NESTRANS REGIONAL TRANSPORT STRATEGY

Background and findings report

March 2007

Prepared for:

Nestrans
27-29 King Street
Aberdeen
AB24 5AA

01224 625524
www.Nestrans.org.uk

Prepared by:

Steer Davies Gleave
68-70 George Street
Edinburgh
EH2 2LR

0131 226 9500
www.steerdaviesgleave.com

Contents

		Page
1.	**INTRODUCTION**	**3**
	This document	3
2.	**THE WIDER POLICY CONTEXT**	**4**
	Introduction	4
	The National Context	4
	Social Inclusion	8
3.	**MEETING TRANSPORT DEMAND: KEY PRINCIPLES**	**9**
	Transport, the economy and the environment – the policy framework	9
	The policy framework and the north east	11
	Looking ahead – the need for a long term perspective	12
4.	**THE NORTH EAST - DEMOGRAPHIC, ECONOMIC AND LAND USE FACTORS AND SOCIAL INCLUSION**	**14**
	Expectations for demographic change	14
	Population forecasts and projections	15
	The economy	17
	Land use	23
	Social exclusion, multiple deprivation and health	26
5.	**TRANSPORT PROVISION AND USE**	**29**
	Introduction	29
	Car ownership	29
	Car use	32
	Mode share	35
	Bus services – access and use	38
	Parking	43
6.	**CONNECTING THE NORTH EAST TO EVERYWHERE ELSE**	**44**
	Introduction	44
	Freight transport	47
7.	**TRANSPORT AND EMISSIONS**	**51**
	Introduction	51
8.	**LOOKING AHEAD**	**53**
	Traffic growth and car dependency	53
	Technology	57
9.	**AREAS OF RISK AND UNCERTAINTY**	**59**

Introduction 59
Land use – key issues 61
Transport 62

10. APPENDIX 1: PROGRAMME OF INTERVIEWS 69

FIGURES

Figure 4.1 Deprivation Map of NESTRANS Area 27
Figure 4.2 Deprivation map of Aberdeen Area 28
Figure 5.1 Car Ownership by Ward in NESTRANS Area 32
Figure 8.1 alternate Population Forecasts for NESTRANS Area, 54
Figure 8.2 Forecast Changes in Employment 54
Figure 8.3 Traffic and Travel Intensity at national Level 56
Figure 8.4 Scottish Executive Forecast and Targeted Percentage Growth 1996-2021 56

TABLES

Table 4.1 Population and employment densities 23
Table 5.1 Car ownership by administrative area 2004 31
Table 5.2 travel to work by mode 2003/04 34
Table 5.3 Frequency of car use 34
Table 5.4 Modal share travel to work trends 35
Table 5.5 Other trip purposes 37
Table 5.6 People living within 6 mins walk of a half hourly bus service 38
Table 5.7 Access to bus services 40
Table 5.8 Frequency of use of bus services 41
Table 5.9 perceptions about buses; proportion of survey respondents agreeing with statements 42
Table 5.10 car parking - employed adults at work away from home 43
Table 6.1 Air Services from Aberdeen Glasgow and Edinburgh: Business Destinations 45
Table 6.2 UK Freight movements by volume: Thousand tonnes 47
Table 6.3 Market size: freight 48
Table 6.4 Traffic by cargo category: 2003 (Thousand tonnes) 49
Table 6.5 Traffic In Scottish Ports: 2004 (Million Tonnes) 49
Table 6.6 East coast port traffic 2002 – 2004: million tonnes 50
Table 7.1 Transport emissions 51

1. INTRODUCTION

This document

1.1 This document is intended to serve three purposes

- First, to assess the wider and longer term policy context for the RTS;
- Second, to discuss some important emerging policy issues, including in particular the issues of potential trade-offs between reducing the effects of greater accessibility on the environment and improving economic performance; and
- Third, as a background findings paper on transport and its links to land use and the economy in the North East of Scotland.

1.2 The majority of the document deals with these quantitative findings, which are drawn from a wide range of data and information sources, principally the 2001 Census and the Scotland Household Survey. Where appropriate some more qualitative and interpretative findings from the interview programme (undertaken principally during March to June 2006) have been included. A summary of the main outcomes of the interviews is attached as Appendix 1 to this report, including a complete list of those contacted.

2. THE WIDER POLICY CONTEXT

Introduction

2.1 Transport is one of our most vital public services. It supports all sectors of the economy, enabling firms to bring business to suppliers, services to customers, and products to markets. It connects people to jobs, shopping, health and leisure. It links family and friends, and students to learning. Through the 2004 Transport White Paper - Scotland's Future Transport[1] - and the development of the National Transport Strategy[2], Scottish Ministers have set an overall aim to promote economic growth, social inclusion, health and protect our environment through a safe, integrated, effective and efficient transport system.

2.2 The 2004 White Paper set out five high-level objectives for transport

- Promote economic growth by building, enhancing, managing and maintaining transport services, infrastructure and networks to maximise their efficiency;
- Promote social inclusion by connecting remote and disadvantaged communities and increasing the accessibility of the transport network;
- Protect our environment and improve health by building and investing in public transport and other types of efficient and sustainable transport which minimise emissions and consumption of resources and energy;
- Improve safety of journeys by reducing accidents and enhancing the personal safety of pedestrians, cyclists, drivers, passengers and staff; and
- Improve integration by making journey planning and ticketing easier and working to ensure smooth connection between different forms of transport.

The National Context

2.3 Transport policy frameworks and structures for delivery have recently undergone a period of substantial change in Scotland, which has included the formation of a new national transport agency, Transport Scotland. As well as the National Transport Strategy (NTS) which provides guidance for transport policy across the country, this section will make reference to guidance and strategies at the national level.

National Strategy and National Planning Guidance

- Scotland's National Transport Strategy, published in December 2006,[3] presented a number of high level transport objectives, which were developed from those set out in the most recent Transport White Paper 'Scotland's Transport Future' (2004).[4] The high level national objectives from the White paper as set out in

[1] Scotland's Future Transport – The transport white paper, Scottish Executive, June 2004.

[2] National Transport Strategy, Scottish Executive, December 2006.

[3] Scotland's National Transport Strategy, The Scottish Executive, 2006: http://www.scotland.gov.uk/Publications/2006/12/04104414/11

[4] Scottish Transport White Paper - Scotland's Transport Future, The Scottish Executive, 2004: http://www.scotland.gov.uk/library5/transport/stfwp-00.asp

paragraph 2.2 were reaffirmed

2.4 To support the high level objectives, the NTS includes three strategic outcomes to which transport policies should aspire;

- Improve journey times and connections, to tackle congestion and the lack of integration and connections in transport which impact on our high level objectives for economic growth, social inclusion, integration and safety;
- Reduce emissions, to tackle the issues of climate change, air quality and health improvement which impact on our high level objective for protecting the environment and improving health; and
- Improve quality, accessibility and affordability, to give people a choice of public transport, where availability means better quality transport services and value for money or an alternative to the car.

2.5 Planning objective setting specifically in relation to transport is addressed further in Scottish Planning Policy 17 (SPP17) Planning for Transport.[5] A Planning Advice Note (PAN) 75: Planning for transport (2005)[6], accompanies SPP17. This contains more specific guidance than SPP17, and refers to the importance of integration of land use planning with transport, taking account of environmental aims and policies, and policies on economic growth, education, health and the objective of a fairer, more inclusive society.

2.6 Within SPP17, land use planning is stated as an important tool in:

- Reducing the need for travel by relating land use to transport facilities;
- Enabling access to local facilities by walking and cycling;
- Encouraging public transport access to developments; and
- Supporting essential motorised travel.

2.7 As stressed in SPP17, the general hierarchy of priorities for individual travel accessibility development should be walking, cycling, public transport and then finally private cars. SPP17 suggests that access to jobs and facilities across the wider urban area should be a prime consideration. Accessibility of new developments is an important issue, and one that has historically been difficult to measure definitively.

2.8 The national policy guidance on Economic Development, SPP2 is also applicable to transport provision. This document sets out the Scottish Executive's planning guidance on how land use planning can assist economic development whilst taking account of social and environmental agendas

2.9 The key objectives outlined in SPP2 aim to ensure that planning authorities;

[5] Scottish Planning Policy: SPP17 Planning for Transport, The Scottish Executive, 2005: http://www.scotland.gov.uk/Publications/2005/08/16154406/44078

[6] Planning Advice Note: PAN 75 – Planning for Transport, The Scottish Executive, 2005: http://www.scotland.gov.uk/Publications/2005/08/16154453/44538

- Provide a range of development opportunities,
- Ensure that development takes place in sustainable locations,
- Safeguard and enhance the environment, and
- Promote better dialogue between local authorities and businesses.

National Economic Development Objectives

2.10 The national strategy for promoting economic development 'The Way Forward: Framework for Economic Development in Scotland' (FEDS)[7] was originally presented to the Scottish Parliament in June 2000, and has since been refreshed in September 2004. The objectives within this framework are split into two types: the principal outcome objectives and the enabling objectives.

2.11 The Principal Outcome Objectives are as follows:

- Economic growth - with growth accelerated and sustained through greater competitiveness in the global economy;
- Regional development - with economic growth a pre-requisite for all regions to enjoy the same economic opportunities, and with regional development itself contributing to national economic prosperity;
- Closing the opportunity gap - with economic growth a pre-requisite for all in society to enjoy enhanced economic opportunities, and with social development in turn contributing to national economic prosperity; and
- Sustainable development - in economic, social and environmental terms.

2.12 The achievement of these desired outcomes depends upon a complex array of economic drivers. Establishing the underlying conditions and context for economic growth to flourish is, therefore, a critical step. There are four key enabling objectives:

- A stable and supportive macro-economic environment;
- A facilitating national economic context: encompassing the physical, human and electronic infrastructure;
- Dynamic competitiveness in Scottish enterprises; and
- Economic policies and programmes to secure the social, regional and environmental objectives.

National Planning Framework

2.13 The National Planning Framework, published in April 2004,[8] is a non-statutory planning policy document which looks at Scotland from a spatial perspective and sets out an achievable long-term vision. It identifies likely changes in Scotland as a place to 2025 with the aim of planning, so that different areas can develop to their

[7] Framework for Economic Development in Scotland, The Scottish Executive, 2004: http://www.scotland.gov.uk/Publications/2004/09/19872/42430

[8] National Planning Framework, The Scottish Executive, 2004: http://www.scotland.gov.uk/Publications/2004/04/19170/35317

full potential. It also identifies key strategic infrastructure needs to enable planning of optimum investment in the most appropriate places. The framework provides a national context for development plans and planning decisions and informs the ongoing programmes of the Scottish Executive, public agencies and local government.

2.14 Reference to transport within the National Planning Framework mirrors the sentiments expressed in the Scottish Executive's National Transport Strategy which is based on supporting the promotion of economic growth, promoting social inclusion and accessibility. The aim is to ensure that the development of transport is sustainable and minimises the environmental impact of travel. It encourages transport solutions focusing on sustainable transport options, while recognising that maintenance and enhancement of the trunk road network and supporting maintenance of the local road network is fundamental to Scotland's performance.

2.15 The Framework points to best practice where improvements are being seen in sustainable transport such as trains, buses, trams, ferries, cycling and walking to help to stimulate modal shift away from cars. Targeted improvements on the motorway and trunk road network are also tackling some of the critical congestion spots while freight facilities grants are being used to stimulate modal shift in freight from road to rail and water.

Partnership for a Better Scotland

2.16 The Scottish Executive Partnership for a Better Scotland[9] (2003) has four aims:

- Growing the economy;
- Delivering excellence in public services;
- Supporting strong communities; and
- Developing an ambitious and confident Scotland.

2.17 Transport issues are a key component within the document, which states: "our aim is an accessible Scotland, with a modern, safe, efficient and sustainable transport system".

A Smart Successful Scotland

2.18 The Scottish Executive's Smart, Successful Scotland strategy (2004)[10] sets out the ambitions for the Enterprise Networks. It is based around the themes of Growing Businesses, Learning & Skills and Global Connections.

2.19 Its aims include taking forward aspects of physical and electronic infrastructure, together with building the global connections of Scottish businesses to create

---

9 Partnership for a Better Scotland, The Scottish Executive, 2003: http://www.scotland.gov.uk/library5/government/pfbs-00.asp.

10 A Smart Successful Scotland, The Scottish Executive, 2004: http://www.scottish-enterprise.com/publications/smart_successful_scotland_refresh.pdf

world class locations; to be part of Europe and connected to the global economy. It also emphasises the need for "well integrated approaches to ensuring that we have globally attractive locations for work, study and living as well as for visiting."

2.20 Scotland: A Global Connections Strategy (2001)[11] accompanies the Smart Successful Scotland strategy. Its overall aim is "*to see Scotland recognised as the most globally connected small nation in Europe*".

2.21 The document states that a 'world class infrastructure' is required to achieve these aims, and "*the effectiveness of transport and communication links*" is highlighted as particularly important.

National Sustainable Development Objectives

2.22 'Choosing our Future: Scotland's Sustainable Development Strategy',[12] was published in December 2005. The key aim of the strategy is to present methods by which Scotland can adhere to the common, UK wide sustainable transport aim laid out in the 'One Future – Different Paths' document in March 2005.[13] This is an important policy to adhere to in development of transport options for the north east, its principal aim, as outlined below, should therefore be borne in mind:

"to enable all people throughout the world to satisfy their basic needs and enjoy a better quality of life without compromising the quality of life of future generations."

Social Inclusion

2.23 The Scottish Executive's approach, which is set out in 'Closing the Opportunity Gap', aims to prevent individuals and families from falling into poverty; to provide routes out of poverty for individuals and families; and to sustain individuals and families in a lifestyle free from poverty. There are six Closing the Opportunity Gap objectives, and transport can make a particularly strong contribution to three of these: on employability, regeneration and rural disadvantage. There are 10 targets within the overall objectives, a number of which have links to transport. Guidance on developing Regional Transport Strategies and Local Transport Strategies also emphasises the importance of tackling social inclusion issues across Scotland.

---

11 Scotland: A Global Connections Strategy, The Scottish Executive, 2001: http://www.scotland.gov.uk/library3/enterprise/agcs-00.asp.

12 Choosing our future: Scotland's Sustainable Development Strategy, The Scottish Executive, 2005: http://www.scotland.gov.uk/Publications/2005/12/1493902/39032

13 'One Future – Different Paths', The UK's Shared Framework for Sustainable Development, HM Government, 2005: http://www.sustainable-development.gov.uk/publications/pdf/SD%20Framework.pdf

3. MEETING TRANSPORT DEMAND: KEY PRINCIPLES

Transport, the economy and the environment – the policy framework

3.1 Central to the approach adopted to the development of the Regional Transport Strategy is the idea that the strategy should seek to intervene to achieve that balance between demand for transport and its supply that provides the greatest net benefit to the region as a whole, both for the current population and for future generations, and for the benefit of specific areas and socio-economic groups within the region.

3.2 While sustaining the regional economy is a key objective, recent reports by Sir Nicholas Stern[14] and Sir Rod Eddington[15] have highlighted (respectively) the need to take action now on climate change to avoid the risk of a major reversal of global economic performance, and the need for a realistic approach to the capability of transport to impact on the economy.

3.3 The message from Stern is that there is a need for action to be taken to reduce emissions from all sources, otherwise global economic performance will suffer, possibly significantly. While the region's contribution to climate change could be regarded as negligible in global terms, it is essential to be seen to make a contribution to meeting this challenge.

3.4 Eddington rightly highlights the importance of transport's role in improving economic performance in situations where there are severe bottlenecks and constraints on movement. Such constraints add to business costs and can deter people from entering the labour market because of extended and unpredictable journey times; higher costs reduce regional output and lack of labour limits the scale of production through increased wage costs. Regional GDP can be increased by reducing costs and expanding the supply of labour.

3.5 Eddington also stresses the importance of agglomeration economies, citing strong evidence to show that productivity is highest where effective employment density[16] is highest. Better transport can increase effective density by reducing the costs of movement, resulting in enhanced regional productivity and hence GDP and employment. The agglomeration effects discussed by Eddington are strongest in large cities (and especially London) and city regions: as discussed later, employment density in the north east is low and in Aberdeen is lower than any other large urban area in Scotland. We return to this in Chapter 4.

3.6 Reducing transport's impacts on climate change cannot be left to market forces, and therefore a strongly interventionist approach to planning is needed. This is because much of transport is not priced in the way that most goods and services

[14] Stern Review on the Economics of Climate Change, HM Treasury, October 2006.

[15] The Eddington Transport Study, HM Treasury, December 2006.

[16] Effective density is a combination of physical density per square mile and connectivity between people and employment locations.

are: this applies especially to use of private cars, but it also applies to freight vehicles. Eddington suggested that all external effects should be priced, so that road and other transport users are confronted with a cost that accurately reflects the real costs imposed on society, and not simply private (individual) costs. This points to road user charging as an element of future policy, which if implemented would have implications for the north east.

Policy context for use of roadspace

3.7 Road user charging looks increasingly likely to be part of the future policy framework, imposed by national government. The logic of road user charging is well known. At present, drivers of cars pay their own fuel and operating costs and associated taxes and duties, but these may bear little relationship to the cost of using roadspace, especially at peak times when other users are competing for the same space. That cost varies by time of day: the true costs to society in the region of using roadspace at peak time on a Monday morning is far greater than at the same time on a Sunday: the difference is that the roads are generally very congested on the Monday and hardly used on a Sunday at that time of day. The Sunday driver enjoys free flowing traffic and imposes no costs on other road users: however, both impose costs on the environment in terms of emissions, air quality and noise. This is a consideration contained in the recent National Transport Strategy for Scotland, which highlights the commitment of both the Scottish Executive and the UK government to reducing transport's impacts on the environment, while also sustaining economic growth.

