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RURAL ACCESSIBILITY

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2002

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ACKNOWLEDGEMENTS

Many people provided data and took time to speak to us during the survey and analysis work. Particular thanks are due to the staff within local authorities for their help in setting up the focus groups and for providing extensive data on transport services within each area.

The support and advice of the project advisory group during the work was much appreciated. The research team wish to express their gratitude to the Scottish Executive project manager, David Seaman, for his support throughout the work.

CONTENTS

EXECUTIVE SUMMARY

Rural accessibility depends upon the services and facilities available and the travel options for each group in society to reach these services. This report describes the findings of research to define how rural accessibility measures can be used in rural policy development, monitoring and evaluation.

Previous research has looked separately at the accessibility needs of rural dwellers, the transport policy interventions to overcome problems, and alternative accessibility measuring techniques. Through a survey and analysis programme, this project builds on these three strands of work towards an integrated approach to needs assessment and project appraisal.

Five case study areas have been used for detailed surveys and analysis. These allow accessibility to be studied for a range of types of rural area as follows:

- West Aberdeenshire - Relatively affluent mixed commuter and agricultural characteristics
- East Ayrshire - Agricultural and declining industrial area
- Central Caithness and Sutherland - Remote mainland
- East Lothian - Relatively affluent commuter area
- Wigtownshire - Deep rural and agricultural area

An extensive survey programme has been undertaken in these areas comprising postal surveys of 725 residents, telephone surveys of 250 residents and five focus groups. Local authorities and key transport operators have also been interviewed to establish current policies and concerns about rural accessibility.

The surveys identified that:

- Expectations of rural accessibility are consistent with the type of area. The quality and amenity of rural areas is the main reason why people choose to live there, and people are broadly content with their relatively poor accessibility provided they have a car available.
- The least affluent people are less content, partly because they feel constrained to live in the rural area due to family ties or other factors, and partly due to their poor accessibility.
- Amongst car users, expenditure on fuel exceeds the national average by 50 to 100% with the most affluent people spending the most. Opinion is divided amongst those surveyed on whether fuel tax levels are appropriate.
- All people groups in all areas rank car travel as the most useful mode. The importance of car, taxi, rail, walk and cycle all increase with income, but the importance of bus travel decreases with increasing income.

- Satisfaction with bus services is greatest in the commuter rural areas. In more remote areas, detailed planning and flexibility by travellers is needed for buses to be a practical option.

- When discussing social exclusion, rural dwellers focus on problems for young unemployed and elderly people, and limited social and leisure activities for people of all ages. Car based solutions, with a managed approach to providing lifts, are generally viewed as the most promising way to overcome these accessibility difficulties, but bus and community transport initiatives are also suggested.

- Use of telephone and internet shopping and banking is greatest amongst the higher income groups, and use of local facilities is greatest amongst the poorest.

- Most people find ways to overcome accessibility limitations but the costs of doing so are greatest for the least wealthy people.

- The economics of providing and operating bus and rail services are poorly understood, but survey participants demonstrated that they were open to economic arguments, by recognising the fragile economics of many transport and non transport activities in rural areas.

- Better co-ordination of rural transport services is viewed as a high priority by all groups, and an improved dialogue is needed between service users and providers to build joint confidence and ownership in new approaches.

The analysis of travel behaviour has identified that:

- Accessibility measures explain the travel choices of residents in all types of rural area. The choice of local or regional destinations for trips varies more by trip purpose and socio-economic group than it does by type of rural area.

- For assessing travel to work behaviour it is important to consider different job markets by skill group and other factors separately.

- Opportunities for work, shopping, health etc are best defined in terms of the level of activity at each location.

- Readily available data on services, facilities, and transport services is sufficient for useful analysis of accessibility. Trip planning software, models and information systems are improving the ease of incorporating accurate travel times within accessibility analysis.

The analysis demonstrates both qualitative and quantitative approaches for assessing rural accessibility needs and problems. Use of these techniques in appraisal could assist policy makers and planners working with local communities and transport operators to deliver improvements. Quantitative analysis is more useful than qualitative appraisal since it allows more direct comparisons of investment options locally and nationally, but qualitative analysis is still useful to check, calibrate and validate quantitative measures.

Classification of rural accessibility characteristics, for planning and investment needs, should take account of the trip purpose, population group and type of geographical area in that order.

Assessing the accessibility needs of rural dwellers involves consideration of: expressed, stated, comparative and community need. Expressed need is demonstrated through observed demand, stated need through surveys of the local community, but for an objective view of comparative and community need accessibility analysis is required.

Each stakeholder has different aims for the development of rural facilities and transport services, but improvements in rural accessibility are common goals for all stakeholders, helping to facilitate integrated action. Joint agency approaches could be encouraged by setting national accessibility targets. Achievable and measurable accessibility goals should also be defined within local transport strategies to help manage progress at a local level.

Effective co-ordination of rural transport has proved to be an elusive goal, so the Scottish Executive should sponsor a demonstration project, or projects, to identify how obstacles can be overcome and what types of co-ordination are practical between public, community, health, social work and education transport. Either associated with these demonstration projects or as a separate initiative, "dialogue marketing" of rural transport services should be tested in rural Scotland with individual and group action programmes providing practical information to travellers and transport operators on services and travel needs.

CHAPTER ONE INTRODUCTION

BACKGROUND

1.1 People living in rural areas not only have more constrained choices of opportunities but fewer travel choices and higher transport costs to reach them. Rural accessibility depends upon both the quality of the services and the travel options to reach these services. Most current public investment to improve rural accessibility is prioritised either on the basis of the spatial distribution of opportunities or on the availability of transport services. A more systematic approach to measuring rural accessibility could allow scarce public funding to be targeted more effectively at tackling accessibility problems ensuring that practical solutions are brought forward which will meet peoples' needs.

1.2 This project has assessed, using empirically based and tested accessibility measures, how transport derived social exclusion in rural areas can be evaluated. This report presents:

- Survey and analysis findings, which help to provide a better understanding of rural accessibility and transport derived social exclusion.
- Suggestions for a robust methodology for measuring accessibility in Scotland's rural areas which can be included in developing spatial information systems to inform future rural policy.
- An appraisal framework to allow accessibility concepts to be used for evaluating options for investment in rural transport initiatives.

1.3 The project was undertaken by Derek Halden Consultancy in association with Aberdeen University and Scottish Agricultural College.

APPROACH TO THE PROJECT

1.4 This project was tackled in three stages as follows:

Stage 1 - Context and Review of Previous Work

- Review existing evidence on the role of transport in social exclusion in Scotland.
- Review innovation in rural transport and its role in addressing transport disadvantage
- Review current methods for identifying the extent of transport related social exclusion in rural Scotland

Stage 2 - Surveys and Analysis

- Investigate current and potential use of accessibility measurements in a rural context, including in relation to new rural transport initiatives.
- Utilise relevant accessibility measures to assess the transport options available to a representative sample of dwellers in rural Scotland.
- If possible calibrate accessibility measures by reference to data on expressed needs, and people’s views on accessibility constraints.

Stage 3 - Recommendations

- Recommend appropriate accessibility measures for use in future policy development, monitoring and evaluation.

POLICY CONTEXT

1.5 National transport policy targets funding at rural transport through the rural transport funding initiative including:

- The rural community transport grant scheme
- Rural public passenger transport funding

1.6 Between 2001 and 2004, £16.8 million is being spent on these initiatives which represents a very significant percentage of the total expenditure on rural transport services in Scotland. The community transport grant scheme is administered nationally and the rural public transport funding is administered through local authorities.

1.7 The passenger transport funding allocation for each local authority is determined using simple criteria based on the demography of each area as follows:

- A base allocation has been given to all Councils excluding the four major city Councils: Glasgow, Edinburgh, Dundee and Aberdeen. All other Council areas have at least some rural population.
- The base allocation has then been augmented by a further amount determined on the share of Scotland's population within each relevant Council and the dispersal of the rural population in terms of distance from settlements of over 1000 people.

1.8 It is recognised at both national and local levels that for effective use to be made of these funds improved targeting of resources is needed including co-ordinated local rural transport strategies. A more accurate assessment of rural transport need would consider accessibility for each group in society and prioritise investment towards the public interventions which would achieve the greatest change in accessibility.

1.9 Rural transport need depends on many inter-dependent factors. Research (Shucksmith 2000) has shown that non car available households tend to live within settlements which offer access to basic services such as a shop or a post office. It has also been found that many who choose to live in more dispersed patterns are from higher mobility sectors of society.

1.10 Efficient targeting of transport investment to tackle socially excluded people in rural areas therefore needs to consider these social factors in addition to geographic and demographic influences from population density and transport network structure.

1.11 New approaches also need to build on current best practice for prioritisation of resources being adopted by local authorities and transport operators across the country.

1.12 In the allocation of the national community transport funding, community groups are required to make a case for funding and applications often include simple accessibility measures. Good practice in assessing community transport needs, involves surveys and analysis to determine accessibility problems and travel demand requirements. Applicants need to demonstrate how any new community transport service will complement existing provision.

1.13 Detailed surveys of the community are expensive and this can be an obstacle to the development of some potentially successful schemes. Fund assembly can be frustrating for

community groups since the ease of attracting funding increases with the number of funding partners. Simple accessibility measures to demonstrate need could help to win initial support from funding partners. If a community were able to identify a need using accessibility analysis techniques then more of the investment in survey time could be devoted to joint working with the community on developing projects. This would not only ensure better targeting of funding but should help to ensure that the schemes which are funded are more successful.

CHAPTER TWO REVIEW OF PREVIOUS WORK

BACKGROUND

2.1 There is a very extensive body of literature on issues related to rural accessibility. Over the last 30 years the research has evolved in line with national and local policy. Initial studies (e.g. DoE 1971) attempted to assess the importance of rural public transport and its role in rural lifestyles. The main focus was therefore on mobility. These studies identified the unequal distribution of mobility between different rural population groups and sought to establish minimum level of service criteria based upon a range of factors.

2.2 A major advance was made by incorporating this thinking about mobility within the wider concept of accessibility. The seminal work from this period (Moseley 1979) structured the consideration of rural accessibility under three main themes:

- The population group – This took account of the wishes of each individual to engage in defined activities.
- The activity supply point – This identified the opportunities based upon the land use supply which would allow any individual to satisfy their desire to participate in the activity under consideration.
- The availability of transportation – This defined how an individual could traverse space to reach the relevant facility.

2.3 This work recognised that transport was a derived demand and that the analysis of accessibility needed to consider both the supply of opportunities and the supply of transport for each population group. Unfortunately despite these theoretical advances in the 1970s, the apparent complexity of accessibility analysis hindered the application of the concept as a planning tool. There was no policy priority or administrative structure to encourage joint working between the relevant public agencies to allow transport provision to be considered jointly with the provision of healthcare, education etc. There was therefore little demand for more integrated appraisal using accessibility techniques.

2.4 This potential obstacle had been recognised by Moseley in 1979. He therefore suggested that standards of accessibility should be established by Central Government to provide a framework for local decisions in each local community about service planning.

2.5 In recent years there has been renewed interest in a more integrated planning approach, and accessibility analysis is recognised as having an increasing role to play in identifying efficient, effective and equitable solutions. Issues such as the need to reduce social exclusion in rural areas have introduced a new political priority to overcoming the problems of rural inaccessibility (Scottish Executive 2000). The debate now centres on:

- Identifying the accessibility needs of rural dwellers and the impacts, including social exclusion, of poor accessibility.
- The transport policy interventions which have sought to improve rural accessibility.

- Practical techniques for measuring accessibility in rural areas that can be used to support expenditure decisions and prioritise initiatives.

2.6 The literature review below therefore considers previous work under each of these three topics. Under each strand, the focus of the work is Scottish issues but relevant international literature is also considered where appropriate.

ACCESSIBILITY NEEDS OF RURAL DWELLERS

2.7 Rural areas have diverse characteristics and the problems faced by rural dwellers vary according to the specific needs of individuals.

2.8 To allow practical analysis of issues, rural areas have been categorised in National Planning Policy Guidance (Scottish Executive 1999) as commuter, intermediate or remote. This national classification is defined using simple accessibility measures. Commuter areas are defined as being within 60 minutes travel time of a principal centre, intermediate areas are 60 to 120 minutes from a principal centre and remote rural areas are more than two hours travel from a principal centre.

2.9 In Scotland about 170,000 people live in remote areas, 270,000 live in intermediate rural areas and about 600,000 live in commuter rural areas. Each type of area has its own characteristics and within each type there is a wide range of issues and problems including the desire for improved accessibility. In each local area practical solutions require approaches to be tailored to local needs.

2.10 Access to a principal centre is, however only one aspect of rural accessibility. Access to regional and local population centres increases in importance with remoteness. Regional centres will often have a population of around 30,000 and offer a wide range of public and private services and local centres will usually have a population of over 2,000 but provide only basic services.

2.11 The existing definitions of types of rural areas are therefore vague so research has been undertaken to investigate if a more robust typology can be developed. Recent work (RGU 2001) suggested eight theoretical typologies based on transport and geographical conditions. The typologies include two peri-urban areas, three contrasting market towns with hinterlands and three types of remote areas. The research suggests that the typologies should be further developed to allow social and economic differences to be considered in greater depth.

2.12 An alternative approach to categorising rural areas by geographical area is to classify them by the characteristics of the travel need. A review for the Countryside Agency in England (TAS 1993) identified that, for the purposes of appraisal, need could be considered as follows:

- Comparative need - This compares individual cases with averages or with other similar situations. The level of need is determined by equity aims but recognising that trade-offs are made by rural residents i.e. poorer accessibility to theatres in exchange for better access to the countryside.

- Expressed need - Demand as an indicator of expressed need is identified as the most common measure for defining need in current practice. However this method does not address the issue of latent or frustrated demand, and does not address the issue of enforced demand e.g. owning and financing the operation of a car because there is no alternative, rather than by choice.

- Stated need - There is an obvious place for including what people say they need in the development of transport policies through a consultative process.

- Community need - This requires an objective view to be taken to defining the need for a minimum level of access to basic services such as a doctor's surgery, educational facilities etc.

2.13 The research suggests that each of the four methods has some validity, and in practice a robust appraisal methodology would incorporate elements from all of the approaches.

2.14 Solutions to rural exclusion problems are likely to be most effective if developed with local communities (Scottish Executive 1996). Community approaches link the identification of need with delivery of the solutions allowing effective targeting of measures. However objective criteria are still needed to determine the overall level, and prioritisation of public resources for such initiatives.

2.15 The policy emphasis on the equity issues has increased in recent years and research has identified factors leading to social exclusion in rural areas (Shucksmith 2000). This outlines the current problems with private and public services, notably transport, public housing and childcare, and the ineffectiveness of the welfare state in reaching some rural dwellers. A number of policy recommendations were made, including: the need for rural 'exclusion-proofing' of new and existing policy; tackling issues concerning low pay, and benefits take-up; and reducing poverty amongst older people. Recommendations particularly relevant to accessibility included the following:

- Many people experiencing social exclusion in rural areas live dispersed amongst apparent affluence, rather than concentrated in specific areas. Area based intervention may therefore be insufficient.

- Aspirations for community based initiatives are required to tackle the problems, but top-down incentives need to be supported by parallel initiatives for community capacity building.

- Current economic and transport trends will lead to an increase in social exclusion in rural areas.

2.16 The work suggests that, to achieve integration into paid work for many people, fresh thinking on transport is required. Subsidised taxis for targeted groups, grants to help with car purchase and help with car tax and insurance costs are all suggested. More local service provision such as small shops and schools, and local community transport schemes, have the dual benefit of providing work for local people and improving access to services. The research therefore emphasises the need for a joined up approach in tackling social exclusion.

2.17 Recognising the need for this comprehensive approach, a conceptual framework for viewing social exclusion in rural areas has been proposed (Scottish Executive 2000). This identifies four main systems which give an individual a sense of belonging in rural society:

- private market processes,
- public services,
- voluntary schemes
- cultural support.

2.18 Each of these systems has a role in addressing rural accessibility issues. A recent policy review (Scottish Executive 2000) identified that discussions about service provision in rural areas tended to highlight the following services as of importance.

- Work
- Banks
- Shops
- Chemists
- Post offices
- Libraries
- Childcare and out of hours school care
- Sport and leisure facilities
- Information and advice services
- Health and social care
- Education and training
- Community halls
- Local government Offices
- Employment Service and DSS offices
- Public and community transport

2.19 The public sector has the primary role in providing most of these services. Even where services are predominantly controlled by the private sector, public support is often required in some form. Local service provision is therefore largely within the control of public agencies.

2.20 Debates about service provision in remote areas tend to focus on the quality of a few core services: the shop, the primary school, the GP, the community hall and public transport. Of particular concern is the wide disparity in opportunities available to different groups in society. Lack of access to services particularly disadvantages older people, families on low incomes and young people (Scottish Office 1998).

2.21 A structure for assessing the transport related dimensions of social exclusion was proposed by Church et al (1999) and used in research for the Scottish Executive (2001b). This suggested that exclusion could be: physical, geographical, economic, time based, facility based, fear based, or due to space management strategies. Accessibility levels for rural residents are more likely to be sensitive to each of these factors than for their urban counterparts.

2.22 This highlights the crucial relationships between transport and social exclusion. Car ownership is critical in explaining the large range in accessibility levels experienced by rural dwellers. The limited supply of public transport is a major factor in accessibility for non-car households, given the declining availability of local services such as shops, primary schools and health facilities in rural areas. This is a particular problem for people without cars who live in remote areas (Scottish Executive 1998).

2.23 Low income car-owning households are also at risk of exclusion due to low accessibility levels. The declining relative costs of car use in recent decades have enabled this group to adopt a car-dependent lifestyle but levels of accessibility are dependent upon fuel prices, so that they could face increasing exclusion with rising fuel costs. It was also found that certain groups, particularly the job seeker and teenager, experienced social and economic exclusion due principally to transport and accessibility issues.

2.24 Overall, in considering rural accessibility levels there is at least as much variance between population groups and specific travel purposes as between geographical areas. Therefore geographical classification of rural areas is only a starting point in assessing the needs of rural dwellers. Accessibility also needs to be considered by trip purpose and population sector.

TRANSPORT POLICY INTERVENTIONS

2.25 Private transport by car will invariably offer the best accessibility in rural areas. However concerns about the impact of the car are leading many authorities to restrict or manage car access (Countryside Agency 1999).

2.26 For the declining numbers of people without a car, rural public transport offers lifeline services, but as the numbers of passengers reduces the cost of providing these services to the public sector is increasing. Significant funding has been provided by the Scottish Executive to local authorities in recent years to stem the rate of decline (Scottish Executive 2001c). Research for the Executive on the impacts of this funding has concluded that:

- The cost of providing transport services increases with remoteness.
- Shopping was the most frequent trip purpose for passengers on scheduled bus services and the surveys revealed a high percentage of female and elderly users on the new bus services.
- The new transport services were provided with very little analysis of the levels of unmet need, but the new services were successful in penetrating the key target market of residents who have no access to a car in remoter areas.
- 36% of those making journeys on new services in remote areas would not have travelled if the service had not been available, with the equivalent percentage for peri-urban areas being 23%.
- Investment in peri-urban areas was most successful in targeting social exclusion.
- Greater efforts should be made to ensure that community transport investment is distributed more widely across Scotland in the future.
- Priority should be given to community transport schemes which provide services for individuals rather than only for groups.
- Local transport strategies should set and monitor clear objectives for rural transport including the future role of conventional bus, demand responsive bus services and community transport measures.

2.27 The findings of this research therefore confirm an ongoing need for public funding of rural transport, but recommend better targeting of these funds through more rigorous analysis of rural transport needs to achieve more efficient and equitable solutions.

2.28 European work (VIRGIL 2000) has reviewed the experience throughout Europe of transport schemes to improve rural transport under four main themes:

- Enhancement of regular bus services.
- Development of on-demand or responsive services.
- Integration of goods and passenger transport.
- Development of multi-purpose and/or multi-agency transport services.

2.29 This work notes the general absence of appraisal in bringing forward project plans and, for the UK projects, the report states:

> *"We are not aware of any real use application of systems for assessing socio-economic benefits to set against the costs of rural passenger transport services. Indeed, even simple accessibility indices are conspicuous by their absence. Detailed Cost Benefit Analysis is only required or undertaken for large projects, such as major road, rail or infrastructure investment."*

2.30 To allow a consistent review of the various projects across Europe, 14 criteria were defined within this research as shown in Table 1. Although this framework has primarily been used in research it also provides a useful list of questions which the promoters of rural transport projects could usefully consider.

Table 1 - VIRGIL criteria for evaluating rural transport schemes

Criterion	Sub-criterion
1: Operational viability	Is service only means of public transport in the area?
	Is it a supplementary service to regular services?
	Does the service substitute a previous service?
2: Use of telematics Has telematics been utilised in:	Reservation of service?
	Ticketing system?
	Information system?
	Traffic planning, e.g. routing?
3: Potential for integrated passenger / freight transport	Freight in passenger traffic?
	Passengers in freight traffic?
4: Applicability Is a similar service concept in use:	In the same region
	In the same country
	In other European countries
5: Economic viability Can economic viability be determined based on the following indicators:	Total annual cost of operation
	Ticket (fares) revenues (passengers and freight)
	Annual surplus / deficit
	Financing of deficit
	Continuation of financing
6: Geographical coverage	Has the service brought new areas within service which have not had previous public transport services?
7: Social viability Has the service particularly improved / decreased the mobility for:	Elderly people
	Disabled people
	School children
8: Flexibility of service Is there any degree of flexibility of the service with regard to:	Route
	Stops
	Checkpoints
	Timetable
9: Technical suitability of vehicle fleet	What is the standard passenger capacity?
	Are there any special comfort features?
	Is there wheelchair access?
	Is there low-floor access?
	Is there separate access to a freight space?
10: Training of personnel Is there special training for:	Vehicle drivers and assistants
	Reservation personnel
11: Efficiency of reservation and data collection system Have the following systems been considered:	Reservation via Travel Despatch Centre or in-vehicle mobile phone / radio link
	Automatic, semi-automatic or manual data collection
12: Reallocation of labour	Has the service resulted in re-allocation of resources between different public sectors (measurable cross-sector benefits)?
13: Users' opinion	Is the users' opinion positive about the service?
14: Marketing	Is there sufficient marketing of the services to users?

2.31 The VIRGIL project has assessed a large number of case studies against the above criteria from throughout Europe including over 20 from the UK. It therefore provides a powerful source of information on the practical experiences of local authorities and others of implementing rural transport projects.

2.32 Voluntary and community schemes are proving to be successful in many places and can provide good value solutions to local needs. To help promote these initiatives there is an increasing amount of guidance available to help people organise, research, evaluate, and promote successful schemes e.g. Scottish Office 2001, CTA 1997. Successful case studies across Scotland are described in these documents.

2.33 Research (Scottish Office 1998) has also shown that public transport is little used by the majority of people in rural Scotland. Rural residents who use public transport usually do not have regular access to a car and confine their trips to short journeys which they can make using a reasonably frequent public transport service. Due to lack of provision and flexibility, many rural dwellers were unwilling or unable to consider public transport as an alternative and are regarded as car dependent. Two main types of car dependence were identified:

- Structural dependence - Those who are dependent on their cars because there are no viable alternatives

- Conscious dependence - Those who rely on their vehicle but could realistically undertake their journeys by alternative modes.

2.34 Cars are regarded as a fundamental necessity by the majority of households in rural Scotland, who rely on this mode for the bulk of their travel. Those in more isolated areas make a higher proportion of their journeys by car than those living close to shops, employment and services. Income is also an important indicator of car use.

2.35 There are also interesting trends by journey purpose. Travel by car to a supermarket is a car journey common to all people, regardless of location, affluence or remoteness. Having a car is also often regarded as crucial to obtaining and keeping employment, and in the most peripheral areas car sharing for shopping and employment was prevalent. Consequently, many rural dwellers without regular access to a car are still dependent on friends' or relatives' cars for these sorts of journeys. The majority of non car available households are in and around small towns and villages, close to shops, services and at least some employment.

2.36 To reconcile this car dependence with national transport policy, an integrated approach to policy intervention is needed (Farrington et al 2000). Policy benefits can be maximised and negative impacts minimised by reducing the need for mobility in rural areas, improving accessibility by other means, such as supporting rural services (retail, health, etc.). However, the work has identified that progress with practical schemes, supported with funding from the relevant agencies, requires an objective method of assessing accessibility levels which is calibrated with people's perceptions of their needs.

2.37 In any local area conflict and synergy between transport policies and the goals of rural development can be identified. When evaluated against the aims of achieving social, economic and environmental sustainability, transport policies are seen to have many positive elements which seek to improve accessibility via increasing public transport-based mobility (e.g. the Public Transport Fund and the Rural Transport Initiative Fund). However some policies have conflicting elements, notably fuel tax which has positive environmental benefits but potential negative implications for social and economic sustainability.

MEASURING ACCESSIBILITY IN RURAL AREAS

2.38 There have been various approaches to provide a more robust analytical approach to measuring rural accessibility. The relative role of demand and accessibility analysis in appraisal has shadowed the perceived need of policy makers to balance efficiency and equity aims. Moseley (1979) identified that setting national accessibility standards would be likely to increase the need for public support for transport. However, national government experiments (Coe and Fairfield 1980) concluded that "People living in rural areas have to adapt to their

environment by adopting a lifestyle involving limited mobility or by making their own arrangements for transport".

2.39 In the early 1980s a programme of research in England sought to define a methodology for assessing accessibility problems in rural areas (Kilvington and McKenzie 1985). This work gave further insight into rural accessibility problems, and confirmed that travel behaviour and need in rural areas was too complex to be measured accurately by any simple formula.

