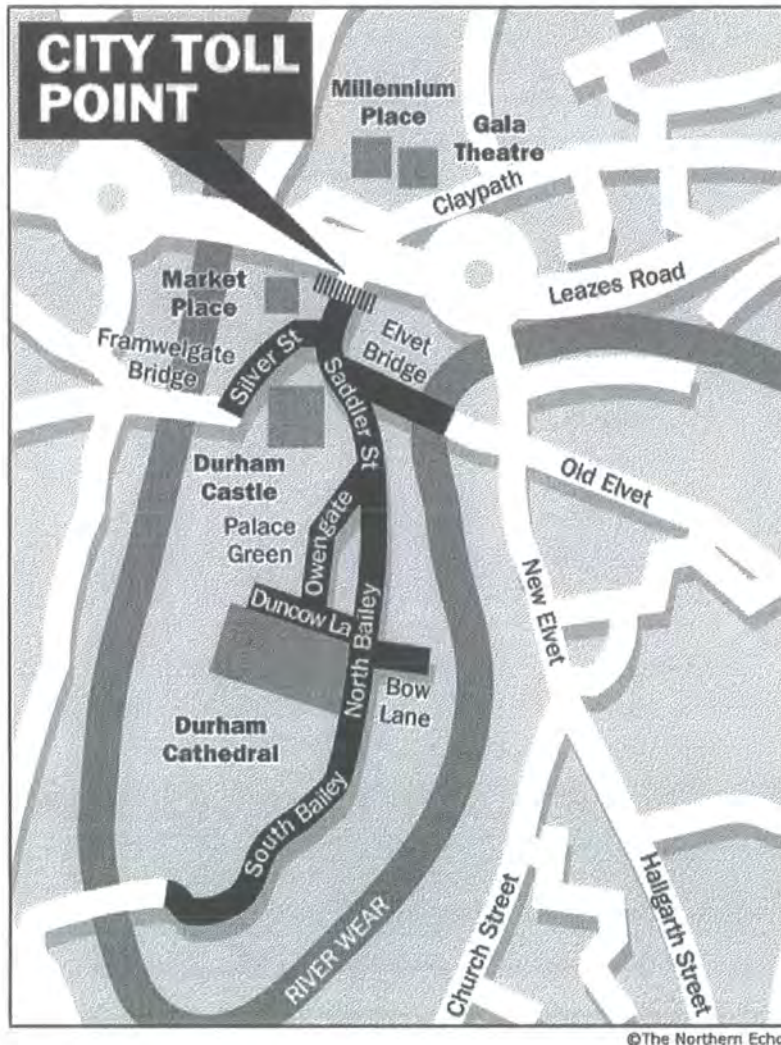
The central area of Durham City that is the subject of the RUC scheme has experienced traffic congestion for many years and various measures have been taken to reduce the volume and type of traffic passing through the city. Table 5.2. sets out the growing regime of restrictions historically. Despite these limits congestion problems remain. According to Durham County Council (DCC) the local authority with responsibility for traffic in the city, congestion difficulties, both in the proposed charging area and across the City in general are expected to worsen (Buchanan, 1997). In order to develop an integrated response to traffic management the local authority commissioned consultants *Colin Buchanan & Partners* to produce the Durham City Travel Study. The subsequent report based its recommendations on the government's five core objectives for developing transport policies; environment, safety, economy, accessibility and integration. The study was produced after public and interest group consultation. It identified "clear support" for the core recommendations outlined in table 5.2. Of these five criteria the environmental aspects of transport policy are of the most relevance to this research and will be discussed in greatest detail. In that analysis it becomes clear that the environmental justification for the RUC scheme is repackaged to include what are essentially conservation priorities whilst what the government regards as environmental objectives hardly appear within the justification for the scheme. Map 5.3. illustrates the RUC scheme area and clearly shows the single point of access available to traffic as the narrower, historic bridges to the east and west of the peninsula are now closed to traffic.

Table 5.2. Development of Traffic Restrictions within the Peninsula area of Durham City

| Year | Description of restrictions | Brief details of restrictions / <i>recommendations</i> |
|------|--|---|
| 1975 | A number of restrictions were introduced in Saddler Street and the Market Place aimed at rationalising the movement of traffic in the City centre. Following continuous monitoring further measures were deemed necessary. | <ul style="list-style-type: none"> - Silver Street and the Framwellgate Bridge closed to traffic. - Loading prohibition introduced in the south part of Saddler Street. - Parking restrictions strengthened in the Market Place |
| 1988 | A DCC working group was set up to review the traffic situation and develop new proposals to restrict access to the Peninsula area. The working groups package of measures was not supported by the Chief Constable, the Dean and Chapter of the Cathedral, the Chorister School and the University. No action was taken. | |
| 1988 | Following the rejection of the working group's proposals a modified package of measures was introduced on a temporary basis following consultation. | <ul style="list-style-type: none"> - Access to the Market Place limited to service vehicles and orange badge holders. - A maximum weight limit of 7.5 tonnes for delivery vehicles entering Saddler Street, between hours of 10am and 6pm Monday to Saturday and all day Sunday. |
| 1994 | It was considered that these temporary restrictions were effective and the Traffic Orders were made permanent. | <ul style="list-style-type: none"> - A maximum weight limit of 17 tonnes at all other times. - A maximum length limit of 7 metres for buses entering Saddler Street. - Loading prohibitions extended to the north part of Saddler Street to the junction with Owengate. |
| 1997 | <p>Existing restrictions were considered to be difficult to enforce and subject to regular abuse.</p> <p>The <i>Durham City Travel Study</i> identified a range of potential traffic management measures as part of a city wide congestion reduction strategy</p> | <ul style="list-style-type: none"> - <i>a controlled parking zone</i> - <i>park and ride</i> - <i>improvements for buses, the disabled, pedestrians and cyclists</i> - <i>employer participation to resolve transport problems</i> - <i>restrictions on access to the peninsula</i> - <i>improvements to the conditions on North Road</i> |

(Sources: Adapted from :*Possible Measures to Reduce Traffic in the Market Place, Durham City* . Durham County Council, 2001 and from: *Durham City Travel Study*, 1997)

Map 5.3. Durham city centre congestion charging scheme area



roads subject to restricted access by scheme toll point

Durham City centre's transport problems stem mainly from its historic character and this is reflected in the old city being designated a World Heritage Site. Durham currently enjoys half a million visitors per year, most of whom choose to visit the historic sites of the Cathedral and Castle area. The only road access to these sites on the 'peninsula' is via the market place and the narrow confines of Saddler Street. Before the scheme began up to 3, 000 vehicles per day accessed this area between 8am and 6pm with 72% of those vehicles remaining in the area for less than 15 minutes (Buchanan, 1997). The local authority has identified these road users as 'kiss and drive' short stay visitors since it appears that it is common practice for drivers to drop off a passenger in the market place and then drive along Saddler Street, up to and around Palace Green (see map) and return to the market place to pick up the passenger, who has often carried out some brief business or retail transaction, before leaving the area. The local authority regards these type of journeys as non essential, and even as a nuisance, and the RUC scheme is aimed at discouraging these 'kiss and drive' trips. The Durham City Travel Study (Buchanan, 1997) produced statistics of existing and projected traffic growth. These predict that the 'do nothing' scenario is likely to lead to eventual gridlock. Table 5.4. summarises the key projections under various scenarios. The projections are of city wide traffic growth and clearly indicate the consequences of the 'do nothing' scenario.

The Study predicted that if implemented the scheme should influence driver decisions to access to the entire peninsula during its operating hours. It was expected that this would have an effect on traffic levels on the approaches to the peninsula on Claypath and on the access road from Millburngate. The parking provided at the Prince Bishops shopping centre should also have an effect by providing spaces for any motorists seeking parking in the area but not wishing to enter the RUC area. Since the transport problems within Durham are, like the city, historic, this may perhaps have contributed to the acceptance that something needed to be done about congestion in the city. The proposals contained in the Durham City Travel Study together with this general acceptance provided the local authority with a secure policy development environment in which to work up a suitable scheme.

Table 5.4. Projected Traffic Growth in Durham City (from 1997 base)

| | Do Nothing Scenario | | Do Something Scenario | |
|------------------|---------------------|-------|-----------------------|-----------------|
| | 2001 | 2006 | Demand Management | Northern Bypass |
| Total vehicles | +6% | +17% | - | - |
| Journey times | +11% | +50% | -5% | -8% |
| Speeds | -4% | -21% | +2% | +5% |
| Fuel consumption | +7% | +27% | -3% | -5% |
| Final queues | +55% | +331% | -21% | -43% |

(source: adapted from Buchanan, 1997)

5.3.3. Details of the Durham scheme

One reason given for providing local authorities the powers to introduce RUC was because it was felt that a flexible approach to designing schemes to suit the particular traffic problems and congestion relief requirements would be best achieved by those with the best understanding of the particular local context. The Durham context is highly specific, particularly because of its status as a World Heritage Site, but also because the scheme features a single entry and exit point and because of the type of trips it aims to discourage. It is not, for example, aimed at 'peak hour' traffic, which might normally be considered the target for congestion reduction. Neither is the revenue to be collected intended to support improved public transport in general, or encourage the use of alternative modes or routes. In essence it is designed as a deterrent to the 'kiss and drive' trips.

Whilst discussing the context of the RUC scheme it is worth considering another aspect of the decision making context. This centres on individuals involved in the process. Initially professional local authority transport officers were responsible for all aspects of the scheme, from the identification of the problem, through the search for a solution, in the interpretation of DETR / DTLR guidance and on to the recommendation to elected members. Here the context broadened to potentially include politically motivated individuals and at this point it was possible that the RUC scheme could be halted altogether or modified to meet political considerations. Once this stage was passed the scheme returned to officers as administrators of official local authority policy, changing the context again to some extent. From this point officers could proceed secure in the knowledge that they enjoyed the support of elected members who, because of their approval, could become the focus of any criticisms of

the scheme. This also freed officers from the worry of having to develop a scheme that they could 'sell' to elected members as their task was simply to implement the RUC scheme as efficiently as possible.

Briefly summarised the Durham scheme proposes to charge motorists £2.00 to access the restricted area between the hours of 10 am and 4 pm. Fees are collected at a pay station and controlled by a rising bollard at the exit of the scheme area. After the scheme has achieved acceptance, and any teething problems have been addressed, it is expected that the system of fee collection will become automated. Existing loading restrictions have been altered to allow deliveries to take place before the 10 am deadline. In order to maintain visitor numbers to the historic attractions of the peninsula the scheme also includes provisions for the purchase and operation of two low floor, 16 seater minibuses to operate a shuttle service to and from Palace Green. This is an important feature of the scheme since the hill up to the main visitor attractions is steep and this might otherwise deter less active pedestrians who may have chosen not to pay the charge and walk.

Following approval by the full council on the 9th of January 2002, work began to put the various infrastructure aspects out to tender with the aim of having the scheme in operation sometime in April or May 2002. In fact the scheme did not become operational until October of that year following formal approval from the Secretary of State.

5.3.4. Comparisons between overall policy themes

The RUC scheme then has its roots in the traffic management measures of the 1970s and 80s and from this time the principal concerns underlying the scheme design seem to fit closely to the present government's five key transport policy objectives. The local authority seems especially concerned about safety describing the market place and Saddler Street as an area where 'pedestrian vehicle conflicts'¹⁸ are a high risk (see plate 5.5). Similarly there was concern from the Dean and Chapter of the Cathedral about the environmental implications of the growing traffic volumes. However, even

¹⁸ A local authority term for 'road accidents'!

though oxides of sulphur from vehicle exhausts bring a completely new, twenty first century meaning to the dissolution of the monasteries – in the form of sulphur deposits on ancient stonework – the concern centres on the conservation of historic sites without reference to pollutant emissions. Local traders have expressed their concerns over how changes to the market place might affect the micro economy of the area, though evidence from Middlesbrough uncovered during an interview with Tees Valley Joint Strategy Unit¹⁹ suggested that the closure of one of the town's main shopping streets, Newport Road, resulted in increased commercial activity rather than a decline. Clearly from the measures already taken in Durham in the 1970s (see table 5.2.) accessibility was already a serious problem within the narrow confines of Saddler Street in particular (see plate 5.5.). A traffic light contraflow system was installed some years ago to ease the difficulties in this area, though a local authority transport officer pointed out that motorists 'running a red light' often cause localised gridlocks that result in cars using the footpath to squeeze past each other. Obviously this adds to pedestrian safety concerns. The final current policy objective of 'integration' was not a term in vogue in the 1970s but the present scheme includes this additional concern within the aims of the Durham City Travel Strategy (Buchanan, 1997), which looks to the complimentary measures of a parking strategy, park and ride, RUC and improved bus, cycle and pedestrian facilities to support each other in achieving congestion reduction and integration between modes.

Following the detailed development of the scheme officers took it to a local authority cabinet committee of elected members for approval. The tone of the document presented at this point is one that emphasises the increasing urgency of finding a solution, with the safety aspects of government policy objectives given the greatest prominence, especially in the area of road accidents. Environmental policy objectives, other than those indirectly relevant via the findings of the Durham City Travel Study, are conspicuous by their absence. Up to this point there had been little elected member involvement and the scheme development was, according to local authority officers, "highly officer driven". This point marks the beginning of the transition from the professional to the political arena. At this transition point there was no discernible change in the rationale for the scheme either from an environmental or any

¹⁹ Tees Valley Joint Strategy Unit (TVJSU) is a joint local authority working group set up to deal with transport issues that have trans boundary effects throughout the five boroughs of the Tees valley.

Plate 5.5. 'Pedestrian vehicle conflicts'

A car can just be seen amongst the crowd on Saddler Street, illustrating the competition for space between pedestrians and vehicles in the historic centre of Durham



other standpoint. The local authority's 'Road User Sub Group' (RUSG) recommended a clear statement of the reasons for the RUC scheme using standard DETR responses tailored to the local setting. A regulatory impact assessment was carried out to ensure no legal or regulatory conflicts existed, though no economic assessment was made. Following a brief period of further consultation the RUSG recommended that the traffic order²⁰ be debated at a session of the full Council.

During the consultation process transport officers developed a comprehensive and highly detailed justification for the scheme, concentrating on the safety and environmental (conservation) grounds for the scheme. Interestingly when questioned about the environmental aspects of the scheme LGO7 a transport officer with DCC expressed the view that though

"...we were concerned that it was a world heritage site, we've got the Cathedral and Castle up there and we were concerned about the levels of traffic and the effect that they can have on these historic buildings, but I've got to say that was not our primary concern. At the end of the day the traffic levels which are entering Saddler Street and driving up to the Cathedral and University are quite low anyway, we're looking at two thousand vehicles a day and the environmental effects of those are not substantial enough" (Interview with LGO7 11/12/01).

Within this quote it is clear that the conservation dimension is more important to the local authority than wider environmental concerns and, though conservation issues are important to the local authority, safety considerations remained the key factor underpinning the rationale for the scheme. LGO8 another DCC transport officer pointed to accident statistics as providing justification for the scheme,

"so (cars) were quickly identified as being a problem to pedestrians in the very narrow part of Saddler Street where there is a potential for conflict in that area. There have been several pedestrian accidents in the last five years²¹, so there was that concern... and the historic nature of the site, obviously it dates back over almost nine hundred years, so it was never designed to take traffic flows what we have today" (Interview with LGO8 31/10/01).

The view expressed here also places some emphasis on the historic aspects of the peninsula but any possible environmental aspects do not seem to be important to

²⁰ The formal title of the local legislative procedure necessary to introduce the scheme.

²¹ There were in fact fifteen in this period

transport officers in as much as they are not mentioned, perhaps indicating that the environment is not a priority within the RUC scheme.

The government's guidance on local transport policies requires environmental aspects to be considered and the usual policy interpretation of 'environmental' refers to the natural environment rather than the built environment normally associated with the conservation of historic buildings. For example, chapter two of the 1998 White Paper (DETR, 07/1998) makes this interpretation clear in its discourse on sustainability and the potential threat posed by CO₂ emissions. From the above viewpoints though, it would seem that Durham is dressing conservation issues for an environmental appearance in order to satisfy government policy aspirations. As such this represents a convenient adaptation of 'environmental' as a term since, in this scheme, conservation issues do appear to have greater significance when compared to any possible emissions reductions benefits. Like the economic / environmental 'win-win' scenarios identified by commercial organisations and discussed elsewhere in this research, the local authority appears to be driving its agenda forward by including 'other' concerns along with environmental ones to produce 'win-win' scenarios; in this instance a safety / environmental (or conservation) approach has been chosen within the overall integrated transport policy development process.

In January 2002 a meeting of the full Council convened to discuss this and other traffic orders. The item describing the RUC scheme was set out by the Director of Environment and Technical Services. A summary of the progress to date on the scheme was made, followed by a lengthy explanation of the objections received and officers' responses to objectors. The Director presented the scheme in a positive light, conceded that adjustments might be necessary and closed his address. What followed was surprising in its brevity. The chairman of the meeting offered the opportunity for comment or discussion and, following a single response on the proposed bus service that was quickly dealt with, the motion was proposed and seconded. The Council then passed the traffic order unopposed. The move from the professional realm through the political and on to the administrative had taken only a few minutes.

The striking thing about the process was the simplicity with which the order passed from being a fully worked up proposal to being adopted as official policy and the

apparent simplicity of the schemes public domain approval perhaps obscures other aspects of the overall process acted out behind closed doors. The approval of the RUC scheme, as it were 'on the nod', seems at first impression to be shockingly simple because of the lack of debate amongst elected members and because it was known that elected members had had little involvement in the scheme's development up to this point. However, on reflection the ease of passage of the scheme indicates that political differences and concerns within the *Labour* councillor group had probably already been aired until a consensual view was achieved. The Council meeting's acceptance of the RUC scheme also recognises that the process of scheme development up to this point had been thoroughly and professionally carried out within the transport officer group and probably also indicates the presence of a high level of trust between officers and elected members. Indeed during a discussion with LGO7 directly after the meeting, and on a subsequent occasion, he emphasised that his experience of elected members during his time at DCC had found them to be "fully supportive" of proposals brought forward on traffic issues. He contrasted this with the attitudes he had experienced of elected members in some other authorities that he had found to be fraught with "political differences" between and within political parties. The combination of officer trust and the lack of political differences may also be significant in that the latter allows the former space and opportunity to function. Were there to be an atmosphere of political infighting amongst factions or perhaps a situation of a finely balanced Council with, perhaps, no overall majority it might be expected that elected members would take proposals such as this one and use it politically against their opponents. The Durham experience seems to reflect that of Cambridge in the early 1990s. A congestion metering scheme was trialled in the City in 1993, but progressed no further. Ison (1998) carried out some research into the scheme and amongst the detailed conclusions reached are that for a scheme to progress to full adoption and implementation it is necessary that

"political stability is maintained throughout (Ison, 1998:145)"

and that a scheme leader was also a necessary part of taking the process forward. In Cambridge, Ison identifies the then Director of Transportation as the key individual officer promoting that scheme and also notes that the scheme

“undoubtedly lost an element of momentum (Ison, 1998:145)”

upon this individuals retirement. Both of these traits can be seen in the Durham scheme. A settled, single minded officer group has carried the proposal forward within a non acrimonious, settled political atmosphere.

In comparing the process of decision making in Durham with that of Cambridge another aspect of the rationale behind such schemes emerges. Both of these cities are historic cities with many narrow streets not designed for the burden of twenty first century traffic. Other UK historic cities, Oxford, York, Bath, Maidstone, Chester and Canterbury have similar experiences of traffic management problems and these have also developed park and ride systems in recent years. The Oxford system, which is probably the most successful, began a daily service in 1973 and now attracts 17% of all traffic from outside of the city and has seen inner city traffic flows decline despite an overall increase in traffic levels generally (Cairns, 1997). The local authorities responsible for traffic in these cities, in common with Durham, have had to respond to predictions of the 1989 road traffic forecasts (DoT, 1989) and the effects of increasing traffic levels sooner than many other cities. This is perhaps because increasing traffic levels have a greater visual impact in historic, narrow streets and possible solutions have stronger spatial constraints in these towns necessitating the need to find solutions more quickly than in other places. Given these observations it is not surprising that Durham is actively investigating park and ride and that it is also the first local authority to introduce congestion charging. The historic city therefore provides a model of the course traffic restraint policies might take elsewhere. For more modern spacious cities the model may be applicable but at a later date as road capacity is likely to be reached later in more spacious towns and cities. The traffic management developments within UK historic cities may therefore provide an indication to other cities, currently coping with their traffic levels, of measures that their local authorities may have to consider in the not too distant future.

5.3.5. Hiccups of final approval

For Durham though such decisions became reality in October 2002. The scheme was formally approved later than expected because of some surprise difficulties during the

final approval process. These centred on the interpretation of the intentions of the scheme by a DTLR civil servant who was responsible for reviewing the scheme on behalf of the Secretary of State. Such differences in interpretation are, according to LGO7, possible because of the lack of appropriate, relevant guidance on small RUC schemes. The Guidance for Methodology on Multi Modal Studies (GOMMS) (DETR, 05/2000) was, according to officers, unsuitable for the Durham scheme since it was aimed at much bigger schemes intended to cut traffic volumes and raise funding for improved public transport. However it does provide a useful definition of the environmental impacts of transport that the GOMMS seeks to influence.

“The environmental protection objective involves reducing the direct and indirect impacts of transport facilities and their use on the environment of both users and non-users. The environmental impacts of concern include... noise, atmospheric pollution of different kinds, vibration, formal intrusion, severance, impacts on intrinsically valuable flora and fauna, *ancient monuments and historic buildings* and so on” (DETR, 05/2000/Vol 1: section 3.3.4., emphasis added).

It is possible that DCC transport officers are unaware of this paragraph within the GOMMS since it is very lengthy and detailed document. In its introductory chapter, for example, GOMMS makes reference to computer based modelling within transport appraisals. Such modelling systems are usually based on quantitative data collected from multiple sources. The Durham scheme is too small for such appraisal techniques and it is perhaps the case that because of GOMMS emphasis on large scale schemes DCC transport officers have overlooked the possibility of using some of the GOMMS recommendations as a justification of the RUC scheme.

Transport officers certainly felt that the GOMMS requirements were generally unsuitable for assessing the Durham scheme and, in effect, left DCC “working without guidance” (Interview with LGO7 05/02/02). On the one hand this proved useful since the local authority was not constrained by policy guidelines it might consider restrictive, but on the other hand the situation left the DTLR in the position of attempting to evaluate the scheme for approval on behalf of the Secretary of State without an appropriate assessment criteria. This in fact is the nub of the issue as far as final approval is concerned. Because the GOMMS requirements are specifically designed for large and complex schemes the peculiarities of Durham’s intentions do

not neatly fit in with the assessment criteria of the assessors at the transport department. According to the officers of DCC, the DTLR officials did not understand what Durham's scheme was attempting to control because they were measuring the scheme against the inappropriate GOMMS criteria, which, for example, looks for economic benefits through traditional cost benefit analyses (COBA). One DCC officer interviewed stated that he thought the quantitative assessments requested by the DTLR official were of little use to the Durham scheme for two reasons. Firstly, since the scheme is very small a quantitative analysis was not practical and secondly that funding such analyses would cost more than the scheme. The DCC officer also said that the civil servant assessing the scheme was

“an economist carrying out a desk top assessment and that he probably needed to see Durham to understand the aims of the scheme” (Interview with LGO7 05/02/02).

The details of the costs and revenues from RUC in Durham reveal that, as a 'stand alone' measure, the scheme will require a net subsidy to support its operation. Local authority officers accept that as a single measure the RUC scheme will be loss making but point out that from a COBA viewpoint the scheme should be seen as part of a wider strategy to manage travel demand within Durham, as recommended by the Durham City Travel Study (Buchanan, 1997). Revenues from other measures, such as the park and ride and the parking strategy, are part of DCC overall approach to tackling city wide congestion and are expected to cover overall costs. Requesting a quantitative COBA assessment therefore indicated to the local authority officer that the civil servant in question was not aware of how inappropriate his request was. In its official response to the Department's concerns DCC has offered an alternative assessment in the form of some qualitative research findings to support its case for going ahead and justifies the RUC scheme economically by highlighting that the scheme should be seen as part of a wider package of measures emanating from the Durham City Travel Study. Within this hiccup in DCC's progress and their criticism of the DTLR assessment, transport officers acknowledge that their submission to the Department might have explained the uniqueness of the scheme a little more clearly. This weakness in the local authority's process might have been avoided if the process of scheme planning and delivery had formally included more individuals to refine ideas and approaches.

5.3.6. Success of the RUC scheme?

The development of the RUC scheme in Durham is extremely thorough and, following historical efforts, has gathered pace since 1997. As a decision making process the scheme is transparent and consultative, which usually leads to higher quality decisions and outcomes (Godwin & Wright, 1998). From an environmental viewpoint some emissions reduction benefits will be gained from the scheme as traffic levels are reduced²². Also that minor air quality improvements may be discernible in the narrow confines of Saddler Street. However, it is clear that the RUC scheme has been designed as a congestion reducing strategy for the peninsula area with the principal aim of improving road and pedestrian safety. Environmental concerns, as required by government transport policy guidelines, appear to have been used to assist in the overall justification for the scheme and contain little of substance. That environmental concerns are included in this way suggests, on one hand, that officers are more than able to assimilate a level of environmental awareness into their scheme designs. This would appear to be an encouraging sign of moves towards 'joined up' policy making since any requirement for transport planners to consider environmental issues should raise their individual awareness of environmental concerns generally and may influence their thinking on other decisions that they take. On the other hand, and perhaps more cynically, it may also demonstrate the ability of transport professionals to cope with whatever guidelines policy makers impose and continue to successfully develop and implement their preferred schemes in any case²³. Put another way local transport officers may be adept at using policy guidance to suit their own underlying aims as has been seen in the South Stockton Link case. The development of schemes may therefore owe more to the presence of individuals with powerful, leading characters than to the availability of convenient, popular or 'joined up' policy tools for scheme designers to use, as Ison (1998) has suggested about the Cambridge scheme.

If dynamic individuals, groups or organisations are critical to the outcomes of the process this would suggest that educative approaches to raise awareness of the environmental effects of increasing travel volumes would be worthwhile. EM1, a

²² Local Transport Today reports a 90% drop in traffic in the charging area (LTT, 07/08/03).

²³ See 5.2.3.

member of RUSG realised this and recognised the importance of taking the opportunity to speak to school children about their travel habits. His hope was to influence them positively towards thinking about alternatives to the car with the long term aim of reaching them with a different message about the merits of car travel. If educative opportunities could be given added weight within policy processes generally and in the area of education policy in particular then more young people might be turned away from developing habitual car use for their travel requirements

The lack of involvement in the development of the RUC scheme by most elected members perhaps in part indicates their confidence in officers and the Steering Group to produce a workable scheme. It may also be a reflection of their own long term awareness of the particular problem and of the search for solutions. Alternatively they may wish to keep their names out of the minutes of meetings that took decisions in support of road user charging, choosing instead to debate the merits of the scheme informally amongst themselves.

The potentially most difficult hurdle for the scheme to clear was the move from the professional, local authority officer stage, to the political arena of elected members. In the event this turned out to be a small and simple step for the scheme. Cost issues remain a minor obstacle to the implementation of the scheme and may continue to attract attention within and outside the local authority. The Durham City Travel Study also recommends the development of a traffic and parking monitoring programme and this is interesting as it has been noted elsewhere in this research that local authorities generally do not seem to have grasped the importance of monitoring and enforcement. It may be that as with other traffic schemes in other areas a lack of effective monitoring and enforcement may render Durham's RUC less effective than it could be.

5.4. Conclusions: the educative challenge

The interviews and case study provided many interesting insights into how the north east's transport practitioners view the importance of the environment, economic development and mobility. The embedded assumptions, career backgrounds and experience of individuals and institutions have all been found to be relevant to policy

discourses and have provided multi faceted influences on policy processes and eventual outcomes. It would seem from some of the evidence reviewed here that some policy professionals cling to the traditional approach of meeting demand, with little thought given to restraint measures. This exposes their embedded assumptions and understandings of the environment and the purpose of adopting an integrated transport agenda. The challenge facing integrated transport policy makers in convincing many transport policy professionals, and the wider public, away from the expectations of market transport and towards integrated transport and sustainability has perhaps been underestimated. LGO6 of *Darlington Borough Council* summed the issue up saying

“there’s a lot to do, it’s a very challenging job because you are trying to convince people to do something that they’re maybe not necessarily ready to do. They just get into the car and drive everywhere and it’s very difficult to convince them that they shouldn’t do that... My job is about trying to teach people not to do it. I just want to get to the stage when somebody goes to the front door and thinks ‘shall I take the car or shall I take the bus?’ I don’t think people really think like that but if we could do that it would be a major step forward. I think we are still a long way, we are fairly early in process of trying to get people to think about using other modes of transport” (Interview with LGO6 14/05/01).

The themes and sub themes of the chapter illustrate the difficulties for all involved with transport in embracing the new agendas of sustainable development and integrated transport. Government guidance consistently and directly insists that *all* policy be developed with the principles of sustainable development kept firmly in mind. The difficulties of refocusing existing policy traditions and passing ideas and policies through the ‘filters’ of these new agendas are not insignificant. Similarly, for integrated transport, encouragement is given to consider the travel aspects of decisions taken in *all* policy disciplines since most human activity has transport implications somewhere within it. The development of a multidisciplinary approach within policy processes is at the heart of these initiatives though economic considerations continue to dominate policy thinking and actions. It is clearly taking time for these new agendas to percolate throughout policy processes. At this point they have been achieved ‘on paper’ but not in practice, hence the appearance of the rhetoric gap and the feel of greenwash about a substantial amount of policy. The evidence analysed in this chapter suggests that ‘the environment’ is not deeply considered *in it own right* within transport governance. Rather ‘the environment’

appears to be conveniently appropriated in the pursuit of other objectives as the rhetoric of policy discourses adapts to the re-coloured language of the new agendas.

Chapter 6: Wagons role: dilemmas, decision making and divergent roads in NE freight

This chapter continues the analysis of organisations involved in the NE transport sector, examining the state of the road haulage sector within the NE focusing principally on the decision making of road transport companies¹ and how the environment is constructed within those decisions. The transport of road freight and the lorry in particular have been singled out for a great deal of negative attention with regard to the environment in recent years. The attitude of decision makers to the environment and their understandings of their company's environmental impacts are therefore of interest and are examined in this context and in the broader context of the competing pressures faced by transport organisations. The effects on NE transport organisations of regional, national and EU policies and regulatory regimes are discussed. The chapter concludes with a case study that examines the history of a privately owned transport company and its responses to a range of policy issues and opportunities, including shifting its business towards other modes. Within this analysis the significance of a key individual, in this case the managing director, on the processes and outcomes of decision making is discussed. As in the previous chapter this raises the issue of the effects that key individuals can have on policy processes and organisational governance.

The evolution of the modern road haulage industry can be traced back to the 1920s and the development of the industry has witnessed great change. However the changes of recent years, particularly those of the last twenty years have demanded a response to wide ranging environmental legislation, the creation of the European single market and increased globalisation, fierce competition, rising congestion, labour shortages and new technologies. Hauliers have had to adapt to this changing operational landscape in order to stay in business. To remain competitive they have attempted to meet these challenges with key strategies that include specialisation, new technologies or improved networks of contacts.

¹ Ten transport companies and two transport industry associations took part in the research. Appendix 1 contains a list of the organisations that contributed to the research, also see fig 6.1.

Transport decision makers are working within economic constraints, in contextually differing circumstances all with the aim of making a profit. The principal aim of this research is to discover how the environment is constructed within the minds of transport decision makers as they carry out their day to day business activities. Many 'environmentally connected'² decisions are thought to be taken with little thought by the decision makers to the environmental implications. This is in essence because the environmental connection has been achieved by market circumstance or through an economic or regulatory instrument.

Plenty of examples exist and the 'fuel price escalator' policy abandoned after the autumn 2000 fuel protests, it was claimed, was an attempt at using the economic measure of fuel taxation to reduce the demand for transport. Similarly the introduction of differential rates of vehicle excise duty (VED) or *Euro* engine standards provide regulatory illustrations of attempts to influence purchase decisions towards less polluting vehicles. For the haulage industry in particular additional control measures related to vehicle weights, emissions and especially noise have been used to reduce traffic impacts on local and wider environments.

Within the many instruments aimed at controlling the various effects of transport on the environment, some measures have been more successful than others. Some have produced perverse or unintended outcomes resulting in arguably worse environmental impacts. Regardless of the merits, or effects, of these efforts such measures are the 'carrots' and 'sticks' of what are essentially economic considerations that form distinct, but important motivations within transport decision making. If the research questions can successfully identify the processes taking place that construct these environmental connections, whether they are conscious or, as seems more likely, quite subtle ones, then it will be possible to suggest ways of systematically capturing environmental improvements through ordinary economic activity.

6.1. The NE road haulage industry context

² 'environmentally connected' in this context refers to decisions that have some sort of associated environmental dimension to them.

During the research interviews attempts were made to discover how the environment was constructed by interviewees. As it was expected that economic considerations were likely to be the most important to respondents a subtle line of enquiry was attempted in order to reveal possible differences between choices that interviewees felt they would *like* to take and those that they felt they *had* to take. Other questions that investigated current activities and choices, such as reasons for the selection of new vehicles or attempts at specialisation, also reveals an awareness of environmental concerns in addition to the more obvious commercial priorities being expressed. Some responses yielded information that suggests environmental disbenefits are accruing as a result of policies aimed at providing environmental improvement. Not surprisingly almost all respondents complained about the effect of what they saw as the high cost of fuel on their businesses and most agreed that a shortage of drivers was becoming a problem. This thesis argues that the effects of both of these concerns can be shown to have an effect on the overall environmental burden of transport. Finally most responses suggested that local authorities have little or no contact with transport companies and this is at odds with suggestions made by some local authorities.

In the publicly owned companies the structure of the decision making processes is quite different. Each has more than one depot with established decentralised logistical operations carrying repeat cargoes on regular routes. *P&O* and *Interroute* have developed niche operations to closely match the needs of regular customers. *Safeway* also carry out repetitive operations within their own producer to warehouse to store network. The organisational structure of these companies has developed to a point where different individuals have taken on specific responsibilities within their companies and decisions on specific aspects of company policy are taken by groups of individuals with expertise in these areas. From a business viewpoint the volume of commercial activity that these organisations are engaged in means that they can afford to recruit sufficient specialist staff to enable them to take opportunities, maximise market advantages and remain highly competitive and profitable. The characteristics of the company featured in the case study, though privately owned, places it in this group.

The context of decision making within these sub groups of organisations is significantly different. All companies face competitive pressures, but the group of

smaller companies are in a very different position to the large organisations. The pressure on decision makers within these small organisations can be immense. These individuals are in controlling positions and often carry out multiple functions within the organisational hierarchy. They are often responsible for organising enough work to keep their companies going on a week to week basis. They usually negotiate terms on a variety of goods and services needed by their companies in, for example, fuel prices and deliveries, vehicle purchasing and maintenance, property maintenance, office equipment and running costs and advertising. They are usually also the negotiator with staff when wages and salaries are discussed. In short these decision makers are often the primary driving force within their organisations and many have learned the key skills of their present roles in a combination of trial and error and from what they have been taught by older family members. Few have formal qualifications. When asked about his role and responsibilities RHM1 a managing partner of *Gallagher Brothers Transport* expressed a deeply personal view of some of the frustrations, fears, and stresses he felt.

"I've had enough...whether I stay in the business, I mean I've got a son who works (in the business) and you would like to think you were leaving something there that was worth while leaving for him, or am I just putting upon him the headaches that I've got now? There's another brother in there, he doesn't see the business side of it, the worry side of it, the way I do, and I think if you're handing the business on to somebody else are you just handing a load of heartache over because that's all it is now, a headache. I don't suppose there'd be many people in the haulage game that would say anything else but that. (It) sickens a lot of people off just by plodding along. Once I had a great interest in it and I couldn't wait to get to work to get into it, now it's gone the opposite way. I cannot sleep at night for worrying about the way the job's going, is it all worth it at the end of the day? This business used to be three brothers, it's killed one of them and I would say that it's through the stress of the job, worrying" (RHM1 interviewed on 14/06/01).

If this insight into the pressures faced by hauliers is fairly typical it reveals that considerable difficulties exist for individual decision makers as they attempt to fulfil their many tasks each week. The pace and pressure of their roles seems to leave little time to think strategically or to consider the environmental, or any other, implications of their choices and such stress levels are probably not good for the health of decision makers. RHM2, the key decision maker at *Eric Short Transport*, expressed similar concerns.

“Well, I’m 55 now. I would like to retire, certainly within five years. Obviously my son, he’s 22, and I keep saying to him, ‘you know you don’t want to be in transport in ten years time’ (because of) the pressures, costs, legislation” (RHM2 interviewed on 21/07/01).

Most of the representatives of the smaller haulage companies who were interviewed were, in fact, pessimistic about the future prospects for their businesses and the views of these two experienced haulage operators paint a very different picture of the haulage industry to that expressed by interviewees from the larger organisations, making the context of their decisions difficult to compare.

Much can be learned about the decision making context simply by observing the language of the workplace³ within which decision makers work. In contrast to the small companies the atmosphere at *Safeway* and *P&O*, for example, was quite different. On arrival at both companies a receptionist was available to guide, or escort visitors to their contact and both companies provided a relaxing waiting area with refreshments and magazines. Interviews in both cases were carried out without interruption in contrast to the interview with RHM2, which was frequently interrupted as he took all manner of business enquiries by telephone. At both companies the interviewee was able to spend time on a dedicated role. RHM3 of *P. & O. Ferrymasters*, for example, is the senior manager at the Teesport terminal and is responsible for the overall transport operations from that port. He has over twenty staff who carry out the various administrative tasks to ensure the business operates as effectively as possible. Similarly RHM4, a logistics manager at *Safeway* is responsible for the operation of the company’s distribution network. He also has staff under his control, but does not have to concern himself with other issues not related to his carefully defined role. Because of the structure of these organisations both of these managers have time to concentrate on their roles and can therefore develop a deeper level of understanding of the wider implications of their activities. The time to propagate this expertise is found by dividing roles into ever more specific, but interdependent tasks. This means that these organisations need more ‘backroom’ staff and this advantage is usually bought by achieving greater turnover from increased activities and sales. In essence they are buying time and space within which to think

³ See chapter 4.4.1.

and plan. This tends to lead to higher quality decisions being made and makes the identification of improved business opportunities more likely. Examples of this separation of roles can be seen in the many corporate documents produced within companies, often for internal use only, which are used to exchange information within organisations about specific responsibilities and opportunities. *Safeway* provided a copy of their internal *Supply Division Environmental Report* (*Safeway*, 2001, unpublished), which contains environmental achievements and targets, sets out an ongoing environmental management strategy and provides details of the environmental impacts of a wide range of company activities. These include issues around rail freight, vehicle procurement, maintenance and painting, noise, waste, recycling, alternative fuels, refrigerants and emissions. The company's interpretation of its own activities, from an environmental viewpoint, assists other managers and decision makers by providing them with information, and perhaps targets, that can help them to make informed choices within their particular remits.

When activities and interview responses of haulage organisations are considered within these two differing decision making contexts it is perhaps not surprising that the smaller haulage companies appear to have little regard for anything other than the short term business implications of their choices. In contrast the larger companies have created opportunities linked to the size and structure of their organisations that enable them to maximise any benefits, either environmentally connected or otherwise, that might be possible within current regulatory and market frameworks. Commercial advantages are gained in this way through the identification of 'win-win' opportunities.

6.2. Issues and incentives: a summary of the responses of road haulage organisations

Various tables have been produced to illustrate some of the operational decision making tensions faced by road haulage organisations. Each line of each table is set out to explain and comment upon a particular issue or policy measure. As such the tables are self explanatory. Further analysis of selected extracts from the tables is included to aid the general discussion of the extent to which the environment is included in transport decision making. The tables are intended to add clarity to the findings by:

- Identifying the key response strategies used by haulage operators.
- Ensuring that subtleties within responses are not overlooked.
- Aiding in the analysis of the data.

The tables produced also provide a brief summary of the current issues faced by transport organisations and the environmental implications of the eventual decisions taken. The analysis contained in this chapter will systematically examine the data from the tables together with direct interview evidence and draw this together with assessments of:

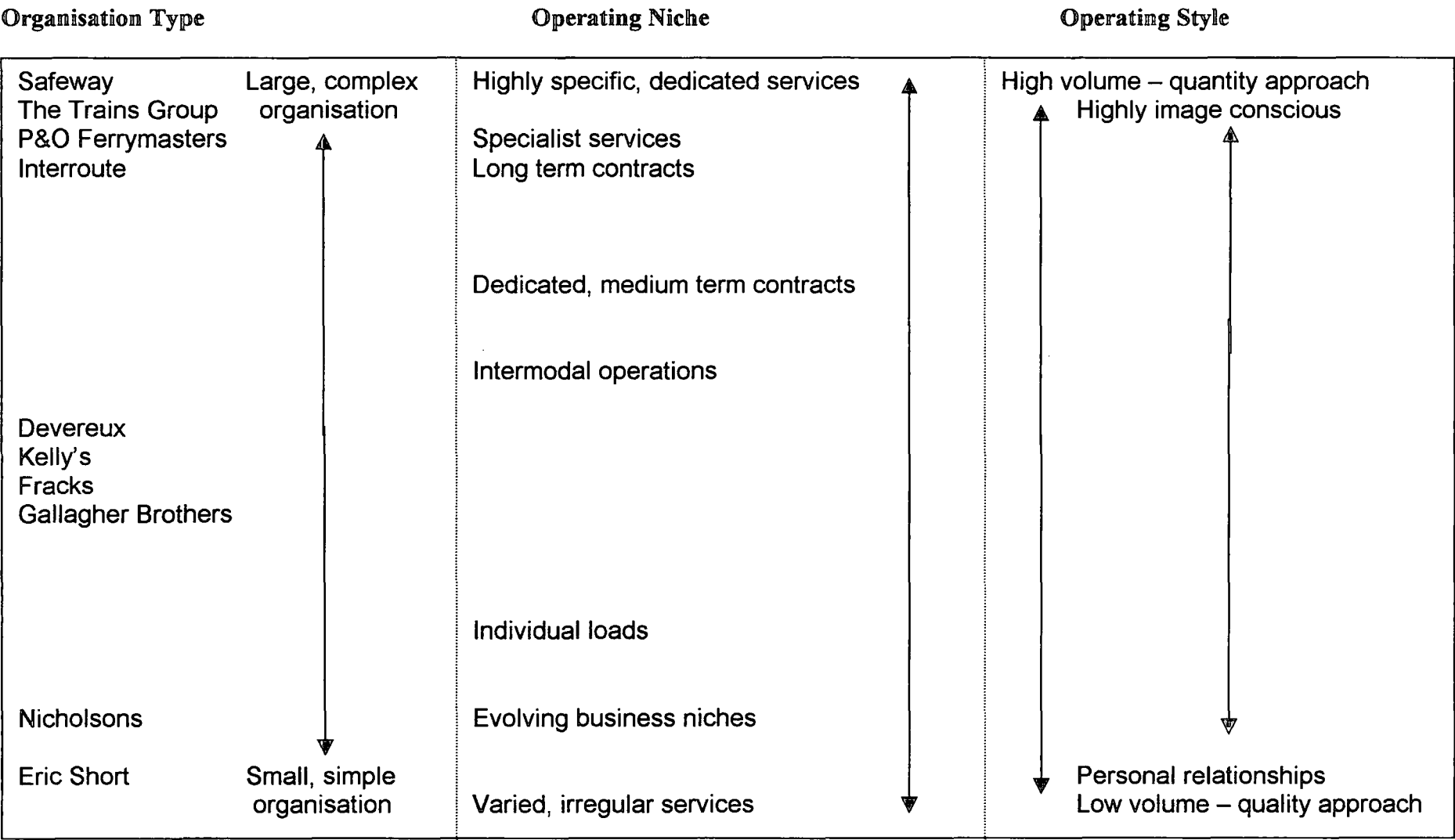
- How current economic, policy and industry developments are affecting road haulage organisations.
- How such developments make decision makers feel and how they might respond to the pressures they face.
- What the environmental burden of the road haulage sector is and how it might be changing.

The chapter will conclude by looking at the implications of these assessments and by asking how the road haulage sector will continue to develop over the coming years. To begin this analysis figure 6.1. has been produced to illustrate the contextual differences of the haulage sector. The arrows on the figure represent continuums of the various ranges described

6.3. Statutory attempts at environmental protection

The analysis of the responses of interviewees begins with the effects of statutory instruments aimed at environmental protection and improvement. The influence of statutory measures on the environmental outcomes of organisational decision making are summarised in table 6.2. The most notable aspect of the command and control measures outlined in the table is the tendency to address a particular problem to the exclusion of others. Many of the standards set out here successfully achieve a narrow

Figure 6.1. Road Haulage Organisations: Relationship between type, niche and style



Note: Quality and quantity approaches are representative of a general approach. Here they do not imply that high volume business cannot also achieve high quality service rather that an element of personal service is lost in the high volume approach.