3.8 Eddington highlights the role of prices in people's and companies' decisions about travel and about locations. Most goods and services have market prices which try to capture the real costs of their production and use. Carbon trading, for example, represents an attempt to capture the inter-generational costs of carbon emissions; and the price of tobacco products includes taxes which can be regarded as a proxy for the consequences to individuals and to society of smoking. In contrast, the market for private motorised transport is characterised by significant under-pricing at peak times and in urban areas, and possibly by over-pricing in rural areas at off peak times. Demand and supply are therefore very poorly matched in terms of the efficient use of resources.

3.9 The bus market is a commercial one, and this should in principle lead to a better match between demand and supply. However, it is also characterised by large operators which makes it difficult to attract new competition.

3.10 The aviation sector is characterised by a limited number of infrastructure providers, although a generally competitive position prevails for the provision of services, with exceptions such as constraints imposed by access rights to the busiest airports such as London Heathrow. However, airlines pay no taxes on aviation fuel and so the sector's carbon contribution, which although small in

comparison to the overall contribution of transport to UK emissions,[17] is almost certainly under-priced.

3.11 In the absence of properly functioning markets, especially for the use of private cars, there is an argument that there is a need to control and ration the use of scarce and expensive infrastructure through actions to alter travel demand. Decisions on the provision of more (or less) infrastructure also need to be guided by non-market criteria, including environmental outcomes and how provision affects social inclusion and health. This is a key element in the wider policy framework.

The policy framework and the north east

3.12 As will be evident from the findings that follow, the north east is characterised by high car ownership and use, combined with a relatively dispersed population and employment pattern. Despite this, the region's level of CO_2 emissions overall is marginally below the average for Scotland[18], which may reflect factors such as a high proportion of newer (more efficient) vehicles.

3.13 As discussed in the policy context, the biggest future challenge in the north east will be to sustain economic growth while slowing the growth in emissions, in line with national and international objectives. Road user charging may have the potential to achieve a positive non-zero-sum outcome[19] for the economy and the environment, by reducing overall transport demand while securing roadspace for the most valuable journeys[20], but in the absence of road user charging , other strategies available to address this challenge would centre on:

- Parking charges and controls
- Persuasion to change travel behaviour / choices
- Travel planning for businesses
- Measures to improve the overall competitiveness of public transport over cars – bus lanes to improve journey times, for example

3.14 Although these approaches may not in theory be as economically efficient as road user charging in securing roadspace for those journeys of greatest value, they may be more readily implemented especially when looking to achieve change in the short to medium term.

3.15 In considering emissions reduction into the medium to longer term, it is clear that land use policies also have a role to play: land use policies are powerful weapons which can reduce the need to travel by bringing people and activities closer together rather than allowing them to become more dispersed. Land use policies

[17] House of Commons Select Committee on Environmental Audit, Ninth Report - Reducing Carbon Emissions from Transport, 2006.

[18] See Table 7.1.

[19] A situation where there are positive outcomes against different objectives rather than where a gain against one objective is at a cost against another.

[20] This point is well made in SACTRA Transport and the Economy 1999.

can also therefore increase effective density of employment by promoting dense development in one or a small number of urban centres. Land use policies therefore also have the potential to achieve a non-zero-sum outcome, by reducing the need to travel while increasing effective employment density and thereby regional productivity.

3.16 The RTS will also assess how best to add to or to change existing infrastructure so as to meet future (and potentially competing) needs and demands. A key issue is whether current use is treated as the base upon which growth is projected due to population and economic change, or whether future plans should be based on targets for reductions in demand. The under-pricing of car travel has been a feature of the economy for many years, and cumulatively has led to the growth of a housing stock that is more remote than would be the case if travel had been priced more accurately.

3.17 This means that there is an inertia effect in seeking to reduce the need to travel, as it is very costly to move house and / or job, and it will take many years to change the current patterns of where people live and work. However, land use policies can more directly influence new locational choices, partly by changing the structure of relative land costs between rural and urban areas, and over time this will affect where activities take place and reduce the need to travel. Hence it is extremely important that planning and transport policies seek to achieve similar objectives.

Looking ahead – the need for a long term perspective

3.18 Beyond the period covered by the current strategy (the MTS) and looking towards 2021 and beyond[21], there are major challenges in forecasting that far ahead. In the chapters below we have used existing forecasts, but it is nonetheless useful to highlight the uncertainties that exist.

3.19 The first is concerned with the energy sector and the price of oil. A (sustained) high oil price will encourage exploration activity, and more exploration, especially sub-sea exploration in the eastern hemisphere, will benefit the region's oil sector businesses. However, it will also push up the costs of connections to everywhere else for all other sectors, which could harm the region's manufacturing and processing industry base. Additional taxes on fuel would reinforce these cost effects for both goods and people movements. The issues surrounding external links are taken up again in Chapter 6.

3.20 A second energy sector issue is how much use is made of nuclear and renewable energy, and the extent to which low cost and low carbon electricity might begin to replace fossil fuels for road and rail vehicles, for example through hydrogen as a fuel or through fuel cells in cars, goods vehicles and buses, and through rail electrification. Arguably looking at the medium term, transport policy cannot be separated from energy policy, and it would be dangerous simply to extrapolate a

[21] Bearing in mind that part of the strategy may be to provide long lived infrastructure. Investment in such infrastructure will have to be appraised over a 60 year period, well beyond the planning horizon of the RTS.

situation where existing conventional power sources continue to dominate the transport sector. Longer term transport policy could look significantly different if energy policy went through a major shift which ushered in an era of very different forms of personal transport.

3.21 Looking into the longer term it is also necessary to consider the influence of technologies, and in particular whether information and communications technologies (ICT) will really alter the demand for travel. It has been wrongly predicted for several years that ICT would reduce the need to meet face to face, but in reality in many sectors the perceived need to meet people face to face has increased. However, future improvements in ICT might change this trend, especially if the costs of travel increase relative to other costs.

4. THE NORTH EAST - DEMOGRAPHIC, ECONOMIC AND LAND USE FACTORS AND SOCIAL INCLUSION

Expectations for demographic change

4.1 The demand for transport is closely related to the size and structure of the resident population and where it is located with respect to employment and the services it consumes, including health and education. Over time, and certainly over a 15 year period, the population is also related to relative economic performance and prospects, and a relative decline in the number and quality of employment opportunities will have a negative impact on the size and socio-economic structure of that population.

4.2 The undoubted fact of the growth of the Edinburgh sub-region and the resurgence of Glasgow city, and the potential for future growth based on a better connected central Scotland labour market and business to business connections (with accompanying agglomeration effects) brings the need for changes in the future competitiveness of the north east into perspective.

4.3 Increasingly, business activity is attracted to where key skills are located. There are very particular factors that will affect where energy sector employment is located, and these factors largely do not transfer to other sectors. The energy sector is changing and it is evident that many places are beginning to claim pre-eminence in the renewable energy sector, so that despite its history of success in the oil and gas sector, the north east is not assured of a similar position within the future energy industry. This points to two things:-

- First, the need to be a highly competitive location for the energy industry however it evolves: in particular this means retaining and attracting skills and companies;
- Second, the importance of growing other sectors of business especially those less dependent on physical movements of goods and people.

4.4 A problem almost unique to the north east is its geographic isolation combined with its relative size. Distance from competing urban areas means a lack of a local market base for service businesses[22], and this typically limits the export markets: it is difficult (outside the energy sector) for the north east to be selected as a headquarters location, for example for serving part of the European business or legal services market. The north east may be selected for other functions, but potentially those generating lower value jobs which might also be mobile to lower cost locations.

4.5 This lack of a local market base cannot realistically be overcome by creating a larger city region with Dundee or Inverness. The north east has to at least hold on to its present high income population and seek to grow its population to develop a

[22] The upside of this is that local services are to a degree protected from external competition by the costs of serving the north east market, but this limited competition could in turn lead to higher prices and lower quality.

larger base market.

Population forecasts and projections

4.6 The total estimated population of the north east was 438,850 in 2001, comprising 211,910 persons in Aberdeen City and 226,940 in Aberdeenshire (National Census). The mid-year estimates by the GROS[23] for 2005 (using the same base as the 2001 figures) indicated a decline in the City population to 202,370 (a decline of 4.5%) while Aberdeenshire's population had grown to 235,440 (+3.7%). The City change compares poorly with Dundee City (decline of 2.3%), Edinburgh (growth of 2%) and Glasgow (0.0% change). However, local factors including the employment performance of the oil and gas sector over this period appear to have been at work in reducing population in the City in the period after 2001; increases in exploration and service activity latterly may have halted or reversed population changes, while there is anecdotal evidence that the attraction of immigrants from new EU member states (especially Poland) has been important, such that the region's population may have increased again.

4.7 There is inevitably considerable uncertainty about the likely position regarding population levels in 2021 and beyond. The GROS 2004 projections to 2016 are for a substantial overall decline in the population of the north east. These are projections, however, based on trends over a short period that were negative. The GROS projects a decline in the north east population of some 25,630 persons between 2001 and 2016, with over 24,000 persons being "lost" from the City over this period.

4.8 However, the mid year estimates for 2005[24] indicate a loss of around 1,000 compared with a forecast in 2004 (on a 2002 base) of a loss of over 8,000 for the north east as a whole. The region has apparently done better than the very adverse GROS prediction, and it is not surprising that the very detailed locally based forecasts indicate a much smaller overall loss to 2016 of some 2,500 persons.

4.9 This total could however comprise a loss of 6,800 from the City and a gain of almost 4,300 to Aberdeenshire, which indicates a continuing dispersal of population, the implications of which were noted in Chapter 3. Recent evidence on inflation of house prices, which showed that prices in Aberdeen rose faster than anywhere else in Scotland, suggests that population movement is at least partly driven by housing cost factors.

4.10 While the locally based estimates of population are likely to be more reliable than trend projections, the very large differences between the two future-casts of population indicate one of the principal areas of uncertainty. Additionally, there is no GROS projection beyond 2016, but the Strategic Forecasts for Aberdeen City and Aberdeenshire (2003 to 2021) indicate a decline of some 4,300 persons

[23] The General Register Office for Scotland.

[24] GRO Mid Year Population estimates 2005.

between 2016 and 2021, with around 57% of this loss being in the City[25].

4.11 In terms of age structure the average age of the population as a whole is increasing, but the Strategic Forecasts indicate that the most significant decline would be in the 30-44 age group from 2005 and in the 16-29 and 45+ age groups from 2016[26]. These structural changes point to issues concerning where these older age groups will live and how they will travel. Here aspects such as physical and financial health are important – a rich and fit society may wish to drive even more for leisure purposes (but probably outside peak hours), whereas a less fit society will demand better public transport. If in addition their settlement pattern is widely dispersed, these transport demands could be very difficult and expensive to satisfy to acceptable standards; similar considerations probably apply to other public sector services such as health care.

4.12 Population change together with changes in household size and composition also give rise to changes in demand for housing. Over the period 2006 to 2021 the Strategic Forecasts indicate an increase of 15,900 households in total; of this growth, 54% is forecast in Aberdeenshire, an absolute change of 8,650 households. By far the largest growth is in single person households followed by 2 adult households. The "2 adults with children" household is expected to decline by some 6,570 households over the period 2006 to 2021, with most of this loss (65%) forecast to take place in Aberdeenshire.

4.13 An added unknown in demographic forecasts is the attraction of immigrants especially from Eastern Europe and potentially over the RTS period from other new entrants to the EU, including possibly from Turkey. This effect has yet to be factored fully in to any forecasts, but could lead to important changes in the forecast outcomes, in terms of size of population and in age and household structures.

4.14 The Strategic Forecasts indicate growth in housing of almost 23,000 dwellings between 2003 and 2021, almost equally divided between City and Shire. Approximately 70% of the new houses forecast would be required within Aberdeen Housing Market Area, which at present is judged to extend 30km around the City.

4.15 Depending on the extent and pace of structural change in the economy, it can be expected that there will be a turnover of people and households. Therefore to sustain and grow the population and the economic base will involve attracting new people with skills and retaining people like students. The future population may also be more diverse than at present in terms of incomes, skills, age structure and household composition. It may also require different housing and services.

[25] Aberdeen City and Shire Strategic Forecasts.

[26] Ibid.

The economy

4.16 The future performance of the economy is a major factor underlying the demographic forecasts. A successful high wage economy will tend to attract more people, which deepens the labour pool and makes the north east more attractive to potential employers. The process is two way, as favourable changes in demographics – becoming a magnet for young entrepreneurs and people with in-demand skills – would attract business investment and employment, and multiplier processes would lead to spillover benefits for the wider community. However, there is also a need for a wide employer pool in order to attract people to move in, as this gives employees a choice of employers. This breadth of employer choice and opportunity appears to exist within the energy sector but not to the same degree in other sectors.

4.17 The Grampian region[27] has outperformed Scotland as a whole in terms of GVA per capita over a period of years. In 2002, the region was ranked third in the UK, behind London and Berks, Bucks and Oxfordshire. Compared to Scotland as a whole, GVA per capita in the region was 37.5% higher. To a large degree this reflects the economic structure and the level of GVA generated by the oil and gas sector.

4.18 Recent evidence points to a strong link between effective employment density and productivity, but there is a very low employment density in the north east. This suggests that the reasons for the north east's very high GVA are largely structural and specific to the region, namely the presence of a large amount of high value oil and gas activity based within the region. The corollary is that without structural advantages the region might perform very poorly in those sectors where agglomeration effects are most important, including services.

4.19 This shows the underlying potential weakness of the region – it lacks mass and density to be a competitive service location, its industries that rely on goods movements will come under cost pressures due to future environmental and other policies, and as the energy sector evolves there are new locations competing for the role as a centre for renewable energy. An added factor is that the renewables industry may generate lower GVA per head than oil and gas if there are more players and fewer economies of scale.

4.20 At present, and for the short term at least, economic performance is reasonably sound. GVA per head is high and while this includes profits (which do not necessarily remain in the region), evidence on earnings shows that the region enjoys higher earnings than either Scotland or Great Britain as a whole. Average earnings in Scotland were 10% below GB (2004) whereas the north east earnings were 3% higher than GB[28], which of course includes London and the South East. Again this reflects earnings in the oil and gas sector, which despite accounting for

[27] Here including Moray, as GVA data are available only for this (NUTS 2) region.

[28] National Statistics Online: http://www.statistics.gov.uk/, based on data extrapolated from the 2001 Census.

only some 15% of employment[29] is a dominant player in the regional labour market.

4.21 In terms of occupations, compared with Scotland as a whole, the region has a higher representation of managers and senior officials, professionals, skilled trades process plant and machine operatives as well as elementary jobs. This structure reflects the emphasis on oil and gas and manufacturing within the economy.

4.22 Unemployment is low although there are pockets where worklessness is high. In the urban area there are no apparent constraints on labour market efficiency which either limit companies' abilities to recruit or to use labour and skills effectively. Better connectivity within the urban area will make the labour market more efficient still, reducing the time needed to recruit and fill vacancies and to match applicants to jobs more precisely. However, initial analysis suggests the gain to the economy from this will be marginal. In the more rural areas, companies tend to experience more difficulties with recruitment and with getting and keeping the right people. Better connectivity for travel away from (rather than around or into) the urban area might well benefit companies located 20 – 30 miles from Aberdeen. The extent to which this is enabled by the AWPR and then by other potential interventions will be considered in the development of the Regional Transport Strategy and other studies.

The oil and gas sector and renewable energy industries

4.23 As suggested above, the short to medium term future of the region's economy depends in fairly large measure on how the oil and gas sector develops, while into the medium term the structure and performance of the renewables sector and the region's participation within it will be more critical. Even the short term is very difficult to predict: most economic forecasts are usually for 2 – 5 years and are heavily laden with caveats regarding significant uncertainties such as the price of oil, the value of the US $, and the performance of the US, EU and far eastern economies. For the North East, an oil price sustained around $75 a barrel would adversely affect traditional manufacturing sectors which have to export physical products and where transport costs play a role in competitiveness. This applies particularly to "commoditised" industries (such as parts of the paper industry), less so to those companies in defensible high value sectors such as whisky.

4.24 At this price level, enhanced recovery from existing North Sea fields and a higher level of exploration activity would be expected; were this to result in significant finds for example in the west of Shetland basin, Aberdeen and Aberdeenshire would benefit as the closest concentration of sub-sea development and recovery expertise. Similarly, sub-sea oil provinces elsewhere in the world become more attractive and more viable at higher oil prices, and the region is already operating successfully as the principal source of management and technical expertise for the oil and gas industry, and especially for the sub-sea sector of the industry.

[29] Including engineering activity related to oil and gas activity. Using the standard classification, energy and water account for 8% of employment, but this under-represents employment in the oil and gas sector.

4.25 Previous oil price spikes inevitably led to a combination of greatly increased exploration activity, followed by field development and recovery, plus drives for energy efficiency across every oil-using activity. This in turn led to prices returning to their "normal" levels. At present, the price spike is not an artificial one created by politically based actions, but a consequence of emergent economies breaking through as major exporting nations. Abstracting form political factors (Iran being the most obvious at present), it is likely that the oil will fall from its present level as other resource constraints take effect in economies like China and India and as factor prices increase. However, most commentators expect "normal" prices to be sustained at levels higher than those that prevailed in the 1990's. This is likely to produce a continuing but not dramatic benefit to the north east in terms of oil and gas industry activity, within which an additional boost to technical jobs will come from decommissioning work on existing production platforms.

4.26 The industry also has longer term aspirations to transform itself from being primarily oil based to being a more broadly based industry, which would include renewable energy technologies such as wind, wave, and forestry / waste / biomass. There is some optimism regarding this potential, but it is noted that activity in renewables is not anchored in the same way as exploitation of local natural resources, and that other areas also have ambitions and expertise in renewables. Nonetheless, the aim of developing a Centre of Excellence for the energy sector appears to be sensible given the base the region has on which to build.