2.40 A disaggregate approach was therefore needed, so research for the Countryside Agency (TAS 1993) suggested that accessibility analysis should consider:

- The category of person
- The availability of a car
- The journey purpose.

2.41 The extent to which any person faces an accessibility problem will depend upon a combination of these three characteristics. This work suggested a research programme to identify levels of rural accessibility across Europe, compare accessibility for urban and rural dwellers, and to benchmark standards of rural accessibility. However this research was not taken forward and there continues to be very limited accessibility analysis in developing practical initiatives.

2.42 At a European level in the early 1990s peripherality indices were developed to define criteria for financial support. The European Commission continues to favour this approach, and Scottish economic development agencies now also use such peripherality indices as a tool for regional policy targeting and evaluation.

2.43 In Scotland various measuring techniques have been used in rural areas for accessibility (Copus 2000, SIRP 2000). Most of these analyses have used distance or drive times to represent the deterrent effect of existing transport supply. This can be helpful in understanding the spatial pattern of activity but does not allow alternative transport options to be evaluated. This is discussed further in Chapter 5.

2.44 Where accessibility has been measured, (Halden et al 1995) it has been found that remote economies can be more self contained than intermediate rural areas, giving better accessibility to a few essential services such as work and shopping. However remote economies face particular challenges in achieving accessibility to more specialised services such as regional hospitals.

2.45 A recent Scottish review of accessibility measuring techniques (Scottish Executive 2000) suggested a practical framework for accessibility analysis including for rural areas. Any accessibility issue must be defined in terms of four categories:

- The type of person.
- Whether accessibility at the trip origin or destination is being considered.
- What is the policy issue being considered.

- What methodology is to being used to calculate accessibility.

2.46 The main elements in each category are summarised in Table 2.

Table 2 - Framework for Accessibility Analysis

Category	Elements	
Type of person	Car available	People by age, socio-economic group, gender, ethnic group etc.
	Non car available	
	Mobility impaired	
Origin or destination	Origin accessibility defines access **to** work, shops etc. Destination accessibility defines access **of** shops, employment locations etc.	
Policy issue	Accessibility by/of walk and cycle Accessibility to/of opportunities by transport system Access to/of the transport system itself Accessibility by/of freight Comparisons of accessibility measures	
Methodology	Opportunity, or Value Measures at a level of complexity and accuracy commensurate with the appraisal need.	

2.47 This approach is structured using the same three main categories identified in 2.2 but expanded to include practical methodologies and to reflect policy appraisal needs. It is equally applicable to urban and rural areas. However it also highlights that, although accessibility analysis is very flexible, it can become complex or confusing if the policy questions being asked are not identified at the outset. Clear ***policies*** relating to a ***group of people*** for a particular ***purpose*** can be analysed easily using accessibility techniques. Vague aspirations for better accessibility are often more clearly analysed by looking at the narrower concept of mobility.

2.48 A national accessibility target for rural areas in England was set in the 10 year transport plan (DETR 2000). This seeks to increase the proportion of the rural population living within 10 minutes walk of an hourly or better bus service by one third by 2010. It is not clear how this target was arrived at but a similar target for Scotland would introduce pressure to divert funding towards less remote rural areas where higher population densities and more frequent bus services would make the target threshold achievable. Off major inter-urban corridors hourly or better bus services are generally only seen within commuter rural areas.

2.49 For Scottish rural areas a target for access to the transport system would be more difficult to define since some of the best current practice involves targeted services for particular population groups on specified days of the week. Nevertheless recent research (Scottish Executive 2000) suggested that national accessibility targets for Scotland would be an effective way for Government to commit to policy delivery without becoming involved in the detailed scheme planning which is best handled at a local level. Targets by trip purpose and population group would provide the level of focus needed to implement policy aims whilst recognising Scotland's diversity.

2.50 A major constraint on analysis of accessibility is the availability of spatially referenced data. However the increasing development of geographical information systems (GIS) means that data are becoming much more widely available for both the distribution of population by characteristics and on services such as employment locations and shops.

2.51 A comprehensive review of spatially referenced data for rural areas has recently been undertaken (SIRP 2000). This has identified how data on rural services could be linked and analysed through the use of the Scottish Executive Geographical Information Systems (SEGIS). The work has suggested the progressive development of national data to cover locations of:

- GPs, Hospitals, Dentists, Chemists
- Primary Schools, Secondary Schools, FE & HE Colleges, Universities
- Post Offices, Banks and Building Societies
- Supermarkets, Independent Grocers
- Petrol Stations

2.52 There is already a very large amount of spatially referenced data within SEGIS for these services and for population and household characteristics and further development and refinement of these data is in progress.

2.53 As part of the development of SEGIS it was proposed that accessibility indicators could be included for rural areas. To date drive time isochrones have been used. The advantages and disadvantages of this approach were considered in research for the Scottish Executive and are summarised in Table 3 (SIRP 2000).

Table 3 - The use of Drive Time Isochrones in SIRP

Advantages	Disadvantages
• For the purposes of the Scottish Household Survey analysis, a drivetime threshold of 30 minutes was used for defining 'accessibility'. This is viewed as a 'cut-off' drivetime which people are prepared to travel for in order to reach many services. • Perceived as a simple indicator which will be understood.	• Drive time accessibility assumes accessibility is inextricably linked with car travel. For those people without use of a car at all times for whatever reason, accessibility is much more likely to be a function of public transport routing and scheduling. • The location of centroids from which to calculate drivetime isochrones is a potential source of disagreement. • A 30 minute isochrone from a large town or city may barely reach the edge of the town giving a misleading picture of accessibility since secondary centres may be available nearer the periphery of the town. • They are generally based on average vehicle speeds and even for roads of the same class speeds may vary significantly and by time of day. • Maps can be aesthetically unpleasing so software packages tend to interpolate between points on a road network producing 'star' patterns with broad extensions rather than linear extensions of road networks.

2.54 Overall, the research concludes that, lines delineating 30 minute drive times should be seen as 'fuzzy' and decisions based on this classification which directly affect areas close to boundaries should take account of this fact.

2.55 Drive time isochrones are not therefore considered to be a final solution, but rather an interim step towards measuring rural accessibility.

CHAPTER THREE THE STUDY AREAS

SELECTION

3.1 Rural areas have diverse characteristics so the aim was to select study areas to reflect as wide a range of this diversity as possible. Within the strategic classification of rural areas as remote, intermediate or commuter there are many different accessibility characteristics. Of particular importance is the need to consider areas by the nature of their economy to include wealthy, poor, growing and declining economies.

3.2 There was also a need to ensure that a range of transport characteristics were covered including:

- levels of car ownership,
- the level and quality of bus, taxi and rail services
- the quality of the road network including links to the strategic road network.
- Areas where local initiatives have sought to improve rural transport through innovative approaches to transport provision .

3.3 In consultation with the Project Advisory Group the five case study areas shown in Table 4 were selected.

Table 4 - Case Study Areas

Area	Characteristics	Reason for Selection
West Aberdeenshire	Mixed, commuter/ affluent/agricultural.	Several local centres. Variety of public transport including community transport schemes operating.
East Ayrshire	Agricultural and declining industrial area..	Pockets of high unemployment. Local economic restructuring underway. Parts of the area remote rural with marginal farming. Very little community transport and public transport the responsibility of the PTE.
Caithness/ Sutherland	Remote mainland	Sparsely populated and generally 'thin' public transport with pockets of poverty.
East Lothian	Affluent commuter	High proportion of high income commuters and relatively good public transport. Important influence of major nearby urban area combined with local agricultural economic base. Well established demand responsive bus services.
Wigtownshire area in Dumfries and Galloway	Strongly rural/ agricultural	Discrete market centre with limited public transport. Good examples of different community transport schemes.

3.6 The study areas are shown in Figure 1.

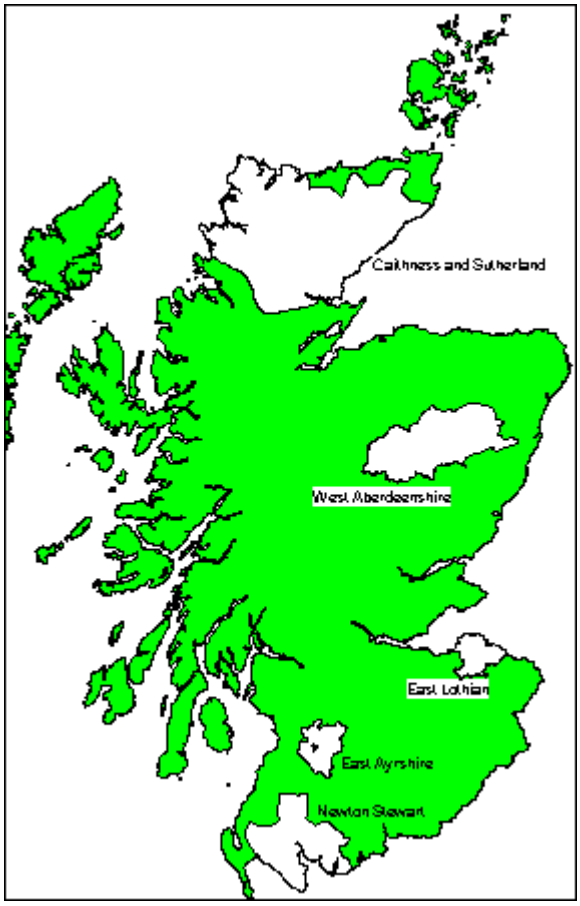

Figure 1 - Case Study Areas

3.7 For each case study area, surveys were undertaken as follows:

- A survey of local authorities and transport operators to identify trends within rural transport and plans being put in place to respond to, or influence these trends. This includes data collection on public and community transport in the area covering routes, timetables, passenger numbers, trends and plans for the future.

- A postal survey with questionnaires sent to 10% of the residents in the area seeking information on travel patterns and attitudes to transport.

- A telephone survey of about 50 residents in each area to follow up the postal responses with more detailed perceptions and views of accessibility issues

- One focus group in each area, with a small number of those interviewed from the telephone surveys, to explore issues emerging from the telephone surveys particularly potential solutions to accessibility problems.

3.8 To provide the background for these surveys it is interesting to start by placing the study areas in context. A strategic analysis has therefore been undertaken looking at broad, regional accessibility to major centres and higher/middle order services.

STRATEGIC ACCESSIBILITY CHARACTERISTICS OF STUDY AREAS

3.9 The strategic analysis starts by looking at average road travel-time to major urban centres, and then maps patterns of accessibility to major shopping centres and to regional health care facilities. The analysis has been undertaken at a postcode sector level covering the whole of Scotland but looking at the case study areas in detail. It must be emphasised that postcode sectors do not provide a level of detail sufficient for the analysis of rural policies. The strategic analysis has been undertaken to illustrate the strategic accessibility context for each of the study areas and postcode sectors provide sufficient detail for this. The methodology is described in detail in Appendix A.

3.10 The choice of "key services" for looking at strategic accessibility is a difficult one, although a potentially very long wish list is effectively constrained by the availability of appropriate data. Within the resources of this project it is only feasible to generate a limited number of travel-time surfaces under the three categories below:

- Specialist Services - There are four cities in Scotland with a population of more than 150,000[1], Glasgow, Edinburgh, Aberdeen and Dundee. These represent the top level of the urban hierarchy. They each offer the broadest range of specialist goods and services and are thus an appropriate focus for analysis of accessibility to such high level requirements.

- Middle Order Shopping Services - Below the top tier of specialist services there is a long "tail" of smaller service centres, each providing a different combination of shopping opportunities, some perhaps higher level, covering a relatively large hinterland, others purely local. At the medium levels of the hierarchy these hinterlands appear to overlap to a considerable degree, so that adjacent towns of roughly comparable size may offer different and complementary goods and services to largely the same area.

- Middle Order Hospitals Services - Key medical facilities have been defined in terms of accident and emergency units, general surgery centres and maternity hospitals. This list is clearly incomplete, but it is illustrative of what can be done through GIS analysis.

3.11 Generally speaking the highest order of goods and services (in other words the most specialised/expensive/infrequently used, and in pursuit of which most people are prepared to travel the longest distances) are found only in the largest cities, where a sufficient market is available both within the city itself, and in its large surrounding "hinterland". The time it takes to travel to the nearest high order service centre is a significant aspect of the accessibility. Examples of such services are specialised shops, financial and legal services, regional/national theatre and concert venues etc. The four largest cities in Scotland, Glasgow, Edinburgh, Aberdeen and Dundee are distinguished by the presence of a large number of such high order services. Carlisle and Newcastle-upon-Tyne were also included in the analysis to avoid boundary effects.

[1] Several other "conurbations" may exceed this threshold. However these are not easily represented as point locations, and it is convenient at this point to restrict the analysis to these four.

3.12 The pattern revealed by Figure 2 brings no great surprises, with a broad NW-SE trend in accessibility reflecting the location of the main cities, and highlighting the well known problems of the Highlands and Islands.

3.13 Turning to middle order services, a different approach to the identification of destinations is required, since it is much more difficult to identify a precise list of towns associated with a broad band of services. A simpler approach is to select particular services within the middle order, and to identify the destinations where these services are available. Two types of "middle order" services which previous research has shown to be of particular concern to rural residents are medium sized shopping centres, and medical services such as maternity units and accident and emergency centres.

3.14 Medium sized shopping centres are considered to be the sort of place visited occasionally for a full or half day's shopping, perhaps for specific items of clothing, or for Christmas gifts. In the absence of any published data, it was decided that such shopping centres could best be selected on the base of certain "indicator " retailers. A medium order shopping centre was defined as a location where three or more of these retailers are present. Thirteen Scottish towns/cities, namely Aberdeen, Ayr, Dumfries, Dundee, East Kilbride, Falkirk, Edinburgh, Glasgow, Inverness, Kilmarnock, Kirkcaldy, Perth and Stirling, satisfy this criterion. The Northern English towns of Carlisle and Newcastle–upon-Tyne were also included.

3.15 Access to these centres is shown in Figure 3. Although most of the shopping centres are in the Central Belt or along the East Coast, and there are therefore many similarities between this pattern and the one shown in Figure 2, the presence of Inverness (a city of only 44,000 people) results in an "oasis" of more accessible postcode sectors in central Highland. This neatly illustrates the inadequacies of simple urban population as a proxy for the role of different towns and cities as service centres. Accessibility indicators, based on distance from settlements above a certain size, may be misleading since some settlements have a service function above that normally associated with their size by virtue of their remoteness and lack of competition.

3.16 Rural accessibility issues come to the fore in family life in a particularly powerful way at times when specialist medical assistance is needed. GP surgeries are fairly widely distributed and not usually very far from their customers. However, due to scale economies, various hospital functions are provided at a relatively limited number of locations, and journey times from remote rural locations may be surprisingly long.

3.17 The closure of rural maternity units has been a sensitive political issue, since centralisation causes anxiety in relation to emergency admissions, and the ease with which relatives and friends can visit mother and baby after the birth. Similarly, the closure of rural accident and emergency centres has engendered concerns regarding the possible threat to life associated with long journeys to hospital in emergency cases (even though smaller centres may not have had the specialist expertise available to provide optimum care).

3.18 Figure 4 reveals a rather complex and apparently inconsistent pattern of accessibility to maternity units. Provision seems relatively sparse in mainland Highland, and in Scottish Borders and Dumfries and Galloway. There appears to be, for instance no provision between Inverness and Wick, a distance of 100 miles, and no mainland provision on the West Coast

north of Fort William[2]. Some island areas are, by contrast, relatively well served (for example Arran, Islay, S Uist, Lewis and the Northern Isles) and have modest journey times. It has to be stressed, however that such a map cannot take account of various local solutions (perhaps provided by local GP practices, and involving delivery at home) which may well compensate for poor access to in patient maternity care in sparsely populated areas. A more objective assessment would need to take account of variations in policy and approach to provision between the different health boards. This is beyond the scope of the present project.

3.19 The map of travel time to the nearest accident and emergency unit (Figure 5) shows that the latter outnumber maternity units almost two to one (93 and 47 respectively). Their distribution is rather denser than that of maternity units in the eastern half of Scotland, but fairly similar in its sparsity in the north and west, where parts of Sutherland, Upland Tayside, Argyll and several Island areas are more than one and a half hours from the nearest accident and emergency unit. However, again, the map cannot take into account special provision in remote areas, through local GP surgeries for minor accidents, or the use of a helicopter in major incidents.

[2] However, the Skye Bridge now improves access from Lochalsh to the unit at Portree.