Table 6.2. Influence of statutory controls on the processes of organisational decision making and associated environmental outcomes

| Legislation / Regulation | Organisations Affected | | Environmental Effects | | Comments |
|--|--|--|---|--|--|
| | Which | How | Positive | Negative | |
| Euro 1, 2, 3 and 4 diesel engine manufacturing standards | All purchasers of new diesel engined vehicles | Restricts choice of vehicles by setting mandatory EU wide engine manufacturing standard | Raises environmental standards in discrete stages. Removes 'dirty' vehicles from new market. | Discourages improvement beyond the mandatory standard. Can discourage the development of other perhaps more effective technologies. | Generally positive but may focus on sub optimal solutions. Regular review likely to be necessary. |
| 'Ultra low sulphur' diesel standards | All purchasers of fuel | Slight increase in operating costs due to increased maintenance requirements. May shorten engine life. | Reduction of some harmful environmental emissions. | Slight increase in overall fuel consumption. Larger increase in 'converted' emissions products, principally CO ₂ | Generally positive but may focus on sub optimal solutions. |
| Increased fuel taxes | All purchasers of fuel | Increases operating costs adding to pressure to find less expensive operational strategies or technologies | Initially reduces overall demand for fuel. | Differential fuel taxes with the EU encourage the use of 'foreign', higher sulphur fuel in the UK. | Unified fuel taxes / costs across the EU would provide a solution. Strict application of fuel quality standards would harmonise the environmental effects |
| Differential VED rates. | All purchasers of new and second hand vehicles | Encourages choice of models that attract lower VED rates, especially in the second hand market | Encourages a switch to 'cleaner' vehicles | Negligible | Causes a reduction in the value of second hand vehicles. |

Table 6.2. (cont.)

| Legislation / Regulation | Organisations Affected | | Environmental Effects | | Comments |
|---|---|---|---|---|---|
| | Which | How | Positive | Negative | |
| Industrial waste disposal regulations | All organisations carrying out vehicle maintenance | Restricts disposal routes through mandatory controls. Regulated by Environment Agency and Local Authorities. Heavy fines for offenders. | Reduces pollution of land, groundwater and watercourses. Recycled wastes can substitute new natural resources. | Negligible | Creates and improves business opportunities in the recycling sector |
| Dangerous goods in transit regulations | All organisations transporting goods defined as dangerous | Re-routes road vehicles through specified lower risk corridors | Local air quality improvements gained by reduced vehicle movements | slightly increased emissions from longer journey distances | Insignificant overall environmental impacts (except in the case of road accidents) |
| Proposed EU Working Time Directive and other restrictions on drivers working hours. | All organisations with employee drivers | Limiting working hours of employees. The WTD is likely to lead to some restructuring of transport operations to suit reduced shift lengths | None | New infrastructure provision may be required for an expanded network of overnight lorry parks to suit shorter travel distances possible in shortened shifts | Likely to increase operating costs and add pressure on other expenditure with possible negative environmental effects. May be an associated increase in employment due to more drivers working less hours |

aim whilst failing to address other, sometimes emergent issues. The *Euro* engine standards, for example, have successfully reduced vehicle emissions associated with air quality, but have done so by increasing the proportion of emitted gases that add to global warming⁴. The technological changes applied to engine design to achieve this goal has also led to a slight increase in fuel consumption (Coyle, 2000). This also adds to global warming. In the context of vehicle procurement road haulage decision makers did not see the Euro standards as a particularly relevant factor in their choice of vehicles. Hauliers were aware though that the 'improved' standards had led to greater fuel use. RHM5 of *Devereux Transport* expressed this view of this aspect of the *Euro 3* engine standards.

"Environmental performance to be quite honest is mandatory really. At the end of the day more fuel has got to be created to power them...so there's an element of pollution somewhere along the line" (RHM5 interviewed on 14/06/01).

The point here being that it is clear that the regulatory instrument is working effectively and producing air quality benefits, but that the same instrument, by not including CO₂, is actually encouraging a sub optimal solution in the form of additional greenhouse emissions.

The introduction of 'ultra low sulphur' diesel presents similar problems. The environmental drawback here is associated with fuel consumption. RHM5 again.

"There's a positive side to sulphur in that it lubricates fuel pumps... so (without it) you'll have a gradual deterioration of fuel performance" (RHM5 interviewed on 14/06/01).

The implication of this comment is that choice has been removed in vehicle and fuel purchasing and that any concern he or anyone else may have for the environment is now imposed through the regulations.

⁴ A strikingly similar situation was seen with the introduction of catalytic converters in the early 1990s. Catalysts reduced their target emissions but created the problem of their own eventual disposal, increased CO₂ emissions through reduced fuel efficiencies and brought about a collapse in investment in 'lean burn' technology which, it is argued, could have delivered similar pollution reduction in conjunction with lower CO₂ emissions (Hughes, 1993).

Another aspect of the introduction of 'low sulphur diesel' centres on the uneven application of agreed EU standards within member states. This can lead to a situation where organisations based in continental Europe choose to buy fuel there, because of its cost, and are, coincidentally, buying fuel that does not comply with the European 'low sulphur diesel' standards.

Increasing the cost of fuel can be shown to have a short term effect on fuel demand and this produces similarly short term environmental benefits. The longer term effects though are potentially more significant in the present situation where fuel prices are considerably and consistently higher in the UK than in other parts of Europe⁵. In the UK for example diesel fuel is currently 76.1 pence per litre compared with a Euro zone average of 68 pence (AA, 2003). Firstly, the difficulty of passing on the cost of increased fuel charges is perhaps more serious than the cost itself since this limits the options open to organisational decision makers in other areas of organisational finance. According to the *Freight Transport Association* the haulage industry continues to operate with average profitability returns of 3% and the fuel price difference seen above is having a significant effect on industry profitability (FTA, 1998; 2003). These limitations may have direct environmental significance by delaying decisions on new vehicle purchases, which may themselves be associated with choosing cleaner or more efficient vehicles. Secondly, and perhaps more obviously, the competitive difficulties faced by UK hauliers are encouraging the use of European diesel in lorries operating in the UK. There are two aspects to this both with identical environmental significance. On the one hand European companies can work in the UK, typically covering up to 3,700km on a 1400 litre tank of fuel. On the other hand British lorries can fill up with European diesel before crossing back to the UK or, as was suggested by RHM2 in one interview, by making special trips and transferring fuel to UK based vehicles.

"We know that, we work with people down south who basically, they're only about fifty miles from Dover, they're probably doing two or three trips a week to Paris. They fill up at Calais, come back in, drain the tanks from their trucks and just have enough in to get them back out to

⁵ Despite the UK's membership of the EU considerable differences exist between their transport, taxation and regulatory systems. Within this chapter in particular, the 'UK' and 'Europe' are sometimes referred to as distinct places for reasons of convenience. This distinction does not imply that the UK is not part of the EU or that some harmonisation has not already taken place.

Calais again and refuel. So their UK vehicles are running on the cheaper fuel that is bought in France and that's every day" (RHM2 interviewed on 21/07/01).

In either case the diesel being used in the UK is foreign fuel produced to a lower environmental standard than UK diesel. RHM5 explained.

"The E.C. Transport Ministers agreed that by 2005... all diesel would be very low sulphur content... you can only buy ultra low sulphur diesel in the U.K. and that's not the case in the rest of Europe, yes they've got to adhere to this low sulphur diesel by 2005, but it will be the end of 2005 so all the foreign trucks that come into this country are full with high sulphur diesel which is more fuel efficient than low sulphur diesel" (RHM5 interviewed on 14/06/01).

Clearly for companies operating in Europe there are real cost advantages to be gained despite the environmental cost. In a comparative study of revenues likely to be raised from different rates of diesel tax the RHA (2001) point to £82 million of annual revenue lost because of UK hauliers fuel purchases abroad. This figure could be adapted to show the emissions burden attached from burning the same value of European diesel. Such a figure would not include similar diesel purchased by foreign companies currently operating in the UK. Ignoring, for the moment, the improved competitiveness of European goods because of lower transport costs it is obvious that whatever the quantity of freight being moved a certain volume of lorry trips will be required to do this. Since the economics of the situation make using foreign fuel an attractive strategy it makes it likely, as suggested by the RHA, that a greater proportion of the fuel used in the UK will come from Europe than would be the case if there were no significant difference in fuel prices. In this situation the price differential has the effect of undermining the effect of the environmental regulatory standard applied to UK fuel. Furthermore, from an environmental standpoint, harmonising the application of the low sulphur standard *or* the actual cost of fuel across the EU would appear to be the necessary step to achieve the outcome intended by the introduction of the fuel standard. This raises the question of how to develop processes that can successfully apply Europe wide standards evenly and equitably. The present situation seems to suggest clear procedural flaws in policy processes. The difficulties in achieving a Europe wide 'joined up' approach to policy design and implementation may be extremely difficult and time consuming given the additional competing national agendas and formal and informal networks.

The prevailing rates of vehicle excise duty (VED) appear to influence purchase decision making. These vary according to various criteria, including the expected environmental performance of vehicles. This is more noticeable in the second hand market. Clearly aware that environmental performance can offer direct economic benefits to his company, RHM6, one of the family members who own *Kelly's Transport* said,

"...only because you have different types of engines now, *Euro* 1, 2 and 3 is just to get the tax, cheaper tax, that's the only way it would affect us so we would be going for the one with the cheaper tax" (RHM6 interviewed on 29/06/01).

Similarly, when asked if he considered different VED rates when choosing replacements RHM7, the transport manager of *Nicholson's Transport*, was also well aware of the advantages offered by careful selection of vehicles, or indeed from vehicle modifications such as fitting 'cleaner' engines.

"Oh yes. Full tax on a 38 tonner is something like £3,750, with the clean engine you can actually get it down to about £780, it's a substantial saving buying a cleaner vehicle" (RHM7 interviewed on 14/06/01).

Such a difference in tax should provide a simple choice for hauliers but without the disadvantages seen with the *Euro* engine regulations of removing choice completely. This regulation does in fact illustrate the important principle of the 'win-win scenario', said by, for example, Button (1990), to be necessary for achieving positive environmental outcomes. 'Win-win' scenarios are seen as preferable because they deliver economic and environmental benefits. In this regulation the positive environmental choice of a cleaner vehicle is rewarded by a reduction in tax. This introduces clear incentives into decision making processes and the level of incentive remains reasonably flexible allowing for possible future policy aims of upping incentives to obtain further environmental benefits.

Since the EU Working Time Directive was the basis of much concern within the minds of interviewees and the haulage industry in general, it is perhaps worth examining the likely effects of the Directive on organisational decision making

processes. Substantial changes in working practices within the haulage industry are likely to have measurable environmental implications. The main Working Time Directive (CEC, 93/104/EC) was agreed by member states in 1993 and passed into UK law in October 1998. Employees in road transport were not included within the Directive's original requirements. However negotiations began before 1998 to include these employees in a subsequent addition to the Directive's coverage. The key requirements for the haulage industry centre on the 48 hour working week and the requirement that drivers take an 11 hour break between shifts. Much argument remains as a number of issues are unresolved, such as the position of self employed drivers, who in effect carry out the same functions as employee drivers, but are not constrained by the same legislation. Most hauliers expressed some sort of concern about the effects of the Directive (FTA, 2003) though most seemed unsure exactly how it might affect them. However, RHIR1, a district officer of the RHA, seemed clearer than most about the implications of the Directive on hauliers;

"There will be a major increase in the demand for drivers if the working time directive comes in in the form that it is currently drafted and that will add to the problems. The way it is phrased at the moment, we estimate that there will be something like a 15 - 20% increase in the numbers of drivers required simply to do the job that is being done at the moment and clearly, at the moment while we have difficulty replacing our existing driver population, adding that into it is going to make things significantly more difficult" (RHIR1 interviewed on 02/07/01).

Judging from the responses of most interviewees, driver shortages are already becoming a problem and any regulatory requirement that makes this situation more difficult is likely to add to haulage industry concerns. The long term consequences are difficult to predict, but if self employed drivers are exempted from the Directive's requirements there may be a move within the haulage industry to reduce the number of employee drivers in favour of subcontract drivers. Any such move has clear attractions for operators in that employment costs can be reduced in this way whilst maintaining existing operational commitments. However risks exist for hauliers in drivers moving their labour around to suit themselves, so this may introduce real dilemmas into decision making processes. For the environment reduced shift lengths, longer rest periods and shorter working weeks may lead to a much longer term restructuring of transport operations that demands new infrastructure provision to

compliment the shorter travel distances possible in shorter shifts. This would of course increase costs and add to pressure on other company expenditure that may delay decisions that contain environmentally positive aspects.

This summary and analysis of the effects of regulatory approaches on decision making processes in the haulage industry illustrates several things. Firstly, that it is difficult to design regulations that perfectly capture the intended outcome. This can be because of unconsidered factors that contribute to the regulatory regime gradually diverging from it's intention, or because new factors emerge with similar effect. Secondly, regulations can inhibit further improvement by setting standards that organisations aim to meet rather than exceed. Thirdly, and perhaps most importantly they can lead to a reduced level of environmental awareness because the need to consider particular factors is removed by the prescriptive nature of regulations. The final aspect of this point however, is that, as argued above, definite environmental benefits may be provided that would be unlikely to be obtained without regulation.

6.4. Transport decision making and the European Single Market

The analysis of interviewees' responses continues with an examination of the effects of the European Single Market on transport choices and these are summarised in tables 6.3. and 6.4. Table 6.3. deals with the effects of the single market currently being experienced. Since overall environmental assessment is claimed to be a key part of the EU's common infrastructure policy, table 6.4. summarises the effects likely if transport networks and systems can be developed in as environmentally sensitive way as possible. The EU Single Market came into being with the signing of the 1993 Maastricht Treaty, which committed members states to stronger economic links in particular, but in doing so provided the rationale for further development of trans European transport networks (Charlton & Gibb, 1998). The key effect of the Treaty with regard to transport and in regard to the environment is the tendency of Maastricht's provisions to encourage transport demand that is already unsustainable. Article 129 of the Treaty explicitly recognised improved transport links as vital to the success of the Treaty and this affected major changes to the decision making environment of transport companies. For each individual company across the EU the Treaty brought about the expansion of its potential market area, customer base and the

Table 6.3. Influence of EU Single Market and globalisation on the processes of organisational decision making and associated environmental outcomes

| Strategies / Opportunities | Organisations Affected | | Environmental Effects | | Comments |
|----------------------------|------------------------|--|-----------------------|--|---|
| | Which | How | Positive | Negative | |
| Enlarged market area | All organisations | Increasesd number of business competitors generally <i>and</i> increased number of potential transport poviders both increase pressure on costs. Longer travel times and distances increase internal costs for transport providers (eg wages, overnights, maintenance). | None | Increased emissions from increased transport demand. Extra vehicles required increased consumption of new natural resources | Economic benefits. May increase social and societal costs. |

Table 6.4. Influence of EU Single Market and globalisation on the processes of organisational decision making and associated environmental outcomes under possible future transport patterns

| Strategies / Opportunities | Organisations Affected | | Environmental Effects | | Comments |
|--|--|---|--|--|--|
| | Which | How | Positive | Negative | |
| Possible modal shift towards marine transport | Organisations using trans-sea shipment routes | Possible increase in shipping distance as a proportion of total journey length | Reduction in road vehicle emissions. | Possible increase in marine pollution | Opportunity to reduce road transport requirements and offset HGV driver shortages |
| Possible modal shift towards rail transport | Organisations transporting goods over distances greater than about 350km | Time and cost improvements possible at distances greater than 350km | Reduction in road vehicle emissions. Reduced congestion. Improved local air quality. | Substantial materials and energy requirements for necessary large scale infrastructure provision | Significant improvements in rail volumes unlikely with present land use patterns and market structures |
| Further trans European route connectivity achieved by filling in the gaps in the European road network | Long distance road hauliers | Time and cost improvements possible from reduced delays and congestion at present bottlenecks | Proportion of journeys where vehicles can run at optimum fuel efficiency speeds increased offering slight emissions reduction. | Likely increase in traffic due to reduced journey times. Increase in emissions likely to exceed any efficiency improvements. | Improvements in road network likely to make modal shifts towards rail and sea less attractive |

number of competitors it might face. This section of this chapter argues that this expanded European market has reached the local level in the NE of England⁶ and, whilst bringing opportunities, has also introduced considerable problems for the road haulage sector and that some of these problems are increasing the detrimental effects of road transport on the natural environment. Within this situation it is also implicit from interview evidence that the considerable pressure that NE transport decision makers are facing leaves them little time to consider broader environmental issues or the environmental aspects of their decision making.

The solutions to some of the problems faced by transport companies undoubtedly lays outside their control, but the immediate challenge for many transport organisations is to remain in business. From the interview evidence this has been difficult for some of them and the first issue that must be dealt with concerns the difficulties faced by companies in remaining competitive and procuring enough profitable work to remain competitive. Low profit margins can constrain companies in their responses to changing circumstances. For example low returns can prevent companies from purchasing new vehicles that are more fuel efficient and less polluting. Not that there was any suggestion that business opportunities are scarce. RHM1 of *Gallagher Brothers Transport* pointed to the difficulties of business survival despite there being plenty of work.

“There is the work there and there’s an abundance of work at the moment, we’re exceptionally busy but it’s like by the time you get the price of the job and your wages and your fuel and one thing and another, it’s just not working out...I’ve had customers that I’ve had for twenty years but because someone else has come along and said that they would do the job that much cheaper (the work has gone)” (RHM1 interviewed on 14/06/01).

Similarly RHM5 of *Devereux Transport* stated that

“...you’ve got to be fairly pro-active in a sense because at the end of the day it’s a very very hard business and it doesn’t seem to be getting any easier. If you want to stay in the business you’ve going to have to squeeze... look at ways of reducing fuel etc., and increasing your operation and efficiency, that’s what you’ve got to do” (RHM5 interviewed on 14/06/01).

⁶ In terms of NE transport operators and foreign flagged vehicles making regular trips between Europe and the NE.

These responses suggest an underlying problem, perhaps caused by the expanded market that the traditional structure of the road haulage industry is struggling to cope with. Under circumstances where work is plentiful it might normally be expected for prices to rise with demand, but as this does not seem to be the case it raises the question of what has changed within the economy that might be responsible for this. Even before the single market came into being it was certainly true that freight was travelling longer distances than used to be the case (Whitelegg, 1993). As EU internal market barriers were removed and European and wider global competition increased it was expected that transport demand would increase further (Sichelschmidt, 1999). This situation continues to pose a problem for the transport sector, which seems to be centred on the market itself. If, for example, a company is faced with an increasing number of suppliers who can compete for an order, either because they are located within the single market area or because they fall within an enlarged spatial area to enable 'on time' delivery, the company might well be in a position to obtain the goods it requires at a lower price. Evidence of the growing number of market competitors is provided by *Devereux's* and by *Nicholson's Transport*.

"There is a small move in the industry towards internet based trading. There are disadvantages and advantages, we do use it, yes it does help seeing more available work nearer (to) where you're offloading...we do use the internet in probably a growing way really to get to load, but mostly its regulars" (RHM5 interviewed on 14/06/01).

And RHM7 of *Nicholson's*.

"We do have a computer system, which we have through the Road Haulage Association, called Road Runner. That enables us to access loads from a wide variety of people" (RHM7 interviewed on 14/06/01)

Obviously if these firms are accessing new customers, outside of their established network of contacts, through computer technology they are encroaching on remote 'local' markets. It is quite reasonable to assume that other firms across Europe are making similar moves to access loads. If hauliers are accessing loads from a wider area then they are increasing the number of competitors who can realistically compete within markets. The enlarging of the area of the single market means that pressure on

costs within suppliers' businesses are increased and, of course transport is one of those costs. This can result in work being moved around the transport market to the lowest cost provider as seems to be the experience of *Gallagher Brothers Transport* in the example above.

From this situation there seem to be direct and indirect environmental impacts. The direct impacts are caused by the spatial expansion of the market with the removal of internal barriers to competition. The longer hauls of this new operating space have clear environmental impacts, in the form of emissions, associated with increased fuel use and further non renewable resource depletion. In the longer term such trends will lead to greater road network and infrastructure provision as the 'missing links' of European networks are provided (Sichelschmidt, 1999, Hoyle & Knowles, 1998). This will of course create additional environmental impacts in the locations of their construction and use. Were targeted regulatory controls introduced that directed more freight towards rail transport some of these increasing environmental impacts could be prevented.

This fieldwork reveals an increased number of transport providers competing for work because of the opportunities provided by the single market. This adds the second cost dimension of the 'sub market' for transport operators in the form of an internal competitive pressure on costs between rival transport providers. In short a greater number of haulage customers are available to a greater number of haulage companies so cost pressure exists from within the customer group *and* from within the supplier group. The road freight transport industry is then in something of a paradoxical situation in that it's own highly efficient, low cost distribution systems add competitors to markets necessitating greater efficiencies in those markets and in the transport market. This situation seems curiously unsustainable since the same characteristics that improve efficiency also reduce profitability, whilst both add to environmental burdens.

The particular problems of the UK haulage industry can in part be traced to the inequality between member states' regulatory regimes. However it would seem that part of the environmental impact associated with these characteristics of the single market arises from the opportunities open to European based hauliers within the UK

transport market. *Devereux's* suggest that foreign flagged vehicles, operating from Europe and in the UK, are taking advantage of inequitable economic and regulatory conditions between member states. This results in non UK companies using poorer quality diesel that contains more pollutants, such as sulphur and this has direct environmental disbenefits.

“we don't go abroad with our general trucks *now* because it's not competitive, the foreign lads have got it all I'm afraid, predominantly because of the fuel and there's less restrictions in most foreign operations... but the foreign lorries that are coming in (here) aren't using low sulphur and not buying any fuel in this country anyway so essentially they're not paying anything to use our roads” (RHM5 interviewed on 14/06/01).

This implies an environmentally perverse outcome to the intention behind the higher cost of diesel in the UK and will not help in efforts to improve UK air quality. The economic concepts that underpin the single market seem to fall down at the policy delivery stage by leaving national governments free to decide to distort the single market either by reducing, or increasing transport costs through subsidies or taxes. Until such time as these difficulties can be addressed and successfully resolved competition problems seem likely to continue. Clear transport imposed environmental disbenefits can therefore be attributed to the creation of the single market. Also some of the economic imperfections of the single market have, from the evidence seen here, influenced organisation transport decision making towards less sustainable practices and have created additional negative environmental impacts.

6.5. Decision making processes under competitive pressure

In response to stiff competition some organisations have developed novel, even niche responses. These responses include specialising in a particular aspect of road haulage. Within the responses of interviewees there were few indications that the environment was considered as important in itself. Commercial rationale underpins these choices but the specialisations chosen also contain effects that either reduce or exacerbate the negative environmental impacts of road transport. These are of interest since they provide clues as to the sustainability 'direction' that transport activity can take. Table 6.5. sets out the extent to which the environment is considered and affected within

Table 6.5. Influence of increased competition amongst transport providers on their processes of organisational decision making and associated environmental outcomes.

| Business / Technological Response | Organisations Affected Which | How | Environmental Effects | | Comments |
|--------------------------------------|--|---|---|---|--|
| | | | Positive | Negative | |
| Specialisation | Specialist Hauliers | Provides 'niche' opportunities with reduced competition | None | Specialist vehicles under utilised. Higher proportion of 'return empty' trips of specialist hauliers adds to emissions per km | Reduced safety, health and environmental risks due to specialist handling of loads |
| 'Containerisation' of trailer fleets | Some general hauliers and some tanker hauliers | More flexible trailers able to accept wider variety of loads. Reduced loading times | Possible reduction in the number of 'return empty' trips, especially in the tanker sector | Negligible | Possible improvement in fleet utilisation and vehicle loading times. Improved potential |
| Palletised distribution network | General hauliers | Regular business. Regular routes, stops etc. Reduced costs. Reduced profit margins | Ensures more outward 'full loading'. Minimal 'empty returns' | Encourages transport of smaller, lower cost items over longer distances and therefore increases overall transport volumes and emissions. Reduced profit margins can lead to older, 'dirtier' vehicles remaining in service for longer. | Encourages economic development through reduced transport costs. Tendency to use older (less reliable) lorries for local trips. These are usually oldest and 'dirtiest' in haulage fleets and this can negate other local air quality improvement measures. |

Table 6.5. (continued)

| Business / Technological Response | Organisations Affected | | Environmental Effects | | Comments |
|---|---|---|---|---|--|
| | Which | How | Positive | Negative | |
| Exchanges of loaded trailers | Large volume freight movers. 'Own product' movers. General hauliers. Self employed owner drivers. | Improved utilisation of vehicles and labour | Possible reduction in the number of 'return empty' trips. | Negligible | Possible improvement in driver and fleet utilisation and vehicle loading times. Improved potential for modal transfer. |
| Development of informal network of contacts | Mainly general hauliers | Key source of backloads. Provides breakdown / maintenance backup in emergencies. | Reduces costs by reducing the number of 'empty returns' | Negligible | Builds personal relationships between hauliers. Increases trust, knowledge and mutual assistance. |
| Use of sub contract 'owner driver' labour | Companies engaging sub contract drivers and owner drivers. Self employed drivers. | Removes need for contract providers and sub contractors to comply with much employment related legislation. | Negligible | Possibility that sub contractors will use dirtier lorries and fuels to remain competitive | Possible for contract providers to avoid the requirements of the 'Working Time Directive' and other employment and environmental legislation |

Table 6.5. (continued)

| Business / Technological Response | Organisations Affected | | Environmental Effects | | Comments |
|-----------------------------------|--|--|---|---|---|
| | Which | How | Positive | Negative | |
| Leasing of vehicles | Growing number of companies leasing vehicles | Removes need for 'in house' maintenance and repairs. Fixed costs improve financial stability. | Tendency to remove old vehicles from fleets providing cleaner, more efficient vehicles as first choice for operations. If 'lease expired' vehicles sold into 2nd hand fleet then no improvement | Negligible | Leasing may offer cost savings and make attempts at regulating wastes, vehicle disposal and re-engineering simpler. |
| Internet trading | A small number of hauliers | Identifying backloads | Reduces costs by reducing the number of 'empty returns' | Negligible | Potential for further reductions in return empty trips as market areas increase beyond 'personal network' areas. Similar service offered through RHA |
| Alternative Fuels | A small minority of hauliers | Cost reductions. Image improvements Quieter operations can reduce restrictions on access times | Air quality improvements due to lower emissions. Lower noise levels. CNG requires little new infrastructure provision. | Fossil fuels still pose environmental problems but in comparison with present fuels few negative effects. | Offers lower operating costs. Reduced restrictions on delivery times can improve vehicle utilisation |

decision making processes in terms of specialisation. Examples are included in the table and the subsequent analysis examines some of these aspects in greater detail.

Specialisation of any kind represents a response by a company to engage in or strengthen a particular area of activity. The overriding emphasis that is placed on economic considerations could reasonably suggest that decisions to specialise in particular business activities are likely to be taken primarily on a commercial basis. Within the specialisations uncovered in this project two main types, that occur at different scales of activity, are apparent. Firstly there is 'side line specialisation' that involves identifying a particular activity that offers market opportunities that supplement the main business activity. Both *Gallagher's*, with their sideline in heavy haulage and *Nicholson's*, with their involvement in the pallet distribution network have chosen to specialise in this way to bolster their main activity of general haulage. The second kind of specialisation can be described as 'sub sectoral specialisation' and involves the dedication of the core business activity to a single form of haulage. This strategy has been seen at *Kelly's* where the company relies almost exclusively on container shipment loads that are arranged on a sub contract basis through a single shipping line. It has also been seen at *InterRoute* with their choice to carry tanker traffic only.

Table 6.5. also highlights another form of specialisation that also often occurs as a 'sideline specialisation' at individual company level. The appearance of pallet networks in recent years represents another attempt at specialisation. The processes that are taking place to enable these networks to flourish are clearly economic and opportunities are probably further increased because of the single market. The effects of pallet networks are not solely economic though and environmental implications do exist as a result of their appearance. The system of delivering palletised goods and the opportunities for companies in the system was explained by RHM7 of *Nicholson's Transport*.

"We do a nightly trunk down to what we call a 'distribution hub' near Bawtree (Doncaster).... we collect pallets from round our area, our post code is what it works on (and) we cover TS and DL which is Teesside and Darlington. So we collect (loaded) pallets in, assemble them here, label them up, give them all the correct documentation and put them on a night trunk

five nights a week which comes down to the hub, we drop the pallets off for distribution on next day delivery nationwide and at the same time we collect all the stuff that we've been asked to deliver the next day in our area. Everything comes in by truck and goes out by truck. It's a lot quicker for them and it's a lot more economical as well. There's quite a considerable saving where somebody would take two pallets down the road we used to charge them as a full load on a 7½ tonner which may be £200 or £300 for the load, we can do both pallets for about £70 or £80" (RHM7 interviewed on 14/06/01).

On first impression it would seem that the pallet network offers environmental benefits in the form of reduced emissions through load sharing. It may however, merely reduce the cost of transport to point where previously unviable journeys become worthwhile. If this is so the pallet network is likely to encourage higher overall transport volumes. The market might also be expected to settle into longer transport distances with accompanying higher emissions burdens. This system does illustrate the significant economic efficiencies that can be achieved through this type of transport. The economic processes that are taking place are simple and well rehearsed and it is unlikely that either hauliers or their customers would be willing to move back to a less economically efficient system. Since economic equations cannot easily take into account unpriced environmental factors then the development of spatially wider markets involving processes that are largely unaffected by increased environmental costs are likely.

The commercial benefits of the system are unconvincing for some and small profit margins do raise the possibility of older, dirtier lorries remaining in use for longer because companies may be unable to afford to replace them as often. The low profitability for operators in the haulage sector constrains their vehicle purchase decisions resulting in vehicles remaining in service for longer periods. These vehicles are often the least energy efficient vehicles within company fleets. Clearly their condition is linked to emissions and, replying to a question about emissions, RHM2 confirmed this,

"...I think the one at the minute is this emission thing for the City Centres, which the (local authorities) are trying to push through. You understand that anybody who has trucks that do local deliveries, or some companies anyway, basically use the oldest type of truck. They

probably spent four or five years travelling up and down the country and in their last two years they'd do the local deliveries." (RHM2 interviewed on 21/07/01).

Whether this practice is exacerbated by the pallet network is unclear, but in any event it raises the possibility that the dirtiest lorries are in use in the least appropriate places. From an operational viewpoint this makes sense since older vehicles are usually less fuel efficient and less reliable and decisions to keep such vehicles on local runs make economic sense. It does present an example of where an environmentally negative strategy is pursued for economic benefits and may add to difficulties for local authorities charged with improving urban air quality. This may also suggest that environmental concerns are poorly understood and considered within day to day transport decision making processes. More cynically, they may just be ignored in favour of commercial priority since breakdowns closer to a depot are more easily and cost effectively dealt with than those at a distance. If the former is the case an educative approach to influencing decision making process might be useful in raising the profile of environmental concern within organisations. If the latter is true attempts to ensure, or improve, current air quality might need to be backed by a tougher regulatory and inspection regime to ensure environmentally positive 'choices' are made.

The final two aspects of commercial activity that are highlighted in table 7.4., 'internet trading' and 'alternative fuels' have appeared as business strategies relatively recently. Alternative fuels in particular may offer considerable potential for reducing the environmental burden of transport. Neither measure was encountered to any great extent. Internet trading and the use of the RHA's similar computerised load finding system 'Roadrunner' was discovered at two companies; *Nicholson's Transport* and *Devereux's Transport*. RHM5 explained his company's use.

"There is a small move in the industry towards internet based trading. There are disadvantages and advantages, we do use it, yes it does help seeing more available work possible nearer where you're offloading but essentially, historically, hopefully you've got customers near where you are tipping, because you know where you're tipping and you do a bit of research and things like that and our customers are fairly long established. We do use the internet, in probably a growing way really, to get to load." (RHM5 interviewed on 14/06/01)

From the final line of *Devereux's* comment it would suggest that as transport distances are increasing, perhaps in part as a result of the opportunities of the single market. This might make systems that can find remotely located, new customers increasingly useful. Apart from the environmentally negative consequence of possibly increasing trading areas and encouraging transport the internet does seem to offer the benefit of reducing return empty running. Once again though no evidence was found that *Devereux*, or any other haulier, is including internet trading within day to day business activity for any reason other than for commercial gain.

Decisions to choose alternative fuels are examined last for several reasons. As a new way of responding to current commercial conditions the use of compressed natural gas (CNG) fuel was seen within this research only at *Safeway*. The company is experimenting with the fuel as a means of improving its environmental performance against a set of self imposed targets in line with government advice (Safeway, 2001). With grant support, and working in partnership with *Scania*, *Safeway* is converting 40 more of its 750 plus lorries to run on gas. 10 CNG *ERFs* are already in service working on deliveries in the London area.

Using this technology offers cost reduction benefits to *Safeway* as the price of the fuel is about half the cost of diesel. The vehicles are also considerably quieter than diesel powered lorries and RHM4 of *Safeway* expects this factor to offer advantages.

“If we do get relaxation of curfews⁷ because we’re running quiet fleets, we will get a benefit from it (CNG) and if we can take curfews out that means we can take vehicles out, take vehicles off the road. There’s a direct saving, less congestion during the day because there’s a lot less vehicles on the road” (RHM4 interviewed on 21/07/01).

For the environment the benefits are to be found in the reduced quantities of CO₂ emitted per unit of energy consumed when comparing CNG with diesel. CNG is also cleaner in its air quality effects because it contains lower levels of particulates. In the longer term a large scale switch to CNG could deliver other environmental benefits as

⁷ Under existing legislation delivery times are restricted in residential areas to avoid noise disturbance. CNG vehicles are quiet enough to be unaffected by this legislation and this may assist *Safeway* in improving the efficiency of its delivery systems and vehicle utilisation by arriving at stores during the night, or at other times of day when traffic volumes are lower.

the gas is literally 'on tap' through the existing underground pipe network. This would also reduce dependence on fuel deliveries.

From an organisation decision making viewpoint *Safeway's* use of CNG is interesting since the choices taken involve different individuals, from different backgrounds, working at different levels within the company. *Safeway's* involvement with CNG, like its other high profile move into rail based deliveries in the north of Scotland, offers political, 'green' image benefits and there may also be an element of personal interest in the project at the highest level. A director of the company, with responsibility for supply chain issues, has taken a personal interest in the environmental implications of *Safeway's* transport choices. The director has considerable experience of transport was a former President of the *Freight Transport Association* (FTA) and is currently a member of the *Commission for Integrated Transport* (CfIT). These connections imply a close interest in lorries as well as an awareness of the environmental implications of transport. This presence of individuals with such experience within decision making structures can be expected to influence the decision making processes. The transport decision making uncovered at *Safeway* is affected by the presence of this individual and by other factors associated with the relative size and complexity of the organisation. Also, unlike most organisations that have taken part in this research, *Safeway* have a particularly high public profile through day to day close contact with shoppers. The company goal of being

"the first choice for those customers who have the opportunity to shop locally in a *Safeway* store" (Safeway, 2001:2).

sums this aim up. They are therefore, highly sensitive to their public image. From the evidence within their annual report and from a comment from RHM4 the company appears keen to give the impression of being market leaders

"Our main Board Director of Logistics⁸, is very keen on it (CNG) and he's prepared to *suffer the costs* to be the leading edge in the industry and in the UK it's seen as the way forward" (RHM4 interviewed on 21/07/01, emphasis added).

⁸ The director with responsibility for supply chain issues mentioned above.

The comment reveals the underlying view that 'green' transport behaviour costs money and implicit within this is the suggestion that this is in essence a political decision, though with probable commercial benefits. Not surprisingly, there is a desire at the top of the company to be at the forefront of the food retail sector. This shows in the commitment of *Safeway* to carefully spending money that delivers 'win-win' benefits. With their CNG and rail freight policies *Safeway* gain image benefits associated with caring for the environment, alongside gaining valuable experience of operating a new technology, as well as the conventional economic benefits from grants and cost savings. RHM4 again.

"Fuel cost is lower, fuel duty is lower...It probably washes its face in terms of cost if you take the partnership grants into account and the improved fuel consumption, but it takes an awful lot of management time to get a project like that going in terms of the overall costs. It's got to be marginal but I'm not that close to it. At the end of the day it's heavily a political decision....it's good business and good PR for us if we take it as a political decision and say the benefits outweigh the costs" (RHM4 interviewed on 21/07/01).

So again, like so many other of the underlying motives seen in this research, economic considerations appear to be at the heart of commercial decision making processes. Within the decision making processes at *Safeway* the environment benefits are found in 'win-win' situations where the economics of being environmentally friendly suit the decision makers. Also the tendency to look for 'win-wins' is due in part to the influence of key figures within the decision making hierarchy. The ability of well placed staff to direct organisations towards particular goals, including environmental awareness, is not without significance. The next section of the chapter examines the effects of organisational structure and the presence of such a key individual on the decision making processes of a particular organisation in more detail.

6.6. Case Study B: Transport decision making within a freight transport company

The company selected as the subject of this case study is one that has taken a proactive role in developing an integrated, multi modal distribution network that includes the immediate localities around its distribution centres and outwards across

the UK, Europe and beyond. *The Freight Group's* move into rail freight has clear environmental implications, but the company's decision to restructure towards multimodal operations is a key commercial strategy in its own right. Like *Safeway* the availability of grant assistance and the ability to identify 'win-win' opportunities appears to be a significant factor in the company's decision making. Also the approach of the company to a range of other issues including staff training, new technology and environmental concerns appears innovative and dynamic. Some of the strategies identified at *The Freight Group*⁹ offer possibilities for improving the standing of the environment within transport decision making in general.

6.6.1. Company profile and operational niche

The beginnings of *The Freight Group* can be traced back to 1965 when the current chairman began the company as a self employed, owner lorry driver moving sacks of grain in a part of a multi modal journey that took the cereal onwards by sea from the port of Immingham. The company remains privately owned, but has expanded beyond hire and reward¹⁰ road transport services into shared user logistics and intermodal transport operations and is now the UK's largest private rail freight operator. The company employs 240 people at five UK sites that have a combined area in excess of 100 hectares and include 140, 000 square meters of covered warehousing that handle paper, foods, textiles and chemicals. *The Freight Group's* status as a privately owned company limits the amount of financial information available but current annual turnover is known to be around £15million (The Trains Group, 2003). The growth of the company has come about through specialisation rather than acquisition or merger and this has resulted in the company enjoying a good reputation within the industry and with policy makers. In the area of rail freight development the company's efforts have been recognised as winners of the prestigious 'National Rail Freight Achievement of the Year' award for 2001. The award panel cited *The Freight Group's*

⁹ Within the thesis *The Freight Group* is the name given to one of the participating organisations in order to preserve its anonymity.

¹⁰ 'Hire and reward' is a term usually used within a small business context to indicate work orders that are not covered by a regular contract.

“sustained effort, drive and commitment to integrate rail freight, warehousing and road distribution (and has) demonstrated that rail is a realistic and viable option” (The Trains Group, 2003:www).

The company's approach to integrating rail transport with local collection and delivery services has seen its rail activities grow by around ten orders of magnitude during the previous three years.

The chairman of the company plays a key role in the development of the commercial ethos of the organisation;

“The way that you tend to run a business, the business starts and develops and grows and it's about people skills. (It) has to be about you giving authority further out to the 'coal face', so *they* actually run the business. It runs itself. At each of our sites the manager is totally responsible for all the personnel, all the income coming in, all the expenditure and each one of those reports (pointing to a company document). They set budgets and set targets and all of that so everybody is buying into the system. It's a journey and this is a road you never get to the end of, it's continual improvement on skills and each year. What we've done last year is good enough to get us where we wanted to be but we then have to improve to get to the next step and part of that is trusting yourself and my task in life is, I think, talking with two or three groups of people you might say; one is customers, another is the talking to the media which is communicating to the general public. And very much talking to the workforce particularly right down to coal face, spending time talking with them. It's quite a demanding task because you've got quite a number of employees at five different locations. What we do in *The Freight Group* is, in terms of employees, we have a culture based on 'how can we make it fun for people to come to work'. It's an easy thing to say but more difficult thing to do but it's something that will give them an interest and we give them a task to do, they go and sort it, that's the best way of doing it. I'm not doing the job, they're doing the job and so it's best for them to come and say what is the best way of doing it ” (TG1 interviewed on 09/04/02).

6.6.2. Company decision making structure

The company's activities are carried out on five sites at Knowsley, Ely, Selby, Droitwich and Ripon with the latter hosting the Group's headquarters. The first three sites are rail connected and all contain warehousing facilities for final road distribution of goods. Each site is run as a semi independent business concern with its own autonomous decision making structure and site managers are encouraged to take

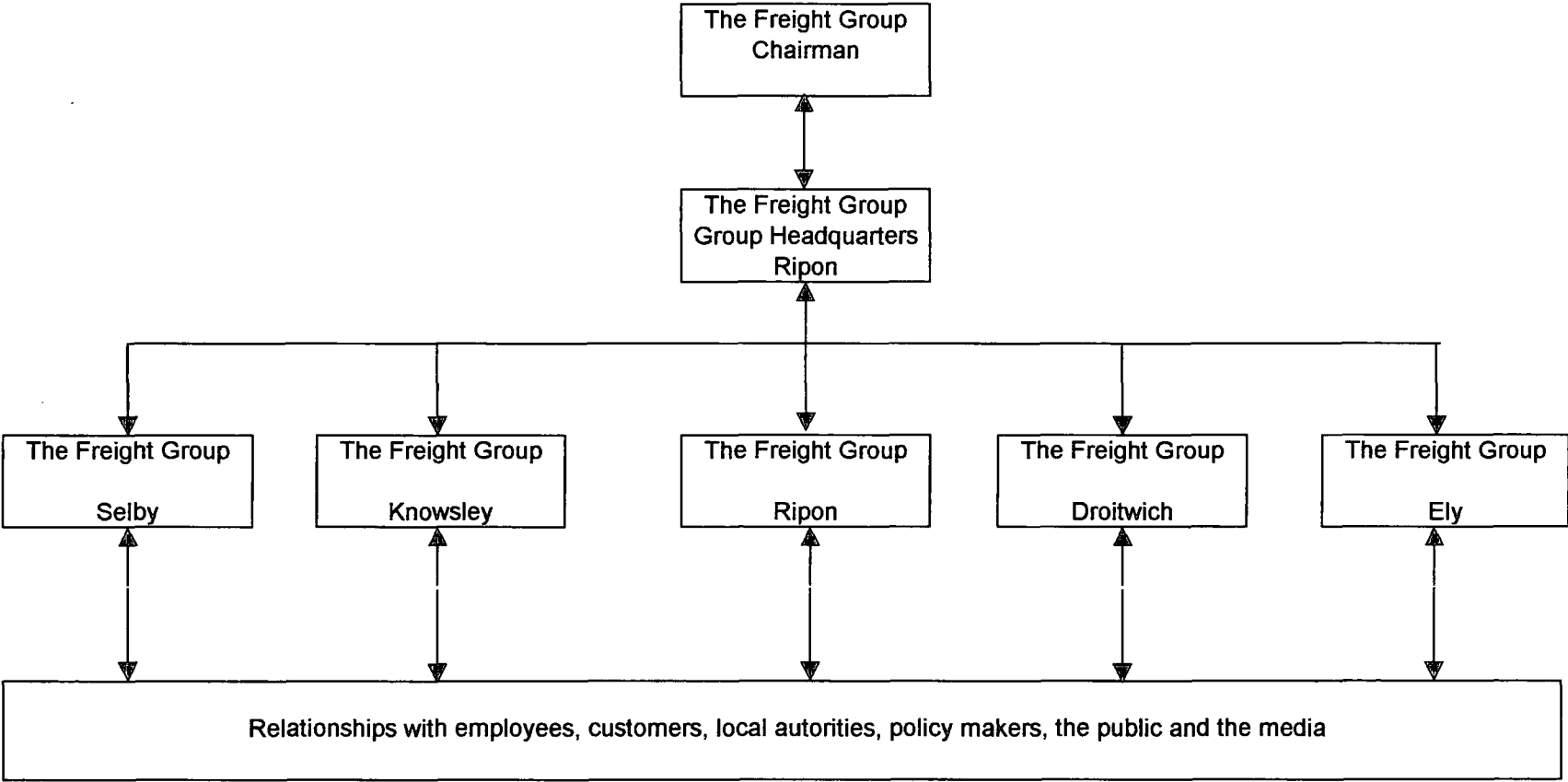
full responsibility for on site operations. Strategic decisions are taken by the company chairman with input from senior staff and it is within this forum that the company ethos, strongly influenced by the chairman, is developed. In contrast to local authorities and public companies the *Trains Group*, as a private company, is under no obligation to consult with, inform or report to an electorate or shareholders about its activities and intentions. Compared to a public company, such as *Go Ahead*¹¹, this gives an advantage to decision makers that allows them to respond quickly to opportunities and to develop strategic plans discretely. Public companies are likely to have their decisions scrutinised more closely, though they have the advantage of being able to raise investment capital through share issues. The vertically integrated decision making structure of *The Trains Group* is illustrated in figure 6.6. and shows a concentration of decision making power within the person of the Group proprietor and chairman. From an environmental viewpoint the structure suggests that the chairman's awareness and understanding of issues will be crucial to the company's attitude towards issues that affect the organisation, including environmental issues, and therefore to the groups resultant environmental profile.