4.27 The 2004 Strategic Forecasts for the oil and gas sector (Source: Aberdeen City and Shire Strategic Forecasts 2004) indicate a decline in employment of 14,000 between 2003 and 2021, of which onshore job losses account for 5,500, and offshore 8,500. The impact on the resident population is moderated in that the effect is most likely to be impacts on the temporary or transient population which works mainly offshore. What this does not include is multiplier driven impacts on other sectors, which could be quite significant given the level of wages in the sector (which would affect the induced multiplier effect) and the extent of local linkages, which would affect the indirect multiplier effect.

Other sectors

4.28 Manufacturing accounts for around 10% of total employment in the north east, with "clusters" in food and drink manufacturing and processing, engineering and paper. It is strongly export (from the region) based, and performance depends on its ability to compete in UK national and in overseas markets. Many of the major companies are owned outside the region, and plants in the north east have to compete with other plants in the same business for investment. Transport factors – primarily costs and speed and reliability to market - enter directly into plant and industry competitiveness.

4.29 In line with long established UK trends, the manufacturing sector has been shedding employment and is expected to continue to do so, with a forecast decline

from 21,550 jobs in 2003 to 18,450 jobs in 2021[30], although these will depend on transport and energy costs in the UK and competition from emerging economies.

4.30 Construction activity and employment is closely linked to the performance of the national and regional economy. In the residential and commercial sector, activity levels are influenced by national factors such as interest rates and GDP growth, and by consumer and business confidence. Especially in the civil engineering sector, but also for large projects such as hospital construction, government policy and funding strongly affect activity, and locally major new projects (the AWPR in particular) will require construction resources, including labour.

4.31 An on-going issue facing the construction sector is lack of people with appropriate skills, in part due to lack of training during the industry's lean years and partly because it is not seen as an attractive industry in which to work by potential recruits. There is some evidence that this is resulting in wage (and therefore cost) escalation and the attraction of foreign workers, who may not always have appropriate skills and training. In a region which has difficulty in attracting skills to the area, major public sector projects could crowd out some private sector ones as well as affecting construction costs. This would feed through into the residential sector and could affect demographic change.

4.32 The Strategic Forecasts are quite up-beat about this sector and expect employment to grow from 13,500 in 2003 to 14,600 in 2021[31].

4.33 In the revival of urban centres across the UK, service sector growth both in employment and in GVA, has been the major driver. The Strategic Forecasts are, however, somewhat downbeat about service employment growth and predict growth of only 1.7% between 2003 and 2021 to a total of 138,950 jobs[32]. However, employment is expected to peak in 2016 at 140,350 jobs, before declining, in line with demographic forecasts. The forecasts appear to see the service sector as largely oriented towards the local market rather than as export sectors, serving wider markets in the UK and elsewhere.

4.34 In part this reflects the apparent structure of much of the private sector service base, which is dominated by (often quite small) outposts of larger Scottish and UK firms. If the north east remains around its present size in population terms and does not develop "export" oriented service industries, these forecasts appear broadly correct.

4.35 Within services, the following sectors are expected to experience most change between 2003 and 2021[33]

- Retail distribution: 8.1% growth

[30] Aberdeen City and Shire Strategic Forecasts 2004.

[31] Ibid.

[32] Ibid.

[33] Ibid.

- Financial and other services: 2.8% growth
- Public sector and armed forces: 4.9% decline
- Social and personal services: 12.1% growth.

4.36 Overall, total employment is forecast to decline by 4.7%, but it is noted that relatively poor employment growth is expected in the financial and other services sector, which elsewhere has been a driver of high added value growth. The highest growth is expected in sectors like retail and personal services where many of the employees could have relatively low skills and low earnings.

4.37 Some of the interviews undertaken suggested that at present, the retail "offer" of the City centre is poorer in terms of size and quality than what would be expected in a region of over 430,000 people with among the highest average earnings in the UK. Some of the spend that would typically be captured by a large centre appears to be diverted to out of town retail centres, but anecdotal evidence suggests that Dundee's (now much improved) shopping offer benefits from leakage, at least from the southern part of the region. Better accessibility from the north of the region could exacerbate this leakage, unless Aberdeen centre becomes more competitive in terms of scale, range and quality. This will be necessary to realise the forecast 8% employment growth in retail.

4.38 More densely populated centres like Glasgow (with approximately 3,000 people per sq km) and Manchester have created vibrant town centres based on a leisure and retail economy, in which these activities extend well beyond the normal working day, if not quite being true 24 hour cities. Part of the strategy adopted in Glasgow, Manchester, Liverpool and elsewhere involved creating town centre apartments within walking distance of service employment and the core retail and leisure offer. This is probably more difficult in Aberdeen because of the dispersed nature of employment and city land values.

4.39 While growth in self employment may improve matters, it is hard to escape the conclusion that, on the basis of these forecasts, GVA per head in the region is likely to decline relative to Scotland and the UK as a whole, largely because of structural factors, unless the region holds on to and preferably extends its strong energy sector role *and* the renewables sector has a similar GVA profile to that of oil and gas.

Implications for transport and the economy

4.40 A relative decline in GVA per head, together with the ageing population, will likely contribute to reduced demand for (but by itself, not for absolute levels of) car use[34], provided the population distribution does not become more dispersed. This will depend on the success that the region as a whole and the City in particular has in re-inventing itself as a dynamic, high value service based economy.

[34] Low income growth and more people being too old to drive will reduce the growth in car use, but will not benefit the economy.

4.41 Of course, if the GROS demographic projections are nearer to future reality, the region would also lose around 25,000 jobs. If the remaining population were dominated by the elderly and low skilled, the consequences for the region would be serious and the prospects of revival slim, as suggested by Eddington[35] that transport will not regenerate an economy with no other growth pressures.

4.42 There is clearly a huge level of uncertainty here, given the forecast period. There are inevitably considerable uncertainties about world economic performance, about energy sources and prices, about access to water in the emerging and developing economies and about the effects of climate change. There are also issues about future technologies, most immediately those affecting oil exploration and extraction, alternatives to fossil fuels, transport and information and communications. All of these could have significant effects and could mean that forecasts based on long term extrapolations are difficult to accurately predict.

4.43 However, if it is assumed that the longer term outcomes will lie somewhere between the two demographic forecasts and that the economy will continue to grow at around its long term growth trend in productivity (about 2.5% per annum), then these forecasts provide an upper and lower range of expectations for use in the development of the strategy. This then indicates that there is a major task to be undertaken to make the region more competitive as a place and in particular to attract and retain both high level skills and high GVA per head economic activities.

4.44 While the recent past may not be a good guide to the longer term future, it is likely that, in order to retain its position as a high income economy, the region and the City in particular would have to emulate other city-regions that have successfully grown their economies and transformed their prospects. As Prof Michael Parkinson observed, all successful regions have a successful city at their heart (see Competitive European Cities: Where do the Core Cities Stand: Prof Michael Parkinson et al, ODPM 2004), and it is difficult to see how the north east can develop and to a degree re-invent itself without also transforming the role and performance of the city.

4.45 What are currently problems could become opportunities. In particular, the city centre appears to have more sites and properties with low value uses than would be expected, and at the same time there is an absence of large scale development going on. While major physical change may well be needed in order to get city centre sites used more intensively so as to create a denser core of activities (and with that, agglomeration benefits), the fact that land resources are (or at least appear to be) under-used suggests that in the right policy context these could form the basis for city centre revival.

4.46 Other positive features include potential for further development by the ports and the airport which can both develop as employment centres and as gateways. The airport in particular is likely to contribute significantly to improving “positioning”

[35] The Eddington Transport Study, HM Treasury, December 2006.

of the region if plans to extend the runway by 300 metres proceed rapidly, as this would enable long-haul flights, including perhaps direct links with key oil cities such as Houston and possibly with other key destinations and hub airports, thereby giving better access to oil and gas development territories such as West Africa and parts of the former Soviet bloc.

4.47 Similarly, shipping services have been developing as links with new oil developments have become necessary, and there are, for example, three ships per month from Aberdeen to West Africa. This sort of activity is very much in line with the intended future role of the region as the international centre of excellence and technical / management resources for oil development in this hemisphere and especially for sub-sea developments. As the Baltic and Russia grow as markets, shipping services to that region will increase, and the north east ports offer the shortest sea crossings to there from the UK.

Land use

4.48 The most striking feature of the region in terms of land use is the extent to which both residential and economic locations are dispersed. More than half of the population (56%) lives outside the City, compared with 43% of the population in Dundee and Angus, and 42% in the case of Edinburgh and the Lothians. Table 2.1 shows population densities based on 2005 population estimates, and employment densities (jobs per sq km) based on 2005 employment data.

4.49 The population data show the lower density that exists in the north east compared with Dundee and Angus which is the closest comparator area. Aberdeen City has a population density of 1,089 persons per sq km, which is much lower than Dundee, Edinburgh and Glasgow although this may in large part be due to geography and administrative boundaries. Similarly, although an area adjoining a city, Aberdeenshire has a lower density than Angus, Moray and South Lanarkshire, and is more comparable to the more remote rural areas like Dumfries and Galloway and Borders.

TABLE 4.1 POPULATION AND EMPLOYMENT DENSITIES

Administrative area	Persons per sq km	Jobs per sq km
Nestrans	**67**	**42**
Aberdeen City	1,089	931
Aberdeenshire	37	16
(Dundee & Angus	112	598)
Angus	50	20
Dundee City	2,376	1,320
Dumfries & Galloway	23	10
East Lothian	135	44
Edinburgh, City of	1,736	1,304
Glasgow City	3,298	2,365

Moray	39	21
Renfrewshire	651	318
Scottish Borders	23	11
South Lanarkshire	173	68

Source: GROS and Government Statistics Local Area Labour Market Indicators 2005

4.50 Employment locations are also dispersed, for example

- There are major concentrations of employment on the edge of the city at Altens, Dyce and Bridge of Don and outwith Aberdeen at Westhill and Portlethen;
- There are smaller clusters of employment in the larger towns in the rural hinterland such as Inverurie and Peterhead;
- A significant proportion of office based sectors are located outside rather than within the city centre; and
- Health sector and other public sector jobs are also located away from the city centre.

4.51 As a consequence, spatial employment density[36] in the north east is very low, much lower than almost any other area apart from relatively remote rural areas like Borders and Dumfries and Galloway. Employment density in Aberdeen is also very low compared with Dundee, Edinburgh and Glasgow.

4.52 Evidence on travel to work indicates a very dispersed pattern of trip making, with people living south of the City often working to the north in places like Dyce and Bridge of Don, and others living to the north and travelling to the south. In both cases people either travel through the City or find "rat runs" to avoid the built up area as far as possible. It also appears to be the case that trips into the City are to dispersed locations because service sector employment is not concentrated into a central business district.

4.53 The major out-of-centre sites, which contain many of the operations of companies in the oil and gas sector and its suppliers, also generate substantial amounts of both freight traffic and inter-site movements by personnel, reflecting the way many companies developed on multiple sites after they first located operations in the Aberdeen area.

4.54 This has important implications for the provision and use of transport, because the comparative advantage of personal transport (primarily the private car) as a means of access is greatest where there are highly dispersed residential and employment locations. And as discussed below, car use is high in the north east. In contrast, in Glasgow where a large employment base is combined with a much denser core of employment, public transport has a comparative advantage for a higher proportion of employment trips than is the case in Aberdeen.

[36] The term employment density is also measured in relation to working age populations, but here the concept is used in terms of land use.

4.55 The Census (2001) showed that more people travel to work by car in the north east compared to Scotland as a whole, and that the proportion in rising. This in part reflects the level of disposable income in the region and in part the dispersed land use pattern.

4.56 Interviews with private sector builders, developers and property agents all suggest that market forces will tend to increase rather than reduce this level of residential dispersal. This reflects what appear to be preferences among a proportion of the population for space and country living, even if that involves additional travel. Land and property prices are also relatively high in Aberdeen itself, and consequently people seeking more space per £ generally move away from the urban area. The counter trend is for some people, especially those in the growing single person household group to move into city centres, and again this is happening in Aberdeen with builders undertaking developments of apartments.

4.57 These trends are found almost everywhere in the UK. However, in the opinion of the private sector interviewees, the AWPR may encourage further "de-concentration" and dispersal, with lower densities of residential development taking place even further from the City. This is because people in the north east appear willing to tolerate up to 45 to 60 minutes of car commuting, and with the AWPR in place this level of commuting can be undertaken from a further 10 – 20 miles further away, into rural areas where more home space per £ is available. However, as one developer pointed out, if the same space per £ could be provided close to the City, a proportion of the market would prefer the combination of space and a shorter rather than longer commute. To achieve this will require land use policies which provide greater choice, particular in and close to Aberdeen, which could result in a relative decline in land prices on the periphery of the City.

4.58 This represents the market view of development in the region and of the potential role of the AWPR and its effects on settlement patterns. These views reflect what people in the development industry are seeking but are based on trend projection of constrained land supply in and around Aberdeen and the lack of up-to-date plans. New Structure Plans and Local Plans for both Aberdeenshire and Aberdeen City will seek to redress the imbalance of recent years.

4.59 If the private sector view is correct, but planning policies do not enable significant levels of new development closer to the city, demand for development is expected to take place along the principal radial corridors and in "market towns" which, having a base of services and an established community, are attractive locations for developers. Already there are signs of development taking place further out in places like Peterhead, and if this view is correct (and development is permitted), this pattern could lead to demand for development in places possibly as distant as Turriff, Huntly and around Stonehaven. In view of the AWPR "fastlink" proposal, the area bounded by this the AWPR, and the A90 is viewed by developers as especially attractive.

4.60 Clearly, land use and settlement patterns are also influenced by planning policies and by decisions on individual planning applications. The RTS is, however, an opportunity to bring together land use and transport issues, particularly given the

findings on the potential impacts of the AWPR.

Social exclusion, multiple deprivation and health

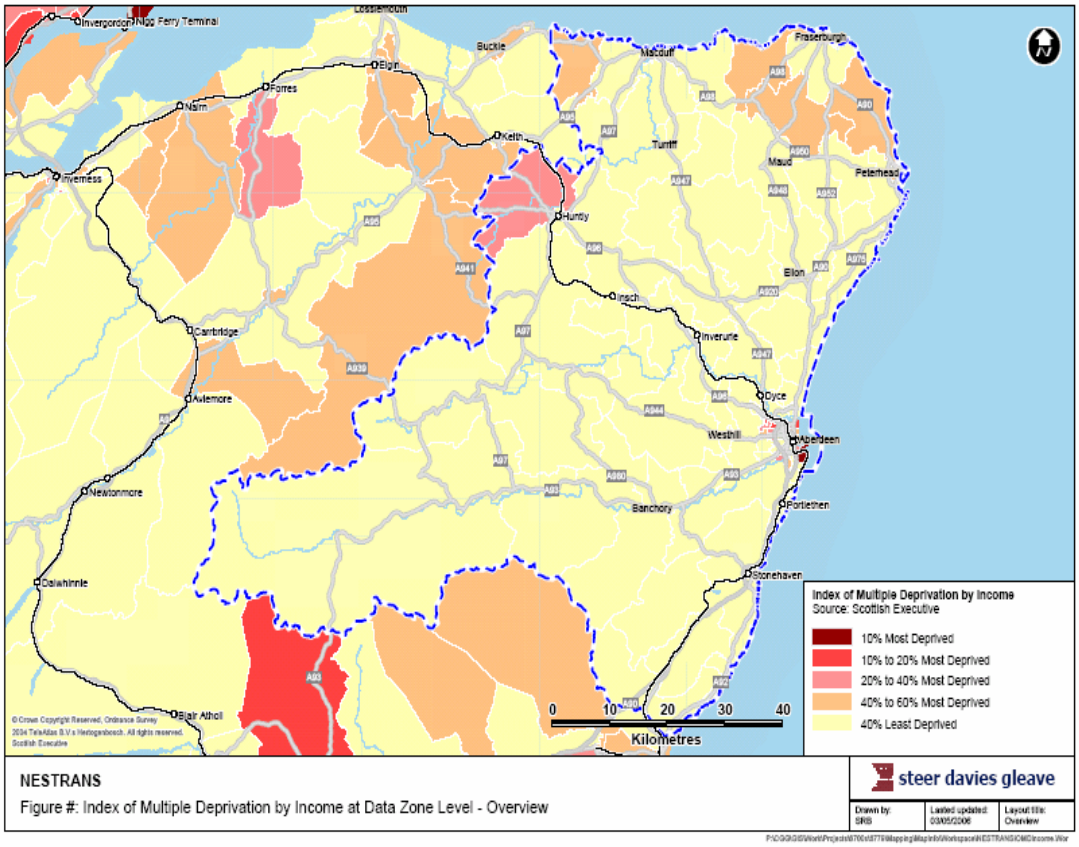
4.61 In every region, no matter how well its economy performs, there will be disparities and inequalities. Often there remain pockets of high deprivation, characterised by worklessness, sometimes stemming from inappropriate or no skills, lack of motivation and a history of being without work. Residents of such areas can suffer from "transport poverty", with minimal levels of access to a vehicle. Public transport fares can also be a barrier if they are seen to be high in relation to disposable income. Transport is often given as a reason for not working, but while it may play a role it is only one of several factors, which often include an unwillingness to travel outwith a "home area" to get to a workplace.

4.62 In general, most of Aberdeenshire falls into the category of 40% least deprived in all of Scotland[37]. However, there are specific pockets of deprivation, which are mapped in Figure 4.1, particularly the following twelve wards:

- Durn (40% to 60% most deprived)
- Banff (20% to 40% most deprived)
- Macduff (40% to 60% most deprived)
- Buchan North and Central Buchan (40% to 60% most deprived)
- Lonmay and St. Fergus (40% to 60% most deprived)
- Fraserburgh
  - East (40% to 60% most deprived)
  - West (20% to 40% most deprived)
  - North (10% to 20% most deprived)
- Peterhead (20% to 40% most deprived)
- Buchanhaven (20% to 40% most deprived)
- Clerkhill (20% to 40% most deprived)
- Dales Towerhill (40% to 60% most deprived)

[37] UK Census, 2001.