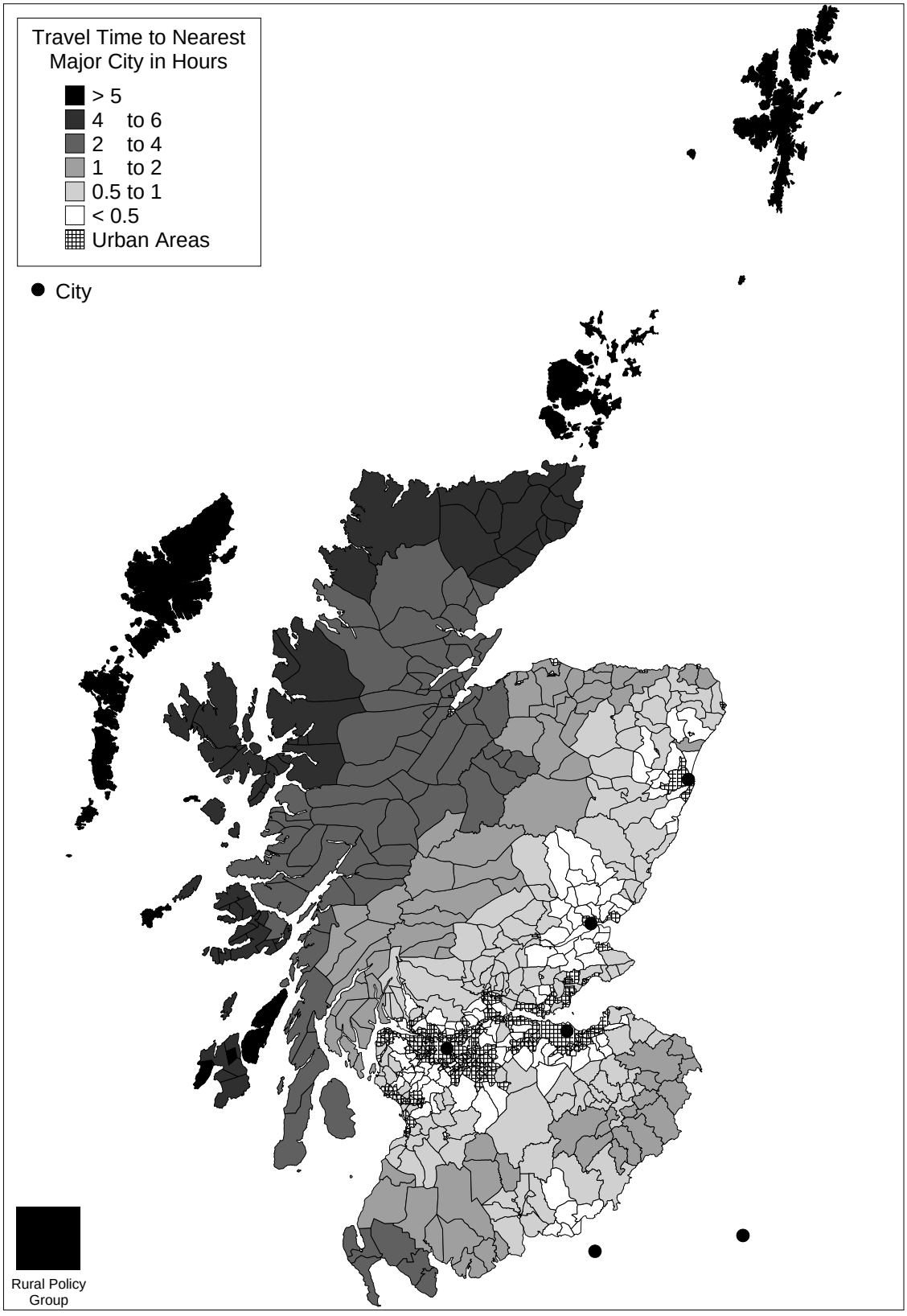

Figure 2: Road Travel Time to Nearest City (>150,000) by Rural Postcode Sector

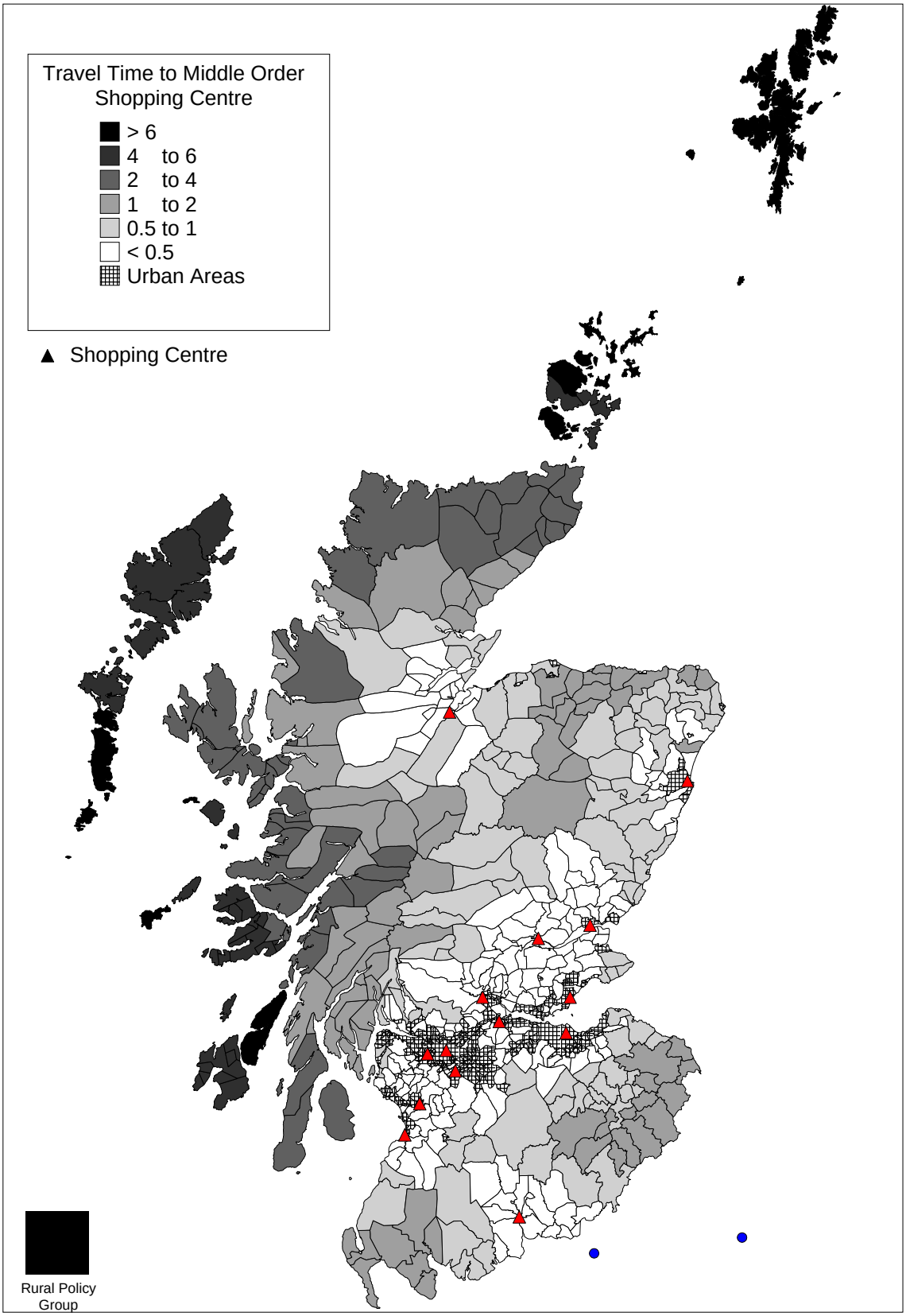

Figure 3: Travel Time to Middle Order Shopping Centres by Rural Postcode Sector

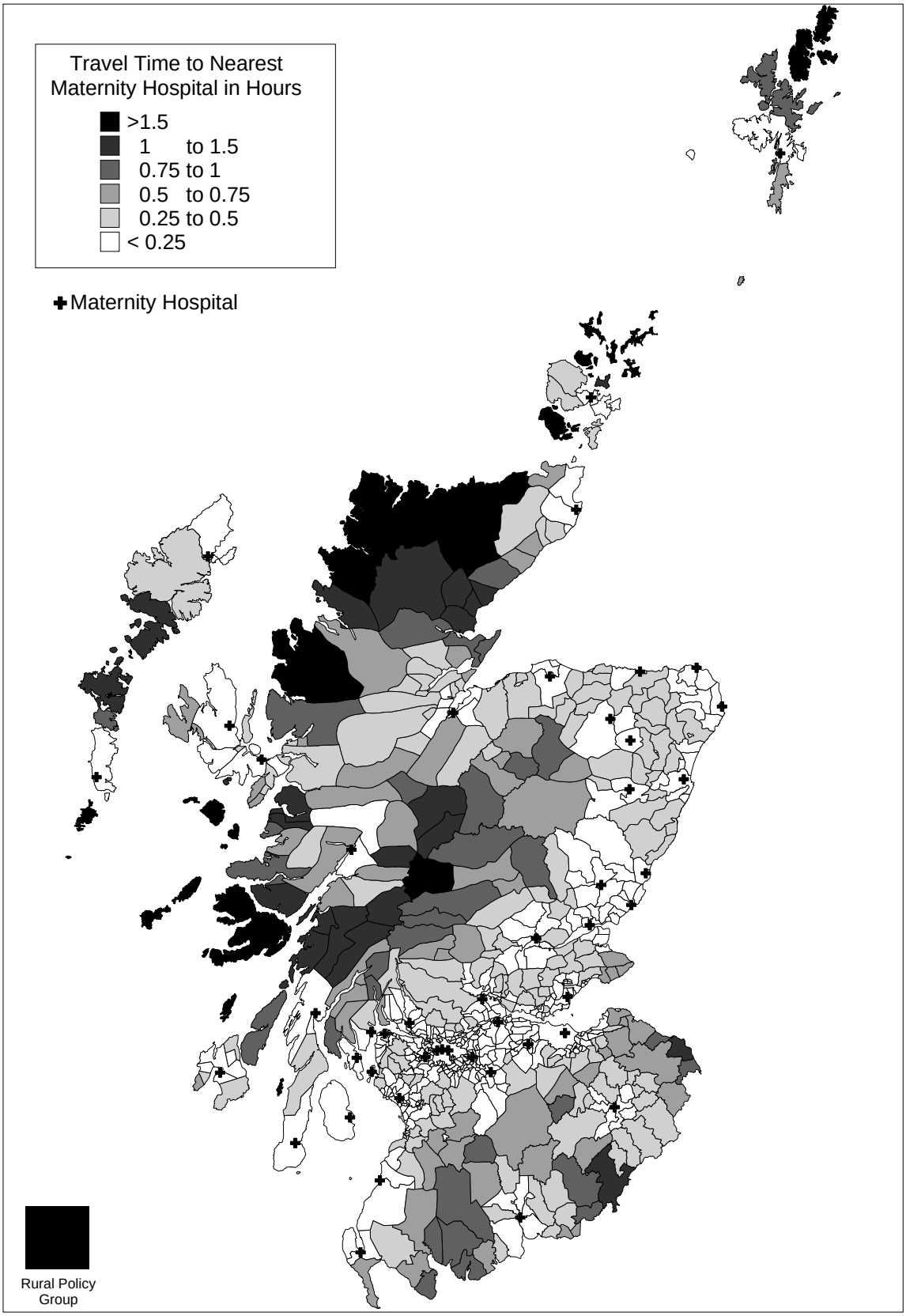

Figure 4: Journey Time to Nearest Maternity Hospital by Rural Postcode Sector

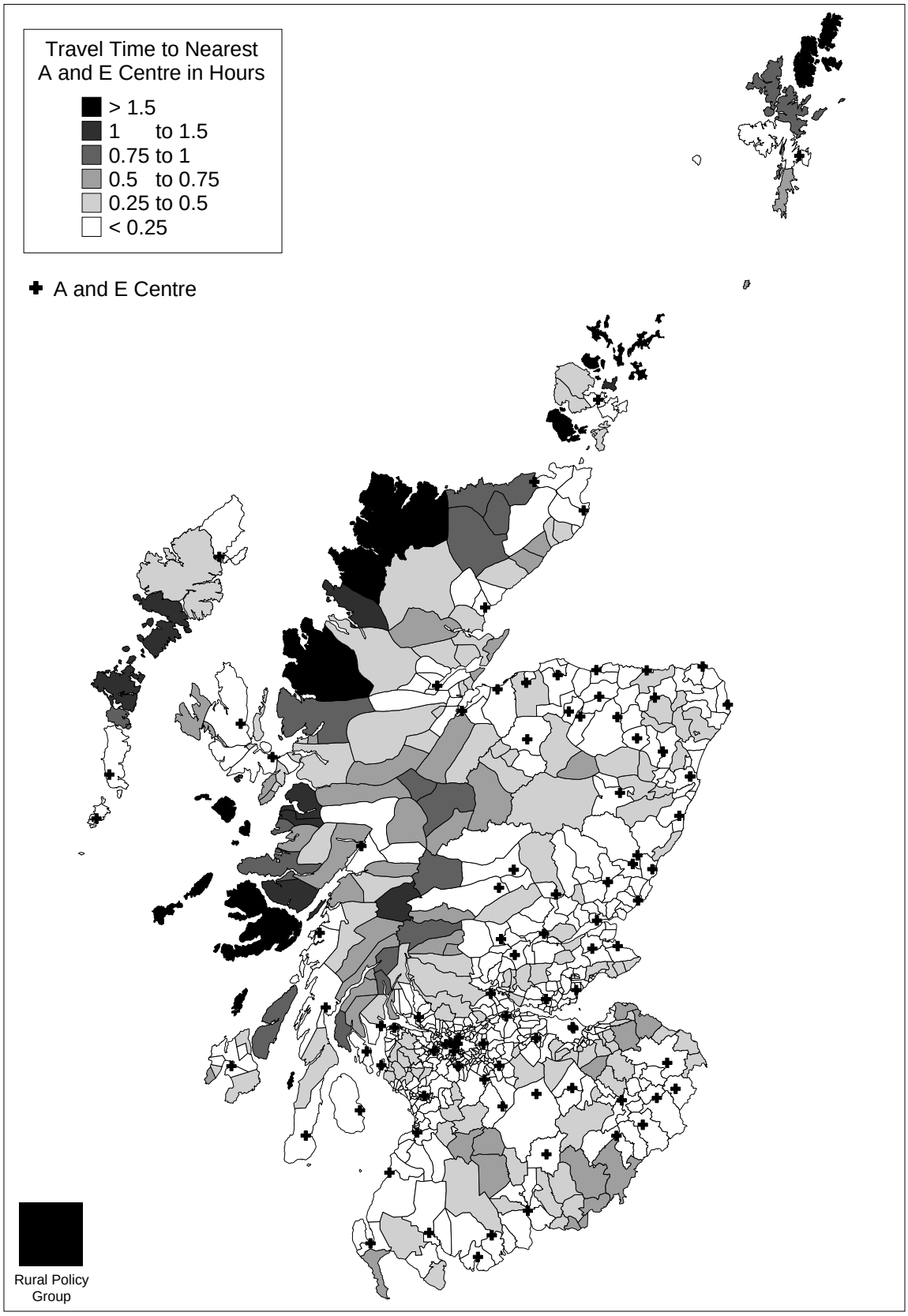

Figure 5: Journey Time to Nearest Accident and Emergency Centre by Rural Postcode Sector

THE STUDY AREAS IN CONTEXT

3.20 All five project study areas have populations of between 16,000 and 21,000 people. Caithness/Sutherland is by far the largest in area, covering over 7,300 square kilometres, and also the smallest in population, at roughly 16,750, giving it a very low population density, at 2 persons per square kilometre. At the other extreme are parts of the East Ayrshire and East Lothian study areas. Even though urban postcode sectors were excluded from the survey work (e.g. Cumnock, and Cockenzie) the East Lothian study area has a density of 44, and East Ayrshire a density of 34 persons per square kilometre. The East Lothian study area is the smallest, with an area of only 385 square kilometres. East Ayrshire is also relatively small, with an area of 610 square kilometres.

Table 1: Population, Area and Density by Study Area

Study Area	Total Population 1999	Area (Ha)	Population Density (per Ha)
Caithness/Sutherland	16,747	732,312	0.02
Aberdeenshire	26,429	238,501	0.11
East Ayrshire	20,707	60,787	0.34
East Lothian	16,979	38,521	0.44
Wigtownshire	20,051	194,051	0.10

3.21 The Aberdeenshire and Wigtownshire study areas both occupy intermediate positions in terms of population density, at around 10 persons per square kilometre. Aberdeenshire is the second largest in terms of area (2,385 square kilometres), and the third largest in terms of total population, at around 26,500. The Wigtownshire study area is considerably smaller in both respects.

3.22 In terms of travel time to the nearest of the four major cities, the most remote area is Caithness and Sutherland, with an average travel time of around five and a half hours to Aberdeen. At the other end of Scotland, the Wigtownshire study area is estimated to be roughly two and a half hours from Glasgow. The other three study areas are all estimated to be less than one hour from a major city, East Lothian being only forty minutes from Edinburgh, the Aberdeenshire study area being roughly three-quarters of an hour from Aberdeen, and East Ayrshire being just under an hour from Glasgow.

Table 2: Travel Time to the Major Cities by Study Area

Study Area	Nearest City	Average Travel Time (Minutes)
Caithness/Sutherland	Aberdeen	326
Aberdeenshire	Aberdeen	47
East Ayrshire	Glasgow	55
East Lothian	Edinburgh	40
Wigtownshire	Glasgow	146

3.23 In terms of access to medium sized shopping centres the disparities between the study areas are rather less marked (Table 3). The closest qualifying shopping centre to

Caithness/Sutherland is Inverness, and the average travel time is roughly comparable to that between Wigtownshire and Glasgow. Average travel times for the other study areas are similar to those in Table 2, apart from the fact that a minority of E Ayrshire postcode sectors are closer to E Kilbride than Glasgow, resulting in a small reduction in average travel time.

Table 3: Travel Time to Nearest Medium Size Shopping Centre by Study Area

Study Area	Nearest Shopping Centre	Average Travel Time (Minutes)
Caithness/Sutherland	Inverness	154
Aberdeenshire	Aberdeen	47
East Ayrshire	Glasgow/E. Kilbride	51
East Lothian	Edinburgh	40
Wigtownshire	Glasgow	146

3.24 Accessibility disparities are further reduced with respect to maternity hospitals (Table 4). The presence of maternity units in both Wick and Inverness reduces average travel times to a little over one hour. In the Wigtownshire area, the nearest maternity units are at Stranraer and Dumfries, with an average journey time of around three quarters of an hour. It is interesting to note that this is only five minutes longer than both East Lothian and East Ayrshire, whilst the continued survival of a number of small units in rural Aberdeenshire reduces the average travel time there to less than thirty minutes.

Table 4: Travel Time to Nearest Maternity Hospital by Study Area

Study Area	Nearest Maternity Unit	Average Travel Time (Minutes)
Caithness/Sutherland	Wick/Inverness	69
Aberdeenshire	Torphins/Huntly/Aberdeen	29
East Ayrshire (Excl. Cumnock)	Irvine/Carluke	41
East Lothian (Excl. EH31-2 and EH32-0)	Edinburgh	40
Wigtownshire	Stranraer/Dumfies	46

3.25 Average travel times to accident and emergency units are lower again, due to more dispersed provision. In the Highland study area average travel time is still almost forty minutes, with an upper limit of three hours. Perhaps surprisingly, the East Lothian area now has the second longest travel time, at thirty seven minutes, to either Edinburgh or Duns Hospitals. In the East Ayrshire study area the average journey time is twenty-five minutes (to Ayr, Douglas or Kilmarnock). Both Aberdeenshire and Wigtownshire benefit from dispersed provision, with average journey times down to 18 and 12 minutes respectively.

3.26 However, it is worth noting that this type of analysis does not take account of the level of provision and quality of care which people receive at the various units. Small accident and emergency units such as those in the Aberdeenshire area may have limited opening hours, and the reversal of the accessibility difference may thus only be a reality at certain times of day. Also the smaller units will not be able to provide the range and level of specialist care available at major hospitals. To take account of these effects would require more detailed accessibility analysis by time of day and using health statistics showing treatments provided and onward transfer for more specialised care.

Table 5: Travel Time to Nearest Accident and Emergency Unit by Study Area

Study Area	Nearest A+E Unit	Average Travel Time (Minutes)
Caithness/Sutherland	Thurso/Wick/Golspie	39
Aberdeenshire	Aboyne/Insch/Aberdeen/Inverurie	18
East Ayrshire	Kilmarnock/Douglas/Ayr	25
East Lothian	Edinburgh/Duns	37
Wigtownshire	Newton Stewart/Kircudbright/Stranraer	12

SUMMARY OF STRATEGIC ANALYSIS APPROACH

3.27 Although it is not possible as part of this project to undertake a full exploration of the issues, the examples presented above illustrate the potential for further work on the use of strategic accessibility analysis to assess rural accessibility at a broad strategic level.

3.28 The selection of certain key services, and the mapping of simple travel times has considerable advantages over the gravity model/economic potential models used in the past, particularly in terms of conceptual transparency, and ease of interpretation. Since the exact location of key services is established by geocoding addresses of service providers, it does not make any assumptions regarding the relationship between settlement population size and order of service provision.

3.29 The estimation of travel times for rural postcode sectors achieves a small enough zoning structure to provide useful results whilst retaining wide data availability by cross referencing to published socio-economic data.

3.30 In order to develop this methodology further it would be necessary to:

- Establish a more comprehensive list of key services and urban functions, each of with an accurate source of geo-referenced data relating to the level of provision of the function.

- Investigate whether it is either feasible or productive to combine the travel times for different types of services into a composite accessibility score for each rural location reflecting real perceptions and needs. This sort of score would be useful for strategic funding decisions such as setting funding allocations for funding rural transport.

- Enhance the networks on which the travel times are generated, by incorporating a public transport option.

3.31 The case study areas have very different levels of accessibility for different purposes. Whilst parts of East Lothian, West Aberdeenshire and East Ayrshire fall within planning definitions of commuter rural areas, accessibility for some purposes is poorer than for more remote areas. Rural needs are therefore better defined in terms of accessibility to key functions than in aggregate for geographical areas.

CHAPTER FOUR SURVEY OF LOCAL AUTHORITIES AND TRANSPORT OPERATORS

4.1 Face to face interviews were undertaken with representatives of the local Councils: Aberdeenshire Council, East Ayrshire Council, Dumfries and Galloway Council, East Lothian Council, Highland Council and Strathclyde Passenger Transport Executive. These interviews covered the Council's policies to improve rural accessibility, policies and expenditure on rural bus services, community transport services.

4.2 Data was also sought from the Councils on:

- Bus Services and Community transport in the area
- Public transport fares, taxi subsidies etc.
- The policy context and future plans
- Trends in transport usage
- Suggestions for a location in the area where a focus group could be held.

4.3 The outcome of these interviews varied across the five case studies with different information and policies being held and promoted in each area. The main findings relevant to this research are summarised below.

EAST AYRSHIRE

4.4 Most of the population of East Ayrshire lives in small communities. Although most of these communities only have very basic services such as a local shop or post office, they do offer some local accessibility. A 1998 settlement survey by East Ayrshire Council estimated the population of the main local communities as shown in Table 7.

Table 7

Settlement	Population 1998
Auchinleck	3879
Catrine	2183
Cumnock	9099
Mauchline	4183
Muirkirk	1879
New Cumnock	3829
Ochiltree	844
Sorn	299

4.5 Very few of the residents live outside communities of 1000 people yet the rural accessibility problems are great. The economy of the area is being restructured following the decline of traditional industries particularly coal mining. There is considerable deprivation and much of the area is covered by Social Inclusion Partnership funding which provides support to communities in a variety of ways. Staff associated with the SIP have been active in

promoting community bus services and the coalfields community transport initiative has recently been introduced in partnership with the coalfields federation, and east Ayrshire Council. The project has received £88k Scottish Executive community transport funding towards a total initial project cost of £269k. The intention is to offer three buses to community groups in the area who will provide volunteer drivers. Once the usage has built up there will be clearer procedures for prioritising the services to complement existing bus services.

4.6 Commercial bus services in the area are very extensive with typically four buses an hour between many of the core communities such as Cumnock, Auchinleck and Mauchline. There are also frequent bus services to the towns of Ayr and Kilmarnock. Although the frequency of these varies throughout the day there are more than two buses an hour in peak periods to Ayr and Kilmarnock from the core towns.

4.7 In the more remote areas, bus service frequencies are lower but SPT ensure that hourly or better service frequencies are achieved by introducing subsidised services for communities where commercial services do not provide this level of quality.

4.8 The SPT concessionary travel scheme provides for a special rural concession fare from many of the towns to Ayr and Kilmarnock. This recognises that people in towns like New Cumnock need to travel further for basic accessibility needs.

4.9 The bus services in the area are considered to be on a stable financial footing and there have been very few changes in the services in recent years. Sustained patronage on the services is ensuring that only certain evening and weekend enhancements require public funding.

4.10 Local committees liase with the Council on priority concerns for local people, and the main bus service issues to emerge from these have been suggested improvements to evening and weekend services. New contracted services have been introduced in response to these requests. There is no taxicard scheme for mobility impaired people since the dial-a-bus scheme is very comprehensive and is considered to be better value for money to operate in this area.

4.11 Most education bus services run at capacity so have not been registered for public use. Where spare capacity is available and they could be of use to fare paying passengers, it is SPT's policy that they should be registered.

4.12 High quality bus and rail timetable information is published by SPT in the area transport guide which is updated annually.

4.13 To aid analysis, the area has been split into 8 zones as shown in Figure 6.

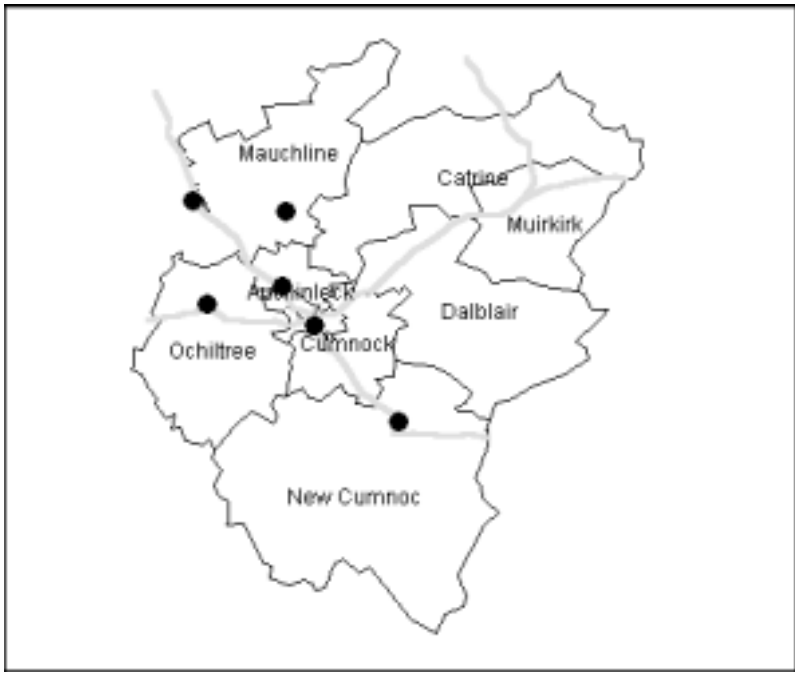

Figure 6 - East Ayrshire Analysis Zones

WEST ABERDEENSHIRE

4.14 The western side of this study area has some of the deepest rural communities in Aberdeenshire and the eastern side is only 25km from the City of Aberdeen. Tensions between better transport and the protection of rural facilities have been a major concern for the Council in its local transport planning. As travel times to the towns and the City of Aberdeen fall, the viability of many local shops and facilities has been declining.

4.15 There are no rail services to the area and bus services are patchy. Through support from the Scottish Executive Rural Public Transport Fund, 31 additional services were introduced in Aberdeenshire in 1998. The total annual spend on subsidised services is £1.55 million. In addition, some of the school bus contracted services are registered as public services, particularly in the more remote areas.

4.16 Priorities are established through discussions with the Area Bus Forum which includes representatives from the Council, local communities and public transport providers.

4.17 Community transport initiatives are being encouraged by the Council as an increasingly mainstream approach to the development of improved transport. There are 7 community transport operators and community transport groups promoting car and minibus services. These have highlighted some of the challenges in delivering good value for money for community transport funds. Good utilisation of vehicles requires more volunteers than are readily available but paying drivers is costly and more complex administratively. The Mid Deeside community transport initiative has sought to provide the characteristics of a scheduled bus service with paid drivers and full time use of the community minibus. This appears to have worked better where the service frequency is higher. With lower frequencies operating only one day per week it is harder to build patronage.

4.18 Concern about the impact of closures of shops, post offices, petrol stations and other facilities on rural accessibility has prompted Aberdeenshire Council to monitor rural facilities.

The data are not available for the exact study area for this research but the Marr District has roughly similar boundaries and has seen closures in local facilities as shown in Table 8.

Table 8 - Rural Facilities in Marr District

	1981	**1999**	**2000**	**Change 1981-2000**
Shops	254	217	216	-48
Primary Schools	36	32	32	-4
Post Offices	36	25	22	-14
Petrol stations	34	23	23	-11
Doctor's surgery	10	10	10	0

4.19 Bus timetables are available in a range of leaflets, some published by the Council and others by the bus companies.

4.20 The analysis zones used to describe the communities in Aberdeenshire are shown in Figure 7.

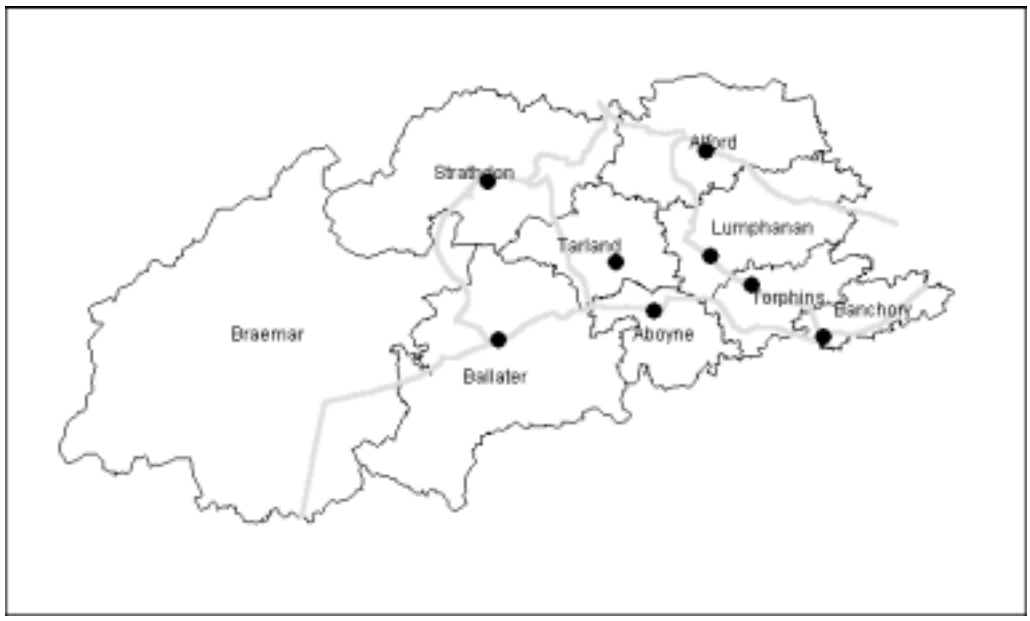

Figure 7 - West Aberdeenshire Analysis Zones

WIGTOWNSHIRE

4.21 Wigtownshire in Dumfries and Galloway includes some of the most remote rural areas in southern Scotland. The study area extends from near Glenluce in the west, which is about 12km east of Stranraer, to near Castle Douglas in the east which is about 20km from the regional centre, Dumfries. There have been significant job losses in agriculture in recent years and new jobs to support tourism have not been spread evenly. The ageing population includes many who have retired to the area taking advantage of the attractive environment and relatively low house prices.

4.22 With the exception of the inter urban services from Stranraer to Dumfries, all the bus services in the area are contracted. Maximum fare levels are set in the contracts but one of the major operators in Wigtownshire has a low fares policy resulting in fares substantially less than the specified maximum. Throughout the area there is a delicate balance between high fares and the viability of services. Lowering fares would improve accessibility more than adding more buses, but with lower fares fewer services would be viable. The Council therefore considers that more could be achieved to improve accessibility by investing in existing services to lower fare levels than by adding more services.

4.23 Over the past 15 years many people have experienced significant improvements in bus services. Prior to de-regulation in 1985 fare levels were considered to be high and deregulation resulted in more buses and lower fares on both contracted and commercial services. In 1990 a free concessionary travel scheme was introduced increasing the investment in local bus services by the Council by £0.8million. Since 1998 investment from the RPTF has allowed enhancements to services increasing service frequencies, particularly in the evenings and at weekends. In 2001/2002 the budget for subsidised bus services in the Council area is £3.8million of which £0.35million is from the RPTF.

4.24 The services from Newton Stewart to Wigtown and Whithorn have recently benefited from new low floor buses and early monitoring suggests that there has been a resulting increase in passenger numbers. More generally during the 1990s the bus services have been strengthened on the core network in the area with feeder services from smaller communities to the core routes interchanging at towns such as Newton Stewart.

4.25 However, at existing levels of public funding the viability of many existing services is fragile. Synergy between the use of buses for school contracts and for public services adds to the public funding of buses but only 15% of the buses needed for the school run are needed to run scheduled services. Overall there are concerns that there is insufficient public money available to maintain bus services at their current level.

4.26 Priorities for bus investment are decided by the Council in consultation with local bus user groups and taking account of correspondence from members of the public highlighting gaps in service provision.

4.27 There are six community transport schemes in Dumfries and Galloway receiving funding of just under £100k from the Scottish Executive. One of these is a demand responsive minibus operating from a base in Stranraer and covering western Wigtownshire.