Such structures place considerable responsibility and power within the hands of a single individual and allow such a person to express their particular individual preferences within the organisation's decision making systems. Private companies structured in this way, not surprisingly, usually focus on core business activities and as such attract little attention because their day to day operations are driven by a set of broadly common values held across the commercial sector. When organisations, and especially their leaders, vary from this commercial focus it is possible for them to appear distinct from their contemporaries. This case study argues that the person and character of a key individual can have a significant influence on an organisation's decision making and, from this, its consequential environmental impact.

Distinctive key individuals are not a new phenomenon amongst business leaders and can be seen within the history of the Industrial Revolution when a few industrialists took a broader view on the social, health, moral and even religious condition of their employees and their families. The *Joseph Rowntree Trust*, for example, came into

¹¹ Go-Ahead is the subject of a case study in the next chapter.

Figure 6.6. *The Freight Group* - Organisational Structure



being because of chocolate manufacture *Joseph Rowntree's* concern for the wider effects of his business activities. Similarly the construction of towns like New Lanark and of Port Sunlight for the workers of *Lever Brothers* came about because philanthropic industrialists felt it important to care for more than just their businesses. The generous behaviour of nineteenth century philanthropists almost certainly delivered commercial benefits of some kind to the companies and individuals involved, perhaps for example through reduced ill health related absenteeism. There are parallels with present day industrial enterprises that aim to care for more than simply their immediate 'bottom line' performance. In their altruistic behaviour many early industrialists may have held, or shared, wider societal, social and moral goals. Business leaders who hold such philanthropic beliefs are in a strong position to influence the elite decision making groups of the commercial world through the privileged access they hold within these elites¹². An illustration of this sort of influential behaviour was uncovered at *Safeway* in the willingness of a senior board member to 'suffer the costs' of a pro environmental strategy on alternative fuels¹³.

The employee welfare aims and environmental concerns expressed at *The Trains Group*, and also seen in the actual environmental effects of *The Freight Group's* activities, mirror some of the nineteenth century philanthropists. The chairman's construction of the environment and the importance he attaches to it clearly stems from his family roots. During a tour of the Group's Selby intermodal freight facility the chairman described in detail his vision for the eventual appearance of the site once construction work is finished. His ideas included substantial tree planting and the formation of an artificial reed bed lake, which was already under construction. The reed bed lake provides an illustration of a positive environmental gain derived from an essential construction procedure. An area of the Selby site is quite soft and requires draining in order to install some of the heavy rail freight infrastructure. The artificial lake will act as a drain to this land and ensure it is maintained in a dry condition. However this function could have been achieved less expensively and less attractively by the installation of concrete culverts and field drains and such a building tactic is commonly deployed elsewhere. When asked why he was willing to plant trees and

¹² The Chairman of The Trains Group is due to address transport business leaders at a forthcoming transport conference.

¹³ See Ch 6.5.

create a lake, and how such priorities were part of him and where they came from he replied;

“I think that comes from (being) a countryman, my father was a countryman and my two brothers are farmers, but my father said, “leave a place a better place than when you came for the next generation. You know you’ve got to try and improve places not just take the most out of places, give something back” and part of that I think is about birds and trees and other things and education, particularly for the next generation. They tend to think that milk comes out of a bottle or potatoes just come out of a tin or out of a packet”. (TG1 interviewed on 09/04/02).

This response also revealed an attitude towards education that will be discussed later in the chapter, but the strong influence of his family background, and his father in particular, is clearly demonstrated both within what the chairman says and in what his company is doing. Discussing the construction on site he went on to say

“...I think if you can do simple things, it doesn’t always need to cost an arm and a leg, it might take a little bit of time but it doesn’t need to cost a lot of money. Because you’re having to do that (install drainage), you might as well do it to a very high degree.” (TG1 interviewed on 09/04/02).

He then revealed another interesting influence on his thinking that originated from time spent working in Scandanavia;

“I spent a lot of my time in Sweden... learnt Swedish and then I bought a shipping line and when you work with the Swedes (you see that) they spend as much time writing their environmental report as they do their financial report. It’s very much about the environment and nature and looking after things and so it’s that sort of deep education that has come back to me (and) followed on from my father. Being in Scandinavia, learning and seeing how they operate, and because we’re involved with Scandinavian paper, and seeing it was all about giving people the understanding that they should be concerned about the environment” (TG1 interviewed on 09/04/02).

The decision making structure at *The Freight Group* allows the chairman to express his personally held beliefs and build on what *he* sees as valuable through his company’s activities. The company is successful by commercial standards and operates within a highly competitive transport market. This suggests that at the

operational level the company is efficiently and effectively dealing with customers, whilst at the strategic level the company is succeeding in identifying longer term business opportunities that go some way to ensuring good prospects for future operations. Positive environmental outcomes are more easily achieved through efficient business operations and have been seen elsewhere in this research at *Go-Ahead* and *Safeway* for example. It is only when a company is profitable enough to devote time and resources to more than simply keeping afloat that it has the opportunity to identify 'win – win' strategies that can achieve a positive economic and environmental outcome. When asked how the environment could be given greater emphasis in transport decision making the interviewee, TG3, put it this way;

"I think the question is 'what is it that they (the customers) are looking for?' No. 1 they're looking for quality of service, it's got to be a good first class service. No. 2 it's got to be at reasonable cost; and No. 3 covers the environment. Now if the first two don't stand up, the third doesn't get anywhere" (TG3 interviewed on 16/04/02).

This viewpoint clearly puts the needs of the customer first but is essentially a pragmatic view in terms of environmental impacts as it recognises that to be able to influence the way that freight is transported the contract to move the freight must be won in the first place. Obviously this means that the usual factors of price and service must be attractive enough to win and maintain a customer base. This means that companies will be unable to adopt the best environmental options where the economic costs of such options lead the company to lose its competitive edge. This confirms the importance of financial incentives such as subsidies, grants and tax exemptions in altering commercial decision making in favour of improved environmental outcomes. A brief summary of the Group's activities during the last two years illustrates the strategy of the Group in finding 'win – win' opportunities, some of which are linked to financial incentives. Taking these opportunities has benefited the business and generated improved environmental outcomes.

6.6.3. Intermodal innovation at *The Freight Group*

In February 2000 *The Freight Group* was chosen by *Knowsley Council* to develop and operate a new £7 million intermodal rail freight facility serving Merseyside and the

north west. The development provides an alternative mode of transport through the heavily congested Manchester – Merseyside corridor with a capacity of 650, 000 tonnes and could reduce road traffic by around 30, 000 lorry journeys a year. This would reduce road transport emissions by considerably more than any increase in rail emissions brought about by the modal transfer (Jacobs Gibb, 2001).

The Selby and Ely sites were formerly owned by *British Sugar* and some of the post production wastes left at the sites (mainly lime derived from calcium carbonates used in the sugar refining processes) was tested for suitability and subsequently launched as mushroom and horticultural fertiliser.

In March 2001 the *Strategic Rail Authority* (SRA) awarded a £100, 000 grant to *The Freight Group* to assist in its receipt, storage and distribution of 41, 000 tonnes of paper then sent by road. This represents 55% of the investment costs needed to make the rail option viable. A representative of the SRA said that the grant

“...will benefit the local environment, saving around 20, 000 lorry journeys on already congested roads over a five year period” (The Trains Group, 2003:webpage).

In support of the Government’s aim of increasing the volume of rail freight by 80% (DETR, 07/2000A) *The Freight Group* has signed a contract with partners *MSC Medite* and *GB Railfreight* to operate a container service from Felixtowe to Selby. When the service is fully operational it is expected to replace over 700 weekly lorry journeys with three trains.

The above examples of *Trains Group* activity have been selected because they illustrate activities with a strong environmental dimension and represent the outworking of the identification of ‘win – win’ business opportunities. The partnerships with *Knowsley Council*, *MSC Medite* and *GB Railfreight* provide examples of the benefits both for business and the environment that can be attained if organisations can work together to find ‘joined up’ solutions to transport demand. The grant from the SRA shows the importance to companies of an altered economic equation when considering modal switches. The example of the lime waste provides an illustration of some of the unexpected business and environmental ‘win – win’

benefits that can be gained from carrying out a thorough Environmental Assessment¹⁴ of a site. These 'win – win' benefits are only possible if the decision making processes taking place within the business are comprehensive enough to include looking in the right places and to this end business standards have become a useful tool in finding such opportunities.

6.6.4. Setting standards

The Freight Group have embraced a range of business standards including ISO9001:2000¹⁵, ISO14001¹⁶, the COMAH¹⁷ standards and the *Investors In People* (IIP) scheme. As a semi independent businesses each operational site registers for a particular standard separately and, usually after being assisted by specialist consultants, the application is submitted to the relevant authority. If the application is of appropriate quality the business mark is awarded. Currently four sites have achieved the ISO9001 standard (The Trains Group, 2003). Similarly *The Freight Group* is working towards ISO14001 recognition. COMAH standards apply to all chemical handlers and *The Trains Group*'s Droitwich site has been awarded top level COMAH accreditation for its flammable liquid storage facilities where it handles a range of cosmetics and bulk chemicals. Three sites have been awarded IIP status in recognition of the 'in house' and external training opportunities available to staff. Facilities include access to *Learndirect* resources for all employees and the company sponsors some staff to further their education on a day release basis.

The standards mentioned here are common across industry and are sometimes achieved by companies to enable them to bid for contracts or to satisfy the demands

¹⁴ Environmental Assessments, sometimes referred to as Environmental Impact Assessments, are required under planning law for new, large scale developments of the kind being carried out at Selby.

¹⁵ This is a management quality assurance standard that assesses the management systems of a company against a set of international standards.

¹⁶ ISO standards are an internationally agreed range of benchmarking standards applied to a wide variety of business and commercial management procedures and are administered by the International Standards Organisation in Geneva. ISO14001 is an environmental management standard awarded to organisations that can demonstrate that they have in place a thorough system of environmental assessment and management for all their activities.

¹⁷ COMAH standards are derived from the Control of Major Accident Hazards Regulations (1999) that impose stringent management standards and procedures on the use, handling, storage and processing of chemical materials. To achieve COMAH accreditation high standards of fire prevention and protection measures are needed, including regular air changes to warehouses and the installation of interceptor tanks to protect the environment from spillages.

of customers. However at *The Freight Group* the range of standards and awards achieved suggests that the Group takes the standards seriously and has improved its collective awareness of a range of issues including environmental concerns. How 'education' in general affects the internal company culture is discussed later in the chapter but when taken together the views on education and on the environment held by the chairman appear to mirror those of the company. Given that *The Freight Group* remains privately owned, and its decision making structure is vertically integrated from the chairman downwards, this is not surprising¹⁸.

That the structure, image and activities of the company are so closely associated with the chairman's views and character perhaps provides an example of what is a re-emerging phenomenon amongst business organisations. Since the restructuring of business and industry that took place under the Thatcher governments of the 1980s and early 1990s industrial organisations have tended to become smaller and tended to be privately owned. This has given opportunities to a new generation of entrepreneurs to stamp their character on their companies in a way that was more difficult to achieve with state owned corporations. An added dimension to these changes in the structure of business and industry has been the emergence, or perhaps re-emergence, of a form of leadership that is permeating through the commercial world; that of 'ethical',¹⁹ business practices. These so called 'ethical' concerns are wide ranging, touching many business sectors. It is, for example, possible to buy 'fairly traded' foods and drinks, 'ethically' managed pensions and investments, furniture made from 'sustainable forests', 'energy efficient' home appliances and one of the pre-election pledges of the present government was the adoption of an 'ethical' foreign policy. All of these are contestable either in their original definitions or in the practical outworking of their aims. What is clear is that the elites within the business community have identified areas where they might gain market advantage by adopting what they perceive to be commercial practices more acceptable to the public. Regardless of their original, underlying intentions though, merely identifying and examining these strategies is likely to have an informing, educative effect on business elites themselves that could lead to changes in decision making within organisations.

¹⁸ See fig 6.6.

¹⁹ A highly contestable concept and set of business practices

If this is the case it may provide the opportunity for new generation of business leaders to emerge and for them to hold a greater environmental awareness amongst their philanthropic concerns. Evidence collected here from *The Freight Group* and what has been seen at *Safeway* and at *Go Ahead* (the subject of the next chapter) seems to support this suggestion. If this is the case it could provide useful opportunities to restructure industrial and business practices towards improved environmental outcomes as it would mean that convincing a relatively small number of key decision makers and elites could have a significant effect on organisational decisions.

6.6.5. Infrastructure, operational strategies and decisions

During the tour of the Selby site and in the subsequent discussion it became clear that *The Freight Group* is working to convince local businesses to use rail freight for what are usually considered short haul operations, not thought to be particularly well suited economically to rail and intermodal journeys. In an analysis of intermodal operations suggests that if intermodal systems can be improved to the point where 400-500km train journeys become viable then this

“could lead to leaps in intermodal volumes”. Cardebring *et al* (2000:17).

The Freight Group currently operates a service well under this threshold on the 70km journey from Immingham to Selby. The chairman explained.

“We’ve actually paper that comes in on two trains a day. One comes from Immingham and this is sort of dispelling the myth. At the moment people tend to think of freight trains running 200 miles or something, we have a freight train that runs 45 road miles (70km) which is from Immingham to Selby, every day. We have another one that comes from Felixstowe again with paper products and we have another one that brings containers three times a week at the moment from Felixstowe as well”. (TG1 interviewed on 09/04/02).

The Felixstowe to Selby journey at around 320km is closer to the distance expected to suit multimodal operations (Cardebring *et al*, 2000) but still under their suggested ‘viability point’. In viably achieving a very much shorter distance of 70km with their trans European multimodal paper transport service *The Freight Group* are

demonstrating what would seem to be a significant breakthrough in improving short distance multimodal transport opportunities. This naturally raises questions around how the relative viability of competing modes is measured and compared at *The Freight Group*, whether there are other dimensions to the expanding rail freight sector and what the company can do to improve the viability of rail to the point where customers chose it for economic reasons.

Rail is particularly suited to high volume, heavy loads of relatively low value, with the obvious and most frequently thought of example being coal. Other bulk loads also suitable for rail freight include some chemicals, fuels, raw foodstuffs, construction materials and industrial feedstocks. The paper reels that *The Freight Group* receive from Immingham fall into this category. The paper is delivered to Selby and its non perishable, long 'shelf life' characteristics make it simple to handle and store. The construction of indoor loading facilities at Selby remove the main risk to the product, which involves it being damaged by wet weather conditions during loading and unloading operations. Part of the paper transport service offered by *The Freight Group* includes storing the paper in covered warehouses until it is required by the final customer and a system of stocking the various grades and sizes has been developed that moves the product through the system based not just on demand but on time spent in stock. The service also includes damage reclamation work that involves the company stripping off any damaged layers from the paper reels, reweighing the reels and putting them back into the warehouse delivery system. These characteristics of the service give important competitive advantages to *The Freight Group*; the inconvenience of having to return damaged stock and obtain credits is removed for the customer as is the cost of this for the supplier. This is done by *Trains Group* staff photographing the damaged reels 'before' and 'after' reclamation and sending online images, together with new weight details to the supplier in Finland. An appropriate price adjustment is then made to the customer and *The Freight Group* receives payment for its services. Added elements of trust are involved and this is clearly the most cost effective and convenient method of operation for all three parties. The economic viability of the paper operation was explained by TG3, a *Trains Group* site manager;

“The whole package of transportation and warehousing is a damn site cheaper using us and warehousing it here rather than at Immingham because the dockside warehousing is much more expensive. If you were looking at it in isolation you would be correct in the assumption that (such a short distance) is not a viable option, but they (*StoraEnso*) are not, they’re looking at it as company. So *StoraEnso* as a company are running four regional distribution centres (RDCs), us at Selby, Barking, Scotland and Knowsley, from Immingham. They are all rail connected and the warehouses are specifically designed for receipt by rail. It’s faster unloading 14 rail wagons than 36 or 38 road wagons. Just physically unloading 38 road vehicles and all the paper work, plus 38 drivers standing around waiting, those have all got to be taken into consideration so it all forms part of the cost” (TG3 interviewed on 16/04/02).

This viewpoint explains the clear advantages for *The Freight Group*. Competitive advantage and improved viability have therefore been gained by *The Freight Group* by the identification of this pattern of business activity and the innovative blend of cost, service, location, new technology and trust used. Though there are clear economic reasons why *StoraEnso*, the paper supplier, chose to use rail there appears to be an underlying preference for rail within the company. When asked whether *StoraEnso* had any other reasons for choosing rail TG1 suggested;

“I think it’s a combination of things, its because the customer has a passion to put things on rail. I think that stems from the Scandanavian ethos that rail is better than road and it also stems from the environmental benefits if you like” (TG1 interviewed on 09/04/02).

This is of interest as it suggests that within some companies, especially in Europe, there is an underlying preference for rail that has developed historically. TG3 also outlined the transport of bottled mineral water from France to Selby;

“On the *Perrier* water it’s also a bit of both really, we convinced them that rail was an option basically because they can send it through the tunnel from France. The French again like loading on to rail and with *Perrier* water two thirds, almost three quarters of their business is for the SE, London basically (and is distributed from the Ely depot). The rest comes up to Selby and if you’re looking at France to Selby its got the distances, the only way they can get it done as cheaply by road is by using the likes of *Willi Betz*, low wage, cowboy operators” (TG3 interviewed on 16/04/02).

The transport of bottled drinks has grown considerably during the last 30 years and consumption rates of these products introduce a high transport demand that has been

used previously as an example of the 'unsustainable' nature of some products (Whitelegg, 1993). That *The Freight Group* has succeeded in taking this product in particular on to rail represents actual evidence of reduced environmental impacts within current transport decision making processes. Also though, the UK has, until the opening of the Channel Tunnel, been isolated from the European rail network. Because of this opportunities for long distance rail freight have been limited. In Europe the opposite has been the case and long distance, trans boundary rail freight has been a traditional transport option. In this way the European situation is more comparable with rail freight in North America where much higher volumes of freight, around 24%, travel by rail (Button, 1999). Both Europe and North America therefore have a natural 'distance viability' as an existing characteristic to be considered within their transport decisions that the UK has not historically enjoyed. Both of the above examples of *Trains Group* customers are European companies that have an existing predisposition to rail. Because such opportunities are relatively new to UK companies, it might then be reasonable to expect that it will take time for UK businesses to consider seriously rail freight options. Any consequent improvement in the environmental burden of UK freight transport might also lag behind that of Europe. This suggests a role for educative processes in raising awareness amongst transport decision makers. *The Freight Group's* involvement in rail freight itself comes from this predisposition as the interviewees experience in Scandinavia has clearly influenced his thinking on rail freight.

The Freight Group has, though, begun to handle freight that has not usually been associated with rail for many years, if at all. In addition to the bottled drinks goods such as textiles, cosmetics and food are carried in containers suitable for multimodal operations and moved in mixed trains to, from and between *Trains Group* railheads and throughout the UK, the rest of Europe and SE Asia. Advantages over road haulage are similar to those of the paper operation and a repackaging and reclamation service is also offered on some lines. Repackaging involves adding value by breaking container sized loads down to pallet or carton sizes that are then distributed with lower bulk discounts applied. In essence *The Freight Group* has transferred the final distribution and packaging of products away from the supplying manufacturer and closer to the customer. This is not an entirely new phenomenon within transport and logistics, but the combination of the advantages seen in the paper operation together

with the flexibility necessary to handle these other loads has been highly successful for the company and is a marketable advantage. Viability is further improved as each new customer is added as this contributes to an overall increase in volumes. This allows for longer, or more frequent trains to operate, which in turn allows for an improvement in the schedules available to customers.

From this analysis of the activities of *The Freight Group* it is clear that the variety of solutions to transport and storage demands provided by the company is innovative and dynamic. The company is contributing to improved environmental outcomes, principally through reduced lorry movements, and also improving the sustainability profile of some products. If expanded such transport solutions could deliver significant environmental improvements in terms of air quality improvements, reduced traffic congestion and reduced CO₂ emissions.

6.6.6 .New technologies and the environment

The use of new technology within the transport sector has been discussed elsewhere in this thesis. The use of new technologies usually centres on the economic advantages that a particular technology can provide for decision makers, or on what environmental benefits are gained by the introduction of new technologies by regulatory means. At *The Freight Group* the use of new technologies falls into the first category and is about improving the economics of transport and warehousing operations. The use of digital photography to send images of damaged stock around the world has already been mentioned. The ability of such technologies to reduce transport are clear as suppliers can see any problems for themselves rather than having to organise the return of the goods in question. The environmental effects are similar to those achieved by the use of internet and video conferencing for 'online' meetings of individuals in different locations. Any environmental benefits gained by the use of these strategies will be increased in proportion to the distances involved. Time is also saved by the use of these methods and also in proportion to travel distances. Since time is highly valued this represents a marketable advantage for *The Freight Group* and such uses of new technology fall in to the 'win-win' category discussed previously.

Other technological innovations, most of which are time saving in some way, are also used by the company to add to economic advantages. In its repackaging of loads into smaller units for example, unique bar codes have been developed for use in tracking stock through the warehousing system. This information is also available to suppliers and customers and allows them to check on the value, availability and likely delivery times of items within the system. All of the uses of new technologies seen at *The Freight Group* add efficiencies into the business systems of the company and those of 'on line' customers, many with clear environmental spin off benefits and contribute to the overall environmental 'imprint' of the company which is itself closely audited by the various management control systems.

6.6.7. External and internal development strategies

In support of the aim of increasing rail freight volumes the Group is lobbying local authorities, *Yorkshire Forward*²⁰ and local businesses to support and use the Selby railhead, which *The Freight Group* hopes will be recognised as the Regional Distribution Centre (RDC). The chairman sees its approach to the development of a RDC as distinctive in that

"...the thing that we're trying to do different (here) is instead of having the Regional Distribution Centre at the motorway junction we want to put it at the railhead. So do the trunk haul by rail, and then we'll distribute them out from here, when and where the customer wants them" (TG1 interviewed on 09/04/02).

The strategy of locating a RDC at a railhead, whilst a positive step from an environmental standpoint is not common within the UK freight transport sector. It may take some time to convince organisations with transport requirements of the benefits of adapting their transport patterns to rail. Playing a facilitating part by helping to provide information and advice to potential customers is something that institutions such as local authorities and RDAs are well placed to achieve, though no evidence of local authority contact with haulage companies was found within this research. Some local authorities are in a position to work with rail options and local authorities on Teesside and in Durham remain committed to increase rail use between

²⁰ The region's Regional Development Agency (RDA)

Teesside and Durham and on the Leamside line to the east of Durham city. (Interviews with LGO5, 12/04/01 and RCS2, 20/03/01). From the data gathered here this is the exception rather than the rule and frustration has clearly been felt in attempts to explain *The Freight Group's* activities and ethos to the local authority.

"We got hold of the local council, we had a meeting with the Chief Executive, I wanted to meet him and the Development Officer was wondering why she was there as well. I was saying 'well we are investing eight and a half million pounds'. You meet these people and tell them all this, but shouldn't they really be knocking on my door and sort of saying 'well you're doing a lot for the region what can we do for you?' But what they could do for us wasn't a part of their conception. Going back to the Development Officer, we ask the direct question, 'what do you think the railhead does for the region?' and she said 'it serves *Trains Group*'. I said, 'no it's for the community', she couldn't understand it. The other thing was we're not very well known in the area. I said, 'fine well let's deal with that issue, what are you going to do about it for a start. If you say we're not known, tell us what we ought to be doing about it then. I'll take all the criticism there is, no bother at all, but give me something positive. You're the Development Officer for the region, what're you doing about it?' I was trying to get the point across and she was saying 'well we'll have breakfast meetings, we will have to arrange one on transport and we must get the road transport people there', you know I haven't got the time. She totally missed the point... it's just the way they think... the thing that people don't always realise is that if you don't give this advantage to local industry, if councils don't shout for local industry, the small person hasn't the ability, hasn't the time or the money to spend shouting for himself, he's surviving" (TG1 interviewed on 09/04/02).

The frustrations expressed by the chairman perhaps indicate the depth of difficulty in challenging the development assumptions within the arena of local governance. The development officers remark that the 'road transport people' should be involved might also reveal that the default institutional mindset equates transport with roads. Such local authority attitudes reflect the business as usual approach seen in Stockton BC's South Stockton Link scheme discussed in the previous chapter²¹. Despite these frustrations the chairman continued to outline his vision for the development of the industry giving the impression that *The Trains Group* would lead the hesitant if necessary.

"*The Freight Group* has spent a tremendous amount of time being at the forefront of getting freight back onto rail (and) we actually go and do something about it, we're the ones who *are*

²¹ See Ch 5.2.3.

putting the freight on the rail. We have a mission you see and we said about a year ago that we're going to put 30, 000 lorry journeys (on to rail) through each of our three rail terminals which is 90, 000 a year. So roughly in tons that would be something like half a million tons through each and of course that is in weight coming off the roads. Now if we can save that, you know that's having some effect". (TG1 interviewed on 09/04/02).

From an environmental viewpoint there are measurable advantages to be gained in terms of CO₂ reduction, reduced noise and congestion and improved road safety from putting one and a half million tonnes of freight on to railways. While discussing the attempt to focus local businesses and institutions on the possibility of a railhead RDCs and modal switches towards rail the chairman's views on the importance of education appeared again.

"If you can put the Regional Distribution Centre at the railhead and... every supermarket could draw off from here... that's the sort of thing. It's a slow education, it's because the people who are buying the product are just buying it delivered. They're not thinking of the whole picture" (TG1 interviewed on 09/04/02).

The interviewee is referring to the whole transport cycle of freight in this remark and is drawing a distinction between customers who give no thought to how their freight arrives and the much smaller proportion that consider the journey aspect as part of the overall environmental impact of the freight²². One of the things that *The Freight Group* hope to achieve in their lobbying and awareness raising efforts is for customers to consider collecting freight themselves from the railhead and thereby taking responsibility for part of the transport chain. The reasoning behind this is that this tactic should have an educative effect on how companies construct the environment within their transport demands because the additional transport requirement would then be under *their* control and subject to *their* environmental management systems. Whether the broader commercial sector can be persuaded to adopt a collection strategy though seems doubtful given current transport market trends towards 'just in time' deliveries. As part of their strategy, and in an attempt to convince road hauliers that rail and road freight can be complimentary modes (interview with RHA on

²² Considering the environmental impacts of all activities, including those of the supply chain are part of Environmental Management System (EMS) requirements. The effects of EMS on organisational decision making are explored in detail in the next chapter.

02/07/01), *The Freight Group* have not invested in a large fleet of road vehicles but prefer to use contract hauliers for local collection and delivery trips.

“The way we see it about the truck business is this, *Trains Group* runs some of our own vehicles but we hire other vehicles. Now just to give an example, we will be getting one hundred lorry loads a day out of this site and we’ve got three or four lorries! So that gives you an idea of where we’re coming from because what we see is, we should employ local people, contractors with local knowledge and commitment. We think that’s fair because we think that they’ve been there and rail should recognise that point and part of the problem is that rail tend to take on the haulage industry and the haulage industry sees rail as the opposition. What we see is bringing the products through the Channel Tunnel or wherever they come from (by rail) and using the local hauliers for the job. As a prime example of that, we’ve done a lot of stuff to Scotland, we’ve no lorries at all in Scotland, we run all by third party people and I think that’s what we should be doing. We shouldn’t be here to try and hog all the things and, coming back to the local economy, we will get more support and more help that way. What we think is that we should be putting our money into the infrastructure, the things that actually make it work. What we see is lorries travelling within a fifty miles radius of the railhead, that’s what our ultimate aim is and we also see that the Working Time Directive which is coming in in 2005 is going to have a marked effect on driver shortages” (TG1 interviewed on 09/04/02).

Collecting and distributing freight over relatively short local distances also contains other, potentially attractive, dimensions. Across the road haulage industry driver shortages are becoming increasingly common and this trend is not lost on *The Freight Group*. In short the problems of recruitment centre on the costs and relative difficulty of obtaining an HGV licence, the relatively poor remuneration rates and on the social costs to drivers faced with ever increasing transport distances. *The Freight Group’s* ability to operate short haul rail journeys and collect and deliver in a ‘days return journey’ by road could offer a solution to two aspects of the driver shortage problem. Firstly, fewer lorry drivers would be required if more freight could be carried by rail. Secondly, the social cost to drivers would be reduced if they did not have to sleep in their cabs, away from home for extended periods. Anecdotal evidence gained from informal conversations with HGV drivers suggests a significant minority would avoid employment that would involve regular overnight trips²³. Such a change in the

²³ These insights were gained by speaking with drivers at various companies whilst waiting to see interviewees, in general conversation around haulage premises and in informal conversations with drivers away from workplaces.

working conditions for lorry drivers might therefore make recruitment easier for road haulage companies. If an expanded distribution and collection system based on these principles could be developed it could also help to dispel the notion popular amongst some road transport companies that road and rail are essentially competing modes rather than, as *The Freight Group* are trying to promote, complementary ones.

In the above comment the chairman also made predictions about the possible effects of the European Working Time Directive (WTD) on road haulage drivers' working hours and a consequent exacerbation of the driver shortage problem has also been discussed in the chapter. Briefly summarised the requirements of the WTD will increase the difficulties for road haulage companies in their search for drivers as more drivers will be needed to meet existing transport demand. Since drivers will be required to work shorter periods with a consequent reduction in possible travel distances more overnight stops will be necessary and journeys will take longer. The only obvious, long term alternative would be to add an extra driver for long journeys (and this possibility arguably does not meet current driver working regulations, as the extra driver would still be regarded as 'at work' when not driving). The net effect for road haulage operators of the application of the WTD to the road haulage sector is to add to operating costs. This should be welcomed from an environmental viewpoint as it should alter the economic competitiveness between road and rail transport towards increased use of rail. From his comment on the effects of the WTD the chairman seems to see the development of intermodal rail freight operations as at least part of the solution to the problems caused for road hauliers by the application of the Directive.

Regardless of the reasons for the company in using contract hauliers one of the undoubted effects would be that *The Freight Group* itself avoided having to deal with the requirements of the WTD within a large driver group. Since *The Freight Group* only employs a handful of drivers meeting the requirements of the Directive will fall in large part on the shoulders of the contract haulage companies. Also from the above comment though, the company clearly sees itself as being generous by not 'hogging' all the work for itself and this seems to form part of its strategy of dealing with and existing alongside the local communities.

6.6.8. Educative efforts

References to education have already been made but another aspect of the innovative culture being developed at *The Freight Group* centres on the availability of educational opportunities to employees. It is a reflection within the company of the chairman's desire to carry the rail freight message to local, regional and national policy makers. The chairman's belief in educating employees, visitors, local and wider business communities and local authorities clearly has its roots in his earlier life and working experiences. When asked about the importance of education for his staff he expressed views on a variety of educational opportunities.

"We have a programme (to) help people back into education at our other locations too look, (offering the company newsletter) there is an account there, read what it says on that. And the guy that's sitting in that photograph there with the red thing on (receiving an education award) was the guy who you saw walking down the side of the train. Just turn over the page you see a guy getting a degree and there's another chap again, we sent him away for three years. He has had to study weekends and nights and other things so it's a good part of his own time. So I think in that commitment makes them work. You have to try and support people where you can" (TG1 interviewed on 09/04/02).

The reference to the 'guy walking down the side of the train' showed a picture in the Group newsletter²⁴ of one of the site's stockyard operators receiving an HNC in Technology. It is this sort of commitment to workforce training that has led to *The Freight Group* achieving the *Investors In People* status at most of its sites. Discussing the opening of the Knowsley site the chairman remarked;

"We've very much invested there, we've been very pleased with the standard of the employee we've got there. We train employees, we spend the time training people and getting them interested in the job. In terms of the school children, we've got two shunting locomotives across there and we've had a naming competition. We're going to have them out in July just before they break for the end of term for a days visit. We'll show them how to operate a site and they can see shunting locomotives working, it's because they're the next generation... So the things that we're doing aren't especially for us, they're for the people following on because the things that we do, particularly in rail terms, it's long term. Not a quick fix" (TG1 interviewed on 09/04/02).

²⁴ *Freight Group News*, Issue 6, April 2002 (unpublished)

Again the themes of investing through education and opportunities to develop relationships with local communities comes through and though this represents a shrewd and sensible business strategy, it perhaps also indicates the emergence of a different kind of leadership in the business sector. The chairman may not even be consciously aware of his style of leadership, which also contributes to a distinctive working culture within *The Freight Group*. Such a trend may be part of an emerging new 'culture of the workplace' beyond the company, though research would be needed to confirm this. As business strategies such approaches to changing the culture within companies have been shown to change the nature of business and the attitudes of employees. Schoenberger (1997) cites the cases of *Xerox* and *Lockheed* in the USA as examples where companies adapted to a different approach in order to move their businesses into new markets that the companies could not hope to enter with their existing 'profiles'. The substance of their different approaches encompassed the recruitment and retention of staff, generous salaries, working conditions and promotional opportunities. Sometimes even locating new ventures away from the 'corrupting influences' of the established part of the company in order that the new ethos might flourish (Schoenberger, 1997).

Something akin to this style of leadership, ethos and decision making can be seen at *The Freight Group*. In investing in rail and intermodal operations the company is trying to develop what is in effect a new business venture²⁵. The expertise, attitudes, traditions and ethos of previous intermodal businesses have dissipated over time as the railways have concentrated on passenger transport rather than freight. This places *The Freight Group* in a good position to grow a 'new' business within the freight transport sector as established habits and attitudes should no longer colour the expectations of employees or customers. Furthermore the skill of identifying the opportunities currently available is supported by the timely involvement of government in encouraging, and especially in investing in, rail freight. The economic incentives offered by grants undoubtedly helps companies to afford the high capital costs of developing new business ventures. To this end the government has committed £4billion to rail freight investment over the next ten years (DETR, 07/2000A). This

²⁵ Rail and intermodal operations have previously existed during the days of the dominance of transport by the railways but had until recently declined severely.

level of state support together with many of the policy documents that have appeared since 1997 indicate that a long standing commitment has been made to increasing the volume of freight travelling by rail. State investment has also been promised for new rail safety systems that, though aimed at improving passenger safety, should improve the credibility of railways generally. Finally the Channel Tunnel offers attractive opportunities to freight carriers by linking the UK with the rest of the European network and it would seem that the economics, policy and geography of rail freight have come together to present very attractive opportunities for those with the wisdom and confidence to take them. *The Freight Group*, through the leadership of its chairman and senior management appears to have positioned itself well to exploit these business opportunities.

Given these circumstances it is perhaps not surprising that an atmosphere of enthusiasm was evident at the Selby site as this is not just a new venture for the company but in essence a new industry with a sense of the pioneer about it. The language of the workplace²⁶ attempts to develop a new ethos and a new culture of 'doing business' and was illustrated during a tour of the site in a variety of small, sometimes subtle ways. A display board in the reception area welcomes visitors by name and identifies their organisation and those arriving by train are met at the station by a member of staff and driven to the site. Whilst touring the site the chairman addressed all the staff spoken to by their forename and many replied using his and the affection with which the chairman is held was vocalised by a management consultant working with the company, who when interviewed privately about his perceptions of the company and the chairman said

"...you're meeting a true missionary today! seriously, on those two topics, environment and efficient business, what this guy doesn't know about it isn't worth knowing. They'll (*The Freight Group*) point you in the right direction" (TG2 interviewed on 09/04/02).

Another dimension to this close relationship between the senior management and the rail yard staff²⁷ was uncovered during the site tour in response to a question that asked how control of the whole *Trains Group* operation was maintained. The chairman

²⁶ See Ch 4.4.1.

²⁷ Rail yard staff are employees who in some literatures might be referred to as 'shopfloor' or 'blue collar' workers.

began by recounting the story of how the company had acquired a new lifting vehicle; The drivers of the container lifting plant vehicles were given the responsibility of drawing up a specification for a new lifting vehicle. They were then sent to various manufactures to test drive different models before making the final selection themselves with the company using a £100, 000 grant from the SRA to make the purchase.

6.6.9. Summary of the activities of *The Freight Group*

This evidence drawn from simple observations and explanations, the company's approach to staff improvement, to community involvement, to local business awareness, in trying to involve local authorities and to environmental concerns all point to a different culture of organisational decision making that has grown out of a distinctive leadership style within *The Freight Group*. This 'joined up', inclusive approach to running *The Freight Group* business activities can be said to be a 'win-win' situation for the company, its staff and customers and the environment. If this management ethos could be translated into action across the wider commercial sector it might indeed make 'the workplace' somewhere where staff can enjoy their work and feel sufficiently valued and motivated to translate companies' business, and environmental aspirations into successful outcomes. With this sort of devolved, but at the same time controlled and structured decision making system, new business ideas and opportunities can more easily be identified and then brought to fruition. Perhaps these are the substantive reasons why *The Freight Group*, unlike many of the road haulage companies examined earlier in this thesis, has grown from 'one man and his lorry' to the multimillion pound transport and logistics group that it is today.

6.7. Conclusions

This chapter has attempted to look at how the environment is constructed within the minds of road haulage industry decision makers. The case study provides a deeper analysis of how an organisation that began in road haulage has restructured towards intermodal operations in the belief that this is where the transport market is headed. It would seem that in most cases the environment remains largely unconsidered. Few interviewees showed any sign of any detailed knowledge of the environmental

implications associated with either, their transport decisions, or of those associated with broader transport issues. This generally low level of environmental awareness is reflected in the broad transport trends uncovered in the fieldwork. For example, filling up with fuel before crossing the Channel back to the UK, or using the most polluting vehicles on short distance, urban deliveries. These, despite policy efforts to improve the environmental impact of transport, seem on balance to be environmentally negative. However, key individuals have emerged that, because of their role and influence within their organisation's decision making processes, are able to alter decisions. This characteristic was clearest at *The Freight Group* and at *Safeway* where decision outcomes have been adjusted, without serious compromises to commercial viability, in favour of improved environmental outcomes. Other encouraging signs that the environmental impacts of transport can be reduced have been identified and are taking place albeit on a somewhat piecemeal basis. Almost without exception these environmental improvements are associated with 'win-win' situations. This also confirms the very strong link that exists between economic priorities and decision making. 'Win-wins' are therefore crucial in delivering environmentally improved operational performance but those supported by subsidies also distort the overall market. This represents intervention on behalf of environmental (and or social) objectives and confirms that altered decision making is indeed possible within careful policy design.

From the decision making uncovered in the fieldwork, on one hand it would seem that where environmental benefits can be gained in conjunction with economic advantages company decision makers are willing to include them. On the other hand many decision makers seem equally ready to disregard the environment if commercial benefits can be obtained in doing so. This perhaps suggests that haulage industry decision makers are constrained by competitive economic pressures in their decision making that leave them in a position where they feel no other choices, other than economically centred ones, can be made. This situation may be exacerbated by the type of organisational decision making taking place and the structure and complexity of the organisations taking the decisions²⁸.

²⁸ These issues are explored in a little more detail in the next chapter.

In carrying out the fieldwork it became clear that the decision making structure of the organisations interviewed here varied considerably and that this is a significant factor in this analysis of organisational decision making processes. What was not immediately obvious was that in many cases the transport choices being made were not being made in an organisational sense but more in an individual sense with an organisation in mind. This separates the decision making landscape into two distinct groups; those made by individuals and those made by groups. Most of the companies that took part were small to medium sized companies with less than 50 lorries. Only two had more than 100 vehicles and in most cases a single individual was responsible for managing the day to day running of the transport operations. In larger organisations, like *P&O* and *InterRoute*, it was clear that the interviewees had limited responsibility for transport decision making and that other aspects of organisational transport policy decisions were taken elsewhere at more strategic levels within companies. For example, the *P&O* decision to rationalise to Immingham or, *InterRoute*'s choice to carry only chemicals in the north east of England, have been taken at higher levels within the companies. At *Safeway* and at *The Freight Group* though, a slightly different picture emerged that may, in part, be the result of interviewing better placed contacts, but may also be associated with examining larger, more complex organisations.

The approach to decision making at *Safeway* was certainly similar to others in this group of organisations in that it was highly focussed on costs generally, probably more explicitly than anywhere else, and on applying market principles to every detail of its operational regime. The approach differed in two ways that are significant for this work. Firstly, *Safeway*'s approach to transport decision making involved more people, with specialist skills in different areas of transport²⁹. Secondly, in the decision making process, the actual decisions taken seemed to reflect more fully all the possible environmental benefits that could be gained from the company's activity, though admittedly these environmental benefits were arguably always measured in cost terms. So both *Safeway* and *The Freight Group* have not departed from the norm in focussing on economic priorities, but they have managed to identify and include environmental benefits that also deliver economic and political benefits for them. The

²⁹ Research indicates that decisions taken by groups can provide superior outcomes than those taken by lone individuals (Goodwin & Wright, 1998).

political benefits centre on positive public relations, or 'good PR', towards customers, the public and towards governance groups. All of these would be expected to deliver, in return almost, further economic benefits over time as other opportunities emerge.

For this research the identification of such environmentally positive outcomes, however small or uncommon is welcome since it suggests that theoretically postulated 'win-win' scenarios are indeed possible and are taking place. Naturally this raises questions such as;

- What factors are responsible for producing 'win-win' opportunities for organisations to identify and take up?
- Can this awareness and good practice be spread throughout the road haulage sector?
- How can this be done?
- Does the nature and structure of organisations like *Safeway* and *The Freight Group* give them particular advantages in this area?
- Are these characteristics readily transferable?

These questions are not straightforward and because of the great variety of organisations and opportunities present in the road haulage sector answers may be difficult to formulate. However in the case of *The Freight Group* and *Safeway* the companies have identified commercial opportunities that benefit the environment and that are dependent on some sort of policy instrument. For example, at *Safeway* the involvement with rail freight and CNG is grant aided. Also, though not explicitly stated, their recycling strategy rests on the requirements of the 1997 Packaging Regulations that prohibit large scale disposal. In closing off what may be the most economical business strategy, as far as waste packaging is concerned, policy makers have altered decision making towards a more sustainable outcome. Similarly *The Freight Group* have worked in partnership with local authorities and development agencies, obtaining financial support towards the costs of setting up freight terminals and taken advantage of a grant aid to purchase mobile plant.

Regulatory approaches have been discussed in this chapter (with reference to table 6.2.) and it has become clear that a significant shift in decision making has taken place towards the goal of particular regulations. However, due to an apparent lack of 'joined up' thinking at the regulation design stage it is arguable whether these modified choices have always delivered environmentally optimal solutions. Furthermore, regulations do seem to possess the tendency to reduce environmental awareness. This is because decision makers no longer see a choice to be weighed and they therefore no longer need to think about 'regulated' factors.

Perhaps then the practice of creating 'win-win' situations for decision making can be achieved through careful design and combination of economic instruments and regulatory controls. From many very small clues seen within the smaller companies featured in this project, such environmentally beneficial practices could permeate throughout the road haulage sector. Such clues have been seen in many of the specialisations found in the project and in particular in some specific decisions, such as *Nicholson's* choice of a site with railhead potential. The differences of scale and impact seen within the answer to the first three questions above suggest that larger organisations are more successful at identifying 'win-win' opportunities and putting them into practice. RHM4 revealed board level involvement in the CNG and rail projects and the chairman of *The Freight Group* enjoys similar influence over his company's decisions. It may therefore not be a coincidence that the structure of decision making within *Safeway* may benefit from having a broader experience base within their decision making pool. Also the financial strength of the company, which is far bigger than others interviewed, may also provide the means to become involved in some of these opportunities. It may also be the case that the involvement of senior decision makers, such as board members can also provide crucial input into decision making processes that can sway processes towards priorities other than usual commercial constraints. These last few points suggest an advantage for larger, more complex organisations in identifying commercially viable strategies from which they can gain economic benefits, advantages over their competitors and, in doing so, happen to provide environmental improvements.

In the next chapter of this research project the transport decision making processes of public transport organisations are analysed and this allows an opportunity to compare

the structures and processes that are taking place within the two groups. In the analysis of their decision making processes it is also possible to link the relative complexity of organisations with their environmental awareness.