FIGURE 4.1 DEPRIVATION MAP OF NESTRANS AREA



4.63 These findings are consistent with the IOMD health rankings. The following ten Aberdeenshire wards are also ranked as deprived in terms of health:

- Banff West and Boyndie (40% to 60% most deprived)
- Banff (40% to 60% most deprived)
- Macduff (40% to 60% most deprived)
- Buchan North (40% to 60% most deprived)
- Fraserburgh East (20% to 40% most deprived)
- Fraserburgh West (20% to 40% most deprived)
- Fraserburgh North (10% to 20% most deprived)
- Peterhead (20% to 40% most deprived)
- Buchanhaven (40% to 60% most deprived)
- Clerkhill (40% to 60% most deprived)

4.64 In terms of employment, Peterhead and Fraserburgh North wards rank as 20% to 40% most deprived while the remaining areas (Banff West and Boyndie, Buchan North, Banff, Macduff, Fraserburgh West and East, Clerkhill and Buchanhaven Ward) fall under the 40% to 60% most deprived.

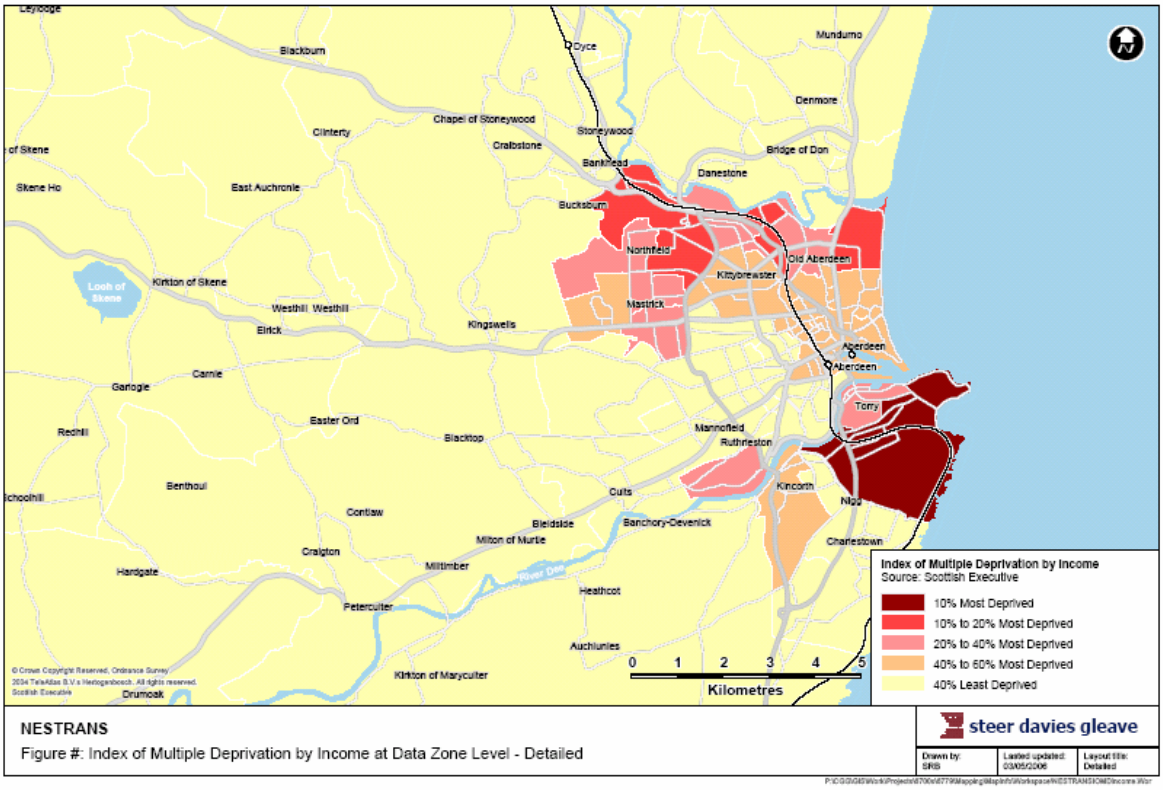
4.65 In Aberdeen City, Seaton is ranked as 10% to 20% most deprived in terms of income in all of Scotland. Wards such as Auchmill, Cummings Park and Woodside Ward also fall under this category. In addition, areas such St. Machar,

Mastrick, Summerhill, Springhill, Garthdee and Torry are ranked as 20% to 40% most deprived.

4.66 The IOMD rank for employment is fairly consistent with the rank for income. Springhill, Cummings Park, Auchmill, Hilton, Woodside and St. Machar fall under 20% to 40% most deprived in terms of employment. Similarly, these areas also rank as the most deprived in terms of health with Seaton ranked as the top 10% most deprived in all of Scotland.

4.67 Figure 4.2 below shows areas of deprivation within the City.

FIGURE 4.2 DEPRIVATION MAP OF ABERDEEN AREA



5. TRANSPORT PROVISION AND USE

Introduction

5.1 The most distinctive feature of the north east is the way land use and the economy have co-developed, which has led to housing and employment locations being very dispersed, and consequently to high car dependency. High income levels, rural living, employment sites away from transport nodes and other factors combine to generate high levels of car ownership and car use. These all combine to generate a complex pattern of trip making, largely by car. Unlike most cities where a high proportion of trips are into a dense urban core, in Aberdeen many travel to work trips are to the periphery and off-centre employment locations; and many of these journeys to work are cross city, with people living to the north of the city travelling to places like Altens, and people living along the A93 corridor travelling to Dyce and Bridge of Don, for example. Many businesses also operate on a number of sites, which additionally generates cross city business related travel during the working day, as well as requiring access to a vehicle during the day.

5.2 The well known constraints such as at Bridge of Dee and around Anderson Drive lead to what is locally regarded as severe congestion; in addition, traffic seeks to avoid these pinch points by using rat runs through residential areas and on minor roads further away from the City, which can lead to high levels of traffic in rural villages. There is some interview evidence that this makes the north east something of a "culture shock" to new residents especially those from the USA; but there is also evidence that people become acclimatised to these factors and that the strengths of the region as a place to live usually overcome the negative transport factors.

5.3 Prior to the development of the RTS, the AWPR was the principal intervention planned to address these traffic problems and reduce travel times and costs for both personal travel and for freight. To ensure that any suppressed demand for car travel in the region, which could be released by the AWPR, does not outweigh the benefits, a key aspiration is to "lock in" the benefits of the AWPR and accordingly to limit the amount of generated traffic. Land use policies can contribute to this, by concentrating residential development closer to employment locations in order to reduce the need to travel, but transport measures are also required if this aim of sustaining the AWPR's benefits is to be achieved.

5.4 The dispersed nature of employment and residential settlements make it difficult to effect large scale transfers to public transport without the (potentially high) cost implications of more frequency on thin rural routes. As discussed elsewhere, this underlies the need for transport measures to manage demand, as well as land use measures to reduce the need to travel.

Car ownership

5.5 Figures from the Scottish Household Survey indicate that car ownership in the

north east is higher than the national average, and that the rate of increase is slightly higher than the average for Scotland[38].

5.6 Car ownership is linked to the level and distribution of personal and household disposable incomes. The higher proportion of households with access to at least one car in the north east is at least partly explained by the relative strength of the regional economy. In particular, car ownership in Aberdeen City is higher than the average for Scotland as a whole. Levels of car ownership in large cities are usually lower than this average, and Aberdeen's level of car ownership may reflect factors such as a higher proportion of company cars (which would reflect the economic structure and the need in some sectors to have a car available during the working day) as well as higher average incomes.

5.7 However, car ownership is not the same as car use: in continental Europe, car ownership is generally higher than in the UK, but car use is lower. One factor generally held to be important in this respect is the higher quality of public transport in most continental cities, which in larger centres often includes a rail based network giving access to a dense central employment area. European cities also tend to be denser in terms of settlement pattern.

5.8 The fact that the north east has a relatively high rural population also contributes to high levels of car ownership. As shown in Table 5.1, only 16% of households in Aberdeenshire do not have access to a car, while over a third have two or more cars. Compared with an average of rural areas shown in Table 5.1, both City and Shire have fewer no-car households, fractionally more one car households, but markedly more two and more car households. An estimate has also been made of cars per 1000 people[39]. The City is exactly the same as the average for all of Scotland, but is well above the average for large urban areas.

5.9 Aberdeenshire has a level of car ownership almost as great as that for accessible rural areas, where car ownership tends to be very high because of lack of alternatives. As Aberdeenshire comprises all three types of rural areas the fact that its level of car ownership is so high indicates that factors other than rurality affect car ownership. Income is clearly one of these, a related factor is the link between the quality of life benefits of living in a rural area and the mobility needed to access urban area facilities as well as employment. High per capita car ownership together with a relatively large dispersed population increases the potential use of private cars.

[38] This chapter draws on work undertaken for NESTRANS by RGU, but includes much additional data, analysis and commentary.

[39] This is based on per 1000 adults and is not comparable with European data on car ownership. It does however give a good basis for intra Scotland comparisons.

TABLE 5.1 CAR OWNERSHIP: COMPARISON OF ABERDEEN AND ABERDEENSHIRE TO SCOTTISH AVERAGES 2004

Cars per household	0	1	2	3+	Cars per 1000 of population
All Scotland	**34**	**44**	**19**	**3**	939
Large urban areas	43	41	14	2	757
"Accessible" small towns	26	47	23	4	1065
"Remote" small towns	35	48	16	1	840
"Accessible" rural areas	17	44	33	6	1321
Aberdeen City	31	47	19	2	939
Aberdeenshire	16	48	30	7	1306

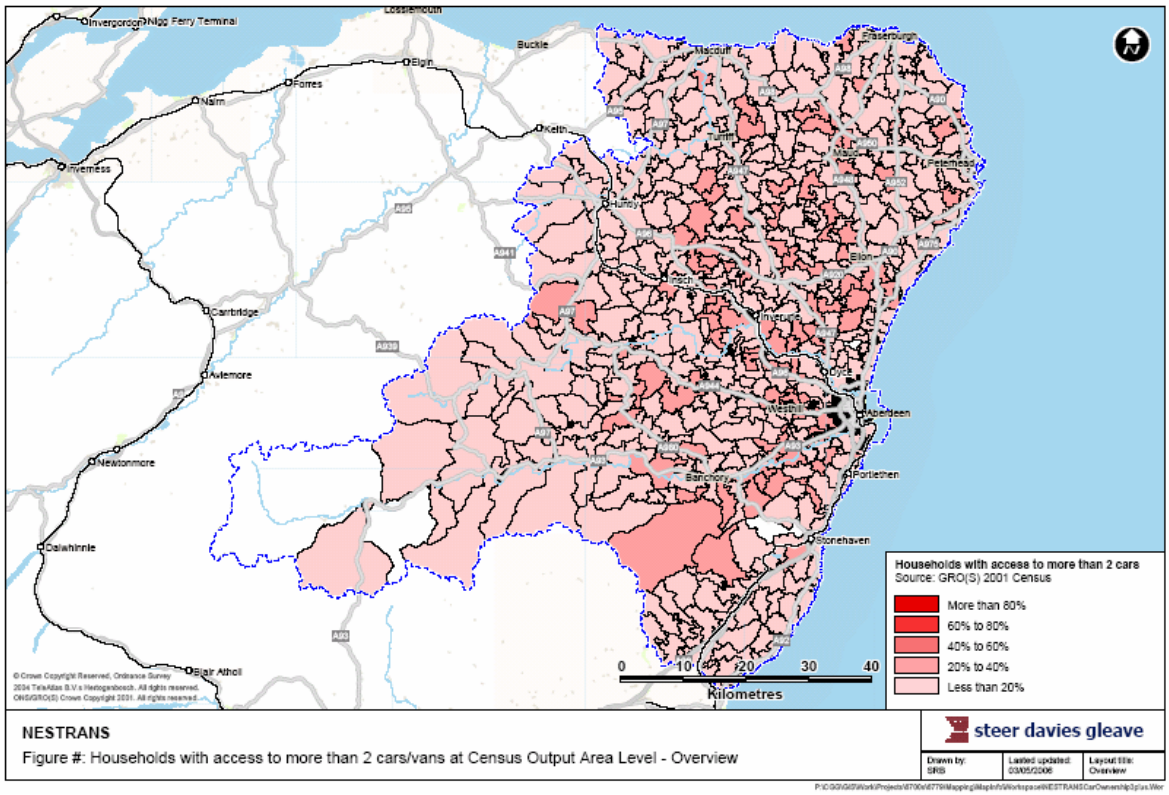
Source: Scottish Household Survey 2003 / 2004 and Steer Davies Gleave

5.10 Just as income is not evenly distributed across a region, car ownership varies by sub-area. Figure 5.1 over shows car ownership by ward. This shows the uneven distribution: for example, only 3.5% of households in Kingswells do not have a car, and two other settlements, Westhill (6.4%) and Newtonhill (8.7%) also had low levels of non car ownership. Over half of households in these three settlements had two or more cars. Similarly, four wards within Aberdeen have less than 10% of households without a car.

5.11 In contrast, more than 60% of households in Seaton did not have a car in 2001; there were also low levels of car availability in St Machar, Castlehill, Tullos, Pittodrie, Woodside, Torry and Langstane electoral wards – all with less than half of households with a car.

5.12 In Aberdeenshire, car ownership is relatively low in the larger towns, again as might be expected in view of the reasonable ease of access to local services and to public transport. Nevertheless, while around 20% of households in Inverurie, Stonehaven and Laurencekirk did not have access to a car, car ownership is still higher than the national average. Again income levels are a factor in this, but access to public transport – in part reflecting the very dispersed settlement pattern observed earlier – is likely also to be a factor. There are also pockets of low car ownership (over 35%) in parts of Peterhead, Fraserburgh and Banff.

FIGURE 5.1 CAR OWNERSHIP BY WARD IN NESTRANS AREA



Source: 2001 Census

5.13 The proportion of the population (over 17 years of age) who possess a driving licence is substantially higher in the north east than the average for Scotland (76% versus 65% respectively). As with car ownership, the proportion of those with a licence is also increasing slightly faster than within Scotland as a whole.

5.14 Not surprisingly, a higher proportion of those living in the rural parts of the region are drivers; 82% of Scottish Household Survey respondents in Aberdeenshire possess a driving licence. The proportion in Aberdeen City is lower (70%), but still higher than the national average (65%).

Car use

5.15 Car ownership is not a problem in itself: The problems of congestion, delays, uncertain travel times and lost productive time arise when too many cars (and other vehicles) are used at one time in a small area. However, all car use adds to greenhouse gas emissions.

5.16 Half of motorists in the North East of Scotland use their car every day, compared to 42%, nationally. An even higher proportion of residents in Aberdeenshire drive every day (55%) compared to the Scotland average (42%), and again the rate in Aberdeen City (45%) is slightly higher than for Scotland as a whole

5.17 The proportion of Household Survey respondents that drive every day remained relatively stable between 1999/2000 and 2003/2004.

5.18 Table 5.2 shows people's usual method of travel to work. This reveals that the City is as reliant on motorised modes as are large urban areas as a whole; however, within this the use of the car is significantly higher (67% compared with 59%). Use of the car as driver is even higher, indicating that car sharing is slightly less prevalent in the City than in other large urban areas. Bus use is lower and rail use is less than 1% of survey respondents. Use of "other" modes is however higher in the City: these include taxis and motorcycles.

5.19 Walking to work is marginally higher in Aberdeen than in large urban areas across Scotland, while cycling is marginally below. In Aberdeenshire, walking is low compared with the average of rural areas while cycling is the same as the average. This may reflect distances and the locations of work places relative to residential areas, but factors like climate might also play a role.

5.20 The use of the car is higher in all rural areas, which reflects mainly the lack of public transport serving much of rural Scotland. To compare Aberdeenshire an average of the three types of rural areas was used. This shows that Aberdeenshire residents make more use of the car than the rural average, and make less use of bus, rail and walking.

5.21 Table 5.3 looks at frequency of car use. This shows that Aberdeen has more daily and three per week drivers than large urban areas as a whole. Shire residents' frequency of use is similar to accessible rural areas which are characterised as being more remote from urban centres than is most of Aberdeenshire. Comparison using the average of the three types of rural areas shows that Aberdeenshire is similar across all use frequencies except daily use, where Aberdeenshire's use frequency is 17% higher.

5.22 Using estimates of actual frequencies, an index number (with all Scotland as 100) was constructed to enable comparisons. This shows that while the index of use frequency in large urban areas is 81, in Aberdeen it is 106, which is 31% higher than the index for all large urban areas. Similarly for Aberdeenshire the index is 128, almost identical to that of accessible rural areas and 14% higher than the rural average of 112.

TABLE 5.2 TRAVEL TO WORK BY MODE 2003/04

	CAR			OTHER MOTORISED				NON MOTORISED	
	driver	passenger	all car	bus	rail	other	all motor	walk	cycle
All Scotland	60	8	68	12	3	2	85	13	2
Large urban areas	51	8	59	19	4	2	84	14	2
"Accessible" small towns	63	9	73	8	3	3	87	12	1
"Remote" small towns	50	10	60	6	2	3	71	26	3
"Accessible" rural areas	75	7	82	6	2	2	92	8	1
Aberdeen City	60	7	67	13	0	5	84	15	1
Aberdeenshire	71	8	78	4	1	4	87	11	2

TABLE 5.3 FREQUENCY OF CAR USE 2003/04

	Use per week			Use per month			Index Scotland = 100
	Every day	At least 3	One or two	Two or three	Once	< Once	
All Scotland	42	11	6	1	0	2	100
Large urban areas	34	9	5	1	0	2	81
"Accessible" small towns	46	12	6	1	0	1	109
"Remote" small towns	40	11	7	1	1	1	96
"Accessible" rural areas	55	13	7	1	0	1	129
Aberdeen City	45	12	5	0	0	1	106
Aberdeenshire	55	12	8	1	0	1	128

Source: both Scottish Household Survey 2003 / 2004.