4.28 The analysis zones are shown in Figure 8.

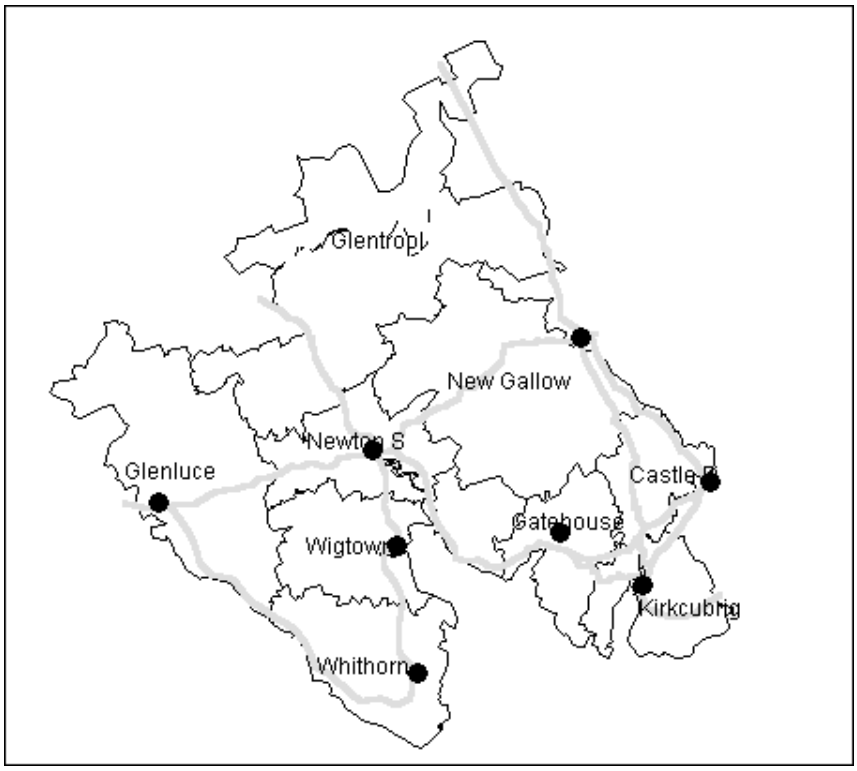

Figure 8 - Wigtownshire Analysis Zones

CAITHNESS AND SUTHERLAND

4.29 The study area is one of the most sparsely populated areas of Europe. Despite its remoteness about 37 per cent of households do not have a car. Public transport in the area is by train, bus, taxi and community transport. In the more populated areas public transport provides reasonably frequent services between communities but in the more remote areas there are very limited services providing only a few buses each week.

4.30 The rail passenger services connect communities on the east side of Caithness and Sutherland with the regional centre of Inverness. There are three trains per day from Wick to Inverness and the journey time is about 3 hours 45 minutes.

4.31 With the exception of a few inter-urban services, all the bus services in the area are contracted. Fare levels are not defined by the Council but are set by the individual operators. This results in the price of bus travel varying widely across the area. On one service the operator charges no fares since it is considered that the administrative costs exceed the potential revenue.

4.32 The Council decides priorities for investment in rural bus services on three criteria:

- Whether the service helps to meet any travel to work needs
- Whether there are any alternative services available to allow people to make the relevant journeys
- What is the value for money based on the subsidy per passenger.

4.33 The Council's transport strategy identifies that the level of service offered by public transport is currently patchy. The strategy therefore describes plans to define minimum standards of public transport for communities of different sizes. These would act as a general guideline within which detailed service planning would be carried out under the three criteria above. In planning new services the Council is seeking to develop more demand responsive services and consolidation around a few key routes such as Inverness to Wick.

4.34 Where there is a common need for public and education transport, the education services are registered to allow the buses to cater for combined education and other transport needs. The budget for education transport in Highland Council is about £7.5 million per anum compared with the budget for subsidised bus services at about £1 million. The Council is therefore conscious of the potential benefits of increasingly integrated planning of these budgets.

4.35 In recent years the Scottish Executive Rural Public Transport Fund (RPTF) contribution of £0.6 million has allowed a very substantial improvement in the services for many parts of the area. A further £0.2 million supports community transport services.

4.36 There is also a good history of close working between the Council and community transport operators to identify needs and bid for funding from a range of sources. The Sutherland Partnership has been particularly active in promoting community services for local transport in many parts of Sutherland including Durness, Lairg, Kinlochbervie, and Lochinver. This partnership pulls together funding from many sources including the Council, social inclusion partnerships, the Scottish Executive, the lottery and local interest groups. There is a shortage of volunteer car drivers so the initiatives comprise mainly contracted dial-a-bus and subsidised taxi schemes. This contrasts with some other parts of Highland where voluntary car schemes comprise the bulk of the community transport.

Figure 9 - Caithness and Sutherland Analysis Zones

EAST LOTHIAN

4.37 The population of East Lothian is growing. Rural East Lothian is proving increasingly attractive as a place to live for people who work in the Edinburgh area. The 1991 census showed that more than 50 per cent of the population worked outwith the area and it is likely that this percentage has grown significantly since then given the continuing decline in rural employment opportunities and the expansion in opportunities in Edinburgh. This has resulted in an increasing east-west divide in the area with the settlements closer to Edinburgh experiencing much higher levels of affluence than in the east.

4.38 Commercial services account for the bulk of the bus operations in the study area and overall patronage on these has been fairly stable or declining in recent years. The Council's main policies on supported services are to:

- Provide good value services and support community transport services to cater for unmet social need including for elderly people and those with mobility difficulties.

- Seek to co-ordinate the provision of supported services to link with the commercial network.

- Provide services which ensure basic access to centres of employment, shops, hospitals and health facilities, schools, and recreational facilities.

4.39 Taxicards provide subsidised taxi travel for mobility impaired rural residents for a limited number of trips per year. The maximum subsidy is £3.50 per trip and 100 trips per year. A survey by the Council has identified that people will use taxis when they are more stressed such as travelling to hospital but will be happy to use accessible buses for other more routine travel.

4.40 Community transport is co-ordinated though a loose network of representatives from transport and social work in the Council and the individual scheme promoters. Funding for some schemes has been obtained from social work. Wider co-ordination of education, social work and public transport services is an objective for the next few years.

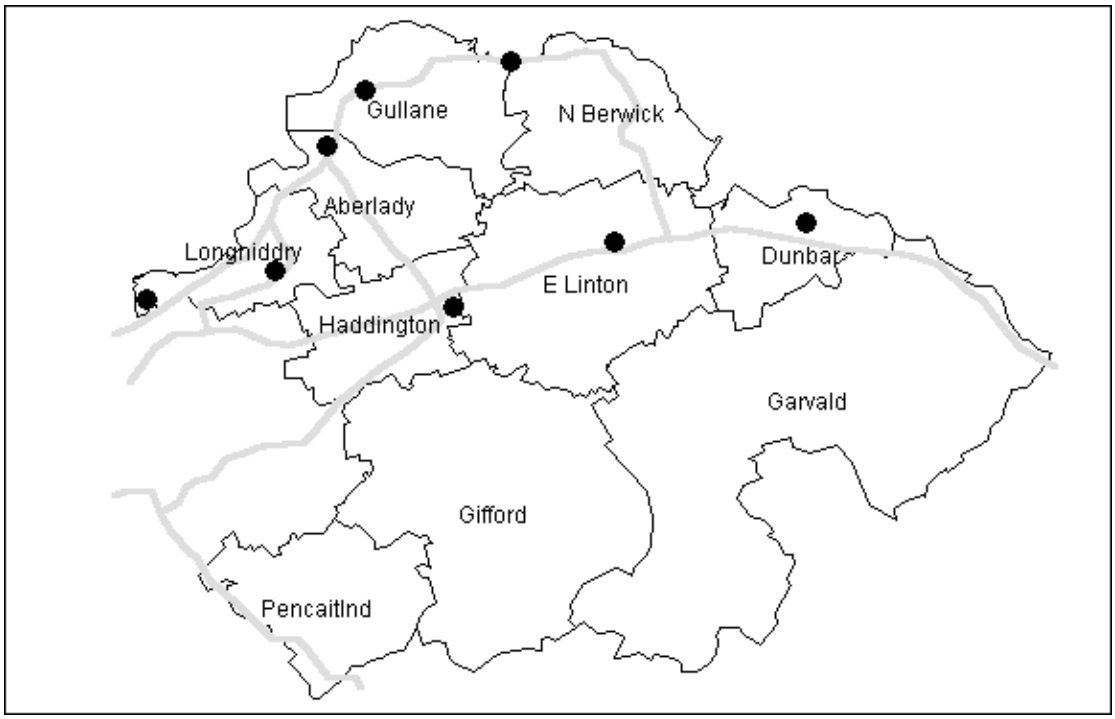

Figure 10 - East Lothian Analysis Zones

SUMMARY OF THE SURVEYS OF COUNCILS AND TRANSPORT OPERATORS

4.41 The economics of transport operation in the study areas involves a fragile balance of public funding and fare income. Public funding for school transport and contracted services helps to support the rural bus fleet and the commercial viability of some services which are not subsidised directly.

4.42 In all the areas there are some commercial services on core inter urban routes and subsidised local services connecting with these inter urban services. There are more commercial services nearer to major towns with loss making rural sections of journeys being subsidised by profits on the urban sections.

4.43 Many rural services have a high percentage of passengers on concessionary travel schemes. Fare levels on commercial services for passengers not covered by concessionary travel are a concern for many Councils.

4.44 Current trends are resulting in more services on core routes and increased need for public funding to support local services. Subsidy levels for local services have been able to increase very significantly in recent years as a result of the new national funding. However as patronage continues to fall, the funding would need to increase on a year by year basis if all current local services are to be maintained.

4.45 Most Councils consider accessibility issues when prioritising local funding but these are mainly qualitative judgements rather than based on any quantitative analysis. Analysis includes:

- Setting minimum acceptable standards of service for communities of different sizes and prioritising bus service investment to meet these targets. This type of accessibility analysis considers public transport as the destination and looks at the population catchment for each service.

- Prioritising investment in new services where there are particular benefits for less mobile groups such as disabled people.

- Assessing the cost of subsidy per passenger.

- Assessing the contribution of public investment for access to work, shops etc.

4.46 Various models operate for co-ordinating public transport service provision with the development of community transport. More public sector support for planning community services is needed in areas with a weaker community capacity.

CHAPTER FIVE POSTAL SURVEY

5.1 The aims of the postal survey were to obtain a comprehensive picture of the accessibility-related lifestyle characteristics of people in a wide range of rural contexts. A questionnaire was sent to 3400 households in the five rural areas described above. It sought basic socio-economic and travel/accessibility data, and asked people to indicate their willingness to participate in further stages of the research.

5.2 A copy of the questionnaire used is shown at Appendix B. The electoral roll was used for the sampling framework and a quota sample obtained for the 3400 target households. The sample covers residents from a range of rural environments in each study area, including villages and small towns as well as sparsely populated areas. Where there were larger towns within the study areas residents of these towns were excluded.

RETURNS

5.3 A total of 725 questionnaires were returned comprising: 75 (11%) from East Ayrshire, 174 (26%) from Aberdeenshire, 167 (25%) from Wigtownshire, 147 (22%) from Caithness and Sutherland and 162 (24%) from East Lothian. Based on previous experience it had been expected that the response from East Ayrshire would be lower than from wealthier areas. With less than half the responses from East Ayrshire than from the other areas there certainly appears to be a much lower interest. Nevertheless an 11% response to a "cold" questionnaire in an area with these socio-economic characteristics is not unexpected.

POPULATION

5.4 The age group of those completing the questionnaires varied significantly between the areas. In Wigtownshire over half the respondents were over the age of 60. Caithness and Sutherland also had an elderly population responding. These two areas are also the most remote rural environments. Aberdeenshire was very close to the average for the full sample and East Ayrshire had the lowest percentage of elderly respondents at 22 per cent.

Table 9 - Age Group of Respondents by Sample Areas

%	All	East Ayrshire	West Aberdeenshire	Wigtown -shire	Caithness and Sutherland	East Lothian
Over 60	39	22	36	51	47	31
18-60	61	78	64	49	53	69

5.5 Household composition also shows that the Ayrshire, Aberdeenshire, and East Lothian samples have the lowest percentage in the over 60 age group. However for younger age groups it is significant that Caithness and Sutherland has an above average percentage of children. Table 10 shows that in East Ayrshire elderly people have been less prepared to respond to the survey, but in all other areas elderly people were most likely to respond.

Table 10 - Household Sample Composition by Age Group
(1999 population estimates for the areas in brackets)

%	over 60	18-60	child5-17	0-5
All	27 (24)	53 (52)	15 (19)	5 (5)
East Ayrshire	14 (22)	63 (52)	18 (20)	5 (6)
West Aberdeenshire	23 (22)	57 (53)	14 (20)	6 (5)
Wigtownshire	39 (29)	45 (48)	13 (18)	3 (5)
Caithness and Sutherland	32 (27)	48 (50)	16 (18)	5 (5)
East Lothian	22 (22)	54 (54)	17 (18)	6 (6)

5.6 Socio-economic status varies significantly across the five areas. Figure 11 shows the difference between the East Ayrshire and Caithness and Sutherland samples and the wealthier East Lothian and West Aberdeenshire samples. The dominance of elderly people in Wigtownshire gives this sample a low representation of higher income households.

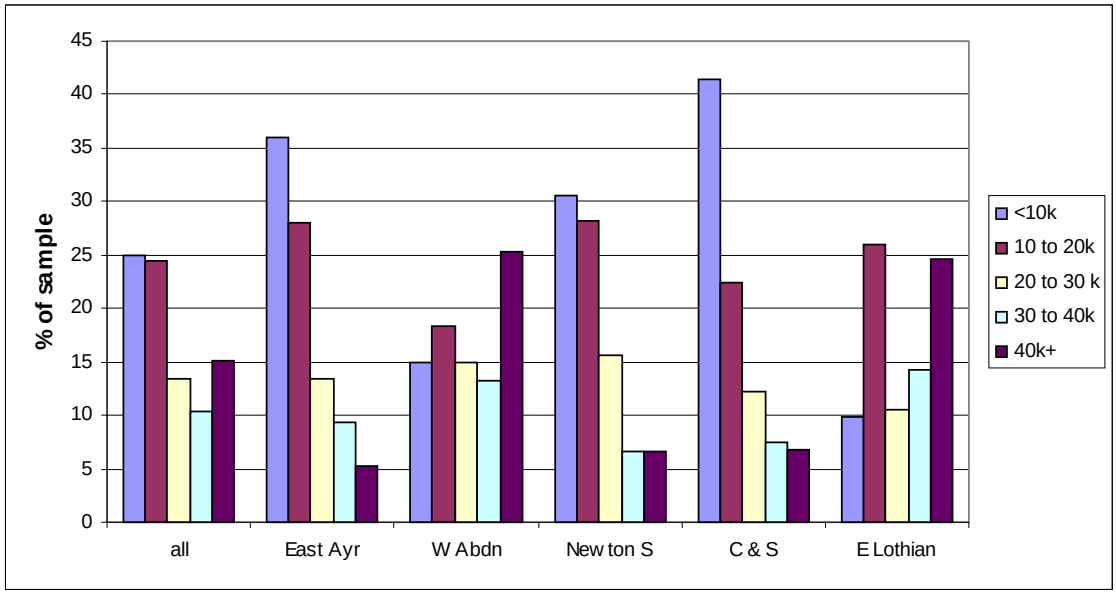

Figure 11 - Household Income by Study Area

5.7 A similar picture emerges of socio-economic status from looking at the household accommodation in the sample as shown in Table 11.

Table 11 - Household Ownership by Sample Area

%	owned outright	owned (buying)	private rented	public rented
All	45 (26)	30 (26)	7 (14)	15 (34)
East Ayrshire	19 (13)	37 (20)	4 (5)	37 (61)
West Aberdeen	41 (26)	36 (31)	9 (25)	9 (17)
Wigtownshire	54 (35)	22 (22)	7 (16)	14 (26)
Caithness and Sutherland	54 (34)	19 (20)	8 (14)	18 (32)
East Lothian	43 (20)	39 (39)	6 (12)	10 (29)

5.8 Although more house owners have responded to the questionnaire than for people in rented accommodation, the samples still reflect the general characteristics of the areas. In the East Ayrshire sample, there is a much higher proportion of people living in public rented housing. The Caithness and Sutherland sample has the highest level of households living in accommodation which is owned outright.

CAR AVAILABILITY

5.9 With regard to car ownership some questionnaires left these boxes blank so it is not known if this identified no vehicles in the household or whether it was simply that respondents did not complete the question. If it is assumed that blank responses represent no vehicles then this suggests average levels of car ownership 17 per cent lower than assuming that all blank boxes are simply incomplete questionnaires. The figures in Table 12 may therefore overestimate car ownership by up to 17%.

Table 12 - Household Vehicle Ownership

	Average number of vehicles available					
	East Ayrshire	**West Aberdeen**	**Wigtown-shire**	**Caithness and Sutherland**	**East Lothian**	**All**
Cars	0.88	1.03	0.92	0.83	1.15	0.97
Vans	0.07	0.07	0.09	0.08	0.04	0.07
Motorcycles	0.01	0.03	0.03	0.10	0.01	0.04

5.10 Not surprisingly the levels of car ownership are highest in the wealthiest areas: East Lothian and West Aberdeenshire, and lowest in the less affluent areas: East Ayrshire and Caithness and Sutherland. However given the average lower socio-economic status within East Ayrshire it is surprising to note the relatively high levels of car ownership amongst the respondents. Further analysis shows that the reason for this can be accounted for partly by the age of the respondents. People over the age of 60 have lower car ownership. The Ayrshire sample with its younger population may appear to have a higher relative car availability than might be expected, but if adults age 18-60 are considered for all the areas then a more accurate comparative picture of car availability can be seen.

Table 13 - Vehicle Ownership (Adults 18-60)

	Average number of vehicles available (adults age 18-60)				
	East Ayrshire	**West Aberdeen**	**Wigtown-shire**	**Caithness and Sutherland**	**East Lothian**
Cars	0.79	1.17	1.00	0.96	1.26

5.11 The average spend on vehicle fuel and public transport fares per household was £38.78. This compares with a national average of £17.30. Of this total spend, the bus and train fare component (£6.29) was similar to the national average household spend on these modes (£5.8). The difference between the sample areas and the national average is accounted for by car fuel costs, which were over three times the national average. It is possible that some bias

has been included in the responses given the publicity about the problems of high fuel costs in rural areas. However the highest costs are for the commuter rural areas to the cities of Aberdeen and Edinburgh. One member of a household commuting daily from Dunbar to Edinburgh might expect to spend about £55 per week on fuel for travel to work alone. It is therefore not inconceivable that an average spend of up to £40 on fuel for all trip purposes is an accurate representation of fuel costs.

Table 14 - Expenditure on Travel

	Expenditure on travel £				
	Car/van Fuel	**Bus Fares**	**Train fares**	**Other (taxi, ferry, air)**	**Total**
All	36.82	1.75	1.19	3.35	38.78
E Ayrshire	34.07	5.24	0.73	4.61	41.68
W Aberdeenshire	40.78	1.40	0.27	3.54	41.23
Wigtownshire	31.35	1.03	0.64	2.27	30.40
Caithness/Sutherland	32.06	1.27	0.22	0.58	30.62
East Lothian	38.74	1.72	3.63	3.99	43.92

5.12 The Family Expenditure Survey (National Statistics 2000) suggests that total household motoring costs in rural areas are about £57.70 per week. Based on average car purchase and non fuel maintenance costs of £31.70 (Scottish Executive 2000) this would suggest car/van fuel costs of £26. The respondents have indicated a figure 40 per cent higher than this. It is therefore likely that the average fuel costs suggested by the respondents are high.

5.13 The highest spend is in East Lothian, the most affluent area. It is interesting that households in the more remote areas consider that they spend less on transport than for the commuter rural areas. This is discussed in more detail later under the analysis of travel patterns.

ACCESS NEEDS AND TRAVEL

5.14 Travel patterns for each area are analysed in detail in Section 6. At this stage it is interesting to compare the overall travel characteristics of the sample areas. People were asked why they chose to live at their current abode and eight reasons were listed. These were ranked from great importance to no importance. Figure 12 compares the five study areas for reasons of great importance.

5.15 It is interesting that in all the areas except East Ayrshire by far the most important factor is the general amenity and quality of life of the location. Access to the countryside also ranks highly helping to explain further the choices of rural dwellers to sacrifice quality of access, for work and shopping, in return for a rural lifestyle.

5.16 East Ayrshire demonstrates very different characteristics with family ties being stated as the most important reason for the choice of location. Other accessibility needs are rated lower and very similarly across the study areas. It is of note that residents of Ayrshire and Aberdeenshire rate shopping lower than for the other areas since these areas also have poor shopping opportunities within the rural area.

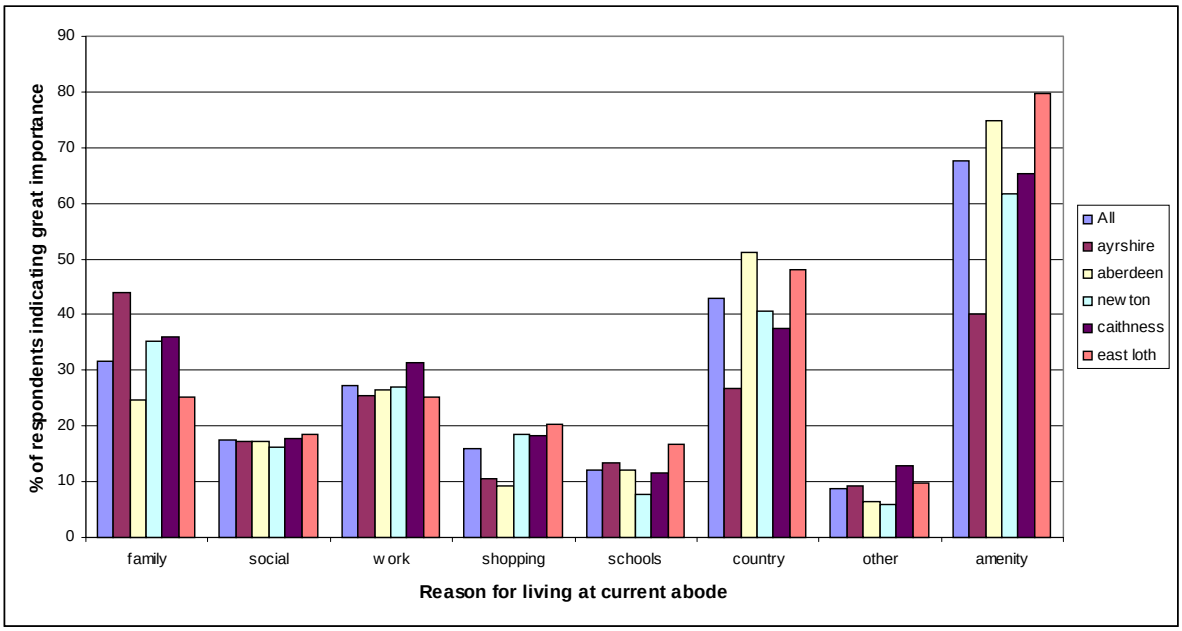

Figure 12 - Important reasons for living at current abode

5.17 It is also interesting to note the importance of access to work given its importance in social inclusion policy. The two least affluent areas, East Ayrshire and Caithness and Sutherland, are the lowest and highest respectively in terms of importance for access to work. This emphasises the diverse characteristics of rural areas and that different interventions will be required in each type of area to tackle transport derived social exclusion.

5.18 Further analysis looking at the importance of factors by the respondent's length of stay at the current address shows that family ties and social reasons are relatively more important for people who have spent more than 10 years at their current address.

5.19 For six travel purposes people were asked what was the most important mode of transport for them personally and for their household. Figure 13 shows the percentage of trips by mode for respondents. Car as driver was the most common mode for all trip purposes. Walking was the next most popular mode achieving 39 per cent of trips for leisure trips and 33 per cent for access to school.

5.20 It is interesting that car and walk achieve such a high proportion of trips to school. Overall in rural areas bus travel makes a much more significant contribution to the travel needs of school children than the 13 per cent for the case study areas. However schools also provide a wide range of functions as community centres and for evening activities so it is likely that the responses have included these trips in addition to mainstream school travel.

5.21 For trips other than leisure and school, respondents indicate a consistent 70 per cent of trips are made as car driver. This suggests that trip purpose is not a major factor in mode choice for these people. If a car is available it is used except for very local trips such as a local walk for leisure purposes or to school.

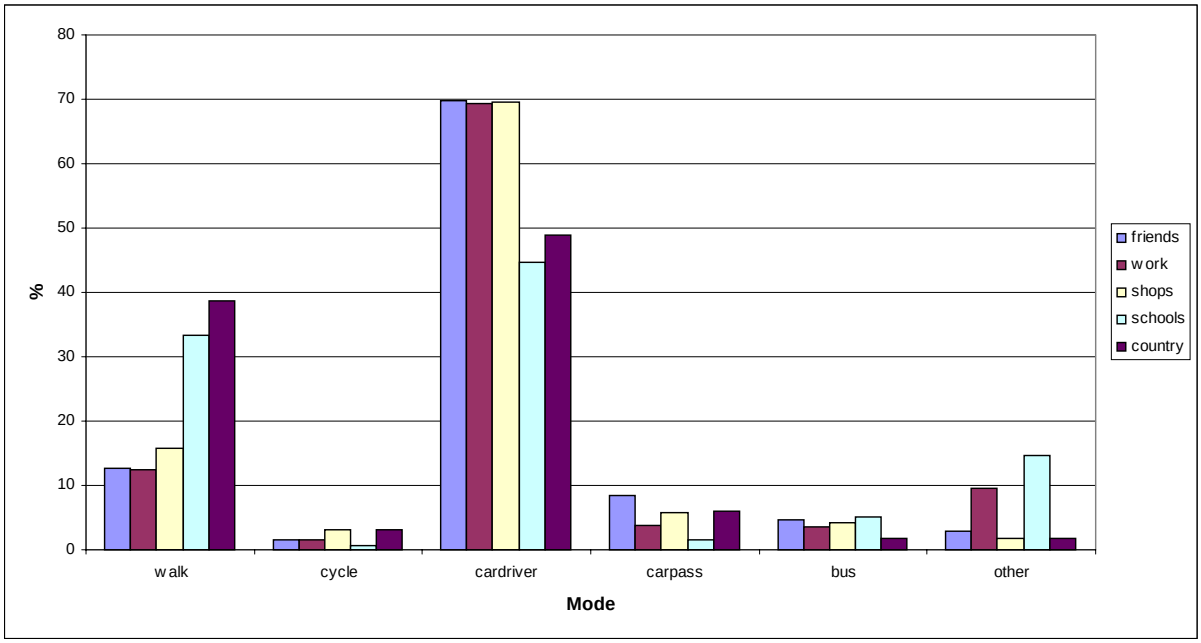

Figure 13 - Most Important Modes by Trip Purpose

5.22 With the exception of work and school trips, car as passenger is more popular than any public transport option. Public transport options are the most important modes for less than 5 per cent of trips.