Chapter 7: A new deal for buses: better for anyone?

The organisations examined within this final group of the project are people movers and are almost all bus or coach companies¹. The 1998 integrated transport White Paper *A New Deal for Transport: Better for Everyone* (DETR, 07/1998) made much of an increased role for public transport alongside a reduction in car use. This chapter analyses the effects of transport policy developments during the last two decades on the bus passenger transport sector with a particular emphasis on the NE region. The aim is to discover how decision makers construct the environment within their day to day choices. For this group of organisations the operational context is somewhat different from the haulage sector; public transport is seen as part of the solution to transport problems rather than part of the problem and is at the centre of attempts to reduce the environmental burden of transport. The effect of this for decision makers is to provide them with opportunities to obtain substantial amounts of the public money earmarked for public transport. Clear effects on decision making processes caused by these opportunities are revealed. The environmental benefits of the range of public transport initiatives currently in use in the NE are questionable and the funds concerned are providing a simple commercial benefit to the companies involved, whilst having a limited impact on public transport patronage². This chapter closes with a case study of one of the UK's major public transport groups based in the north east of England and provides insights into the attitudes towards the environment at a variety of levels within the organisation.

7.1. All change in public transport

In the public transport sector, after the deregulation and privatisation of most of the UK bus industry, bus based public transport went through a period of major change in the late 1980s and early 90s that saw patronage and quality fall. Since that time the annual distance travelled by private cars in the UK has gone up by a third, whilst bus and coach travel dropped by 12% in the same period (National Statistics, 2000).

¹ Eight passenger transport companies, a new bus distributor, the PTE and the Police took part in the research. Appendix 1 contains a list of the organisations that contributed to the research, also see fig. 7.2.

² See the results presented Stagecoach regarding the Durham Road Super Route in 7.5.1. of this chapter.

Within the bus sector during this time many companies appeared and disappeared and the competitors within the sector gradually rationalised into four large UK wide bus operating groups and many hundreds of much smaller companies operating a few buses each. This very brief sketch of the changes in public transport leading up to the publication of the Integrated Transport White Paper (DETR, 07/1998) builds on the introduction to this thesis and is intended to illustrate the complexity of balancing environmental safeguards with market forces and individual transport demands with societal aspirations, all centred on increased prosperity and on the freedom to make travel choices. Attempting to steer transport policy along a course that is broadly acceptable to the public, and in a direction that meets the Governments' commitments made internationally to embrace the principles of sustainable development, is not likely to be simple³. It is important that public transport carries an increasing share of the overall passenger transport burden if progress towards these difficult to reconcile policy ambitions is to be achieved. With this background in mind it is perhaps not surprising therefore that the transport White Paper (DETR, 07/1998) takes the promotion of public transport as one of its core themes. The foreword to the document recognises that

“...we (can) not go on as before, building more and more new roads to accommodate the growth in car traffic. With our new obligations to meet targets on climate change the need for a new approach is urgent” (DETR, 07/1998:2).

The Government's policy is set out in detail throughout the White Paper. Chapter 1, for example, recognises that for the UK, the emissions from road traffic growth are Britain's fastest growing contributor to climate change. The White Paper sees the appropriate response to the problem within a new approach to the overall transport system that includes

“...bringing together the public and private sectors in a partnership which benefits everyone...that taxpayers' money is spent wisely to make public transport available for all and that services are properly regulated in the public interest. We want to see greener, cleaner vehicles that have less impact on our environment. We want better public transport and we want to make it easier to walk and cycle. But these alone will not be sufficient to tackle the congestion and pollution that is caused by road traffic: we need to reduce the rate of road

³ See for example DETR, 1997; DETR, 03/1998; DETR, 02/2000; Chapter 2 of this thesis.

traffic growth. We also want to see an absolute reduction in traffic in those places and streets where its environmental damage is worst " (DETR, 07/1998:8).

The regular emphasis on partnership is characteristic of the present government's approach to much of its policy making. The Government seems to prefer to build coalitions of support through consultation with a variety of interest groups. The above quotation appears to take into account the concerns of public and private finance, market forces, the environmental lobby and the ordinary voter. Public transport, and buses in particular, are seen as the way these changes in transport behaviour are to be brought about and with reference to buses the chapter continues;

"Buses will be cleaner, more comfortable and more reliable, a real and attractive alternative to using cars. We will build on local partnerships to deliver better bus services... (with) quicker, more reliable services; higher quality vehicles with staff trained in customer care; easy to use buses – to help access for disabled and elderly people and parents with young children; *Quality Contracts* – for bus routes to ensure integrated networks; and special funding for buses in the countryside" (DETR, 07/1998:10).

These extracts from the White Paper appear to promise 'something for everyone' whilst also appearing to demonstrate a clear and unambiguous determination from the Government to change transport behaviour in favour of increasing public transport patronage at the expense of the car. At the time such an approach may have represented a genuine desire amongst ministers, though it is perhaps of relevance to note the governmental inexperience of The Labour Party when it was returned to power in May 1997. The bold aims of the White Paper may reflect that inexperience and show that Labour had not sufficiently taken into account the likely political consequences of the practical outworking of its policy agenda. Subsequent events, such as the fuel price protests and the concerted attempts by a well informed and pervasive road lobby⁴ to put the case for roads and the car, seem to have put the government on the defensive over its transport policies. The government therefore became increasingly keen not to be seen as 'anti car' and a transport policy inertia has developed that has seen a return to the established conventions of the road building tradition. Since the public backlash against motoring costs in the autumn of 2000 fuel duties have been quietly reduced and the lower rate of vehicle excise duty for smaller,

⁴ See Daimler Benz (1998); AA (2000); RHA (2001).

relatively 'greener' cars has been extended to slightly larger, slightly less 'green' vehicles. Perhaps most significantly, the 'maintenance only' stance on road building has been abandoned in the call from government for more schemes to be put forward for funding.

More recently still, and following several serious accidents, adverse publicity centred on the safety of rail travel has further undermined confidence in this particular public transport mode and the post-Hatfield train cancellations and delays added to road traffic volumes. The Potters Bar accident did nothing to rebuild confidence in rail. On the face of it the difficulties of some of the train operating companies might be expected to cause some passengers to switch to buses. Though this might have been the case a negative atmosphere surrounding one public transport mode did little for the image of public transport in general, perhaps in part because, as illustrated by fig. 7.1, all of the main UK bus groups are also train operators. This may therefore be of some relevance to attempts at increasing bus, as well as rail, patronage.

Table 7.1. Transport Group Operations

| Group | Bus | | | | Train | Air | Vehicles |
|--------------------|-----------|------------------|---------------|-------------|----------------|-----|----------|
| | <i>UK</i> | <i>N.America</i> | <i>Europe</i> | <i>Asia</i> | <i>UK only</i> | | |
| <i>Stagecoach</i> | √ | √ | | √ | √ | | |
| <i>First Group</i> | √ | √ | | | √ | | |
| <i>Arriva</i> | √ | | √ | | √ | | √ |
| <i>Go-Ahead</i> | √ | | | | √ | √ | |

(source: compiled from annual reports)

The long term effects of these events on both the public's perceptions of public transport and on the ability of government to carry through its stated transport policies are difficult to predict. However, the intentions set out in the White Paper and its daughter⁵ documents remain official policy for the moment. All deal with specific aspects of transport planning, provision and funding and set out how the Government expects local authorities, the haulage industry and the public transport sector to respond to its transport policies. This is then, the prevailing policy and legal situation within which local authorities, hauliers and public transport providers must operate.

⁵ For example, *Guidance on Full Local Transport Plans* (DETR, 03/2000); *Sustainable Distribution: A Strategy* (DETR, 03/2000); and *From Workhorse to Thoroughbred: A Better Role for Bus Travel* (DETR, 03/1999).

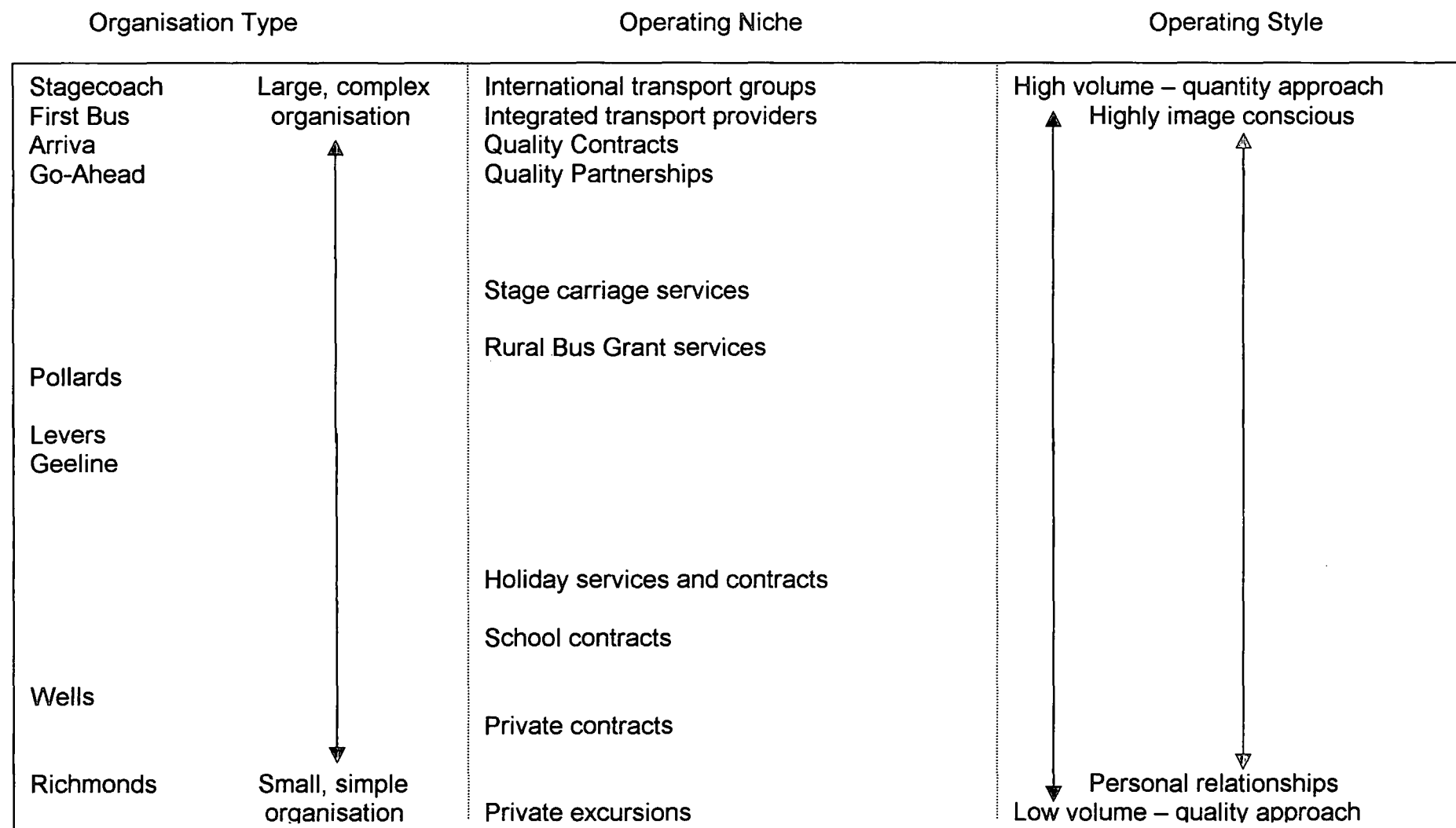
7.2. Opportunities for the bus sector in the new operating landscape

The White Paper attempts to encourage increased use of public transport with the help of financial support channelled through local authorities. Quality Partnerships, Quality Contracts and Rural Bus Grants⁶ are but three of the schemes that have sought to re-vitalise bus based public transport in the hope of effecting a modal switch away from cars. The use of such policy tools is not unreasonable since it has been estimated that about one fifth of all journeys, in the UK, are commuting trips (DoT, 1997). Due to the static nature and regular time patterns of many jobs, the associated commuting journeys are often amenable to public transport. These 'quality' initiatives are discussed in some detail later in this chapter and represent direct, 'strings attached' financial support to the bus industry and as such are similar in effect to a direct subsidy. They also represent a political tool that can be used by the government to make the claim that, because it is spending money, it is serious about re-vitalising public transport. The contrast with the haulage sector is stark. The haulage sector has felt the burden of increased fuel and excise duties, single market competitive pressures and has been singled out for criticism as being in part responsible for increased road congestion, pollution problems and even illegal immigrant trafficking. Bus travel has, in contrast, been promoted as environmentally friendly and congestion reducing and this image of public transport has been reinforced on occasions within political speeches⁷ and photo opportunities. In pursuit of these goals the public transport sector has been encouraged and supported by central and local government, and politically desirable 'win – win' opportunities for the sector and the environment are indeed possible. Despite sharing the same road network and traffic regulations this places the bus sector in a contextually different position to the haulage sector as the recipient of government sponsored publicity, increased infrastructure and technological provision, and financial support for services. Figure 7.2. summarises the operational context and landscape in which NE public transport providers work. It illustrates the relationship

⁶ These three types of bus service support are explained in detail later in the chapter, see 7.6.

⁷ See for example *The Independent* (06/06/1997).

Figure 7.2. Public Transport Organisations: Relationship between type, niche and style



Note: Quality and quantity approaches are representative of a general approach. Here they do not imply that high volume business cannot also achieve high quality service rather that an element of personal service is lost in the high volume approach.

between the size and complexity of organisations and their distinctive styles and niches within the NE transport market.

Bus companies face similar market and economic pressures to haulage companies and also make many environmentally connected⁸ decisions as part of their day to day operational choices. Some of these environmental connections occur because the environmental dimension to a particular decision is a predictable outcome of one or more policy tools applicable to the operators' circumstances and this provides a distinct contextual basis for bus sector decision making. Other environmental connections hinge on simple commercial opportunities and a small number seem to reflect the longer term strategy of companies as they try to forecast how regulatory and market forces might affect them in the future. NE bus operating companies were interviewed to try to discover how they viewed the environment and how they included environmental concerns within their transport choices. The commercial opportunities for public transport providers, especially in providing for commuting trips, are clear and, if emissions from cars are to be significantly reduced, these trips must be captured, especially by the bus.

In this analysis of the public transport sector in the NE of England the first observation to make concerns the different nature of the organisations interviewed and how they might respond to the opportunities they face. Before all the interviews were completed it was clear that the companies taking part were of three distinct types. The first grouping within the sector comprises the UK's four major bus groups, three of which are present in the region⁹. Representatives of two, *Arriva* and *Stagecoach*, were interviewed and the third company with a major presence in the north east of England, *Go-Ahead*, is the subject of the case study that completes this chapter. The second type of company were much smaller but, like the first group, were engaged in stage carriage¹⁰ service work and, on some routes were competing

⁸ As in previous chapters 'environmentally connected' in this context refers to decisions that have some sort of associated environmental dimension to them.

⁹ *Arriva*, *Go-Ahead* and *Stagecoach* have depots in the NE region and operate an extensive range of services. The *First Group* has a relatively minor role in NE bus services provided by a small number of services based in the Scottish borders. This includes a service to the Gateshead Metro Centre, some rural services in parts of Northumberland and some school services in the Berwick area.

¹⁰ 'Stage carriage' is the term given to bus operations where a fare is paid on entry to the vehicle, for a journey on a numbered service, following a published timetable

directly with the big companies. The third group of companies tended to be smaller still, though not always, but were not involved in stage carriage work. This group was engaged mainly in private contract work, excursions and holiday travel. The latter two groups were usually privately owned and operated and often family businesses for several generations. Not surprisingly, in terms of their operational niches, there is an element of overlap between groups (see fig. 7.2.). The different characteristics of the organisations seem to make an important difference to their outlook and this also alters the context of their decisions. This is perhaps best illustrated by a short literature review of bus company annual reports available from some of the participant companies.

7.3. The corporate literature of bus sector annual reports

The first point worthy of note concerning bus company literature is that companies can be separated into two distinct groups almost immediately. One group comprises the four big bus groups and these companies all produce a typical, highly detailed 'glossy' annual report. The other group of companies is made up of the smaller operators that do not usually release such annual summaries into the public domain¹¹. There is therefore a dearth of information on the activities and performance of the latter group of companies. This is important in itself as it does seem to provide a proxy indication of their size, value and complexity. This short review of company literature is therefore useful in providing insights into how the larger companies function and since they share the same overall market place and economic conditions, suggests how the smaller ones might work¹².

The annual reports of the four large bus companies reveal that they are all multi faceted transport groups. As revealed in Table 7.1. all operate UK bus and train services. *Arriva* have extensive vehicle dealership interests and *Go-Ahead* have become involved in aviation services. All of the groups except *Go-Ahead* have international interests and operate bus services in North America, Asia or Europe. The

¹¹ Under laws governing company accounts, limited companies are obliged to provide an annual summary of their accounts to Companies House. On payment of the appropriate fee copies of accounts are available to the public.

¹² Absence of literature makes analyses of the performance of small companies more difficult, but does not imply that they are not engaged in useful activities. The part of this analysis based on the activities of small companies therefore, by necessity, relies on interview and observational evidence

financial performance of this group, illustrated in Table 7.3, reflects their size and international reach and indicates the large gap, in terms of financial strength, between these corporate groups and the other, smaller organisations that are part of this research.

Table 7.3. Group Financial Performance

| Group | Turnover (£m) | | | Operating Profit (£m) | | | % Profit |
|--------------------|---------------|--------|--------|-----------------------|------|------|----------|
| | 1999 | 2000 | 2001 | 1999 | 2000 | 2001 | |
| <i>Stagecoach</i> | 1,548 | 2, 179 | 2, 084 | 220 | 244 | 123 | 5.9% |
| <i>First Group</i> | 1,470 | 1,795 | 2, 054 | 122 | 161 | 135 | 6.6% |
| <i>Arriva</i> | 1,372 | 1,391 | - | 93 | 88 | - | 6.3% |
| <i>Go-Ahead</i> | 496 | 547 | 588 | 44 | 47 | 53 | 9% |

(source: compiled from annual reports)

The first observation to be made concerning this type of published information centres on its complexity and quality. In producing their annual reports and accounts all four groups make extensive use of various business consulting services. The cost of engaging these consultancies is almost certainly too expensive for some of the smaller companies interviewed. The most obvious consequence of this is that it limits the ability of smaller companies to 'get their message across' to the public and especially to local authorities. A less obvious effect of this, but one of greater environmental significance, is that in engaging consultants the larger groups buy expertise that can raise awareness of various issues within the groups. Traditionally, investment, financial and taxation advice is supplied by accountants and auditors as part of their normal duties. Since keeping accounts is compulsory, then this is also likely to be true for the smaller companies, though the accountancy and auditing companies that smaller companies engage are themselves likely to be less expensive and less sophisticated. The large groups though are also able to engage other, non financial consultancies and some fund transport research. It is in these non financial areas that the groups have gained some awareness of environmental issues that is difficult to measure within the smaller companies, either because it does not exist in written form, or because it does not exist at all. This means that for the groups at least some corporate environmental awareness does exist. This knowledge can feed into decision making processes. A review of the annual reports reveals some differences in approach; *First Group* and *Go-Ahead* both publish an environmental report whilst *Arriva* and *Stagecoach* produce strategies that remain within the company with a

limited amount of information available 'on line'. *First Group's* attempt covers what are for the company the important aspects of environmental reporting such as the storage and use of fuel and chemicals, energy use, waste management, water usage, noise and air quality. They have also developed an environmental management process that includes training staff in environmental awareness and auditing the environmental profile of the group. This should enable them to identify environmentally damaging practices within their operations and then deal with the causes in an organised way. For example *First Group* has identified the storage of fuel and chemicals at its depots as posing a potential threat to the environment. The following extract from their Environmental Report indicates the level of sophistication within their procedures;

"Losses (of fuel or chemicals) to the environment could lead to contamination of the ground or water resources either directly, or as a result of leakage from drainage systems, or indirectly through leaching of contaminants from the ground" (*First Group*, 2000:18).

The response to these particular concerns has been that the group set in motion a rolling programme of storage tank replacement and replaced all their underground tanks by 2000, though as a result of further acquisitions another 11 tanks currently await decommissioning. The example illustrates the value of environmental auditing in highlighting risks to the environment before actual incidents occur. Leakages are obviously far simpler to detect in banded¹³, above ground tanks than in buried tanks. Also, apart from the reduced environmental risk of visible tanks, expensive fuels leaking away add costs to operations and reduce profitability. This example, and the others within *First Group's* environmental report, illustrate how environmental

¹³ Most bus companies have on site fuel filling facilities and therefore own fuel, and sometimes oil storage tanks. Originally tanks were often located below ground, in a similar way to public roadside fuel filling stations, with only delivery pumps visible above ground. Because of the tendency for these types of tanks to develop undetected leaks that can cause severe ground pollution before leaks become known many companies are decommissioning these tanks in favour of above ground, banded tanks. Similarly, for reasons of possible collapse, high level, stilt supported tanks, of which *Go-Ahead* owns one, are also being decommissioned. Bunding involves constructing a dyke, or retaining wall around a fuel storage tank that can contain at least one and a quarter times the volume of the tank in the event of a sudden burst. This should contain a worst case scenario spillage, avoiding 'slop over' and seepage and allow time to safely remove spilt fuel.

¹³ *Go-Ahead's* strategy is similar and is explored more fully in the case study included in this chapter.

concerns have been assimilated into the management systems of the company and are now within the decision making processes of day to day activity¹⁴.

The smaller companies do not produce environmental summaries either and their environmental awareness is more difficult to gauge. None are known to employ consultants to inform them of the environmental impacts of their decision making. Their most likely sources of environmental information are from the statutory hazard information data that accompanies the delivery of hazardous products, from regular industry journals and from publicly available information from news media sources and the internet. To discover the underlying environmental awareness of these companies the interview questions attempted to draw out environmentally aware¹⁵ responses by giving the opportunity to discuss the issues that most impacted upon the smaller companies. Failure to mention environmental issues was taken to indicate that either the respondents were ignorant of environmental concerns or were uninterested in them.

A further important contextual factor that should be mentioned in the analysis of how the environment is constructed within the minds of decision makers has been alluded to already and concerns the size and complexity of transport organisations. Like the haulage organisations discussed in the last chapter, two styles of decision making are apparent and these seem to be a function of organisation size.

Within the big four bus operating groups decision making takes place in a variety of forms. Obviously some individual decisions are taken on behalf of the companies but, judging from the annual reports and environment strategies, consensual group decision making is an important component of overall company decision making strategies. These decisions can involve a number of individuals, often with specific responsibilities, sometimes situated at different levels within the organisations, and sometimes based at different locations. Consultant opinion is added to these decision inputs as deemed necessary. Organisations interviewed that fall into this category

¹⁵ 'Environmentally aware' in this context refers to responses that indicate some level of environmental awareness or concern associated with the company activity or with transport generally.

include *Nexus*¹⁶, *Go-Ahead*, *Arriva* and *Stagecoach* and *Pollards* to a lesser extent. The other type of decision making was more individual in style where the amount of information available to the decision maker is limited by the time and opportunities the individual concerned has to spend on their decision making process. *Levers* and *Geeline* typified this style of approach where the proprietor is the sole decision maker. *Wells* and *Richmonds*, as family run companies with much longer histories, are slightly different in that though there is a single decision maker both companies can call on family members to become involved in decision making processes when required.

7.4. Changing operational decisions

Like the previous chapter on the haulage sector, tables have been produced aimed at adding clarity to the data collection and at allowing a fuller analysis of interview responses to be made. The tables assist in:

- Identifying the key response strategies used by public transport operators.
- Ensuring that subtleties within responses are not overlooked.
- Aiding in the analysis of the data.

The tables produced also provide a brief summary of the current issues faced by public transport organisations, the strategies employed in response and the environmental implications of the eventual decisions taken. The analysis contained in this chapter will examine the environmentally connected issues raised by interviewees. The analysis will also draw on the examples from the tables to discuss;

- How current economic, policy and public transport developments are affecting bus companies and especially how environmentally connected aspects of these developments are included in decision making processes.

¹⁶ *Nexus* was formerly known as the Passenger Transport Executive (PTE) and is responsible for operating the Tyne and Wear Metro system and has responsibility for strategic planning and organisation of public transport services across the boroughs that make up the former metropolitan authority.

- How such developments make public transport operators feel and how they might respond to the pressures they face and, in particular, how they might identify and exploit environmental and economic 'win-win' opportunities.
- What the environmental burden of the public transport sector is and how it might be changing.

This chapter examines the challenges faced by public transport companies and concludes by assessing whether, or not, companies have taken environmental considerations into their decision making processes and whether inclusion has been deliberate or implicit. Much policy is aimed at using a variety of market and regulatory forces to move organisational choices towards improved environmental outcomes. The implications for the environment and for policy processes will be included in this assessment.

7.5. Effects of altered operational conditions

The analysis of the responses of interviewees begins by examining the effects of altering the operating environment for public transport operators either by regulatory or market means. Using interview responses and published information, table 7.4 summarises the influence of various factors on the decisions made by organisations. Altered operational conditions that have measurable environmental effects are of most interest to this research and are discussed in more detail than other issues¹⁷. Bus priority measures (BPMs) are one such environmentally connected factor that influences both motorist and bus company decision making. They can have a considerable effect on the operational efficiency of bus services and are intended to offer advantages to passengers and operators. If buses are able to move smoothly and quickly through slower moving traffic then it is expected that this will encourage some modal switching from cars. The advantages for operators centre on increased revenues taken from the extra passengers and the ability to operate without traffic congestion causing timetable delays. This last point is particularly important because

¹⁷ Other factors affecting decision making are likely to exist, but space constraints limit this analysis to those issues with the clearest environmental connections. Similarly some issues covered in the table also merit further analysis and are included here for illustrative purposes.

Table 7.4. Influence of operational conditions on the decision making processes of public transport companies and the associated environmental outcomes

| Influencing factor | Operational Effect | Environmental Effects | | Comments |
|--------------------|---|--|--|---|
| | | Positive | Negative | |
| Bus Priority Lanes | Increased road space for buses at expense of other traffic. Journey times should be consistent and delays should not occur during congested peak times. | If expected modal transfers take place this should bring about a reduction in emissions and improve local air quality. | If modal transfer does not take place as expected motorists will continue to endure congested conditions for longer periods. Emissions also likely to rise and air quality deteriorate | Success of bus priority measures dependent on monitoring and enforcement. Other complementary incentives may be needed to encourage modal transfer. |
| 'Low Floor' buses | Cost of low floor vehicles adds significantly to company costs. Increased patronage expected. | Any modal transfer attributable to low floor design should offer emissions reductions and air quality improvements. | No significant difference to regular bus design so no extra environmental effects attributable to bus type. | Offers an improvement in quality especially for elderly and disabled people. May assist in delivering environmental improvements as part of a package of measures. May increase travel volumes. |
| Congestion | Increases journey times, fuel consumption and vehicle wear all of which incur costs. Passengers see no advantages over other modes and may then switch to cars to avoid congested routes. | None | Increases local air pollution and CO ₂ emissions per km. | Congestion can produce a deterrent effect for motorists. 'Artificial' congestion created by bus priority may encourage modal transfer if time / cost savings can be seen. |

Table 7.4. (Continued)

| Influencing factor | Operational Effect | Environmental Effects | | Comments |
|--------------------|---|---|---|---|
| | | Positive | Negative | |
| Driver shortages | Presents problems in maintaining reliable services. Failure to meet contract requirements can result in passenger disillusionment and desertion. Can also attract penalties from traffic commissioners, such as fines and loss of franchises | None | Cancelled and unreliable services encourage modal switch away from buses towards car use and therefore emissions are increased. | Companies may need to make driving jobs more attractive through wage increases and improved conditions. Innovative responses to 'unsocial' shift patterns discovered in this fieldwork. |
| New Technologies | New technologies can offer potentially significant advantages for operators and passengers. New technologies currently being tested in the industry include the use of 'real time' information for passengers, 'smart cards' and 'high tech' bus priority measures. For these, and other new technologies, companies must commit time and resources to evaluating the uses of new technologies to their particular style of operations. | Any modal transfer attributable to the introduction of 'new technologies' should offer emissions reductions and air quality improvements. | None | New technologies can be expensive to evaluate, adopt and operate. Sometimes it is questionable whether the money committed to the adoption of new technologies could yield greater increases in patronage and modal switches if it were spent on subsidising some services. |

local authorities, as contract providers, and traffic commissioners often monitor punctuality and patronage within service quality requirements. Persistent delays, apart from causing irritation to passengers and loss of patronage, can, in extreme cases, result in fines, contract cancellations or loss of franchises.

7.5.1. Bus priority measures

The commonest form of BPMs are bus lanes. These typically involve re-designating existing road space to exclude vehicles other than buses from some road space for some, or all, of the day. Other BPMs include 'Buses Only' roads, 'No Entry Except Buses' restrictions and traffic lights set to give priority to buses. BPMs are usually found in town centres, often as integral parts of bus stations or parts of town centres designed as bus terminus and interchange areas. As such these BPMs are usually well observed and are not often congested by other traffic. More strategic measures include the development of transport hubs aimed at integrating public transport modes. These can be seen at some major airports and railway interchanges. In the NE examples of this sort integration can be seen at *Heworth* Metro station in Gateshead, where car and bus modes are integrated with the Metro. This is achieved by the provision of a large, monitored Park and Ride site aimed at encouraging drivers to switch to public transport for the final part of their journeys into Newcastle¹⁸. Another, slightly different approach can be seen at *Eldon Square* bus station in the centre of Newcastle where the design of the bus station allows bus passengers the easiest access to the shopping centre, whilst those travelling in by car usually find the limited amount of parking more expensive and difficult to find. Such 'trip end control' as it is known, was discussed during interviews, and is an important part of combined BPMs since priority is given to bus passengers by allowing their vehicles close, easy access to popular destinations, whilst making conditions for the competing mode, the car, tedious, time consuming and sometimes prohibitively expensive. Discussing BPMs a senior manager, PTR1 of *Arriva*, put the company's point of view.

"We need the local authorities and central government to adopt pro public transport planning policies more specifically in terms of car parking policy and in terms of car access because obviously where parking charges are economically realistic and where the car does not have

¹⁸ A more comprehensive scheme exists to the south of the region in York.

total access to city centres, provision is made for public transport to have a better standard of access. Then people can see that the bus provides a more convenient form of travel to and from the town centres. Lobbying on planning issues, on car parking policies and bus priorities are key issues as far as we are concerned" (interview with PTR1 03/09/01).

From this interview extract it is clear that *Arriva* has taken a strategic decision to support bus priority in general because they can see advantages for their operations from BPMs. Here *Arriva* are explicitly linking 'trip end control' with increased bus patronage. The reference to planning issues indicates that *Arriva* recognises that the advantages offered by BPMs originate in the development planning process.

As they are the most familiar form of BPM, bus lanes deserve a more thorough discussion. They were conceived to give access and speed advantages to buses over other traffic. BPMs are usually in the form of redesignated space on existing roads, though some new roads are being built to include them from the design stage. The standard, quality and location of these bus lanes vary widely. Most bus lanes are under the control of local authorities and are usually found on the more congested approaches to town centres where sufficient road space exists for some road space redesignation to take place. The quality of these BPMs also differs with considerable variations found in the duration times, sign posting and lane continuity. Such variations have been observed within this project. These different standards introduce problems for road users as it is difficult for car drivers in particular to develop a consistent understanding of bus lane requirements. Such difficulties are exacerbated in the NE region with additional variations within Newcastle where bus lanes *and* 'no car lanes'¹⁹ exist. This introduces an additional element of confusion as car drivers might see small vans using the lanes and assume that cars are allowed to use them too (interview with LGO1 of *Newcastle City Council*). *Stagecoach* is aware of these particular difficulties and voiced very similar concerns. PTR2, a senior manager of the company remarked

"There's no limit on what's a goods vehicle so if you've got an Escort van, you're all right, you can go through it. Which is fine if only they keep moving but quite a few (are) stopping and unloading and you get blockages" (interview with PTR2 07/08/01).

¹⁹ Though similar to bus lanes in appearance these 'no car lanes' are unusual, though not unique to Newcastle, in that goods vehicles are allowed access to the lanes.

The wide variation found within bus lane provision does little to help improve understanding of the intention behind bus lanes. It is clear from evidence gathered in this and other research (Tucker, 1998), and from simple observation, that bus lanes still create some confusion and are sometimes poorly understood by some road users.

Bus operators know that bus lanes can be very effective and the patchy understanding of and respect for them is an important issue for bus companies and this introduces questions centre on the monitoring and enforcement of BPMs. PTR1 of *Arriva* commented that the success of BPMs has a direct influence on travel decisions.

“...for the bus to be attractive, what are people looking for? They’re looking for the service to be reliable and they are looking for the service to be convenient, so the key area in terms of reliability is traffic congestion, so one of the main issues for the bus company is certainly having to look at, and are vigorously lobbying over, is proven bus priority measures for our services so that they can provide an attractive option to the car...” (interview with PTR1 03/09/01).

It is interesting to note within the above quote that PTR1 also uses the word ‘proven’ when referring to BPMs. This suggests that operators are experiencing problems with some BPMs.

“There’s a key issue about enforcement and again one of the things in terms of general policy that we raise at every meeting that we can with Local Authorities, and people like Government Office in the North East and DLTR, is about the fact that it’s no good just granting money for capital expenditure on such measures. There needs to be associated, ongoing revenue funding for enforcement because it won’t work otherwise. The real problem years ago when the bus lanes were introduced in Middlesbrough (was) they were never enforced and hence have fallen into great disrepute...” (interview with PTR1 03/09/01).

From this extract it is clear that *Arriva* is bringing their corporate power of influence to bear at every opportunity in pursuit of improved BPM enforcement. The identification of BPM issues by *Arriva* provides an example of a win-win response to the prevailing political, economic, social and environmental influences currently affecting the public transport sector.

Enforcement is an interesting issue of which little evidence of monitoring or enforcement of BPMs has been observed or discovered during interviews with local authorities or the Police. This perhaps reinforces *Arriva's* interest in the issue. The police discussed monitoring and enforcement in cost terms and a traffic police officer complained that police numbers had been cut whilst workloads had increased. He suggested that because of this there was little chance of BPM enforcement unless local authorities provided the funds for traffic measures that they had implemented (interview with *Cleveland Police* 23/01/02)²⁰. Stockton Borough Council also admitted they had no plans to monitor or enforce a 'high occupancy vehicle lane' due at the time of interview to form part of a new road scheme on Teesside (interview with *Stockton Borough Council* 20/04/01)²¹. Monitoring and enforcement of BPMs is seen by operators as a very important issue and it could be argued that lack of enforcement can actually lead to a situation where other road users not only misunderstand the intended effects of bus lanes, but absorb the idea that bus lanes are not to be taken seriously. This notion has also been picked up from interviews with motorists and bus drivers in previous work (Tucker, 1998) and is further supported by regular observation of various bus lane schemes on Teesside. It seems clear from these observations that drivers are often confused in several different ways by BPMs. Some drivers seem unsure when to drive in the bus lane and when to keep out of it, whilst others ignore bus lanes altogether. A third group seems 'slightly' unsure of what to do and drives with half of their vehicle in the lane and half out of it. Perhaps the most revealing attitude can be observed when drivers realise that there is a traffic camera, or a police or traffic warden presence in the vicinity of the BPM and they immediately respect the provision of the bus lane (interview with *Cleveland Police* 23/01/02). The evidence of these views and casual observations suggest an important role for monitoring and enforcement.

²⁰ According to police sources plans do exist in Cleveland to introduce two motorised traffic wardens who would use mopeds to extend the areas they currently cover. This proposal is aimed at enforcing traffic regulation violations in general and is not a response to bus lane problems in particular (interview with *Cleveland Police* 23/01/02).

²¹ The 'high occupancy vehicle lane' was never installed, removing any need for monitoring and enforcement. The issues around the expected provision of this lane and its ultimate removal from the road scheme in question forms part of the analysis of local authority responses to transport choices in chapter 5.

A link therefore exists between the effectiveness of BPMs, in terms of congestion reduction and improved patronage for buses, and their monitoring and enforcement. This suggests that local authorities need to revise their thinking on bus priority measures and regard monitoring and enforcement in a similar way to how they see highway maintenance, and dedicate appropriate funding to it. It is self evident that clear, traffic free bus lanes are more likely to be effective and this point was picked up by PTR2 of *Stagecoach* when commenting on the ability of bus lanes to attract passengers. Expressing how he thought the motorists might see such schemes he said,

“apart from anything else there’s also the perception thing where if you’re in a car in a queue and the bus goes past, all of a sudden it begins to be not such a silly idea” (interview with PTR2 07/08/01).

Without adequate observation of BPMs from other road users, car drivers in particular will be unlikely to experience this feeling. Operators are then quite clear in their support for BPMs and have made decisions to pressurise anyone in authority who can help improve the integrity of bus lanes in particular.

From an environmental viewpoint any traffic reductions that do result from BPMs can offer air quality benefits. Successful BPMs that bring about some modal transfer obviously offer some wider environmental benefits through emissions reductions. *Arriva* at least have recognised the commercial benefits to be gained from including the environment in their decision making;

“...so (the environment) is not something we don’t consider, it’s one of the issues we consider but it’s in a second strata if you like and we are in the fortunate position at the moment, in terms of a lot of things that we do which have benefits in terms of patronage, in terms of cost reduction, also have an environmental benefit” (interview with PTR1 03/09/01).

The major operators have all introduced some sort of environmental awareness and management systems and the way that PTR1 was able to express this view may be an indication of the permeation of environmental awareness into *Arriva*’s decision making processes²². More cynically, and since the environment appears to be a

²² Environmental management issues are explored more fully in the case study at the end of this chapter.

secondary concern to *Arriva*, it may demonstrate an ability to marshal an argument in support of regular commercial strategy.

Possible negative environmental effects of BPMs hinge on whether they are respected by other road users and if some motorists continue to use all available road space on a 'free for all' basis. Indeed parking and loading along busy routes during restricted periods can, because of the large readily available space, sometimes be worse than before BPMs were introduced. Monitoring and enforcement are again the vital issues in this context, though complementary measures can also have a significant effect on attempts to encourage modal switches. When asked whether his company had evidence of increased patronage as a result of bus priority provision PTR2 of *Stagecoach*, commenting on the 'Durham Road Superroute' into Sunderland, raised the issue of combined measures and noted that

"...we had a quality partnership (on the route) so we provided new low floor buses, *Sunderland City Council* put some bus lanes down the road. *Nexus* through the *PTE*, put in new shelters and publicity out and we did a monitoring exercise on it... we measured services that weren't involved at all, we looked at some services that used the road but weren't low floor and then we measured the new low floor services that used Durham Road. The new low floor services got about five or six percent increase in patronage, the other buses got I think about two percent that's all, presumably because of the bus lane. Yes, it worked pretty well because otherwise we would have expected probably only two percent, so five percent increase is pretty good really. That was an example... where you can, as long as you've got a good frequency and you've got priorities to get through the traffic congestion you can run reliably and it's fast, yes, I think you can attract people or at least hold on to them anyway... so if you put new low floor buses on, you would perhaps get a bit of an increase but not that much, if you just put new shelters you might get something, but not a lot and if you just put publicity out, you probably would get something as well. You only get a small amount if you do them individually but if you put them altogether, you get a lot better impact at the end of the day" (interview with PTR2 07/08/01).

The fact that these combined measures in this case seem to be more effective, by two or three orders of magnitude, is perhaps not surprising since the scheme in question addresses some of the usual barriers to increased patronage. Whilst interview data cannot be regarded as proving the effectiveness of the 'Durham Road Super Route', it is clear from what PTR2 said that *Stagecoach* have taken the trouble to measure levels

of patronage on different vehicles in various conditions. Interestingly enforcement of bus lane requirements was not mentioned in this case and this could possibly offer further improvements. Much has been made in policy development circles of the importance of producing 'joined up' solutions to transport problems and this scheme at least illustrates that several organisations, working together in their own areas of expertise, have produced a successful scheme that is delivering improved patronage. Though no hard evidence of any modal switch was offered it is unlikely that the five percent increase in passenger numbers was solely due to extra, overall travel demand.

7.5.2. Congestion

Congestion is also highlighted in Table 7.4. and can be a particularly difficult problem for bus operators to cope with as it affects them in a variety of ways. Firstly congestion causes delays and affects the punctuality of services. Secondly, the bus moves no faster than the other traffic and passengers could be forgiven for trying other ways to make their journeys and avoid the congestion. One way to do this is to drive themselves along less congested routes where perhaps buses do not operate. Thirdly, buses operated in start stop conditions are less fuel efficient and experience more mechanical wear than those operated at optimum design speeds. Fourthly, since congestion causes journeys to take longer, but not cost more in fares, the balance between operating costs and revenues is altered, making bus operations more expensive to service providers. The first two of these disadvantages can cause modal switches away from buses and all of these factors add to operating costs. Congestion therefore appears to be particularly unwelcome as it is what might be described as a 'lose – lose' situation of environmental damage and traveller inconvenience. The environment loses as local air quality is reduced²³ and through additional CO₂ emissions. Given the disadvantages of congestion for operators and passengers it is not surprising that bus companies are enthusiastic about BPMs.

²³ Pollution in some UK cities fell by around two thirds during the few days of the autumn 2000 fuel price protests when motorists sought other travel modes. In London, Manchester and Cardiff atmospheric CO levels fell, with the largest fall from 1.4ppm to 0.5ppm experienced in London. In contrast Belfast which was unaffected by the protests saw its carbon monoxide level rise slightly (*The Independent*, 16/09/01).

BPMs give travel advantages to public transport users by releasing buses from congestion whilst simultaneously maintaining the inconvenience of congestion for car drivers to act as positive deterrent to travel by car. This can be described as 'congestion creation' (or multiplication) for car drivers, and as congestion has been shown to increase the patronage of public transport (*Go-Ahead*, 1999) it would seem that a measure of controlled congestion in this respect is welcome, at least for bus operators. The positive effect that congestion can have on public transport usage was confirmed from an unexpected source when, in an informal group discussion at a recent transport conference (*Merseytravel*, 2001), a representative of the *Highways Agency* expressed the view that "congestion was necessary" as part of attempts to promote public transport alternatives to cars. It would seem from views such as these that measures that create additional 'artificial' congestion by channelling other road users into smaller spaces, and simultaneously freeing space for buses to move more rapidly, should further increase patronage. Building roads, or congestion relief, in the traditional 'predict and provide' manner, works against increasing public transport patronage and against reducing car use, as in this model the car is seen to have clear advantages over the bus. This is the essence of the market transport²⁴ congestion paradox; as an operating condition for public transport providers, congestion is both a nuisance and a necessity. Market transport is informing the contextual frameworks of policy development and administrative delivery processes with the effect that the key factor limiting road transport growth is congestion.

7.5.3. New technologies

New technologies also offer possibilities for environmentally improved transport decision making. Table 7.4 outlines the potential applications of new technologies for transport. Further analysis is appropriate as the application of new transport technologies are seen by policy makers as a key part of the government's integrated transport strategy (DETR, 07/1998:56, 126). New technologies for transport fall into three basic groups. The first group are applied to vehicles and include fuel management systems, exhaust cleaning technologies and alternative fuel

²⁴ Chapter 3 of this thesis argues that the market transport paradigm prevails in UK transport.

technologies²⁵. The second group of technologies offer benefits to operators and passengers and include the use of 'smart cards' that allow fares to be paid on the buses and trains of different operators and sometimes to pay for car parking. Computerised information systems available from home computers, laptops and even mobile phones can give passengers up to the minute access to service and booking information.

'Smart' bus priority measures also offer advantages to public transport. These can be installed as part of traffic management systems and can change traffic signals in favour of buses thereby assisting punctuality. The third group of technologies offer advantages to passengers in the form of what might be termed 'information assurance'. 'Real time information' systems are positioned at key points within the network and display up to the minute information about the position of buses, their arrival times and possible delays²⁶. From the standpoint of public transport generated environmental improvements, the technical merits of these systems are unimportant if they fail to contribute to increased public transport patronage and modal switches. It would seem from the evidence offered by PTR2 of *Stagecoach* earlier in this chapter that the benefits of technical innovations are felt most noticeably within combined measures aimed at improving public transport patronage. These combined measures aim, in part, to improve the image of public transport and make it more 'user attractive'.

7.5.4. Public image and the environment

Image is important in a competitive market place and commercial strategists are keen to promote their green credentials as a way of improving public perceptions of public transport and of attracting funding. *First Group*, for example, highlight within their environmental report the fact they are involved in 'over 50 quality partnerships' and, by this inclusion, *First Group* imply a link between environmental improvement and quality partnerships. This desire to be seen to be green is further illustrated by the

²⁵ These technologies are very similar to the ones applied to HGVs and their merits have been discussed with particular reference to Safeway's adoption of CNG in chapter 6.

²⁶ The systems work either by global positioning systems (GPS) or beacons relaying the position of vehicles, via computer, to a network of display monitors located at key positions within the network. *Go-Ahead* are in the early stages of introducing such a system in Brighton.

amount of image building information visible on buses in, for example, stickers that claim 'this is a low emission vehicle'. In this way the environmental benefits from such technologies become part of the green image claims, which can be used to inform future passengers of the environmental benefits of bus travel. Both *Arriva* and *First Group* are involved in schools contact schemes where staff and vehicles are used to promote the green image of bus travel, and whilst such constituency building is not technological *per se* it does make use of technological improvements that benefit the environment. *First Group*, for example, use a double decker bus that advertises itself as using 'greener diesel'. These attempts are image building efforts aimed at promoting public transport in a way that is hoped will make it easier to capture young peoples' journeys for the bus as they become independent travellers²⁷ (Pilling *et al*, 2000).

7.6. Economic incentives and transport decision making

At the outset of this section it is worth stating the obvious that all the transport activity taking place whether it be for business, employment or leisure reasons, contains an economic dimension. Vehicles and fuels cost money as do drivers' wages and the administrative and maintenance systems of those engaged in any form of transport. The link between transport and economic activity is indisputable so it is not surprising that the introduction of financial support measures for bus services, in the form of Rural Bus Grants (RBG) has had an effect on the decision making processes of service providers. Table 7.5 summarises the effects of these financial and contractual support measures.

Rural Bus Grants are available through *Rural Bus Subsidy* grants, *Rural Bus Challenge* funds and *Rural Transport Partnership* funding. All were introduced by the government during 1998 and provide funding for new rural services, transport innovation and for the reduction of social exclusion respectively. According to the DETR (07/2000) all can be used for local authority organised and tendered services or community transport projects. Some of the companies interviewed during this

²⁷ For an in depth explanation of the benefits of an early educative approach to promoting public transport see the *Catching Them Young Project* (Pilling *et al*, 2000).

Table 7.5. Influence of financial and contractual support measures on the decision making processes of public transport companies and the associated environmental outcomes

| Influencing factor | Operational Effect | Environmental Effects | | Comments |
|------------------------------------|---|--|---|---|
| | | Positive | Negative | |
| Rural Bus Grants | Alters the economic basis on which the decision to provide a service is made | Gives the opportunity for rural travellers to use the bus service instead of relying on cars | May result in empty buses operating in rural areas whilst potential passengers continue to use cars for reasons of preference | If used as part of a package of measures increased patronage amongst non car owners can be achieved. Significant modal transfers thought to be unlikely without clear advantages being created for the bus over cars. |
| Quality Partnerships and Contracts | Contracts vary but can offer exclusive access to a route or service, which provides a more reliable revenue return. | By ensuring exclusive operator rights emissions should be reduced as competitors can no longer operate viably. | Negligible in urban situations but may result in empty buses operating in rural areas whilst potential passengers continue to use cars for reasons of preference. | Should prevent fares 'undercutting' to win passengers. The unprofitability of such tactics usually involves at least some older, 'dirtier' vehicles remaining in service for extended periods. Can be shown to increase patronage though modal switches are more difficult to measure. May increase overall travel volumes. |

research are benefiting from one or other of these Rural Bus Grants to support otherwise non viable services.

Where service provision had previously relied on purely commercial factors the decision had been taken by previous service providers to deregister services and cease operating them. The 'market transport' approach to rural service provision introduced as part of the deregulation and privatisation of the bus sector from 1985 has seen a significant fall in the patronage of UK public transport. According to EU research in the period 1970-99 UK bus and coach patronage has dropped by 25% whilst all other member states have seen increases in passenger numbers (EU, 2001). UK bus usage is also the lowest, in terms of the total number of kilometres travelled per passenger. UK public transport infrastructure investment has grown more slowly, and remains 20% below the European average (ibid.). Also in the same period, UK car usage and kilometres per person have more than doubled and are amongst the highest in Europe (DETR, 2000; EU, 2001). Together these statistics reveal the consequences of state withdrawal from public transport partnership which led to more car use and therefore more congestion and pollution. They also indicate firstly, a failure to include environmental considerations within the thinking of transport policy decision makers, and secondly, that pure market approaches to public transport provision are unable to provide a system of sufficient quality and value for money to remain attractive. In short the decline exposes an 'environmental bankruptcy' within the underlying ideology and prevailing policy discourses.

Since the publication of the 1998 White Paper (DETR, 07/1998) a renewed atmosphere of partnership between government, local authorities and operators has been discernible in the public transport sector and, according to the annual reports of all four main UK public transport groups, has begun to halt the decline in patronage. All of the companies report an overall increase in patronage of about one percent during a twelve month period (*First Group*, 2001; *Stagecoach*, 2001; *Go-Ahead*, 2001; *Arriva*, 2000). The effects of this renewed partnership are evident from the above comments made by PTR3 concerning rural bus grants.

"we serve Wensleydale and the surrounding areas, little towns like Masham and Ripon (and) there were no commercial bus services, there wasn't anything. There were bits and bobs

around the Catterick area, but when the Government came along with the rural bus grant money *North Yorkshire County Council* benefited from the big pot of money, I think it was awarded per population of ten thousand (and) because there's little villages dotted everywhere then *North Yorkshire County Council* got a shed load of money, so they were able to provide, or put out to tender, a lot of local bus services" (interview with PTR3 07/09/01).

The effect 'on the ground' for *Pollards*, and others, has been to provide a financial cushion to allow company costs to be met during the development *and* ongoing operation of services. Once services are established the extra revenue adds to profitability. In Wensleydale *Pollards'* experience has been positive with passenger numbers growing and the service beginning to mature into a familiar local service.

"Obviously this started from nothing. Up Wensleydale where we do the contract (it) goes all the way to Hawes and all the little villages in between and prior to that obviously there was very little, may be one or two buses a day but since day one, passenger levels have continued to go up. We do try and provide a good service. It's different, I've never operated in a rural area before, (and it) is a lot different to operating in towns and to some extent it manages itself. You've got a lot of regular passengers, it's a tight knit community and everybody knows everybody, everybody knows the drivers and it becomes... it is a service, it isn't a bus ride, it's a local service" (interview with PTR3 07/09/01).

Geeline's experience in east Durham has been similar

"A lot of the growth is through the rural bus grants that we're getting" (interview with PTR6 06/09/01).

Bus grants have therefore altered the operational landscape and decision making context for contract providers by allowing them to exercise control over rural public transport. Since they fund or subsidise a particular service there is little prospect of another unsubsidised operator attempting to compete along the route. The economics of any attempt would not make it worthwhile. Also if such a situation were to arise, the local authority in question might take advantage of the competitive atmosphere and withdraw financial support for the route. The control of these Rural Bus Grant funds places the local authority in a powerful, influential position with operators and allows them to prompt operators into action and obtain best value from their funds. For service providers Rural Bus Grants provide security of revenue and allow

investment in new, top quality vehicles. PTR3 remarked that the grants were essential to the revitalisation of public transport.

“If anything without the Government’s returns via the Rural Bus Grant we’d still just be running coaches” (interview with PTR3 07/09/01).

Or put another way *Pollards* would not have been able to consider stage carriage operations for economic reasons. The success of the various Rural Bus Grants in bringing about a change in service provision augurs well for other attempts to introduce subsidised services elsewhere and the present operating landscape compares with the situation in rural public transport before the 1985 deregulation and privatisation of the sector²⁸.

The policy and operational circle has turned full circle through the upheaval of the so called ‘bus wars’ of privatisation and deregulation, and has settled, for the moment at least, into a situation of subsidised, virtual monopoly provision (Knowles & Hall, 1998). For passengers there is little difference in the character of services. The main differences appear to be in the politics of control of the system. Control now rests very much with government and local authorities through subsidy control and a comfortable ‘truce’ appears to have developed, particularly amongst the larger operators who seem reluctant to challenge each others’ market niches for fear of provoking reciprocal action. Smaller operators are also wary of provoking the commercial strength of the big companies but seem willing to chip away at the edges of the established market landscape. Several of the interviewees expressed sentiments appropriate to their position in the market hierarchy when discussing competitive practices. PTR5, proprietor of *Levers* was the most outspoken of those interviewed saying

“they all tender, when it comes to tender time we all tender for each other’s routes but if one was able to see the tender then we would very quickly see *Arriva* putting higher prices for the ones *Stagecoach* do and *Stagecoach* putting high prices for *Arrivas*. They know I’ve only got 12 buses, but they know I can turn up unexpectedly anywhere, so I’m a deflating influence, so

²⁸ Before the 1985 Act the state owned *National Bus Company* operated loss making rural services on a subsidised basis.

the County is desperate for me to keep tendering because it keeps the lid on the others” (interview with PTR5 19/07/01).

Before moving on to discuss the various forms of Quality Partnerships and Contracts that now exist, a final important aspect of Rural Bus Grants must be examined. In the White Paper the government set out its intention to reduce travel volumes and this goal has been repeated in many of the daughter documents that appeared²⁹ and indeed in many other official publications emanating from the various groups working on policy advice³⁰. What was not clear from any of the interviews was whether any significant modal transfers from cars to buses were taking place as a result of the new services in Wensleydale, east Durham or in *Levers*’ principal rural niche in the North Yorkshire Moors. PTR3 did hint however, that some increase in travel volumes might be taking place amongst tourists.

“Our business is solid all the year round, but in the summer time obviously running up Wensleydale, it’s a very touristy area, we do get a peak of passengers... with a lot of people coming up obviously not knowing the particular road they’re going, they’re catching the bus to wherever which is excellent and there is a big market out there” (interview with PTR3 07/09/01).

From the rhetoric found within the government’s transport policy documents it is obviously not their intention to increase overall travel volumes through their funding arrangements. If a trend such as the one described here becomes significant it might prompt the government to reconsider how rural bus grants are applied. When asked about his company’s rural service provision PTR5 of *Levers* was more forthright, making several interesting comments. Beginning with an operator’s definition of integration.

“Those services are run by North Yorkshire Moor National Park, we just provide the buses. It’s their network, which of course has been politically organised into the routes you’ve seen... but the Moors Bus³¹ isn’t wholly integrated because *Arriva* have a very strong commercial presence on the east coast that the Moors Bus competes with” (interview with PTR5 19/07/01).

²⁹ See footnote 3

³⁰ See for example; UK Round Table on Sustainable Development (1996)

³¹ Moors Bus is a National Park Authority contract currently operated by *Levers* during summer months.

From this it seems that PTR5 would define 'integrated transport' as being organised without on-street competition. This is a notion of integrated transport worthy of further discussion. According to Potter and Skinner (2000), 'integrated transport' has been unquestioningly accepted as the preferred policy option with little thought as to what the term means. Competition free service provision has obvious attractions for operators and, if accepted as an overall service provision strategy, could return bus policy and provision full circle to the style of operation found during the days of the former *National Bus Company*. Tendering for contracts and franchises seems to be the preferred approach for the moment but is a small step away from 'market transport' towards the integrated transport paradigm discussed in chapter 3. Some Quality Contracts do in fact give preferred operators exclusive rights to provide the services on a route, which is what PTR5 is suggesting within his definition of integration and this too has the mark of a regulatory assisted approach to developing integrated transport. He went on to describe how passenger numbers have gone up as a result of the introduction of grant supported services.

"They (the National Park Authority) enthuse about how the passenger figures have gone up. You're just lucky if you carried six or eight passengers, its just barmy and they pay £2.50 for an all day ticket. We used to do excursions but we no longer do them (because) you can't compete with £2.50 all day. When the Moors Bus started three or four years ago, the average price for an excursion was six or seven pounds for an all day trip. No one will pay that when they can get it for £2.50. So that was another example of Government interference, for wonderful green reasons but it just doesn't apply... you've got fifteen or sixteen buses belting all over the North Yorkshire Moors in the summer for six weeks while the schools are off. Wonderful from my point of view because there is a return on the vehicles being used, clients love it. Out of this terrible environment in to a nice one. But it's a very very good question how justified on environmental grounds that can be. But it works, all you get is an excuse to go on excursions. They come with rucksacks, water tablets and wanting to get from one toilet stop to another. Trying to get people out of their cars! [with sarcasm] Car users can vary things that much, there's no way [to get people away from cars] it's just too big an economy" (interview with PTR5 19/07/01).

PTR5 raises a number of issues here. The issue of state subsidy, in the form of bus grants or Quality Contracts is seen here to be undermining private enterprise to the point where it is no longer viable. PTR5 is suggesting that though the intention behind

the policy is to encourage rural travellers into modal switches, and is therefore environmentally friendly, the outcome is that more vehicles with hardly an increase in overall patronage is the result, along with a non viable private enterprise. Since there are now more vehicles travelling more kilometres, this reduces the measure of public transport usage in passengers per kilometre terms and he therefore questions the policy from an environmental viewpoint. This is particularly interesting, not least because it comes from someone who is a direct beneficiary of the policy. The point is though, that despite policy makers' constructions of the environment in their policies, it is likely that unintended outcomes will appear. In this instance the collapse of excursion work and increased environmental burdens due to more services being provided that are not resulting in a reduction in car use. This suggests that simply providing money to support or create services will not generate sufficient modal switches to justify them on environmental grounds and that other measures may need to be used in concert with funding. PTR5's final point perhaps reveals some of the frustration of bus operators who are able to see the intention of policy, can deliver a high quality service, but cannot influence the take up of the service simply because they cannot compete in convenience terms. The experience of both *Pollards* and *Levers* implies that the increasing passenger numbers are coming from increased travel volumes rather than modal transfers from cars. Increased travel volumes are the last thing that policy makers want to encourage as this increases the environmental burden of transport. If this were established beyond reasonable doubt it would represent a blow to policy aspirations and may raise questions over the continuance of funding for 'quality' measures. Reducing the need to travel has been a key part of the government's policy framework and transferring some of the more essential travel to more sustainable modes has carried equal weight (DETR, 07/1998). The developments found in rural transport in this project suggest that the outworking of these integrated transport policies is falling short of both of these aims.

Quality Partnerships, also detailed in Table 7.5, merit further discussion. Quality Partnerships formalise the relationship between local authorities and bus operators and each take on separate responsibilities aimed at improving the overall quality of bus travel. The local authority usually provides improved traffic management facilities such as BPMs and Park and Ride schemes whilst operators offer better quality, improved marketing, better integration and more reliable services (DETR,

07/1998). Quality Contracts go further and offer operators exclusive rights to operate particular routes or groups of services. In return operators must meet the local authorities targets for patronage levels and agree to provide buses with improved quality specifications, which in urban areas usually means low floor vehicles³².

Quality Partnerships and especially Quality Contracts offer reliable revenue streams to operators and are therefore important in allowing operators some security in their decision making when committing themselves to new vehicles or recruiting staff. These types of contracts offer environmental benefits too and these centre on congestion and emissions reductions. Exclusive rights to operate a particular service ensure that no other competing operators can register a rival service on the same route and this eliminates the possibility of several buses racing each other for passengers on the busiest routes. This reduces small amounts of both emissions and congestion. However the main success of these arrangements lies in their ability to increase patronage through the provision of combined bus quality improvements undertaken jointly by local authorities and operators³³. Some modal switching does seem attributable to these measures particularly when part of a combined package of improvements. The willingness of a range of operators interviewed in this research to become involved in Quality Partnerships and Quality Contracts perhaps indicates a degree of consensus amongst operators and local authorities as to the usefulness of both forms of Quality measures in furthering improvements in local bus services.

7.7. Case Study: Transport decision making within the *Go-Ahead* Group

This section of the chapter focuses on organisational decision making within the *Go-Ahead* group and how the structure of the organisation, and its moves towards developing environmental management systems, have affected how the company views, and behaves towards, the environment. This case study forms part of the overall analysis of the responses to the issues faced by the public transport providers and how this sector constructs 'the environment' within its decision making processes. *Go-Ahead* has been chosen because of its proactive stance in promoting environmental awareness within the bus sector, illustrated in particular by its annual

³² Usually 'low floor' vehicles.

³³ See 7.6.1. for an explanation by PTR2 of *Stagecoach*.

reporting on the environmental aspects of its business activities. The case study analysis builds on the analyses of some of the public transport issues already discussed, but also indicates the effects of other factors on organisational decision making.

7.7.1. *Go-Ahead*: origins onwards

Following the deregulation and privatisation of bus services enacted in the Transport Acts of 1980, and especially 1985, opportunities arose for the creation of new, privately owned bus companies and the present *Go-Ahead Group* can trace its origins back to a management buy out of the state owned *Northern* bus company in 1987. The Group was listed on the London Stock Exchange in 1994 and the company has grown into a major UK public transport provider through acquisitions, joint ventures and carefully targeted investments and marketing strategies. During the last four years this growth has resulted in the company almost doubling its annual turnover, to £588m, and operating profits to £53m (*Go-Ahead*, 07/2001)³⁴. Today the Group employs around 18, 000 people and serves 600 million passengers a year. Operational activities include bus and train services, aviation ground handling services and taxi and despatch services. Strategic activities include attempting to provide integrated transport services both in terms of seamless, intermodal journeys and in terms of improved information, journey planning and ticketing arrangements. The produces the usual comprehensive corporate information, but has also documented environmental performance and, in the latest edition of its environmental report (*Go-Ahead*, 06/2002), has added a social dimension to its corporate reporting. Within this approach to developing its business strategies for the future the company's response to a range of issues including staff training, new technology and environmental concerns appears innovative and dynamic.

7.7.2. Decision making within *Go-Ahead*

The structure of the Group is vertically integrated with each company operating as a semi independent business, responsible through the board to shareholders. The links

³⁴ Also see table 7.3.

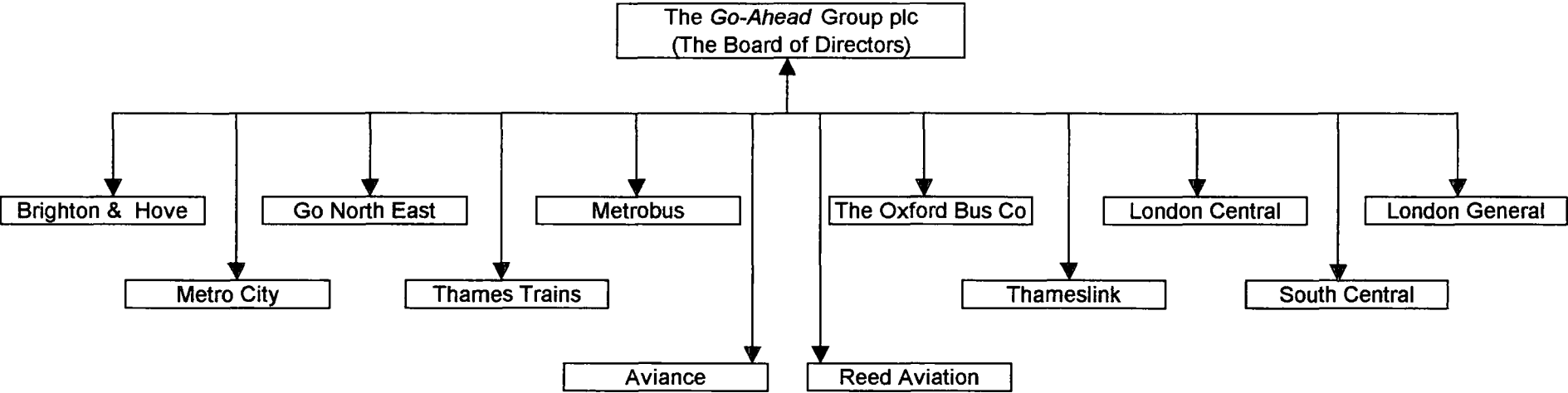
between the twelve *Go-Ahead* companies and the board are illustrated in figure 7.6. and this structure can be clearly seen within many of the corporate documents produced by the Group. In annual reports the operations of sub groups of companies are reported on by mode with, for example, information and statistics of combined bus activities stated together (*Go-Ahead*, 07/1999, 07/2000, 06/2001). In other documents, such as the Group profile and the environmental report (*Go-Ahead*, 2001, 2002, 09/2002), corporate reporting from the separate companies within the Group further illustrates the overall structure with the inclusion of specific information from each separate company. Within the companies of the group this structure is replicated as company directors are given responsibility for particular activities and decisions within their company. *Go North East* provides an example of this type of sub grouping and includes *Go Coastline*, *Go Gateshead*, *Go Northern* and *Go Wear Buses*. Figure 7.7. illustrates the integrated decision making structure of this sub group and the bottom row of the figure shows managers and engineers of the four subcompanies and their lines of responsibility through to the sub group Operations Director and Managing Director.

From an environmental viewpoint the style and structure of *Go-Ahead's* decision making processes includes the promotion of environmentally led policies and practices within the Group whilst also aiming to give due consideration to the environmental effects of the group's existing activities. The *Go-Ahead* Group has placed environmental issues within it's emerging 'corporate social responsibility' (CSR) agenda³⁵. This is partly because the personal awareness and concerns of key individuals have spread into their workplace decision making, but also because of what are seen as responsibilities conferred by trends, or 'best practice', within industry generally and, more recently, within this part of the commercial sector. It is an approach that aims to include 'the environment' within decision making processes.

Go Ahead is a large and complex organisation and structures such as those seen in figures 7.6 and 7.7 provide a useful way of controlling the organisation without necessarily introducing rigidity to the decision making process and stifling ideas, innovation and enthusiasm. Autonomy within the Group structure is encouraged

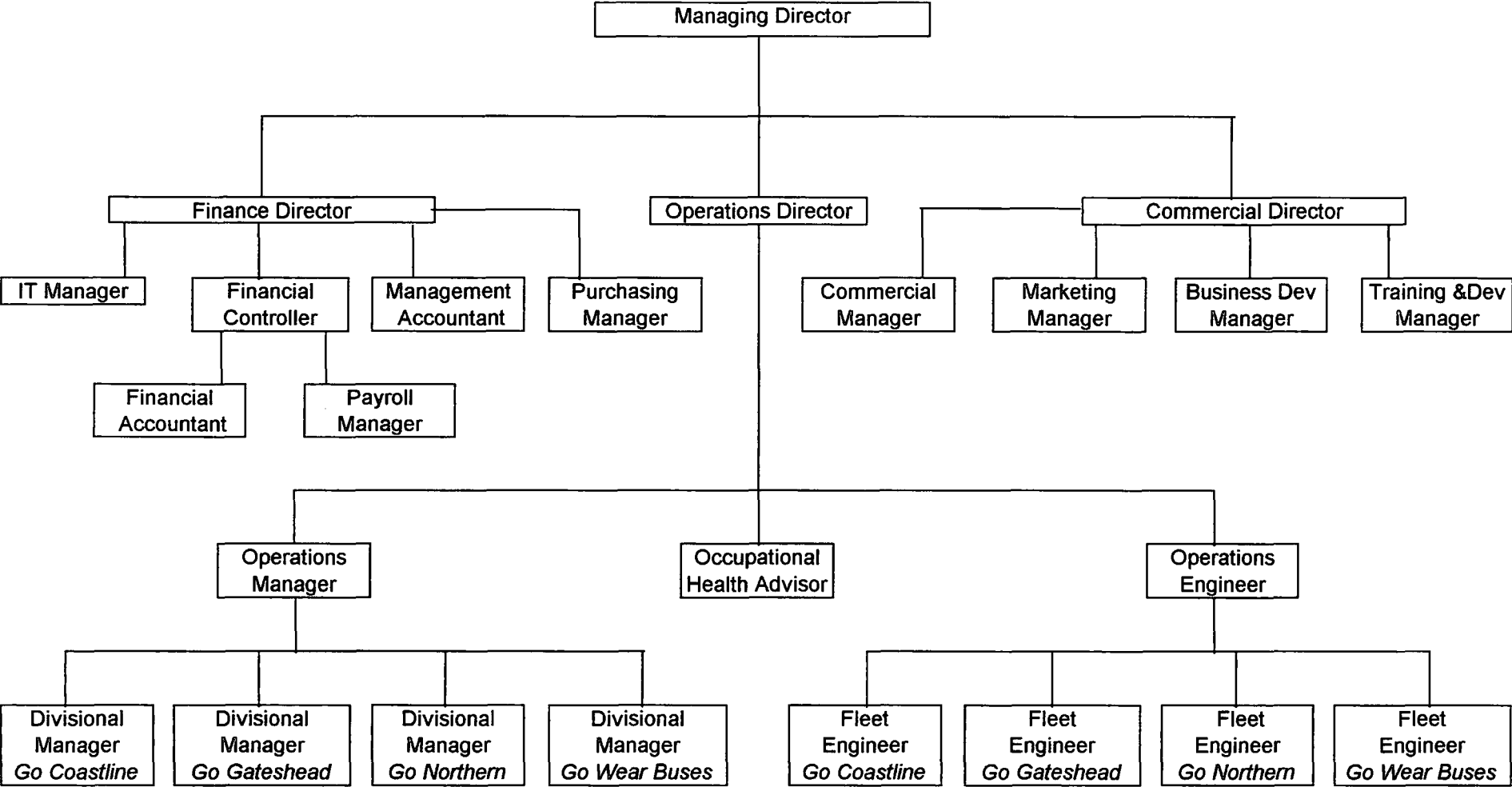
³⁵ See *Further Ahead* (*Go-Ahead*, 09/2002)

Figure 7.6. Structure of the *Go-Ahead* Group



source: compiled from *Go-Ahead* reports

Figure 7.7. Structure of *Go North East*



source: *Go North East*

through conferring responsibility on individual managers within overall business guidelines and managed through clear lines of responsibility that are drawn between the roles of individuals within the Group³⁶. Semi formal lines of communication exist between staff of different companies of the Group and regular meetings of managers and directors provide opportunities for sharing ideas, discussing issues and for the senior management to subtly exercise its corporate governance over the sub companies of the group. From evidence uncovered during interviews and from *Go-Ahead's* own published information, this case study argues that the structure of the *Go-Ahead* Group lends itself well to the encouragement of new ideas and the development and assimilation of corporate policies throughout the Group. From an environmental viewpoint this offers the potential to spread positive environmental thinking and best practice throughout the Group.

7.7.3. Background to environmental reporting

During the 1980s and 90s considerable changes took place within the environmental legislation of both the UK and Europe. These changes were part of an overall consolidation process taking place within the European Community aimed at harmonising standards to provide a level economic playing field within which markets could flourish (Wolf & White, 1997). The existing legal³⁷ and regulatory framework that aimed to control the discharge of various forms of pollution was strengthened and integrated across the EU³⁸. Not surprisingly the regulatory authorities, such as the Environment Agency in the UK, have concentrated their initial efforts on the worst polluters and potentially the most dangerous industrial processes³⁹. In response, the industries concerned have literally 'cleaned up their act' and reduced their environmental burdens. The response has also seen a restructuring

³⁶ The control structure is similar to that of *The Freight Group*, but larger (see fig. 6.6)

³⁷ In the UK this was based mainly on the Control of Pollution Act 1974.

³⁸ In the UK the 1990 Environmental Protection Act and 1995 Environment Act enshrined the principles of Integrated Pollution Control (IPC) into law and the European Directive 96/61/EC created an Integrated Pollution Prevention and Control (IPPC) regime across the European Community. These legislative and regulatory arrangements include codes of practice for business and industry that aim to improve the environment by pollution control and reduction. This is achieved by centring on the development of systems of work that focus on using 'best practicable environmental options'. In essence this places a requirement on organisations to develop environmental management systems (EMS)³⁸ that take into account the environmental effects or impacts of all the activities of an organisation and, where necessary, make adjustments to working procedures, industrial processes and waste disposal practices to reduce negative environmental impacts.

³⁹ Principally heavy industry, mining and the oil and chemical sectors.

of the corporate governance of companies through the creation of internal EMS procedures and reorganising corporate decision making processes. Expert consultant advice has also been sought to redesign, or remove, industrial processes in order to reduce the discharge of pollutants, reduce waste and create markets for co-products⁴⁰.

Part of EMS procedures involves publishing reports on the environmental performance of organisations and many companies already combine environmental reporting with health and safety reporting. *Go-Ahead's* inclusion of environmental and health and safety issues within an overall CSR report represents a further development of its own corporate reporting processes. This is being increasingly seen across industry. Corporate reporting has developed during the last thirty years beyond the publication of financial accounts into a comprehensive, annual statement of the full range of companies' activities. The inclusion of environmental and social responsibilities into the reporting process signals a recognition by the commercial sector that these issues affect and are affected by commercial activities. Movement towards including environmental, social, and for some companies ethical⁴¹, concerns into corporate reports indicates that the organisations involved are in the vanguard of reporting developments.

The developments in corporate reporting and the growth in environmental management systems are in some ways therefore mutually dependent. Together they are changing the internal decision making processes of those engaged in the various strands of corporate reporting. Through the creation of new posts and organisational structures these changes are also influencing other companies to follow their example, which ensures a cascade effect by affecting the decision making processes of those becoming involved in reporting activities. Environmental and other corporate reporting has become an increasingly important activity for organisations since it contributes to the evolution of organisational structures and decision making processes, provides access to markets, adds to the credibility of organisations amongst marketplace contemporaries and presents a 'green', caring and responsible image to

⁴⁰ 'Co-product' is a term adopted for marketable products derived from post production wastes previously disposed of as waste. Many of these co-products require some adaptation or reprocessing to convert them from their waste form to useful products.

⁴¹ Ethical investments portfolios are available that offer a range of so called ethic options. These can include investments in environmentally benign activities, wildlife enhancing or poverty alleviation projects.

whoever might be watching. These reasons provide powerful and compelling incentives to carry out data collection and reporting and the prevalence of such practices is therefore likely to spread further.

7.7.4. The development of environmental awareness and reporting at Go-Ahead

Like many other companies environmental reporting began gradually at *Go-Ahead* but has developed into a detailed, audited annual summary of the Group's environmental impacts. Within the public transport sector only the reports of the *First Group* and *Go-Ahead* have moved beyond 'on line' offerings that typically contain well intentioned generalities but little detail on specific issues or environmental impacts. That organisations like these are prepared to publish these reports illustrates the growing sophistication of environmental management systems (EMS) within them. It perhaps also indicates that 'the environment' is constructed at a deeper level of understanding than was previously the case within these organisations. *Go-Ahead's* first environmental report appeared as a result of other activities. One senior manager, PTR13, one of the authors of the report, explained.

"A lot of the data that went in there (*The Way Ahead* - Environmental Report 2001) we were collecting for our own environmental reporting because we're trying to install an EMS, so an awful lot of it was part and parcel of that" (interview with PTR13 19/04/02).

Introducing EMS procedures within an organisation requires management to analyse existing procedures and provokes questions around the environmental impacts of activities. For *Go-Ahead* the value of turning some of this growing environmental awareness into a publishable document was identified. Once the questioning process had begun, and the 'spill overs' into other areas were realised, the value of developing environmental reporting further in to CSR reports was also accepted. When asked if such reporting would become an annual occurrence senior manager PTR13 commented;

"Undoubtedly. It will expand as well, we've already been told to start working on this year's. It will include other things as well as the environment, it will become a social as well as an environment report" (interview with PTR13 19/04/02).

The publication of *The Way Ahead (Go-Ahead, 2001)* has led to a general raised awareness and questioning centred on environmental issues within the Group. Commenting on the report senior manager PTR11 said,

“it’s made us more aware of how we are going to be measured. I wouldn’t quantify the level of response to it, but I know it has provoked a response from the subsidiaries, we’re getting asked more questions on how we can help with environmental issues” (interview with PTR11 14/03/02).

Another senior manager, PTR12, pointed to a mixed response to the document from within the group.

“It’s stimulated thinking. When you asked about the subsidiaries whether it was because they had to or whether they were interested in, it depends. We’ve done some environmental forums where we’ve tried to push the CSR and environmental issues and some of them have gone away very enthused and yes they’re interested in it but that probably comes from their own background... maybe they are environmentally friendly and aware in their own private life anyway and they try to transfer that through to their business. Other ones have gone away rather cynically and probably think ‘well if it’s what Group want, it’s what the subsidiary wants then we’ll do it’ and I think it’s trying to engender some kind of engagement that they don’t just do it because they have to, they do it because they believe in it” (interview with PTR12 14/03/02).

The final sentence of this comment reveals that PTR12 is aware of the value of engaging staff in the issues rather than simply achieving obedience. The comment also provides a clue that the introduction of environmental reporting has not all been smooth and problem free. Initially there was some resistance to the notion of environmental reporting. Various managers expressed doubts, both about the wisdom of revealing too much of what they saw as, sensitive, internal information, and also whether such reporting would deliver any real benefits. Senior manager PTR15 admitted his scepticism over the value of the exercise.

“In some ways I was resistant to it because the amount of work it required to be put in by subsidiaries compared to the benefit they would gain from it I felt was inappropriate. I also felt that the detail that was asked for was of such minutiae that in a real world the subsidiaries wouldn’t have the time or the inclination to do it, so they’d just give the answers that were wanted and therefore I questioned the accuracy of the end product. So I didn’t start off as

being behind it or supportive of it. I started off as being resistant to it” (interview with PTR15 19/04/02).

This view raises an important question as to the accuracy of this sort of reporting by suggesting that there are those within the subsidiaries that might give the answers that were required rather than those that reveal the real situation. Perfectly open, honest and fulsome responses seem unlikely since understanding of environmental issues will always vary between individuals and within individuals over time. This particular difficulty of collecting useful data may, however, be minimised as environmental discourses develop within organisations. But it nevertheless remains vital to the success of environmental and CSR reporting that any such difficulties, of either honesty or accuracy are minimised. The existence of this view and others like it perhaps suggest the need to communicate more effectively the ethos behind CSR and environmental reporting within the Group. The respondent quoted above seems to see the reporting too narrowly, in terms of the short term cost and effort associated with the data collection rather than from a strategic viewpoint. Another senior manager PTR9 was less critical of the publication of the environment report but seemed to question its contribution to the Group saying.

“I think what I would say is that in terms of environmental policies, there are a lot of issues that we would do anyway as a result of the professional business that we’re in so in terms of the environment, whether it be in terms of the vehicle itself or if it’s the buildings or whether it’s any of the waste products that we produce, we were already doing that to a large degree. What we probably haven’t done is got an environmental policy that is belt and braces, covers all angles of the environment” (interview with PTR9 12/03/02).

In the final sentence of the above quote PTR9 did reveal that there was perhaps a little more that could be done to ensure that every possible issue was covered. This tacitly implies a limited understanding of the aims of the CSR and environmental reporting. The above quote almost contains a change of mind on PTR9’s part as he begins by thinking that there is little room for improvement, but then, thinking as he speaks, begins to wonder whether all the options and issues have been covered⁴². PTR9’s response is also interesting in that it confirms senior manager PTR12’s view that there

⁴² This response justifies the research methodology of not providing questions in advance of interviews. See Chapter 4.3.

is still some way to go in communicating the underlying ethos of environmental reporting within the Group.

“I’m hoping that by the time 2002 version of that is out at the end of the year, the next time, maybe in the spring when we do a marketing forum, the guys will come back and say ‘well yes, we’ve had feed back from the guys on the shopfloors and they like this, they do that, they get involved with that’, but I think it’s chipping away, it’s a long process to get it to drip feed. I mean you’ve got now about eighteen thousand staff, it’s a big job trying to distribute that kind of ethos and information across the Group so we’ve really gone for the *quick win*, all the department heads said ‘well look, this is why you should be involved in it, this is why you should champion it’ and then said ‘well can you now spread the word’ if you like” (interview with PTR12 14/03/02, emphasis added).

PTR12’s view was of this difficulty was that he thought time was needed for some of these new ideas to percolate through the Group and that the most effective short term tactic had been to introduce CSR and environmental reporting through the existing management hierarchy. The comment implies his acceptance that this was not the ideal approach but, given the circumstances, was the best available option at that moment in time. He also made a supporting point, also related to the structure of the Group, that highlighted the difficulties in communicating the new ethos within *Go-Ahead*, saying that,

“especially (in) a Group that is a devolved Group, we don’t issue edicts from on high, well not very often, so you’ve got to rely on the individual subsidiary to start pushing the boat out and pushing the message” (interview with PTR12 14/03/02).

As *Go-Ahead* relies on a devolved, semi autonomous structure that nurtures individual responsibility within its business activities then a slower response might be expected than would be obtained from strict, unquestioning obedience. This short term disadvantage should be more than offset if CSR and environmental thinking can be communicated throughout the Group in a way that convinces people of the value of this sort of reporting by helping them to understand the underpinning rationale. When asked if staff understood the aims of, and thinking behind, the environmental report manager PTR12 said,

“some of them do and some of them don’t, it’s down to your own personal outlook quite honestly. You know some people don’t give a monkey’s and it will be very hard to convert them to it. As long as you can convert them down the line as well (you can say) ‘this is what the company will do, you need to adhere to it’. For example switching bus engines off when you’re in a bus stop for more than two minutes or switch them off when you go in a covered bus station, you know, hopefully the staff understand why, it’s for their benefit, the passengers’ benefit. Everybody’s for a healthy atmosphere but even if they don’t understand to some extent, as long as they do it then that’s fine. On the other side you’ve got staff who will whole heartedly take all this on board and say, ‘yes it’s a fantastic idea, we agree with it’ and they’re the people that really we want to try and get involved with it and then let them be their local environmental CSR champion within their local unit because if they’re interested, let them get on with it. The last thing we want to do is stifle enthusiasm” (interview with PTR12 14/03/02).

Clearly it is important to the success of any initiative to convince the staff of an organisation of its value and this process does seem to be underway at *Go-Ahead*. The first environmental report, *The Way Ahead*, is clear in its aim of

“...improv(ing) environmental performance in all areas through motivation and encouragement of all subsidiaries and their staff” (Go-Ahead, 2001:3)

and EMS procedures should help to make this possible. From PTR12’s comment it seems there is some genuine enthusiasm amongst *Go-Ahead* staff for the aims set out in *The Way Ahead*. But for those individuals who are not naturally enthusiastic about such priorities the introduction of environmental management systems helps to formalise into day to day decision making processes the environmental objectives of the environment report. This should also produce a more consistent approach to environmental issues across the group. The introduction of EMS procedures however, and moves towards ISO14001, also require the support and understanding of individuals at the very top of an organisation. This point was raised by senior manager PTR13, who said,

“(for) the senior management, it’s about possibly making them a bit more aware of what we were trying to do and why and possibly, hopefully, making them a bit less prone to chop it if it’s got long term legs as it were, if it’s an annual thing, that’s what we’re looking to do. By doing that it does get the Directors (the *Go-Ahead* board) to focus in on it and take a more

critical look at what they're doing as well as us raising the issues to them" (interview with PTR13 19/04/02).

PTR13 went on to suggest ways that the effectiveness CSR and environmental reporting could be improved, saying,

"I've been thinking about this quite a lot lately and it's all very well producing this glossy report and having a co-ordinating role over the sub companies, but despite the Directors attending various meetings for this, I couldn't tell you who had overall responsibility within the *Go-Ahead* Group for the environment. If they are going to pursue this line, I think that definitely needs to be addressed. It needs an Environment Manager or a Group Environment Manager to basically co-ordinate the subsidiaries to do it" (interview with PTR13 19/04/02).

This echoes the point made by PTR12 (above) that the 'quick win' was only a short term tactic and that another, perhaps more comprehensive approach might be required as the CSR strategy develops. *Go-Ahead's* attempts at environmental reporting have certainly moved up a level during the last two years and it is perhaps not surprising that there is a slight lack of co-ordination in the overall process. It might therefore be necessary for the Group to bring all of their corporate reporting together and give that responsibility to an individual at the highest level. Senior manager PTR14 paid tribute to the efforts of the Board in driving forward environmental issues but also suggested that these efforts might be still more successful if an individual were appointed to take responsibility for corporate reporting at Group level.

"I think (one of the directors of the company) is doing his best to drive it forward at the moment but there are other things on his agenda and perhaps somebody is needed who is able to, not necessarily just to look at the environment, but the whole corporate reporting gambit. It should be on a more ongoing basis rather than just looking at it and gathering the data on a yearly basis. They perhaps ought to look at it six monthly or quarterly and take a view as to how the year is going before they get to the point where they're actually producing a report at the end of the year to say what's happened" (interview with PTR14 19/04/02).

The appointment of a Group Environment Manager to carry out these duties would be likely to provide an additional influencing factor on the structure and decision making processes of the Group. The breadth of expertise required to take into account effectively the many 'environmental' impacts of the Group's activities might be

difficult to find in a single individual. This also raises the question of whether expert consultants could carry some or all of these functions out. Consultants have already been involved in some of the work that resulted in the publication of the report and also in auditing it.

7.7.5. Consultants; what role?

The engagement of consultants to carry out any expert analysis within an organisation is not an uncommon phenomenon and can have benefits and drawbacks. In this analysis of environmental awareness and reporting within the *Go-Ahead Group*, this brings the discussion to a crossroads in the sense that an argument could be made that once consultants are involved then the development of thinking within the appointing organisation comes to an end as the consultants take on this role. The counter argument supports the identification and development of expertise within an organisation as a way of improving the organisation's awareness and quality of response to issues. When it was suggested that consultants could have an enhanced role in improving environmental reporting within *Go-Ahead* manager PTR11 was sceptical and supported the latter position, pointing to the benefits to the company of carrying out the work 'in house'.

"I think there's massive benefits by doing it ourselves. I'm not saying we should discount consultants, I think consultants should deal with people at very senior level, share ideas, give suggestions and with the senior people organise or galvanise the people within their own organisation to go and think some more about it and come up with policies themselves. I'm a deep believer in that, consultants are a cop out in my view. Sorry, I just think that's the case really. They're alright, they've got a use where an organisation hasn't the resources where people can be allocated to look after that particular project, where they don't have expertise, don't have the resources to finance it. But where we've got an organisation like this with a diverse, fairly skilled management team at subsidiaries and Group, we should do it ourselves wherever possible because it really gets you thinking about it. I'm not saying that I would have done it with that (the environment report) because that was so wide but in the discussions with *Oxera*⁴³ we've done it at a senior level" (interview with PTR11 14/03/02).

⁴³ Oxera Environmental is an Oxford based environmental and economic consultancy, www.oxera.co.uk/environmental.

Within this view it is clear that PTR11 believes that benefits gained from the management team creatively thinking the issues through as a group cannot be matched by sub contracting the thinking to consultants. The management are likely to be highly focussed on the aims and needs of the group and consultants could hardly be expected to recognise, own and embrace these aims as wholeheartedly. More negatively according to the above view, the engagement of consultants can have a detrimental effect on thinking⁴⁴. Manager PTR12 though defended the use of consultants and explained *Oxera's* involvement in a little more detail.

"*Oxera* didn't go to all the companies and collate the data, what we did was we got managers, senior managers, directors in some cases, around a table for a whole day session with *Oxera* to debate what we were going to do and how we would do the management and then the guys went away and did it themselves and just presented their sets of data to *Oxera* (who) compiled it and they presented a document at a higher level. So yes, there is a place for them but I wouldn't have said to *Oxera*, right, there you go, I don't want to see you again until you bring back a printed copy because there's no point, you're not going to engage with staff and they're going to miss things, they're going to misinterpret things, they don't understand things as we do, we need input from our own staff both at higher levels and shop floor" (interview with PTR12 14/03/02).

This view reveals a considerable understanding of the value and potential pitfalls of using consultants, indicating that *Go-Ahead* see their usefulness mainly in an early role as advisors and then as data analysts. PTR12's viewpoint suggests that consultants are used alongside senior management with company staff staying close to the issues as they develop. This also implies that the concerns of PTR11 (above), are being met in that company staff of all levels are being involved in the development of responses to the issues raised by environmental management systems and the challenges emanating from the Group environmental report. It also supports PTR12's view of the selective use of consultants that uses their expertise to develop complementary skills within the Group. This joint approach is perhaps a sign that *Go-Ahead* is serious about environmental issues because of the comment that expresses the intention to engage staff in the thinking process. The senior managers

⁴⁴ In chapter 6 the discussion of the effects of regulatory approaches on thinking reached a similar conclusion. In that case the prescriptive nature of the *Euro* engine regulations were the cause of a reduced need to consider the environmental aspects of vehicle design.

within the Group interviewed seem therefore to have grasped the importance of issue engagement percolating throughout the organisation.

7.7.6. The Way Ahead and consultants

Two teams of consultants and an independent academic were involved in some way or other in the publication of the environmental report *The Way Ahead* (2001). *Oxera Environmental* were the first to be involved and provided advice at an early stage and assisted *Go-Ahead* staff in developing 'benchmarking' standards like the 'per passenger journey' units used to compare CO₂ emissions between different group activities. This measure is derived from the equation

$$\text{Unit of emissions per passenger journey} = \frac{\text{Total emissions per annum (tonnes)}}{\text{Total passenger journeys per annum}}$$

(*Go-Ahead*, 2001:7)

and attempts to quantify ecological efficiency throughout the business based on internationally set guidelines⁴⁵. In developing the 'per passenger journey' measure of environmental performance *Go-Ahead* hopes *The Way Ahead* will show that it is providing a credible standard that will allow independent analysts to assess the Group's on going environmental performance. The company also hopes that other transport operators will adopt this way of measuring ecological efficiency and in doing so enable comparisons to be made with other transport groups. Manager PTR12 explained the background to engaging *Oxera* to assist in producing *The Way Ahead* (2001).

"The group uses a wide range of consults because, in the end, it's cheaper than employing an expert on the environment, an expert economist, you know, pick a multitude of things, it's a lot cheaper to use a consultant on an *ad hoc* basis. *Oxera* are ones that we've known for a long time and trust and really the data in there, if we had to do that internally, we'd probably still be waiting for (it) now because whoever you give the role to, they've got another job to do whereas at least with *Oxera* you say 'well I'll pay you that much money, I want it in three months time' and they do a lot of work on trying to come up with measures that were

⁴⁵ Based on standards from the World Business Council for Sustainable Development (2000)

meaningful when it was put out in the public domain. This is why we've got these kind of energy used per passenger journey and that's what we relied on them to do a lot, they do these reports for a lot of other people" (interview with PTR12 14/03/02).

The use of consultants may, in a subtle way, help with this aim of producing an industry wide benchmarking standard because consultants can have a role in shaping the internal decision making processes of organisations. Since consultants are engaged precisely because they can bring outside expertise and credibility to problems they might also be expected to be involved in the spreading of standards in the normal course of their duties. If a consultant has developed a workable standard for a client then it is likely that the consultant will use the same standard elsewhere if possible, because this is the easiest course of action for the consultant. Put another way the standard developed *becomes* the consultant's expertise. Clearly because of these possible 'spread' and 'credibility' effects the likelihood that others might adopt *Go-Ahead's* 'per passenger journey' standard would be reduced without the involvement of consultants.

The second team of consultants involved with the report came from *WSP Sustainability*⁴⁶ and were responsible for auditing *The Way Ahead* (2001). The analysis of *The Way Ahead* concluded that the report

"...accurately represents *Go-Ahead's* environmental impact on its stakeholders" (*The Way Ahead*, 2001:32).

but also recommended that the Group went further in strengthening its environmental management procedures by including wider aspects such as socio economic and ethical issues in future reports. Following the recommendations of the auditors an Oxford University Professor was invited to comment on the report. He also suggested similar ways to improve reporting methods and to widen the scope of the report. These two independent recommendations seem to be the source of ideas within *Go-Ahead* to expand the environmental report into the wider Corporate Social Responsibility (CSR) reporting planned for future editions. This early response by

⁴⁶ For *WSP Sustainability*, see www.wspgroup.com

Go-Ahead to the recommendations is perhaps a further indication that the Group is serious about its corporate reporting.

The environmental reporting procedures at *Go-Ahead* have altered environmental discourses within the group and this is undoubtedly important in any analysis of the construction of 'the environment' within the organisation's decision making. It does not though, represent the complete picture. Day to day decisions are made of which many have clear environmental connections⁴⁷ and these decisions should reveal how the environment is constructed by decision makers when carrying out their usual duties. This may also provide some indication of the extent to which EMS procedures, the group's environment report and CSR thinking have influenced decision makers. The next section of this case study explores some of these decisions.

7.7.7. The economics of 'environmental' decisions

There are many examples of positive environmental outcomes occurring when sound economic decisions have been taken, indeed some have been seen within this research project and identified as 'win-win' decisions. 'Win-lose' decisions, where taking an environmentally sound decision makes less obvious or immediate economic sense, are less common and clearly if commercial organisations became involved in taking uneconomic decisions too often, or at too great a scale, then they would be very likely to go out of business. Some decisions however, that appear to be of this type, are taken within *Go-Ahead* and the justification for doing so does seem to be based on environmental outcomes. An example of such a choice was uncovered during a recent interview and centred on the adoption of continuously regenerating trap (CRT)⁴⁸ technology. When asked about the environmental basis of some decisions senior manager PTR10 explained,

"you get down to other (decisions) like the CRT that we did and the ultra low sulphur fuels and in effect that actually costs you more money, there's not a strong financial business case

⁴⁷ As in previous chapters 'environmental connections' in this context refers to decisions that have some sort of associated environmental dimension to them.

⁴⁸ Continuously Regenerating Trap is, as its name suggests, a device fitted the exhaust system of diesel engined vehicles that continuously removes the particulate matter from the exhaust gases and, if the correct minimal maintenance procedure is followed, would be expected to last the lifetime of the vehicle.

for it because of your fuel efficiency costs, it costs money to put it in, OK you get a bit of reduction on your Vehicle Excise Duty" (interview with PTR10 12/03/02).

Taken at face value it would seem that this decision made little economic sense but the underlying rationale can be found in the comments of another manager.

"You've got to try and push that more for the 'soft' reasons, you know as a transport operator we have a *duty* to reduce this and I think, although they've all done it (the subsidiaries have adopted CRT), that is the harder one to find a strong financial business case for doing. I think at the end of the day you would have been forced to do it sooner or later so you might as well get the credit for doing it. But strangely enough that was the one that we didn't seem to have any hassle in getting through" (interview with PTR12 14/03/02, emphasis added).

Though PTR12 describes these as 'soft' reasons they are not soft from the viewpoint of a decision made within the usual priorities of commercial activity, which PTR12 accepts is harder to justify. In accepting that transport operators 'have a duty' to adopt cleaner technologies, PTR12 reveals the extent to which the awareness of an environmental problem i.e. local air quality concerns has provoked a response that has become established in the minds of decision makers and has moved beyond purely economic priorities. This is interesting in as much as it may indicate that environmental concerns are moving from the periphery of organisational thinking and awareness towards the centre of concern, in much the same way as health and safety concerns have already done so.

Health and safety requirements have for many organisations become routine and company procedures and standards have become embedded in the minds of staff. This tendency can be observed in the many ways health and safety equipment is routinely and unconsciously used throughout workplaces daily. For example the wearing of fluorescent vests by a variety of construction and service industry staff, the regular use of 'hard hats' on construction sites, or the comprehensive use of traffic cones, extra lighting and temporary fencing around road works. What these working practices illustrate is the extent to which the safety of workers and the public has become almost automatically included within working practices. A *Go-Ahead* senior manager, PTR9, confirmed the acceptance of health and safety priorities within company spending plans.

“What we do is we do a business plan every year for three year periods and that actually covers most of the aspects within the business, whether it’s Health and Safety, whether it’s Finance, whether it’s people management, we do that and we also back that up with budgets and all the budgets are laid out, that goes to the Board” (interview with PTR9 12/03/02).

Health and safety concerns have therefore become deeply embedded within decision making processes⁴⁹ to the extent that health and safety plans are, in this example, ranked alongside financial plans in the mind of this manager. When senior manager PTR12 refers to ‘duty’ therefore, he is perhaps unconsciously revealing that environmental concerns are following a similar course to health and safety within the thinking and awareness of commercial organisations. Health and safety is already widely regarded as being an overriding concern within the design, construction and operation of infrastructure, plant and equipment. It has been accepted that companies have a duty to ensure systems of work are safe for employees and the public (HASAWA, 1974) and, as such, these concerns are beyond the usual ‘hard’ economic decision making of organisations. Like PTR9 above, companies know that they have little choice but to budget for health and safety, not least because failures of health and safety procedures can cost them dearly in fines or compensation payments but can also seriously damage their public credibility⁵⁰. There is increasing evidence, some of which can be seen at *Go-Ahead* in PTR12’s ‘duty’ comment, that the inclusion of the ‘environment’ as a basic, core concern is gradually becoming accepted within organisations. This is evidenced by the growing number of commercial organisations seeking EMS accreditation (Hillary, 2000). Another manager, PTR11, working across the group had become aware of increased interest within the subsidiaries of environmental issues, which also indicates that the embedding of environmental awareness is increasing.

“In my position we’re getting asked more questions on how we can help with environmental issues relating to properties... and we’re now looking at the implications of the bunding of storage tanks in all the subsidiaries. It’s taking a little bit of thought. Whether it’s genuine

⁴⁹ See Appendix 4.

⁵⁰ Though not entirely due to safety shortcomings the demise of *Railtrack* provides a transport sector illustration of the effect on a large organisation’s credibility that a series of high profile accidents involving failures in health and safety procedures can have.

awareness of the environment or whether it's what they (the board) think we should be doing I don't know and I don't really care as long we do it" (interview with PTR11 14/03/02).

The detail of this comment is based on the issue of bunding fuel storage tanks. Many existing fuel storage tanks pose serious health, safety and environmental risks and though incidents remain unlikely *Go-Ahead* and *First Group* at least are spending considerable sums on replacing them. Replacement and bunding of storage tanks is likely to require considerable capital investment and these decisions contain clear economic dimensions in terms of capital outlay but promise an intangible return. Measurable financial returns seem to be limited to the relatively small losses prevented by the replacement of leaking tanks. These capital investments are therefore more akin to insurance premiums in that they represent investment costs set against a possible higher cost if an unlikely catastrophe was to occur. Funds are therefore being committed to proactive works that reduce the risk of an 'environmental' incident even if a direct environmental improvement is not always delivered. It could be argued that the reason for changes in these decision making processes are due to the potential costs in fines and clean up charges that would be likely to be incurred if an incident took place. Given the difficulties in justifying environmental expenditure in economic terms such capital commitments might be likely to be considered as expenditure areas where 'economies' can be made during relatively difficult periods of business activity. In his response though PTR11 seems more concerned that the work is carried out than what the underlying motives are and, whilst this may be a reflection of PTR11's lack of involvement in the overall financial strategy of *Go-Ahead*, it may also be a further indication of the penetration of environmental concerns into the minds of decision makers. In his response PTR11 also pointed to 'environmental' questions originating from subsidiary staff and this perhaps indicates that the introduction of EMS procedures are beginning to raise awareness amongst staff. Without an EMS to provoke improved environmental awareness it would be less likely that risks, such as tank bunding, would be spotted and acted upon. The fact that capital has been committed to fund these improvements also suggests that environmental thinking and awareness are becoming more deeply embedded within the organisation and its decision making processes.

In this example the introduction of an environmental management system has brought about significant capital expenditure in order to minimise a possible risk to the environment, but it is not always the case that the application of an EMS leads to added expenditure. Examples of significant financial savings have been uncovered by *Go-Ahead* as the introduction of EMSs and moves towards ISO14001⁵¹ accreditation have progressed. At *aviance* for example the management is committed to the introduction of an EMS compatible with ISO14001⁵² and managers there cite environmental improvement as the primary concern for the development of procedures leading to ISO14001 status. When asked what the motivation was for wanting ISO14001 approval Manager PTR14 said,

“From our point of view we want to see an improvement to the environment. The bonus to the company is that it will reduce costs in terms of energy consumption. Indirectly we’ve found that by implementing the project that we’ve had a lot of bills from the Airport Authority that relate to things that we wouldn’t have picked up if it weren’t for the project” (interview with PTR14 19/04/02).

When the details of these potential savings were explored it was revealed that *aviance*’s landlord, the *British Airport Authority* (BAA), charges the company a rent that includes the energy costs (heating, lighting, air conditioning etc.) associated with *aviance*’s operations within the airport buildings at London Gatwick. In the office building where *aviance* is based BAA charges *aviance* 11% of the total building rent because *aviance* occupy 11% of the floor space. This rent includes 11% of the building’s energy costs and waste disposal costs. In the application of their EMS *aviance* was trying to identify possible energy savings and waste reduction measures that could be implemented to lessen the company’s environmental burden. Though these measures would usually have the added advantage that they would be accompanied by some reductions in costs, in this example the benefits turned out to be less than expected. Since BAA charged rent on an area occupancy basis any savings *aviance* could make in reducing energy use had the effect of reducing the total energy demand for the building. Therefore any efficiencies that result from the company’s EMS deliver to *aviance* only 11% of the total savings made. Those

⁵¹ See The Trains Group, Ch 6.6.4.

⁵² These initiatives were responsible in part for the publication of the Group environment report *The Way Ahead*.

occupying the other 89% of the building enjoy a 'free rider' reduction in energy costs without any improvement in *their* environmental impact. Had it not been for the introduction of their EMS *aviance* might not have discovered that they were being charged rent for areas of the airport that they either did not use at all, or only used some of the time. The discovery has, of course, prompted the company to renegotiate its rental charges on a more accurate basis. For *aviance* the prospect of working hard to reduce their environmental impacts only to enjoy 11% of the financial benefit is likely to act as something of a disincentive. Despite the perversities of this particular example however, it is clear that for *Go-Ahead* the potential for improving the economics of their operations if EMSs were introduced across the Group is considerable. A point driven home by manager PTR14.

"In terms of they've been charging us for accommodation, energy consumption and waste from accommodation that we haven't got and haven't had for some time, there are quite a lot of good cost savings for the company and I think if you can do that on a Group wide level the cost savings are quite significant and so are the positive effects on the environment if you can demonstrate (it), particularly in the bus industry, I think it is essential for them" (interview with PTR14 19/04/02).

Potential financial benefits such as these would be unlikely to have been identified without the introduction of the EMS and the possible revelation of hidden benefits could therefore provide a compelling incentive for decision makers who are less than enthusiastic about adopting a 'green' agenda. The reality of the trend towards these proactive, environmentally positive decisions and systems within the Group, brought about by the refinement of EMS led decision making processes, is that, in some cases at least, *Go-Ahead* is putting the environment before the immediate 'bottom line' in some of its decisions. For this research it presents another example, this time within *aviance*, of the deepening awareness of the environmental implications of commercial activities as organisations attempt to 'green' their activities through the introduction of environmental management systems.

7.7.8. Environmentally perverse outcomes

Examples of perverse outcomes discovered during the application of EMS procedures are not uncommon and, along with other aspects of the structures of economic

processes in general, are a core issue for those wishing to adapt existing regulatory and taxation regimes towards systems based on environmental efficiency. In addition to the disincentives uncovered in the *aviance* example above, the analysis of the structure and decision making processes at *Go-Ahead* reveals other environmentally perverse situations that arise from the day to day activities of the company. One such example arises from the adoption of CRT technologies to reduce exhaust gas particulates⁵³. Senior manager PTR15 has had considerable experience of the technology and explained the difficulties;

“On the first generation of vehicles they were fitted to, they proved to be dependable and reliable. They are less dependable and reliable on current generations of vehicles because there is a problem. They work very well on *Dennis Darts* (since) they went in in 1995/6, you know we’ve still got vehicles that had them fitted new then which are still on the road and still working. We’ve got vehicles that have been delivered in the last six months that they were fitted to and they failed. Now it’s not altogether clear why and the manufacturers don’t know why. We’re on to sort of mark 19 now of development trying to find out what’s going wrong. There’s a thought that temperatures are an issue because the more modern engine tends to run cooler. It’s one of the characteristics, it’s not one that’s been an objective, but they are running cooler which brings out other problems. For instance, for many years, when it was decided to put heaters on buses, they worked very well just taking waste heat out of the cooling system. With modern vehicles, for the worst of the climate there’s actually little spare energy going into that heating system to make out, but the other side of that coin is that there is an optimum temperature for a CRT to work properly. The chemistry of a CRT requires a particular temperature and it is barely achieved on the latest series of engines and they’re really having to jump through hoops to get the CRT as close to the source as possible, so whereas in earlier generations, you could effectively just take out the silencers down the stream and put the CRT in because there was still enough heat to work it. Now they’re right up against the exhaust manifold and in a double deck with a transverse rear engine there really isn’t room. So there’s no simple answer to whether it works. It does work very well on older vehicles, less so on current vehicles” (interview with PTR15 19/04/02).

When asked about the performance of CRT in a separate interview another *Go-Ahead* senior manager, PTR9, expressed similar concerns.

⁵³ CRT has been discussed already within this thesis in chapter 6. Briefly, for the technology to work successfully the operating temperature of vehicle engines is critical. Recent developments in engine designs, aimed at satisfying the environmental requirements of the *Euro 2* and *Euro 3* engine standards has caused manufactures to produce engines that operate slightly differently. As a consequence of this the exhaust gases are cooler as heat is concentrated within the combustion process and this is beginning to cause difficulties with CRT equipment.

“Well, we’ve got problems with them actually, and the Operations Engineer has got *Eminox* in there. We’ve got a problem on a certain vehicle which is the *Denis Trident* where we’re not getting the emissions level that we should, the traps aren’t working as efficiently as they need to. On other vehicles we haven’t got a problem. We’ve had few problems but with the *Trident* we’ve had a number of failures and we’ve had them replaced and we’re waiting for a solution coming up. What is happening basically is that the engines (exhaust) are not getting to a high enough temperature so we have to make sure that we get that right, right burning quality. We’ve got units that haven’t been changed, we’ve got other units like the *Trident* I’ve just mentioned which could be changed quite regularly because of the standard, they’ll give us a new one and we leave it on for several weeks and then we find that it’s not meeting standards. So what happened in the end was they said well just leave it on for the time being, we’ll get dispensation from the Vehicle Inspectorate until you resolve the problem, that’s what they’ve done” (interview with PTR9 12/03/02).

An associated, and similarly perverse, environmental outcome also arises from the changes in engine specifications as it has become clear that the combustion temperature of fuel is closely associated with environmental performance. This has forced manufactures to raise combustion temperatures to achieve optimal environmental performance. Put simply this has been achieved by reducing the size of engines and working them harder, which has considerably increased their fuel consumption rates. Manager PTR15 outlined the situation.

“What has been a consumer (of energy) is changing engine technology because as engines get cleaner, they work harder basically. The philosophy always used to be in the bus industry before we ever had any environmental interest or concerns of any reality, was that a big engine working at half pace would last for ever, that was the philosophy. The traditional engine the bus industry had most of was *Gardner’s*, a big 10½ litre engine that had a power capacity somewhat greater than was ever called for, but the theory was that it would run for ever. With the benefit of hindsight now, you look at the amount of work you used to have to do to them and that actually was a well founded point of view, but the problem with the big engine working at less than it’s optimum output is that it’s dirty. We didn’t recognise that at the time, no one was aware of it and so the situation now, the flavour is very much that you have small engines working very hard and an engine working very hard on the whole is fairly clean. But in getting there also, that engine is less efficient from a fuel consumption point of view and you know, if you take a bus now, typically you might get five or six miles per gallon; when I started in the industry you would expect to get twelve or fourteen miles to the gallon”.(interview with PTR15 19/04/02).

In essence the environmental 'improvement' in vehicle emissions has been achieved by the curious method of doubling fuel consumption and this looks difficult to justify by any measure of sustainability or economic efficiency, and therefore appears to be a 'lose-lose' situation in economic and environmental terms.

Clearly though this presents manufacturers with design challenges that seem difficult solve. Both CRT and the *Euro* engine standards offer significant, but different reductions in the environmental impacts of vehicles and the difficulties for manufactures in meeting a range of environmental objectives for engines should not be underestimated. What is more straightforward is that a given amount of emissions will be produced by a given amount of fuel burned. The precise balance of chemical compounds present in the emitted gases will vary according to a variety of factors that centre on the chemical make up and quality of the fuel, the combustion temperature and the post combustion 'clean up' technologies applied⁵⁴. Using present internal combustion (IC) engine technologies designers are in the difficult position of having to choose which pollutants to emit and which ones to limit. Since almost all IC engine emissions are environmentally damaging in someway this simply moves a problem around rather than providing a solution. Alternative engine technologies, from an environmental viewpoint at least, might offer more appropriate solutions to emissions problems. From this it would seem that the IC engine is an environmentally inappropriate technology to continue using to power the global vehicle fleet. This is because the limited 'environmental' improvements achieved by 'greening' IC engines have, for some variants of the technology, resulted in a greater draw on scarce natural resources.

The diminishing 'environmental' returns available from the IC engine add to policy dilemmas faced by decision makers, both in transport organisations such as *Go-Ahead* and also in policy making circles. Poor quality decisions at this level can lead to environmentally sub optimal outcomes. The emphasis in recent years on improving the air quality profile of engines whilst simultaneously, and unwittingly, increasing

⁵⁴ For example CRT or catalytic converter.

the 'greenhouse' emissions provides such an example and led manager PTR9 to predict a possible change policy emphasis;

"At the moment though the biggest issue politically and from an environmental point of view has been on particulates and NO_x and that's where the problem has been. It probably needs to shift in due course to CO₂" (interview with PTR9 12/03/02).

This perceptive view raises questions that centre both on the demand for transport generally and on the appropriateness of current engine technologies in meeting transport demands. This suggests a clear role for governments in matching policies more closely to long term environmental improvements and, working through the state's regulatory agencies and local authorities, to implement more effectively policies aimed at environmental improvement and increasing sustainability.

7.7.9. Environmental benefits gained from commercial choices

For this case study however the questions are more limited. The environmental performance of engines is set by regulatory standards that are based on existing IC technologies. It is the role of governments, and perhaps the EU, to use such regulatory regimes and economic incentives to influence vehicle procurement towards environmentally benign technologies. The influence of public transport operators therefore is perhaps limited to the fringes of what can be achieved. They can, for example, make environmentally informed decisions on issues where choice still exists and can resist environmentally negative developments. The increase in the number of air conditioned vehicles is one such opportunity. *Go-Ahead*, so far, have chosen not to purchase air conditioned vehicles for stage carriage work. When asked why *Go-Ahead* had chosen not to operate air conditioned vehicles manager PTR15 outlined the reasons for not using the technology and also expressed doubts about the usefulness of it in buses in general, though not for environmental reasons.

"It's cost, it's costly to buy and costly to maintain. I'm sure there are environment issues but they weren't the ones that occurred to us. I am resistant of air conditioning because it is a difficult technology to maintain in a bus environment and you end up with a situation where if you either market the service as having air conditioning then you have an obligation to provide it, or conversely, if you brought it to the driver, very quickly for the trade union that

becomes part of the base expectation so they refuse to drive the bus if it's not working, so you jeopardise reliability in the product. Also, on the whole, I can't quote what they are but the general length of the journey of a passenger in an urban bus is not that long and, therefore, do we need to invest in providing that sort of environment for the relatively short exposure to it" (interview with PTR15 19/04/02).

The priority expressed here is an economic one and provides an example of an organisational decision that is delivering an unintended benefit to the environment. In decision making terms it confirms once again the overriding strength of market mechanisms and economic priorities within corporate governance processes. It also offers the opportunity to bring the power of the cost dimension to bear for environmental protection and improvement. If environmentally damaging technologies such as air conditioning could have cost premiums attached to them in the form of some sort of environmental tax then the uptake of them could probably be reduced. Influencing decisions towards environmentally sound outcomes without such a cost disincentive might prove difficult. If the cost of air conditioning falls this would become more difficult. It would seem that, for the moment, that case for air conditioning buses in general has not cleared the economic hurdle. Again an obvious policy opportunity and perhaps regulatory role exists for governments to provide the necessary carrots and sticks to shape decisions towards environmentally positive choices.

Other decisions with an environmental dimension have had their decision input factors altered by *Go-Ahead* in order to try to achieve a degree of environmental protection as a result of a sound commercial choice. Manager, PTR10, involved in procurement, pointed to how the introduction of quality systems and moves towards ISO9000 have drawn attention to the 'traceability gaps' within procurement procedures. This has led to changes in verification methods and in the terms of contractual arrangements made with suppliers.

"I mean traditionally we've always tried to buy from suppliers with ISO9002. ISO9000 as they're working towards now. Those suppliers are usually the ones with quality systems in place so they have got accountability and traceability so you would believe that the majority of those suppliers have actually got strong environmental policies in place. It might mean

tightening up but the basics, you know everyone's thinking about the environment, what's going to happen in the next hundred years" (interview with PTR10 12/03/02).

Traceability is a key component of environmental regulations and it is a legal requirement for companies to provide detailed information on their products to enable purchasers to take into account the possible effects products can have on people and the environment. Traceability simply means that companies must be able to trace the route products and wastes take as they are used, created and pass through the work systems of their organisations. This enables hazardous substances in particular to be accounted for and if pollution incidents occur those responsible should be identifiable. *Go-Ahead* have begun to use contracts with suppliers and service providers to introduce stricter controls on a range of substances and waste products. This allows *Go-Ahead* greater traceability in its materials balances and allows the company to pass on difficult to handle wastes to suppliers of the primary products. Both advantages also put *Go-Ahead* a step further from responsibility should any safety, health or environmental incidents occur. PTR10 outlined the auditing of suppliers.

"We do check certain suppliers particularly where we buy things like batteries, for example. There's obviously a duty care attached to those. We need to ensure that the old core (battery) that comes off the buses is disposed of correctly so with that particular supplier we have a 'cradle to grave'⁵⁵ service so we've gone with that. Things like batteries are attractive to the guys on the shop floor so we need to track them, we need to know where they've gone. As you drive around you will see scrap yards saying bring your batteries in. Once they go to someone like that we don't know where they've gone, we've got no traceability and obviously there's a major implication on the company should one of these fall into the wrong hands or end up washed up on a beach or something like that. So we've gone heavily for this cradle to grave service whereby the supplier who is dropping in forty or fifty batteries will be picking up the old core from the last delivery so we're constantly checking to make sure that what we have sent back to him tallies with what we purchased. Obviously there's a duty of care there and there must be paperwork to say that's been uplifted properly. It's things like that making us ensure that the systems are in place and we do that on a regular basis" (interview with PTR10 12/03/02).

Contracts are then, drawn up tightly with responsibility for waste disposal given to the contractor as part of the deal and terms are included that allow *Go-Ahead* to terminate

⁵⁵ Meaning that products will be traceable before they enter *Go-Ahead's* control and until after they have left it again as they are removed by the contractor.

the contract if the contractor does not fulfil his responsibilities. Manager PTR10 explained how *Go-Ahead* uses contracts to encourage environmentally responsible behaviour amongst suppliers.

“We’ve recently changed our lubricants supplier and we’re going to be doing ‘cradle to grave’ on the lubricants as well. The previous contractor was purely in place to collect the waste but we feel that we now have a better lever because he’s not going to want to jeopardise the supply of products. He’s going to ensure the collection of the waste is there as well and that will be things like paint, thinners, anti-freeze, all the dirty filters that get changed on the vehicles as well as the waste oil so we’re constantly looking at our need to tighten up the standard” (interview with PTR10 12/03/02).

The use of ‘levers’, as PTR10 put it, is interesting as it is a move beyond trusting that the contractor will comply with the terms of a contract simply because of legal or regulatory requirements. The levers represent a ‘stick’ of control that supports the ‘carrot’ of encouragement. It is also interesting to note that in this instance *Go-Ahead* are not basing the decision to engage the contractor solely on price. In this case service quality, including traceability, provides a greater attraction and has topped price in the decision making process. It would seem that in a similar way to the CRT example, wider and more long term benefits have been identified that have swayed the decision in part towards a more positive environmental outcome and away from the immediate bottom line. Such decisions, if representative of a trend, are encouraging from an environmental standpoint since they again illustrate that regulatory requirements and industry ‘good practice’, in the form of corporate reporting, quality standards and EMS procedures, can permeate through organisations and supply chains to change the commercial decision making priorities of organisations. This also suggests that discourses of ‘the environment’ are being reconstructed in the minds of decision makers as they come to terms with new regulatory requirements and working practices.

7.7.10. Summary of *Go-Ahead*’s activities

From the extracts analysed here it would seem that the structure of relationships, both economic and otherwise, between organisations presents opportunities for environmental improvements. Restructuring of arrangements also offers further

opportunities to include environmental priorities within decisions as important *in themselves*. Taking the spectrum of *Go-Ahead's* environmental initiatives, their development of EMS and their corporate reporting aspirations it would seem that the company has achieved the inclusion of 'the environment' in a small, but increasingly positive way, in its decision making. Some problem areas clearly remain such as the perversities and disincentives of the *aviance* example above. This illustrates the case for introducing changes to the structure of arrangements between organisations that include the planning, construction and administrative stages so that environmentally perverse incentives can be designed out. The example of the altered contractual arrangements and the introduction of 'cradle to grave' regimes suggests a useful start has been made. Policy makers also need to become involved in restructuring broader trading arrangements to further encourage these developments. It might be necessary for governments to legislate on these lines in order to inject an even colour of green to business and organisational interactions. It will not be sufficient to rely on positive environmental discourses and constructs to pervade gradually into organisational decision making and business relationships given the clear financial pressures to take advantage of freely accessible environmental commons.

Go-Ahead, like all other commercial organisations, is subject to a wide variety of pressures. These include the demands of customers and staff, the realities of the marketplace, attempting to keep up with regulatory requirements and technological opportunities and meeting the expectations of shareholders. Within these competing pressures some staff at all levels of the company from board level downwards have begun to understand and embrace environmental issues and try to adjust the Group's activities towards environmentally improved decisions within a structure of operations that remains profitable. This strategy is in essence the theme of both *The Way Ahead* (*Go-Ahead*, 2001) and of *Further Ahead* (*Go-Ahead*, 09/2002) and represents a significant move towards including environmental concerns within day to day, operational decision making. The embedding of environmental concerns within the company is patchy. At some levels the construction of the environment in the minds of staff is fulsome and deep. In other areas awareness is not so deep though the need to include environmental concerns is accepted. Elsewhere still, environmental considerations seem less important in the face of the regular demands of operating public transport services. In short environmental priorities are more difficult to

include within decisions the closer the decision maker is to the operations side of the company. This is perhaps not surprising since operations managers have a greater responsibility to deliver revenues than other managers involved in non operational tasks. As part of their responsibilities this latter group also enjoy opportunity to think creatively about wider issues, such as environmental or social concerns. That this second group is the one with a more deeply developed understanding of environmental issues is therefore not surprising. One of the most pressing challenges for *Go-Ahead* is to communicate this awareness and decision making ethos throughout the Group.

7.8. Conclusions

The aim of this stage of the research was to examine the decision making processes of a range of public transport operators in the NE region. The first point of note is that the context for public transport companies is very different from that of other road users. With the exception of the emergency services buses enjoy less road traffic restrictions than most other vehicles with parts of the network now dedicated to their journeys. This represents a significant financial and infrastructural commitment to bus services funded from general taxation and provides an indication of how seriously government and local authorities are in promoting public transport use. Cars and especially lorries are tightly constrained by a range of traffic regulations that seldom apply to buses. This also gives preference to the bus. These advantages are part of the pro public transport culture that has emerged particularly since the 1997 general election and that has altered the operational landscape of bus company activity. The tables in this chapter provide details of the wide range of factors currently affecting the commercial choices of bus operators and also outline their environmental effects. The variety of operational conditions seen in the tables illustrates the complexity of decision making processes for transport sector decision makers. Few of their choices appear simple and on examination usually have many difficult to quantify factors involved. The complexity of the decision making environment is therefore likely to increase the pressure on those organisations with less sophisticated decision making processes. Of the nine operational organisations interviewed five rely on a single individual to take all the operational decisions. Two of these, *Levers* and *Geeline*, are involved in complicated contractual commitments that demand highly specific

operating practices, punctuality and quality requirements. Neither of these two companies has the resources to carry out detailed market research or consultations within its tendering processes. Such legally and financially binding commitments represent a serious risk to small businesses. As many small bus companies have appeared and disappeared again since the 1985 exposure to these sort of risks may well be taking a toll on operators. The larger operators of the 'big four' bus groups all possess the commercial strength, and employ sufficient staff, to dedicate adequate resources to ensuring that their commercial decisions maximise returns, provide added opportunities or enhance their public profiles.

It is therefore clear that two very different organisational structures have been revealed within this research. One group, the large companies, appear to be highly organised, well informed and well resourced organisations able to call in expert opinion as necessary. Much of this can be gleaned from the published literature of these companies. The other group are more enigmatic since they produce very little public domain literature and also, almost always, feature single decision makers in control. Of the two groups the first seems quite capable of maximising commercial opportunities and this includes ones that are derived from environmental management processes or green image building. The second group of decision makers have the advantage of being closer to the ground on which they both operate and can therefore use their experience, local knowledge, personal relationships and low overheads to win work against the apparent strengths of the bigger companies. From these observations and the preceding analysis it would seem that company size, value and organisational complexity is a reasonable proxy for environmental awareness. This environmental awareness is reflected in corporate decision making especially in 'win – win' opportunities.

The interface between the bus company and the passenger – the road – is under the control of local authorities. From the standpoint of operators it is important that local authorities meet their responsibilities to maintain agreed, or expected road traffic conditions. The evidence gathered within these interviews and simple observation suggests that local authorities are failing to achieve the standards of bus priority enforcement that they have committed themselves to or that operators would like. Operators complain that failures to maintain the integrity of BPMs dilute the

effectiveness of combined measures aimed at encouraging modal transfers toward buses. For their part the police feel their viewpoints are sometimes ignored when they warn of being underresourced and unable to enforce BPMs. These concerns are perhaps particularly important as such failures on the part of local authorities not only reduces the effectiveness of an individual bus lane but also reinforces the idea within the minds of motorists that bus lanes are not to be taken seriously. Local authorities interviewed earlier in this research defend themselves by complaining that adequate funds are not provided to them for monitoring and improvement. This is a moot point and government would undoubtedly argue otherwise, but it does illustrate perhaps the inexperience of UK road users, bus operators, the police and local authorities in dealing with BPMs. None of these groups appears to have fully come to terms with what is expected of them in response to BPMs. This provides an example of the difficulties in embedding the aims of new policies into the minds of a range of decision makers.

From what has been seen in this fieldwork BPMs can and do deliver increased bus patronage. Congestion does affect individual choices to travel. But the effectiveness of much of the effort and financial support that has been put in to improving public transport is being reduced by a lack of enforcement of congestion reduction measures. The dilemmas faced by the key actors involved surround funding. Local authorities have not quite grasped the need for ongoing funding to maintain the credibility and effectiveness of BPMs and this point was stressed by several organisations including *Nexus*. They took the most strategic, long term view in suggesting that a 'very well resourced' and 'subtle' campaign is perhaps the most likely to change the understanding of the many diverse interests that use roads and transport systems (interview with PTR8 15/10/01). The present government seems to prefer to work by using focus groups and building coalitions of support on sensitive issues and, though this style of governance is not uncommon, it can lead to inertia when difficult issues arise. Such a style by nature sacrifices leadership for consensus and, since it is unlikely that a sudden change to a decisive, prescriptive style will take place, a subtle programme of educative persuasion may be chosen as the way to increase the modal split in favour of public transport. The shrewdness of some operators is revealed by their involvement in educative processes.

Chapter 8: The way ahead: an uphill struggle

At the outset of this study, the growth in transport demand was discussed in terms of sustainability and environmental protection. It was suggested that a clash of priorities is taking place within transport decision making. Environmental awareness and notions of sustainable development have penetrated policy discourses, but transport demand of the present style continues to be provided for. The essence of the policy struggle is to reconcile these issues into politically and environmentally acceptable solutions. Policy discourses around 'sustainability' are slightly different from many other policy discourses because they intentionally include the sustainability implications of policies from other disciplines. In the context of this research environmental discourses follow a similar pattern, because the research poses questions centred on the inclusion of the environmental implications of transport within decision making. The research questions centred on the significance of the environment to transport decision makers, how prominent the environment is within the decision making of transport organisations and the extent to which environmental considerations included when making transport choices. The details of the processes and priorities present within decision making reflect the salience of 'the environment' within of NE transport organisations. Identifying and examining this salience has remained the underlying theme.

8.1. Routes converge? An analysis across NE transport organisations

From the review of the literatures that underpin this thesis it is clear that the difficult choices facing policy makers are supported by an abundance of published research evidence. The relevant discourses and their literature have been referred to throughout the thesis.

Governments are well aware of the issues and a series of global gatherings have taken place during the previous three decades that have sought to develop solutions to the problems posed: Stockholm (1972), Montreal (1987), Rio (1992), Kyoto (1997), Johannesburg (2002), and others could be added. All have contributed to the promotion of sustainable development policies around the world and form part of the

context within which all transport decisions are made. There is a greater volume, depth, quality and breadth to the academic literature on issues around 'sustainable development' and 'the environment'. The evidence presented in these literatures has influenced governance discourses, informed the networking activities of pressure groups and further increased the penetration of the concepts of sustainable development into policy literature.

Calls for greater environmental protection have been woven into the sustainable development policy path not least by green pressure groups that have grown into articulate, professional campaigning organisations that operate from the local to global scales. Understandably this gradual process has begun with the greening of the language of policy, whilst a greening of behaviour has been less evident (Vigar *et al*, 2000; Jacobs, 1999). Considerable resistance has also been encountered from vested interest groups that feel threatened by a sustainable development agenda. Where green development has occurred it can almost always be associated with economic benefits. Examining transport choices within this context to discover how decision makers respond to policy will reveal the depth of 'environmental' understanding present within the operational landscape of transport.

Similarly, notions of 'integrated transport' have moved from the conceptual onwards to policy debates and towards public consciousness. However the UK government has found to its cost that moving too far ahead of public opinion can be politically dangerous. The integrated transport agenda, prescribed by New Labour on entering office in 1997, has had to be reined back to politically acceptable limits¹. New Labour's honeymoon is well and truly over, seen in the rejection of much of its transport strategy, characterised by the demise of the symbol of joined up governance – the DETR. These developments in transport policy are representative of a reduction in the importance of the environment with decision making in response to political pressure.

The retreat from the original intentions behind New Labour's early transport policy proposals is reflected in the divergence between 'sustainable development' and so

¹ In for example the announcement in July 2003 of a further £7bn of funding for road building.

called 'integrated transport' agendas. UK regions have their own Regional Sustainability Frameworks and local authorities have Local Agenda 21 strategies. These have seen the sustainable development discourse reach down from the national scale to the local level. Following these the embryonic 'integrated transport' paradigm has also reached the local scale in the development of Local Transport Plans, Green Travel Plans, School Travel Plans and, at the regional level, in Regional Transport Strategies. Though the sustainability policies remain these integrated transport initiatives are undermined from the centre by a more recent return to decision making characteristic of the market paradigm. New Labour, in their announcements on road building and in the abandonment of traffic reduction targets, and the Conservatives, in their latest policy proposals *Free to Travel* (The Conservative Party, 2003), have both returned to 'predict and provide'. The argument that road construction generates traffic looks set to be replayed. Inertia and abandonment have come to characterise much of the policy of the 1998 Integrated Transport White Paper (DETR, 07/1998) and of the Ten Year Plan (DETR, 07/2000A).

8.2. Transport paradigms?

This thesis has discussed these issues in terms of transport paradigms² and argued that a 'market paradigm' prevails in the transport sector. This 'market paradigm' encompasses a broad approach to transport decision making and reflects a general movement towards the market state and away from the nation state as the emerging governance order (Bobbitt, 2003)³. The market paradigm, as suggested in this thesis, is broader than some other typologies such as the 'new realism' (Goodwin, 1991, 1999) or 'pragmatic multi modalism' (Shaw & Walton, 2001) and is a statement of the broader philosophical conceptions that underpin transport decision making rather than the more functionally related themes of these other typologies. The thesis has argued that 'market transport' is a subset of the market state and that transport decision making has essentially been subsumed into economic choices by any meaningful definition of choice, leaving little scope for the inclusion of other priorities within decision making processes. On the basis of empirical evidence the thesis has argued therefore, that where 'the environment' and other factors have been

² For example see fig. 3.2.

³ See Ch 3.1.

included within transport choices, it is because of economically positive elements associated with them. 'Market transport' is therefore a paradigmatic statement of intentions that underlay and motivate decision making. As such 'market transport' can comfortably exist alongside other typologies that, at first glance, might appear to be competing ways of explaining the development of UK transport.

The regulatory paradigm is all but gone; road freight was deregulated in 1968, buses in 1985 and the railways, though not officially deregulated, have been transformed from a cohesive, integrated system into a complex landscape of competing interests and multiple priorities. In each of these developments the market paradigm has provided the implicit or sometimes explicit reasoning behind the changes. Where vestiges of the regulatory paradigm remain, in the PTA areas and in the regulated transport market of London, public transport patronage has held up or suffered less of a decline (Knowles & Hall, 1998).

In terms of an overall national strategy for shaping transport demand, few would suggest that a problem does not exist. An underlying consensus, that the trajectory of traditional transport provision cannot continue unchallenged, is evident from the policy literature that has appeared since the road traffic forecasts of more than a decade ago (DoT, 1989). However this consensus is often lost in the opportunism of the moment within governance elites and especially in the cut and thrust of Westminster politics. At this level non partisan consensus is virtually absent, except that New Labour seems to be trying to move closer to the Conservatives in a consensus displaying the tenets of the market paradigm. Political courage is rare and is illustrated by the government's unwillingness to embrace its own integrated transport proposals and in announcements over increased road funding. The *dominating* coalition of the broad network of organisations and interests sometimes referred to as the 'motoring lobby' continues to narrow the debate and maintain momentum in support of 'predict and provide'. Recent evidence puts this lobby in the ascendancy, due in part perhaps to the "embeddedness of cars in people's lifestyles" (Vigar, 2002:184) and to the ambivalent attitudes of many towards proposed changes in transport behaviour (Paterson, 2000).

The integrated transport paradigm has hardly begun, though notions of integrated transport have been widely discussed⁴ since the publication of the White Paper (DETR, 07/1998). Partly because of influence from sustainable development debates, the concepts of integrated transport have expanded to embrace other areas previously considered as having little, or no relevance to transport debates. These new considerations centre on empowerment, accessibility and social inclusion (Root & Schintler, 1999). Indeed the underpinning concepts surrounding transport are now related across modes, policies and scales with such great complexity that a 'principle of complementarity'⁵ could describe and encompass what have evolved into the bases of high quality, joined up⁶ transport decisions at any level. The essence of integrated transport is that all aspects of transport should complement each other, so all modes, systems, services, infrastructure, information and ticketing should be developed in concert (Marshall & Banister, 2000; May & Roberts, 1995).

Introducing such a concept to an unprepared community of transport consumers and expecting significant changes in transport habits was ambitious. That this new agenda of integrated transport and the 'new realism' (Goodwin *et al*, 1991; Goodwin, 1999) has not been enthusiastically embraced is due to the historic, habitual tradition of UK demand led transport supply. The existing landscape of transport decision making, that the integrated transport paradigm sought to enter and influence, has experienced an historic and gradual evolution *away* from transport concepts that match the ethos of the integrated transport paradigm. Halting this trend is difficult and reversing it no less so. The 'market transport' paradigm remains. Unsurprisingly, serious transport and environmental problems also remain (Goodwin, 2001).

⁴ See for example May & Roberts (1995); Button (1999); Potter & Skinner (2000).

⁵ The suggested 'principle of complementarity' develops the work of Davis (1994), who sets out four core ideas to underpin sustainable transport. These include the 'principle of equity', the 'precautionary principle' the 'polluter pays principle' and the 'principle of empowerment' (of groups and individuals to protect the environment). The 'principle of complementarity' it is therefore argued, embodies the elusive 'joined up' approach to transport decision making.

⁶ In the sense that if fully integrated transport systems existed, and were able to deliver wholly optimal outcomes, then it would be possible to reach transport decisions that could be described as 'high quality'.

8.3. Incentives to drive change

The thesis has also discussed transport decision making in terms of structures of incentives and how the balance between different incentives might be altered. The Integrated Transport White Paper (DETR, 07/1998) recognised the existing structures of incentives present within transport decision making in its focus on the economic aspects of transport choices. Much of the policy emanating from the White Paper and the Ten Year Plan (DETR, 07/2000A) seeks to use these powerful economic incentives to begin to restructure transport supply and demand. From an environmental viewpoint the essence of this strategy is to use economic incentives as substitute environmental incentives by linking economic measures with environmental outcomes. Fuel costs, congestion charges⁷, parking charges and differential fuel and vehicle excise duty (VED) rates, and more recently the threat of camera derived speeding fines, all play a part in shaping the structures of incentives of all road users, service providers and road space managers.

Policies that use structures of incentives, rather than more prescriptive measures, to reshape transport demand towards improved environmental outcomes involve long term commitment and an implicit acceptance that change will be incremental rather than sudden. Examining how a range of NE transport organisations interpreted these changing structures of incentives has provided some useful insights into how the wider community of transport consumers might respond to such policy initiatives.

The use of bus quality measures⁸ (BQM), the most contentious fieldwork issue arising in the research, contains a strong financial element to assist public transport provision and is one such example. Evidence was uncovered, at *Geeline* within the fieldwork of this research, that points to the success of BQMs in incentivising bus companies, through the use of grants and service contracts, to provide higher quality services. Where used within a package of bus priority measures (BPM) the use of BQMs confirms research evidence that points to integrated approaches being more successful in effecting modal switches (Marshall & Banister, 2000). Other financial incentives to modify transport behaviour have also been applied. The most obvious, and direct, tool

⁷ See Ch 1.3.

⁸ In the form of various types of contracts and subsidy arrangements.

increases the cost of fuel for private motorists as an incentive to switch modes to less expensive forms of travel. Difficulties remain with this approach however, because it depends upon a relative cost difference between modes. To achieve the desired modal switching this implies the application of a continuing subsidy to public transport along with a simultaneous punitive taxation regime levied against private modes (Storchmann, 2001). Even when rigorously applied, research indicates considerable resistance to changes in travel behaviour amongst some groups, especially car borne commuters (*ibid.*). Increases in private transport costs via fuel taxation have recently been softened for motorists whilst some public transport fares have been allowed to increase. This suggests a lessening of the likely effect on modal split through the reduction of what pressure exists from taxation regimes and appears to send a confusing signal about policy intentions.

Regulation is also useful in directing behaviour towards more environmentally friendly outcomes. The use of the Euro engine standards, the introduction of catalytic converters and emissions testing within vehicles' annual MOT tests all illustrate this approach. The fieldwork revealed areas where regulatory controls are affecting transport decision making with favourable environmental outcomes. *Safeway's* use of CNG powered lorries to allow them to deliver to stores during noise curfew times⁹ also provides improved air quality over the usual use of diesel powered lorries. Though the environmental benefits of this strategy are quantifiable, the interview discussions revealed it has been adopted for economic or logistical efficiency reasons rather than for environmental ones. This confirms the salience of economic priorities within decision making and also the opportunities for environmental enhancement within 'win-win' scenarios.

Within the NE context this places regional agencies and especially local authorities in a pivotal position to influence transport demand and travel behaviour away from the 'free' market approach and towards the integrated, more sustainable approach. Institutional organisations like the local authorities within the first group featured in this research, have had to absorb much of the stress present in transport governance brought on by new policies. Local Transport Plans (LTPs) placed wide ranging

⁹ Because CNG powered lorries are quieter than the 'curfewed' diesel vehicles.

responsibilities on local authorities (DETR, 03/2000). Within this research clear evidence has emerged of new perceptions of 'the environment' developing within these institutions, but there are clear difficulties in embracing fully a sustainable development agenda. A rhetoric to reality gap does exist giving an impression of 'greenwash'. This is evident in the ability on the part of local transport policy makers to develop interpretations of policy to suit their existing agendas.

This introduces a political dimension to the structures of incentives that influence transport decision making. Local authorities face considerable local political and electoral pressure to maintain and improve the prosperity of their areas. Many decision makers involved in this objective see transport links as a key component of economic development¹⁰. Other incentives to change, such as road safety concerns which some claim will work against economic priorities, have also been found to influence institutional transport decision making. An example of this is provided by *Durham County Council's* congestion charging scheme. In this case, momentum for the scheme was already present and, within an atmosphere of high levels of trust between officers and elected members, transport officers moved the scheme forward rapidly. To meet the governments core requirements for transport schemes¹¹ officers developed an interpretation of 'the environment' to protect the historic city centre and improve pedestrian safety. In essence officers embraced the new policy objectives to develop a scheme to which they were predisposed.

With a quite different outcome, similar interpretive skills are also evident in *Stockton Borough Council's* refusal to implement previously agreed integrated transport measures. Again, long standing preference existed within the local authority for their scheme. The LTP bidding processes provided the opportunity to access funds for it. Success depended on it being dressed in green. Both of these discoveries illustrate the ability of governance actors to assimilate emerging policy requirements into existing or preferred programmes and that may also meet local political objectives. This is particularly clear within the written submissions of the LTP process, where shrewd individuals have managed a range of factors to obtain their desired outcomes. Factors

¹⁰ See interview with RDA representative in Ch 5 for example.

¹¹ The five key objectives within which transport plans must be designed are environment, safety economy, accessibility and integration (DETR, 03/2000).

include persuasive scheme justification to meet public, political and economic priorities, meeting policy criteria in scheme design and good public consultation and media relations. An absence of any effective, independent scheme to monitor LTP outcomes allows a loose interpretation of overall policy themes. The strategic consequences of this sort of locally applied interpretation of policy may mean an element of policy drift occurring, but may also be an unavoidable consequence of a genuinely devolved governance structure.

The above examples illustrate local authority officers pursuing their existing scheme agendas as part of incentive structures. Since UK transport policy has historically been characterised by 'predict and provide' the possibility of a successful reconceptualisation of transport policy towards an integrated transport agenda, which leads to significant change *on the ground*, is not good without a concomitant alteration in the structure of incentives to drive that change. If such interpretive developments, seen in the above examples, are widespread then policy inertia is likely. In terms of the conceptualisations of 'the environment' within the first research group of institutional organisations, it is apparent that 'the environment' is, for some individuals within the group, a convenient policy justification rather than a priority in itself. The local transport policy choices revealed within this group points to the usefulness of these research methods in exposing differences of intent and outcome within UK transport policy.

8.4. Maintaining changes in transport behaviour through monitoring

The above analysis points to the embeddedness of the traditional underpinning rationale of 'predict and provide', the continuing, almost exclusive, focus on economic priorities and the subsuming of convenient environmental considerations within transport decision making. If such a view of the environment is held by influential members of the transport policy community it might go some way to explain the lack of monitoring of integrated transport measures, such as BPMs or BQMs, and the general slow progress in altering travel behaviour. Quality and priority measures have been demonstrated to be successful in increasing public transport patronage and, indirectly, in reducing car dependency by increasing congestion for cars through the reallocation of road space (Go-Ahead, 1999; May & Roberts, 1995).

It is therefore surprising that local authorities do not seem to have accepted, or perhaps understood, the value of monitoring integrated transport schemes to ensure that they remain effective and achieve their desired goals. BPMs, in the form of bus lanes provide the most obvious example of weak policy intervention and, in some cases, appear to be little more than a sop to an integrated transport agenda. Two strands of the problem emerged during the research. Firstly, local authorities seemed to be unaware of the importance of committing funding to effective monitoring and enforcement of integrated transport measures, through for example, patrols or the use of enforcement cameras, despite evidence supporting this (interview with Cleveland Police)¹². Also no attempt to educate drivers as to the requirements and objectives of BPMs was discovered in the research.

Secondly, it seemed from the data gathered that some elements of the integrated transport agenda set out in LTPs were seen as little more than a convenient opportunity to access increased local transport funding. Meeting the government's criteria for integrated transport funding releases extra money to local authorities for transport schemes. The DfT seems unable to differentiate between genuine and notional integrated transport schemes. This institutional blindness on the part of the department also rests on monitoring as no attempt was discovered to monitor the implementation of DfT funded schemes. Two interpretations could be ascribed to the general lack of monitoring at both the local and national scale. On one hand it may suggest that the benefits of monitoring are genuinely not fully understood and appreciated within transport decision making circles. On the other hand, the lack of effective monitoring may suggest that merely 'lip service' is being paid to integrated transport agendas, since considerable experience of monitoring does exist with relation to speed. For example the monitoring (and enforcement) of speed at over 6,000 camera sites raised £73m in 2002, cut speeds and improved safety (LTT, 07/08/03). Monitoring in the speed context is therefore considerable though other motives may exist in addition to the officially stated reason of improving road safety. If local authorities were to monitor and enforce integrated transport measures as enthusiastically as road safety sites, similar sums may be raised through penalties,

¹² Also the use of mobile, bus mounted cameras used on London 'red routes' supports this conclusion.

though these may be hypothecated towards improved road safety. Such a strategy might improve the effectiveness of integrated transport measures and also confirm the 'win-win' link, discussed above, between economic incentives and environmental outcomes.

Evidence from speed monitoring, and the associated penalties of enforcement, point to quantifiable changes in traffic speeds and road safety or, put another way, driver behaviour. Data from the Durham RUC scheme shows a dramatic 90% reduction in traffic¹³ entering the monitored and enforced charging zone. Similarly the tightly controlled inner London congestion charging scheme has affected a 38% fall in the number of cars in the charging zone area¹⁴. From this evidence it is clear that integrated transport measures that carefully blend regulatory instruments and market forces, can deliver changes in transport decisions¹⁵. As NE policy makers move forward in the development of the next round of LTPs and in embracing the aims of the Regional Transport Strategy the role that monitoring and enforcement *could* play in affecting changes in transport behaviour remains significant, but still underplayed.

8.5. Structures of incentives and the environment

The considerable focus on economic priorities identified within the research is hardly surprising but what is also of interest is the lack of a balancing environmental focus within organisational decision making. 'Win-win' scenarios clearly exist and, if carefully developed, can be effective in reducing the environmental burden of transport. Most rest on the economics of commercial activity and confirm the dominance of the market in human affairs¹⁶. This thesis has discussed transport in terms of transport paradigms and all of these suggested explanations for overall transport decision making, as well as the suggestions of others, hinge on market instruments to shape them. The 'market paradigm' applicable to transport and advanced here is no exception to this. Market instruments possess the power to reshape decision making in their application and many examples of this exist. Such instruments are therefore clearly part of any transport paradigm and the variation in

¹³ Local Transport Today (07/08/03).

¹⁴ Local Transport Today (12/06/03).

¹⁵ See for example CfIT (2002).

¹⁶ See Bobbitt (2003) for a detailed discussion of the market state and its derivatives.

overall composition and strength of instruments, and any complementary regulatory measures, have shaped the changes in UK transport over decades. From an environmental viewpoint this is encouraging as the sum of the evidence confirms that transport decision making is amenable to change, despite the fact that difficulties of intent remain. Intention is at the heart of the problem and for those advancing an environmentalists' viewpoint or agenda, affecting the overall, long term intentions of policy makers will remain of paramount importance.

It has also been noted within the thesis that changes in transport decision making, by all stakeholders: institutions, people carriers, freight movers and private individuals is more readily influenced by packages of measures. The notion of 'integrated transport' recognises this (May & Roberts, 1995; AMA, 1990). Where integrated approaches to transport planning and provision have been uncovered they have been found to be the most successful in encouraging modal switches. Public transport receives considerable support through the various forms of BQMs and especially through fuel duty rebates. It is allocated preferential road space and is seen more as part of an integrated solution to transport congestion, than as part of the problem. Bus support measures have altered the decision making context and allowed operators to provide more frequent services and services in areas where the economic case is weak. This certainly provides an alternative to the car with associated environmental benefits *providing* modal switching takes place rather than simply encouraging extra travel.

The market approach to transport, currently in the ascendancy again, limits the chances of effective integration and modal switching because of the failure of markets. Markets cannot equitably include unpriced or inaccurately priced factors. Policies that state environmental enhancement amongst their objectives can, if they are conceived with genuine intent, be realised if market values are applied to the environmental assets in question. Given the dominance of economic priorities, it seems likely that this will only be achieved by internalising the environmental cost of transport decision making into economic equations. This would make the protection of the environment part of the structures of incentives that influence decision making and should lead to improved environmental outcomes. The Durham RUC scheme and its larger contemporary in London, implicitly recognise this in the levy of a charge on access. Any attempt to develop a comprehensive range of monetary values for

environmental assets would, though, be likely to be highly contested. Limited evidence of this approach already exists but the application, in the UK context, of what are often described as environmental taxes (Ayres, 1998) is somewhat piecemeal¹⁷.

The development of any such environmental taxation policy is obviously the responsibility of governments but the application of some measures could be conferred upon local authorities, as is the case with congestion charging. The response to these sorts of policies would come from the broad community of transport users, such as the other two groups featured in this research and from private individuals.

8.6. Commercial priorities and environmental awareness

In the NE road transport sector awareness of the possibilities of emerging policy is, generally, less well developed than the institutional transport organisations. Conceptions of the environment are 'thin' with ongoing operational tensions taking precedence over most other things. Following the fuel price protests of autumn 2000 some of the intense commercial pressure felt by haulage companies was relaxed through vehicle excise duty rebates. Though this political tactic yielded commercial benefits for haulage operators (interview with *Eric Short Transport*) it did nothing to raise environmental awareness and priorities within decision making.

The indications from this research suggest therefore, that as an input to decision making 'the environment' does not feature strongly for many transport managers. One example of limited environmental awareness recognised the economic benefit of reduced VED as being linked to the environmental benefit delivered by cleaner engines. Replacement vehicles and engines were chosen with an eye to reducing VED¹⁸ costs more than environmental protection. This was clear because the comment was passed that engines were changed before the next VED was due, implying that the dirty engine remained in use as long as possible (interview with *Kelly's Transport*). Another saw the burning of waste engine oil in a garage heater as

¹⁷ The application of VED rates is one such example. VED rates vary according to engine emissions standards, with 'cleaner' vehicles attracting lower rates. The fuel price escalator was another and congestion charging is the newest measure to date.

¹⁸ See note 15 above.

environmentally friendly, presumably because, for the owner, the oil was not wasted it was reused. To him not buying heater fuel was using less natural resources. That the fumes produced by the burning of waste oil polluted the atmosphere did not seem to register with him. His conception of the environment was therefore 'thin' and owed more to the economics and convenience of his actions than to any understandings of environmental awareness.

In terms of this research, environmental awareness is generally low, particularly in areas where regulatory regimes guide decision making. For example, in environmental terms no choices exist in the procurement of new vehicles because all must comply with identical emissions standards. This removes the need to consider the environmental dimension when purchasing a new lorry. In this sense regulatory approaches to environmental improvement do little to raise awareness, though the haulage sector would look considerably different without the present structure of regulation and it is not likely that environmentally positive choices would be made were regulatory controls to be relaxed.

At the commercial organisations taking part in the research, 'win – win' opportunities existed to benefit the environment and these were generally taken up, but sometimes with little thought expressed for the environmental dimension of a decision. Exceptions to this generally poor level of environmental awareness appeared in the largest companies, one of which featured in the case study of chapter 6. Exceptions were also more common in the passenger transport sector. Examining how the environment is conceived and constructed within the minds of transport decision makers exposed real differences in the identification of business and environmental opportunities between organisations. Two clear reasons for this emerged.

Firstly, the ability of organisations to identify these 'win – win' opportunities seems to be a function of size and complexity. Further work is needed to establish the balance of significance between the weight of these two factors in decision making. Clearly though large, complex organisations performed well at finding 'win – win' opportunities. *Safeway* for example, in achieving SRA support to operate a delivery train through Scotland, or in the recognition amongst the major bus groups that packages of bus quality measures are more effective at raising patronage than single

BPMs. Some organisations, for example those companies with 50 to 100 vehicles, were merely large and seemed very similar in their organisational structures to small companies with just a few buses or lorries¹⁹. This was more evident in haulage organisations and this suggests that complexity, in the transport sector, is a better proxy than size for successfully identifying good business strategies that also deliver environmental benefits. *The Freight Group* confirms this as it has grown in complexity as the volume of its business activities have grown. Different individuals have taken on specific roles and, though it operates only five lorries²⁰, it has been very successful, embracing complex procedures to find grant support, from a variety of sources, to develop premises and buy plant.

Secondly, key individuals seem to play a crucial part in the more successful transport organisations. Both of the most successful freight transport organisations, identified in this research at *Safeway* and *The Freight Group*, featured dynamic leadership. In both cases the individuals concerned drove forward the organisational agenda on environmental issues connected to the businesses. The leadership of *The Freight Group* has been examined in detail already. The key individual at *Safeway* is a board member with considerable transport sector experience, having been a chairman of the FTA and now a member of the *Commission for Integrated Transport*. This allows a broader view to be applied to *Safeway's* transport requirements and provided the impetus behind the operation of delivery trains and in piloting the use of gas powered lorries. In the passenger sector similar leadership characteristics were found at, for example, *Go-Ahead*, which, within the public transport sector has taken an innovative approach to environmental reporting and CSR issues.

This raises the possibility of targeting key decision makers within the transport industry to improve the sector's attitude and performance towards the environment. This naturally raises the question of how such key individuals might be identified. If identification could be achieved, and the individuals concerned could be persuaded

¹⁹ The range of size amongst haulage companies is considerable. In this research companies range from those with as few as 9 lorries to one with over 800 and from bus companies with 3 vehicles to international operators with thousands of vehicles. This way of measuring organisational size is complicated by sub contract arrangements that feature multi million pound logistics operations being operated with hardly any directly owned lorries. Similar variations of size and complexity exist in the passenger sector.

²⁰ The majority of *The Freight Group's* lorry activity is undertaken by sub contractors.

into a pro environmental 'win – win' agenda, then spreading improved environmental practices across the sector would also be achieved.

Thin understandings of the environment however, militate against commercial operators developing their business strategies to include integrated transport priorities and business as usual looks set to continue. Hope for a wider appreciation of the environment within the sector's decision making circles realistically must remain low, though other factors²¹ may force environmentally connected changes.

8.7. New processes in transport decision making

Two factors of particular interest emerged in the analyses of commercial transport sector organisations. Firstly, some of the organisations involved in the research²² have become heavily involved in the growing trend towards 'corporate reporting' across the commercial sector²³. This has clearly led to the deepening of environmental awareness within the senior echelons of organisations and, increasingly, downwards to the operations level. Secondly, an associated development is the appearance of environmental management systems (EMS). The constraints placed upon organisations seeking a recognised status of approval for EMS, such as ISO14001, are considerable²⁴. For example organisations must be able to account 'source to sink'²⁵ for their material flows, energy usage and wastes. For *Go-Ahead*, altering organisational behaviour and recording and reporting systems to achieve the ISO14001 standard often raised previously unconsidered environmental issues that led to direct commercial benefits. Public image benefits were also identified and these too, were felt to be important. In terms of the environment the appearance of EMS within organisations is positive. Conceptually it suggests that 'the environment' has reached a level of importance previously unseen within decision making. This is

²¹ Such as the restructuring of incentives.

²² Especially *Go-Ahead*, *Safeway* and *The Freight Group* but also to a more limited extent in some other organisations.

²³ See Appendix 4.

²⁴ These EMS standards were also identified at *Go-Ahead*, *Safeway* and *The Freight Group*.

²⁵ 'Source to sink' refers to the whole life cycle of a product, from the origins of the natural resources used in production to the ultimate destination, usually in some form of waste, when it is no longer required. Similar life cycle analyses can be constructed for the materials and energy used in providing services.

because of the close connections to economic benefits that have become part of EMS and ISO14001 accredited systems in particular.

ISO14001 is illustrative of how environmental priorities can begin to subsume economic ones. The overwhelming majority of day to day decisions taken within the wider business community are economically driven. Organisations might recycle waste paper, packaging, print cartridges or a host of other things, but it is often for reasons of convenience or minor economic benefit and perhaps some limited awareness of the environment. This kind of 'thin' environmental awareness was uncovered in many places within this research²⁶.

In these approaches to including 'the environment' within daily commercial activities organisations subsume the environment into the overall economic process. ISO14001 and other EMS' provide a mechanism for this, but with significant differences. With ISO14001 the key difference lies in the requirement for organisations to be aware of, and to take into account, the practices of other organisations involved in their supply chain. For approved organisations this stretches their responsibility into the behaviour of other organisations, preventing them from avoiding difficult environmental issues by 'sub contracting' out responsibility to others. This has led to many ISO14001 approved companies making the same standard a requirement within subcontract service providers, as one interviewee commented.

It's like *Ford*, the entire supply chain for *Ford* now has to be accredited to ISO14001 otherwise you don't even get the interview" (interview with PTR13 19/04/02).

Though undoubtedly connected to economic benefits these developments in supply chain responsibility add weight to environmental priorities, as revealed by another interviewee who, remarking on a supplier, said

²⁶ At, for example, the bus depot where waste bus oil was used for heating the workshop. The heater in question burnt waste engine oil in a tubular, fan assisted, horizontally mounted, portable heater, which, judging by the colour of the smoke it produced, offered dubious environmental benefits. Similarly at another company where a depot manager gave waste oil to allotment holders to paint their fences with. This practice may also feature dubious environmental benefits since no apparent thought had been given to the implications for localised pollution that might occur to water and soil around the preserved timbers. [Note: 1 litre of oil can pollute up to 250,000 litres of drinking water (Alloway & Ayres, 1992).]

“Not necessarily the cheapest but yes, we’re looking to get good service and (to) know that it’s been disposed of correctly” (interview with PTR10 12/03/02).

Environmental management systems seem therefore to provide a useful mechanism for the gradual redefining of the environment within the minds of organisational decision makers. This subsumes economic priorities into environmental ones. As such they exemplify ‘joined up’ decision making and raise the level of priority the environment is afforded within decision making. This is achieved in part by internalising environmental priorities into the economically based structure of decision making. In addition, expanding the area of thought that decision makers engage in also contributes to the process as it prompts them to consider and include aspects of their decisions that they were previously unaware of. Environmental management systems also support the aims of wider policy requirements to foster broad approaches to policy choices aimed at tackling the unsustainable nature of much human activity.

8.8. Concluding analysis

In the NE road transport sector it is clear that two very different groups of commercial organisations have been revealed within this research. One group, the large companies, appear to be highly organised, well informed and well resourced organisations able to call in expert consultant opinion as necessary. Much of this can be gleaned from the published literature of these companies. The other group are more enigmatic since they produce very little public domain literature and also, almost always, feature single decision makers in control. Of the two groups the first seems quite capable of maximising commercial opportunities and, where relevant, this includes ones that are derived from environmental management processes or green image building. The second group of decision makers have the advantage of being closer to the ground than the larger organisations and can therefore use their experience, local knowledge, personal relationships and low overheads to win work against the apparent strengths of the bigger companies and hence remain in business. This does not mean that they incorporate environmental considerations into their decision making or that they are particularly environmentally ‘aware’. Their presence

within the transport sector, however, has environmental implications, particularly with reference to organisations that display little or no environmental awareness. From these observations and the preceding analysis it would seem that company size, value and organisational complexity is a reasonable proxy for environmental awareness and that this environmental awareness is reflected in corporate decision making, especially in identifying 'win – win' opportunities.

In terms of environmental awareness the larger companies seem to have the edge over the smaller ones. That they generally happen to be the organisations that are identifying the 'win – win' scenarios is important. One aspect of organisational enlargement should be increased efficiency and economies of scale. These were identified at *Safeway* where, for example, favourable deals with vehicle suppliers are negotiated on the basis of volume. With organisational enlargement time efficiencies can also be gained that can allow managers the opportunity to think creatively about business opportunities. This was seen at *Go-Ahead*. This provides the chance to research market niches and identify new opportunities, including environmental 'win – wins'.

Conversely, the smaller participants in both the passenger and freight sectors, seem to be being constrained in their efforts to improve their operating positions by forces external to their control. For example, intense competitive pressure means that many feel they have no time for anything other than that used for identifying day to day work, essential to remaining in business. This effectively blocks their progress and regardless of the quality or precision of their choices inhibits their performance. Interestingly this does not seem to be a function of organisational age, quite the opposite. Many of these organisations are amongst the oldest that took part in the research. It may even be that the somewhat insular structure of these family businesses, and the limited educational standard attained by some decision makers inhibits the growth of these companies. Further research would be required to investigate these suggestions.

In addition to the commercial organisations that have to operate within policy constraints, institutional organisations have had to respond to central direction and implement policy at the regional and local levels. For much transport policy this

places these organisations at the critical point of policy and service delivery. The complexities of this position are considerable and local authorities must balance a range of priorities in their decision making including; political and economic considerations, funding concerns, the environment, leisure, safety and responsibilities that have no obvious or significant transport implications. Other difficulties that further complicate their situation are the external factors that can influence transport habits and road user behaviours, such as rail crashes and fears over the safety of public transport. Since the fuel price protests of autumn 2000 knocked the pro public transport drive off course, governments and local authorities have appeared to be nervous of being seen as 'anti car'.

For the local authorities and regional organisations regular changes in the individual occupying the Secretary of State for Transport's chair do little to help public confidence²⁷ or the ability of local authorities to deliver temporally consistent transport decisions. The present government seems to prefer to work by using focus groups and building coalitions of support on sensitive issues. Though this style of governance is not uncommon it can lead to inertia when difficult issues arise. The consensual style by nature sacrifices leadership for agreement. Since it is unlikely that a sudden change to a decisive, prescriptive style will take place, a subtle programme of educative persuasion is the only alternative way to change transport habits towards increasing the modal split in favour of public transport²⁸. The shrewdness of some organisations participating in this research is revealed by their involvement in schools.

The rate of progress in finding politically acceptable solutions to UK transport problems continues to be slow. The complex problems related to the relationship between human transport behaviour and the natural environment have certainly prompted a comprehensive reassessment of transport priorities since the 'great debate' was re-energised in 1995. This re-focusing has taken in the 'new realism' of demand management (Goodwin *et al*, 1991; Goodwin, 1999) and moved on to the 'pragmatic multi modalism' of Shaw and Walton (2001). New Labour arrived in office in 1997 with a new 'joined up' vision for transport. Labour created the DETR and set out its transport vision in the Integrated Transport White Paper and the subsequent Transport

²⁷ There have been six cabinet ministers with responsibility for transport since Labour regained power.

²⁸ See Pilling *et al* (2000) and also interview with *Nexus*

Act. Part of the thrust of the White Paper featured enhancing the value of the environment within policy and transport decision making. To this end the new government embraced a distinct transport policy agenda largely based on soft economic tools and voluntary changes in travel behaviour and transport requirements. This approach has clearly failed, not least because of the relatively low cost of private motoring and the price inelasticity of demand for private travel. The emergent paradigm of integrated transport has been extinguished by the roar of market transport. As a result congestion and emissions have certainly risen. The London model, that of the enforced market instrument of the congestion charge, at least appears to be working (*Local Transport Today*, 12/06/03)²⁹ and is the only UK approach delivering sustained, significant reductions in congestion and pollution and reductions in journey times. The political courage displayed in adopting the scheme is rare and the scheme's initial success may embolden politicians to explore congestion charging in. For example, the Transport Secretary has announced that congestion charging *has become* part of the policy equation³⁰.

According to the Transport Act 2000 and to *Guidance on Full Local Transport Plans* (DETR, 03/2000) congestion charging was already one of the available policy tools. That the Secretary of State is prepared to endorse the measure only after it's success in London confirms the lack of leadership that is apparent when politically difficult transport issues arise. Conversely it also suggests that decisive leadership can deliver effective transport policies. The role of the individual, in this case the Mayor of London, has provided and maintained the impetus for a scheme full of political and economic risks and, as in the case of the key leaders identified in the haulage sector, illustrates the importance of determined leadership in delivering environmentally positive transport choices. Despite the embryonic success of the London scheme the government's Integrated Transport Strategy appears paralysed under the pressure of the motoring lobby's relentless drive for a return to the narrow route of 'predict and provide'. The mix of circumstances suggests heavy policy options will become more necessary. The London experience suggests they may become more acceptable than previously thought.

²⁹ TfL estimates that there have been 150,000 fewer cars entering the charging zone each day and of these, 75-105,000 drivers have switched to public transport. Others drive around the zone, travel at free times, car share, cycle, walk or use taxis or motorcycles (*LTT*, 12/06/03).

³⁰ See *Local Transport Today*, 12/06/03).

Local authorities in particular have accepted that limits to the provision of road space exist. The authorities with responsibility for the narrow confines of the road networks of the UK's historic cities have experienced this dilemma soonest. It is no coincidence that demand management, in the form of 'Park & Ride', and now congestion charging, have been embraced first in these places. The conflict between the car and people, and between the car and the environment, is at its starkest in historic cities whose designers never envisaged cars³¹.

Perhaps the underlying reasons for the slow and patchy progress towards the 'integrated transport' paradigm centre on a lack of serious political interest in transport stretching back half a century or more. Now that transport issues have gained a high profile, have aroused great public concern and neat, inexpensive solutions to problems look increasingly unlikely it is necessary that governing authorities manage to improve their performance to match that of some of the participants in this research.

8.9. Issues for further research

The fieldwork generated some interesting discoveries regarding the effectiveness of environmental management systems in modifying commercial decision making towards more environmentally benign outcomes and raises the question:

- What would be the environmental effects if EMSs became a compulsory part of management portfolios?

The close relationship between the economic and environmental aspects of transport decision making suggests an expanded role for markets in shaping transport choices. Identifying the appropriate markets and, within these, the instruments necessary to deliver change are important. Therefore further research at the operational level is necessary to:

³¹ See plate 5.5.

- Identify the key market instruments able to deliver changes in transport decision making.
- Determine whether such instruments are likely to be more effective as part of packages of measures and if so what other instruments are important.
- To discover how regulatory influences may be included within these attempts to change behaviour without reducing environmental awareness.
- To explore the ways in which the most appropriate scales of intervention and regulation can be identified.

Consistent with the transport arguments put forward in the thesis effective bus priority measures appear to enjoy broad support amongst most groups. The opportunities offered by BPMs raise the questions:

- Is funding the answer to the problems of BPMs, or are more contentious issues preventing BPMs from being more effective?
- Would more, consistently applied and properly enforced BPMs improve their acceptance and observance amongst car drivers?

The answers to many of these questions and the application of any emergent, transferable solutions could have profound implications for the improvement of the overall environmental burden of transport.

More fundamental issues however, remain unresolved. The lack of broad consensus, within the UK, over how to develop a transport system appropriate for the present and for future generations is problematic. The need for a 'joined up' approach to policy development that the government set out in 1997 reflected considerable understanding of how a range of non transport policies impact transport demand and choices. The creation of the DETR embodied the holistic, integrated approach and was intended to begin to tackle the lack of consensus in transport policy. The DETR undoubtedly had

its own internal structural problems and its creation was perhaps a little over ambitious. It was not allowed to continue the 'joining up' process, despite some headway being made, and it is clear that though environmental issues have become more important in transport decision making 'transport' and 'the environment' are not fully joined up as yet.

Moving towards a fully holistic approach to transport decision making is not without other difficulties. Adding actors to decision making processes raises questions centred on the dangers of the 'non-decision' within transport governance. Since current transport behaviour and trajectories are unsustainable, not taking decisions that can move towards sustainability imply eventual system collapse. Therefore:

- Should decision makers develop a framework for action that features time limits for discrete stages on the journey towards the notional destination of sustainability?
- Is this possible anyway given the fractious and fractured nature of market orientated governance?
- Since it is self evident that the provision of efficient, effective, accessible, comfortable, convenient and affordable transport is desirable politically, economically and environmentally then is it possible to set transport policy apart from party politics in order to avoid short term disjointed policy and to provide 'win – win – wins' that include political benefits?

Under these circumstances governance regimes may themselves be in need of fundamental redesign. The present model maintains the narrow interest of the 'market state', whilst acting undemocratically in its relations with many of its own citizens. This democratic deficit can be seen in the many 'losers' created by some transport decisions who have little or no influence over those decisions. The poor and socially deprived suffer lower levels mobility and access through the application of many of same policies that provide access and mobility enhancements for the better off. Similarly 'market transport' gives little regard to the environment. Both the social

and environmental aspects of transport are disadvantaged by the systemic bias towards the short term economic imperative of increasing prosperity.

From this there seems to be failure occurring in different contexts; there is a failure to develop any sort of consensual approach to transport requirements; there is a failure of the systems of policy delivery as they become diverted by vested interests; and these threaten a potentially more serious failure – that of the ability of the natural environment to sustain the increasingly damaging characteristics of transport demand.

In the context of this research, the difficulties in encouraging the importance of the environment within decision making are significant. Encouragingly, responses in NE organisations to the range of decision making conditions discussed here point to improvements in the environmental burden of transport achieved through adjusting the contextual bases of transport choices. Refining and confirming this knowledge could be achieved through further study of the links between intentions and outcomes in transport policy.

For an integrated and sustainable transport policy to become a reality more attention should be given to raising effectively the salience of the environment within the operational decision making processes of the transport sector. This research has found the prominence of the environment in decision making to be poor, except where associated with economic 'win – wins'. In answer to the 'how' question of improving and including environmental awareness within decision making, the compelling evidence of improved environmental awareness and action amongst organisations that have adopted EMS procedures suggests that a more prescriptive approach to decision making has considerable merit. Clear environmental benefits have been uncovered in this research that emanate from environmental management systems. The extent to which this raised awareness has spread across the transport sector mirrors the spread of corporate reporting, EMS and green image building. Key individuals have played an important role in the proliferation of these standards. That these corporate strategies are often accompanied by economic benefits should add to the case for a wider adoption of these systems within corporate governance.

Thus the possibility of identifying a methodology that can highlight links between environmentally good transport decision making practice, structures that can deliver such practice and flaws in policies aimed at achieving environmentally positive outcomes is significant. It would provide the opportunity to reshape transport decision making towards improved environmental outcomes by using key actors and systems to raise awareness, spread good practice, demonstrate effective policy and inform future policy design.

Appendix 1

Participating organisations and dates interviews took place

| Date | Organisation |
|--------------------------|--|
| <i>Group A</i> | |
| 14/02/01 | Regional Development Agency |
| 15/03/01 | North East Regional Assembly |
| 20/03/01 | Tees Valley Joint Strategy Unit |
| 27/03/01 | Newcastle City Council |
| 02/04/01 | Government Office for the North East |
| 17/04/01 | Durham County Council |
| 20/04/01 | Stockton Borough Council |
| 10/05/01 | Gateshead Borough Council |
| 11/05/01 | Sunderland City Council |
| 14/05/01 | Darlington Borough Council |
| 23/01/02 | Cleveland Police – Police Officer |
| 23/01/02 | Cleveland Police – Manager |
| 07/11/01 | Transport Conference – Excellence in Integrated Transport Planning |
| <i>Case Study</i> | |
| 13/10/01 | Durham County Council –Transport Officer |
| 11/12/01 | Durham County Council –Transport Officer |
| 09/01/02 | Durham County Council –Transport Officer |
| 06/02/02 | Durham County Council –Transport Officer |
| 07/02/02 | Durham County Council –Transport Officer |
| 15/04/02 | Durham County Council – Elected Member |
| 15/04/02 | Durham County Council – Elected Member |
| <i>Group B</i> | |
| 14/06/01 | Nicholson Transport |
| 14/06/01 | Gallaghers Transport |
| 14/06/01 | Devereux Transport |
| 21/06/01 | P&O Ferrymasters |
| 28/06/01 | Inter Route |
| 29/06/01 | Eric Short Transport |
| 29/06/01 | Kelly's Transport |
| 02/07/01 | Road Haulage Assoc. |
| 02/07/01 | Freight Transport Assoc. |
| 24/07/01 | Fracks Transport |
| 27/07/01 | Safeway – Transport Manager |
| 05/09/01 | Lorry Driver (working for Safeway) |
| 07/09/01 | Lorry Driver (working for Inter Route) |
| <i>Case Study</i> | |
| 09/04/02 | The Freight Group – Managing Director |

| | |
|----------|--|
| 09/04/02 | The Freight Group – Senior Manager |
| 16/04/02 | The Freight Group – Site Manager |
| 09/04/02 | The Freight Group – Plant Vehicle Driver |
| 09/04/02 | The Freight Group – Warehouse Worker |

Group C

| | |
|----------|----------------------|
| 19/07/01 | Leven Valley Buses |
| 07/08/01 | Stagecoach |
| 04/09/01 | Arriva |
| 07/09/01 | Richardson's Coaches |
| 06/09/01 | Jayline |
| 06/09/01 | Compass Royston |
| 07/09/01 | Proctors |
| 09/10/01 | Thirlwell's Travel |
| 15/10/01 | Nexus / PTE |

Case Study

| | |
|----------|---------------------------------------|
| 12/03/02 | Go-Ahead – Senior Manager, Purchasing |
| 12/03/02 | Go-Ahead – Senior Manager, Operations |
| 14/03/02 | Go-Ahead – Senior Manager, Property |
| 14/03/02 | Go-Ahead – Senior Manager, Reporting |
| 19/04/02 | Go-Ahead – Senior Manager, Operations |
| 19/04/02 | Go-Ahead – Senior Manager, Aviation |
| 19/04/02 | Go-Ahead – Senior Manager, Reporting |

Appendix 2

Case Study Participants

Durham County Council

The first case study examines the process of developing and implementing a congestion charging scheme within a NE local authority. The example highlights the usefulness to the local authority of new legislation to enable it to tackle an historical traffic problem that, until the availability of the legislation, amounted to a gap in the provision of suitable powers to shape an intensifying problem within local transport behaviour. The organisation, *Durham County Council*, was chosen because it had developed and implemented the UK's first congestion charging scheme. Its interpretation and application of recently enacted legislation therefore makes it of interest to the wider analysis of NE road transport and to congestion charging debates. Lessons are also relevant for other local authorities considering such schemes.

The Freight Group¹

The second case study involves a private company and its innovative approaches to restructuring freight transportation arrangements through intermodal transfers. The new transport patterns emerging in the organisation's operations contain economic, social and environmental solutions to sector wide difficulties and may offer some transferable lessons for freight transport in general. This organisation has its headquarters some sixty kilometres to the south of the NE region. Its activities however, justify its inclusion within the research as it is the north of England's principal intermodal transport operator and many NE road haulage companies transport loads to and from its north Yorkshire railhead. Though just outside the area chosen for the research it is in effect the NE region's main modal transfer point for access to the UK and European rail network.

Go-Ahead Group

The third and final case study presents an in depth analysis of the reconstruction of 'the environment' within the *Go-Ahead Group*, a NE based public transport company, through the introduction of environmental management systems and enhanced corporate reporting strategies. This analysis drew on a substantial volume of qualitative information on a wide range of underlying organisational concepts of, and attitudes towards, the environment and organisational decision-making. This particular organisation was chosen for several reasons. It is one of the UK's four major public transport groups and has its headquarters in the NE region. It also allowed access to a wide range of senior managers who were interviewed at a variety of locations. Staff interviewed are responsible for some very different areas of the company's activities and the extent to which their specific roles coloured their views provided an interesting aspect to the overall analysis.

¹ The name of the company has been changed to ensure anonymity.

Appendix 3

This appendix contains examples of questions asked to research participants. It is not practical to reproduce each set of questions used. The examples provided are illustrative of the questions asked to each group. In all cases though there was opportunity to adapt the line of questioning during the interview. This was done on most occasions.

Group A

Questions to the Government Office for the North East

The specific line of inquiry of the research centres on how organisations make their transport choices and I wanted to interview a representative from the GO to find out the GO position on transport in the NE with regard to things like LTPs, the RTS, economic regeneration and development generally. I've spoken to the RDA and RA about the RTS and I'd like to begin with the RTS.

1. RPG is intended to be a comprehensive spatial strategy for the regions and includes transport, in the form of a RTS, within this guidance. What has been the role of GO in the production of a RTS?

I know that the 'communications chapter' of the draft RTS as prepared by the RA was rejected, can you tell me why that was?

Do you think that because RPG has not yet been finalised it presents difficulties for the RA in developing a RTS that fits in with RPG?

2. When the government took office it made much of developing an IT system and LTPs were to be the vehicle for this process. Action was also promised to tackle the decline in PT and the growth in reliance on private cars. How can guidance to LAs and regional bodies carry this forward and ensure an even, unified or 'joined up' response from these groups?

From what you have seen of the RTS and LTPs do you think LAs and regional bodies sufficiently understand the government's intentions and objectives for transport?

3. The government is also committed to moving forward on SD and regional sustainability frameworks have been produced to carry this policy forward. The NE draft version doesn't specifically mention reducing travel volumes in it's 'environmental protection and enhancement' section and this leads me to wonder what sort of environmental guidance has been given to those producing sustainability frameworks?

This advice obviously originates from the centre. Presumably this advice comes from the DETR but how is it passed through to the local level?

4. DETR was formed in 1997 presumably with the aim of fostering a more joined up approach to transport and environmental issues that clearly affect each other. What sort of changes has this brought to transport and environmental policy making at the local level and are they properly joined up?

As far as transport advice from the DETR is concerned do you think there is still a conflicting agenda between engineers and planners (old DoT / DoE)?

If so is this leading to confusion at the local level?

How can any conflicting advice or confusion be cleared up by GO?

5. Since the appearance of the ITWP the fuel price protests seem to have driven the governments transport policy in a less sustainable direction. How does this affect working through of the recently adopted LTPs and the RTS.

Will they look like 'greenwash' if the government backs off from a sustainability agenda to placate the motoring lobby?

Questions to the Police

Traffic Division, Cleveland Constabulary.

On traffic management

1. What are the most important traffic management issues the police face?
2. What effects do BPMs have on traffic flows?
3. Why do you think LAs install BPMs?
4. In your view do LAs consult adequately with the police on their traffic plans?
5. How well do you think motorists understand and respond to BPMs?
6. Do the police face difficulties monitoring and enforcing BPMs?

7. What is the breakdown of responsibility for BPMs between the LAs and the Police?
8. Are there any other issues around BPMs that cause difficulty or where improvements could be made?

On HGVs

9. Would you say that HGV operating offences are on the increase?
10. Why do you think this might be?
11. Are police able to maintain the current level of roadside checks?
12. Do you think that roadside checks are an effective means of ensuring compliance with legal and regulatory requirements?

Questions to Darlington B.C.

Integrated transport has been heralded as the solution to a variety of transport problems. As the emphasis on integrated transport is quite recent there has been little time to deliver actual integrated systems 'on the ground'.

1. Can integrated transport contribute to solving transports environmental problems in this locality?

How accurate can measurements be?

2. How has Darlington integrated environmental considerations into its transport policies?

The joint LTP begins with a vision statement that aspires to a *"...more sustainable lifestyle in a more attractive environment"* How have baseline positions on the environment and the sustainability of transport been assessed or measured?

3. Recent government policy requires LAs to submit LTPs for their areas, was government guidance on LTPs adequate for this task?

Was guidance offered and accepted from ANEC?

4. LTP guidance emphasises the unfair advantages enjoyed by cars over other modes and suggests a change in attitude to assessing local transport needs. How has the LA addressed this shift in priority?
5. 'Protecting and enhancing the built and natural environment' heads the list of objectives on government guidance on LTPs. How has this been done in the borough?

In the work done on producing a LTP how did the LA assess the state of the local environment as a starting point for protection and enhancement?

How does the LTP of the borough enhance the natural environment?

6. The overall theme of LTP guidance is one of local responsibility and local traffic management initiatives are encouraged.

What traffic management options are open to the LA?

Can these options assist in meeting the needs of all travellers?

Are there any plans to develop an integrated parking strategy and / or Park and Ride schemes?

Will there be reallocations of road space towards less polluting and congesting modes, or modes that can reduce social exclusion?

The LA now has considerable scope to introduce local measures to raise additional funds to be used in support of public transport. Measures include congestion charging and workplace parking charges. Does the borough intend to explore and perhaps introduce these, or similar measures?

How can the LA make this happen?

Has the LA developed processes through which to introduce this policy?

Is the LA satisfied with the government's response to these sort of traffic management issues?

7. PPG 13 makes particular mention of walking and cycling strategies and proposes discrete, dedicated routes for these modes, sharing space with cars is particularly discouraged. For example ways for cyclists to 'bypass' dangerous junctions are mentioned. Within the existing land use layout of the LA's area are cycling and walking regarded as realistic alternatives to motorised modes?

Will the LA need to make changes in long term Development Plans to make cycling and walking realistic alternatives to motorised modes?

Does the LA have specific plans to improve cycling and walking routes?

Will these adequately tackle the dangers faced at junctions?

8. PPG 13 also includes advice to LAs on the development of 'Green Transport Plans' and suggests that, where appropriate, Green Transport Plans form a compulsory component of planning applications. Does the LA have any plans to make the inclusion of Green Transport Plans a requirement for any category of applications, either by type or area?

If Green Transport Plans are required as part of planning applications how will the LA monitor the success of the Green Transport Plans?

Has the LA developed a GTP of its own?

9. In the guidance on LTPs integrated approaches to solving transports environmental problems are encouraged.

Does this bring development plans into conflict with LTPs?

Do they have conflicting agendas (eg economic vs sustainable transport)?

If so how will these be resolved?

How difficult has it been to develop a LTP that fits in with existing Development Plans?

Do development plans focus mainly on economic regeneration and opportunities?

If integration of plans has been difficult will the Development Plan now need to be revised?

Have previous or existing plans concentrated on one mode and cars in particular?

10. Integration with the RTS (when it appears) is also required and wide consultation is expected within this process, has the LA been fully consulted?

Has information been gleaned from consultation that has assisted in drawing up a joint LTP?

Has integration with the RTS been difficult?

11. Freight issues were also specifically mentioned in LTP guidance and LAs have powers to limit access of HGVs to designated areas. Restrictions can be total or be limited to particular times of the day or week. Does the LA see these measures as useful or necessary in meeting objectives such as environmental enhancement?

Can circumstances be foreseen where such restrictions might be introduced?

12. Planning guidance also recommends long term changes to freight hubs and distribution routes. Has the LA found it difficult to integrate the present characteristics of distribution within the joint LTP?

Has suitable space been reserved for intermodal connections centres to be developed to assist in improving the sustainability of freight transport?

13. The recent white paper, *A New Deal for Transport*, promises government financial support for rural bus services. Have rural bus services declined in the LA area and are offers of government support likely to reverse any decline?
14. The Transport Acts of the 1980s ended LA control of bus services and *A New Deal for Transport* encourages LAs develop integrated transport strategies of which LTPs are a part.

Where in the borough are bus services most problematic?

Are gaps in PT provision responsible for social exclusion or commuting difficulties?

What steps can the borough take to ensure that bus services are evenly distributed across routes and times where profitability varies?

Is further government intervention required to make service provision comprehensive?

Group B

Questions to Haulage Industry Associations

What is the history of the organisation, how old is it?

1. How many members do you represent?
2. How many offices do you have?
3. What do you regard as your main role within the transport sector?
4. Do you offer other services related to transport?
5. Are you involved in operating systems that link the load requirements and availability of your members to help reduce empty returns?
6. What are the commonest concerns raised by your members?
7. Is your organisation working with government, local authorities or other agencies on any of these issues?

8. Does the organisation work with local authorities on 'sustainable distribution strategies' or 'freight quality partnerships'?
9. Do you offer advice on legislative changes to your members?
10. Do you offer advice or information to your members on any environmental matters?
waste disposal / recycling.
environmental performance of vehicles.
energy / fuel efficiency ideas.
11. Are you aware of the activities of 'waste brokers' and are there opportunities for you to encourage your members to use 'waste brokers'?
12. Do you run courses / seminars to help inform operators of their responsibilities?
13. What is the level of take up of these training opportunities?
14. Which are the most popular courses that operators chose to attend?
15. Why do you think this is?

On intermodal issues

16. How involved is the organisation with the development of 'freight hubs' and 'intermodal transfer' facilities?
17. What factors should be considered when choosing sites for intermodal facilities?
18. Will the recent emphasis on 'integrated transport', and in particular moving more goods by rail, make any real difference to the road transport industry?
19. Has this organisation been consulted by a local authority or regional organisation, such as an RDA, about local or regional freight strategy?
20. Have you offered advice on these issues to any other organisation?

On drivers

21. Companies involved in the research have expressed concern at the apparent shortage of drivers, would you agree that there is a driver shortage?
22. Do you offer driver training to your members?
23. Do you see driver shortages as a significant problem for the industry?

On future challenges

24. What do you consider to be the most difficult problems facing the haulage industry?
25. Do you expect this to change?
26. Do you see new problems arising?
27. How do you see the future for the haulage industry generally and for this organisation?

Questions to haulage firms

Background information

1. What is the history of the company, how old is it?
2. How many vehicles do you operate?
3. Do you have more than one depot?
4. Do you have a main customer, or a few who provide a large part of your business?
5. What percentage of your business is carried out for your regulars?
6. Does the regular business involve repeat trips over the same route?
7. Are any of those routes within the north east?
8. Do any of the regular routes involve 'return empty' trips?
9. What potential is there for not returning empty?
 - access to return loads?
 - computer load matching systems?
10. Are you involved in sub contract work with other hauliers, either by accepting or awarding it?
11. Do you offer other services related to transport?

On purchase decisions

12. Does your regular work influence the type or number of new vehicles that you buy?
13. What other factors influence your vehicle purchase decisions?
14. If VED (vehicle excise duty) rates were based on the emissions output of vehicles, as has been recently introduced for cars, would this influence your choice of models?
15. Does the general fuel efficiency of a particular model add to the chances of you buying more of these as opposed to less efficient vehicles?
 - faster, larger etc.
16. Does the environmental performance of new vehicles affect your purchase decisions?

On depots

17. Does your regular work influence the location of your depots?

18. Are any depots located around rail, port or airport facilities?
19. Do you cross load to other modes at any of these places?
20. Do you move containers?
21. What other factors influence your depot location decisions?

On monitoring

22. Do you monitor energy costs?
 - gas, electricity?
23. Do you monitor the fuel consumption of vehicles individually?
24. Are vehicles tuned for maximum fuel efficiency?
25. Do you monitor the cost of repairs and maintenance for your fleet on an individual vehicle basis?
26. Do you monitor the number of filters and particulate traps that individual vehicles use?
27. Would vehicles that needed these items changed less often be more likely to be chosen as replacement vehicles?
28. Do you monitor the total amount of waste from your vehicles?
 - oil, tyres, spent filters, exhausts etc.
29. Does the local authority or Environment Agency monitor the air quality, noise or wastes from your operations?

On wastes

30. How are these disposed of ?
31. Do you recycle any of these wastes or reuse them in some way
 - waste oil heating for example?
32. Have you attempted to match your wastes to other companies' material requirements?
 - perhaps through a waste broker?
33. Would you consider this?
34. Why / Why not?
35. Could it offer your company an advantage?

On drivers

36. Do you train drivers to drive as efficiently as possible?
37. Do you offer any sort of efficiency bonuses to drivers?
 - for finding return loads perhaps?
 - or for achieving low fuel consumption?

On other organisations

38. Are you a member of the FTA or RHA?
39. What sort of issues do you ask them for advice on?
40. Do you ask them, or any other organisation, for advice about the environmental impacts of the haulage business?
41. Are they helpful in advising you when you need information?
42. Do they advise you on forthcoming legislation that may affect you?
43. Does either of these encourage environmental awareness?

44. Have any other organisations, such as the local authority, offered advice on the company's environmental impacts?
45. Does the local authority attempt to influence your operations by the use of regulations on noise, delivery times or wastes?
46. Have you ever had a planning application refused?
 - perhaps for changed use of premises or extended hours?
47. Are you aware of 'sustainable distribution strategies' and 'freight quality partnerships'?
48. In recent government guidance on local transport plans local authorities are encouraged to develop 'sustainable distribution strategies' for their areas. Has the local authority here consulted you about your freight operations?
 - perhaps asked for times and frequencies of loads into town centres?
49. Has the local authority here sought your views on any aspects of your operations?
50. Has the local authority approached your company about developing 'freight quality partnerships' aimed at improving access and air quality while reducing congestion and inconvenience?
51. Whether the local authority has been in contact with you or not does the company attempt to structure its operations around congestion avoidance in town centres?

On future challenges

52. What do you consider to be the most difficult aspect of running your business?
53. Do you expect this to change?
54. How do you see the future for the haulage business generally and for this company in particular?

Group C

Questions to public transport providers

Background information

1. What is the history of the company,
 - How old is it?
 - How has it grown?
 - What is the ownership structure?
 - Regional groups?
2. How many vehicles do you operate?
3. Do you have more than one depot?
4. What aspect of passenger transport represents the main part of your business activity?
 - private contract
 - fare paying (stage carriage?)
 - subsidised services

5. What are the broad transport issues that affect the industry / company?
 - and policy issues?
 - *New Deal for Transport?*
6. What proportion of the turnover is linked to these types of service, or any other type of service?
7. Is all your work within the north east?
8. Are you involved in contract work for local authorities?
 - one or more local authority?
9. Have you agreed to share routes or services with other operators?
 - or have you agreed to provide some services whilst they provide others?
10. Do you compete 'on street' for passengers?
11. Have you become involved with 'bus quality partnerships'?
 - would you?

On purchase decisions

12. Does your regular services influence the type or number of new vehicles that you buy?
13. What other factors influence your vehicle purchase decisions?
14. If VED (vehicle excise duty) rates were based on the emissions output of vehicles, as has been recently introduced for cars, would this influence your choice of models?
15. Does the general fuel efficiency of a particular model add to the chances of you buying more of these as opposed to less efficient vehicles?
 - faster, larger etc.
16. Does the environmental performance of new vehicles affect your purchase decisions?
17. Have you considered experimenting with alternative fuelled vehicles?
18. Has this ever been suggested to you?

On services

19. What is the market like?
 - how is it changing?
 - What are the opportunities?
 - What is the competition like in the market?
20. Do your regular services influence the location of your depots?
21. Are services part of an integrated timetable with other bus or train operators?
22. What other factors influence your service provision decisions?
 - local authority support
 - housing / business / leisure facilities
23. how do you make travelling by bus attractive
 - shelters
 - information
 - through tickets
 - shared tickets with other bus / train companies

On monitoring

24. Do you monitor energy costs?
 - gas, electricity?
25. Do you monitor the fuel consumption of vehicles individually?
26. Are vehicles tuned for maximum fuel efficiency?
27. Do you monitor the cost of repairs and maintenance for your fleet on an individual vehicle basis?
28. Do you monitor the number of filters and particulate traps that individual vehicles use?
29. Would vehicles that needed these items changed less often be more likely to be chosen as replacement vehicles?
30. Do you monitor the total amount of waste from your vehicles?
 - oil, tyres, spent filters, exhausts etc.
31. Does the local authority or Environment Agency monitor the air quality, noise or wastes from your operations?

On environmental issues

32. Does the company participate in environmental debates in any way at a business level?

On wastes

33. How are these disposed of ?
34. Do you recycle any of these wastes or reuse them in some way
 - waste oil heating for example?
35. Have you attempted to match your wastes to other companies' material requirements?
 - perhaps through a waste broker?
36. Would you consider this?
 - why / why not?
37. Could it offer your company an advantage?

On drivers and staff

38. What is the employment profile of the company?
39. Do you train drivers?
40. Do you train existing drivers to drive as efficiently as possible?
41. Do you offer any sort of efficiency bonuses to drivers?
42. for achieving low fuel consumption?
43. Do you train drivers to deal with the public?
 - in what way
 - apart from driving what do you expect of them?

On other organisations

44. Are you a member of a trade association?
45. Which one?
46. What sort of issues do you ask them for advice on?

47. Do you ask them, or any other organisation, for advice about the environmental impacts of the public transport services?
48. Are they helpful in advising you when you need information?
49. Do they advise you on forthcoming legislation that may affect you?
50. Does either of these encourage environmental awareness?
51. Have any other organisations, such as the local authority, offered advice on the company's environmental impacts?
52. Does the local authority attempt to influence your operations by the use of regulations on noise, wastes or service provision?
53. In recent government guidance on local transport plans local authorities are encouraged to develop 'bus quality partnerships' for their areas. Has the local authority here consulted you about these?
 - perhaps asked for times and frequencies of services into town centres?
54. Has the local authority here sought your views on any aspects of your operations?
55. Has the local authority approached your company about developing 'bus quality partnerships' aimed at improving access and air quality while reducing congestion and inconvenience?
56. Whether the local authority has been in contact with you or not does the company attempt to structure its operations around attracting passengers specifically at peak times?
57. Or towards a particular type of service or passenger?

On future challenges

58. What do you consider to be the most difficult aspect of running your business?
59. Do you expect this to change?
60. How do you see the future for public transport companies generally and for this company in particular?

Appendix 4

The recent history of corporate reporting

Health and Safety concerns within industry became established in advance of formal environmental awareness, assisted perhaps because of the interest of trades unions in protecting the health and safety of their members. Serious attempts at improving legislation on both health and safety in the workplace and in the environment had occurred in 1974.¹ Since occupational health and safety is influenced by the workplace environment then concern for the condition of that environment became the logical next step in thinking and as such raised environmental awareness within industry generally. Linking these related concerns within combined reporting procedures was only a small move from this point. The chemical industry has led the way with combined Safety, Health and Environmental (SHE) reporting during the last decade and many examples exist within their corporate literatures². This style of reporting has set the background context within which much of the commercial sector must now operate and the environmental reports of *Go-Ahead* (2001), the *First Group* (2000) and other transport groups form a part of the wider response to corporate environmental reporting that is spreading across the commercial world. In part this response is driven by the prime movers of the trend. As these leading industries analysed their processes for SHE impacts the transport requirements of these organisations and, more recently, the commuting habits of their staff formed part of the total picture³. In order to minimise their environmental impacts, which were often being made increasingly costly because of the development of environmental regulations and their associated charges⁴, many companies have rationalised their operations, closed old plants and invested in new cleaner, greener technologies. These changes have not been without effects on the transport requirements of some organisations. Under IPC legislation new industrial development is subject to a range of regulatory and planning controls not applicable to existing enterprises and has caused a closer examination of the environmental effects of these proposed

¹ The Control of Pollution Act and the Health and Safety at Work Act

² See for example Richards (1995), Robson (1997), *Elementis* (1997), *Allied Colloids* (1998).

³ A link to the growing requirement within planning processes for the inclusion of Green Travel Plans within development applications exists here.

⁴ For example the Landfill Tax or reduced 'discharge consents' to controlled waters.

developments. This has brought into debate previously little discussed environmental effects of companies' operations and has led to organisations requesting increasing amounts of SHE information from their suppliers and customers in order to compile their SHE reports. The growth of such reporting is information generating in itself and together with other legislative requirements, such as COSHH⁵ regulations, has driven data collection and reporting processes down through supply chain organisations and enabled them to provide answers when necessary and also to produce their own Safety, Health and Environmental reports. The inclusion of the relationship between corporate activities and social and ethical issues represents a refining of corporate reporting processes a step further. This is part of the explanation of the development of CSR thinking and reporting processes at *Go-Ahead* and, as a trend, might also be expected to cascade through from large and complex organisations downwards.

A second reason for organisations publishing SHE or CSR data is that it demonstrates to potential suppliers, customers and perhaps most importantly, to those seeking to award contracts for goods or services, that the organisation has considered these issues and formalised them into operating procedures. To this end the publication of corporate information has spread to become a part of a general exchange of information between organisations routinely requested by contract providers. The information within these corporate tender addendums is usually a repackaged version of the published 'glossy' SHE reports⁶. Failure to submit formalised SHE policies often excludes potential contractors from the tender process and it is therefore not surprising that the collection, collation and publication of SHE data is spreading throughout the business community. An example of this was uncovered during a research interview when manager PTR14 speculated on what he thought would be the likely conditions attached to an application for an operating license;

"It may well be the case in the future that, given some of the things we handle, some of the things that we do, if we're looking to expand into various other airports it may certainly be that ISO14001 is a pre tender qualification. It's like Ford, the entire supply chain now has to be accredited to ISO14001 otherwise you don't even get the interview" (interview with PTR14 19/04/02).

⁵ Control of Substances Hazardous to Health

⁶ These are usually available on request from image conscious companies and other organisations.

The effect on any business of having its potential market limited by exclusions rules would be likely to be economically negative and therefore organisations perhaps have little choice but to join the networks that have obtained access to new markets through such accreditations.

The third motivation for organisations in publishing detailed analyses of the environmental effects of corporate activities is associated with the possible public image benefits that can be generated around environmentally friendly activities. Public transport providers are perhaps fortunate in that they are generally seen as being at the forefront of efforts to reduce the environmental impact of transport. They still need to be mindful though of the negative image public transport can have associated with it. Public transport, and particularly bus travel, is seen by some as dull and unexciting (DETR, 03/1999B) with criticism of the comfort, quality and punctuality of buses being regularly levelled by those not wishing to use them (AA, 1997). It is therefore important for public transport operators to ensure that they engage with media discourses and convey an image of professionalism and quality throughout their business activities⁷. The publication of environmental reports and CSR strategies contributes to the development of a positive organisational image with the public, other business organisations, regulatory authorities and the transport policy community.

⁷ See comment of PTR8 at Nexus above, section 7.5.5.

Appendix 5

Sustainable Development and Sustainability

The terms 'sustainable development' and 'sustainability' are used throughout the thesis. Their meanings in the context of this thesis are not unusual or different from their uses elsewhere. 'Sustainable development' has been summarised by the WCED (1987) as

"...development that meets the needs of the present without compromising the ability of future generation to meet their own needs" (WCED, 1987:43).

Two important concepts are included within this aim. Firstly, needs are regarded as the essential needs of the world's poor. These should be given overriding priority. Secondly, limitations of technology and social organisation impinge upon the environment's ability to meet present and future needs. For a thesis concentrating on the links between transport and the environment in NE England the second of these concepts is of primary importance.

Humanity has the ability to make development sustainable, but the concept implies limits. The WCED states that these are not absolute limits, but limitations imposed by the state of technology and social organisation on environmental resources, and by the ability of the biosphere to absorb the effects of human activities. This is disputable. A natural system, the Earth, clearly has definite limits in the sense that a finite amount of materials and energy are embodied in the Earth. The notion that growth in prosperity or population, or put another way of the economic or social kind, cannot continue indefinitely is flawed. A finite system has limits (see Meadows et al, 1992; Daly & Cobb, 1989). Changing the materials and energy balance of the natural environment over time also has limits (Ayres & Simonis, 1994). The continued use of natural resources and the associated accumulation of pollution from that use, reduces the opportunity for future generations to live similar lifestyles. For example, when the global oil supply is exhausted, widespread mobility, such as that enjoyed by the present industrialised world, will either cease or will have to be powered by a different energy source. Such alternative energies are possible but are in their infancy in technological and availability terms. Current predictions of proven oil reserves point to the urgency of speeding up the development of alternative mobility technologies (Black, 1996).

Technology and social organisation can be managed and improved to make way for continuing economic growth but at some point a limit *will* be reached. Developing technologies and shaping social aspirations within this constraint is therefore an urgent political challenge and one that becomes more difficult to achieve with the passage of time because each litre of fuel burned and tonne of materials used reduces the decision making options. The current inequitable distribution of global resources, energy and opportunities, or in other words, one that features endemic poverty for millions of people will always be prone to ecological, environmental and other catastrophes.

Sustainable development therefore requires that those who are more affluent adopt lifestyles within the planets ecological means in, for example, the use of energy.

Rapidly growing populations also increase resource pressure. Sustainable development therefore depends on population size and growth remaining in harmony with the changing productive potential of the environment.

‘Sustainable development’ and ‘sustainability’ in this thesis then are terms that include the belief that limits exist. Activities that are described as ‘more’ or ‘less’ sustainable, or as moving ‘towards’ or ‘away from’ sustainable development, are therefore seen as developments that push the environmental limits of resource depletion and pollution assimilation further into the future or bring them closer.

The sustainability of transport – whether the style of transport is moving closer to those limits or not – is therefore key to the long term well being of the natural environment and the population it supports. Moving human lifestyles towards sustainable development is not easy or straightforward. Painful choices have to be made meaning that in the final analysis, sustainable development rests on political will. Linking transport policy issues to sustainable development is therefore logical and relevant.

[Note on sources: In addition to the sources referred to above the analysis contained in this appendix draws particularly heavily on *Our Common Future* (WCED, 1987:8-9).]

References

- AA. (2003). www.theaa.com
- AA. (2000). *Congestion Charging in London*. Automobile Association, Basingstoke.
- AA (1997). *Living with the Car*. Automobile Association, Basingstoke.
- Adams, W.S. (1990). *Green development*. Routedledge, London and New York.
- Allied Colloids. (1998). *Allied Colloids: Caring Chemistry*. CIBA-Giegy Group. Berne. Switzerland.
- Alloway, B.J. & Ayres, D.C. (1992). *Chemical Principles of Environmental Pollution*. Blackie Academic and Professional, London.
- AMA (Association of Metropolitan Authorities). (1990). *Changing gear: urban transport policy into the next century*. AMA, London.
- Arriva. (2000). *Annual Report*. www.arriva.co.uk
- Ayres, R.U. & Simonis, U. (1994). *Industrial Metabolism: Restructuring for Sustainable Development*. United Nations University Press. New York.
- Ayres, R.U. (1998). *Turning Point: The End of the Growth Paradigm*. Earthscan Publications Ltd. London.
- Bacon, F. (1620). *Novum Organum*, London.
- Bannister, D. (1998) *Transport Policy and the Environment*. Routledge, London.
- Barbier, E.B. *et al* (1994). *Paradise Lost?* Earthscan, London.
- Beardshaw, J. (1992). *Economics: A Students Guide, 3rd Edition*. Pitman Publishing, London.
- Beatty, C. & Haywood, R. (1997) *Changes in travel behaviour in the English Passenger Transport Executives' areas 1981-1991*. Journal of Transport Geography (1997) Vol 5, No1, pp 61-72. Elsevier Science Ltd.
- Black W.R. (1996). *Sustainable transportation: a US perspective*. Journal of Transport Geography. Vol. 4, No.3, pp 151-159. Elsevier Science Ltd.
- Black, W.R. (1998). *Sustainability of transport*. in Hoyle, B. & Knowles, R. (1998). *Modern Transport Geography, 2nd Edition*. John Wiley & Sons. Chichester.
- Blowers, A. (1993). (Ed). *Planning for a Sustainable Environment*. Earthscan, London.
- Bobbitt, P (2003). *The Shield of Achilles: War, Peace and the Course of History*.

- Bristow, G. *et al* (2001). *Tensions, limits and potentials: Evaluating rural development policies in Scotland*. Cardiff Business School, Cardiff University
- Brown, S. (1990). in Silvertown, J. & Sarre, P (1990). *Environment and Society*. The Open University, Milton Keynes.
- Buchanan, C. (1997). *Durham City Travel Study*. Colin Buchanan & Partners, Edinburgh.
- Butler, R. (1991). *Designing Organisations: A Decision Making Perspective*. Routledge, London and New York.
- Button, K. & Nijkamp P (1997) *Social change and sustainable transport*. Journal of Transport Geography. Vol. 5, No.3. pp 215-218. Elsevier Science, Pergamom.
- Button, K. (1993). *Transport, the Environment and Economic Policy*. Edward Elgar Reference. Cheltenham.
- Button, K. (1999). *Integrated Transport Policy*. Edward Elgar Reference. Cheltenham.
- Cairns, M.C. (1997). *The development of Park and Ride in Scotland*. Journal of Transport Geography. Vol. 6, No.4. pp 295-307. Elsevier Science, Pergamom
- Cardebring, P *et al* (2000). *Analysing Intermodal Quality; A key step toward enhancing intermodal performance and market share in Europe*.
- CEC (Commission of the European Community). (1993). *European Working Time Directive*. 93/104/EC, Brussels.
- CfIT (Commission for Integrated Transport). (2002). *Annual Report 2001 – 2002*. www.cfit.gov.uk
- Charlton, C. & Gibb, R. (1998) *Intermodal surface passenger transport*. (in Hoyle, B. & Knowles, R.. (1998). *Modern Transport Geography, 2nd Edition*. John Wiley & Sons. Chichester).
- Cohen, J. & Rogers, J. (1995). *Associations and Democracy*. Verso, London and New York.
- Collingridge, D. (1992). *The Management of Scale*. Routledge. London and New York.
- Coyle, M. (2000). *Reducing the environmental impact of road transport operations: a review of inventions that can be applied by fleet operators*. Cantique Workshop, Huddersfield University Division of Transport & Logistics.
- Cullingworth, J.B. (1999). *50 Years of Town and Country Planning in Britain*. British Planning.

Curran, S. (1998). *The Environment: Confronting the Issues*. The Stationary Office, London.

Daly, H.E. & Cobb, J.B. (1989). *For the Common Good*. Greenprint, London.

Daimler Benz. (1998). *New Routes for Traffic*. Daimler Benz, Stuttgart.

Davis, A.L. (1994). *The role of environmental principles in developing sustainable transport policies*. Proceedings of the 22nd European Transport Forum.

Davis, A.L. (1996). *Promoting sustainable transport in England: principles and practice*. Journal of Transport Geography. Vol. 4, No.1. pp 67-70. Elsevier Science, Pergamon.

DEFRA (Dept of Environment, Food and Rural Affairs). (2003) *Digest of Environmental Statistics: The Global Atmosphere*. www.defra.gov.uk

DoE (Dept. of the Environment). (1992) *Land use planning policy and climate change*. HMSO, London.

DoE & DoT. (1994A). *Planning Policy Guidance Note 13*. HMSO, London.

DoE & DoT. (1994B). *Planning Policy Guidance Note 13: A guide to Better Practice*. HMSO, London.

DETR. (Dept of Environment, Transport and the Regions). (2001). *Tackling congestion and pollution*. HMSO, London.

DETR (2000). *Transport Statistics*. www.transtat.dft.gov.uk

DETR. (07/2000A). *Transport 2010: The Ten Year Plan*. HMSO, London.

DETR. (07/2000B). *Social Exclusion and the Provision and Availability of Public Transport*. HMSO, London.

DETR. (05/2000). *Guidance for the Methodology on Multi Modal Studies (Vol 1)*. HMSO, London.

DETR. (03/2000). *Guidance on Full Local Transport Plans*. HMSO, London.

DETR. (02/2000A). *Guidance on Preparing Regional Sustainable Development Frameworks*. HMSO, London.

DETR. (02/2000B). *Climate Change: Draft UK Programme*. HMSO, London.

DETR. (1999B). *From Workhorse to Thoroughbred: A Better Role for the Bus*. HMSO, London.

DETR. (1999A). *Planning Policy Guidance Note 13*. HMSO, London.

DETR. (06/1999B). *Transport's New Deal: The Research We Need to Achieve It*. HMSO, London.

DETR. (03/1999A). *Sustainable Distribution: A Strategy*. HMSO, London.

DETR (03/1999B). *From Workhorse to Thoroughbred: A Better Role for Bus Travel*. HMSO, London.

DETR. (03/1999C). *Guidance to RDAs on Regional Strategies*. HMSO, London.

DETR. (10/1998). *Planning for Sustainable Development: Towards Better Practice*. HMSO, London.

DETR. (07/1998). *A New Deal for Transport: Better for Everyone*. HMSO, London.
[Quotations from this source use page numbers from the *Microsoft Word* version of the white paper found on the DfT website: www.dft.gov.uk/itwp]

DETR. (1997). *Sustainable local communities for the 21st century*. HMSO, London.

DfT (Dept. for Transport). (17/12/2002). *Statement by Alistair Darling on 10 Year Investment Plan for Transport*. www.dft.gov.uk

DfT. (2001). *Transport Statistics*. www.transtat.dft.gov.uk

DTi. (1996). *Competitiveness Forging Ahead*. Ch 6: *Looking to the future*.
www.archive.official-documents.co.uk/document/dti/dti-comp/chap6.htm

DoT (Dept. of Transport). (1997). *National Travel Survey 1994-96*. HMSO, London.

DoT. (1996). *Transport The Way Forward*. HMSO, London.

DoT. (1989). *National road traffic forecasts 1989*. HMSO, London.

DoT. (1984). *Buses*. HMSO, London.

DTi. (1996). *Competitiveness Forging Ahead*. Ch 6: *Looking to the future*.
www.archive.official-documents.co.uk/document/dti/dti-comp/chap6.htm

Durham County Council. (2001). *Possible measures to reduce traffic in the Market Place, Durham City*. Durham County Council.

Elementis. (1997). *The Elementis Commitment*. Elementis Chromium. Corpus Christi, Texas.

EU (European Union). (2001). *Energy and Transport in Figures*. European Union, Brussels.

First Group. (2001). *Annual Report*. The First Group, London.

First Group. (2000). *Environmental Annual Report*. The First Group, London.

FTA (Freight Transport Association). (2003).
www.fta.co.uk/information/otherissues/freighttaxation

FTA. (1998). *Freight Matters Policy Brief 5: Cleaner Air*. Freight Transport Association, Tunbridge Wells.

Gardner, G.T. & Stern, P.C. (1996) *Environmental Problems and Human Behaviour*. Allyn & Bacon, Boston.

Gibbs, D. (2002). *Local Economic Development and the Environment*. Routledge, London & New York.

GLA. (1999). *Road Charging Options for London: A Technical Assessment*. Greater London Authority.

Go-Ahead Group (2003). *Go-Ahead to the future: A profile of the Go-Ahead Group*. The Go-Ahead Group plc, Newcastle.

Go-Ahead Group (09/2002). *Further Ahead – Environment and Social Report 2001-2002*. The Go-Ahead Group plc, Newcastle.

Go-Ahead Group (2001). *The Way Ahead – Environment Report 2001*. The Go-Ahead Group plc, Newcastle.

Go-Ahead Group (07/2001). *Annual Review*. The Go-Ahead Group plc, Newcastle.

Go-Ahead Group (1999). *Directors Report and Accounts*. The Go-Ahead Group plc, Newcastle.

Goodwin, Paul & Wright, G. (1998). *Decision Analysis for Management Judgement (2nd Edition)*. John Wiley & Sons. Chichester.

Goodwin, Phil. (2001). *Running to stand still? An analysis of the Ten Year Plan for Transport*. Council for the Protection of Rural England, London.

Goodwin, Phil. (1999) *Transformation of transport policy in Great Britain*. Transport Research Part A 33 pp 655-669. Elsevier Science Ltd.

Goodwin, Phil. (1991). *Road traffic growth and the dynamics of sustainable transport policies*. The Environment and Transport.

Goodwin, Phil., Hallet, S., Kenny, F. & Stokes, G. (1991). *Transport: The New Realism*. Report to the Rees Jeffreys Road Fund. Transport Studies Unit, Oxford.

Greene, D.L. & Wegener, M. (1997). *Sustainable transport*. Journal of Transport Geography. Vol. 5, No.3. pp 177-190. Elsevier Science, Pergamom.

Gudmundsson, H. & Höjer, M. (1996). *Sustainable development principles and their implications for transport*. Ecological Economics 19, pp269-282. Elsevier Science Ltd.

Guiliano, G. (1998). *Urban travel patterns*. in Hoyle, B. & Knowles, R. (1998). *Modern Transport Geography, 2nd Edition*. John Wiley & Sons. Chichester.

Hartman, J. (1997). *The Delft bicycle network revisited*. in Tolley, R. (1997). *The Greening of Urban Transport, 2nd Edition*. John Wiley & Sons Ltd, Chichester.

HASAWA (1974) *Health and Safety at Work Act*. HMSO, London.

Helm, D. (1991) (Ed). *Economic Policy Towards the Environment*. Blackwell, Oxford.

Hempel, L.C. (1996). *Environmental Governance: The Global Challenge*. Island Press, Washington.

Hill, R. (1993). *Planning in Transport*. Journal of Transport Geography.

Hillary, R. (2000) (Ed). *ISO14001: Case Studies and Practical Experience*. Greenleaf, Sheffield.

Hillman, M. (1997). in Tolley, R. (ed). *The Greening of Urban Transport, 2nd Edition*. John Wiley & Sons, Chichester.

Hirst, P. (1995). *Can secondary associations enhance democratic governance?* in Cohen, J. & Rogers, J. *Associations and Democracy*. Verso, London and New York.

Hirst, P. (1994). *Associative Democracy*. Blackwell, Oxford.

HM Treasury. (2001). *Budget 2001*. Ch 6: *Protecting the Environment*. www.archive.official-documents.co.uk/document/htm/budget2001/chap6.htm

HM Treasury. (1998). *Pre Budget Report*. Annex C: *Living standards and sustainable development*. www.archive.official-documents.co.uk/document/cm40/4076/407608.htm

Hoyle, B & Knowles, R. (1998). (Eds). *Modern Transport Geography, 2nd Edition*. John Wiley & Sons. Chichester.

Hudson, R. & Schamp, E.W. (1995). *Interdependent and Uneven Development in the Spatial Reorganisation of the Automobile Production Systems in Europe* in Hudson and Schamp (Eds) *Towards a New Map of Automobile Manufacturing in Europe ? New Production Concepts and Spatial Restructuring*, Springer, Berlin.

Hughes, P. (1993). *Personal Transport and the Greenhouse Effect*. Earthscan. London.

- Hunter, C., Farrington, J & Walton, W. (1998) *Transport and the environment*. in Hoyle, B & Knowles, R. (Eds). *Modern Transport Geography, 2nd Edition*. John Wiley & Sons. Chichester.
- IPPC. (1996). *Climate Change 1995: Economic and Social Dimension of Climate Change, Contribution of Working Group III to the Second Assessment Report*. Cambridge University Press, Cambridge.
- Ison, S. (1998). *A concept in the right place at the wrong time: congestion metering in the city of Cambridge*. Transport Policy 5, pp139-146. Elsevier Science, Pergamon.
- Jacobs Gibb. (2001). *West coast main line air quality appraisal*. Rail Freight and the Environment, Jacobs Gibb, Reading.
- Jacobs, M (1999). *Sustainable Development as a Contested Concept*. Oxford University Press.
- Jacobs, M. (1993). *Sense and sustainability: Land use planning and environmentally sustainable development*. Council for the Protection of Rural England, London
- Jacobs, M. (1991). *The Green Economy*. Pluto Press, London.
- Knowles, R. (1989). *Urban public transport in Thatcher's Britain*. Transport Study Group. Institute of British Geographers, 1989, pp 79-104.
- Knowles, R. & Hall, D. (1998). *Transport deregulation and privatisation* in Hoyle, B & Knowles, R. (Eds). *Modern Transport Geography, 2nd Edition*. John Wiley & Sons. Chichester.
- Local Transport Today. (07/08/03). *Durham charge cuts traffic by 90%*. Local Transport Today, London.
- Local Transport Today. (07/08/03). *Traffic Growth Continues*. Local Transport Today, London.
- Local Transport Today. (26/03/03). *British Park and Ride sites set to pass the hundred mark*. Local Transport Today, London.
- Local Transport Today. (12/06/03). *Charging prompts 38% drop in central London car trips*. Local Transport Today, London.
- Lovelock, J.E. (1979). *Gaia: A new look at life on Earth*. Oxford University Press, Oxford.
- Mackie, P., Preston, J.M. & Nash, C.A. (1995). *Bus deregulation: ten years on*. Transport Reviews 15, pp229-251. Elsevier Science Ltd.
- March, J.G. (1988). *Decisions and Organisations*. Basil Blackwell Ltd. Oxford.

- Maxwell, J.A. (1996). *Qualitative Research Design: An interactive Approach*. Sage, London.
- Marshall, S. & Banister, D. (2000). *Travel reduction strategies: intentions and outcomes*. Transport research Part A 34, pp 321-338. Elsevier Science Ltd.
- May, A.D. (1991). *Integrated transport strategies: a new approach to urban transport policy formulation in the UK*. Transport Reviews 11 (3), pp 22-247.
- May, A.D. & Roberts, M. (1995). *The design of integrated transport strategies*. Transport Policy, Vol. 2, No. 2, pp97-105. Butterworth Heineman.
- May, T. (1997). *Social Research*. Open University Press. Buckingham.
- Meadows, D *et al* (1992). *Beyond the limits: global collapse or a sustainable future?* Earthscan, London.
- Meadows, D., Randers, J.& Behrens, W.W. (1972). *The Limits to Growth*. Universe Books, New York.
- Merseytravel. (2001A). *Local Transport Plan: Annual Progress Report*. Merseytravel, Liverpool.
- Merseytravel. (2001B). *Excellence in Integrated Transport Planning*. Waterfront Conference Company, London.
- Mill, J.S. (1962). *Utilitarianism*. in Warnock, M (ed). Collins, London
- Ministry of Transport. (1966). *Transport Policy*. HMSO, London.
- Ministry of Transport. (1963). *Traffic in Towns: A Study of the Long Term Problems of Traffic in Urban Areas*. Ministry of Transport, HMSO, London.
- National Statistics. (2000). www.statistics.gov.uk
- NERC (Natural Environment Research Council). (1998). *Scientific Group on Decommissioning Offshore Structures, 2nd Report*. Natural Environment Research Council / Department of Trade and Industry.
- O'Riordan, T. (1989). *The challenge for environmentalism*. in Peet, R. & Thrift, N. (eds) New Models in Geography. Unwin Hyman.
- Owens, S. (1995). *From 'predict and provide' to 'predict and prevent'?: pricing and planning in transport policy*. Transport Policy, Vol. 2, No. 1, pp43-49. Elsevier Science, Pergamon.
- Paterson, M. (2000). *Understanding Global Environmental Politics*. Palgrave, London.

Pemberton, S. (2000). *Institutional governance, scale and transport policy – lessons from Tyne And Wear*. Journal of Transport Geography 8, pp295 – 308. Elsevier Science Ltd.

Pilling, A., Murray, S. & Turner, J. (2000). *Catching Them Young Project: A community based project to increase transport awareness and influence travel behaviour amongst young people*. Greater Manchester Transport Resource Unit. University of Manchester.

Potter, S. & Skinner, M.J. (2000). *On transport integration: a contribution to better understanding*. Futures 32, pp275-287. Elsevier Science Ltd.

Public Service Agreements 1999-2002. (1999). Ch 13: *Department for International Development*. www.archive.official-documents.co.uk/document

Public Service Agreements 1999-2002. (1999). Ch 16: *Ministry of Agriculture, Fisheries and Food*. www.archive.official-documents.co.uk/document/cm41/4181/psa-16.htm

Putnam, R.D. (1993). *Making Democracy Work: Civic Traditions in Modern Italy* Princeton University Press, Chichester.

RCEP (2000). *Energy – The Changing Climate*. The Stationary Office, London.

Regional Assembly for the North East (2001). *Sustainability Framework*. Sustaine www.northeastregionalassembly.gov.uk/

Regional Assembly for the North East (1999). *Rules of Procedure*. www.northeastregionalassembly.org.uk/RulesofProcedure.htm

RHA (Road Haulage Association). (2001). *Overtaxed and undervalued*. Road Haulage Association, Weybridge.

Rhodes, R.A.W. (1997). *Understanding Governance*. Open University Press. Buckingham.

Richards, M. (1995). *Making Better Choices: How Tioxide uses Life Cycle Assessment*. The Tioxide Group Limited.

Roberts, A., Parker, T. & Phillips, A. (1998). *A review of the Canterbury park and ride scheme*. Proceedings of the Institute of Civil Engineers, Transport, Vol 129, No 1, pp1-13. Institute of Civil Engineers.

Roberts, J. (1990). *Summary and conclusions for policy*, pp 287-302. in Tolley, R. S. *The greening of urban transport: planning for walking and cycling in Western cities, 1st edition*. Belhaven, London.

Robson, R. (1997). *Safety, Health and Environmental Performance*. ICI Public Affairs. London.

- Root, A. & Schintler, L. (1999). *Women, motorisation and the environment*. Transport Research Part D 4, pp353-355. Elsevier Science Ltd.
- Roth, G. (1967). *Paying for Roads*. Penguin Books Ltd.
- SACTRA (Standing Committee on Trunk Road Assessments). (1994). *Trunk Roads and the Generation of Traffic*. HMSO, London.
- SACTRA (1977). *Report*. HMSO, London.
- Safeway. (2001). *Making a Corporate Commitment*. Safeway (unpublished).
- Sayer, A. (1992). *Method in Social Science*. Routledge, London.
- Schoenberger, E. (1997). *The Cultural Crisis of the Firm*. Blackwell, Cambridge, Mass.
- Shaw, J. & Walton, W. (2001). *Labours trunk-roads policy for England: an emerging pragmatic multimodalism*. Environment and Planning A. 33, pp 1031-56. Elsevier Science
- Sichelschmidt, H. (1999). *The EU Programme "trans-European networks" – a critical assessment*. Transport Policy. Vol.6. Elsevier Science, Pergamom.
- Silverman, D. (1993). *Interpreting Qualitative Data: Methods for Analysing Talk, Text and Interaction*. Sage, London.
- Smith, M., Whitelegg, J. & Williams, N. (1998). *Greening the Built Environment*. Earthscan, London.
- Smith, M.A. & Stacey, R. (1997). *Governance and cooperative networks: an adaptive systems perspective*. Technological Forecasting and Social Change 54. pp79-94. Elsevier Science Inc.
- SMMT (2003). *Data Services* www.smmmt.co.uk/information/
- SMMT (2002). *Percentage of diesel new car registrations UK v Europe*. www.smmmt.co.uk/information/diesel.asp
- Stagecoach. (2001). *Annual Report*. www.stagecoachgroup.com
- Stead, D. (1999). *Relationships between transport emissions and travel patterns in Britain*. Transport Policy, Vol 6, Issue 4, pp247-258, Elsevier Science Ltd.
- Stockton B.C. (2001). *Local Transport Plan*.
- Storchmann, K. H. (2001). *The impact of fuel taxes on public transport: an empirical assessment for Germany*. Transport Policy 8, pp19-28. Elsevier Science Ltd.

Sustainable Development Commission (2003). *Redefining Prosperity: Resource productivity, economic growth and sustainable development*. www.sd-commission.gov.uk/pubs/rp/pdf/rp.pdf

Telecommuting (2000). *Telecommuting 2000: Transport Submissions*. www.flexibility.co.uk/telecommuting2000/tc2000.htm

TfL (Transport for London). (2003). *Congestion Charging Scheme*. Transport for London, www.tfl.gov.uk

The Conservative Party. (2003). *Free to Travel*. www.conservatives.com

The Freight Group. (2003). www.thefreightgroup.co.uk

The Freight Group. (2002). *The Freight Group News*, Issue 6, April 2002 (unpublished).

The Guardian (10/07/2003). *£7bn roads scheme stirs 'U turn' row*. Guardian Newspapers Ltd.

The Guardian (17/12/2002). *Going nowhere, slowly*. Guardian Newspapers Ltd.

The Guardian (11/12/2002). *Darling unveils a £5.5bn roadbuilding 'binge'*. Guardian Newspapers Ltd.

The Guardian (17/04/2001). *Foot and mouth: tracing the epidemic*. Guardian Newspapers Ltd.

The Guardian (21/02/2001). *Foot and mouth outbreak: government bans animal exports*. Guardian Newspapers Ltd.

The Guardian. (02/01/01). *Prescott loses his grip on Whitehall empire*. Guardian Newspapers Ltd.

The Guardian. (06/08/1999). *Road fought by Swampy may open for eclipse traffic*. Guardian Newspapers Ltd.

The Independent. (16/09/2000). *Air Quality in cities shows big increase*. www.independent.co.uk

The Independent. (2000). Various articles from 16/09/02 and 17/09/02 editions. www.independent.co.uk

The Independent. (06/06/1997). *I'll get you on the bus says Prescott*.

The Independent on Sunday. (28/11/00) *Speed Kills: it's just that simple*.

Tolley, R. & Hallsworth, A. (1997). *I'd walk there but...* in Tolley, R. (ed) *The Greening of Urban Transport*. John Wiley & Sons, Chichester.

Tolley, R. (1996). *Green Campuses: cutting the environmental costs of commuting*. Journal of Transport Geography, 1996. Vol. 4, No. 3, pp213-217.

Tonn, B., English, M. & Travis, C. (2000). *A Framework for Understanding and Improving Environmental Decision Making*. Journal of Environmental Planning and Management, 43(2), pp 163-183. University of Newcastle upon Tyne.

TRL (Transport Research Laboratory) (2003). *The construction industry mass balance: resource use, wastes and emissions*. Transport Research Laboratory, Oxford.

Tucker, A. (1998). *The Effectiveness of the Norton Road Bus Priority Lane*. (unpublished)

Tucker, M. (1997). *Climate change and the insurance industry: the cost of increased risk and the impetus for action*. Ecological Economics 22, pp 85 – 96. Elsevier Science.

Turner, R.K. (1993). *Sustainable Environmental Economics and Management*. John Wiley and Sons, London and New York.

Turton, B. & Knowles, R. (1998). *Urban transport solutions and problems*. in Tyne & Wear (2001). *Local Transport Plan*.

Tyne & Wear (2001). *Package Submission for Tyne and Wear 2000-2001: Monitoring Report*. Jointly published by Tyne & Wear Local Authorities & Nexus.

UK Round Table on Sustainable Development (2000). *Indicators of Sustainable Development*. London.

UK Round Table on Sustainable Development. (1996). *Defining a sustainable transport sector*. London.

UNCED. (1993). *Agenda 21: Program of Action for Sustainable Development*. United Nations, New York.

Vigar, G. (2002). *The Politics of Mobility: Transport the Environment and Public Policy*. Spon Press, London & New York.

Vigar, G. *et al* (2000) *Planning, Governance and Spatial Strategy in Britain*. MacMillan Press Ltd

WCED. (1987). *Our Common Future*. Oxford University Press.

Weaver, P. M. (forthcoming). *Evaluating Sustainability Science*. Greenleaf Publishing: Sheffield, UK.

Weaver, P.M. (1998) *Restructuring of Transport, Logistics, Trade and Industrial Space Use*. In: Ayres, R.U and Weaver, P.M. (eds.) *Ecorestructuring: Implications for Sustainable Development*. United Nations University, Tokyo, Japan.

Welsh Office. (1999). *Proposals for a National Economic Development Strategy*. Ch 9: *Integrated Development*. www.archive.official-documents.co.uk/document/welshoff/neds/e-chp9.htm

White, P.R. & Farrington, J. (1998). *Bus and Coach Deregulation and Privatisation in Great Britain, with particular reference to Scotland*. Journal of Transport Geography. Vol. 6, No. 2, pp 135-141.

White, P.R. (1997). *What conclusions can be drawn about bus deregulation in Britain?* Transport Reviews 17(1), pp 1-16.

Whitelegg, J. (1993). *Transport for a Sustainable Future*. Belhaven Press. London & New York.

Wolf, S. & White, A. (1997). *Principles of Environmental Law*. Cavendish Publishing, London.

WBCSD (World Business Council for Sustainable Development). (2000). *Measuring Eco Efficiency: A Guide to Company Performance*. WBCSD.

Worldwatch Institute (2002). *State of the World 2002*. Earthscan, London.

WWF. (2002). www.wwf.org.uk

Yin, R.K. (1994). *Case Study Research: Design and Methods*. 2nd Edition. Sage, London.