5.23 Table 5.4 demonstrates that reliance on the car for the journey to work (in terms of modal share) is now greater in the north east than for Scotland as a whole. The proportion of journeys travelling to work by car has risen steadily from 68% to 73% between 1999/2000 and 2003/2004, in contrast to the average for Scotland which remained static at around 68%.

Mode share

5.24 While use of the car has grown, in contrast, numbers travelling to work by bus have dropped relative to the national average. Only 8% travelled to work by bus in 2003/2004, a slight fall from 10% in 1999/2000.

TABLE 5.4 MODAL SHARE TRAVEL TO WORK TRENDS

	1999/2000 (%)		2001/2002 (%)		2003/2004 (%)	
	north east	All Scotland	north east	All Scotland	north east	All Scotland
Car	68	67	70	68	73	68
Walking	14	14	16	13	13	13
Bus	10	12	9	12	8	12

Source: Scottish Household Survey 2004.

5.25 Only 3% of people travel to work by train in Scotland, but the limitations of the local commuter rail network in the north east means that even fewer travel to work by this mode in the region (less than1%).

5.26 According to the Census figures, the proportion of those travelling to work by car rose significantly between 1991 and 2001 in Aberdeen City and Aberdeenshire, while the proportion of those taking the bus fell in both council areas. The proportion travelling to work by car from Aberdeen City rose from 56% to 64% between 1991 and 2001, and from 64% to 76% over the same period among those living in Aberdeenshire. Commuting by bus fell by about a third over the same time period in both areas. It should be noted, however, that local bus companies report increased bus use by around 2% per annum since 2001 (following a 40 year decline in passenger numbers), and that this increase will not be apparent in the Census figures.

5.27 The median distance travelled to work by Aberdeen residents is less than 5km, whereas in Aberdeenshire the median distance is between 10 and 20 km[40].

5.28 It is generally the case that "school runs" add to morning peak hour congestion. The majority of pupils walk to school in Aberdeen and the proportion is higher than the average for Scotland, but almost a quarter are driven to school by car which is close to the Scottish average. Only 17% travel by bus, compared to 23%

[40] Allowing for offshore workers and "others", the mean distances are estimated to be 6.1 km and 16.2 km respectively.

nationally.

5.29 Reflecting the rural character of much of the area, just under half of pupils in Aberdeenshire walk to school and only 16% are driven to school. The substantial financial burden of providing school buses for Aberdeenshire Council is illustrated by the fact that one in three pupils travel to school by bus, almost 50% more than Scotland as a whole.

5.30 Table 5.5 shows travel for other purposes and indicates a reliance on car use, even when viable alternatives are available.

TABLE 5.5 OTHER TRIP PURPOSES 2003/04

	Shopping for small amounts of food	Super-market shopping	Town centre shopping	Evenings out for leisure purposes	Visit friends and relatives	Go to see GP	Go to library
% who always use a car							
Large urban areas	41	86	39	37	67	59	42
"Accessible" small towns	48	89	67	51	70	55	42
"Remote" small towns	44	84	58	46	61	58	47
"Accessible" rural areas	66	97	88	70	83	78	72
Aberdeen City	39	90	41	37	69	62	40
Aberdeenshire	55	94	78	67	82	73	61
% who could very or fairly easily use another mode							
Large urban areas	56	19	40	27	15	40	43
"Accessible" small towns	61	19	36	26	17	50	51
"Remote" small towns	44	19	31	22	14	37	33
"Accessible" rural areas	30	11	20	10	10	21	21
Aberdeen City	57	16	49	29	13	37	40
Aberdeenshire	39	15	28	14	11	30	27

Source: Scottish Household Survey 2004

5.31 This shows that for the City car use for these various purposes is broadly in line with that of other large urban areas, with some trip types slightly more car intensive, while others are less so.

5.32 For Aberdeenshire three comparator areas have been used, as Aberdeenshire does not fit any one of these on its own. Broadly it appears that using an average of car use in the three area types of rural areas as a benchmark, car use in Aberdeenshire is consistently higher than that benchmark, across all trip types.

5.33 The lower half of the table shows whether use of an alternative mode would be very or fairly easy. Again there are minor differences between Aberdeen City and the large urban area average, with only town centre shopping being seen to be markedly easier in the City compared to other urban areas.

5.34 In Aberdeenshire, for every trip type, fewer survey respondents said it would be very or fairly easy to use another mode than was found in the average of the three area types. This could point to actual problems with alternative modes in Aberdeenshire, but it might also reflect perceptions and / or lack of knowledge about the alternatives.

5.35 Where people live and work strongly influences both distances travelled and frequency of use. A study for the Scottish Executive[41] found that personal lifestyle choices and greater mobility have led to dispersal of home, work, education, leisure and shopping locations. This has been reinforced by the rising real costs of public transport compared with cars. As a consequence, vehicle distances and trips have continued to increase, particularly on the trunk road network for commuting trips.

Bus services – access and use

5.36 Table 5.6 shows trends in the proportion of the population living within 6 minutes walk of a half hourly bus service. This is a very broad comparison, but it does suggest that a marginal advantage in 1999/2000 had been reversed by 2003/2004. The actual proportions in both the north east and Scotland as a whole also appear low given the standard for accessibility being applied here is not a high one.

TABLE 5.6 PEOPLE LIVING WITHIN 6 MINS WALK OF A HALF HOURLY BUS SERVICE

	1999/2000 *(%)*	2001/2002 *(%)*	2003/2004 *(%)*
north east	42	39	40
All Scotland	41	41	43

Source: Scottish Household Survey.

5.37 Table 5.7 shows walking time access to bus stops. This reveals that Aberdeen performs better than the average of large urban areas, with 64% of residents within

[41] Scottish Executive Development Department 2001, by Faber Maunsell.

3 minutes of a stop compared with 55% for all large urban areas. The reverse is true in Aberdeenshire, with only 47% being within 3 minutes walk of a stop compared with 54% average across the three types of rural areas used as a benchmark. In the benchmark "average" rural area, 93% are within 13 minutes of a stop, compared with only 83% in Aberdeenshire.

TABLE 5.7 ACCESS TO BUS SERVICES

	Walking time to nearest bus stop					One at least every …. minutes				
Row percentages	Up to 3	4 to 6	7 to13	14 +	none	Up to 13	14 to 26	27 to 63	64+	Don't know
All Scotland	**55**	**31**	**9**	**3**	**1**	31	31	31	5	***23***
Large urban areas	55	34	9	1	0	52	35	13	0	*17*
"Accessible" small towns	55	32	10	2	0	7	32	60	1	*25*
"Remote" small towns	59	28	9	1	1	2	16	73	8	*37*
"Accessible" rural areas	47	27	11	10	4	3	11	64	17	*28*
Aberdeen City	64	28	7	1	0	53	38	8	0	*15*
Aberdeenshire	47	26	10	12	2	2	12	63	18	*35*

Source: Scottish Household Survey 2003 / 04.

Note: frequency of service responses adjusted for don't knows – row % do not sum to 100

5.38 In Aberdeen, bus frequency is better than the average of large urban areas, with 77% enjoying a frequency of up to 26 minutes, compared with 72% in all large urban areas. In the average of rural areas[42], 24% enjoy a frequency of up to 26 minutes and 89% have a frequency of up to 63 minutes; in Aberdeenshire only 14% enjoy a frequency of up to 26 minutes and 77% have a frequency of up to 63 minutes. In addition, while 30% of (average) rural area residents did not know their bus frequency, in Aberdeenshire the proportion was 35%.

5.39 Table 5.8 shows frequency of use of bus services. This shows that bus use in Aberdeen City is marginally less than in large urban areas as a whole, with less daily bus use. In Aberdeenshire, frequency of bus use is less (compared with the average of the three types of rural areas), with relatively fewer responses in the daily and weekly use categories. Average weekly numbers of trips per head were calculated; this shows that in large urban areas on average 1.22 trips per person were made, compared with 1.06 in Aberdeen (that is, 15% higher in all urban areas). In Aberdeenshire, the average number of trips per person per week was 0.25, whereas in the averaged rural area it was 0.41, which is 61% higher than in Aberdeenshire.

TABLE 5.8 FREQUENCY OF USE OF BUS SERVICES

	Every day or almost every day	2 – 3 times a week	About once a week	Once a fortnight or once a month	Not used in past month
All Scotland	11	12	8	10	59
Large urban areas	17	16	10	12	44
"Accessible" small towns	6	8	7	11	69
"Remote" small towns	3	4	4	8	81
"Accessible" rural areas	4	6	5	8	77
Aberdeen City	12	17	11	14	46
Aberdeenshire	2	4	4	10	80

Source: Scottish Household Survey 2003 / 2004.

[42] After removing the don't knows in order to assess known frequencies of services only.

TABLE 5.9 PERCEPTIONS ABOUT BUSES; PROPORTION OF SURVEY RESPONDENTS AGREEING WITH STATEMENTS

	The buses are on time	The buses are frequent	The service runs when I need it	I personally feel safe & secure when using the bus	Finding out about routes & times is easy	It is easy to change to other forms of transport	The fares are good value
All Scotland	71	79	75	86	79	73	69
Large urban areas	68	79	76	84	78	74	72
"Accessible" small towns	74	78	74	87	81	67	62
"Remote" small towns	78	75	71	93	80	66	63
"Accessible" rural areas	76	65	60	89	81	64	59
Aberdeen City	72	84	78	90	84	68	58
Aberdeenshire	87	75	75	95	84	61	50

Source: Scottish Household Survey, 2003/04

5.40 Table 5.9 shows findings from the Household Survey on people's perceptions about bus services, and shows the proportions agreeing with a series of statements about buses. This shows a remarkable similarity in views between City and Shire, with more positive views than their respective comparators with regard to running on time, frequency, meeting needs, personal safety / security and information (despite high levels of don't know responses regarding frequency of services as noted earlier). However, residents of both areas were more negative than their comparators with regard to interchange (integration) and value for money.

5.41 There appears to be a link between bus use in Aberdeenshire and access to bus services, service frequency, residents' actual knowledge of the services and perceptions about interchanging between bus and other modes, and about value for money. In the City, despite better access and frequency, bus use as measured by trips per person per week is below the large urban area average; and compared with a rural benchmark, use in Aberdeenshire is lower, lack of knowledge of services greater and actual services appear to be less frequent, certainly as perceived by survey respondents.

5.42 It is possible that value for money plays an important role here, as this was a factor mentioned in a number of interviews. A factor shaping perceptions about value may be the fact that almost everyone considers only the marginal cost of car use (fuel and possibly parking costs) while the whole cost of the bus fare has to be met

on each trip, by adults of working age at least.

Parking

5.43 Parking is a factor in the marginal cost of using a car and parking policy and charges can be used as a crude way of affecting car use[43]. Table 5.10 shows where people normally park a car or van driven to a place of work. This shows in particular that residents of Aberdeen enjoy free parking provided by employers much more frequently than in urban areas as a whole, but in all areas the majority of employees benefit from free parking. In both Aberdeenshire and in rural areas generally, on-street parking is less important than in urban areas; however, employers' free parking is even greater for residents of Aberdeenshire than of the City, and is also greater than in rural areas as a whole.

TABLE 5.10 CAR PARKING - EMPLOYED ADULTS AT WORK AWAY FROM HOME

	Commercial	On street free	On street driver pays	Employer car park – driver pays	Employer car park - free	Other free park	Other
All Scotland	3	14	1	6	69	4	1
Large urban areas	3	21	2	7	62	3	2
"Accessible" small towns	3	10	1	7	72	5	2
"Remote" small towns	8	18	2	1	65	5	1
"Accessible" rural areas	3	12	1	5	72	6	1
Aberdeen City	3	15	0	5	73	1	2
Aberdeenshire	3	8	1	6	75	4	2

Source: Scottish Household Survey 2003 / 2004.

5.44 In the above, on street parking includes both in-town parking and parking around premises on industrial estates, which probably explains its importance in the north east. At present this form of on-street parking is not charged, but could be provided the streets are public roads. However, employer-provided parking can not at present be charged or taxed in order to increase travel costs to workers. This almost certainly limits the possible role of parking in managing travel to work demand for private transport, although its use in town centres where free on street parking is used by commuters might have a marginal effect.

[43] Especially with regard to reducing emissions, as a car does not cause environmental damage when parked.

6. CONNECTING THE NORTH EAST TO EVERYWHERE ELSE

Introduction

6.1 The ability to travel efficiently within the north east is important for economic performance, as it affects the costs and efficiency of movements of both personnel and freight; good connections are also important for shopping, for visiting friends and relatives and for a wide range of leisure purposes.

6.2 However, the north east depends to a greater degree than many regions on the ability of people to travel in and out on business – not just the day and short stay business visitor but also people working offshore. The region also continues to have a manufacturing base which requires efficient movement of freight both outwards for finished and processed goods, and inwards for raw materials and semi-finished goods.

6.3 A number of constraints has been identified which already affect the north east, and which could impose more constraints in future years if not addressed; and there are potential constraints that could emerge. In particular:

- Rail journey times to the south are poor, partly because of single track working south of Montrose, slow line speeds through south Fife, capacity constraints on the Forth rail bridge, and limits on approaches to Waverley station;
- There are road pinch points to the south, around Dundee and on approaches to the Forth crossings at Queensferry and Kincardine: the former could involve closure to goods vehicles around 2013, depending on the extent of corrosion in the cables;
- The ability to create economic interactions with Inverness is limited by road and rail links: the quality of the A96 is poor in places while the railway is single track and consequently journey times are lengthy;
- Over the period of the plan it is likely that links with the south east of England and with major cities in England by air will become more prevalent; lack of slots and airport congestion could become significant constraints;
- There are road and rail bottlenecks in England especially south of the M62.

6.4 Many of these issues have to be addressed through the National Transport Strategy or through the regional strategies of other regions, while others fall within the purview of Transport Scotland, the Department for Transport and its agencies. However, these constraints may also represent opportunities, for example to develop ro-ro ferry services and coastal shipping as alternatives to road and rail freight, and to develop air services to continental hubs rather than Heathrow.

Air links

6.5 Not surprisingly in view of its relative size, Aberdeen has fewer air links to the rest of the UK and elsewhere than Glasgow and Edinburgh. This is shown in table 6.1. This was based on actual flight availability midweek in November 2006. The situation changes by day of the week and by time of year, and since then changes in services have taken place. Nonetheless this provides a useful comparison.

TABLE 6.1 AIR SERVICES FROM ABERDEEN, GLASGOW AND EDINBURGH: BUSINESS DESTINATIONS (FREQUENCY PER WEEKDAY)

	Glasgow		Edinburgh		Aberdeen	
destination	**carrier**	**frequency**	**carrier**	**frequency**	**carrier**	**frequency**
Amsterdam	KLM	5	KLM	5	KLM	4
					BMI	3
London Heathrow	BA	10	BA	10	BA	5
	BMI	7	BMI	8	BMI	4
London Gatwick	BA	6	BA	6	BA	4
	EJ	3	EJ	4		
London Luton	EJ	6	EJ	6	EJ	2
London City			BA	7		
			Scotair	8		
London Stansted	EJ	5	EJ	6		
	Air Berlin	2				
Paris	BA	3	AirFrance	3	AirFrance	3
			BA	3		
Birmingham	BA	6	BA	6	BA	3
	Flybe	6	BMI baby	3	BMI baby	2
			Flybe	6		
Manchester	BA	6	BA	6	BA	3
	BMI	5	BMI	6	BMI	6
New York (Newark)	Continental	1	Continental	1		
Frankfurt	BA	1	Lufthansa	3		
Berlin	EJ	1				
Madrid			BA	1		

Source: BAA timetables, November 2006

6.6 It is evident that Aberdeen lacks direct flights to major European business centres compared to the other airports, but on the basis of its relative size fares better than Glasgow for services to the London area. Edinburgh has a markedly higher number of flights principally because of the frequency of flights using smaller aircraft which use London City airport, presumably reflecting the links between Edinburgh's financial community and that in the City of London and (increasingly) in Docklands.

6.7 Where the Aberdeen area suffers most (in relative terms) is in the range of destinations available (even if not on a daily frequency), links to the US and to holiday destinations. A review of destinations served by scheduled flights (also November 2006) shows that

- Glasgow offers 61 destinations of which 20 might be regarded as wholly or very largely holiday destinations
- Edinburgh offers 63 destinations of which 19 might be regarded as wholly or very largely holiday destinations
- Aberdeen offers 25 destinations of which only one might be regarded as wholly or very largely a holiday destination.

6.8 Aberdeen is therefore more reliant on indirect flights (intra / interlining) to link to some 40 destinations which are served directly from Glasgow or Edinburgh or both. North east residents also have a much poorer choice of direct scheduled holiday flights.

6.9 Direct air services are well established as a factor in the attraction of inward / mobile investment[44], and while this has been less important for the region in the past because of the strength of its other assets for the oil and gas sector, the competitive environment for future energy sector investment could be much more difficult, and hence better air services are an essential part of the development of the economy of the region.

6.10 The economics of air services are such that larger aircraft have lower cost per seat-mile. Typically, larger aircraft need longer runways in order to operate at or close to maximum payload, and it is noted that there are runway extension plans for Aberdeen, which could make US and longer range European services technically feasible. Without market growth, the use of large aircraft on new routes would be accompanied by low frequencies, but a combination of income growth and lower fares will grow the market. It is therefore reasonable to expect frequencies to improve over time, provided the airlines choose the right services and timings and market their services well. Here there is plenty of scope for public sector input towards route analysis and marketing.