5.23 A similar analysis was undertaken for households with an income of £10,000 or less. Figure 14 shows that for this group car travel as driver is less important and bus travel is more important. Car as passenger is also more important for less affluent people, particularly for travel to work and for visiting friends and family. The importance of walking and cycling does not appear to change significantly between the income groups, although walking trips to the local countryside appear to be more important for the lower income households.

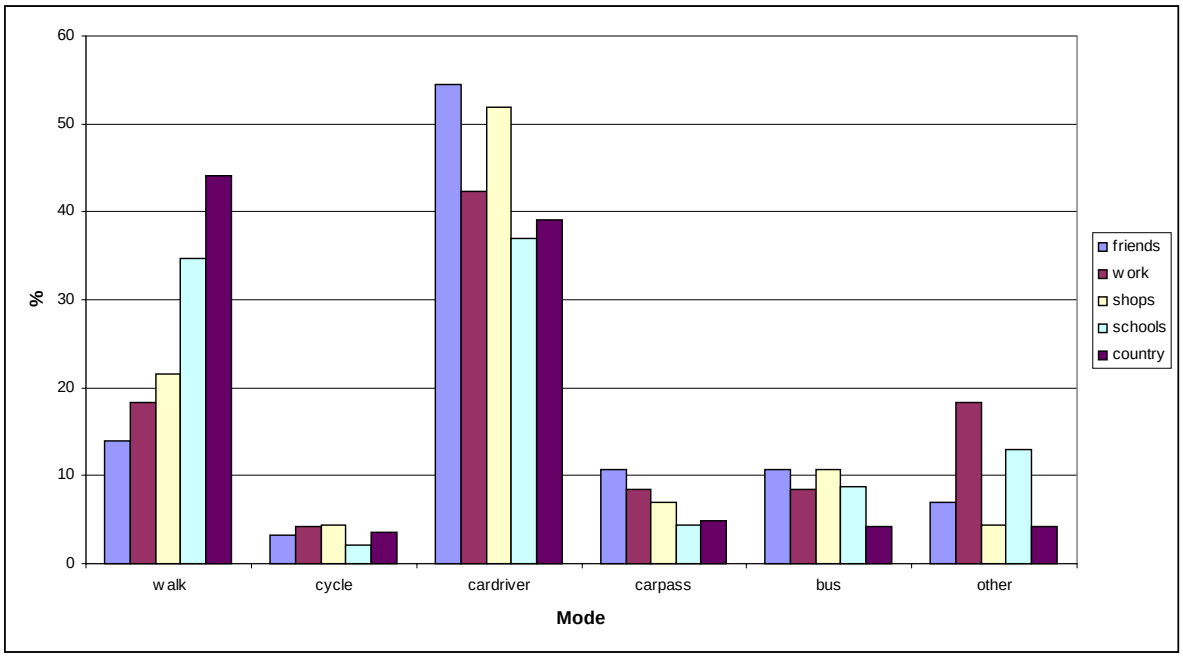

Figure 14 - Most Important Modes by Trip Purpose for Less Affluent People

5.24 People were asked to describe the number of trips they made, the modes used and the destinations for eight trip purposes:

- Work
- School
- Travel in the course of business
- Regular food shopping
- Other shopping
- Hospital
- Personal business such as visits to the bank or post office
- Social and recreational trips.

5.25 Nearly all respondents filled in at least some details of their travel patterns but did not describe all trip purposes, modes and destinations. The number of people describing their travel patterns by area and trip purpose are shown in Table 15.

Table 15 - Sample Sizes by Trip Purpose

	Work	School	Local shop	Other shop	Hospital	Pers. Bus.	Social/ recreat.
Ayrshire	45	17	58	42	12	38	36
Aberdeen	64	31	101	70	13	62	63
Newton	50	20	104	69	25	74	66
Caithness	58	24	101	75	27	72	54
East Lothian	77	23	105	73	10	63	67

5.26 Each of the study areas has been zoned for the purposes of analysis as described in Chapter 3. These zone boundaries can be taken to define:

- Local travel - Trips which are made to destinations within the nearest village or town to the origin.
- Other local travel - Trips which are made within the rural area to towns or villages other than the nearest to the origin.
- Regional Centre - Trips which are made to the nearest major town or city such as Aberdeen, Inverness, Dumfries, Stranraer, Ayr Kilmarnock and Edinburgh.
- Elsewhere - Trips that are made to none of the above and which generally involve longer distance travel

5.27 The destinations are compared for four trip purposes in Figure 15. This demonstrates that the more remote areas: Caithness and Sutherland and Wigtownshire are less dependent on travel to other areas than areas with commuter rural characteristics.

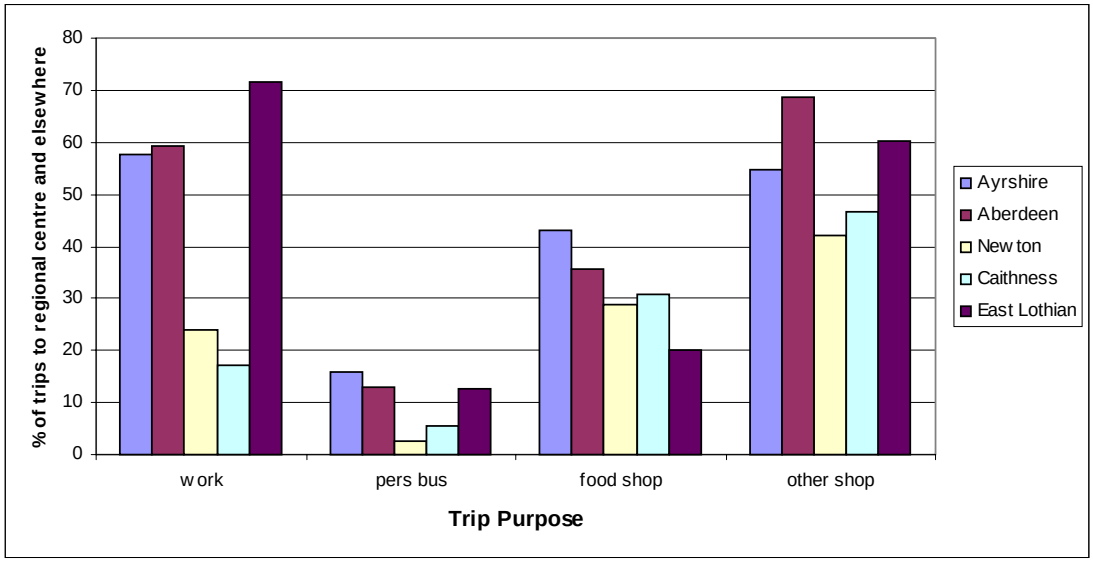

Figure 15 - Travel by Sample area and Trip Purpose

5.28 It can be seen that personal business trips to local post offices and banks in the rural areas appear to meet the needs of most of the population. In the deeply rural areas just under

half the population travel for non-food shopping to regional centres such as Inverness, or Dumfries. For food shopping, East Lothian captures the most locally in the towns like Haddington, North Berwick and Dunbar. However nearly a third of rural residents are making regular food shopping trips outwith the immediate rural area indicating a high dependence on travel for basic accessibility needs. The relatively low level of food shopping trips captured within rural East Ayrshire is of note in this relatively deprived area.

5.29 Work trips show clearly the distinction between remote and less remote rural areas. East Lothian is very dependent on jobs in Edinburgh. Caithness and Sutherland, as the most remote area, is the most self contained in terms of rural employment. For both the Wigtownshire area and Caithness and Sutherland the external work destinations are scattered across Scotland and the frequency of travel to these jobs is only once a week or less.

5.30 A similar analysis can be undertaken for non car travel only, as shown in Figure 16. It should be noted that the numbers of non car travellers in each sample area are small so the accuracy of some results may be questionable. Although there are typically 15 to 25 people in each sample area identifying non car travel patterns for each trip purpose, in the high car ownership areas of Aberdeenshire and East Lothian there were as few as 7 people identifying a local food shopping trip destination.

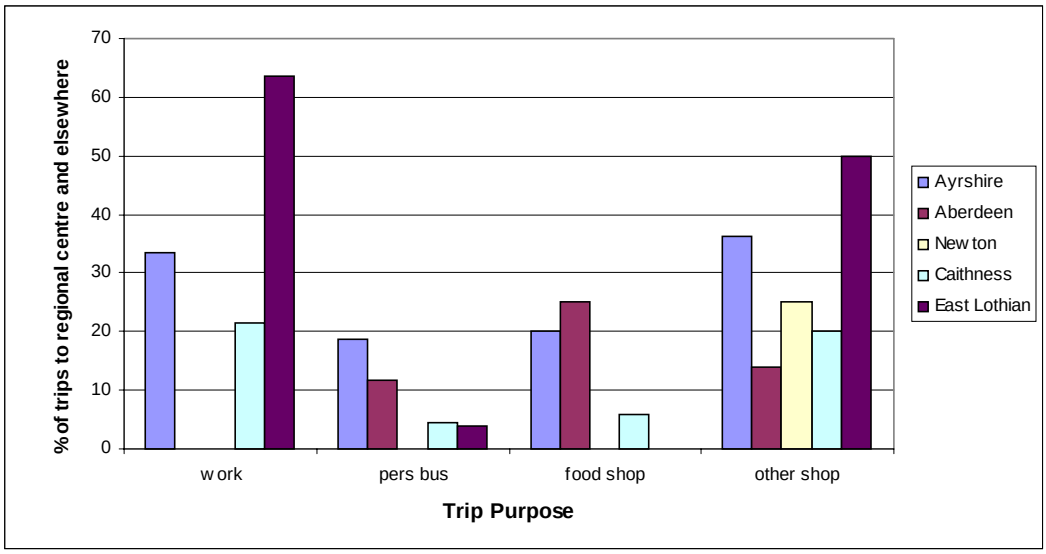

Figure 16 - Non Car Travel by Sample Area and Trip Purpose

5.31 Although there are similarities with the characteristics for all travel, Ayrshire and East Lothian maintain a much higher level of travel to external destinations than for the other areas. The East Lothian trips are largely by rail from stations on the North Berwick line into Edinburgh.

5.32 Using these four definitions of types of destination, overall trends for trip purposes can be seen as shown in Figure 17. The regional centre is most attractive for work and shopping trips whereas most personal business trips are made locally.

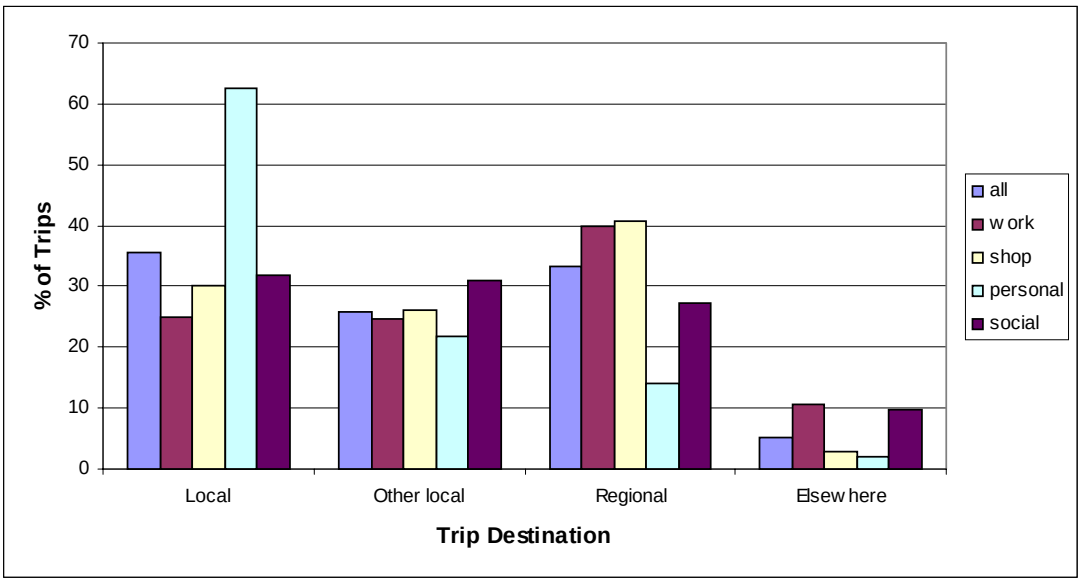

Figure 17 - Trips by Purpose and Destination Category

5.33 A similar analysis for non car trips shows that personal business trips achieve approximately the same percentage locally for car and non car trips. However, for other trip purposes an average of 70 per cent of trips are made locally, which is more than twice the average level for all trips.

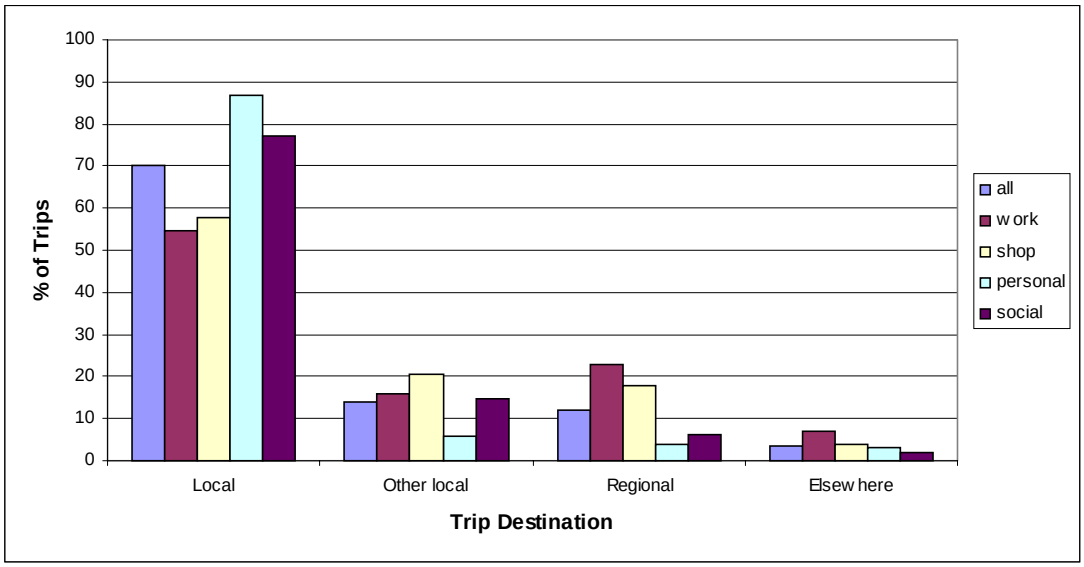

Figure 18 - Non Car Trips by Purpose and Destination Category

5.34 Amongst households with incomes less than £10k there was a poor response in completing the travel patterns section of the questionnaire. Trip frequency by purpose was often completed but details of the trips in terms of mode and destination were left blank in many cases. From the 34 responses on destination for work trips there were 13 using car and 21 using non car modes. Non car travel is therefore of much greater importance to this group. Of the 21 non car trips, 20 had local destinations but more than half the work car trips were to the regional centre. This may suggest that for the less affluent households car ownership was necessary and dependent on their travel to work needs. These issues are dealt with in more depth as part of the telephone surveys.

5.35 Trip frequencies were also studied by trip purpose. Figure 19 compares trip frequencies by car and non car owning households. Overall the trip frequencies were fairly stable across the study areas. The reason for the higher trip frequencies for travel to work by car is because households with more cars also had more members of the household in work.

5.36 Not surprisingly non car trip frequencies for shopping were higher for non car households since people without cars can only carry a limited quantity of shopping in one trip.

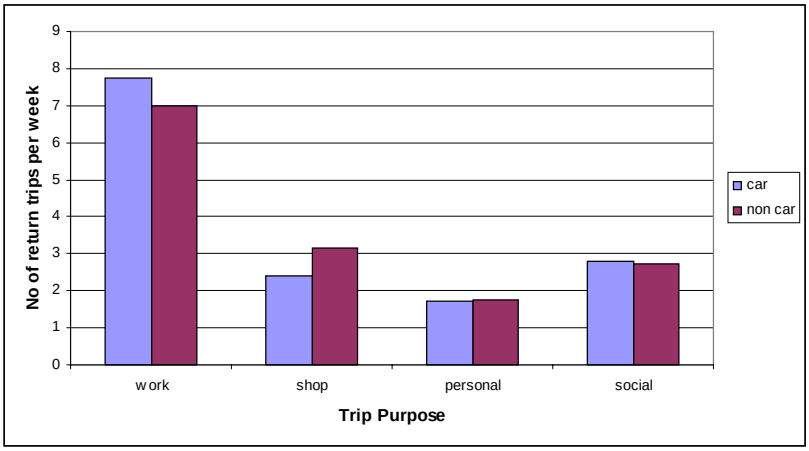

Figure 19 - Household Trip Frequency by Purpose

5.37 At the end of the questionnaire respondents were asked whether or not they would be willing to participate in further survey work. Overall 56 per cent of people provided telephone numbers. It is interesting to note that in East Ayrshire and Wigtownshire fewer people were prepared to participate but there were sufficient in all areas to ensure that a balanced telephone survey could be undertaken.

SUMMARY OF POSTAL SURVEY

5.38 There are socio-economic and accessibility similarities and differences between each of the study areas. This emphasises that a range of factors need to be considered in evaluating rural access needs.

5.39 Car as driver was the most popular mode achieving 70 per cent of trips other than leisure and school. Trip purpose is not a major factor in mode choice and if a car is available it is used for all but the most local journeys.

5.40 The quality and amenity of rural areas is by far the most important reason why people choose to live there. However for the least mobile people, family ties are a more important factor on choice of residence than other access needs such as work shopping etc.

5.41 Expenditure on fuel exceeds the national average by between 50 and 100 per cent. However the highest expenditure on fuel is in the most affluent areas.

5.42 With increasing remoteness travel patterns become more self contained within the rural area. However personal business trips are made locally within all areas.

5.43 Car ownership appears to be linked to travel to work needs for lower income households. Lower income households also make more local trips than their more affluent counterparts.

5.44 Trip frequencies by purpose appear to be fairly stable across the study areas.

CHAPTER SIX TELEPHONE SURVEY

6.1 Following the postal surveys, telephone surveys of 250 households were undertaken. These sought to explore perceptions and attitudes of rural accessibility building on the responses in the postal survey. The questions asked are shown in Appendix C.

6.2 The survey took place during February and March 2001 and questions were asked about:

- Perceptions of isolation.
- The usefulness of various transport modes including the quality, reliability and convenience of travel by each mode.
- Changes which respondents would most like to see made to improve transport
- Limitations for access for a range of trip purposes for routine and more occasional travel.
- Convenience of access to basic and everyday services and ways in which this could be improved.
- Relationships between quality of life and transport
- Whether rural dwellers are getting a fair deal from the Council and the Government in terms of the services provided and the taxes paid and what improvements are needed.
- Willingness to participate in a focus group.

6.3 Of the 725 people that responded to the postal survey, 378 stated that they were willing to answer further questions over the telephone. The aim was to have a reasonably even number of responses to the telephone survey from each area with about 50 interviews in each area. This proved difficult since there were variations in the number of people willing to participate from the different areas and in East Ayrshire it was only possible to make 33 interviews.

6.4 Table 16 shows the characteristics of the telephone survey interview sample by area, age group, income group and car availability. The sample characteristics are a reasonably close match with the postal sample characteristics described in Chapter 4.

Table 16 - Telephone Interviewees by Sample Areas

No (%)	All	East Ayrshire	West Aberdeenshire	Wigtown -shire	Caithness and Sutherland	East Lothian
Total	250 (100)	33 (13)	57 (23)	53 (21)	55 (22)	52 (21)
Over 60	87 (35)	8	19	20	22	18
Income <10k	56 (22)	10	7	14	20	5
Non Car available	34 (14)	6	6	9	8	5

6.5 The results of the survey are reported below for each of the main questions.

ACCESSIBILITY RELATED ISOLATION

6.6 The first question was whether households felt isolated in any way. Many people viewed isolation in terms of the ease with which they could reach a nearby town or city, and perceptions of car and non car owning households were very different. Figure 20 shows perceptions of isolation by area.

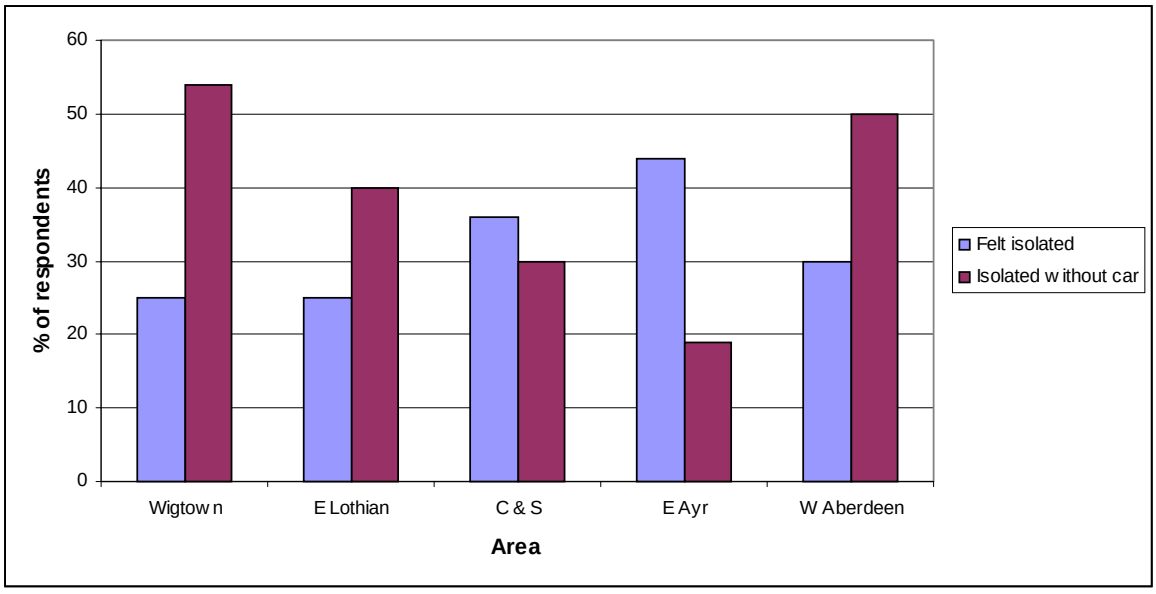

Figure 20 - Perceptions of Isolation by Area

6.7 It can be seen that people in Wigtownshire and West Aberdeenshire are most reliant on cars and people in East Ayrshire are by far the least reliant. Further analysis shows that:

- In Ayrshire 50% of those feeling isolated are concerned about the frequency of public transport, particularly in the eveneings and at weekends.
- In Aberdeenshire 41% of those feeling isolated cite the distances to facilities, friends and relatives and 24% are concerned about being isolated in poor weather.

- In Wigtownshire the availability of public transport was by far the most common concern accounting for 62% of those feeling isolated. However, many people commented that they would take lifts from friends if they did not have a car themselves. Isolation was mainly a concern when people wanted to travel to larger cities with a supply of good shopping and cultural events.

- The weather was the main reason why people in Caithness and Sutherland stated that they felt isolated with 50% citing this as their main concern. However it should be noted that the month before the survey many people had been snowed in, in some cases up to ten days. This may have affected the attitudes at the time of the survey.

- East Lothian has relatively good accessibility but as many people in this area felt isolated as in the remote area of Wigtownshire. The main reason for feeling isolated was the distance to facilities, friends and relatives (38%). It is interesting that East Lothian and Aberdeenshire as two relatively wealthy and partly commuter rural areas should be concerned about remoteness from facilities whilst the more remote areas are more concerned about public transport.

6.8 A similar trend emerges for perceptions of isolation by income group. As seen from Figure 21 33% of people in households with an income of less than £30k per year feel isolated but this falls to 19% for higher income households.