6.11 There is concern about aviation's contribution to climate change. At present it is estimated that domestic and UK international aviation contributes around 6% to UK greenhouse gas emissions (Source: estimated from DEFRA data in Sustainable Development Indicators 2006 (published 31/07/2006 ref 360/06); also see The Economist, 28 September 2006 – Virgin Territory). The use of larger and more efficient aircraft will improve the level of emissions per passenger mile, but competition in the aviation industry is such that low fares and an expanding range of flights (including long haul flights), combined with growth in incomes, is growing the market, potentially faster than aircraft efficiencies can reduce emissions per passenger mile. The present structure of UK taxation does not discourage rapid growth of air travel, but this can be expected to change. It is

[44] See for example Prof Michael Parkinson and others: Europe's Core Cities.

likely that this will be more of a deterrent to the price sensitive holiday market than to the business travel market.

6.12 It is also difficult to see how the north east can become much less aviation dependent given its location. If there is pressure to make significant cuts in emissions, it is likely that these will be easier to achieve from surface transport and from other energy uses than from aviation.

Freight transport

Road freight movements

6.13 Road freight is by far the most important means of freight transport of goods within, to and from the north east. Freight data for Grampian region shows the volumes of freight to and from other parts of Scotland and the UK. Table 6.2 shows UK freight movements.

TABLE 6.2 UK FRIEGHT MOVEMENTS BY VOLUME: THOUSAND TONNES 2000-2004

	Freight into Grampian	Freight within Grampian	Freight from Grampian	Balance
	FROM		TO	*minus means a balance of trade deficit*
Borders	7		11	-4
Central	471		531	-60
Dumfries & Galloway	43		49	-6
Fife	202		200	2
Grampian		15,350		n/a
Highlands	566		549	17
Islands	4		4	0
Lothian	388		149	239
Strathclyde	1,178		841	337
Tayside	1,119		939	180
SCOTLAND	3,978		3,273	705
Elsewhere in UK	961		974	-13
TOTAL	4,939		4,247	692
Grand Total to, from and within Grampian		24,536		

Source: Scottish Transport Statistics, 2005.

6.14 Intra regional movements are significant and account for 63% of all movements by volume. Much of this is high bulk low value materials which it is generally uneconomic to transport any distance, and includes commodities such as animal feed, grain, aggregates and some building materials. The major destination regions are Tayside and Strathclyde, followed by Highlands. Movements to the neighbouring regions are probably very similar in make up to the intra region movements, while traffic to Strathclyde includes whisky being moved to bottling plants. In volume terms trade with the rest of the UK is very small, under 8% of total volume.

6.15 The major issues highlighted by the road freight sector and its customers are costs, journey time reliability and the effects of the working time directive. Congestion anywhere in the road network is seen as an important cost escalation factor because it makes journey times unpredictable both for goods being exported and for materials coming in. Increasingly recipients of goods require timed deliveries and impose various forms of penalties, including cancellation of supply contracts where times are missed consistently. Because of this, exporters from the region need to allow contingency times, which can involve earlier and less efficient call off of production as well as the additional cost incurred by extending the period of use of a vehicle and driver. Congestion in and around the City is perceived to be an issue, but the real bottlenecks are those on the English motorways mainly south of the M62 and on approaches to the Humber and southern east coast ports.

Sea freight

6.16 Aberdeen and Peterhead are the two major ports in the region. They developed strongly for offshore oil related movements from the 1970's, first in the exploration phase and then into the field development and production phases. At present, oil-related movements are still important - largely to service platform requirements.

6.17 Fish is the other major trade at both ports, while other traffics include mainly bulks and some containers, plus more recently export of oil equipment to Africa from Aberdeen.

6.18 Looking at port traffic as a whole for the UK, growth in traffic has been particularly strong in two key sectors, container and roll-on/roll-off (ro-ro) traffic, which have averaged growths of 5 per cent and 3.5 per cent per year respectively over the last decade. The 1996 Origins, Destination and Transport of the UK International Trade Survey, published by the UK Department of the Environment Transport and the Regions (DETR) estimated that the Scotland – Continental Europe market is as shown Table 6.3.

TABLE 6.3 MARKET SIZE: FREIGHT (SCOTLAND-EUROPE, 1996)

	Units	Percentage
Accompanied trucks	114,000	47%
Unaccompanied trucks	38,000	16%
Container	88,000	37%

TOTAL	**240,000**

Source: DETR

6.19 In terms of container traffic, Forth Ports are important particularly in respect to EU traffic, with a little more than 70% of all Scottish EU traffic. Table 6.4 shows Scottish traffic by cargo type for inwards and outwards movement.

TABLE 6.4 SCOTTISH MARITIME TRAFFIC BY CARGO CATEGORY: 2003 (THOUSAND TONNES)

Cargo category	Inwards	Outwards
Liquid bulks	12,535	2,951
Dry bulks	3,595	706
Other general cargo	51	292
Container traffic	275	232
Ro-ro traffic	2,356	2,220
All traffic	18,813	6,402

Source: DfT Maritime Statistics 2005

6.20 Table 6.4 shows that liquid bulk and ro-ro traffic dominates outward-bound movements in terms of tonnage. Inward-bound tonnage is far greater in tonnage, and this is dominated by liquid bulks (12.5 million tonnes), while dry bulks and ro-ro traffic make up much smaller, yet significant, volumes. The total number of road goods vehicles and containers passing through Scottish ports, and the weight of freight that they carried, increased by around 55% and 43% respectively between 1992 and 2002 (Source DfT Maritime Statistics 2005).

6.21 No Scottish ports were in the top five leading ports in the UK in 2004 in tonnage terms. Table 6.5 shows traffic at the principal Scottish ports, which shows that Aberdeen was the sixth largest of the major ports in freight terms.

TABLE 6.5 TRAFFIC IN MAJOR SCOTTISH PORTS IN THOUSAND TONNES (2004)

Port	Inward	Outward	Total
Aberdeen	2,095	1,793	3,888
Clyde	8,173	3,334	11,507
Cromarty Firth	1,552	1,656	3,208
Forth	3,966	30,926	34,892
Glensanda	1	5,188	5,189
Orkney	6,656	11,278	17,934
Sullom Voe	5,382	18,557	23,939
Total through all Scottish ports	33,394	77,050	110,444

Source: Scottish Transport Statistics 2005.

6.22 Total traffic through Scottish ports was 110.4 million tonnes in 2004; the east coast ports' traffic was 88.4 million tonnes or 80% of the total.

6.23 Table 6.6 shows trends for all the east coast ports over the last three years for which data for all ports are available. This shows that Aberdeen has seen growth, whilst Peterhead has seen a major decline in traffic. This also shows that the north east ports account for only 5% of the tonnage through Scotland's east coast ports.

TABLE 6.6 EAST COAST PORT TRAFFIC 2002 – 2004: THOUSAND TONNES

	2002	2003	2004	% change 2002-04
Aberdeen	3,654	3,323	3,888	+6.4
Peterhead	1,343	1,051	676	-49.7
All east coast	102,072	91,220	88,435	+13.4

Source: Scottish Transport Statistics 2005.

6.24 Despite a relatively small share of the market, north east ports are well placed to benefit from growth in trade with the Baltic and Russia as the closest UK ports to these regions.

7. TRANSPORT AND EMISSIONS

Introduction

7.1 Table 7.1 shows transport emissions from road and rail transport by local authority area in Scotland. The final column shows an index of transport emissions per capita. This shows that the north east performs better than the Scotland average on transport emissions. Within the regional average, Aberdeenshire's emissions per head are well above the Scottish average, but Aberdeenshire nonetheless compares very favourably with other rural areas such as Dumfries & Galloway, Perth & Kinross and Highland, but less favourably than Angus, East Lothian and the Western Isles. To some extent the relative performance of these rural areas depends on the distances people have to travel to service centres, as well as on propensity to travel.

7.2 Aberdeen performs better than Glasgow and Edinburgh but less well than Dundee; however, the administrative boundary of Dundee is more tightly drawn than that of Scotland's other cities. Overall, the region's performance is therefore on the right side of the Scotland average.

TABLE 7.1 TRANSPORT EMISSIONS (C02 IN KT PER ANNUM 2003)

Area	Railways	Road petrol	Road diesel	Road other	Index of emissions per capita (Scotland = 100)
Aberdeen City	1	133	101	3	54.69
Aberdeenshire	5	332	301	9	133.74
Nestrans	**6**	**465**	**403**	**12**	**96.27**
Angus	4	116	111	3	103.30
Argyll and Bute	3	147	118	3	140.42
Clackmannanshire	0	24	18	1	42.89
Dumfries Galloway	11	288	417	7	232.74
Dundee City	1	74	57	2	44.29
East Ayrshire	3	121	114	3	95.30
East Dunbartonshire	1	74	51	2	56.42
East Lothian	7	98	91	2	103.22
East Renfrewshire	0	76	57	2	71.25
Edinburgh, City of	5	308	258	8	61.14
Eilean Siar	0	34	28	1	114.98
Falkirk	2	164	170	4	110.64
Fife	10	326	270	8	82.66
Glasgow City	2	444	393	11	69.73
Highland	5	406	357	10	176.37

Inverclyde	0	55	37	1	53.14
Midlothian	0	79	63	2	85.79
Moray	1	97	81	2	98.10
North Ayrshire	0	97	74	2	60.70
North Lanarkshire	3	369	362	9	109.49
Orkney Islands	0	29	24	1	130.66
Perth and Kinross	4	319	331	8	230.69
Renfrewshire	0	189	142	5	93.25
Scottish Borders	4	171	156	4	146.91
Shetland Islands	0	31	27	1	128.86
South Ayrshire	1	125	97	3	96.07
South Lanarkshire	5	334	335	8	106.73
Stirling	2	143	128	4	151.40
West Dunbartonshire	0	70	52	2	63.39
West Lothian	2	183	176	5	107.64
TOTAL SCOTLAND	84	5453	4997	135	100.00

Source: DEFRA Local and Regional CO2 Emissions Estimates for 2003: authored by AEA Technology 2005 See also the report 'Local and Regional CO2 Emissions Estimates for 2003', produced by Netcen for Defra

http://www.defra.gov.uk/environment/statistics/globatmos/galocalghg.htm

8. LOOKING AHEAD

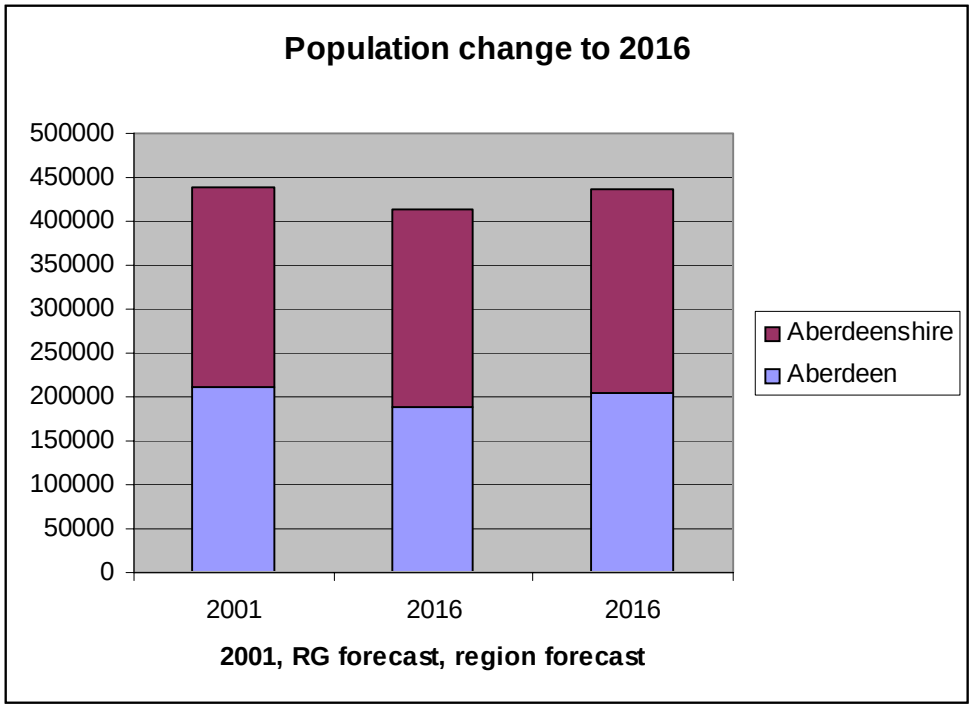
Traffic growth and car dependency

8.1 Road traffic dominates the use of surface transport. Here therefore the focus is on road traffic, its recent performance and likely future trends.

8.2 There is robust evidence to demonstrate that traffic growth is closely related to three factors, namely demographic changes, growth in car ownership (which is related to growth in income per head) and changes in the use of cars. Supporting these changes are influences such as changes in the relative costs of travel, changes in land use patterns, and wider social and lifestyle influences. The north east has a distinct economic structure with high income levels largely dependent on a sector whose principal outputs are currently in short supply and whose price variations can have a significant effect on the performance of the regional and national economies. This makes it very difficult to forecast with any confidence over even the medium term. This is an area where future scenarios will be developed later in the RTS process.

8.3 Figure 8.1 shows possible population changes, revealing large differences between the GROS projections and regional forecasts. Going beyond these to 2021 the regional forecast is for a further decline of 4,300 residents. There are major uncertainties here, however, and strong performance in the energy sector combined with immigration and stronger service sector growth could lead to population growth or stabilisation rather than decline. Notwithstanding population change, there is an expectation that there will be some 16,000 more households in the region. There are clear trends towards smaller households, but also to more cars per household, so changes in household numbers and income growth would point to growth in car ownership overall.

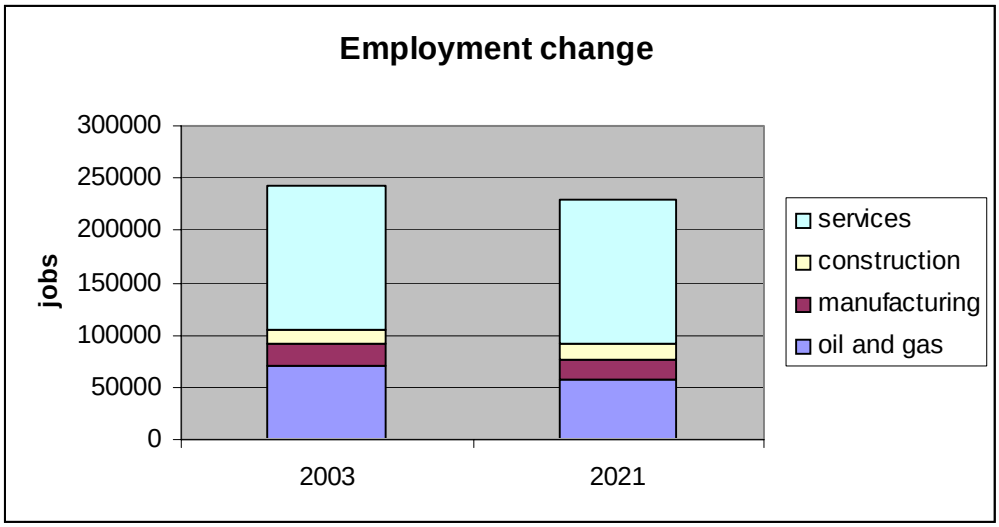
FIGURE 8.1 ALTERNATE POPULATION FORECASTS FOR NESTRANS AREA, 2001 TO 2016



Source: GROS and Aberdeen City & Shire Strategic Forecasts

8.4 Employment performance is also important. Figure 8.2 shows regional forecasts of employment change, showing an overall decline of 4.7% through to 2021.

FIGURE 8.2 FORECAST CHANGES IN EMPLOYMENT



Source: Aberdeen City & Shire Strategic Forecasts, 2003

8.5 What this does not reveal is the effect on per capita income. UK productivity growth trends would suggest a sustainable rate of increase of around 2 to 2.5% per

year, but examination of the forecast structural changes in employment would suggest that low added value sectors are expected to grow in numbers while high added value sectors will decline overall; this suggests below trend income growth, which would tend to damp down growth in car ownership relative to the UK as a whole.

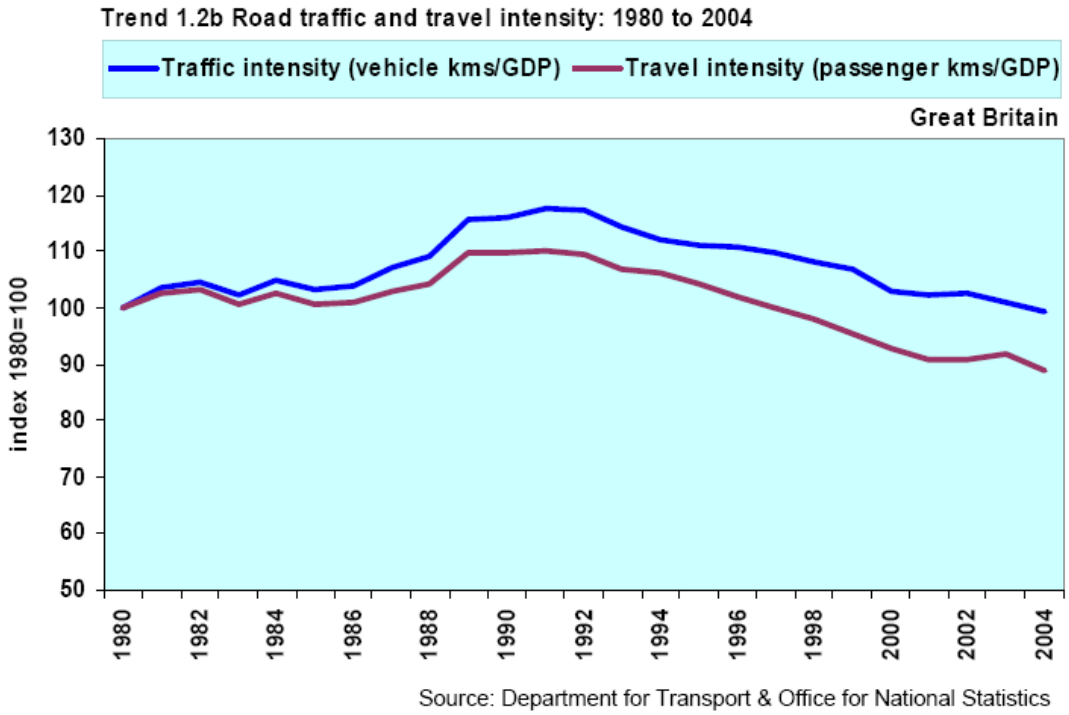
8.6 Future traffic levels also depend on people's choices regarding how intensively to use their cars relative to other alternatives. Figure 8.3 shows that at the GB level there has been a degree of decoupling of income and traffic growth. This reflects both factors such as congestion, relative transport costs and policies to get people out of cars and into trains and buses. Similar measures in the north east will therefore tend to reinforce income changes, thereby helping (at least) to reduce the rate of growth of car use.

8.7 However, where people live and work strongly influence distances travelled and frequency of use for trips other than work trips. A study for the Scottish Executive found that "personal lifestyle choices and aspirations for greater mobility have led to dispersal of home, work, education, leisure and shopping locations. This has been reinforced by the relative costs of private car against public transport. This leads to car dependence, and increased vehicle distances and trips, particularly on the trunk road network for commuting trips. The provision of public transport enhancements on its own cannot resolve the issue" Source: Term Commission for the Evaluation and Review of Local Authority Road Traffic Reduction Targets: Scottish Executive 2006.

8.8 Land use changes will also significantly affect the demand for transport, especially when looking ahead over a period of 15-20 years. Across Scotland and the UK as a whole, employment locations in sectors of the economy such as retail and modern light manufacturing have become less geographically concentrated, which also increases car dependency. However, it is the concentrations of high added value service sector employment within city centre locations that have driven economic growth in most regions, with emergence of clear agglomeration effects in the largest and best performing centres. The north east has a small number of large scale clustered developments of activity associated with the oil industry, and more recently growth of out of city business and retail parks adjoining the principal road network. Many commuting trips using the strategic road network now have origins and destinations that are very dispersed, typically outside the transport corridor formed by the strategic routes. This makes it particularly difficult to provide an efficient public transport service.

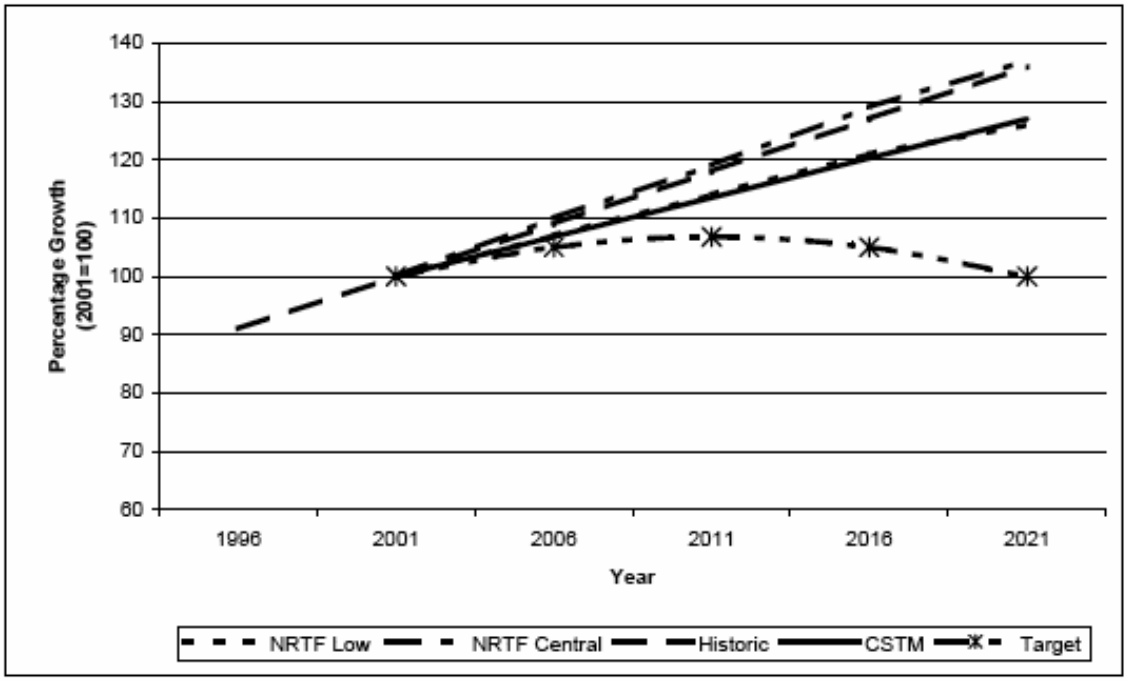
8.9 There is solid evidence that, given opportunities for more mobility, a proportion of the population (and especially those in the family formation life stage) will use that opportunity in order to satisfy lifestyle choices, and in the north east in particular to secure what is perceived to be better value for housing expenditure in the rural areas.

FIGURE 8.3 TRAFFIC AND TRAVEL INTENSITY AT NATIONAL LEVEL



8.10 Figure 8.4 shows the Scottish Executive's traffic growth targets as set in 1997 (RTRA); this shows forecast and targeted percentage traffic growth.

FIGURE 8.4 SCOTTISH EXECUTIVE FORECAST AND TARGETED PERCENTAGE GROWTH 1996-2021



8.11 More recent analysis has shown predictions of traffic growth by (broad) region, which shows traffic growth higher in the north east than anywhere else, in the do-

nothing base case. This was based on earlier demographic and economic forecasts which were more optimistic than those presented above. Nonetheless, while population and employment factors suggest a dampening effect in traffic growth, growth in the numbers of households and the likelihood of lifestyle choices to exploit scope for greater mobility are likely to be at least as strong counter-forces.

Technology

8.12 Faced with concerns over current and future effects on climate change and its long term implications for travel, there is an understandable tendency to believe that transport technology will somehow "save the day" and enable society to avoid too many unpalatable decisions. As discussed below, there is little evidence so far on which to base such an optimistic view of the future.

8.13 Transport technology has tended to be evolutionary rather than revolutionary. Cars and buses today are largely better (and usually larger and more powerful) versions of what were around 15 years ago, with the exceptions of more effective very small cars (such as the Smart) and the growth of 4X4 and MPV designs. There are better electric and hybrid cars, but the breakthrough that these would need to become commonplace has not happened so far. Similarly on most of the Scottish rail network, technology has evolved with more comfortable and reliable rolling stock and more powerful freight locomotives; the principal move forward has been the introduction of tilting trains on the west coast main line.

8.14 The same picture is found with aircraft and ships, with gradual improvements in efficiency and performance rather than any single major leap forward. Devices heralded as major breakthroughs have tended to fail.

8.15 With the possible exception of electrically powered vehicles and development of fuel cell technologies, it is difficult to see where any leap ahead might come in terms of vehicles. There will likely be further development of systems such as anti-collision devices and automatic controls for road vehicles but again these are expected to be evolutionary developments.

8.16 One major breakthrough that would be partly technological but mainly political would be a national road user charging network for demand management. Much of the technology exists but cost and consumer (voter) resistance are the key determinants of when this will happen. It has potential to change levels and patterns of trip making which could be marginal or significant depending on levels of charging and how revenues are utilised. It might be noted that at high charge levels a highly dispersed settlement and employment locations pattern will cost residents more in charges than a more compact pattern, and these higher costs might figure more directly in place competitiveness calculations than vehicle operating costs currently (appear to) do.

8.17 The other major unknown is the cost of energy. While price spikes have resulted in new supplies and more efficient use leading to price reductions, this time this seems less likely. Continued high oil prices would tend to work against diversification of the region's economy by making other manufacturing less competitive while stimulating the oil and gas sector. It would also make living

remote from employment and services less attractive.

8.18 Development of ICT is the other unknown factor which could affect demand for travel. Over the last 20 years ICT has been seen as a way of replacing the need to travel, but in reality people have tended to have more rather than less face to face contact. This is an area that can see revolutionary change and it would be brave to predict that past trends will simply continue – a realistic and cost effective 3-D video conferencing system, for example, could be expected to have a real impact on the need to travel to intra-company meetings. ICT should, at the margin, also make home working and more flexible working more feasible, but is unlikely to have a transport related impact on services like education and health. Assuming income grows, demand for personal services and retail will also grow, and these plus any increase in leisure time will increase travel demands as almost by definition they cannot be serviced remotely using ICT.

9. AREAS OF RISK AND UNCERTAINTY

Introduction

9.1 This section is intended to highlight those areas of risk and uncertainty that will shape the approach to the strategic issues that will be important over the period to 2021. This section begins with the economy, which will largely shape the region in terms of employment, demography, income and expenditure – including expenditure on transport.

The economy – key issues

9.2 The demand for transport will depend in part upon the size, structure and performance of the economy.

9.3 The performance of sectors such as agriculture, fishing and construction (including road building and other civil engineering activities) will strongly affect short distance movements of bulky commodities such as feedstuffs, fertiliser and aggregates, which in volume terms dominate regional level freight movements. Similarly the forecast (trend) slow decline in manufacturing output and the tendency for manufacturing in developed nations to become high value low bulk will affect demand for freight movements out of the region. In the north east, these trends in the primary, manufacturing and construction sectors could affect rural areas disproportionately as these are fairly dependent both on these industries and on the freight transport sector which meets these needs for goods movements. That sector itself is also under threat at present from providers based outside Scotland; however, earnings growth in countries like Poland will tend to erode such advantages held by foreign providers[45].

9.4 Relative to the present, air freight is likely to become more important as the value of exported (and possibly also imported) goods expand relative to volumes. However, with growth in passenger services comes growth in belly hold capacity on aircraft (especially when wide bodies equipment replaces single aisle aircraft such as the Boeing 737 and Airbus A320), and this could mean limited demand for dedicated freight capacity. Future fuel prices and carbon taxation on aviation could have significant impact but on a relatively small (but potentially important) volume of freight.

9.5 Sea freight is likely to grow strongly especially in an environment of road user charging, increasing bottlenecks in the transport network south of the border and on-going lack of development of rail freight capacity relative to demand. These factors could stimulate demand for coastal roll-on roll-off ferry capacity feeding Rosyth, the Humber or the Thames ports, or possibly direct to the continent from north east ports if volumes grow and ferry costs per mile decline by enough to make this viable.

[45] As would a national road user charging scheme which largely replaced fuel duties, as this would be harder for foreign haulage / freight firms to avoid.

9.6 There are uncertainties also about aspects such as future growth in key markets such as the Baltic and Russia for which Aberdeen and Peterhead are well located in at least Scottish terms; in the future of proposals for a container hub in Orkney; and for ferry services to the northern islands. The AWPR could affect the relative attractiveness of the region's principal ports, especially if vessels get larger.

9.7 It is also expected that service sector growth will continue, absorbing more resources. The balance between private sector and public sector services is less directly relevant to transport demand, although some public sector services are more dispersed. All growth in services will increase demand for labour which could generate additional trips and new movement patterns as people move from manufacturing and the energy sector to a more service-based economy.

9.8 The economy will strongly affect demographic performance. In particular, relative decline in the energy sector will impact on regional income and on dependent sectors within the region, which will help to make other regions relatively more attractive. However, at least as significant will be the performance of the city regions whose economic performance has taken off in the last 5 years or so through service industry growth. The Edinburgh – Glasgow region is a strong performer and appears to have potential to remain one of the leading growth regions in the UK. Such performance could lead to lower economic growth in the north east relative to the central belt and that would result in net population loss, which would have important consequences for the demand for transport.

9.9 The key issues for the economy are therefore:

i. Whether a high oil price will be sustained over all or most of the plan period, and if not, the extent to which the oil and gas sector can diversify to the extent necessary to sustain employment and earnings.

ii. Within this, there are positive roles that the public sector can play, in terms of infrastructure, business support, research and training. For the RTS, what role could transport play and how can its value be maximised alongside other measures?

iii. Other policies and measures can be implemented to assist and enable diversification and enhanced performance in other sectors, including manufacturing. The AWPR will help to reduce costs of freight movements and to integrate the labour market. The RTS considers other transport interventions that will add further value to the economy.

iv. If high oil prices persist, there are implications for the region's manufacturing and processing sectors that need to move goods. In general these sectors are likely to become less competitive because of their locations relative to their markets. Can rail and sea freight make a difference in the longer term, or is restructuring largely inevitable?

v. The region must at least sustain and ideally improve its competitiveness as a location; within this, the quality of life offer that includes the option of rural living is potentially important, in order to offer new residents choices that would not be available in most other parts of the UK. But this puts demands on the transport system and affects the environment: is this a trade off situation, or can win-win solutions be developed?

vi. Within the region, physical connectivity to skills does not presently appear to be an important issue that affects competitiveness, and the labour market appears to function well. Will this continue if measures to reduce car use are implemented? Does the outcome depend on the measures, with some interventions producing positive economic outcomes?

vii. The service sector is in the main serving its regional market. A more export based service sector would diversify the economy and would not involve physical movement on the scale required by manufacturing. How can its prospects be improved – can the City attract and grow high added value services and especially those serving export (out of region) markets?

viii. Aberdeen city centre is considered by many to be relatively weak, and needs to develop strongly to contribute to growth and restructuring of the economy as a whole. There appear to be development opportunities close to the centre for urban housing. What policies can be implemented to improve the structure and functioning of the city centre, as a service, retail and leisure "core", and how can transport and planning policies contribute?

ix. In general, how can transport infrastructure and services contribute to improving performance, making the region more attractive to mobile skills and capital, and positively changing structural factors that limit potential?

x. The AWPR is included within the Reference Case and therefore assumed as a given, the RTS will need to consider whether there are other key investments for the economy within the north east or on key external routes?

xi. Will any blue sky technologies affect any of these issues – in particular, would the long term strategy be different in a context which includes a UK or Scotland road user charging scheme?

xii. A national or Scottish road user charging scheme could be put in place over the next 10 to 15 years. Depending on the nature of any scheme, this could make industries dependent on physical goods movements less competitive in areas remote from markets, and it could affect the relative attractiveness of the rural area as a place to live. How can transport and planning measures secure the benefits of road user charging while minimising potential downsides?

Land use – key issues

9.10 While the RTS is concerned with transport, the demand for transport is strongly influenced by the pattern of land use, The Executive's guidance recognises that the RTS should comment on the development plan process. The AWPR is likely to have a significant effect on where developers would choose to develop and on where at least a proportion of the population would choose to live, although these demands will ultimately be subject to planning policy and development control decisions. While land use is subject to planning policies and is therefore more easily influenced than the economy, the use of planning powers will affect the competitive position of the region, within a context where a decline in population and employment is forecast.

9.11 As places compete for skills and employment follows where skills are located, the ability to offer attractive and competitive locations for both housing and industry is a factor in economic development. How the AWPR changes demand, and the

consequences of alternative planning responses to this demand, is something that has to be central to the RTS, in order to understand future demand for transport and how best to meet it.

9.12 Factors such as energy prices and a possible future road user charging scheme will affect the costs of rural living, which is one of the attractions of the region's offer. Significantly higher travel costs combined with high property prices close to the city and the major employment locations will have serious implications for the attraction and retention of skills, especially for younger people, as the option of living further away (in areas of lower housing costs) and commuting will be less viable.

9.13 Key issues for land use are, therefore:

i. The AWPR will change demands for residential, industrial and commercial developments, in terms of scale, timing and location. The future demands need to be anticipated if the RTS is to address medium to long term transport and other issues.

ii. Sustained high energy prices and / or a national road user charging scheme will also have potentially significant and lasting effects demand for all types of development, in terms of volume and locations. Again this forms part of the future context of the RTS; how best can this be evaluated?

iii. It is important to consider and understand the consequences of realistic potential responses to a changing demand situation. What economic and planning scenarios need to be assessed in the development of the RTS?

iv. Location choice especially for residential purposes is important within the competitive process, when seeking to attract skills, talent and capital. If in the medium term such choices are more limited, or if costs are higher, how will this affect the economy?

v. Land use policies have a major role to play in addressing the need to reduce demand for transport[46] for example by increasing co-locations of residential and employment land uses. There is a need to increase the integration between land use and transport planning: how will this be achieved?

vi. Achieving environmental goals involve reducing demand for transport. Can land use (and transport) policies help to achieve this in a manner which also enhances the place competitiveness of the region?

Transport

9.14 Transport is a derived demand. Therefore what is observed in terms of people and freight movements arises as a result of choices made by individuals, households and businesses. For people, these choices include where they have chosen to live, where they work, shop, socialise and access other services. Many people within the resident population made these choices years and possibly decades ago, when

[46] Sometimes expressed as the need to travel; in a context where demand management is part of the national agenda, the term demand for transport is preferable.

the financial and time costs of transport were very different, but the costs of moving home are high, and so many people have chosen to pay the higher time costs of transport as roads have become more congested[47]

9.15 Similarly, a major attraction of the region to incomers is the ability to live in the countryside, which may be a choice of lifestyle or may be a choice made due to higher property costs in and immediately around the city. For people whose choices are driven by cost factors, there is a trade off between housing costs and transport use and costs – the countryside offers better housing value for money but at a cost in terms of vehicle use and time costs.

9.16 One obvious issue here is that when making these choices, people are confronted by the real resource costs of houses and services, but they are not required to pay the full costs of transport use especially where that choice involves use of private cars. The costs that are omitted include costs imposed on other road users in congested traffic conditions and the costs of damage to the natural environment.

9.17 As a consequence, people over-use the transport system compared with what they would do if it were charged for its use at something closer to its real costs. In the north east the combination of high incomes, high land prices in the urban area and the attraction of the rural areas have, in the context of under-priced transport, led to a dispersed settlement pattern, which goes hand in hand with high car ownership and, critically, high car use.