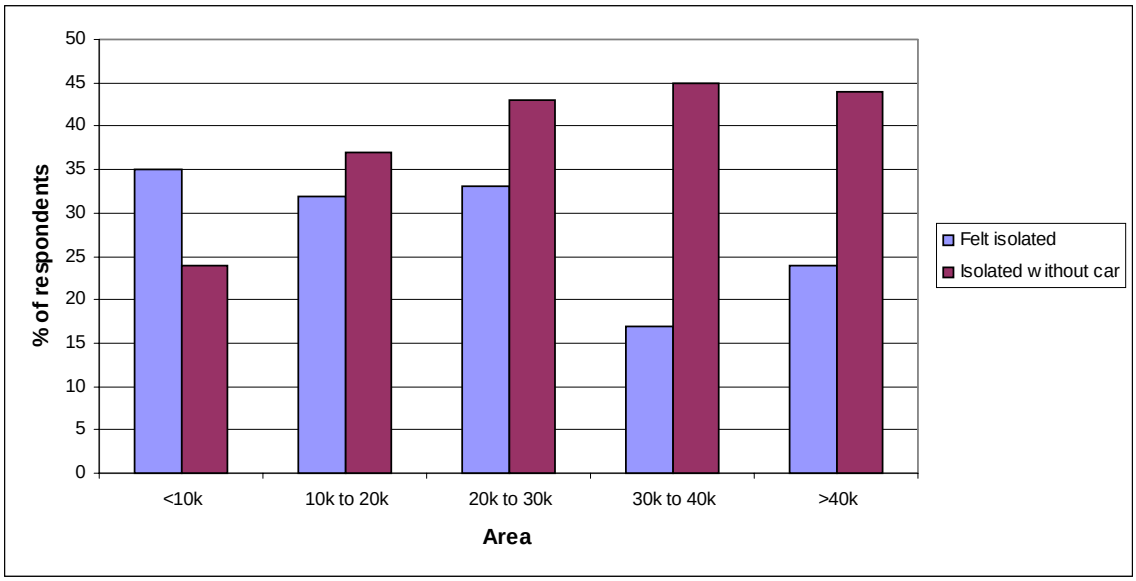

Figure 21 - Perceptions of Isolation by Income Group

6.9 The higher income groups are more concerned about not having a car, probably since they have the most car dependent lifestyles.

6.10 The responses to the survey were also analysed by age group. It might have been expected that older people would feel more isolated, but analysis shows that, of the respondents, only 21% of the over 60 age group felt isolated whilst 37% of 18-60 year olds felt isolated. The main reason for the older group to be concerned was the distance to facilities, friends and relatives but for the 18-60 age group poor public transport was the main concern.

6.11 Overall it is clear that the perception of isolation is dependent on the rural context. In all areas more people stated that they did not feel isolated than did, with the greatest concerns from high income households who felt that they would be very isolated without a car.

USEFULNESS OF DIFFERENT MODES OF TRANSPORT

6.12 In this question people were asked to state the usefulness of each of six different modes of transport. They were car as a driver or passenger, scheduled bus or post bus, taxi, community bus, train and cycling or walking. Interviewees were asked to rank each mode as: *very useful*, *useful*, *slightly useful*, or *not used*. Based on these responses follow up questions were asked on the quality, reliability and convenience of each mode.

6.13 Figure 22 shows how people ranked each mode.

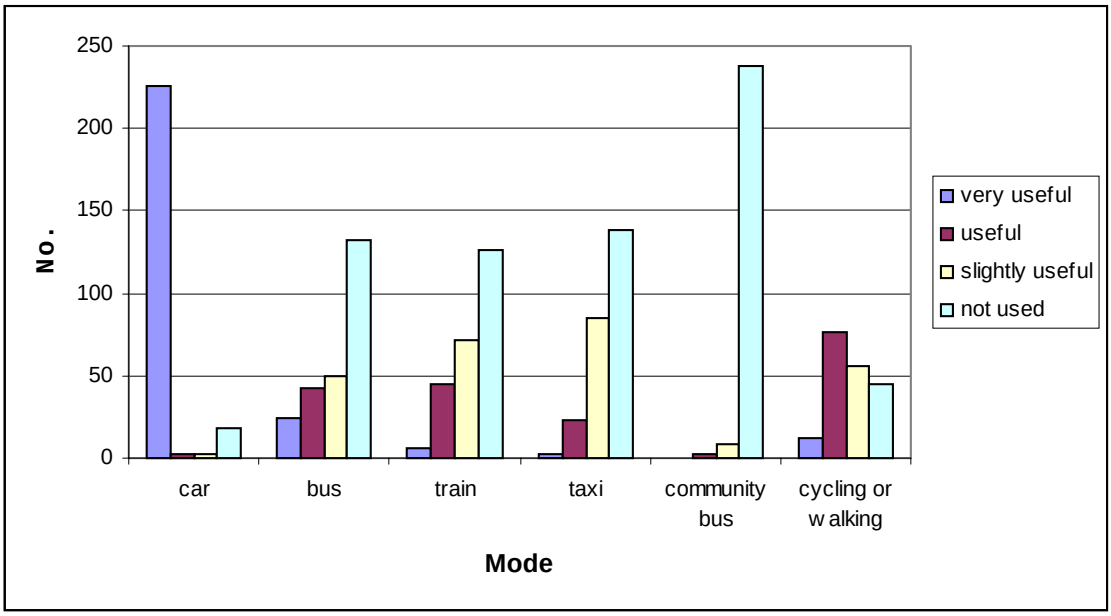

Figure 22 - Number of Interviewees by Usefulness of Mode

6.14 It can be seen that ***car*** is considered to be by far the most useful mode with 226 respondents ranking it very useful. At the other extreme, community bus is not identified by any respondent as being very useful, but eight people did make some use of this mode. The majority of the interviewees also point out that even though they may be lucky enough to be able to have one or more cars, the car itself is not a luxury. Common comments describe access to and ownership of a private car as 'essential', 'absolutely vital', 'a necessity'.

6.15 As opposed to any of the other transport modes mentioned in this survey, the car is very much a multi-purpose vehicle. It is not possible to distinguish any specific patterns of use, e.g. for travel to work or to leisure activities. Once people own or have access to a car it is used in as many situations as possible. Given the easy access to a private car all the other existing transport modes fall short in providing useful transport.

6.16 People also identified some problems with this high level of dependence on the car:

- The cost of petrol is considered to be too high especially for people living in the Highlands region. Not only are the distances greater for access to work and services but the price of fuel rises with distance from larger cities.

- For rural areas near to the major cities of Aberdeen and Edinburgh there is concern about the impacts of congestion within the city on the rural areas. They suggest that a well functioning park and ride system is high on the list of improvements that they would like to see.

6.17 When the usefulness of each mode is studied by area and age group it is found that there is a high level of similarity in perceptions. Aberdeenshire residents are slightly more likely than average to favour the car, East Lothian residents rate the train as more useful than the other areas and East Ayrshire residents consider the bus to be relatively more useful. Nevertheless the general pattern from Figure 20 is repeated for each separate area. Older people rate all modes as less useful than younger people suggesting that transport is generally less important to them. The greatest difference is for the car which is considered to be approximately 20% less useful by older people.

6.18 As shown in Figure 23 an interesting pattern emerges when the usefulness of different modes is considered by income.

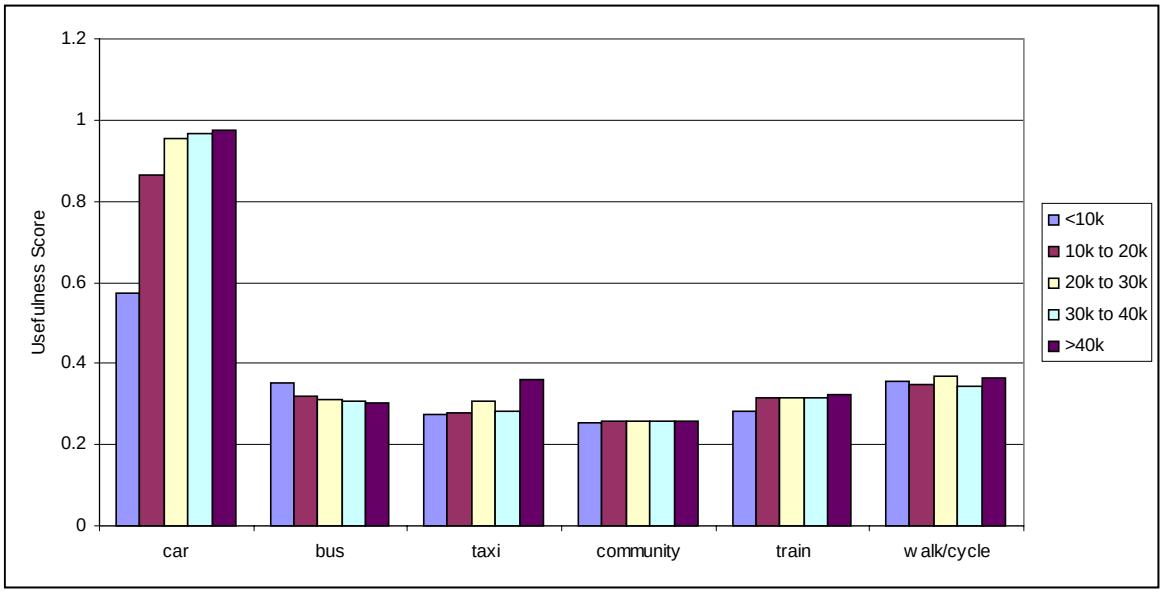

Figure 23 - Usefulness of Different Modes by Income

6.19 Bus travel is considered to be more useful by less affluent households. For all other modes, usefulness rises with income (car, taxi, train) or is similar for all income groups (community bus, walk/cycle). Of particular note is the large fall in the usefulness of the car for lower income groups.

6.20 In general ***bus*** travel is used for local transportation to and from work and services. Whilst 93 interviewees find these bus services useful, few of them actually use the services and only 23 describe them as very useful. Given that there were 34 non car available households in the sample this is a very low ranking for the usefulness of the bus.

6.21 Those who comment that they live near bus routes consider the services to be reasonably convenient. There are concerns about service frequency and operating times, with hourly services considered inconvenient. A problem highlighted by a number of respondents, is that bus services only run to and from major city centres and make travel in other directions and between smaller towns and villages difficult or even impossible. Travel by bus for commuting or other purposes requires travellers to travel radially into major towns or cities

and then radially out of these centres to their destination. It is therefore rare that bus services to rural areas are competitive with car travel times.

6.22 Bus fares are perceived to be to high, and in some cases reliability difficulties were also noted. One respondent pointed out that “Money seems not to be an issue in cars, apart from how much fuel it takes to fill it up. Even though the bus still is half the price of the car, people can’t seem to see that." Car ownership is considered to be a necessity and therefore part of “normal” spending. When considering to chose the bus for transportation, fares are perceived as an extra transport cost on top of car ownership.

6.23 In Caithness and Sutherland the role of the bus on the main strategic routes was highlighted. The most common journeys are along the A9 to Inverness or to Wick, usually for weekly or less regular shopping. Even though bus frequencies on these routes are considerably lower than in commuter rural areas such as East Lothian, some of the interviewees expressed satisfaction with bus services running only a couple of times a day.

6.24 In Wigtownshire and Caithness and Sutherland the post bus is an option for some trips. People comment that they need to commit the whole day if going shopping to a nearby town since the bus often runs only twice a day. Also, once getting to the town there is usually only an hour or two to complete the shopping before the return trip leaves.

6.25 Flexibility and careful planning is needed when travelling by bus in rural areas for the majority of trips. People need to find out when the buses leave and from where, to what destinations you can travel, how the buses interconnect and how long you have to wait in between buses, bus fares, luggage capacity etc. These issues are particularly difficult for disabled people. Among those interviewed with different kinds of disabilities most considered that they were dependent on cars but people with poor eyesight noted that they were helped by good bus services.

6.26 Interviewees made use of ***trains*** for longer distance travel and commuting. For those in Aberdeenshire and East Lothian who are able to use the trains for commuting it seems to be a convenient mode of transport, since it is quicker than the bus and often the car and more convenient to use than the buses. Opinions differ on whether buses or trains are more reliable. The train is also mentioned as preferable to car travel when visiting larger cities since the hassle and the costs of finding parking spaces are avoided.

6.27 However to use trains most rural people need to travel considerable distances usually by car but sometimes by bus. A common complaint is that the interconnections between buses and trains are sometimes not well planned. Only six of the respondents ranked the train as a very useful mode but more of the interviewees used trains than buses (124 for trains but only 118 for buses)

6.28 Fewer people made any use of ***taxis*** than for buses or trains. Taxi use was identified under four main categories:

- For social purposes - One interviewee described this as “when I get drunk”. However several people commented that they would use taxis in the evening to travel to and from social events.

- Travel to stations and airports - When people need convenient and reliable local transport as part of a long distance rail or air journey then taxis were popular.

- In emergencies - Taxis are used in emergencies and on occasions when the other transports options cannot meet their needs.

- For regular travel - A small number of people use taxis for everyday travel for shopping and visiting friends. Although this can be more expensive than owning a car or additional cars some people find it more convenient.

6.29 The most common criticism of taxis was that they were too expensive for most trips. However in the remoter areas people commented that there were usually no taxis available. Often there would only be one taxi in an area and this would be fully booked at weekends and holidays.

6.30 The majority of the people interviewed did not know whether there was a ***community bus*** in their local area. Those that thought they were aware of community buses identified them under marketing names such as village hoppers or dial-a-bus. None of the respondents had ever used a community bus even if they knew how it worked. However 11 people considered that the services were of some use to them because they knew that they could use them if they needed to.

6.31 ***Cycling and walking*** for transportation was naturally only appropriate for local trips. People who walked for a utility trip almost always made their journey to a nearby town or within the village or town where they lived. Very few respondents considered cycling for transportation.

6.32 It is perhaps surprising that in the discussion of quality, reliability and convenience of each mode, few of the interviewees considered their choice of transportation from an environmental or health point of view. Only 12 of the 250 people interviewed mentioned the fact that their use of cars conflicts with their wishes to live in a pleasant environment. Of those, a few households described measures they had taken to reduce the environmental impact of their travel. Most common was moving to a location where commuting was possible by public transport, but others were involved in car share schemes for commuting.

SUGGESTED CHANGES TO IMPROVE TRANSPORT

6.33 When asked what changes the interviewees most would like to see made, the suggestions were usually specific local schemes but some general suggestions were highlighted.

6.34 The most common comment was the need for increased frequency and greater number of buses running together with extended hours in the mornings, evenings and at the weekends and reduced prices. The expectation that this sort of improvement should be possible tends to be more frequent in the areas surrounding bigger cities like Edinburgh, Aberdeen and Ayr and Kilmarnock.

6.35 In the remoter areas like Caithness and Sutherland few of the respondents hoped to see any improvement in public transport. In these areas the interviewees commented on the difficulties in achieving their desired level of change in scheduled bus services, highlighting sparse population as a reason why it would not be economically feasible to have good bus services.

6.36 Several people suggested the organisation of a dial-a-bus service and locally managed mini-buses perhaps sponsored by local companies as possible improvements. However, most of these people commented that they probably would not use it themselves since they had access to private cars. Others suggested that smaller buses could be used to reduce bus fares since the large existing buses rarely had more than a few passengers.

6.37 There were also comments on practical obstacles that hinder people from using the buses. One issue is that buses are not very buggy friendly, thereby making it difficult for parents to bring their children on the bus. For elderly people, but really for everyone, an increased use of low loaders would be helpful. One person suggested that to increase the convenience of using the bus for weekly shopping etc. they should re-introduce the old system of having refrigerators on the buses.

6.38 In three of the areas surveyed, most of the services are contracted by the Councils. These mechanisms for regulating rural bus provision were not widely understood and interviewees suggested greater regulation of public transport to:

- Make better use of the limited fare income from fragile services in rural areas.
- Reduce competition between bus companies which results in competing services running at similar times during mornings and afternoons with limited options for travel at other hours.
- Co-ordinate pricing and fares with co-use of travel cards and agreements on concessions between different geographical areas with different operators.
- Improve integration between bus and rail services.

6.39 Other changes suggested included the following:

- Better information about bus departure and arrival times, destinations and fares.
- More widespread re-introduction of trains on existing tracks where the traffic was stopped during the 1960's. The suggested improvements were in Deeside, westwards from Aberdeen, in east-westerly direction in Dumfries and Galloway and in East Lothian.
- Many car users called for reduced tax on fuel, roads and cars. Some suggest that these could be reduced only for rural areas, whereas others comment that even if fuel prices were the same as in urban areas this would be a major improvement.
- For those living in very remote areas some people suggest subsidised costs on use of taxis, since there are no other options available.
- Requiring everybody to pay additional taxes or charges to fund transport services which ensure easy access for everybody.

6.40 Despite these many suggestions many people commented that they were happy with the existing situation and they could not think of any improvements to make.

CONVENIENCE OF ACCESS TO SERVICES AND WAYS OF OVERCOMING LIMITATIONS

6.41 These questions were constructed to try to find out how people in rural areas overcame the accessibility limitations that rural life involved, for access to work, leisure activities, and different services. The interviews also explored specific differences between short and longer distance travel needs.

6.42 In general the respondents are aware of the facts of rural living, "you can get basic needs catered for, but for more specialised services or goods you have to access larger urban centres".

6.43 Most of the respondents do not feel they face any limitations in access to local services. They are within reach by car for all their needs. This high level of satisfaction is qualified on two points:

- Firstly access to a private car is essential. Public transport is not flexible enough for access to different services or for travel to and from work.

- Secondly facilities and local services should not be reduced any further. In some areas where opening hours have been reduced and/or some basic services like banks and health care centres have been shut down, the local population have organised themselves for protests against these changes. In at least one case they managed to save the bank, but no one knows for how long.

6.44 This reinforces the findings of the postal survey that even amongst non car owning households car travel is the most important mode for many trips.

6.45 There are some differences between the study areas for the convenience of access to services. Most of these differences can be accounted for by the socio-economic characteristics of the sample but people living in East Lothian are most satisfied with the convenience of accessing everyday services.

6.46 It might be expected that rural dwellers would make more use of telephone services and the internet for access to services than their urban counterparts. The surveys did identify: some people who used telephone banking, a few who used the internet for shopping or other types of service provision, and a few who used catalogues for shopping. People using the internet for shopping purchased mainly books, CDs, electrical equipment and computer related goods which otherwise would have required travel to a regional centre. Several interviewees were interested in or already made food shopping purchases on the Internet, mainly via Tesco, but in some cases they were too far away to be included in the delivery area delimited by the shop. As shown in Figure 24, the use of telephone and internet shopping and banking rose with income group.

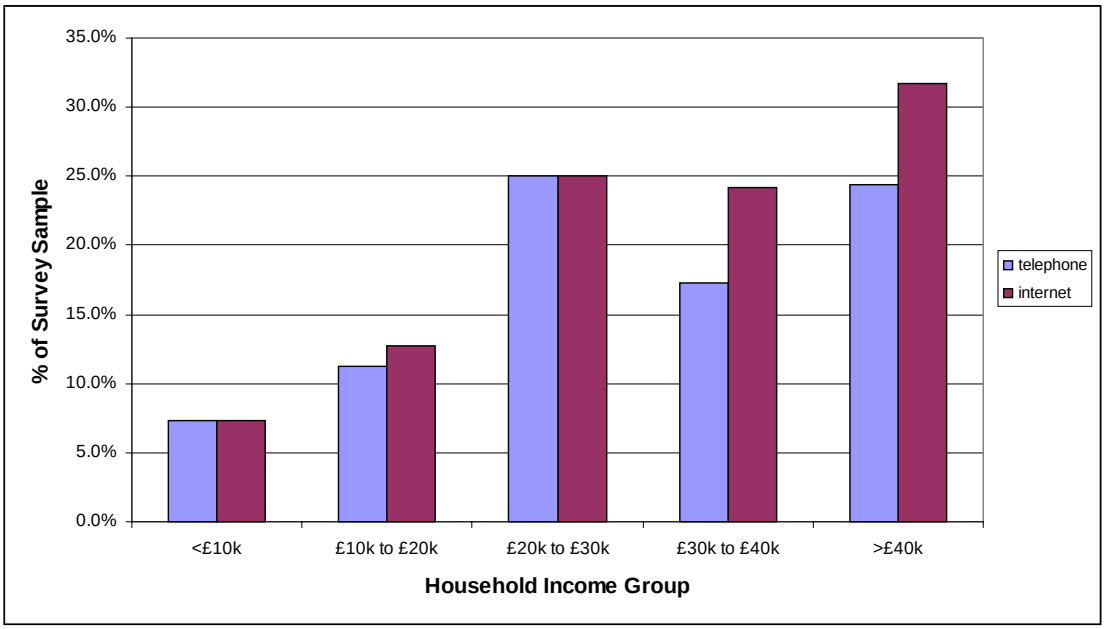

Figure 24 - Internet and Telephone Banking and Shopping

6.47 The lowest income groups are most likely to have lower mobility so telephone and internet services have considerable potential for growth amongst these people as ways of improving their accessibility.

6.48 A number of specific comments were made about accessing local service provision as follows:

- There was widespread agreement that local health providers took a flexible attitude towards their clients taking account of any access problems. However people living far away from GPs and local surgeries expressed concerned saying that it sometimes made them feel insecure.

- Local shops often supply the basic needs but lack variety, particularly for fresh produce. They are also perceived to have high prices. Less regular shopping, such as weekly food shopping, clothes, shoes, and more specialised goods are undertaken in larger towns. Some commuters to larger cities made most of their purchases in the city but others preferred to do the bulk of their shopping locally in an attempt to support the local service. In this respect there was a clear difference between respondents based on income group. People from lower income groups were more concerned about the price of local goods and sought opportunities to shop at cheaper stores.

- Banks were widely criticised for recent closures of local branches. Even where branches remained open, the restricted opening hours could be inconvenient. The interviewees most concerned about these services did not generally use telephone or internet banking to overcome these problems.

- Post offices on their own, or in shops, are seen as very valuable for everyday needs. In the more remote areas of Sutherland and Caithness, the post van was highlighted by some as being the single most important local service.

- Mobile services like green grocers, fish vans, mobile cinemas and banks, or visiting dentists and opticians are considered to be essential local service providers.

6.49 When asked about access to more distant services and possible limitations in using them, the same patterns repeat themselves. People, including non car owners and less mobile people, are generally content with their situation. Again car travel is cited by nearly all people as essential.

6.50 The greatest concerns raised were about access to hospitals. Those who can drive are less concerned even though they would normally not drive themselves for major treatment, and the cost of travelling significant distances can be considerable. For those who use public transport, many trips require an overnight stay. This is a particular problem for those who require to make regular visits given the substantial cost and time involved.

6.51 Overall the surveys suggest that most people find ways to overcome their accessibility limitations but the costs of achieving this accessibility for both local and longer distance trips are greatest for the least wealthy people.

SUGGESTED CHANGES IN THE WAY SERVICES ARE ACCESSED

6.52 About two thirds of the respondents had no suggestions as to how the provision of basic and everyday services should be improved. Of the remainder most suggested transport changes such as improved bus frequencies, lower fuel costs and better maintenance of the roads.

6.53 However a few non transport improvements were suggested including:

- Longer opening hours of banks and post offices.
- Larger local shops with improved choice.
- Co-location of all the basic services within rural villages to improve the viability of service provision and the efficiency of staff utilisation.
- More mobile services.
- Increased local presence of medical services.

TRANSPORT AND QUALITY OF LIFE

6.54 The majority of those interviewed explained that the benefits of living in their particular rural area outweigh any difficulties in transportation. Even though people living in rural areas are more dependent on transport, and pay higher transport costs, they would in general not want to leave. The reasons given for this are common to most people interviewed: the peaceful and quiet life, the beautiful surroundings, fresh air, easy access to the nature, low crime rates, friendly people and in a number of cases the community spirit.

6.55 Rural living is also perceived to be very good for children, although some comment on the problems of driving teenage children everywhere due to the lack of public transport as a

negative influence on quality of life. Even though people are generally content, the respondents point out that the transport system could be better and, most importantly, their satisfaction is in many cases conditional on having a car available.

6.56 There were fifteen people in the survey who were seeking to move out of the rural area, and the three main reasons quoted were: transport problems, lack of job opportunities and growing older and needing to live closer to social support networks.

6.57 People in the Ayrshire sample had very different views on the quality of life in their area from the other rural areas, and listed many problems. In some villages there were considered to be social problems with some of families moving in, who were perceived not to fill the expectations on “rural behaviour”. Some of the respondents in the area also mention the general economic deprivation of the area as one reason for their dissatisfaction. The critical quality of life issues were not therefore considered to be transport related.

A FAIR DEAL IN TAXATION?

6.58 This question concerns the relation between the taxes the respondents pay, such as Council tax, income tax, fuel tax etc, and the service provided in return. About one third of the survey population considered that the overall tax burden was satisfactory, whereas the rest of the interviewees had some objections. Some of the main points made were:

- For the car owners, the costs of fuel and taxes associated to the car were considered high in relation to the investment in roads, particularly road maintenance and winter gritting.

- Although there was widespread concern at the level of the Council tax, several people stated that they would be willing to pay even higher taxes if they could be assured that the services would be maintained at a high level. The quality of schools was considered to be high but people were concerned that other services were provided at a lower quality in rural areas than urban areas.

- Variations in the level of concessionary travel available to elderly people attracted comments from several interviewees since this did not appear to relate to the level of the Council Tax.

6.59 Concerns about high fuel taxes were greatest in Sutherland and Caithness. Otherwise it seems to be the age and overall family situation rather than geographical area that were the most decisive factors in affecting attitudes to tax.

SUMMARY OF TELEPHONE SURVEY

6.60 People with cars in rural areas do not generally consider themselves to be isolated but people without cars often feel isolated.

6.61 To obtain basic accessibility non car owners rely on lifts from car owners. Cars are considered to be an "absolute necessity" by most people.

6.62 Expectations of rural accessibility are consistent with the type of area and people are generally content. However in all areas people expect some services to be provided locally.

6.63 Satisfaction with bus services is higher in the commuter rural areas. In more remote areas careful planning and flexibility from travellers is required for buses to be a practical option for many trips.

6.64 Awareness of community transport is very low. However when asked what improvements they would like to make they suggest community transport solutions.

6.65 Protecting the rural environment by using cars less is not a major factor amongst the vast majority of people.

6.66 Opinion was divided on whether to tax more highly to provide a better service or whether to reduce taxes on transport. Interestingly better road maintenance was the top transport priority to improve accessibility.

CHAPTER SEVEN FOCUS GROUPS

7.1 During the telephone surveys all interviewees were asked if they would be prepared to participate in a focus group to explore practical problems and solutions in greater detail. From the list of willing participants fifteen people in each study area were selected to provide as balanced a sample as possible.

7.2 It was found that mainly car owners and higher socio-economic groups were prepared to participate. There were some non car owners but insufficient to allow any choice of age group, gender etc. There were no potential representatives who were unemployed so the people most likely to be socially excluded were not represented. Whether the "socially included" can give a balanced view of what needs to be achieved to help socially excluded people is a matter of debate. However, as discussed in Chapter 3, to engage fully with socially excluded people relies on community based approaches which are resource intensive and impractical within the context of this project.

7.3 The selected people were contacted by telephone and in most cases said they were able to attend. A letter was then sent confirming the arrangements and agenda for the meetings. A copy of the letter is given at Appendix F. A total of 22 people attended the focus groups and Table 17 summarises the characteristics of the participants. High income and high car ownership groups are over represented compared with the postal and telephone surveys but the sample included the required range of characteristics to allow typical views to be obtained.

Table 17 - Characteristics of Focus Group Participants

Income group	11% <£10k 24% £10-20k 24% £20-30k 17% £30-40k 24% >£40k
Age group	28% >60 72% 18-60
Car ownership	Average of 1.6 cars per household Average of 0.78 cars per adult

7.4 Despite the agenda for the five focus groups being identical, the themes which were of interest to participants in each of the areas were significantly different. Also in each area the discussions regularly returned to particular local issues. It became clear that the main obstacles to good accessibility in each area were viewed as follows:

- Caithness and Sutherland - The fragile economy and services
- East Ayrshire - The general social problems
- East Lothian - Developing better scheduled public transport particularly rail
- West Aberdeenshire - The desirability and impracticality of public transport
- Wigtownshire - Transport, practical rural lifestyles and the local economy.

7.5 A summary of the discussion at each of the groups is given at Appendix G. Table 18 identifies the main themes to emerge from each group.

Table 17 - Key Issues at Focus Groups

Area	Location	Themes
Caithness and Sutherland	Lairg	• There is a strong community focus to protect what is viewed as a very high quality of life, but recognition of the fragile economics of remote areas. • For lower mobility groups opportunities for leisure activities are more constrained than for other trips. • A major challenge is to protect local village shops, banks etc. but local businesses do not meet local needs for times of opening etc. • There is a desire for more scheduled bus services since it is not always possible to plan travel in advance. • Dial-a-bus and taxi bus are perceived to be less successful since people are too proud to use them, but car sharing and taking lifts from friends are viewed as very important.
East Ayrshire	Cumnock	• A high proportion of the community has lived a long time in the area and has relatively low expectations for accessibility. • Bus travel is perceived to be linked with lower social status. • The area is easily accessible to the outskirts of the Glasgow conurbation by car so wealthier people take advantages of the job opportunities there. • Travel costs are subsidised for elderly people and those with health problems but not for unemployed people and job seekers.
East Lothian	East Linton	• Whilst car travel was used for many trips, public transport was seen as essential for trips into the City. Taking cycles on trains was viewed as a problem. • The economy of East Lothian is expanding and the quality of local services is improving. Some local businesses provide transport for customers. • Access to hospitals is considered to be very poor.
West Aberdeenshire	Aboyne	• High parking charges in Aberdeen are a major concern and the park and ride on the outskirts of the city is not viewed as taking people to where they want to go. • Only young and elderly people use the buses. Community transport solutions have been of assistance to elderly people. • More community car schemes are seen as providing improved quality in the future. • The new supermarket in Aboyne has improved access to quality shopping for some. • Cycling is popular for trips on more minor roads. • Broadband internet services would help overcome

		communication difficulties for businesses potentially reducing the need for travel.
Wigtownshire	Kirkcubright	• Sustaining the local economy is the priority and most travel to work and business travel is car based. However more could be achieved for tourist travel by public transport. • The economy of the area is changing with decline of agriculture and new cottage businesses orientated towards tourism. • Public transport is needed for older people and young people. • The strong community spirit could be exploited with more community transport provided this complemented the existing good bus services.

7.6 The focus groups provided an opportunity to test the reactions of rural dwellers to the sort of initiatives which could be implemented. Various ideas for making improvements had been suggested during the postal and telephone surveys and in discussions with the local authorities and transport operators.

7.7 The reactions to possible initiatives are summarised below by mode.

RAIL

7.8 Rail improvements were widely sought and the lack of development of the rail network was considered to be partly related to inefficiency and profiteering within the rail industry. Where there were existing rail lines they were considered to have potential to carry many more trains within the rural area. There was a poor understanding of the very high cost of providing rail services relative to bus services, particularly where new rail infrastructure was required. When asked if investment in buses could overcome the perceived advantages of rail over bus with regard to reliability and comfort it was considered that such improvements were theoretically possible but that it was highly unlikely that they would ever be achieved.

BUS

7.9 There were frequent criticisms of the use of old and large buses to provide scheduled services when smaller new buses would be more attractive. The current fragile economics of providing rural bus services was poorly understood including the need for, and cost of, having suitable vehicles available for school transport. Several groups commented on recent publicity about the possibility of dedicated school buses for the UK but opinion was divided about whether taxes should be higher to allow better buses for both school and public services.

7.10 Demand responsive services were viewed as a positive step for the limited number of trips which people wished to plan in advance. However people commented that they often were not able or did not wish to plan in advance so there was still a need for more frequent conventional services.

TAXI

7.11 Problems with the availability of taxis were common to all of the rural areas. Examples were described of how organisers of late night events or pub owners could help to encourage sharing of taxis. Participants thought that public authorities should encourage more people to consider working as part time taxi drivers.

COMMUNITY TRANSPORT

7.12 The delicate balance between the needs and aims of the various stakeholders in community transport was highlighted. Each stakeholder needs to get more out than they put in for them to participate. Local people want the satisfaction of contributing to society and public agencies need to see a good return on any public resources. Co-existence of such diverse aims within initiatives can cause problems. For example one focus group member who participated in a community car scheme commented that participants could easily become disillusioned if public agencies became involved as they would "then want the scheme run their way". Interest in community transport was dependent on people having personal time or resources to contribute to the community, so the potential for new schemes in the areas with weak community capacity was not thought to be high, even though the need was often greater in these areas.

CAR

7.13 Participants nearly all felt that more car sharing was practical and many said they would be happy to provide lifts more often themselves if they were aware of other peoples' travel needs. This appears to be an area where developing electronic communications could make a significant impact.

CHAPTER EIGHT ANALYSIS OF TRAVEL PATTERNS

8.1 The analysis sought to identify consistent ways of understanding and predicting travel behaviour by rural residents. Previous research (Scottish Executive 2000) had shown that accessibility measures could describe transport choices from the viewpoint of travellers. It was therefore decided to calculate accessibility measures for a range of trip purposes in each of the study areas to investigate whether observed travel perceptions and behaviour from the survey work were described by the accessibility measures.

8.2 This Chapter therefore describes accessibility measures for each of the five areas by trip purpose and examines the extent to which these measures explain the surveyed travel choices.

DATA COLLECTION

8.3 Data from each Council was collected for all the public transport and community transport services. Separation (deterrence) values were then estimated for car available and non car available travel for each of the study areas using the local zone structure defined in Chapter 2.

8.4 The assumptions used in calculating the average generalised time of travel between each of these zones are set out in Appendix D.

8.5 Data on the opportunities available in each zone were obtained as follows:

- Population - Mid year population figures for 1997 at a district level from GROS.
- Employment - Figures were obtained from the national employment census for the number in employment in December 1999 and the number of unemployed people for March 2001.
- Health - The location of all GP surgeries in Scotland was derived from statistics maintained by ISD and supplied by SEGIS.
- Supermarkets - Supplied by SEGIS from their database.
- Banks and Building Societies - Supplied by SEGIS from their database.
- Chemists - Derived from commercial data provided by Retail Locations and supplied by SEGIS.
- Petrol Stations - Derived from a survey by ERM in 1998 and supplied by SEGIS
- Post Offices - Data from Post Office Counters supplied by SEGIS
- Schools - Data from the Scottish Executive education statistics division supplied by SEGIS.

8.6 Opportunities were represented in the accessibility calculation as described in Appendix D.

8.7 Accessibility indices were then calculated for each zone to zone opportunity by factoring the opportunities in each zone by a deterrence function[3]. For the initial analysis the calibration factor was set to the values shown in Table 17. The aim was to start with a consistent look at the five study areas using the same calibration factors.

Table 17 - Calibration factors

Access to Employment	Access to Shopping, Banking, Chemists	Access to local GP surgery, and post offices	Access to Petrol stations
0.025	0.05	0.1	0.05

8.8 The indices calculated are shown in Appendix E. The results are summarised for each area as follows.

EAST AYRSHIRE

8.9 For car available households in East Ayrshire, accessibility is generally good. Zones closest to the major towns of Ayr and Kilmarnock rate particularly highly for access to employment and supermarkets. Overall Mauchline, Cumnock and Auchinleck have good access to a range of services. The lowest levels of accessibility are for the most sparsely populated zones of Dalblair and Muirkirk.

8.10 The indices also allow the travel choices faced by residents of each zone to be examined by trip purpose. Figure 25 shows the attractiveness of different zones for each travel purpose.

[3] The deterrence function was a negative exponential of the form $e^{-\lambda t}$ where l is a calibration factor representing the sensitivity of travel to time and t is the generalised travel time between the origin and the destination.

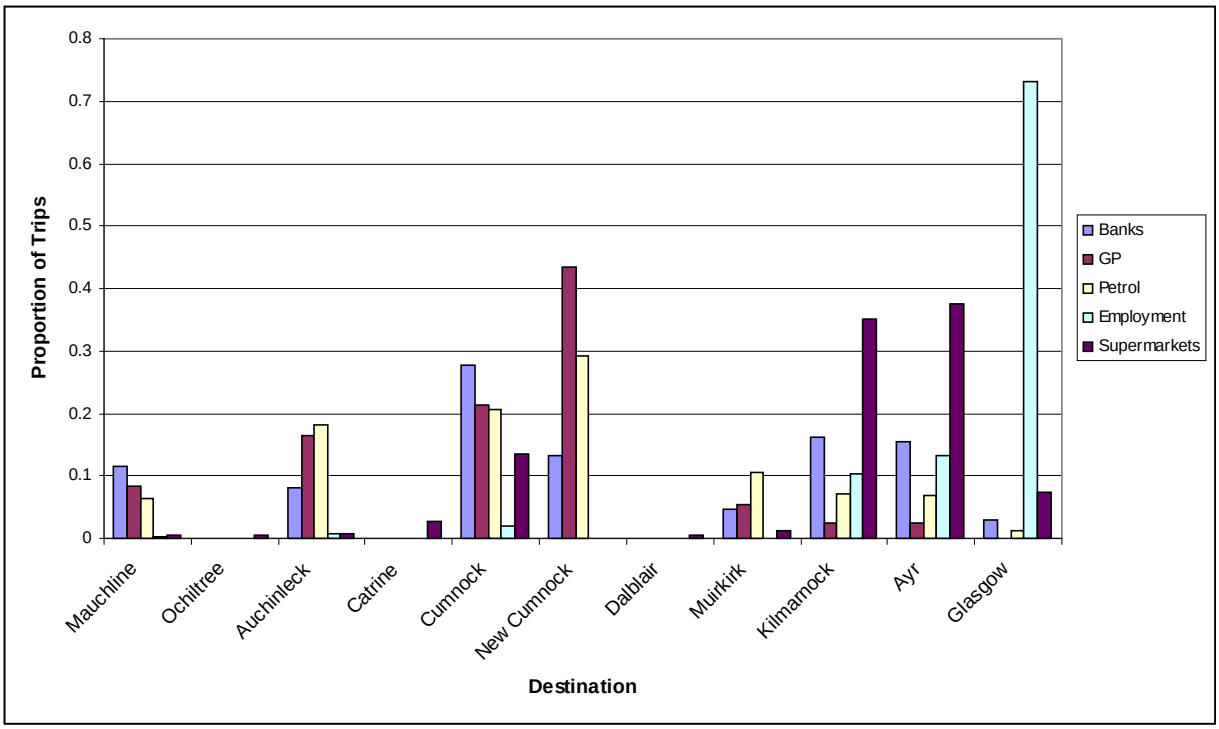

Figure 25 - Car Travel Choices for New Cumnock Residents

8.11 New Cumnock residents can be expected to undertake most of their personal business in New Cumnock or Cumnock but to travel to larger towns for food shopping and employment. Given the relatively low number of jobs locally and the strong attraction of Scotland's largest employment centre Glasgow only 40 miles away it is interesting to note that this analysis predicts that 70 per cent of the car available work trips will be to Glasgow. The observed data shows that very few people actually travel to Glasgow and that about 80 per cent of residents work in the Ayr and Kilmarnock areas. This emphasises that employment markets need to be broken down by population and employment sector for these data to be calibrated meaningfully. Nevertheless the accessibility analysis does demonstrate approximately the correct proportion of people who need to travel to regional centres for work.

8.12 Although non car accessibility is typically a factor of five to ten lower than for car accessibility, non car access is also good for a rural area from most zones. However for non car trips the difference between the larger and smaller towns is very clear. Whereas for car travel accessibility in New Cumnock is just over half that for that for the more central town of Auchinleck, for non car travel New Cumnock only has about a quarter of the level of accessibility of Auchinleck. The accessibility analysis suggests that more non car trips will be made locally in the New Cumnock and Cumnock area.

8.13 Figure 26 shows the equivalent anticipated distribution of trips for non-car travellers.

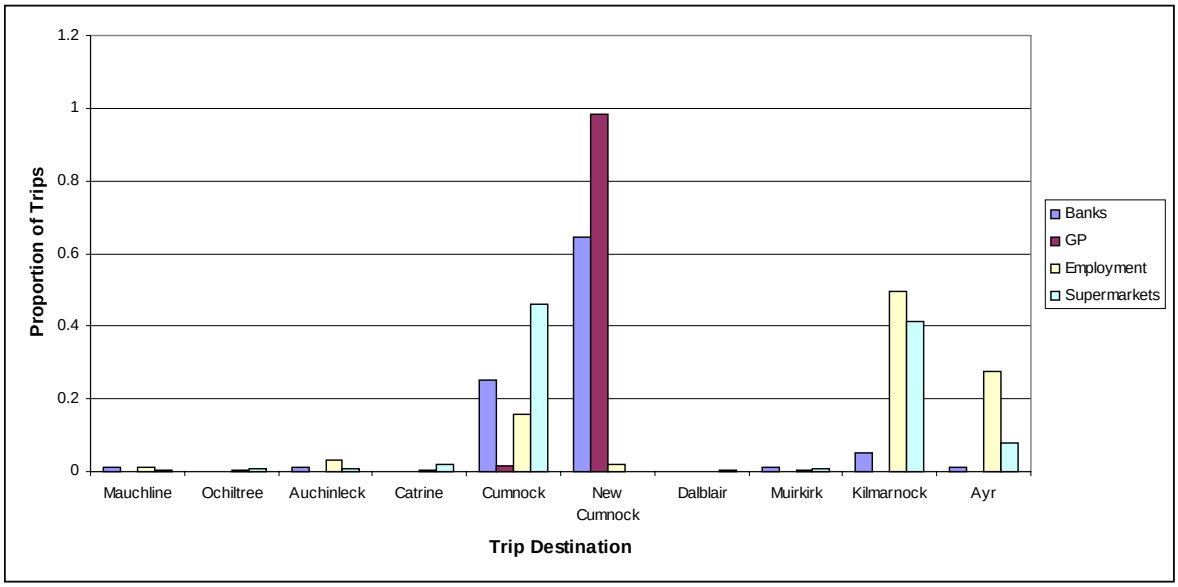

Figure 26 - Non Car Travel Choices for New Cumnock Residents

8.14 Commuting trips to Glasgow are difficult to achieve given the time to reach rail at Kilmarnock so this option has been excluded from the analysis. Kilmarnock has fewer jobs than Ayr/Prestwick but would be expected to attract more work trips from new Cumnock because of the direct bus service in the morning peak. For non car travellers the employment opportunities are also likely to be more attractive.

8.15 Observed data on non car trips is too limited to allow callibration by trip purpose but overall 80 to 100 per cent of trips have destinations in Cumnock or New Cumnock. The accessibility indices represent this for banks and GPs but suggest that more people would be expected to travel elsewhere for supermarket shopping.

8.16 There is also no evidence from the data of non car work trips to Ayr and Kilmarnock even though the analysis would suggest that most work trips would have destinations in these zones. It appears that people in this area are travelling less far than the accessibility analysis would predict.

WEST ABERDEENSHIRE

8.17 There is a very wide range of accessibility across this study area. Strathdon and Braemar are approaching levels of accessibility more common in remote areas but close to Banchory and Alford there is very good accessibility particularly for car available trips.

8.18 Figure 27 contrasts car and non car available accessibility for access to supermarkets for residents of Strathdon and Aboyne.

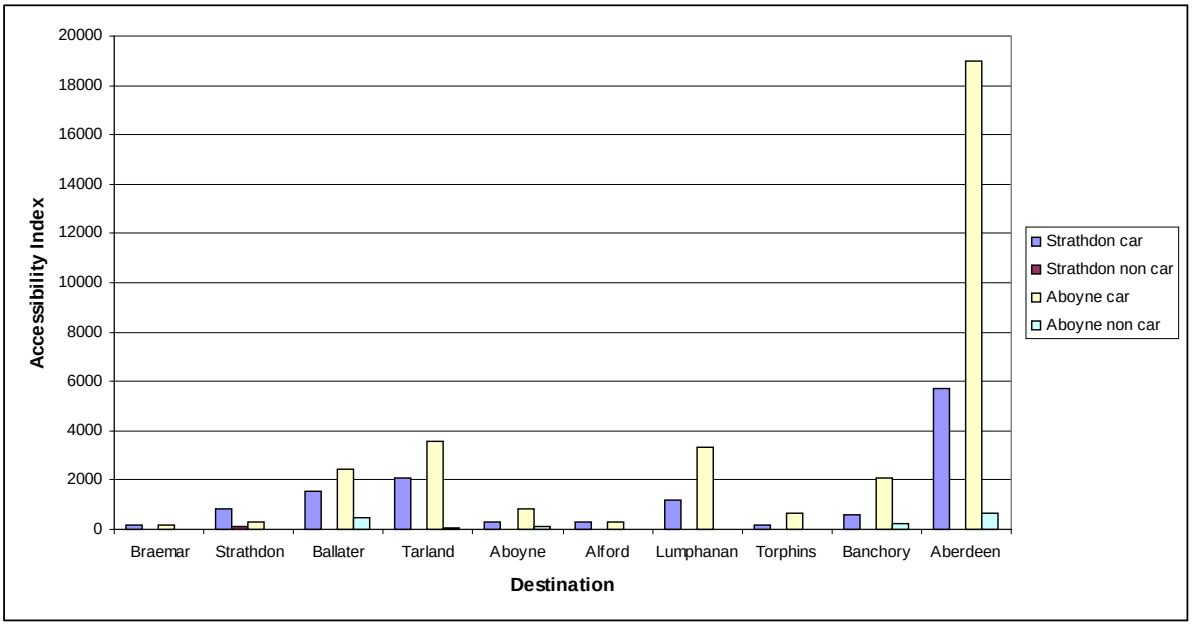

Figure 27 - Comparison of Supermarket Shopping Destinations for Strathdon and Aboyne

8.19 The accessibility index is expressed as square feet of shopping floorspace. It can be seen that for non car available households in Strathdon, supermarket shopping is not a practical option. For car available households the scale of the shopping opportunities in Aberdeen suggests that people would choose to travel there if they had the time available. However, it can be seen that there are at least some shopping opportunities in each zone which may prove attractive for some trips.

8.20 The Tables in Appendix E demonstrate that Aberdeen is also the most likely destination for employment opportunities but that local rural destinations should be attractive for other trip purposes. However there were no chemists outside Aberdeen in the SEGIS database though this is known to be incorrect. Some updating of this database is therefore required which would substantially improve accessibility.

8.21 For all trip purposes, non car accessibility is very much worse away from the core bus routes. The combination of limited provision of services and limited public transport gives these residents very poor accessibility. For example Strathdon has levels of non car accessibility about one hundredth of the car available accessibility. This reinforces the points made by people in this area that car travel is a necessity either by taking lifts or by owning cars.

WIGTOWNSHIRE

8.22 Of all the case study areas Wigtownshire is the most homogeneous in terms of accessibility characteristics. For a deeply rural area, the bus services are good, and there are a reasonable range of services in the towns of Newton Stewart, Gatehouse of Fleet, Kirkcudbright and Castle Douglas in addition to a wider range of services in Stranraer and Dumfries.

8.23 It would therefore be expected that observed trip patterns would show a higher than average use of local centres and the trip distribution spread relatively evenly across the zones. Although the trip numbers from each zone are small, over 80 per cent of trip making is elsewhere in the origin zone or to a neighbouring zone. The main surprise from the observed data is that Dumfries does not attract more trips.

8.24 Car and non car accessibility to supermarkets are compared for Newton Stewart in Figure 28. It can be seen that non car trips are most likely within Newton Stewart but that a significant number of trips to Stranraer are also likely. This is also the general trip patterns observed for other trip purposes amongst this group.

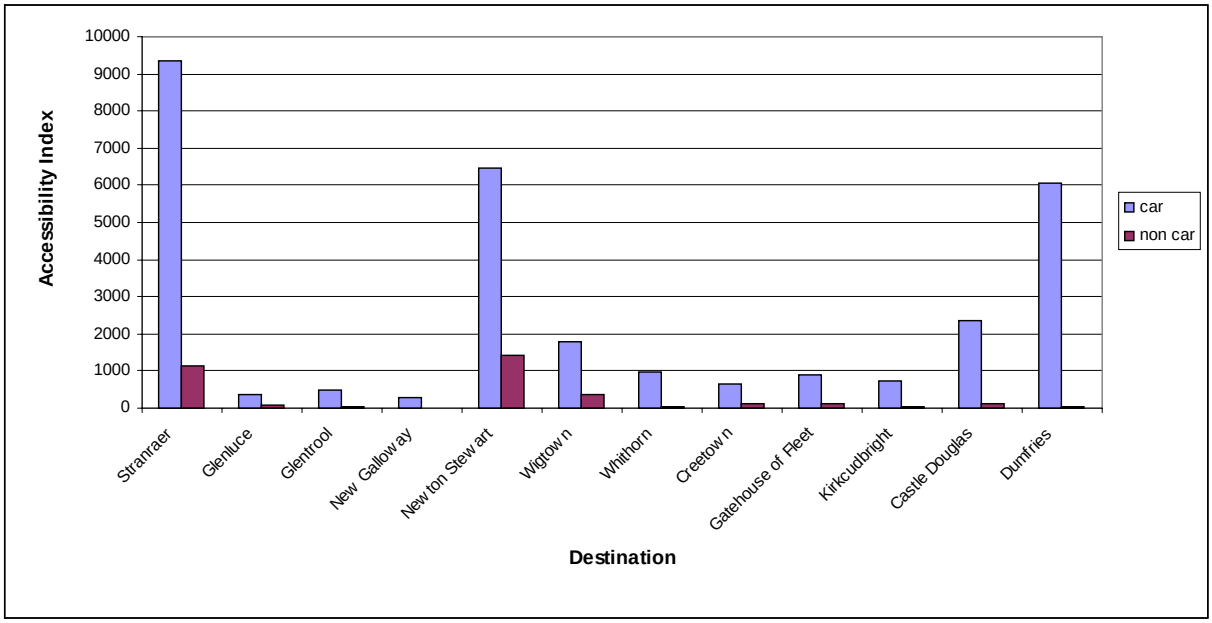

Figure 28 - Comparison of Supermarket Shopping Destinations for Newton Stewart

8.25 For car trips there is a wider range of destinations to choose, but Stranraer, Dumfries and Castle Douglas are likely to be the most attractive based on square footage of floorspace of supermarkets. In practice car available trips are less scattered than this. About half the observed trips are to Stranraer which is broadly in line with the expectations from the accessibility indicators but there are no observed trips to Dumfries. It may be that the supermarkets in Newton Stewart and Stranraer provide a range and choice which is acceptable to the majority of the local population. Alternatively it may be that the higher than average age of the local population reduces the propensity to travel.

CAITHNESS AND SUTHERLAND

8.26 This area includes some very remote locations and the analysis zone sizes are very large. To adopt smaller zones would rarely be practical since in most cases the cost of the analysis would become disproportionate to the transport or service changes being considered. In considering the results of the accessibility analysis it should therefore be borne in mind that the measures are intended to give only a general indication of levels of accessibility.

8.27 The first point to note from the Tables in Appendix E is that for many trip purposes much of the area has negligible non car accessibility to fixed services such as Chemists or GP

practices. Even for car available accessibility, practical levels of accessibility are only achieved in the more populated areas. In the very remote areas it is often necessary and much more efficient to make services mobile, to provide the community with a basic level of accessibility. Many residents of this area highlighted this in the telephone interviews.

8.28 The indicators suggest that only between Golspie, Dornoch and Tain and Halkirk, Lybster, Wick and Thurso are there likely to be non car available people working outwith the zone where they live. However for car available employment trips from the south of the area the indicators suggest that Inverness may be as attractive an employment location working within the zone where people live. Journey times to work of an hour or more are not uncommon near to major cities but the observed data suggests that travel to work areas for these remote locations are likely to be much shorter for the majority of people. Calibration of the accessibility measure to observed behaviour would therefore suggest much greater sensitivity of trip making to travel time.

8.29 The characteristics for supermarket trips show similar trends to the employment patterns. Almost every zone has some supermarket floorspace and this provides typically 25 to 50 per cent of the overall accessibility to supermarkets. For most zones, Inverness, Thurso and Wick provide more than half of the accessibility opportunity. Although the observed data shows very much fewer trips to these strategic locations than this it is likely that if spend were studied at each location the accessibility measure would be a reasonable representation.

EAST LOTHIAN

8.30 For nearly all the zones in the East Lothian area, the employment opportunities in Edinburgh provide the greatest contribution to accessibility for both car and non car travel. Only for non car travel from the remoter zones, does local accessibility become most important.

8.31 The analysis also suggests that Edinburgh will be an important supermarket shopping destination for up to a third of trips from the area. However the observed travel data indicates very few supermarket shopping trips to Edinburgh. People in East Lothian mainly choose to shop in local supermarkets or in more major stores in local centres such as Haddington.

8.32 Other trip purposes also show similar trends with most personal business trips being captured locally although for banking the analysis suggest that Edinburgh will attract more trips.

CALIBRATION OF THE ACCESSIBILITY ANALYSIS

8.33 The above discussion highlights that the calibration factors in Table 17 can give a good indication of the choices facing rural residents and that in many cases observed travel behaviour matches the opportunities identified by the accessibility indices.

8.34 There are a number of lessons from the above analysis as follows:

- For assessing travel to work behaviour it is important to consider each sector of the employment market separately. Highly skilled jobs will not always be suitable for socially excluded people seeking to re-enter work, so the catchments for each

employment market should be analysed separately. Unfortunately analysis at this level of detail is beyond the scope of this project.

- Analysis to help define accessibility problems and solutions in rural areas should not be undertaken in isolation. There are many factors such as attitudes and perceptions in the local community which are also strong influences on travel behaviour and can only be understood by working with local people when developing improvements.

- Opportunities such as work, shopping, healthcare etc are best defined in terms of the level of activity at each location and the quality of the service provided. For example floorspace was used as a proxy for retail activity but if turnover of each store could be used then that would be much more accurate.

- The analysis highlights the accessibility benefits of providing facilities as close as possible to where people live for many types of trip, such as access to local health centre. However to analyse what transport measures are necessary locally to help people travel to these local facilities would require very small zones. Accessibility analysis with large zones is quick and easy to undertake and provides a valuable overview of areas of poor accessibility. Analysing schemes at a very local level would be much more time consuming and in many cases uneconomic.

8.35 Given the absence of detailed employment data and the local nature of many of the other trip purposes, the only trip purpose that merits more detailed calibration at this stage is for access to food shopping. For each of the areas, people were observed travelling very different distances for this purpose and it is useful to examine how much of this difference can be explained simply by the availability of shopping opportunities.

8.36 The accessibility analysis was therefore run for the supermarket shopping trip purpose to obtain the calibration factor with the best fit to the observed data for each of the trip purposes. The results of this analysis are shown in Table 18.

Table 18 - Calibration factors for Access to Supermarkets

Accessibility to Supermarket Shopping		
Study area	**Car**	**Non car**
East Ayrshire	0.169	0.059
West Aberdeenshire	0.086	0.026
Wigtownshire	0.094	0.023
Caithness and Sutherland	0.062	0.019
East Lothian	0.095	0.094

8.37 It can be seen that, for car trips, three of the areas calibrate with factors close to 0.09. This is significantly higher than the 0.05 used in the analysis above. If 0.09 had been used in the analysis then the value of local supermarkets would have been found to be even greater. Given the large differences in the characteristics of these three case study areas, the consistency in calibration may suggest that accessibility measures can account for different degrees of rurality.

8.38 Caithness and Sutherland indicates a lower propensity to travel further. As indicated above this is likely to be a result of the way that supermarket activity was represented.

Through the trip frequency information and the telephone surveys it is clear that people from the remoter areas make less frequent trips to larger supermarkets but buy more on each trip. Therefore if retail turnover was considered it is likely that the Caithness and Sutherland factor would be closer to 0.09.

8.39 It was noted from the telephone and postal surveys that East Ayrshire has some very different characteristics from the other rural areas. It also has the highest density of: socially excluded people, people in public rented accommodation and people on lower incomes. The lower propensity to travel is consistent with all these factors. Not only do lower disposable incomes lead to pressure to reduce transport costs but many people do not look beyond the boundaries of their own community for better opportunities elsewhere.

8.40 For non car trips, the sample sizes were smaller but again there seems to be some consistency for a calibration factor of just over 0.02. Travellers without cars generally spend longer travelling so it is not surprising that the sensitivity to travel time is lower than for car travel. For all the areas, more of these trips are very local so, despite its remoteness, Caithness and Sutherland shows a similar value to less remote areas.

8.41 For East Lothian, car ownership was higher and only seven non car supermarket shopping trips were identified from the data. Therefore this is not a reliable figure.

8.42 East Ayrshire shows a greater propensity to travel further which is the opposite from the car trips. This is likely to be because concessionary fare pricing was not allowed for in the analysis. Many people from towns in the East Ayrshire area can travel to Ayr and Kilmarnock for 40 pence which is the same as it would cost them to travel to Cumnock. Part of the reason for this rural fare subsidy by SPT is to enhance the quality of opportunities available to socially excluded residents. It is therefore likely that the sample is affected by, probably elderly people, travelling cheaply to Ayr or Kilmarnock when their counterparts in the other study areas would travel more locally.

CHAPTER NINE USING RURAL ACCESSIBILITY CONSIDERATIONS IN APPRAISAL

9.1 The analysis above has identified both qualitative and quantitative approaches for assessing rural accessibility needs and problems. The choice of appraisal technique for any individual decision needs to be of an accuracy appropriate to the particular situation with the resources devoted to the analysis being commensurate with the scale of the problem.

9.2 In developing an appraisal framework which will allow public agencies and others to improve accessibility for rural dwellers it is important to:

- Clarify the main types of decision which affect rural accessibility for each group in society.
- Identify practical analytical tools for assessing rural accessibility
- Build from current best practice in quantitative and qualitative analysis.

9.3 It needs to be recognised that people adapt their lifestyles to take account of the opportunities available to them. The surveys demonstrate that people are making explicit trade-offs between accessibility and the many other factors which affect their quality of life. Solutions need to work within what are viewed as community norms and help to overcome rather than support a dependency culture. For example the surveys identified that many elderly people choose to move into larger villages or towns to improve their accessibility as they became less mobile. Also various people described how they had moved house to accommodate their travel to work arrangements better. The transport solutions which work with communities in delivering improvements for those that have the most limited choices therefore make the greatest contribution to improving rural accessibility.

9.4 In each of the case study areas the fragility of rural economies was demonstrated, including the need for transport solutions to support essential and developing economic activity. For the commuter rural areas, there were significant impacts from transport policies in the nearby cities on economic development in the rural area. This emphasises that individual scheme appraisal needs to work within a coherent transport strategy for the area which sets out clearly the overall approach to improving accessibility.

9.5 For some people, improving accessibility provides opportunities, such as to travel further to work, but for other people there are threats, such as village shops being opened up to more competition. It was seen that free buses provided by supermarkets to nearby towns could provide improved accessibility in the short term but that the associated closure of local stores and the lack of guarantee that free buses would continue indefinitely could reduce accessibility in the longer term.

9.6 The framework for considering how to improve rural accessibility therefore needs to take account of the policy context, private market processes and the travel needs of communities.

APPRAISAL FRAMEWORK

9.7 The Scottish Executive Rural Community Transport best practice guide and the draft Scottish Transport Appraisal Guidance provide detailed guidance on promoting and appraising various transport projects. Within both documents there is reference to the need for accessibility issues to be considered to evaluate and justify expenditure decisions. However detailed advice is needed on practical techniques at each stage of the project development.

9.8 Given the wide range of options for accessibility analysis, and the broad scope of the appraisal needs, it is important for all appraisal decisions to define problems clearly, gather the required supporting information and involve relevant stakeholders. Figure 29 suggests a structure for appraisal which recognises that decision making for some projects may involve public agencies, transport operators, community groups, and potential users.

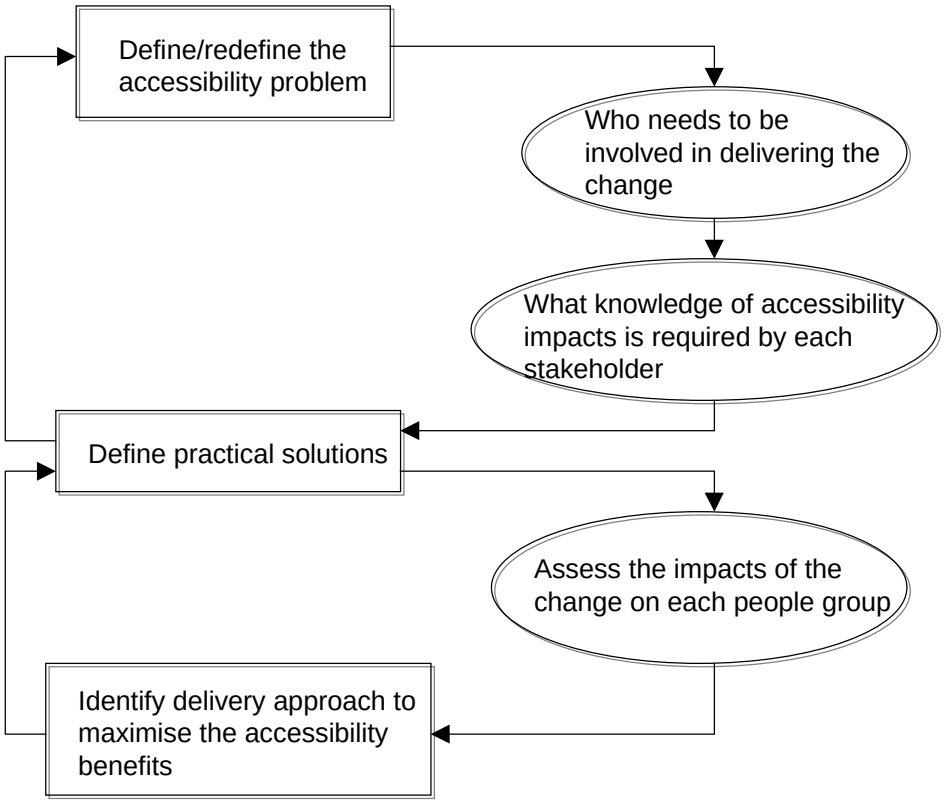

Figure 29 - Framework for Accessibility Analysis

9.9 Accessibility considerations are of assistance in defining and understanding problems, identifying practical solutions and delivering schemes which will be of real benefit.

9.10 Table 19 identifies four of the main stakeholders, the decisions which they need to make, and the approach to accessibility analysis which is likely to be most useful. Although there are other important stakeholders such as Health Authorities, rural transport strategies are likely to be led by one of these four groups. As discussed in Chapter 2, accessibility is measured either in terms of the opportunity available (e.g. number of shops) or the value delivered (i.e. £s or minutes saved), and the analysis can be at any level of complexity from a simple qualitative assessment to highly complex quantitative analysis. In the table an indication of the approach to analysis which would be most useful is given although in practice each situation will have its own specific requirements which should be considered.

Table 19 - Uses of Accessibility Analysis

Stakeholder	Decision	Analysis
Scottish Executive	Assessing overall levels of spend and distribution of resources for supporting rural transport and for use in rural policy.	***Opportunity measures*** • Car and non car population catchments for major hospitals. • Access to employment opportunities by rural population sector. • Average levels of access to local services including shops, chemists, GPs etc. ***Value measures*** • Travel times and costs to major cities/regional centres.
	Setting national targets for improving rural accessibility and monitoring progress against targets.	As above but setting realistic targets for improvement in defined indicators.
	Considering relative importance of transport funding when compared with other policy options to improve rural accessibility.	***Opportunity measures*** • Accessibility of post offices • Access to GPs, health centres and hospitals. ***Value measures*** • School transport costs
Local authorities	Determining funding levels for local subsidised services.	***Opportunity measures*** • Access to employment • Access to local services such as shops, libraries, GPs etc • Access of regional centres including hospitals. ***Value measures*** • Travel times and costs to regional centres.
	Identification of gaps in transport provision and unmet needs	***Value measures*** • Non car time and cost indices factored by the affected population.
	Testing alternative approaches to improve accessibility	As above but testing sensitivity of accessibility measures to the proposed change.
	Ensuring fair distribution of transport provision	As above but comparing absolute levels of opportunity and impacts of changes by population sector and location.
Transport operators	Assessing the potential for growth in passenger numbers	***Opportunity measures*** • Population catchments by service frequency
	Scheme delivery	***Value measures*** • Travel time analysis to inform publicity.

Community groups	Analysis of local need as part of the development of funding bids and proposals.	***Opportunity measures*** • Non car access to work, shopping, and health by settlement. ***Value measures*** • Travel times to regional centres and hospitals.

9.11 The above table is not intended to give a comprehensive list of when accessibility analysis is required, but rather to illustrate the types of techniques which can be used in each situation. Chapter 8 demonstrates the use of these techniques on the five case studies undertaken as part of this research. More specific guidance on the analytical methods is described in separate Scottish Executive research (Scottish Executive 2000).

9.12 In some circumstances the results of the accessibility analysis can be presented qualitatively i.e. "the new bus service will improve accessibility for unemployed people in village 'X' to the job centre". However for most practical applications it will be more helpful to quantify how much improvement will be achieved and for how many people. This will then allow comparisons between alternative investment approaches helping to ensure that investment is prioritised where it provides the best value.

9.13 For local authorities and others to target improvements effectively It is important to identify the impacts of changes on accessibility levels. Analysis which merely shows that there is a need does not imply that the transport investment being proposed caters for this need. In Table 19 it is suggested that, for the analysis of unmet need, the value indicators should be factored by the affected population. With this approach the true benefits of an intervention should be apparent. In remote areas there are likely to be fewer people affected by the accessibility changes but large impacts on levels of accessibility will generally be easier to achieve. In more densely populated areas there will usually be better accessibility, making further improvements harder to achieve, but the number of people affected by the change will be much greater.

9.14 This emphasises the importance of identifying what need is being described under the four categories discussed in Chapter 2: expressed, stated, comparative, and community. Objective levels of community need can be defined using accessibility analysis to set minimum acceptable levels. Local, regional, national, or international benchmarking of accessibility levels allows comparative need to be defined by trip purpose and population group. However accessibility analysis should not be considered in isolation. Expressed also needs to be demonstrated through the demand for travel and stated need established through surveys of the local community.

NATIONAL TARGETS AND INDICATORS

9.15 It was noted in Chapter 2 that the 10 year transport plan (DETR 2000) set a national accessibility target for access to rural public transport in England, but that a similar target was probably not appropriate for Scotland. The Table 19 categories identify the type of target which could be set for Scottish rural areas which could help to deliver national policy objectives.

9.16 National targets are an effective way to galvanise integrated action on rural accessibility with complementary improvements being achieved in both transport and non-transport sectors. The strategic analysis in Chapter 3 would enable targets to be set based on drive times. This would not be ideal for identifying targets for non car travel, since drive times are not always a suitable proxy for non car travel, and non car travel is much more relevant for targeting investment towards the needs of socially excluded people.

9.17 More detail on potential targets is available from the case study analysis. This gives a broad indication of the approximate level of change in non car accessibility which can be achieved from transport or non transport investment, but further work would be necessary to develop this towards a national target which recognises the diversity of rural areas across the country.

9.18 Accessibility indicators calculated as part of policy and project appraisal for one purpose could be of wider benefit to rural policy development across Scotland provided a consistent approach is taken for the analysis. At present indicators in SEGIS based on drive times are the best proxy for accessibility at a national level. New indicators developed either centrally or locally could be incorporated in GIS to allow the data to be linked with other policy variables.

9.19 If a fragmentary approach is taken across Scotland, each local application is likely to be slightly different, since it will be tailored to sensitive local issues. This will make comparisons between investment in different parts of the country difficult to evaluate on a common basis. To ensure a consistent methodology for national comparisons, indicators could be developed centrally by the Scottish Executive helping to reduce resource constraints within individual local authorities, and supporting a more consistent and robust approach to rural transport planning for all authorities. Alternatively fairly rigid guidance could be issued to local authorities if the authorities preferred this approach.

COMMUNITY PLANNING OF ACCESSIBILITY IMPROVEMENTS

9.20 The appraisal framework emphasises the benefits of considering accessibility changes for each affected people group and trip purpose. By identifying the stake of each group in the project, as shown in Figure 29, the decision making and implementation process should be clearer. Ensuring that each stakeholder can contribute effectively towards accessibility improvements requires partnership working. The main stakeholders in rural areas are:

- Local residents and businesses - This group usually contribute the largest element to the costs of rural transport through car, van and lorry purchase, fuel, and fares. The key challenge for analysis is to ensure that the decisions of each individual or group do not have adverse effects on the decisions of others and preferably that they help to support the aims of others.

- Public agencies - Local and central government, economic development agencies, health authorities, environmental protection bodies, and tourist agencies are a few of the public agencies with a legitimate transport remit in rural areas. Each has public funding to deliver defined objectives but overlap must be avoided to ensure effective use of scarce public resources.

- Transport operators - Bus, rail, ferry, and air operators and road, airport, port, and railway infrastructure providers receive varying levels of public subsidy in rural areas. Travel demand analysis is more likely to be of interest to operators than accessibility analysis but destination accessibility considering the population catchments for services is also relevant.

9.21 Building the commitment of all stakeholders not only relies upon knowledge of the potential accessibility change, but on the management of effective community based planning. Initiatives, which are most likely to succeed, are ones which work within accepted community structures. Within any community there will be formal or informal centres and leadership structures. Change can be implemented within these structures, provided accepted limits of operation and responsibility are respected. People are motivated in different ways and success is built upon a targeted approach. An important starting point to develop community based initiatives is to identify the main factors which support and threaten any community. Often a pub or a shop will be the focus for community exchange, and building support within this structure is important. Each community will have its own local characteristics so transport changes may or may not fit.

9.22 Community based initiatives for rural transport are currently fragmentary. The surveys demonstrate how working through the formal or informal leaders, positive influence could be made on the development of more sustainable transport solutions. This can involve considerable staff resources over a long period of time, but transport trends also change slowly so can be included within these wider structures. Success builds upon success so it will be important to publicise successful community based initiatives. However, enthusiasm for any initiative soon wanes, so successful community based initiatives will always be tackling new challenges.

CHAPTER TEN CONCLUSIONS AND RECOMMENDATIONS

SURVEY AND ANALYSIS FINDINGS

10.1 Rural dwellers are generally content with the trade off they have made sacrificing accessibility benefits for other quality of life benefits. Car travel ensures a practical level of accessibility for most trip purposes and those without a car available rely on lifts from car owners for most of their travel. Expectations of rural accessibility are consistent with the type of area, but the need for some services to be provided locally is common to all types of rural area. Local services such as shops and post offices are viewed as important, both for sustaining the rural economy, and for their accessibility advantages.

10.2 When discussing social exclusion, rural dwellers focus on problems for young unemployed and elderly people. However people also point to the many social and leisure activities which rural dwellers, particularly younger people, are excluded from due to access problems. Car based solutions, with a managed approach to providing lifts, are generally viewed as the most promising way to overcome these accessibility difficulties, but in some places bus and community transport initiatives are suggested, particularly for elderly people.

10.3 Satisfaction with rural bus services is highest in commuter rural areas. In these areas commercial services dominate the service provision but their viability often relies on the urban sections of routes rather than the income from rural passengers. Increasing competition within the bus industry may limit such cross subsidy from urban to rural services in the future. Elsewhere, increased public funding is delivering more bus miles, but there are mixed messages about the success of services in meeting local need, demonstrating a requirement for more rigorous needs based appraisal in service planning and monitoring.

10.4 The surveys of rural residents, local authorities, and transport operators all highlight concerns about passenger levels on many rural bus services. There is less consensus about how to provide services which will prove to be more attractive for travellers but the surveys identify that:

- Better co-ordination of rural transport services is viewed as a high priority by all groups. Scottish Executive, Council, Health, and Education resources together comprise a very large existing public financial and staff commitment to rural transport. Together with private resources from communities, including businesses, and transport operators there is potential for significantly better rural accessibility within existing funding. Improved software for managing demand responsive transport and other information technology improvements also improve the prospects for more effective management. Achieving full co-ordination of these resources is viewed as, at least a major challenge, and perhaps unachievable in the short term. Nevertheless all groups can see ways to achieve, at least some, better short term co-ordination.

- A major culture change is required in public attitudes towards rural public transport. Public expectations are that scheduled services can be provided to meet their needs, but awareness of other more innovative approaches to rural public and community transport is low. An effective dialogue needs to be developed between rural transport users and providers offering both groups confidence that practical improvements can be made.

- There is much greater potential for demand responsive services, but this needs to be linked to greater "ownership" of the services by the community. This will require better publicity about services and some softening of existing boundaries between the administration of public and community transport.

A ROBUST METHODOLOGY FOR MEASURING ACCESSIBILITY

10.5 Classification of rural accessibility characteristics, for planning and investment needs, should take account of the trip purpose, population group (including tourists) and type of geographical area in that order. Rural social exclusion is often hidden within wealthy geographical areas and transport services are most successful when they target particular trip purposes. Mapping of accessibility to key services has significant advantages over analysis based on population alone since impacts of actions by transport and non transport service providers can be seen explicitly.

10.6 Quantitative analysis is more useful than qualitative appraisal. By quantifying need, investment can be targeted locally and nationally where it makes the greatest impact on accessibility. The benefits of a large accessibility change for a small number of people in a remote area can therefore be compared with investment which delivers a smaller accessibility change for more people in a less remote area.

10.7 The level of service provided at trip destinations is best represented in terms of activity levels such as retail turnover or healthcare patient numbers but useful analysis is still possible with simpler data such as retail floorspace or healthcare facilities. Within any analysis, the zone size, geographical coverage, and representation of transport depends upon the detail required for the policy issue being considered. However in the absence of relevant data useful qualitative will often still be possible.

10.8 Car travel times can easily be estimated using GIS, transport models, or other trip planning software. Public transport times and service frequencies need to be extracted from timetable information, but with increasing availability of electronic timetables this task is becoming less time consuming. The sensitivity of travel behaviour to travel time and cost varies by trip purpose and population group. To improve the accuracy of this behavioural representation beyond the calibration possible in this research, larger sample sizes will be needed.

AN APPRAISAL FRAMEWORK

10.9 Assessing the accessibility needs of rural dwellers involves consideration of: expressed, stated, comparative and community need. Expressed need is demonstrated through observed demand, stated need through surveys of the local community, but for an objective view of comparative and community need accessibility analysis is required.

10.10 Different stakeholders have specific aims which need to be part of the integrated appraisal framework. Central government may have particular goals to ensure best value in the use of public resources, local authorities may focus on unmet needs, transport operators may focus on travel demand, and community groups, health authorities and other agencies may have concerns relating to specific trips. Rural accessibility changes provide a common aim for all stakeholders, but a wide range of accessibility measures are needed for informed

decision making. Measures of access to regional centres, employment centres, hospitals, shopping, post offices, banks and other facilities and access of facilities by different population groups will all need to be described for particular decisions.

10.11 Planned improvements should seek to deliver targeted and measurable changes in accessibility. Where estimated improvements in accessibility for a particular group are not achieved in scheme delivery, then the reasons for this can be understood from the accessibility analysis and the investment approach altered accordingly.

10.12 Local rural transport strategies offer the potential for co-ordinating local action on rural transport to improve accessibility and need to be fully integrated with non-transport policies in rural areas. All plans should include the resources and timescales for taking forward defined plans and initiatives.

RECOMMENDATIONS

10.13 To provide a framework for integrated action on rural transport, national targets should be set. This would be a powerful way to focus action at the Executive's policy aims. Adopting the national target in the DTLR 10 year plan would not achieve the distribution of effort needed in Scotland. Instead, integration with other public services could be encouraged by setting targets for access to employment, hospitals, post offices, shopping and other key services. More general targets related to population could also be set for access to regional centres from rural areas, and for access by particular population groups. The analysis in this research could be used, and developed further, to allow achievable targets to be defined.

10.14 Achievable and measurable accessibility goals should also be defined within local transport strategies to allow the contribution of public and community transport initiatives to be assessed on a common basis. The planning and management of these local strategies should be fully integrated with local community planning for non transport issues.

10.15 To set these goals and targets, and to monitor progress, consistent and repeatable analysis methods are required at both local and national levels. Assumptions, data sources and calculation methodologies should therefore be set out clearly for all analyses. Accessibility planning approaches for transport and non transport sectors are still evolving, so continuing support is needed to encourage wider use of these techniques and to foster good practice.

10.16 Effective co-ordination of rural transport has proved to be an elusive goal, so the Scottish Executive should sponsor a demonstration project, or projects, to identify how obstacles can be overcome and what types of co-ordination are practical between public, community, health, social work and education transport.

10.17 Either associated with these demonstration projects or as a separate initiative, "dialogue marketing" of rural transport services should be tested in rural Scotland with individual and group action programmes providing practical information to travellers and transport operators on services and travel needs. With such initiatives travellers join a scheme which requires them to provide regular information on their travel patterns. Transport providers are then able to plan services to better meet local needs and to provide personal travel advice to the users.

10.18 Software should be developed to allow public transport data to be extracted easily from the PTI2000 database. It is recognised that current licence constraints place some limitations on this, but there would be major benefits in ensuring free access to this data for transport planning purposes.

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