9.18 However, from the perspective of the economy this has been a major strength of the region. The ability to offer a wide choice of good quality housing locations, from the city itself to attractive small towns through to country estates has helped to attract and retain skills essential to the on-going development of key sectors, especially oil and gas. This appeal has, if anything, to be increased in the future so that the region enhances its place competitiveness in order to attract new residents, skills and business investment.

9.19 Similar considerations apply to business locations, although businesses are generally much more mobile and cost driven than households. Nonetheless there are costs in relocating business activities and many firms have chosen to pay higher transport costs rather than move, or have selected a location that is expensive in transport terms because it offers offsetting advantages such as proximity to labour or resources.

9.20 The Scottish Executive has signalled a clear need to promote economic growth but also a need to reduce the environmental effects of traffic. Put succinctly, the goal is to decouple a long established trend for economic and traffic to grow together. To achieve this it is necessary to change the choices people make, in the short term effecting more sustainable travel choices, in the medium term reducing the need to travel through land use, economic development and other policies. These need to

[47] However, vehicle operating costs have fallen in real terms, although many people perceive that motoring has become more expensive.

promote greater physical concentration of activities so as to lessen the separation between them, to encourage the development of the economy so that it is less dependent on the use of transport and to enable greater use of alternatives, including use of information technology.

9.21 There is no doubt that road user charging would play a valuable role in achieving this de-coupling[48]. However, any move to introduce road user charging will be initiated at the Scottish or UK level, since many regions or cities may believe that it would reduce their competitive position.

9.22 The issues for the RTS are therefore as follows:

i. There are potential trade-offs between the economy and the environment unless the transport advantages of the AWPR are protected against new traffic growth by "locking in" the benefits and the changes in accessibility offered by the AWPR resulting in more demand for housing development further from the City are controlled by land use policies. The idea of locking in the benefits of the AWPR needs to be assessed in operational terms. What are the options if this aim is to be achieved?

ii. While road user charging may be the most efficient form of demand management, there are alternatives that can be implemented in the short to medium term. It is important to consider the effects of these measures on traffic and on the economy, especially of Aberdeen City centre. Are there trade offs between a strong centre and measures to reduce demand?

iii. The present settlement and employment patterns are so dispersed that it is unlikely that any transit system requiring fixed infrastructure (such as trams) would be financially viable. This suggests a bus based public transport system as the principal alternative to the car. What can be done to increase mode shift in a region where use of the car is so high and entrenched?

iv. There is evidence that shows bus use is low, primarily due to perceived (poor) value for money and interchange. Is the present regulatory framework sufficient to address these issues and achieve required levels of mode shift?

v. Development of the airport including runway extension and better facilities including car parking is essential to the growth of the region in its development as a centre of excellence for the energy sector, in developing an export based service sector and in attracting tourists. While better public transport links to the airport are feasible and larger aircraft will limit the growth in air transport movements, the overall environmental effects of more air travel will still be considerable. How can the land-side environmental impacts be minimised, and the economic opportunities maximised?

vi. There remain pockets of multiple deprivation and poor health even in an overall high wage economy with low unemployment. Transport is an enabler – how can it best complement other policies and programmes?

[48] In its report Transport and the Economy (1999) SACTRA observed that it is the most efficient way to achieve this with potential benefits to both the economy and the environment.

vii. The principal transport problems of congestion and air quality concerns arise within and around Aberdeen, and the assessment of economic prospects suggests that the City, as the major regional centre, has to be strengthened. What is the future role of the medium size towns and how can transport complement other policies to sustain these settlements?

viii. The assessment of future land use issues indicates that to have a real and lasting impact on the need to travel, planning has a major (if more medium term) role to play, primarily to seek to concentrate rather than "deconcentrate" future residential and commercial developments. Road user charging would support such policies, but what other transport measures would help to make development close to the City more attractive?

9.23 The AWPR has the potential to improve the economy for much of the business sector, and to address real travel constraints in and around the City. However, it could also lead to more car use, and if not supported by complementary measures, could start to undermine the quality of life offer that is fundamentally important for the medium term health of the region's economy. A "market forces" response to the AWPR is both inefficient in economic and environmental terms (because transport is not properly priced) and is likely to be unacceptable as the basis of the RTS. The challenge is to maximise the undoubted economic benefits while minimising and reversing adverse environmental consequences. Transport alone cannot deliver a win-win outcome: transport must complement appropriate planning and economic development policies if the overall goal of a sustainable future is to be achieved.

APPENDIX 1: Programme of Interviews

Introduction

In addition to extensive research using published sources, including current policy documents authored by Aberdeen City and Aberdeenshire Councils, a programme of interviews was undertaken with a number of informed individuals across a range of organisations with an interest in the north east. These interviews were an essential part of the background research process, principally because it was necessary to make informed predictions about the future development of the north east. The interview list includes influencers within the region and stakeholders in national organisations whose remit will have an important role in the future of the north east.

While economic and other models would have been useful for this process, available standard models are typically too short term in nature. Given the long term nature of the strategy to 2021, it was useful to get "future-casts" from selected individuals who were well informed about key aspects of the region, including transport infrastructure, the economy and its constituent sectors, future land uses and property demand and supply.

This process provided a valuable range of opinion on how the region would develop over the next 10 – 15 years. Of particular value were the views on the economy and how the oil and gas sector would develop and potentially transform itself into a more broadly-based industry which would include renewables. This sector is critical to the region and therefore it was important to understand the range of possible outcomes in order to contextualise the future demand for labour and potential future population levels. This process was complemented by desk research using a range of documentary sources.

As transport is about connectivity between activities, this research also looked at the potential scale and location of residential, industrial and commercial development, particularly given the future context of the development of an Aberdeen Western Peripheral Route (AWPR). This element of the process was especially important given that the key planning policies are about to be reviewed and possibly re-cast, with a new Local Plan in place in Aberdeenshire, an Aberdeen City Local Plan Review being undertaken and the likelihood of a new Structure Plan being started during 2007.

The interviewees

A list of interviewees is provided following the discussion of the findings. The consultants and Nestrans wish to express their thanks to all who participated in the process.

Reporting the findings

The interviews were conducted on a confidential basis, in order to give interviewees the opportunity to speak freely and in some cases critically and/or speculatively without having their individual views specifically reported. This proved invaluable to the research as it enabled people to express personal views rather than those of their particular organisations. In order to provide feedback on the face to face interviews while still preserving the confidentiality promised to individual interviewees, the findings have been grouped into four themes, namely

- Transport in the region – general
- Transport – the AWPR
- Land use, planning and transport
- Other issues

Economic development and environmental considerations are addressed within these as cross-cutting themes. Again, to preserve confidentiality only a qualitative indication is provided as to how many interviewees gave a particular view.

Transport – general

The **airport** is seen by most as important or very important for the future economic development of the region. The region needs to attract and retain businesses and key skills especially within the oil and gas sector and access by air is a vital element within this. Companies require global access for their personnel while Aberdeen needs air access to the eastern hemisphere where it continues to be the major centre for sub-sea development and technology.

Surface access to the airport is seen as poor by most interviewees, but there were differing views about how people should access the airport. Business interests stressed the need for access by car and for good parking, and some pointed out that car access is poor, and well below what people with experience of other international centres would find acceptable. For example the need to use "rat runs" to get to an airport was considered unacceptable, and would not help Aberdeen in competing for talent at a global level. Others pointed to the lack of and need for at least dedicated, branded bus services; it was suggested that growth in flying by lower income groups, driven by the low cost airlines, would drive the development of better public transport links.

A number of interviewees also commented that the management of the taxi service at the airport was poor or extremely poor, with patchy availability and high costs compared to equivalent airports elsewhere. There was general agreement that in the longer term the aspiration should be for some sort of rail or tram link between the airport and the city centre.

There was general agreement that present **road transport** problems especially for travel to work are very "peaky", related to current employment practices especially in the oil and gas sector. The bridges over the Rivers Don and Dee to the north and south of Aberdeen city centre are seen as key problems and the majority of interviewees claimed that a 3rd Don crossing was needed or even essential; some also suggested a new Dee crossing was needed, possibly as part of a wider redevelopment of the city's road infrastructure, for example by reviving a former

plan for a north-south dual carriageway through the centre. This it was suggested would also improve bus journey times by providing more road capacity for buses.

There were differing views about whether improvements at existing pinchpoints would reduce or remove the need for the AWPR, or whether these changes would be complementary.

While most interviewees believed that the AWPR would solve some or most of the road transport problems in the city, a number, including freight transport interests, considered that movement near the **port** (for example in Market Street) would continue to be a major and possibly worsening problem. Views on the future of **sea transport** were very varied, with a number of different future scenarios being suggested, ranging from the development of Scrabster as the main point of access from Orkney and Shetland, a switch to Peterhead to accommodate larger vessels, development at Aberdeen, through to the ferry services going to Rosyth.

There was no consensus here and it was evident that future services would depend on factors outside the control of organisations in the north east. This was especially the case for freight: there was a greater degree of consensus on the potential attractiveness of Aberdeen for foot passengers provided a high quality sea/bus/rail interchange could be developed.

There were mixed views about the **Crossrail** proposals, but on balance the overall feeling was negative. It was described as being irrelevant to the oil and gas sector (a key employer), and of little value in securing new residential or employment developments with access to existing or potential stations along the rail corridor. It was suggested that Crossrail would make more sense if the city centre really grew as an employment centre – but it would need to do so in a more concentrated manner than it is at present. In the same vein, a number of interviewees commented that any form of mass transit would not work because residential and employment areas are so dispersed.

Interviewees also said the **buses** in the region are expensive and some suggested this was due to the existence of the limited number of operators in the area. However, it was also noted that the oil sector has pushed up wage rates generally and that bus operators have to contend with high wages as one of their costs. The impact of buses on the environment of Union Street was commented on by a small number of interviewees; others suggested that adding buses to Market Street traffic would make traffic problems in the areas around the port worse.

Freight (and some other) interests pointed out that there are virtually no commercial or economic links with the **Inverness** area, apart from tourism. Only a small proportion of goods trips on the A96 are end to end while most are short distance trips: one interviewee suggested that less than 20% of trips are end to end. Priorities for the freight sector include measures to increase vehicle speeds both on main roads and in urban areas, the latter including HGV's in bus lanes and/or dedicated HGV lanes. Through-city movements were considered to be important and the general view was that these movements would continue as at present even when the AWPR is opened. There was also some agreement that better and more even road maintenance would help freight movements.

Interviewees from the freight and economic development sectors also suggested that the proposals for the replacement of Guild Street freight terminal are unlikely to work. There was some agreement that a single location south of the city would be more viable. Longer term there will be more demand for road-rail freight interchange.

Transport - the AWPR

There were mixed views on how big an impact the AWPR would have on city **congestion** and on how much traffic would re-route. As noted above, some interviewees within the freight sector suggested there would continue to be a high volume of through city movements, including port related traffic. However, others took the view that most of the region's freight transport problems would be solved by the AWPR.

The other major transport benefit was seen to be much better car (road) access to the **airport.**

Most interviewees wanted to discuss how the AWPR would change the economic geography of the region and how this would then affect transport. Most said there would be an increase in the attractiveness and viability of the main **rural towns**, which would become more attractive for residential development. Peterhead, Inverurie and Stonehaven were generally said to be the places most likely to attract new residents because of the AWPR. However, some interviewees suggested that these towns would also become more like dormitory towns with increased dependency on Aberdeen for employment; others noted that settlements such as Westhill had also grown employment uses as well as seeing new residential developments. There was general agreement that such increased dependency could increase **car commuting** into Aberdeen.

The property sector generally expected residential **land values** to increase away from the route of the road, and some expected that residential settlement patterns would become more dispersed because of the AWPR.

Many interviewees suggested that **commercial development** would seek to concentrate around AWPR junctions, and there was some concern that any such development could suck retail activity out of Aberdeen centre, which was described as fragile by a small number of interviewees. A small number of interviewees were very concerned about the potential developments which could be associated with the AWPR on the city centre.

Some respondents wanted more emphatic assurances that the AWPR benefits would be "locked in" as promised in previous planning processes through public transport priority/other measures in the city. One interviewee also questioned whether the AWPR might exacerbate existing social exclusion issues.

Land use

Early discussions highlighted the potential significance of changes in land use largely due to the AWPR, which would impact on future transport demand over the period of the RTS. Land use is also closely related to economic development and therefore land use issues were explored as part of the interview programme.

Interviewees highlighted problems in the city. The city centre was described as "weak" as a retail and commercial location and one interviewee suggested this was sufficiently serious as to raise concerns that it could collapse, especially if retail activity were allowed to be sucked out by the AWPR. The retail offer was described as fragmented and one interviewee stated that this

was due to former city centre policies. It was also pointed out that there had been no speculative office development for several years and that too much commercial and office employment is dispersed away from the city centre where the main transport nodes are located.

Specifically two interviewees stated the view that the Guild Street redevelopment would not work as a retail development, partly because of location and partly because too much retail expenditure is lost to out of town centres and to Dundee which has become a serious competitor: it was also suggested the AWPR could further undermine the city centre.

Given the importance of office based employment in the development and growth of other city centres, the issue of lack of office development was explored with interviewees who had detailed knowledge of such employment uses in the region. There was some agreement that city centre policies create uncertainty within the development industry, and that the city public sector has been too demanding in terms of conditions required of potential developers of property for employment purposes. It was suggested that this has discouraged city centre development while at the same time Aberdeenshire has been seen to be much more accommodating, hence making towns in Aberdeenshire a more competitive location.

Housing is also dispersed, and most interviewees suggested this trend would continue but might be exacerbated by the AWPR. There were mixed views on the underlying causes, but several interviewees expressed the view that there were too many flatted developments in the city, while larger units such as town houses tended to be developed outside the city. The price of land and difficulties in getting suitable sites together with a lack of brownfield sites and a reluctance to allow release of greenbelt land, were all put forward as factors underlying the lack and high cost of "family" housing in the city, which has led to a dispersal of population and residential development into Aberdeenshire and especially to rural centres with good local facilities and transport links.

Other issues

A number of interviewees raised the issue of, and stressed the importance of, **external connections** to the central belt cities and airports. Rail journey times were seen as especially poor, and there were concerns that pressure to add more stations would make this problem worse. The point was made that the "skip-stop" solution of missing out different stations on one of the Edinburgh and Glasgow routes would cause confusion and make rail less competitive. The Montrose single track section was mentioned by a number of interviewees as a frustrating source of delays and unreliability.

Some interviewees discussed how the region might be differentially affected by changes to **fuel taxation** and in the longer term by **road pricing**. These interviewees suggested that, due to the increasingly car-dependent spatial structure of the north east, the region looks quite different to the other city regions in Scotland. Given this (and concerns that dispersal and car dependency could increase, changes in fuel/carbon taxes and/or road pricing might play out differently in the region compared with other city regions. One suggested that the region might fare well if it were to offer itself as a pilot region for road user charging.

List of interviewees:

Eddie Anderson	ARR Craib Transport Ltd.
Robert Andrew	Stagecoach
Jamie Bell	Scottish Enterprise Grampian
Piers Blaxter	Aberdeenshire Council (Structure Plan)
Maggie Bochel	Aberdeen City Council Planning
Barclay Braithwaite	Aberdeen Harbour Board
Howard Brindley	Highlands and Islands RTP (HITRANS)
Alan Campbell	Chief Executive, Aberdeenshire Council
Peter Cockhead	Nestrans
Rab Dickson	Aberdeen City Council
Michael Dowds	BAA
Frances Duffy	Transport Scotland Strategy and Investment
Bill Duguid	Ryden Property Development
Phil Flanders	Road Haulage Association (Scottish HQ)
Iain Gabriel	{ Aberdeen City & Shire Economic Forum { Director of Transportation & Infrastructure, Aberdeenshire
Prof David Gray	Robert Gordon University, Aberdeen
Neil Grieg	AA Motoring Trust
Eric Guthrie	Aberdeenshire Council
Rob Howie	RA Howie Carriers
Derek Hunter	Grampian McLellans
Jim Irons	Perth and Kinross Council/TAC Trans
Ben Kerfoot	Nestrans
Jim Knowles	Aberdeenshire Council (Economic Development)
Nick Lowe	Stewart Milne Group
Ron Macaulay	Network Rail
George Mair	First Bus
Robin Maitland	Strutt and Parker Rural Development

Margaret McGinlay	Agriculture and Fish Cluster - Scottish Enterprise
Cllr Alison McInnes	{ Chair Nestrans, { Chair of Infrastructure Services Committee, Aberdeenshire
Alan McLean	Virgin Trains
Jason Moir	Dyce Carriers Ltd.
Derick Murray	AWPR Managing Agent
Andy Naylor	GNER Trains
Brian Nixon	Oil and gas cluster - Scottish Enterprise
Colin Parker	Aberdeen Harbour Board
Douglas Paterson	Chief Executive, Aberdeen City Council
John Patterson	Peterhead Harbour Authority
Mike Price	ScotRail
Graeme Purves	Scottish Executive Planning
Allan Rae	Scottish Enterprise Grampian
Bill Reeve	Transport Scotland Rail
Marjory Roger	Confederation for Passenger Transport
Geoff Runcie	Aberdeen & Grampian Chamber of Commerce
Gavin Scott	Freight Transport Association
John Shaw	Aberdeen University
Graham Spall	Shetland Council
Rita Stephen	Aberdeen City Council Economic Development
John Wallace	Peterhead Harbour Authority
Tom Williamson	Scottish Executive Planning
Nigel Wunsch	Network Rail

CONTROL SHEET

Project/Proposal Name:	NESTRANS REGIONAL TRANSPORT STRATEGY
Document Title:	Background and findings
Client Contract/Project Number:	
SDG Project/Proposal Number:	

ISSUE HISTORY

Issue No.	Date	Details

REVIEW

Originator:	JWS
Other Contributors:	
Review By:	Print:
	Sign:

DISTRIBUTION

Clients:

Steer Davies Gleave: