

Attitudes and behaviour
in relation to public transport
in New Zealand's non-metropolitan
regions
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Abbreviations and acronyms

ATF	Angus Transport Forum
BCR	Benefit-cost ratio
DRT	Demand-responsive transport
FAMS	Flexible Agency for collective demand responsive Services
FTS	Flexible Transport Services
GPS	Government policy statement
ICT	Information and communications technology
MOV	Multiple-occupant vehicle
NZHTS	New Zealand Household Travel Survey
NZTA	New Zealand Transport Agency
NZTS	New Zealand Transport Strategy
RBC	Rural Bus Challenge
SEU	Social Exclusion Unit
SOV	Single-occupant vehicle
TDC	Travel Dispatch Centre
T2E	Transport to Employment
TYCC	Tasmanian Youth Consultative Committee

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Executive summary

Transport is vital for the economic and social well-being of individuals, households and communities. Transport increases individuals' employment choices and enhances the economic viability of New Zealand's cities and towns. In addition, transport has a significant impact on the quality of the environment and **on people's** health.

Much transport research and policy focuses on metropolitan areas. However, investigating the transport choices and needs of New Zealanders in small towns is critical to ensuring that public sector investment in land transport facilitates the achievement of wider economic goals such as increased employment, increased productivity, and increased value for money. With their smaller total populations and lower population densities, small towns face particular challenges when meeting people's transport needs. In several countries, less-conventional forms of shared transport, based on smaller multiple-passenger vehicles and even private cars, rather than the more familiar large buses, have been successful in **expanding people's travel choices and promoting** economic development in non-metropolitan towns and cities. In New Zealand, these '**minor**' urban areas contain a significant section of the population and, in some cases, have a growing population as a result of migration from metropolitan areas to high-amenity locations.

This research gathered data to identify the scope for shared transport in New Zealand's non-metropolitan areas. The main aims of the research were to add to the existing research about shared transport in the international arena, and to consider the potential of this transport mode to increase transport choices for residents in non-metropolitan New Zealand. A further aim was to identify ways to overcome transport disadvantage for those groups who did not have the capacity or opportunity to use private transport. In Australia and the UK, demand-responsive transport (DRT), which is a form of shared transport, has been widely used to provide transport choices and achieve a modal shift – including in areas of low population density.

Census data on shifts in population in three non-metropolitan regions in New Zealand (Taranaki, **Hawke's** Bay and Manawatū-Wanganui) were analysed in order to understand the demographic factors that were shaping the demand for particular types of transport. In addition, questionnaires were distributed to households and to some community groups in these regions, and interviews were conducted to obtain further insights into travel behaviour and people's views about shared transport.

The findings of this research have highlighted opportunities for increased use of shared transport in regions that exhibit the relationship between small towns and provincial cities typical of the three regions in this study. There is significant potential for shared transport to expand the transport choices for people throughout non-metropolitan New Zealand, and for this new mode to enhance land use-transport integration.

Abstract

During the last decade, **New Zealand's non-**metropolitan regions have undergone significant demographic and economic changes as a result of migration and changing employment trends. These changes are not widely recognised or understood, let alone addressed in land-use and transportation planning.

This research analyses the demographic trends in three non-metropolitan regions, and through data gathered from a questionnaire and interviews, explores **the residents'** attitudes and behaviour in relation to shared transport. The aim was to build understanding about how to improve transport access for people in these regions in a way that best utilises existing infrastructure. This would support current government goals for transport, which include providing more transport choices, lowering the costs of transportation, making the best use of existing infrastructure, and ensuring that investment in land transport contributes to economic growth and productivity.

The research identifies clear scope for, and interest in, having a greater range of transport options, including shared or flexible transport services. Because shared transport contributes to reduced single-occupant vehicle trips and fewer vehicles coming into larger urban centres from adjacent smaller settlements, the wider land transport system and economy would benefit, with improved effectiveness and value for money in the development and operation of networks.

1 Introduction

1.1 Purpose of the research

The purpose of this research was to build an understanding of the attitudes and behaviour, in relation to public transport, of **residents of New Zealand's non-metropolitan regions**.

In this report, **the term 'non-metropolitan regions' refers to those** local government regions of New Zealand that do not have metropolitan areas. We consider Auckland, Wellington and Christchurch to be metropolitan cities by New Zealand standards. Therefore, the three regions in which they are located **are 'metropolitan regions' and the remaining regions of New Zealand are 'non-metropolitan regions'**. While there are differences between the **'non-metropolitan regions'** that have large and growing urban populations (primarily Waikato region and Bay of Plenty region) and other **'less urban' regions**, for our purposes the distinction between metropolitan and non-metropolitan regions is relevant, as metropolitan regions have a single, very large, contiguous urban area that dominates the region.

For each of the three regions in our study (Taranaki, Manawatū-Wanganui, and **Hawke's Bay**), we focused on travel between their minor urban areas and their nearest main urban centre. Statistics New Zealand (n.d.) classifies the main urban centres in our study as either a 'secondary urban area' (with a population between 10,000 and 30,000 – eg Feilding) or as a 'main urban area' (with a population over 30,000 – eg Palmerston North). The minor urban areas in our study are defined as 'rural areas', as they are places with a population of less than 10,000. The Statistics New Zealand classification results in a blurring of the differences between the large number of very small towns (with a population under 3000) and towns with a population of 3000–10,000, the latter comprising most of the settlements in this research.

Although public transport is a key component of an affordable, integrated, sustainable transport system, **New Zealand's transport system is currently characterised by a** dependence on private vehicles, particularly in non-metropolitan regions, where the alternatives are typically extremely limited.

While there is an on-going historical pattern of public transport use in the three major metropolitan regions (Auckland, Wellington and Christchurch), the changes in the late 1980s to funding and provision of passenger transport resulted in a substantial loss of urban and inter-urban services in non-metropolitan regions. During the 1990s, which was a period of relatively cheap fuel and vehicles, the number of vehicles per household increased steadily and reliance on private motor vehicles grew substantially. Increasing the use of public transport, therefore, is a significant challenge in non-metropolitan areas.

For some individuals, private transport has never been, or is no longer, an option. Age, disability and low income are often barriers to the use of private transport. **As New Zealand's** population ages, more people will require alternatives to private transport. Rather than leaving people dependent on the availability and willingness of friends and family to help them, shared transport services would allow people to have access to transport and mobility, even where conventional public transport may appear economically unviable.

In the last decade or so, significant social, economic and demographic transformations have been taking place in non-metropolitan regions. These transformations include population drift away from the Auckland region (since 1996, according to Waikato University demographers), and a moderating or reversal of the losses experienced elsewhere in New Zealand (McDermott 2008). Other research has

highlighted the impact of amenity migration¹ on small coastal settlements in the lower North Island and lower South Island (see, for example, Peart 2009, Cheyne and Freeman 2006, Freeman and Cheyne 2008). Lifestyle preferences, encouraged by improved transportation and electronic information and communication technologies, are driving a **demand for new 'ex-urban' residential developments**. These and other drivers of population decentralisation are impacting on transportation networks (and are likely to intensify in their impact over time), yet remain largely unaddressed by land-use planning. In their mid-2009 report on commuting patterns, Statistics New Zealand (2009a, p3) noted:

The desire for rural living, for cheaper properties on the edge of cities, or for remaining in a small town while obtaining a better job in the city affects transport systems and causes subsequent congestion. Small towns close to cities have also expanded as people choose to move for reasons of cost and lifestyle. ... [T]hese developments have occurred throughout New Zealand ...

Congestion in both metropolitan and smaller cities is clearly exacerbated by commuting from outside the city. Hence, the availability of alternatives to single-occupant vehicles (SOVs) for commuters in rural areas will contribute to easing congestion in metropolitan and other larger urban areas.

1.2 Recent funding and policy changes

This research was initiated in early 2008, a time of significant developments in land transport policy and funding. In August of that year, the New Zealand Transport Strategy 2008 and the Government Policy Statement on Land Transport Funding indicated a new emphasis on reducing SOV trips as part of a wider platform of more environmentally sustainable transport.

As the fieldwork for this research was drawing to a close, a new Government Policy Statement (GPS) on Land Transport Funding 2009/10–2018/19 (Ministry of Transport 2009a) was released in May 2009. Reflecting the change of government in November 2008 and the deepening worldwide recession, the 2009 GPS contained some markedly different policy settings from the August 2008 GPS.

The key focus of the new **GPS was to use land transport investment to 'support national economic growth and productivity'** (Ministry of Transport 2009a, p10). It stated **the government's general support of the intent of the New Zealand Transport Strategy 2008 (NZTS)**. However, it reduced the priority for modal shift, stating **that 'moving too quickly on modal shift will have a negative impact on environmental and economic efficiency'** (p11) and that the GPS should closely reflect the modal choices **that are 'realistically available to New Zealanders'** (p1). Targets for reducing SOV trips were replaced by **a series of 'impacts' that the government wished to achieve via the new guidance and funding framework**.

Contemporary policy goals of enhancing network efficiency and effectiveness, and reducing congestion, will be assisted by better understanding the nature and impacts of travel between rural and urban areas. The Statistics New Zealand (2009a) analysis of commuting patterns highlights one aspect of this travel – namely, commuting to work. This current research also explores travel for other purposes, such as social, shopping, etc. It builds on previous research published by the New Zealand Transport Agency on accessibility planning (Chapman and Weir 2008).

1 Amenity migration refers to the movement of households from urban areas to alpine, river, forest, lake and coast environments that are considered to have higher natural environmental and/or recreational values.

1.3 The need to focus on rural areas and small towns

The starting point of the research was a recognition that the lower population size and density of non-metropolitan regions, and their different level of amenities, present specific challenges – and possibly opportunities as well – in delivering land transport choices that contribute to positive social, economic and environmental outcomes. Therefore, it is important to develop an understanding of the attitudes and behaviour of residents of non-metropolitan regions in relation to their travel.

Ensuring access to transport and mobility is vital for the economic and social well-being of the **residents in New Zealand's rural areas and smaller urban areas**. In some cases, the growth or decline of these areas is accompanied by an ageing of the population, which presents additional challenges for transport planners and local political leaders. The viability of passenger transport outside of metropolitan areas is often questioned and services are often very limited. This generates what is **known as 'forced car ownership'**. With increasing fuel prices, the disadvantage that is associated with lack of alternatives to private transport is compounded.

Alongside the goal of fostering economic growth and productivity, advancing environmental and health outcomes remains important, given the resulting economic benefits of:

- a reduction in health expenditure on lifestyle illnesses
- better population fitness and health as a result of increased use of active transport modes
- reduced greenhouse gas emissions.

Access to transport **is often a determinant of people's ability to take up** employment opportunities, whether they are residents of smaller towns who travel to larger centres for work, or residents of larger centres who want to work in a smaller town.

As well as the evidence of increased commuting in districts around larger cities that was reported by Statistics New Zealand (2009a), many smaller towns have a local industry and/or a significant public-sector employer, such as a defence base, or a medical or education facility. The continued economic viability of smaller urban and rural areas may be linked to the ability of skilled workers to travel to the town. For these economic, employment and other reasons, the transport needs of people living and/or working in rural and small urban centres requires more careful investigation.

Non-metropolitan regions need particular attention if proposed goals of increased use of active transport and reduced transport greenhouse gas emissions are to be achieved. Some parts of these regions are experiencing a growth in the number of households as result of changing demographics (in particular, smaller households) and changing lifestyles (migration away from metropolitan areas to high-amenity areas, such as coastal and rural settings). This growth is occurring within a statutory and policy framework for land-use planning that does not have adequately integrated land use and transport.

1.4 Objectives

The objectives of this research were:

- to analyse the 2001 and 2006 census data on the socio-economic characteristics of selected non-metropolitan settlements and the main means of travel to work, in order to identify trends in the use of passenger transport at the sub-local level

- to gather and analyse survey and interview data on the perspectives and experiences of different age, ethnic and income groups in relation to passenger transport
- based on this data and analysis, to identify priority areas for enhancing the use of passenger transport, especially by commuters and the transport disadvantaged.

1.5 Structure of this report

This report is structured as follows:

- Chapter 2 reviews the key literature in the field.
- Chapter 3 outlines the research design and the methods used to collect and analyse data.
- Chapter 4 provides background regional information and census data analysis for the regions included in this report.
- Chapter 5 presents questionnaire data and analysis.
- Chapter 6 presents interview data and analysis.
- Chapter 7 discusses the findings and presents conclusions.
- Chapter 8 makes recommendations based on these findings and conclusions.

2 Literature review

2.1 Overview

The aim of this chapter is to identify concepts and international best practices related to alternatives to private transport in non-metropolitan regions. As stated in section 1.1, by **'non-metropolitan regions'** we mean those regions of New Zealand that do not have a large metropolitan city, and which have a mixture of larger provincial cities, smaller towns and rural areas. It is acknowledged that valuable insights about attitudes and behaviour in relation to public transport can be gleaned from research about public transport in metropolitan areas, and a recent New Zealand Transport Agency literature review focused on the barriers and benefits associated with public transport use.² In contrast, our literature review focuses specifically on research about shared transport in smaller urban and rural areas.

It is important to recognise that a range of terminology is used to refer to shared transport that takes a different form from conventional passenger or public transport (which is referred to, in North America in particular, as transit). Therefore, we begin by explaining the terminology in the broad area of interest to us, and the particular terminology used in this report. Some terms refer to the same (or nearly the same) forms of transport, but some are not interchangeable. Much of the literature relates to what is, in fact, just one form of shared transport – namely, demand-responsive transport (DRT). Because DRT has existed internationally for several decades now, it provided a rich source of insights into the factors that contribute to the success (or otherwise) of shared transport.

The literature review also highlights the importance of understanding attitudes towards public transport and the private car, as well as the growing complexity of many individuals' and households' daily mobility and the concomitant need for flexibility in travel arrangements.

2.2 Shared transport in non-metropolitan regions

2.2.1 Introduction

This section examines academic and public policy literature related to alternatives to private transport in non-metropolitan areas. **We use the term 'shared transport' to encompass a range of different forms of transport, referred to variously as:**

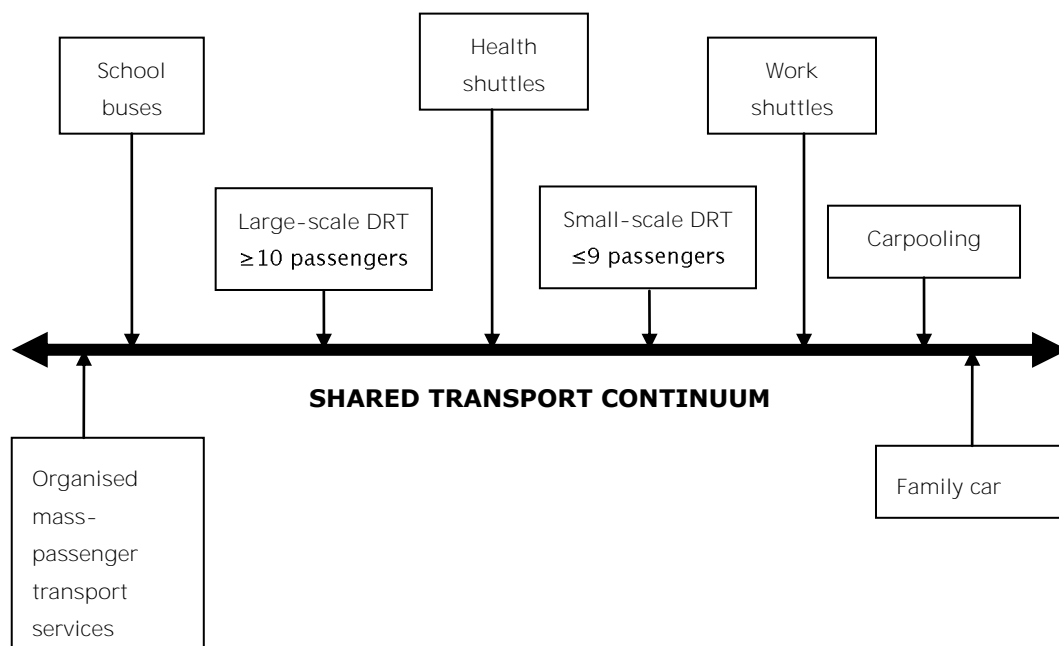
- community transport
- paratransit
- innovative transport
- flexible transport services (FTS)
- demand-responsive transport (DRT)
- non-conventional transport
- public transport
- passenger transport

² A draft of this literature review was made available to the researchers by the author, Emma Hardgrave.

- transit.

The term 'public transport' typically denotes mass-volume services using larger buses and trains (and, where possible, ferries). However, in non-metropolitan areas these services are unlikely to exist or to be viable; hence our preference for the term 'shared transport' (a term that includes DRT) as well as scheduled services that lie outside of conventional public transport. Figure 2.1 below illustrates that shared transport can take a number of different forms that can be found along a continuum, from the more organised forms associated with conventional public transport and larger vehicles (eg school buses), through to the most informally organised travel (eg trips made in a family vehicle).

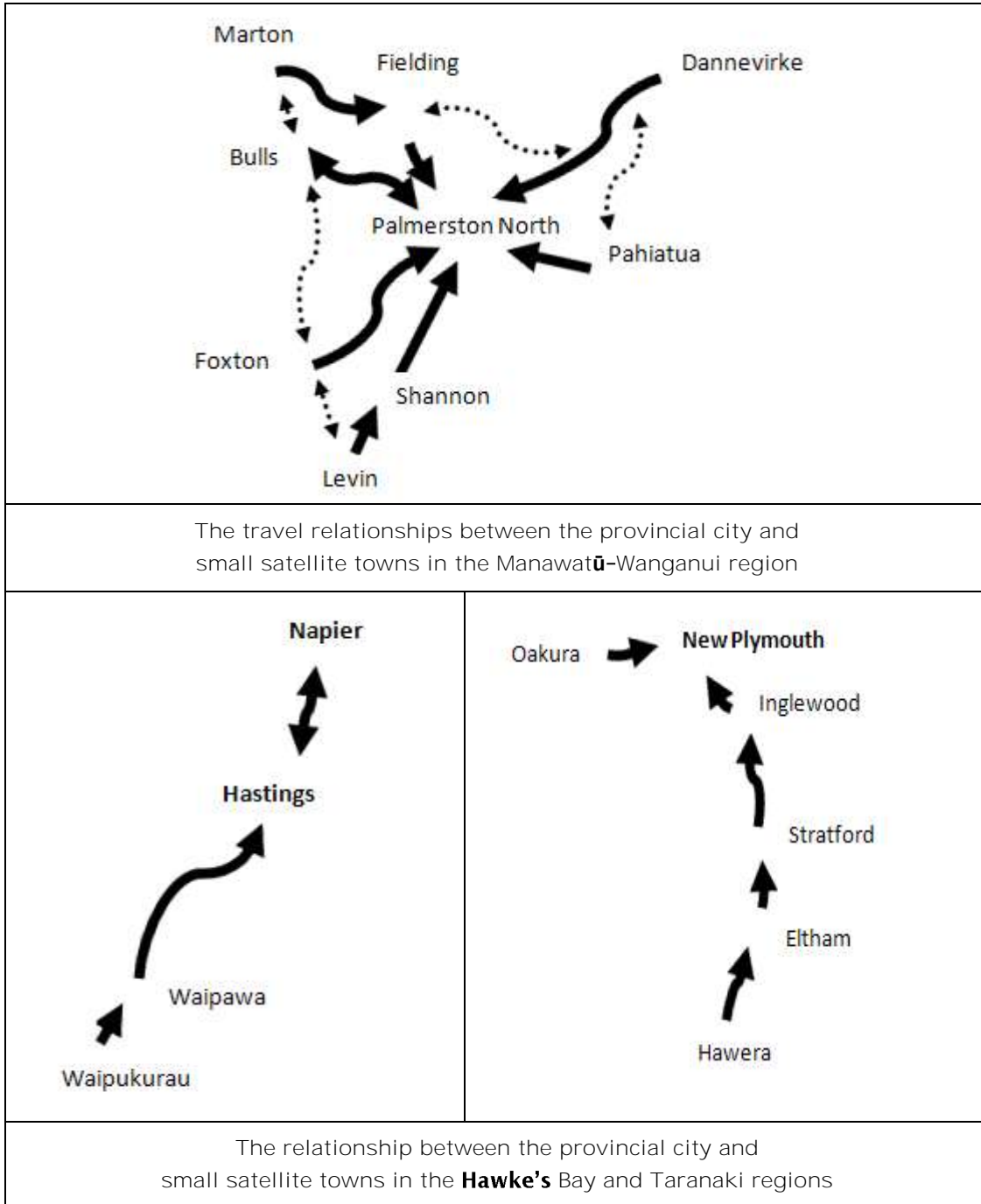
Figure 2.1 The continuum of shared transport



2.2.2 Transport in non-metropolitan regions

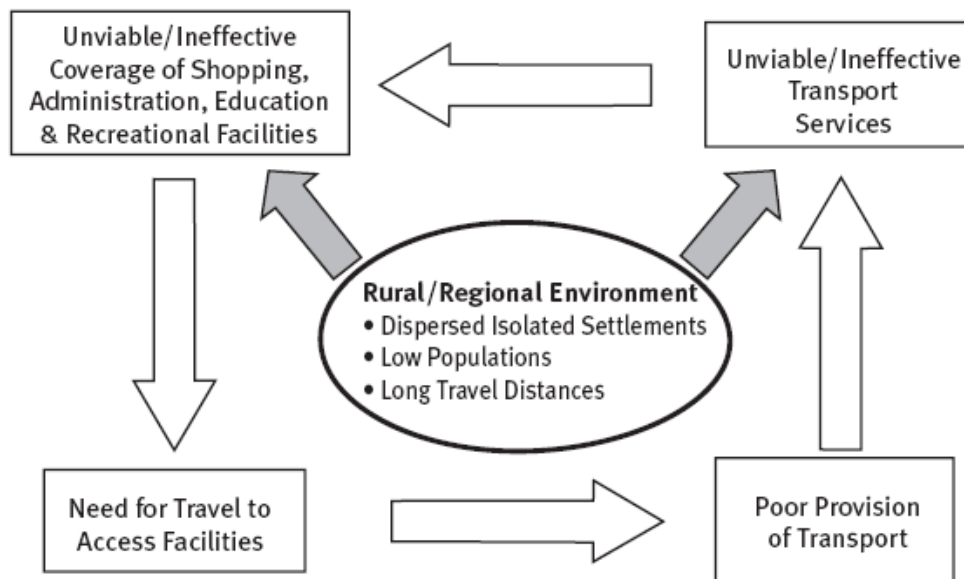
Small towns in New Zealand, Australia, North America and parts of the UK are characterised by small population, low population density, dispersed location and high car ownership (Nutley 2003). Generally, mass-volume public transport is not viable in these areas and local services are limited or have been abandoned. In New Zealand, changes to funding in the late 1980s resulted in a substantial loss of public transport services in non-metropolitan urban areas. Generally, the provincial cities have experienced a recent expansion of urban bus services. However, this research focused more on transport services between the smaller satellite towns and the provincial city, which is often the destination for work, shopping, education/training, health services and other facilities/services, as shown in figure 2.2.

Figure 2.2 Relationships between provincial cities and satellite towns



As noted in chapter 1, the number of vehicles per household in New Zealand has increased steadily over the years. This has been owing to a number of factors, including local government law reform and amalgamations and the withdrawal of subsidies for public transport in the late 1980s and early 1990s, along with access to relatively cheap fuel and cheap imported vehicles. **People's** reliance on private motor vehicles has grown significantly, **creating a 'vicious cycle'** of small town/rural car dependence and ultimately leading to forced car ownership. Figure 2.3 shows this cycle of car dependence.

Figure 2.3 The vicious cycle of small town/rural car dependence (Tasmanian Youth Transport Strategy, 2003, cited in Currie and Gammie 2005 p8)



Banister (1994, p7) defines **'forced' car ownership** as being when:

... there are no alternatives. In rural areas, there is clear evidence of 'forced' car ownership, since cars are owned at lower-income levels and are seen to be one of the items of household expenditure that cannot be foregone.

Dodson et al, in their 2004 research on the burden of car ownership on the poor, recognise it as a legitimate indication of social disadvantage:

There is a tendency, to view the disadvantaged as those excluded from the labour market. However substantial proportions of the employed population potentially face problems of transport disadvantage, through the expenses incurred via motor vehicle ownership (p48).

The locational disadvantage of small provincial towns makes them a 'transport-disadvantaged area'.

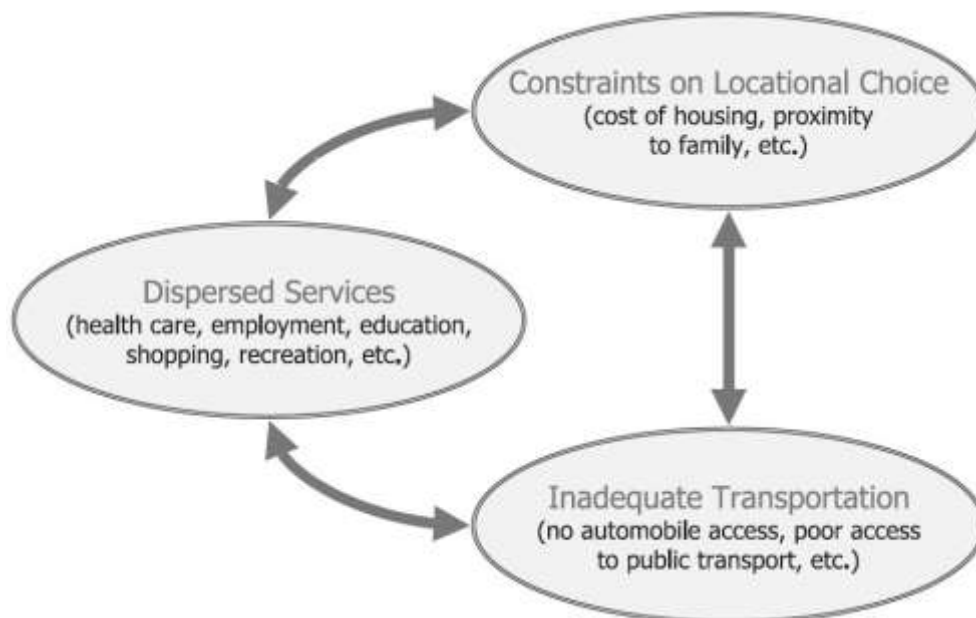
Hurni (2005) defines transport-disadvantaged areas as those without close proximity to transport, or where there are few public transport options. Wixey et al (2005) describe transport-disadvantaged areas as those where people live some distance from the places they need to get to and have a difficult journey to reach those places. An example would be a rural area that has no local shops and no (or very infrequent) public transport services to nearby townships.

In Australian case study research, Hugo (1998) found that poor transport accessibility due to locational disadvantage has a severe impact on a range of people, particularly the elderly, women, youth, the disabled and low-income people. Hurni (2005) defines transport-disadvantaged people as those who are restricted by mobility, isolation and age, and rely on community transport. Gleeson and Randolph (2002, p102) use the term 'transport poverty' to describe transport disadvantage:

Transport poverty occurs when a household is forced to consume more travel costs than it can reasonably afford, especially costs relating to motor car ownership and usage.

Murray and Davis (2001, p579) refer to **the transport disadvantaged** as 'those people who do not have sufficient public transport service opportunities, but may need these services'. Figure 2.4 illustrates elements of transport disadvantage.

Figure 2.4 Elements that create transport-disadvantaged people (Murray and Davis 2001)



The Youth Network of Tasmania Social Exclusion Unit (SEU 2003) reports that a lack of transport has an impact on access to education, health, social, recreational and employment activities. In the UK, **transport in small/rural towns is linked with the concept of 'social exclusion'**. It is argued that a lack of adequate transport prevents people from accessing employment, health, shopping and other social facilities. **In short, it is suspected that small towns produce 'transport-disadvantaged people'**. Hurni (2005) argues that the **distinction between 'transport-disadvantaged areas' and 'transport-disadvantaged people'** is blurred. However, it is necessary to look at the transport service levels in a particular area in conjunction with the travel needs of the population.

Transport disadvantage may seem to be associated with the group described by North American transit researchers as **'captive riders'** (rather than **'choice riders'**), but the focus of this current research was also on the potential uptake of shared transport by choice riders. The distinction between captive and choice riders does not appear to be helpful, as research by Haq and Whitelegg (2008) shows that travel behaviour is not solely rational. In addition, it is important to distinguish between behaviour and attitudinal change. In their study of personalised transportation planning in York (UK), Haq and Whitelegg highlight the need to not simply raise awareness about reducing SOV trips, but to have sustained change in travel behaviour. This is seen as being achieved more effectively through voluntary decision making rather than through top-down (eg government-led) initiatives aimed at changing **people's** behaviour.

2.2.3 New Zealand data on sub-national population change

Analysis of population data is important for understanding the context and scale of transport need in small towns of New Zealand. McDermott (2008) analyses components of recent population change in New Zealand. In a discussion paper inviting further analysis, he argues:

The evidence suggests that population expectations founded on “the drift north”, slow growth in the south, structural disadvantages facing Wellington, rural depopulation, and the primacy of Auckland need revision. The resurgence of second tier and provincial cities, the revitalisation of the rural periphery around major urban areas, and burgeoning lifestyle settlements, both in the shadow of urban areas and beyond, are new facets of New Zealand’s population geography (p9).

McDermott draws on data from University of Waikato researchers, which reveals that in 1996, for the first time in a century, Auckland lost more people to the rest of New Zealand than it gained in an intercensal period. He notes that as a result of a process of population decentralisation, the thinking of policy analysts and planners, which has typically been dominated by the economic and demographic significance of Auckland, may now need to change. Instead, population decentralisation related to changing residential preferences seems to be gaining momentum. Growth in regions elsewhere in both the North and South Islands needs more attention:

Decentralisation is pushing well beyond the metropolitan fringe, though, to localities which assume relatively higher levels of local self-sufficiency than those associated simply with peri-urban development. It can take place through movement to largely rural areas, bush, coastal and lakeside settlements, or through the revival of country towns and seaside villages (McDermott 2006, p9).

McDermott observes that while six regions experienced population decline in the period 1996–2001, only one region (Southland) had population decline in the period 2001–2006. Moreover, **Southland’s** population fell by 0.1% from 2001–2006 (a net loss of just 100 people, well within the range of response and enumeration error), compared with a loss of 7000 from 1996–2001. Several regions (Gisborne, **Hawke’s** Bay, Taranaki, Manawatū–Wanganui, the West Coast and Otago) experienced population turnaround, while three regions in the northern North Island and three in the northern South Island experienced steady population growth in the period from 1991–2006. Within these regions there are still areas of population decline, especially outside the provincial cities, but there is also growth of some hitherto small settlements.

High-amenity migration is increasingly a feature of many non-metropolitan regions in New Zealand (Cheyne and Freeman 2006) and reflects similar patterns that have been evident since the 1990s in other countries, particularly Australia and North America. Growth in non-metropolitan regions is linked to the increase in the older, more affluent age groups, and new work and employment patterns. It is further stimulated by international migration. This population decentralisation away from Auckland has potentially significant implications for transport infrastructure. Cheyne and Freeman (2006; see also Freeman and Cheyne 2008) highlight the tendency for some low-income households to be displaced from some coastal settlements that previously had low-income housing, to other small towns in the region, as a result of rising property values in coastal areas. This would also apply to other high-amenity locations.

2.2.4 Travel needs of residents of non-metropolitan regions

The Land Transport Management Act 2003 notes that a key objective of land transport funding is **facilitating people’s** access and mobility, as key components of economic and social participation – particularly vital for those who live at a distance from employment and services such as education/training, health care, recreation and shopping.

The following key variables influence access and mobility:

- age

- place of usual residence (location in relation to services)
- employment status and place of work
- income
- health status
- disability.

Lack of access to public transport can be a major barrier to social and economic participation and well-being for the young, the aged, the disabled, children, and those on low incomes. Lack of public transport means dependence on private vehicles – either forced car ownership, which can be a burden for a low-income person or household, or dependence on family and friends for transport.

There are significant challenges in meeting the transport needs of small towns in New Zealand. Different towns have different transport needs and issues, and there is a paucity of research on the implications of changing demographic trends (including migration) experienced **by New Zealand's** smallest urban areas. The purpose of this research is to build a better understanding of the travel needs of people living in such places. According to Nutley (2003), a paucity of literature on rural accessibility and transport problems reflects a low public perception of a particular issue, in this case, the travel needs of people living in non-metropolitan cities. However, this situation is not unique to New Zealand. A similar constraint was found by Currie and Gammie (2005) in their Australian studies of rural and regional young people and their transport needs (also see Khong 2003 and Youth Network of Tasmania 2003). Currie and Gammie report that transport research mainly focuses on freight and long-distance travel in rural and regional Australia, rather than the needs of the people living there.

It is likely that limited (or non-existent) public transport creates a situation where there is significant car dependence in these towns. However, as identified earlier in this report, some population groups cannot drive (because of age or health restrictions), or have limited access to a car (because of low income). For example, for young people living in regional New South Wales and Tasmania, getting a ride from either parents or friends is an important mode of travel (Currie and Gammie 2005).

In the literature, some strategies that could address the transport disadvantage of people in small towns include:

- those within the household who have access to transport taking on extra responsibilities, such as driving family members who cannot drive or access other transport services
- cooperative arrangements with friends, family, neighbours, etc
- integrating trips with other members of the community, eg joining a driver on their journey to work
- community transport
- carpooling (also referred to as ride sharing)
- car sharing (where a vehicle is available for short-term borrowing/hire)
- trip chaining³
- greater reliance on walking

³ For a discussion of trip chaining in the New Zealand context, see O'Fallon and Sullivan's 2005 research on older people's travel patterns. See also Vande Walle and Steenberghen (2006, p160).

- migration to other areas.

However, the transport needs for different population groups living in small towns will vary significantly. Table 2.1 identifies the specific characteristics of particular groups and their public transport needs.

Table 2.1 Public transport needs of key target groups (adapted from Ferreira and Charles 2007)

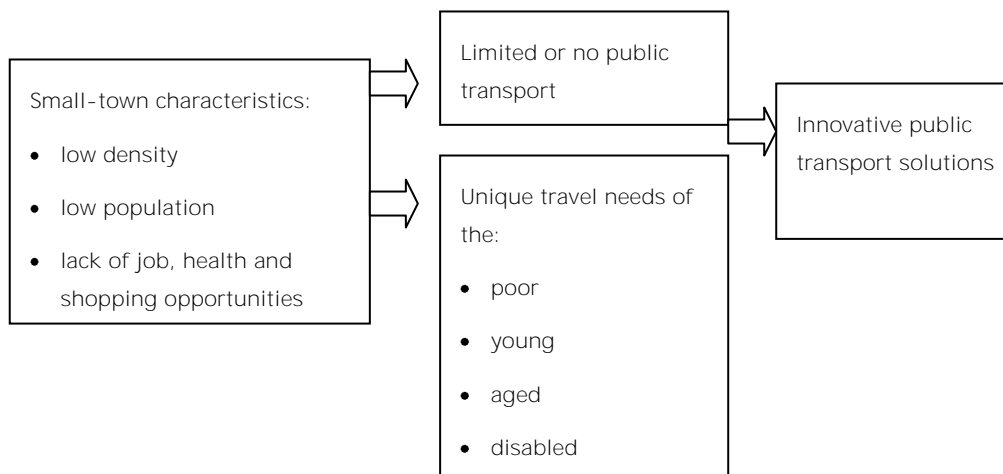
Target groups	Specific characteristics	Public transport (supply factors)
Elderly	<ul style="list-style-type: none"> • have complex mobility needs • have a restricted income • may no longer be able to drive • are uncomfortable about walking a large distance to bus stops • require reliability (but flexible in time restrictions) • may require support/assistance if travelling alone • make life and housing decisions based on mobility and access to transport 	<ul style="list-style-type: none"> • minimum walking to pickup and drop-off points (because of safety fears and health issues) • simple booking requirements and clear information • comfort, cleanliness and confidence in the driver • transport shared with others (for company and support)
Youth	<ul style="list-style-type: none"> • are comfortable with walking longer distances to bus stops and interchanges • are early adopters of new technology • need facilities in vehicles for bicycles, skateboards and other sporting equipment • are totally reliant on public transport • use of public transport while young is expected to influence their behaviour when older 	<ul style="list-style-type: none"> • use new information and communication technology, which is likely to be attractive to young people (eg SMS for bus information) • be flexible and respond to the needs of youth
Families	<ul style="list-style-type: none"> • are often single car owners • have varying needs - the least homogeneous of all the groups • respond to incentives to ride as a group (eg family concession for the whole family) • may have access to, and knowledge of, technology 	<ul style="list-style-type: none"> • highest demand at non-peak times • require facilities for prams and safely seating young children, stowing groceries, etc • drivers may be expected to help with boarding
Disabled	<ul style="list-style-type: none"> • need transport that is sensitive to their specific needs • vary considerably in their needs eg those of disabled youth and disabled elderly • non-peak demand • need awareness by drivers and other passengers about the needs of disabled passengers • need information to be designed to meet specific needs (eg for the visually or mentally impaired) 	<ul style="list-style-type: none"> • peak time and normal service requirements apply, with additional infrastructure requirements such a kneeling buses and accessible waiting facilities • pickup and drop-off points may need to be door-to-door • booking requirements and information hubs should take into consideration the extent and types of varying disabilities • systems need to provide confidence that the disabled can use transport facilities comfortably, safely and independently

Target groups	Specific characteristics	Public transport (supply factors)
Low-income groups	<ul style="list-style-type: none"> • need affordability and availability 	<ul style="list-style-type: none"> • cater for peak-capacity demands (eg start/finish work, school, sports activities) • consider alternative solutions eg car sharing
Unemployed	<ul style="list-style-type: none"> • need reliability, affordability, speed and flexibility • target destinations may be located away from standard stop points 	<ul style="list-style-type: none"> • consider alternative solutions eg car sharing • target business communities as well as individuals

2.2.5 Innovative transport solutions

The land transport system needs to cater for the travel needs of the different population groups it serves. The provision of travel options for socially disadvantaged areas and people has long been seen as one of the core objectives for providing public transport (Nielson et al 2005). Currie and Stanley (2008) argue that provision of public transport can certainly address the problem of access to transport in socially disadvantaged areas. Public transport can provide mobility to disadvantaged people living in small-town New Zealand, and this is a central rationale for the provision of government subsidies to support services. However, regular public transport services for such people and areas are not economically viable. Currie and Gammie (2005) observe a lack (or low frequency) of public transport services (particularly during the evening and at weekends) and a long and impractical walk to the bus stop in small towns of Australia. Stanley (2003) and Logan (2007) also call for an innovative solution to the diverse public transport needs of people in small towns. The importance of innovative public transport solutions is summarised in figure 2.5.

Figure 2.5 Factors producing innovative public transport solutions



Currie and Gammie (2005) identify some innovative ways of addressing the transport needs of people living in small towns in Australia. These are summarised in table 2.2 on the next page.

Table 2.2 Innovative transport solutions (adapted from Logan 2007, Raje and Brand 2003, and Currie and Gammie 2005, p54)

Transport service	Description	Service examples
Community transport services	Services provided by a (not-for-profit) community transport group, or other community group	<ul style="list-style-type: none"> • Community bus services (group, many-to-one) • Demand-responsive transport (DRT) • Community bus brokerage
Motor vehicle schemes	Schemes to assist with driver training and motor vehicle purchasing	<ul style="list-style-type: none"> • Car/moped grants/subsidy schemes • Improved training programmes and licence testing
Ride-sharing schemes	Schemes to enable people without motor vehicles to ride share with drivers	<ul style="list-style-type: none"> • Community car schemes/volunteer driving • Safety car scheme • Hitchhiker licensing and designated pickup points, driver/rider licensing • Police giving young people a ride home • Modify the post delivery bus to include seating for passengers⁴
Telematics	Use of information and communication technologies to inform and facilitate travel	<ul style="list-style-type: none"> • Internet-based booking system for on-demand transport • Demand-responsive bus schemes and car schemes
Transport subsidies and grants	Subsidies or grants provided for a range of travel options	<ul style="list-style-type: none"> • Subsidised taxi vouchers, driving lessons, public transport fares • Motorbike repair grants
Outreach	Bring more services to communities	<ul style="list-style-type: none"> • Mobile libraries and banks • Use of Internet and telephone for access to facilities

Currie and Gammie argue that innovative public transport services are more suited to small towns than to larger towns that might support conventional bus services, although even in large towns, conventional public transport use has declined over time as a result of relatively inexpensive vehicles and fuel.

One of the innovative solutions suggested in the above table is the introduction of DRT services. DRT services respond to demand and fill the gaps between inflexible, fixed-route services, single-hire, totally on-demand taxi services, and area-wide networks (Brake et al 2007, Brake and Nelson 2007). DRT can be described as a form of flexible transport service (FTS), where flexibility is incorporated in terms of route, vehicle allocation and operator, payment type, and passenger category, with the flexibility of each component varying along a demand-responsive continuum (Brake et al 2006). DRT is particularly useful for connecting isolated communities in rural areas/small towns to essential employment, health or retailing services. Figure 2.6 on the next page illustrates the demand responsiveness of public transport.

⁴ Post minibuses operate in many rural areas of the UK, taking the mail to rural areas in the same way as New Zealand Post's rural delivery mail service. The minibuses travel to places that regular transport services would not reach, but operate on very limited timetables (Currie and Gammie 2005, p58).

Figure 2.6 The demand responsiveness of public transport (Cairns et al 2004)



Another innovative response is carpooling, otherwise known as ride-sharing, or car-sharing, schemes, which encourage individuals to share private vehicles for some journeys. This type of arrangement can vary from the informal, at a neighbourhood or workplace level, to formal schemes that are often focused on commuting journeys (Cairns et al 2004). In the UK there are many examples of workplace schemes that are organised via the internet, and businesses, local authorities and hospitals have developed carpooling as part of their workplace travel plans.

Car clubs are an alternative to carpools. They allow people to have access to a car in their neighbourhood, without owning it, by paying a combination of an annual membership fee and an hourly fee per use. In the UK there are some independent rural car clubs, as well as others in low-income areas (as part of Local Exchange Trading Schemes) or older car-renovation schemes (The Countryside Agency 2004). The Countryside Agency had the role of developing and testing the concept of the rural car club in England, and as a result, nine projects were in operation between 2002 and 2004, with the aim of securing the future of these projects in 2005, after the end of the demonstration programme (Cairns et al 2004).

International literature suggests that 9–38% of the population could be attracted to car clubs (Muheim 1998). Meijkamp et al (1997) found that car club members who give up a car on joining a car club decreased their average annual kilometres travelled by more than 65%. Findings from European and American literature suggest that 20–50% of people who join car clubs will give up their cars as a result of joining (see Cairns et al 2004, Shaheen et al 1998).

2.2.6 Conclusion

The literature reviewed indicates that the majority of people living in small towns have established car-dependent behaviour because of low population density and dispersed location. Locational disadvantage has a severe impact on a range of people (eg the elderly, women, youth and the disabled) who cannot drive, or have limited access to private transport.

Conventional public transport is not economically viable in small towns because of the small but diverse population and their travel needs. Different groups in the population have specific needs and their particular public transport factors can be identified.

Because of this, an innovative approach to the development of alternatives to private transport is required. The emergence of car clubs and a significant growth in carpooling is, in part, a response to environmental concerns as well as economic factors, and stimulated by new technologies such as websites for facilitating booking of rides/vehicles. This is an international phenomenon and not

confined to congested UK and European cities. Car clubs now exist **in New Zealand's metropolitan** areas, and carpooling is encouraged through the introduction of T2 and T3 lanes, which give priority to vehicles with two or (in the case of T3 lanes) more passengers at peak times. It is likely that the advantages of these forms of shared transport will appeal to more and more people as they become aware of their existence and benefits.

2.3 Innovative shared transport solutions in Australia

2.3.1 Introduction

Research undertaken in Australia by Currie and Gammie (2005) found that over the last 100 years, settlement patterns in rural and regional areas of Australia have become less dense. It is well known that spatially dispersed populations and settlements increase the demand for private transport, which ultimately leads to a decline in the role of public transport. Changes in settlement patterns and mobility behaviour have been accompanied by a number of significant demographic changes in these areas. For example, the population is ageing, and lower-income groups (including children, young people, the unemployed and single parents) have become increasingly significant. These population groups have limited or no access to private transport. Moreover, this changing population has different mobility needs that cannot be met by traditional forms of private and public transport (ibid).

In the light of this research, public transport organisations in Australia are undertaking initiatives to introduce innovative and people-friendly public transport services. In smaller communities, innovative services that do not necessarily revolve around buses may be appropriate. Battellino (2009) refers to **these services as 'gap fillers'**, which can be provided **by a 'community development' approach where** the community identifies transport needs and is involved in finding the solutions.

DRT is one form of innovative public transport that has been in operation for over 25 years in Australia (see the Telebus and Dial-a-Bus case studies later in this chapter). The relevance of DRT in Australian small towns is increasing because of the financial difficulty of providing adequate public transport services.

Logan (2007) reports that DRT services in Australia have been developed because of changing societal factors, such as ageing, concern about the environment, social isolation and regional economic growth. International experience has shown that DRT is particularly useful for cost-effectively connecting isolated communities to essential services such as health care, thereby contributing greatly to community well-being (Rajé and Brand 2003).

Currie and Gammie (2005) identify six factors in their review of best practice in innovative DRT projects for youth in Australia. These factors were:

- **Local community involvement:** Every best-practice case was originally identified by the local community in accordance with community need. Currie and Gammie argue that wider community involvement was an important factor in the success of the best-practice case studies.
- **Sustainable funding:** The successful case studies obtained sustainable funding, which was usually made possible by the active involvement of local government in the funding mechanism. On the other hand, Currie and Gammie list only a few case studies where uncertainties surrounding sustainable funding were major issues, and conclude that no innovative transport project could survive without solid financial commitment.
- **Organisation:** Organisers played an important role in the success of the best-practice transport projects reviewed by Currie and Gammie. Usually, organisers had good communication skills that

enabled them to talk to stakeholders and funding authorities and at the same time understand the need for public transport.

- The communication gap: There was usually a communication gap between socially disadvantaged people (ie people experiencing poverty and social exclusion) and transport providers. This gap was due to the complicated and diverse needs of people on the one hand, and the perception of transport providers on the other. Finding the means to overcome these gaps was an important step in making DRT successful.
- Utilising existing transport services: Where existing transport services and operators were used to provide innovative forms of transport, the new schemes added value to existing transport services that already catered for the specific needs of disadvantaged people.
- Good promotion: All successful initiatives were well promoted in the form of advertising, catchy project names, distinctive vehicle colour schemes and the organisation of special events.

Public transport organisations in Australia are increasingly including DRT services in network plans. For example, Queensland Transport has developed comprehensive policies including planning, legislative provision, and decision-making and service-delivery frameworks for DRT (Logan 2007). Accordingly, assessments of community need, consultation processes, analysis of different options, and the development of strategies are in progress. This trend reflects the changing focus on the provision of customer-oriented public transport services.

2.3.2 Australian case studies

2.3.2.1 Runaway Bus, Western Australia

The Runaway Bus service has been operating since 1989 in small towns of South Western Australia (Currie and Gammie 2005). The aim of this service is to provide public transport services to popular beaches for young people during the summer school holidays. The service operates six days a week over the Christmas school holiday period (six weeks). Currie and Gammie concluded that the involvement of the bus operators in planning and financing the Runaway Buses, the support of local government, and the advertising of services are key factors in the success of Runaway Buses.

2.3.2.2 CAB IT Taxi-voucher project - Tasmania

The Taxi-voucher project was initiated by the Tasmanian Youth Consultative Committee (TYCC) to address the lack of safe transport options for young people at night (Currie and Gammie 2005). The initiative encourages young people to pay for their taxi fares using \$10 or \$20 pre-paid taxi vouchers that are available from newsagents. All Tasmanian taxi companies accept the vouchers and change is given if the voucher value exceeds the cost of the trip. The vouchers can be used at any time of the day or night. **The scheme's project partners include TYCC, Youth Network of Tasmania, five Tasmanian city councils, the Australian Newsagents Federation, and Taxi Combined Hobart.** Currie and Gammie identified the low cost of set up and management of this simple project as a significant factor in the success of addressing this important issue.

2.3.2.3 Invicta Telebus, Victoria

The Telebus started operating in the early 1980s in the Melbourne Metropolitan Area (Radbone and D'Este 1994, Logan 2007). It provides services to shoppers, commuters and school students on the outskirts of the Melbourne metropolitan area. Telebus stops, rather than routes, are fixed. Buses are scheduled to run within plus or minus five minutes of published timetables. Normal public transport tickets apply on these buses. The Telebus service is successful because it is integrated with other

forms of public transport and provides connected services to low-demand estates developed on the fringes of Melbourne (Radbone and **D'Este** 1994).

2.3.2.4 Dial-a-Bus, South Australia

The Dial-a-Bus service, covering the 2060km² Adelaide metropolitan area, was established in 1973 to provide fixed local-area routes during daylight hours to local shopping centres and public transport hubs (Keal and Foley 1974, cited in Radbone and **D'Este** 1994). The original Dial-a-Bus service failed because of poor planning, market competition, and the dispersed low-density land use along the route.

Enoch et al (2004) argue that Adelaide's current Dial-a-Bus service was developed using the experience of **the** 'dial-a-ride' scheme. Over time, new services were trialled and now an hourly door-to-door 'dial-a-ride' service operates in and around the township of Gawler and the surrounding suburbs to the north-east of Adelaide. Bookings can be made at any time and the service operates between 9am and 3pm Monday to Sunday, and between 7pm and 10pm Monday to Friday. After 7pm these services are on demand and wherever possible, will drop passengers to their door, to enhance their safety (Logan 2007).

2.3.2.5 Mackay Taxi Transit, Queensland

The Mackay Taxi Transit service was established by Queensland Transport in 1993 to service the low-demand areas in Queensland, and originally provided scheduled services (from Monday to Saturday) that supplemented the existing bus services. It offered an hourly frequency to geographically dispersed areas that were difficult to service at a reasonable cost with traditional public transport (Logan 2007). This scheme provided access to the CBD and shopping centres at a cost similar to that of public buses. In March 2008, the Queensland Government announced a change to Mackay bus services, due to a 68% increase in bus patronage over the previous five years. This change included closing the Taxi Transit scheme in order to relocate the funding to the increasingly popular bus services (Derek Halden Consultancy et al 2006).

2.3.2.6 Translink, Shellharbour, New South Wales

In 1992, the Shellharbour Council (located near Wollongong, New South Wales) initiated a DRT scheme that operated on a fixed base route that could be made flexible on request (Enoch et al 2004). This weekday service, which was designed with the help of modern technology (including real-time information, digital stop-announcement systems and guaranteed transfers between services), aimed to ensure that 95% of the population was within 200 metres of a bus stop. However, the initiative failed and later shut down, which Enoch et al attribute to over-reliance on untested technology and insufficient planning.

2.4 Innovative shared transport solutions in the UK

2.4.1 Introduction

In the UK context, DRT schemes are those that can operate with more dispersed and lower demand patterns than buses, and where the service provision is influenced by the demands of the users (Enoch et al 2004). The UK government has seen DRT schemes as a means of tackling a number of policy objectives (Enoch et al 2004, Derek Halden Consultancy et al 2006).

The success of DRT schemes is considered to be dependent on a number of factors, including regulatory, fiscal, institutional and cultural barriers that can exist at government, local government, operator and user levels. These factors need to be considered alongside issues pertaining to the means

of delivery of the service, such as vehicle type, use of technology and the level of flexibility of the service (Derek Halden Consultancy et al 2006).

It is possible to categorise DRT in a number of ways – eg by market, function, characteristics, level, and type of subsidy of the service.

From a market-based perspective, Derek Halden Consultancy et al (2006) define Scottish DRT projects on the basis of:

- premium-value services, such as door-to-door airport transfer
- high-value-to-agency services, where services meet specialised needs including patient and school transport
- high-care-needs services, such as services for people with disabilities, social service and community transport
- best-value public transport, where flexible routing provides wider network coverage in rural locations.

The following alternative functional categorisation is provided by Enoch et al (2004):

- ‘interchange DRT’, **which** provides feeder links to conventional public transport services, with integrated ticketing and timetabling, and preferably guaranteed connections
- ‘network DRT’, which is similar to interchange DRT, but probably not including integrated ticketing, even though this form of ticketing is desirable
- ‘destination-specific DRT’, targeted at particular markets
- ‘substitute DRT’, **which can** substantially or totally replace a conventional bus service or consolidate a number of pre-existing DRT services.

When examining the potential markets for DRT schemes, these two types of categorisation overlap somewhat. Enoch et al (2004) make a clear distinction between ‘captive’ and ‘choice’ users. ‘Captive users’ are those who have low levels of access to cars and therefore have restricted travel choices; ‘choice users’ could make a trip by car, but choose to use an alternative transport mode. Therefore DRT can be seen to operate in the domains of both conventional social policy and environmental policy. Whilst the choice and captive users have differences in their needs and preferences, arrival time is a key factor for both groups.

It is also possible to categorise DRT from an operational perspective based on alternative characteristics, which are, in turn, impacted upon by the existing regulatory and financial frameworks. These operational alternatives include:

- schedule type – fixed-route, demand-responsive or unscheduled
- route type – fixed route or route deviation
- vehicle type – minicab, taxi, minibus or midibus
- origin/destination relationship – one-to-one, one-to-many, many-to-one or many-to-many
- origin and destination of service – door-to-door or predetermined stopping point (Enoch et al 2004, p32).

Route flexibility is affected by both demand levels and distribution. Loop/zone systems, with two buses travelling in opposite directions, are regarded by Enoch et al (2004) as being more efficient than

fully flexible routes. A lower level of flexibility also helps passengers understand the system more easily.

The UK regulatory environment is based upon the Transport Act 1985, which does not include any framework for flexible services but instead concentrates on the size of a vehicle – ‘**consequently there is no single legislative niche for DRT services**’ (Derek Halden Consultancy et al 2006, piii). This focus on the size of vehicle extends to the ‘value-added tax’ (VAT) legislation, where only vehicles designed or adapted to carry nine or more passengers are zero rated. Many DRT schemes rely on the use of small vehicles.

The financial framework for assessing the viability of DRT schemes is more complicated than making a direct choice between commercial or subsidised schemes. Enoch et al (2004) suggest four levels of assessment of the financial performance of DRTs:

- commercially viable
- acceptable subsidy
- justifiable higher subsidy
- financially unsustainable.

Many of the commercially viable or low-subsidy schemes are premium-value services. Some schemes qualify **for the Bus Service Operators’ Grant (BSOG)**, which refunds around 80% of the duty paid on fuel (Derek Halden Consultancy et al 2006). However, until 2006 in Scotland, and until 2004 in England and Wales, public service vehicle-based schemes could not access BSOG for the flexible portion of their services (Derek Halden Consultancy et al 2006). Mageean and Nelson (2003) point out that DRT services are most likely to be supported in highly regulated markets, owing to the higher level of subsidy.

Many schemes have been funded by the UK government’s Urban and Rural Bus Challenge programmes (UBC and RBC), where local government tends to work in partnership with transport operators to tackle issues of social exclusion. These programmes have been altered, over time, in response to criticisms of over-complexity and a disproportionate emphasis on innovation rather than cost effectiveness (Enoch et al 2004).

Research by Enoch et al (2004), Brake et al (2006), and Mageean and Nelson (2003) suggests that there may be three market niches for DRT:

- simple small-scale initiatives for captive users who need access to public transport but can only afford to pay low fares
- premium services for targeted choice users
- large-scale complex network services using technologically sophisticated equipment (telematics-based DRT).

The question of use of technology in DRT has been examined in the UK and as part of wider European studies (Brake et al 2004, Mageean and Nelson 2003). Brake et al (2006, p323) define telematics-based DRT systems organised by Travel Dispatch Centres (TDCs) as:

Booking and reservation systems which have the capacity to dynamically assign passengers to vehicles and to optimise the routes taking account of the status and location of the fleet.

Telematics systems incorporate user-access devices, on-board vehicle devices, and a communications network to provide real-time fleet location information to route optimising software. Since 2004 the most widely used software in the UK has been *MobiRouter*. Whilst the use of this technology, incorporating GPS systems and digital maps, has made DRT more viable, it has also increased set-up costs, and the contracting out of call-centre services to regional call-centres may be a cheaper option than investing in scheme-specific technology. In addition, there is also a problem of lack of availability of mobile phone coverage to some rural areas (Enoch et al 2004, Derek Halden Consultancy et al 2006).

However, because the booking system element of DRT is not a component of conventional bus services, potential users need to feel comfortable with the method used. Therefore, a highly intuitive system, with similarities to other systems that are familiar to users (eg booking taxis by telephone), is desirable.

The following factors have been identified as influencing the success of different DRT schemes (and also conventional public transport):

- Because it is hard to accurately predict the actual usage of a service, flexibility is a key component so that services can be easily adjusted to meet the actual, rather than predicted, market.
- If incentives to entice motorists to change transport mode are important to the success of a DRT service, then it is important to address the barriers to motorists using public transport, eg lack of information, longer journey times, lack of networks, access difficulties, and concerns regarding the usability of public transport.
- If a service seeks to attract transport-deprived users, then affordability is a key factor.
- It is also important to provide a pleasant waiting environment, reliability, frequency, easy interchange, an easily understood network and ticketing structure, comfortable and accessible vehicles, helpful staff and good value for money.
- Whilst addressing the operational factors discussed above, DRT also needs to tackle issues of route and timetable flexibility, access to, and the nature of, technology, mode of booking, regulatory issues and the expressed needs of local communities (Derek Halden Consultancy et al 2006, Enoch et al 2004).

Both in the UK and elsewhere, DRT schemes have experienced serious opposition from rival transport operators, especially minicab and taxi firms, who see subsidised services as a threat. However, research by Derek Halden Consultancy et al (2006) suggests that this fear of competition is ungrounded and that DRT is actually an opportunity for participation by local taxi operators. Brokerage is one such opportunity, whereby a number of taxi operators can make available a range of different-sized vehicles that the DRT operator can call upon as required (Brake et al 2004, Enoch et al 2004).

Pre-service publicity campaigns, including extensive leafleting, appear to be important in launching DRT services. According to Enoch et al (2004), elderly users are the first to respond to new DRT services, and these early adopters provide vital word-of-mouth recommendations to clusters of users who then spread the recommendation further. Targeting services to young people at weekends may also be successful.

2.4.2 UK case studies

2.4.2.1 West Sussex DoRIS

A joint initiative by Sussex and Surrey County Councils, with the TDC based in the council offices in Midhurst, this was the first DRT scheme in the UK to use MobiRouter. The West Sussex service commenced in July 2000 with eight rural, semi-flexible services designed to feed in to existing services. The vehicles are owned by the council and there are no passenger eligibility restrictions. Services operate from Monday to Saturday and have been refined on the basis of early experience. In September 2002, a fully flexible service was added.

Patronage grew slowly at first, but by spring 2003 it had grown from the initial 100 passengers per month to 1500 passengers per month. It is thought that the initial slow growth may have been owing to a lack of bus culture in an area of high car ownership (Brake et al 2004, Enoch et al 2004).

2.4.2.2 Lincolnshire 'CallConnect'

Lincolnshire is the fourth most sparsely populated county in England. The county council has developed fixed and responsive services, **with an emphasis on the 'connection management' of interchanges**. RBC funding facilitated the implementation of DRT software, with the TDC based at council offices. The DRT started operating in March 2001, with the MobiRouter becoming operable from July 2001. Trips are booked using the software, and a text message is sent to the driver, allowing a 10-minute window for picking up the passenger.

Initially, six routes were bookable DRT services, two being fully flexible on-demand services known as CallConnect Plus, which operated with eight-seat vehicles and two-hour (minimum) advance booking. The other four routes were semi-flexible, with both door-to-door and known pickup/drop-off points. Services operated from Monday to Saturday, with no passenger restrictions.

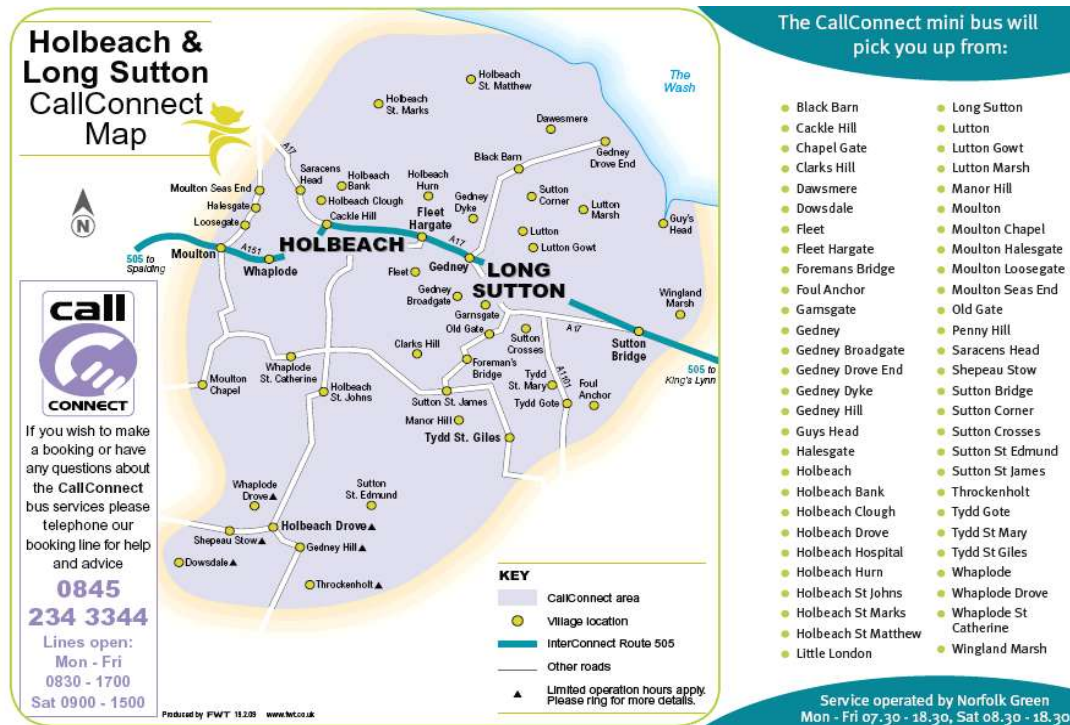
Both services are considered to be improved replacements for conventional services, with the CallConnect services interchanging with trunk services. Monthly usage of the new service grew quickly to a level of patronage about 25% higher than that of the former conventional service, the increase attributed to the extended service, strong branding and community-orientated focus of the service (Lincolnshire County Council 2009).

In 2008, 150,000 journey requests were made to CallConnect, with bookings made by telephone or via the internet. By September 2009, the service had expanded to 25 routes, with a partnership with Northamptonshire County Council meaning that routes could cross the county boundary. Figures 2.7 and 2.8 show examples of the CallConnect advertising materials.

Figure 2.7 CallConnect (Lincolnshire County Council 2009a)



Figure 2.8 Holbeach and Long Sutton CallConnect Map (Lincolnshire County Council, 2009b)



2.4.2.3 Gloucestershire Village Link

Gloucestershire County Council manages and provides the vehicles for this Vale of Gloucester service, which became operational in April 2001 with RBC funding. The vehicles are operated under contract and the booking system operates through a commercial call centre, using MobiRouter.

Initially, the service comprised two loop and one peak-period fixed route. These services operated Monday to Saturday and were bookable and door-to-door.

In July 2002 the services were revised, eliminating the underused evening service, and providing one linear and one fully flexible DRT service that concentrates on areas of high demand, with an extra peak-hours feeder service to Gloucester. The services are designed to interlink with conventional bus routes (for example, by connecting with bus services that have stops at local supermarkets (Enoch et al 2004).

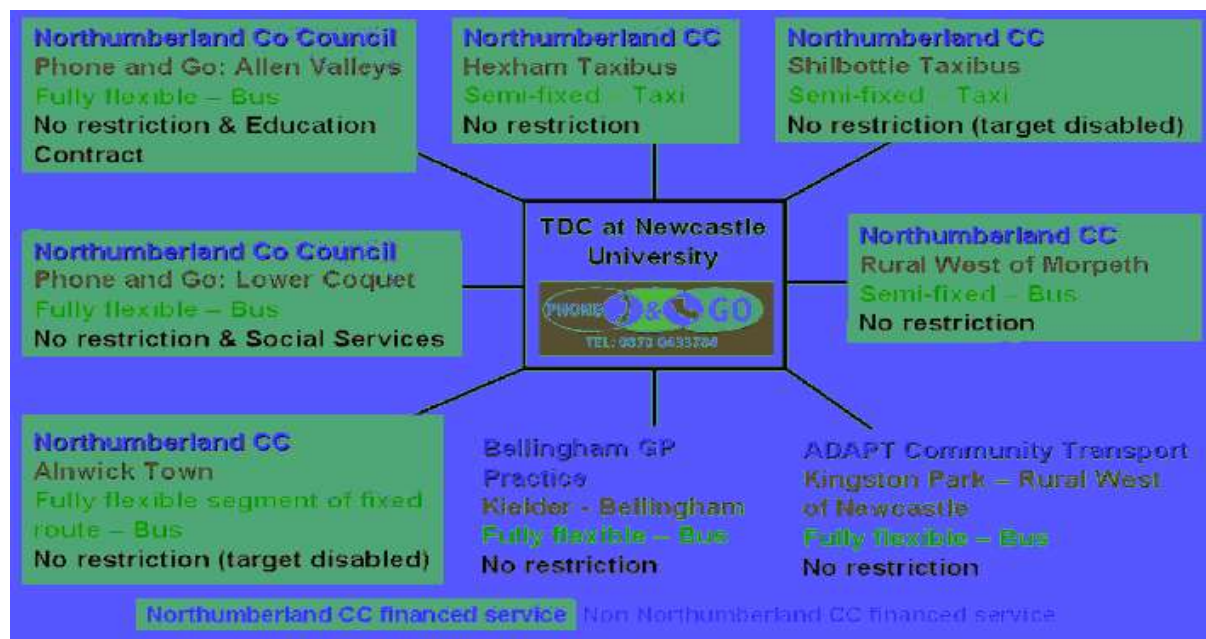
The service has proved to be popular, with early income exceeding expectations. Word-of-mouth recommendations have been important and public meetings have been used to communicate the nature of the flexible service. A taxi service provides a guaranteed back-up, which is paid for by the DRT operator if they are proved to be at fault (Enoch et al 2004, Brake et al 2004).

2.4.2.4 Northumberland 'Phone and Go'

This service, which commenced in 2002, originally operated in two rural areas, supplementing existing fixed-route services, with no passenger eligibility restrictions. The Northumberland County Council coordinated the project, and the University of Newcastle upon Tyne's Transport Operations Research Group (TORG) was responsible for day-to-day management and hosting of the TDC (see figure 2.7). The service was door-to-door or to predefined stopping points, such as interchanges. The TDC was open for bookings for 12 hours Monday to Friday and eight hours on Saturdays, and passengers needed to book one hour before travel.

The original services for both rural areas operated Monday to Saturday. The character of the different rural areas served meant that the coastal service carried significantly more passengers per week (200-250 in 2004). Opportunities arose to introduce new services and combine them with educational and social service contracts, and this enabled the development of a brokerage-based scheme (Brake et al 2004).

Figure 2.9 Northumberland multiple-service provision (Brake and Nelson 2007)



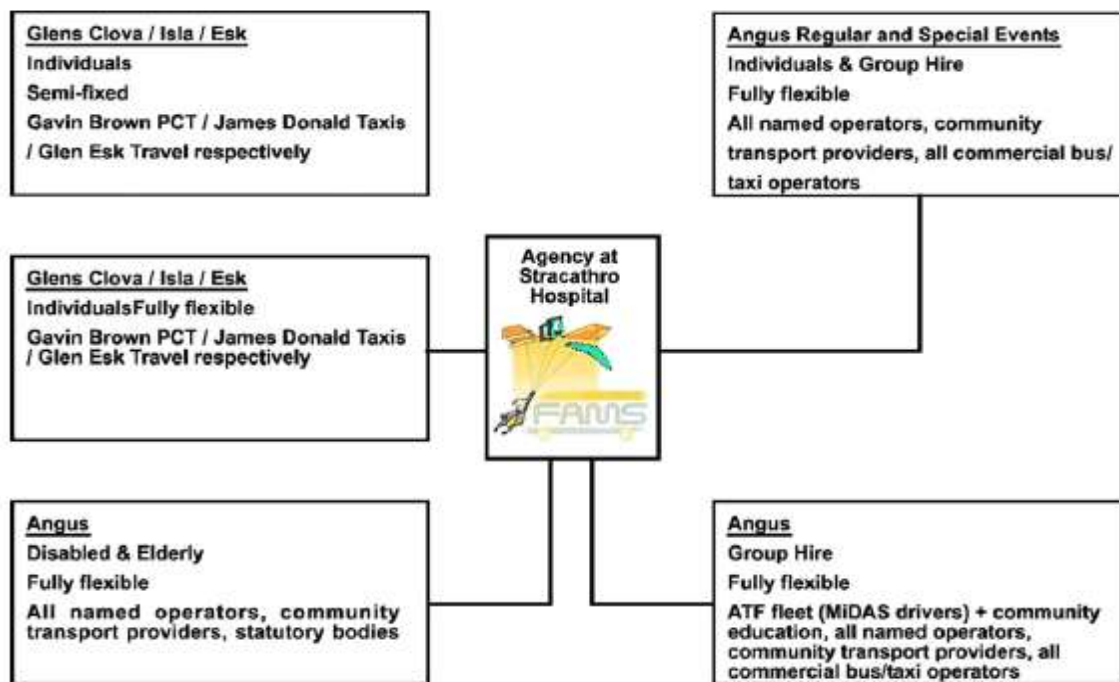
However, these combined extra services created logistical problems, as it was unclear which passengers should take scheduling priority. Furthermore, there were only low levels of cooperation between statutory providers, who were used to independent control of their budgets. When the service ceased to be a research pilot, the TDC was moved to Nexus, who schedule a dial-a-ride service and other services in neighbouring Tyne and Wear. After the transfer of the TDC, the core DRT services (except for the taxi-buses) were withdrawn over a 12-month period. Northumberland County Council also reappraised the use of social service vehicles, identifying times when they could be used by the general public (Derek Halden Consultancy et al 2006).

2.4.2.5 Angus Transport Forum

The Angus Transport Forum (ATF) was established in 1995 by the local community of the Angus region (in the north-east of Scotland), which identified a need for an agency to promote transport needs in the area (FAMS Consortium 2003) – conventional transport links are good on the coast but poor in the rural glens. Prior to the area becoming a trial site for Flexible Agency for collective demand-responsive Services (FAMS), there was no DRT in the area (Brake et al 2004, Derek Halden Consultancy et al 2006). The brokerage-based pilot project has endeavoured to maximise the use of existing public transport in the area, utilising new technology to provide flexible, integrated and sustainable services (see figure 2.10 below). Individual service providers share vehicle availability and cost information to allow ATF to facilitate the booking, scheduling and dispatch of individually flexible services close to the time of travel. Users only have to contact the TDC to request their trips, which are coordinated by the centralised agency. In some glens, semi-fixed routes, contracted to individual transport providers, have been registered to allow public access to what were previously school bus runs. A travel club has also been established by ATF, with door-to-door and door-to-existing-service links for regular and

special events. A group hire service is also available, serviced by ATF-owned vehicles and supplemented by commercial taxis and buses, and community education and transport vehicles (Brake et al 2004, Derek Halden Consultancy et al 2006).

Figure 2.10 Angus public transport brokerage (Brake et al 2004, p334)



It transpires that it has not proved possible to expand the local agency. Derek Halden Consultancy et al (2006) have identified two key reasons for this:

- 1 Because of the different operators involved, it has not been possible to offer a single pricing structure with a constant price for a specific trip.
- 2 Users identified with the operator they were used to, and some requested subsequent trips via that operator rather than through the ATF.

2.4.2.6 Strathclyde **Ring'n'Ride**

This service was launched in September 2001, funded by the Scottish Executive Rural Transport Fund, originally to provide bus services to parts of rural North Lanarkshire that did not, at that time, have a service. The service uses low-floor accessible buses and only makes trips where there are no alternative direct bus services. Direct links are provided between specific rural areas, and from rural areas to town centres, hospitals, train stations and leisure facilities. Journeys must be pre-booked, and **pickup is from people's homes** (Scottish Passenger Transport 2009).

As of October 2009, **there are nine Ring'n'Ride services** that can be used for individual passengers and group bookings. Bookings are made by phone or by text messaging, and it is possible to book up until two hours before travel, although Strathclyde Passenger Transport suggests booking on the day prior to travel. The booking line is open between 9am and 4pm on weekdays, and services operate Monday to Saturday between 7am and 10pm. Normal bus service fares apply and a full range of concessionary fares is available on the services (Enoch et al 2006). In March 2009 it was announced that funding had **been secured for the Ring'n'Ride service** until 2014, partly by Scottish Passenger Transport supplying a fuel-efficient bus on lease to the operator.

2.5 Lessons learned from international experience

2.5.1 Key findings from literature reviewed

This section highlights the key insights drawn from the literature reviewed, to inform **New Zealand's** non-metropolitan regions as they consider the prospects for expanding the use of shared transport.

- While there is growing interest in the provision of public transport in non-metropolitan cities, it is recognised that the social dimension of promoting public transport needs better understanding.
- The literature clearly defines the disadvantaged population groups in small towns and their diverse transport needs. It highlights the importance of finding out how transport-disadvantaged people manage their restricted mobility.
- Mobility needs should be listed along with the behaviour and habits of specific user groups with regard to public transport. Actual behaviour in relation to public transport may vary according to different settlement types and location, and depending on the specific public transport solution. This situation gives rise to questions about the factors that influence decision making by different user groups.
- The literature reviewed shows that different population groups have different needs and may require different forms of public transport. In light of this, our research investigated the extent to which different population groups require special policy interventions, and how an innovative solution could accommodate the special needs of people as well as transport efficiency.
- A better understanding of attitudes towards the use of shared transport is vital. Current travel behaviour varies, and the overseas examples studied show that there is significant scope for innovative solutions. Such innovations could address behavioural drivers that would best facilitate the use of public transport for travel by the diverse population in non-metropolitan settlements.
- The issues highlighted in this literature review could be fruitfully explored through a series of surveys to identify the preferences and attitudes towards shared transport of particular groups living in small towns (with populations of less than 20,000).
- These surveys could include questions to ascertain how individuals might respond to innovative transport alternatives to private transport. Some of the variables that could facilitate the use of shared transport include the use of innovative vehicles and service design, availability of information and communications technology (ICT), and community involvement in decision making.

2.5.2 Key lessons for New Zealand transport planners

A number of earlier research projects and case studies have focused on the design of flexible and DRT schemes (Brake et al 2007). Factors that need detailed consideration before a scheme is implemented include regulatory, fiscal, institutional and cultural barriers at the level of users, operators, local government and central government, as well as operational issues (ibid). Operational issues include:

- the flexibility of vehicle fleet management to minimise empty-vehicle trips
- ensuring that an operator is sympathetic to the concept of DRT and is willing to be sufficiently flexible
- making sure there is sufficient political commitment to support DRT services

- recognising that, as with any collective mode of transport, the service is most efficient when demand is sufficiently concentrated to maintain high resource utilisation
- understanding potential cultural aversion to sharing vehicles
- understanding that a DRT scheme may not be able to overcome extreme land-use patterns such as low-density, highly dispersed development
- ensuring that the target niche is large enough
- maximising the TDC operational hours
- pre-registering passengers where possible, to minimise booking times
- simple fare structures
- through ticketing
- passenger support to promote confidence in the service.

Several factors are particularly crucial to the overall success of a scheme and are discussed in more detail in the following sections.

2.5.2.1 Regulation and licensing

The status of FTS is unclear in many countries, as registration systems tend to have been designed for fixed-route services. For instance, in the UK it has only been possible to register flexible services since February 2004, **based on a classification system of ‘many-to-one’, ‘one-to-many’ and ‘many-to-many’ services** (Brake et al 2007).

2.5.2.2 Service planning and design

A major factor in successful service design is collaboration between key stakeholders, who include the travelling public, operators, local councils and the despatch centre (Brake and Nelson 2007). The key stakeholders need to be flexible and comprehensively investigate user requirements, whilst being aware of the budgetary constraints that will influence service design. Brake et al (2004) maintain that identifying the flexibility of the service is the major determinant of the essential service factors, which are, in turn, moderated by the service function. This classification on the basis of flexibility is advocated by Derek Halden Consultancy et al (2006), who suggest that flexibility can be measured in terms of the following fourfold division of the market served:

- premium value
- high value to agency
- high care needs
- best-value public transport services.

Enoch et al (2004) propose four function-based case types:

- interchange DRT (which provides a direct link to conventional public transport)
- network DRT (which replaces conventional public transport in certain places/times)
- destination-specific DRT
- substitution DRT (which replaces conventional public transport and/or specialist capacity).

The commonality in these classifications is their primary focus on flexibility.

Service flexibility can be based on fully flexible or semi-fixed routes, the geographical coverage of the service, and the integration of different modes, with the level of technological input impacting on the speed with which these factors can be integrated for different service users. The booking criteria are a key element influencing all of the above. If all journeys are pre-booked, then a vehicle will only operate when bookings are made, and arrival times can be predicted with more accuracy. However, this certainty can also be counterproductive because it eliminates the revenue generation that could be provided by casual pickups (Brake et al 2007).

2.5.2.3 Marketing

Experience suggests that the level of preparation that is required for new initiatives is often underestimated and under-resourced, despite the importance of awareness-raising for new forms of service. All stakeholders need to be aware of the service, how it operates, how it differs from a conventional service, and what benefits may accrue from it – and this is an ongoing requirement. Appropriate and distinctive branding of vehicles, timetables and all other forms of publicity is vital. This is particularly important because, to the end user, the visibility of a service decreases as its flexibility increases (Brake et al 2007).

2.5.2.4 Funding

Traditionally, FTSs have been seen as reliant on long-term subsidies. However, according to Brake et al (2007) US experience suggests that this is not the case if the service is well matched with both markets and resources. Attention needs to be paid to formulating a long-term, sustainable strategy that anticipates the cessation of start-up funding and subsidies. Experience from the UK and Italy suggests that single-agency brokerage of pooled vehicles from all public transport sectors may have the greatest potential for achieving long-term sustainability (Brake et al 2006). This flexible-agency approach is exemplified by the Angus Transport Forum (ATF) in Scotland, where different service operators share a common IT infrastructure and management of intermediate services they are individually offering, so that users can benefit from a single service centre to match users' needs with available services (Enoch et al 2004). However, the different organisational structures of the various entities involved do not necessarily lend themselves to greater cooperation and integration. Considerable effort is required to form and commit to a partnership, whether it be a management partnership and/or a brokerage partnership (Brake et al 2006). Brake and Nelson (2007) suggest that there are significant operating-cost savings to be made if the partnership is stable and there is common understanding of the purpose and service delivery aims of a scheme.

2.5.2.5 Costs

The relevant costs are those that are added by running an FTS and would not be incurred if the service did not run. Generally, these costs are administrative, operating and capital costs. However, the most significant relationship is that between revenues and avoidable costs. The significance of this relationship is equally applicable to decisions relating to start up, expansion, contraction and curtailment. Avoidable costs vary depending on the time period being considered, but are based on costs that could be avoided if the service was withdrawn. For instance, a service that does not own vehicles can eliminate costs at the point of contract termination, whereas a service that owns vehicles cannot eliminate costs until the vehicles are sold.

2.5.2.6 Overall viability

Brake et al (2007) maintain that a service whose revenues exceed its avoidable costs should continue to operate. However, to be viable in the long term, a service must also make a surplus sufficient to replace capital items when required. Fare setting is a key factor in revenue generation, and it may be

pragmatic to set fares at a level whereby anticipated passenger numbers generate sufficient revenue to cover avoidable costs.

2.5.2.7 Technology

A key element in decisions concerning the technology to be employed is the trade-off between complexity and cost. Experience from the UK reveals that the financial investment required for telematics-based FTS is prohibitive for commercial operators, meaning that the cost is borne by public or statutory authorities. This being the case, Brake et al (2007) suggest that service boundaries should match public-authority boundaries. However, these service boundaries would generate the need for effective cross-boundary consultation to maintain flexibility in cross-boundary journeys. The cost-effectiveness of a joint TDC for multiple schemes is also supported by Derek Halden Consultancy et al (2006), who suggest that small schemes that are unable to combine their TDC function with other **schemes should remain 'low-tech'**, particularly as remote booking can act as a barrier for some users.

2.5.2.8 Emissions

Public transport is important for emissions reduction and air quality standards improvements (Brake et al 2007). However, investment is often focused on expensive technological fixes that may, rather than reduce emissions, transfer them to fossil fuel-based electricity generation (Diana et al 2007). Research shows **that 'many-to-many' DRT services** that use small vehicles have substantial benefits in terms of minimising atmospheric pollution emissions in low-demand density and high-quality service level scenarios, when compared with more conventional fixed-route public transport services. Also, reducing local emissions (and noise) at bus stops has benefits for adjacent property owners, as well as transport users (ibid).

2.5.3 Why do DRT schemes fail?

A number of DRT schemes in developed countries have failed. Enoch et al (2006) assessed the schemes in order to identify the reasons for those failures. Their key findings were that the DRT projects may have failed to meet their intended objectives because they:

- were not costed on a realistic basis
- were designed without a full understanding of the market that they are trying to serve
- tried to be too flexible
- overemphasised the use of technology
- underemphasised the need for marketing and service visibility
- needed to be more incremental in development
- underestimated the skills needed for working in partnerships.

2.5.4 The next generation

A two-year trial project (starting in 2002) by FAMS, funded by the European Commission, developed a new-generation DRT service based on value-added services and collaborative multiple-service provision. Two of the trial projects, in Italy and the UK, are ongoing, using telematics-based brokerage from advanced TDCs to manage the complete process of public transport service provision. All elements of the service operate as if there was one operator, fleet and booking system (Brake et al 2004). Brake et al see the FAMS model as an expanded and mature agency (see figure 2.11) that presents options to add other non-transport and value-added functions, **such as the use of 'web**

searches to give information about public transport access to work and training opportunities - with **the option of booking a DRT trip where relevant**' (2006, p20).

This is a theme explored by Wright et al (2009) in their evaluation of a rural transport-to-employment (T2E) scheme in Highland Scotland. The Highlands provide limited public transport options because of the dominance of low-density dispersed populations. The T2E scheme is a centrally coordinated shared transport service, where no other transport is available, providing transport to workplaces, training and childcare, using community-based drivers and taxi companies. Wright et al (2009) conducted a 'social-return-on-investment' study on **the scheme's** social and economic impacts on the local community, and concluded that the social benefits outweighed the investment by a factor of three. The T2E model has subsequently been extended to both South-west Scotland and Northern Ireland.

The T2E scheme uses a service delivery model based on a centralised booking service accessed via telephone or the internet, with route planning and travel service ordering being based around individual requests (see figure 2.11). Figure 2.12 on the next page illustrates the operational model.

Figure 2.11 Layered model of service provision (adapted from Brake et al 2006, p19)

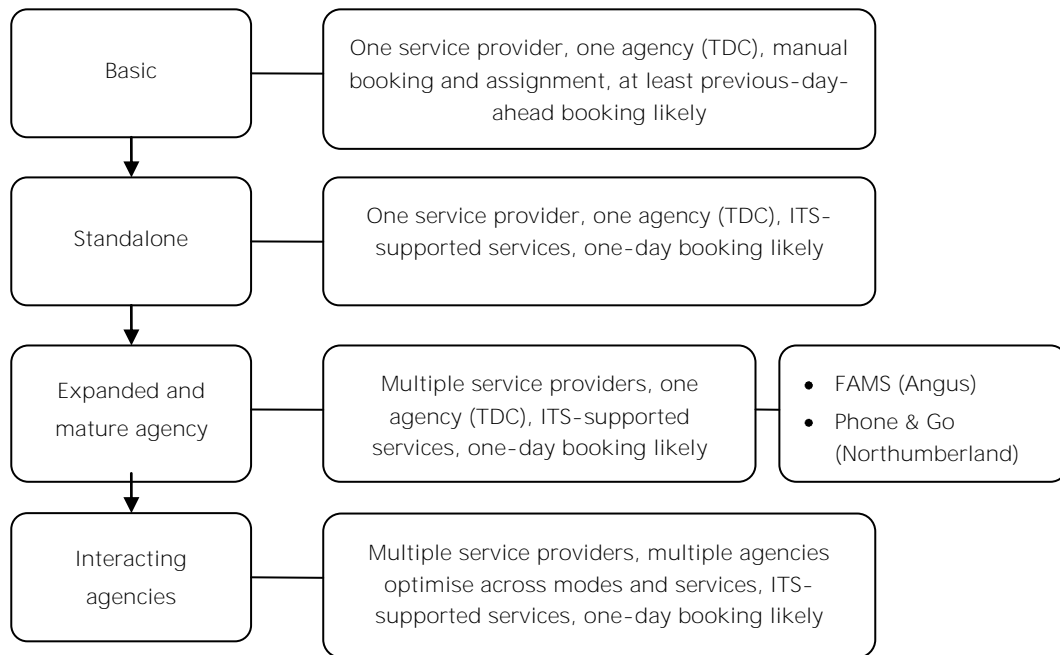
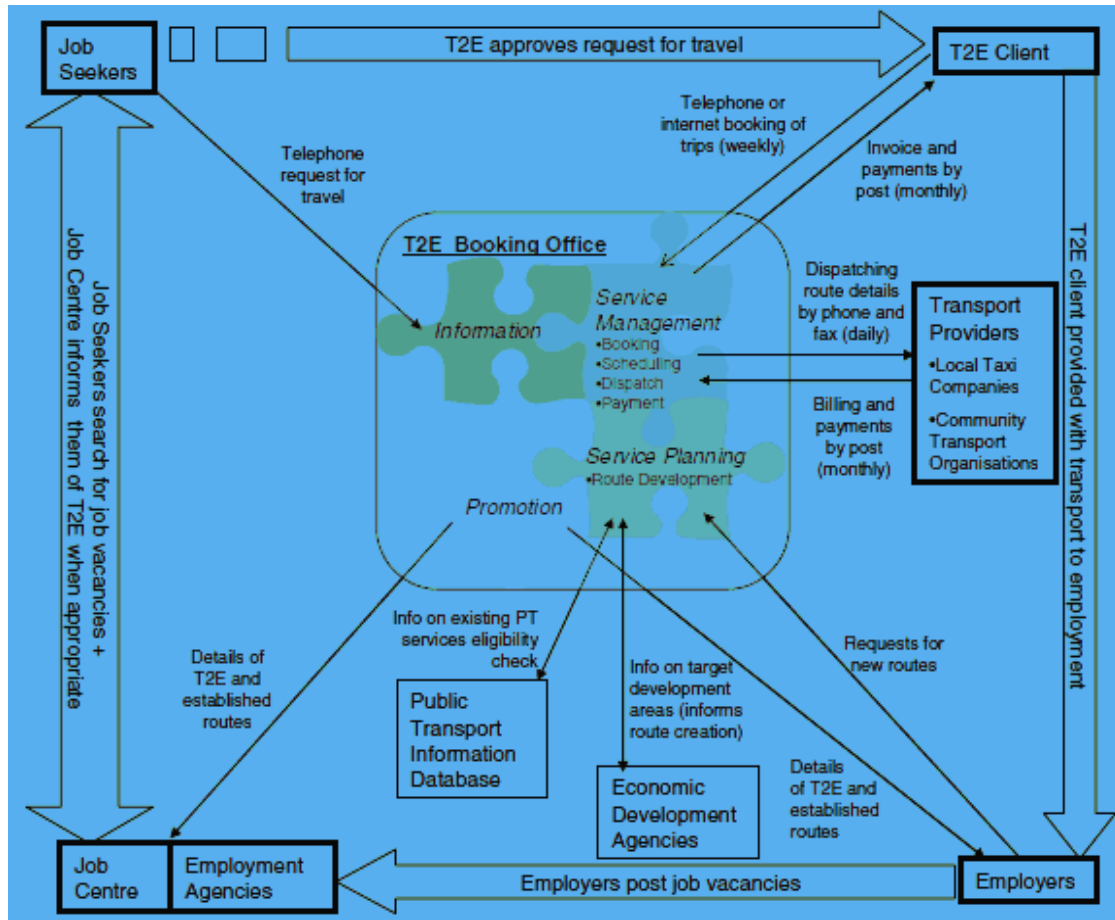


Figure 2.12 Illustration of T2E operational model (Wright et al 2009, p4)



2.6 Conclusion

The international literature provides a rich source of information for New Zealand's transport planners and policy makers about different forms of shared transport and, in particular, a range of DRT initiatives that have existed for many years – three decades in the case of South Australia. These forms of shared transport have been developed in settings that had some similar geographical and cultural contexts to those found in New Zealand, such as low population density and English-speaking populations. These experiences from Australia and the UK cannot be so easily dismissed as might examples from countries that are culturally different and/or have a higher density of population.

Demand-responsive and other forms of shared transport already operate in New Zealand, and there is considerable scope for these forms of transport to expand. Such services may be organised by a statutory organisation, such as a regional council, or they may be promoted by community organisations. In Invercargill City, for example, the Bluff Community Board initiated a project to develop a bus service within Bluff township, with funding from a charitable trust. The scheme is a good example of a local response to local needs. Volunteer drivers for the bus service were supplied by the Bluff Returned Services Association (RSA). In return, the RSA had free use of the bus for their patrons on Friday nights, and took care of the vehicle.

Having reviewed an extensive body of literature, we were then able to determine the specific focus for our own empirical work.

The next chapter outlines the three phases of our data collection:

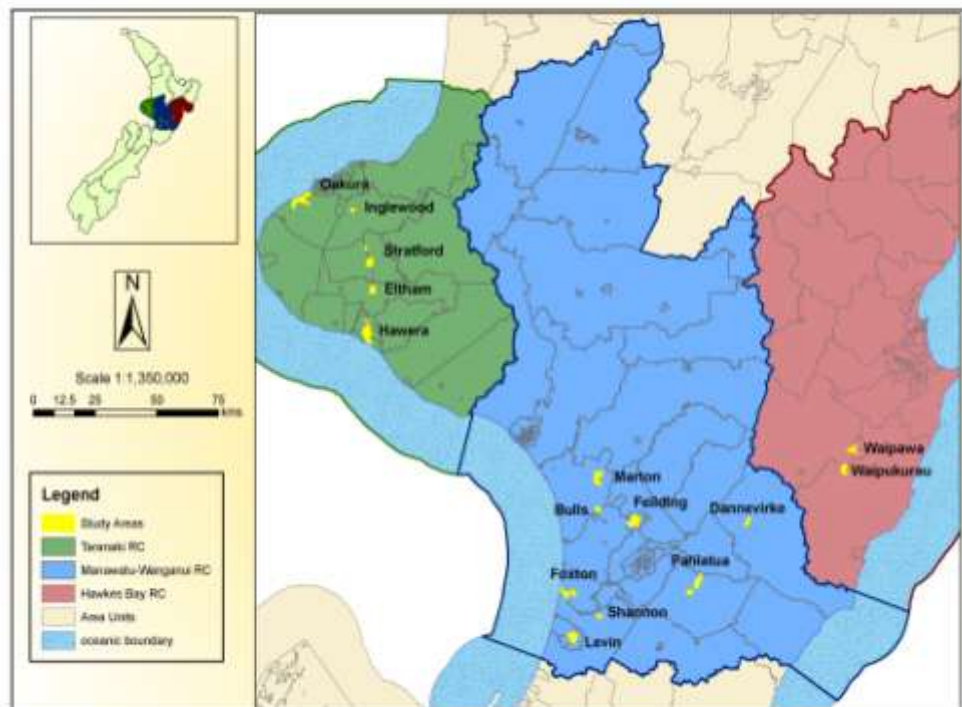
- analysis of recent census data
- distribution of a questionnaire to residents of several towns, as well as to clients of a range of disability/health-focused community organisations (on the basis that these would likely have mobility difficulties and would need alternatives to using their own vehicles)
- interviews with the residents of one town.

3 Methodology

3.1 Introduction

As outlined in chapter 1, this research examines the attitudes and behaviour of people in New Zealand's non-metropolitan regions in relation to public transport. Fifteen small towns in three non-metropolitan regions (Taranaki, Hawke's Bay and Manawatū-Wanganui – see figure 3.1 below) were selected as case studies, with selection on the basis of some common characteristics such as urban-rural mix, non-metropolitan character, etc. The Taranaki towns (and their 2006 populations) were as follows: Oakura (1800), Inglewood (3090), Stratford (5562), Eltham (1980) and Hawera (9570). In the Manawatū-Wanganui region, the following eight towns were included: Marton (4872), Bulls (1659), Foxton (4446), Levin (15,507), Shannon (1368), Dannevirke (5520), Pahiatua (2745) and Feilding (13,359). In the Hawke's Bay region, Waipawa (1926) and Waipukurau (4008) were selected.

Figure 3.1 Case study areas



The empirical work undertaken to examine the attitudes and behaviour of people towards public transport in these towns was carried out in the following three stages.

- 1 First, the 2001 and 2006 census data for the 15 small settlements listed above was analysed. This analysis encompassed socio-economic characteristics and data on main means of travel to work. The aim was to identify demographic trends and work-related travel patterns at the subregional level.
- 2 Following this, questionnaires (see appendix A) were distributed to residents in six towns: Eltham, Bulls, Shannon, Pahiatua, Foxton and Feilding. In addition, questionnaires were distributed to nearly 1000 clients of community organisations and public agencies that provide transport services (typically in relation to health/disability needs) in the three regions. The purpose of the

questionnaire was to supplement the census population **data with data on people's attitudes and** behaviour in relation to shared and public transport.

As noted above, the census data analysis provided insights into demographic trends and work-related travel (journey-to-work and geographical location of home and place of employment). However, people undertake a range of travel, not just for work, and many people are not in the paid workforce. Therefore, the questionnaires provided a mechanism for accessing information about the broader travel of people in small towns. Moreover, the questionnaires allowed information to be gathered about attitudes, not simply travel behaviour. **Nutley's 2003** study of indicators of transport and accessibility problems in rural Australia highlighted the limitations of census data and the need for consumer-orientated case study research to establish travel behaviour. Our questionnaire was a first step towards such research.

We were aware of the use of a similar instrument that was used by transport planners at Horizons **Regional Council to find out about people's views about urban bus services in Palmerston North**. The transport planners considered that their questionnaire had been an effective way of collecting data from residents, both users and non-users of public transport. After assessing the costs and benefits of alternative methods of data collection on a limited budget, we decided to use a similar approach.

- 3 The third phase of data collection involved interviews, which were conducted in Marton, a town that has local employment as well as a commuter bus to Palmerston North, and also relative proximity to two centres: Wanganui and Feilding. As such, it would potentially generate a range of possible travel behaviours. Our aim was to gather data on the perspectives and experiences of different age, ethnic and income groups in relation to transport. This would allow a more fine-grained understanding of local and subregional travel needs, and identification of priority areas for enhancing the use of passenger transport, especially by commuters and the transport disadvantaged. The distinct limitations of conventional telephone survey research for obtaining data from the various age groups deterred us from relying solely on a survey.

This chapter describes how the questionnaire and interviews were used for the purpose of gathering data about travel behaviour and attitudes.

3.2 Questionnaire

3.2.1 Questionnaire sample

The questionnaire design and distribution followed on from our analysis of the census data on population shifts and also trends in travel to work in the 15 small settlements in the three non-metropolitan regions. A one-page (two-sided) questionnaire was distributed to residents of several towns, using a range of distribution mechanisms depending on the demographic characteristics that we wished to have represented, and the nature of the settlement.

The purposive sample was finalised through discussion with the project steering group, and also with regional council transport planners so as not to duplicate existing data or overlap with any transport needs analysis recently (or currently, or about to be) undertaken by them.

3.2.2 Questionnaire design

The questionnaire was designed in a series of iterations. The design and content was reviewed by the research team on a regular basis and sent to the project steering group for comment. At an early stage,

cost estimates were sought from a printer to establish what was affordable in terms of balancing the number of surveys to be printed against questions of colour, paper quality and number of pages. For the surveys to be inserted into newspapers, the paper weight requirement from the newspaper publishers was a significant factor.

Five thousand reply-paid questionnaires were printed. The survey forms incorporated the opportunity to be entered into a draw for a \$50 grocery voucher. This competition required respondents to identify themselves, but **if they didn't enter it**, respondents could keep their identity anonymous.

3.2.3 Questionnaire piloting

In November 2008, the questionnaire was piloted with 10 individuals who were approached randomly in Palmerston North. Some amendments were made in response to their feedback, and the redrafted questionnaire was sent to three of these individuals for comment on the changes. This draft was also given to the steering committee for comment.

3.2.4 Questionnaire distribution

The distribution of questionnaires was determined by the type of transport user. In the case of those with high health needs and/or disability, the freepost questionnaires were sent to community organisations within the region (see table 3.1).

Table 3.1 Questionnaire distribution to community organisations

Area	Organisations approached	Surveys sent
Wanganui	Sommerville Centre	30
	Arthritis New Zealand	30
	RNZFB	up to 300 by email
	Stroke Foundation	12
	Brain Injury Association	30
	Alzheimers Wanganui	30
	Pathways Trust	30
	Good Health Wanganui	40
Feilding	Manchester House	50
	Feilding St John	300
Taranaki	Hospital shuttle-bus service	30
Levin	Contact Inc	40
	Horowhenua Community Health Shuttle	130
Dannevirke	Tararua Order of St John	30
Taumarunui	Taumarunui Mobility Van Society	30
DHBs	Hawke's Bay	150
	Taranaki	0
TOTAL SENT		962

In order to distribute questionnaires to transport users in different age and income groups, questionnaires were inserted into four local community newspapers (see table 3.2).

Table 3.2 Survey distribution to newspapers

Town	Number	Newspaper	Issue date
Eltham	930	<i>Stratford Press</i>	Wednesday 17/12/08
Pahiatua	1200	<i>Bush Telegraph</i>	Monday 22/12/08
Bulls	820	<i>Rangitikei Mail</i>	Tuesday 16/12/08
Shannon	770	<i>Levin Daily Chronicle</i>	Tuesday 23/12/08
Total	3720		

In addition, nearly 100 surplus questionnaires were administered randomly to shoppers in two town centres (Feilding and Foxton).

3.3 Interviews

In-depth interviews were conducted as a second phase of data collection. The interviews were an important component of the data collection for two reasons. First, they allowed us to obtain more in-depth information to expand on information provided in the questionnaire, to fill information gaps that we were aware of. Second, it provided respondents with an opportunity to provide more detailed information about their particular needs and perspectives.

3.3.1 Participant selection procedures

As mentioned in section 3.1, Marton was chosen as the location for the interviews because of its geographical location in relation to larger towns in the region. It had not been surveyed in the previous phase. An approach was made to a local community group, Project Marton, which emailed a brief information sheet about the research, including an invitation to participate, to a range of community groups.

From the response to this email, and to some newspaper coverage about the research, arrangements were made for interviews to be conducted with 19 residents. The interviewees ranged in age from 18 to 75 (see table 3.3). There were slightly more females (11) than males (eight), and there was a slight bias towards older respondents.

Table 3.3 Age range of the respondents

Age group	Female	Male
15-24	-	2
25-49	5	1
50-64	3	3
65+	3	2
Total	11	8

3.3.2 Interviewing procedures and analysis

Interviews were conducted using a semi-structured interview schedule (see appendix B). Before the interview took place, the respondents were given an opportunity to read the information sheet and

seek clarification, before being requested to complete both a consent form and the survey form. Interviews lasted for up to 40 minutes. All interviews were recorded and transcribed.

The focus of the interviews was on mode choice for regular journeys and the factors influencing this choice. Perceptions of shared and public transport were explored, and interviewees were also asked to consider how their transport choices might change in the future.

The transcribed data was coded into themes drawn from the literature that underpinned the questions. Data analysis was structured around the utility of transport choices currently and potentially available, and the constraints imposed by available transport options.

3.4 Conclusion

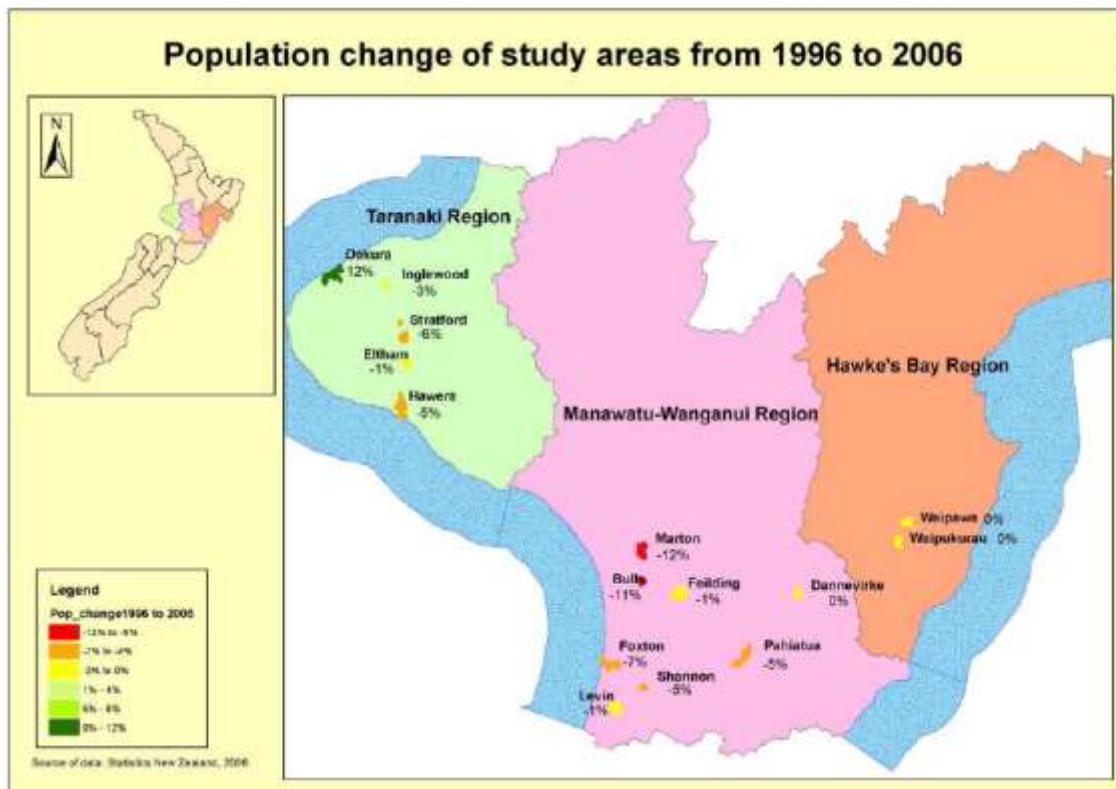
The methods used in this research allowed us to reach a larger number of people than would have been possible had we relied on qualitative methods. While there was an element of self-selection in the respondents, this was also somewhat counteracted by the additional administration of questionnaires through community groups that had clients who might experience transport disadvantage, and also through the distribution of questionnaires in Feilding and Foxton. The methods we chose allowed us to access people across a wide area. The following three chapters present data from, respectively, the census data, questionnaires and the interviews.

4 Data – census data

4.1 Introduction

Census data from 1996 to 2006 for the 15 settlements in the three regions were analysed to gain a detailed understanding of socio-economic characteristics and trends, including journey to work. With the exception of Oakura (near New Plymouth), all of the settlements show a declining population over this period, with the decline being most marked in Marton and Bulls (see figure 4.1).

Figure 4.1 Population change in the study areas between 1996 and 2006



The 2006 census data shows that apart from Oakura, the median income for the areas in the study was below the national median, with the lowest median incomes being found in Marton, Foxton, Shannon and Levin (see figure 4.2 on the next page).

This chapter provides a breakdown of the comparative census data on a town-by-town basis, creating a reference point against which the data presented in the following two chapters can be compared.

Figure 4.2 2006 census median incomes of case study towns



4.2 Oakura

Oakura (situated 12 kilometres south-west of New Plymouth) is a small township that is also a holiday destination and lifestyle art and craft centre. In 2006, its population was approximately 2000, with summer visitors increasing numbers by a further 1500. The town had a small supermarket, tavern, service station, and a number of smaller businesses. Oakura is not on the railway line, but at the time of this research, there was a weekday morning bus service from the town to New Plymouth, which returned midafternoon. This service started in July 2008 with plans to continue for three years, with a possible two-year rollover. A Friday bus service between Opunake and New Plymouth also stopped at Oakura.

Household incomes were above average. In 2006, most workers travelled to New Plymouth for work. Few residents travelled south for work. The proportion of people working within Oakura had increased slightly since 1996, and of those, just under a half were local residents (about 30% from surrounding rural areas), with most of the rest coming from New Plymouth. Few people travelled any substantial distance to work in Oakura.

Table 4.1 Oakura census data

Topic	Comments
Population, households and growth	Population was growing, with an increase of 9% since 2001 (the national average was 8% growth). The increase in the number of households (7% since 2001), was lower than the national trend, and the average number of household members had remained at 2.7 (the same as the national average). Unoccupied dwellings, at 11% of total, were above the national average (10%).
Age	The age-group profile in 2006 (24% aged 5-19 years) was slightly younger than the national average (22%). The proportion of children (under 5 years) and older people (65

Topic	Comments
	years plus) was increasing, approaching the national average.
Household composition	Fewer dwellings than the national average were not owned by residents (22% compared with 31%). More households were likely to be one-family households (83% compared with 68%), and the proportion was increasing. The number of one-person households was low (18%).
Income	Household income had increased rapidly (faster than the national average) with the median income (\$67,100) 31% above the national median level (\$51,400). Sixteen percent of households earned less than \$30,000 a year (compared with 25% nationally), and a high 38% earned more than \$70,000 (compared to 29% nationally). Personal income had increased more slowly and was closer to national trends. However, the 2006 personal median income of \$30,700 was 26% above the national median (\$24,400).
Stability and diversity	The ethnic mix was more European (79% - down from 96% in 2001) and fewer Māori (8%) than the national averages of 68% and 15%. The percentage of Asian and Pacific peoples was much lower. Note that many people wrote 'New Zealander' under 'other' in 2006 , which makes accurate comparisons difficult. In 2006, 43% of residents were living in the same house as five years previously, 20% had been in residence less than a year, and 25% for more than 10 years. This was similar to national averages. Eighty-one percent of residents were New Zealand born (compared with 73% nationally).
Welfare dependency	Just 17% of households received income from government support schemes (excluding superannuation), which was significantly lower than the national average (28%). Median weekly rents had increased by \$91 since 1996, to \$241, and were well above the national median weekly rent (\$201).
Access to vehicles and means of travel to work	Ownership of vehicles was higher than national averages, with 3% of households not having access to a motor vehicle (8% nationally). More than half (68%) of households had access to two or more motor vehicles (52% nationally), and the number of households with three or more vehicles had increased from 11% in 1996 to 18% in 2006. On census day 2006, just three people took public transport to work, 63.6% drove a vehicle to work, 3.5% were a passenger in a vehicle, and a low 2.6% walked or biked. These proportions have been reasonably stable since 1996. Around 8% of residents worked from home in 2006 (the same as the national average).
Communication	The number of residents with no access to telecommunications fell from 3% in 1996 to 0% in 2006 (2% nationally). Access to the internet rose, from 48% of households in 2001 to 66% in 2006. While the rate of increase in internet access was lower than that of New Zealand as a whole, the total number of households with internet access was still well above the national proportion in 2006 (58%).
Employment	Full-time employment had increased by 21% since 1996. Part-time employment had increased at a much slower rate (6%). These increases were below the national averages (22% and 20%). Unemployment had fallen from 8% in 1996 to 3% in 2006 (from 8% to 5% nationally). The majority of working residents worked in property and business services (15%, and increasing), education (10%, declining), health and community services (9%, static), retail (9%, increasing) and construction (9%, increasing). The biggest increases were in property and business services, accommodation, cafes and restaurants, and construction. The total number of residents working was 942 (compared with just 318 people recorded as working in 2006). Jobs consisted of accommodation, cafes and restaurants (14%, strongly increasing), retail (12%, increasing), and construction (11%, increasing). Local jobs had increased by 15% since 2001 (compared with 15% nationally).

4.3 Inglewood

Inglewood is situated on gently undulating land about 10 kilometres north-east of Mt Taranaki. It is located at the junction of State Highways 3 and 3A. In 2009, a once-per-week bus service was trialled between Inglewood and New Plymouth, and InterCity and White Star buses serviced the town on their way between New Plymouth and Wanganui. The New Plymouth–Wanganui railway also passes through Inglewood. In the past there was a daily passenger train service between New Plymouth and Wellington that passed through Inglewood, but this service was discontinued in the early 1980s. There is also a railway line from New Plymouth to Taumarunui via Stratford, but the passenger train service was discontinued in 1983. **The town's population decreased markedly between the 1996 and 2001 censuses, but it has increased slowly since then, reaching 3090 by the 2006 census. In 2006, Inglewood's population was skewed towards older people, with an increasing proportion of people aged 65 or over, and a decreasing proportion of people aged 20 or under.**

The land surrounding Inglewood was used primarily for dairy farming, although the dairy factory closed in 1991 because of a merger with Kiwi Dairies (now Fonterra) in Hawera. The town is a trade and servicing centre, and industries have included toy, clothing, and concrete product manufacture, the processing of bacon and ham, and general engineering and joinery.

In 2006, a third of working residents travelled to New Plymouth for work. The proportion working within Inglewood had declined from 37% in 1996 to 30% in 2006. Few residents travelled south to Stratford and beyond for work. Of those working in Inglewood, just over a half were local residents, with most of the rest coming from New Plymouth. Fourteen percent came from surrounding rural areas. Only 3% came from Stratford and Eltham. Few people travelled for any great distance to work in Inglewood.

Table 4.2 Inglewood census data

Topic	Comments
Population, households and growth	After a substantial decline between 1996 and 2001, by 2006 the population had increased by 5% (compared with 8% national growth). The population was still lower than the 1996 total. The number of households had increased at 1% a year, with the average number of household members falling from 2.6 in 1996 to 2.5 in 2006 (national average 2.7). Unoccupied dwellings were below the national average (10%), at 6% of total dwellings.
Age	The age-group profile was skewed towards older people, with 18% aged 65 plus (nationally 12%), with fewer working-age people. The total number aged over 65 had increased. The proportion of young people (under 20) had fallen, but was about the same as the national average.
Household composition	Fewer dwellings than the national average were not owned by residents (22% compared with 31%). More households were likely to be one-person households (26% compared with 23% nationally), and the proportion was increasing.
Income	While household income had increased faster than the national average), the median (\$38,700) was still 25% below the national median level (\$51,400). In 2006, 33% of households earned less than \$30,000 a year, compared with 25% nationally. Only 16% earned more than \$70,000 (29% nationally). Personal income had increased at the same rate as in the whole of New Zealand, but the 2006 personal median income of \$20,500 was 16% below the national median of \$24,400.
Stability and diversity	The ethnic mix was more European (83%) and fewer Māori (12%) than the national averages of 68% and 15%. The percentages of Asian and Pacific peoples were much lower. Note that many people wrote 'New Zealander' under 'other' in 2006, which makes comparisons difficult.

Topic	Comments
	<p>In 2006 38% of residents were living in the same house as five years previously, 22% had been in residence less than a year, and 27% for more than 10 years. This was similar to the New Zealand averages.</p> <p>Eighty-five percent of residents were New Zealand born (compared with 73% nationally).</p>
Welfare dependency	<p>Twenty-seven percent of households received income from government support schemes (excluding superannuation), which was similar to the 28% national average.</p> <p>Median weekly rents had increased since 1996 by \$40, to \$150, which was less than the national median weekly rent of \$201.</p>
Access to vehicles and means of travel to work	<p>Ownership of vehicles was similar to national averages, with 8% of households not having access to a motor vehicle. Less than half (48%) of households had access to two or more motor vehicles.</p> <p>On census day 2006, not one person was recorded as taking public transport to work (down from 18 using a public bus in 1996); 65.9% drove a vehicle to work (up from 57.5% in 1996); 4.6% were a passenger in a vehicle (a reasonably stable figure); and a substantial 8.4% walked or biked (down from 12.8% in 2001). Around 4% of residents worked from home in 2006 (compared with 8% nationally), which was down from 6% in 1996.</p>
Communication	<p>The number of residents with no access to telecommunications fell from 4% in 1996 to 2% in 2006 (the same as the national average of 2%).</p> <p>Access to the internet rose, from 25% of households in 2001 to 51% in 2006. While the rate of increase in internet access was above that of New Zealand as a whole, this was still below the national proportion in 2006 (58%).</p>
Employment	<p>Full-time employment had increased by 7% since 1996. Part-time employment had increased at a slower rate (2%). These increases were well below national averages (22% and 20%). Unemployment had fallen from 9% in 1996 to 6% in 2006 (from 8% to 5% nationally).</p> <p>The majority of working residents worked in manufacturing (15%, but declining), retail trade (15%, increasing), health and community services (9%, declining), property and business services (9%, increasing) and construction (9%, increasing). The biggest increases were in personal services, retail trade, government services, and property and business services. The total number of residents working was 1437, compared with 822 people recorded as working in 2006. Jobs in Inglewood consisted of retail (17%, declining), education (14%, increasing), manufacturing (13%, a large decline), health and community services (11%, growing), and construction (10%, increasing). Local jobs had declined by 9% since 2001 (compared with a national increase of 15%).</p>

4.4 Stratford

Stratford is located at both the intersection of State Highways 3 and 43, and the railway junction connecting the North Island main trunk line with the Marton–New Plymouth section. The railway from New Plymouth reached Stratford in 1879, and in 1885 the town was linked by rail to Marton and Wellington. The connecting link to the North Island main trunk line was completed in 1932. In 2006, InterCity and White Star bus services between New Plymouth and Wellington were passing through Stratford. Previously, like Inglewood, Stratford was serviced by passenger trains.

The main rural activity of the district was dairy farming, with some sheep farming. Forestry has been important in the east Taranaki hill country. In the past there was some brick and field tile manufacturing. Stratford is a servicing and distributing centre with a number of secondary industries, including the manufacture of furniture and joinery, clothing and footwear, as well as general engineering, timber processing, and beef, bobby calf and sheep-meat processing. Stratford is also a tourist traffic junction for visitors to Mt Taranaki.

In 2006, **Stratford's population profile** was similar to **Inglewood's**. The 2006 census recorded **Stratford's resident population as 5562 (a decline from both the 1996 and 2001 censuses)**, with a higher proportion of over-65-year-olds than the national average, and a slowly declining proportion of under-20-year-olds.

In 2006, just over 40% of working residents travelled to Stratford, down from 54% in 1996. A very small percentage of working residents (6%) travelled to New Plymouth, while 10% went to Eltham. Around 100 people (4%) travelled to Hawera and surrounding areas for work. The location of workplace of around 30% of residents was not defined. Of those working in Stratford, a high 62% were local residents, with 8% coming from New Plymouth (and growing) and 17% from surrounding rural areas. Five percent came from Hawera and Eltham, while just 2% came from Inglewood.

Table 4.3 Stratford (including Midhirst) census data

Topic	Comments
Population, households and growth	After a substantial decline between 1996 and 2001, the population was steady in 2006, with a modest 1% increase (compared with 8% growth nationally). Population was still lower than in 1996. The number of households had increased by less than 1% a year, and was higher than in 1996, with the average number of household members falling from 2.6 in 1996 to 2.4 in 2006 (national average 2.7). Unoccupied dwellings were below the national average (10%), at 7% of total dwellings.
Age	The age-group profile was skewed towards older people, with 19% aged 65 plus (nationally 12%), with fewer working-age people. The proportion of young people (under 20) was slowly falling, but was the same as the national average (29%).
Household composition	Fewer households than the national average were not owned by residents (26% compared with 31%). More households were likely to be one-person households (30% compared with 23% nationally), and the proportion was increasing.
Income	Household income had increased at the same rate as the national average, which left the 2006 median (\$35,800) still 30% below the national median level (\$51,400). In 2006, 35% of households earned less than \$30,000 a year, compared with 25% nationally. Only 15% earned more than \$70,000, compared with 29% nationally. Personal income had increased faster than the national average, but the personal median income of \$19,500 was 20% below the national median of \$24,400.
Stability and diversity	The ethnic mix was predominantly European (82%), with 13% Māori (national averages 68% and 15%). The percentages of Asian and Pacific peoples were much lower. In 2006, 39% of residents were living in the same house as five years previously, 22% had been in residence less than a year and 27% for more than 10 years (similar to national averages). Eighty-eight percent of residents were New Zealand born (compared with 73% nationally).
Welfare dependency	Thirty percent of households received income from government support schemes (excluding superannuation), which was similar to the 28% national average. Median weekly rents had increased since 1996 by only \$29, to \$130, well under the national median weekly rent of \$201.
Access to vehicles and means of travel to work	Ownership of vehicles was lower than the national average, with less than half (43%) of households having access to two or more motor vehicles and 11% of households not having access to a motor vehicle. On census day 2006, three people were recorded as taking public transport to work; 63.4% drove a vehicle to work (up from 57.7% in 1996); 6.6% were a passenger in a vehicle; and a substantial 7.2% walked or biked (down from 13.2% in 1996). Around 4% of residents worked from home (compared with 8% nationally), which was down from 5% in 1996.
Communication	The number of residents with no access to telecommunications fell from 6% in 1996 to 2% in 2006 (the same as the national figure of 2%).

Topic	Comments
	Access to the internet rose from 21% of households in 2001 to 42% in 2006. While the rate of increase in internet access was above that of New Zealand as a whole, this was still well below the national proportion in 2006 (58%).
Employment	<p>Full-time employment had increased by 7% since 1996 (compared with the national average of 22%), and part-time employment had declined by 1% (compared with a 20% increase nationally). Unemployment had fallen from 9% in 1996 to 5% in 2006 (from 8% to 5% nationally).</p> <p>The majority of working residents worked in manufacturing (20%, stable), retail trade (15%, declining), health and community services (8%, declining), and construction (8%, increasing). The biggest increases were in accommodation, cafes and restaurants, transport, and storage and construction. The total number of residents working was 2466, compared with 1701 people recorded as working in 2006. Jobs in Stratford consisted of retail (22%, declining), education (11%, increasing), health and community services (11%, growing), and property and business services (9%, increasing). Local jobs had declined by 1% since 2001 (compared with a national increase of 15%).</p>

4.5 Eltham

Eltham (with a population below 2000) is home to a number of national industries that had their origins in the town. In 1916, the New Zealand cooperative Rennet Company, based in Eltham, became the first New Zealand factory to produce a commercially viable version of rennet.

Today, Eltham is a servicing and shopping centre for the district and it also supports a number of industries related to the rural economy. It is known for its Mainland cheese factory, where many residents work manufacturing butter, cheese and rennet. Others process ham and bacon, freeze and pack meat, and manufacture meat smallgoods. Other Eltham industries include timber milling and joinery, and the making of concrete poles.

Via State Highway 3, Eltham is about 50 kilometres south-east of New Plymouth and 109 kilometres north-west of Wanganui. In 2006, like Inglewood and Stratford, it was serviced by the White Star and InterCity coach services, and although the Marton–New Plymouth railway line passes through the town on its way between New Plymouth and Wellington, there were no passenger train services. A Friday bus service between Opunake and Hawera stopped in Eltham.

In 2006, **nearly half (47%) of Eltham's** employed residents worked in the town, down from 57% in 1996. Few residents travelled to the smaller towns or surrounding rural areas for work – just 3% travelled to New Plymouth, and 9% (more than 70 people) travelled to Hawera and the dairy factory at Ohawe Beach. The location of workplace of around 30% of residents was not defined. Of those working in Eltham, only a third were local residents, with 20% coming from Stratford (and growing) and 10% from Hawera (growing very strongly). Seven percent came from New Plymouth and 3% from Waitara (probably for the oil and gas industry). Ten percent came from surrounding rural areas. Only 2% came from Inglewood.

Table 4.4 Eltham census data

Topic	Comments
Population, households and growth	After increasing from 1996 to 2001, in 2006 the population had declined by 6% since 2001 (compared with the national average of 8% growth). The total population was lower than in 1996. The number of households was slowly increasing and was 6% higher than in 1996, with the average number of household members falling from 2.5 in 1996, to 2.4 (national average 2.7). Unoccupied dwellings were below the national average (10%), at 8% of total dwellings.

Topic	Comments
Age	The age-group profile showed more young children under 5 years (8%, compared with the national average of 7%) and more older people, with 14% aged 65 plus (nationally 12%), and fewer working-age people (56% compared with 59% nationally). The proportion of young people (under 20) was fairly stable.
Household composition	Fewer households than the national average were not owned by residents (23% compared with 31%). More households were likely to be one-person households (29% compared with 23% nationally), and the proportion was increasing.
Income	Household income had increased at roughly the same rate as the national average, leaving the 2006 median (\$37,100) still 28% below the national median level (\$51,400). In 2006, 32% of households earned less than \$30,000 a year, compared with 25% nationally. Only 17% earned more than \$70,000 (29% nationally). Personal income had increased faster than the national average, but the 2006 personal median income of \$21,600 was 11% below the national median of \$24,400.
Stability and diversity	The ethnic mix was more European (76%) and much more Māori (23%) than the national averages of 68% and 15%. The percentages of Asian and Pacific peoples were much lower. In 2006, 44% of residents were living in the same house as five years previously, 18% had been in residence less than a year, and 33% for more than 10 years. This showed more stability than the national averages. Eighty-five percent of residents were New Zealand born (compared with 73% nationally), down from 92% in 2001.
Welfare dependency	Thirty-four percent of households received income from government support schemes (excluding superannuation), which was higher than the 28% national average. Median weekly rents had increased by \$30 since 1996, to \$152, which was well under the national median weekly rent of \$201.
Access to vehicles and means of travel to work	Ownership of vehicles overall was lower than national averages, with fewer than half (44%) of households having access to two or more motor vehicles (52% nationally) and 9% of households not having access to a motor vehicle (8% nationally). On census day 2006, three people were recorded as taking public transport to work. The proportion of people who drove a vehicle to work was similar to the 1996 figure, at 53.3% (compared with 59.6% nationally); 4.9% were a passenger in a vehicle (down from 5.9% in 1996); while a substantial 13.2% walked or biked (down from 19% in 1996). Around 5% of residents worked from home (8% nationally), which was down from 7% in 1996.
Communication	The number of residents with no access to telecommunications fell from 7% in 1996 to 3% in 2006. Access to the internet rose, from 20% of households in 2001 to 39% in 2006. While the rate of increase in internet access was above that of New Zealand as a whole, this was still well below the national proportion in 2006 (58%).
Employment	After declining between 2001 and 2006, full-time employment had increased by 14% since 1996. Part-time employment had increased by 3%. These increases were well below national averages (22% and 20%). Unemployment had fallen from 7% in 1996 to 5% (from 8% to 5% nationally). The majority of working residents worked in manufacturing (42%, a slight decline) and retail trade (9%, declining). The biggest increases were in transport and storage, wholesale trade and construction. The total number of residents working was 915, compared with 1239 people recorded as working in 2006. Jobs in Eltham were dominated by manufacturing (73%, growing). Local jobs had increased by 1% since 2001 (15% nationally).

4.6 Hawera

Hawera, on the Waimate Plain, is 71 kilometres south-east of New Plymouth and 89 kilometres north-west of Wanganui via State Highway 3. It is close to the junction of State Highway 3 and 'Surf Highway' 45, and it lies about 35 kilometres south-east of the base of Mt Taranaki. At the time of this research, a passenger bus service connected Hawera with Waverley on Thursdays and with Opunake via Eltham or Manaia on Fridays. Hawera was also serviced by White Star and InterCity buses, but not by any passenger train services. Since 1996, Hawera's population has declined by 5%, but it remains South Taranaki's largest rural service town, with 9570 'usually resident' people recorded in the 2006 census. Like Stratford and Inglewood, the proportion of under-20-year-olds in Hawera was similar to the New Zealand average, but this figure was declining, while the proportion of people aged over 65 was increasing.

Hawera is a fertile farming area, with agricultural and related service industries the town's major source of employment. Dairyland, the southern hemisphere's largest one-site multiproduct dairy factory (located just outside the town) was processing 13 million litres of milk per day. In spite of further employment opportunities at a beef processing plant and the nearby oil and gas fields, the district was not growing.

In 2006, nearly half the population (46%) worked in Hawera, down from 56% in 1996. Nearly a fifth (17%) travelled to the rural areas surrounding Hawera. Few working residents travelled to the smaller towns, with 3% going to Eltham and 1% to Stratford and 1% to New Plymouth. Few workers travelled to the south (24 to Waverly or beyond), and just 18 to Patea. The location of workplace of around 25% of residents was not defined. Of those working in Hawera, a very high 66% were local residents, with 17% coming from surrounding rural areas. Just 3% came from Stratford and 2% from Eltham. Sixty workers (2%) came from Patea.

Table 4.5 Hawera (including Normanby) census data

Topic	Comments
Population, households and growth	The population was declining, with a 1% decrease since 2001 (compared with the national average of 8% growth) and a 5% decrease between 1996 and 2006. The number of households was almost stable and was 2% higher than in 1996, with the average number of household members falling from 2.7 in 1996 to 2.4 (national 2006 average 2.7). Unoccupied dwellings were below the national average (10%), at 6% of total dwellings.
Age	The age-group profile showed the same proportion of under-20-year-olds as the national average (29%), but more older people, with 17% aged 65 plus (12% nationally) and fewer working-age people (55% compared with 59% nationally). The proportion of under-20-year-olds was falling steadily.
Household composition	Fewer households than the national average were not owned by residents (26%, compared with 31%). More households were likely to be one-person households (28% compared with 23% nationally), and this proportion was increasing rapidly.
Income	Household income had increased markedly in the lower-to-middle income brackets, compared with the national average, making the 2006 median (\$45,000) only 12% below the national median level (\$51,400). In 2006, 26% of households earned less than \$30,000 a year, compared with 25% nationally, and 22% earned over \$70,000, compared with 29% nationally. Personal income at the lower income levels had also increased faster than the national average, and the 2006 personal median income of \$24,000 was 2% below the national median of \$24,400.

Topic	Comments
Stability and diversity	The ethnic mix was more European (74%) and more Māori (20%) than the national averages of 68% and 15%. The percentages of Asian and Pacific peoples were much lower, but were increasing quickly. In 2006, 39% of residents were living in the same house as five years previously, 23% had been in residence less than a year, and 27% for more than 10 years. This was similar to the national averages. Eighty-seven percent of residents were New Zealand born (compared with 73%).
Welfare dependency	Twenty-six percent of households received income from government support schemes (excluding superannuation), similar to the 28% national average. Median weekly rents had increased by \$30 since 1996, to \$152, which was well under the national median weekly rent of \$201.
Access to vehicles and means of travel to work	Ownership of vehicles overall was lower than national averages, with fewer than half (44%) of households having access to two or more motor vehicles (52% nationally) and 9% of households not having access to a motor vehicle (8% nationally). On census day 2006, no people were recorded as taking public transport to work. The proportion of people who drove a vehicle to work was 59.4% (up from 55.6% in 1996, and compared with 59.6% nationally), and 5% were a passenger in a vehicle (similar to 1996 levels and the national average of 4.6%). A substantial 12.5% walked or biked (down from 18.6% in 1996), compared with 7.2% nationally. Around 4% of residents worked from home (8% nationally), which was down from 5% in 1996.
Communication	The number of residents with no access to telecommunications fell from 5% in 1996 to 2% in 2006 (nationally 2%). Access to the internet rose, from 29% of households in 2001 to 48% in 2006. While the rate of increase in internet access was the same as that of New Zealand as a whole, this was still well below the national proportion in 2006 (58%).
Employment	Full-time employment had increased by 5% since 1996 (compared with the national average of 22%), and part-time employment had decreased by 1% (compared with a 20% increase nationally). Unemployment had fallen from 7% in 1996 to 5% (from 8% to 5% nationally). The majority of working residents worked in manufacturing (27% and increasing), retail trade (13%, declining), health and community services (8%, stable) and property and business services (8%, a major decline). The biggest increases were in manufacturing and construction. The total number of residents working was 4653, compared with 3504 people recorded as working in 2006. The majority of jobs in Hawera were made up of manufacturing (19%, declining), retail (19%, declining) and health and community services (11%, stable). Local jobs had declined by 2% since 2001 (compared with a national increase of 15%).

4.7 Waipawa

Waipawa is situated on the northern bank of the Waipawa River, a tributary of the Tukituki River. It is situated on the south-eastern fringe of the Takapau Plain, and via State Highway 2, is 65 kilometres south-west of Napier and 115 kilometres north-east of Palmerston North.

The Wellington–Napier railway and State Highway 2 pass through the town. In the past, a passenger train service operated between Wellington and Gisborne, but the Napier–Palmerston North service was discontinued in October 2001. At the time of this research, Waipawa was serviced by InterCity buses travelling to Napier.

The district's main rural activity has been sheep farming, although cattle raising and market gardening have also been important. Waipawa is chiefly a rural servicing and distributing town where industrial

activities have included sawmilling and joinery, general engineering (including the manufacture of farm machinery), wool and hide processing, and the manufacture of concrete products and lime making.

At the time of the 2006 census, **Waipawa's** 'usually resident' population was 1923, and its age-group profile was similar to the national average. The proportion of under-20-year-olds was fairly stable, and although its proportion of over-65-year-olds was **higher than the country's average**, it was declining. Over half of the working residents worked outside of Waipawa. Of those working in Waipawa, around half were local residents, with most of the rest coming from Waipukurau and the surrounding rural area. Few workers (just over 30) travelled in from Hastings, Napier and Havelock North. Only nine workers were recorded as coming from Manawatū-Wanganui.

Table 4.6 Waipawa census data

Topic	Comments
Population, households and growth	The population was stable, with small increases since 2001 (compared with the national average of 8% growth). The number of households was slowly increasing at just less than 1% per year, with the average number of household members falling from 2.6 in 1996 to 2.5. Unoccupied dwellings were below the national average (10%) at 7% of total dwellings.
Age	Males made up 48% of the population. The age-group profile was very similar to the national average, with the proportion of young people being fairly stable. However, while the proportion of people aged 65 and over was higher than the national average, the total number in this age group was breaking the national trend and declining, possibly because of a lack of services.
Household composition	More households than the national average were owned by residents, and more households were likely to be one-person households (27%, compared with 23% nationally).
Income	While household income had rapidly increased (much faster than national average) the median (\$37,400) was still 27% below the national median level (\$51,400). In 2006, 34% of households earned less than \$30,000 a year, compared with 25% nationally, and only 14% earned over \$70,000, compared with 29% nationally. Personal income had followed the same pattern, with the 2006 personal median income of \$20,800 being 15% below the national median of \$24,400.
Stability and diversity	The ethnic mix was more European (73%) and much more Māori (24%) than the national averages of 68% and 15%. The percentages of Asian and Pacific peoples were much lower. In 2006, 37% of residents were living in the same house as five years previously, 26% had been in residence less than a year, and 26% for more than 10 years. This was similar to the national averages. Eighty-five percent of residents were New Zealand born (compared with 73% nationally), but residents born overseas were increasing rapidly from a low base, and had doubled in 10 years to 14% of population (22% nationally).
Welfare dependency	Thirty-four percent of households received income from government support schemes (excluding superannuation), substantially higher than the 28% national average. This proportion had increased slightly since 2001, which was different from the trend in the rest of the country. Median weekly rents had increased by \$50 since 1996, to reach the same figure as the national median weekly rent (\$152), but because this came from a lower base in Waipawa, the rate of increase was greater.
Access to vehicles and means of travel to work	Ownership of vehicles was similar to national averages, with just 6% of households not having access to a motor vehicle; over half (54%) of households had access to two or more motor vehicles. On census day 2006, no one was recorded as taking public transport to work. The proportion of people who drove a vehicle to work was 63.5%, 7% were a passenger in a vehicle (down from 9.9% in 1996), and just 5.5% walked or biked (down from 8.8% in 1996). Around 6% of residents worked from home (8% nationally), which was fewer than in 2001.

Topic	Comments
Communication	<p>The number of residents with no access to telecommunications fell from 7% in 1996 to 3% in 2006, slightly higher than the national figure of 2%.</p> <p>Access to the internet rose, from 22% of households in 2001 to 47% in 2006. While the rate of increase in internet access was above that of New Zealand as a whole, this was still below the national proportion in 2006 (58%).</p>
Employment	<p>Full-time employment had increased by 18% since 1996, and part-time employment had increased even faster (31%). Unemployment had fallen from 8% in 1996 to 4% (from 8% to 5% nationally) The proportion of people outside the labour force had declined by 11% since 1996.</p> <p>The majority of working residents worked in manufacturing (17%, but declining), retail trade (13%, static), agriculture (13%, declining) and health and community services (8%, static). Increases were in personal services, the public sector, and property services. The total number of residents working was 990, with more than half of them working outside of Waipawa (474 worked in Waipawa). Jobs in Waipawa consisted of retail (23%), transport and storage (15%), construction (8%), property and business services (8%) and government administration (8%). Local jobs had declined by 3% since 2001 (compared with a national increase of 15%).</p>

4.8 Waipukurau

Waipukurau is situated close to the south bank of the Tukituki River on the Takapau (Ruataniwha) Plain, about 7 kilometres south-west of Waipawa. It is 108 kilometres north-east of Palmerston North and 71.2 kilometres south-west of Napier via State Highway 2, and the Wellington-Napier railway also passes through the town. Waipukurau occupies alluvial flats, and the surrounding country is gently undulating.

At the time of this research, Waipukurau, like Waipawa, was serviced by Napier-bound InterCity buses, but not by any passenger trains or council-run buses.

Waipukurau is a rural service town whose economy was originally based on flour milling, sawmilling and flax milling, as well as sheep farming. Lime and bentonite were quarried locally. Waipukurau became the commercial and market centre for the southern part of the Takapau Plain and surrounding hill country. The town's industrial activities included the manufacture of joinery, furniture and cement products, sawmilling, and general engineering. A large stock-sale yard was also established there. Current commercial activity includes a Bernard Matthews meat-processing plant.

At the time of the 2006 census, **the town's population** was relatively stable, with 4005 people recorded as being 'usually resident' in Waipukurau. The proportion of under-20-year-olds, although declining, was similar to the national average, while the proportion of over-65-year-olds was increasing substantially. Although the majority of working residents remained in Waipukurau for work in 2006, the proportion had declined from 32% in 1996. Tikokino (a large rural area) was the most common destination for travel to work, followed by other rural areas and Waipawa. Three percent of workers travelled to Hastings and this was increasing rapidly. Only 1% travelled south to Dannevirke and other towns, while 2% travelled to other regions. Of those working in Waipukurau, around half were local residents, with most of the rest coming from the surrounding rural areas, including 10% from nearby Waipawa. Few workers (39) travelled in from Hastings, and only 24 workers were recorded as coming from Manawatū-Wanganui.

Table 4.7 Waipukurau census data

Topic	Comments
Population, households and growth	The population was stable with small increases since 2001 (compared with the national average of 8% growth). The number of households was increasing at 1% per year, with the average number of household members falling from 2.5 in 1996 to 2.4 (national average 2.7). Unoccupied dwellings were below the national average (10%), at 6% of total dwellings.
Age	Males made up 47% of the population. The age-group profile in 2006 was skewed towards older people, with 19% aged 65 plus (nationally 12%). The proportion of young people (under 20 years) was declining, but was about the same as the national average. The number of those aged over 65 was increasing substantially.
Household composition	More households were likely to be one-person households (29%, compared with 23% nationally), with this proportion increasing over time.
Income	While household income had increased (faster than the national average), the median (\$37,900) was still 26% below the national median level (\$51,400). In 2006, 34% of households earned less than \$30,000 a year, compared with 25% nationally, and only 18% earned over \$70,000, compared with 29% nationally. Personal income had followed the same pattern, with the 2006 personal median income of \$21,800 being 11% below the national median of \$24,400.
Stability and diversity	The ethnic mix was more European (73%) and much more Māori (25%) than the national averages of 68% and 15%. The percentages of Asian and Pacific peoples were much lower. In 2006, 39% of residents were living in the same house as five years previously, 23% had been in residence less than a year, and 26% for more than 10 years. This was similar to the national averages. Eighty-nine percent of residents were New Zealand born (compared with 73% nationally).
Welfare dependency	Twenty-seven percent of households received income from government support schemes (excluding superannuation), similar to the 28% national average. Median weekly rents had increased by \$36 since 1996, to \$151, which was less than the national median weekly rent (\$201).
Access to vehicles and means of travel to work	Ownership of vehicles was lower than the national averages, with 10% of households not having access to a motor vehicle and fewer than half (46%) of households having access to two or more motor vehicles. On census day 2006, no one was recorded as taking public transport to work. The proportion of people who drove a vehicle to work was 61.3%; 7.8% were a passenger in a vehicle (down from 10.6% in 1996); and a substantial 11.5% walked or biked (down from 13.5% in 1996). Around 6% of residents worked from home (8% nationally), which was up from 5% in 2001.
Communication	The number of residents with no access to telecommunications fell from 5% in 1996 to 3% in 2006. This is slightly higher than the national figure of 2%. Access to the internet rose from 22% of households in 2001 to 43% in 2006. While the rate of increase in internet access was above that of New Zealand as a whole, this was still well below the national proportion in 2006 (58%).
Employment	Full-time employment had increased by 11% since 1996, and part-time employment had increased at a similar rate (13%). These increases were well below the national averages of 22% and 20%. Unemployment had fallen from 6% in 1996 to 4% (from 8% to 5% nationally). The majority of working residents worked in manufacturing (22%, but declining), retail trade (14%, increasing), agriculture (10%, increasing) and construction (8%, increasing). The biggest increases were in personal services, recreation and construction. The total number of residents working was 1962, with 1926 recorded as working in Waipukurau. Jobs in Waipukurau consisted of retail (19%, static), manufacturing (16%, a large decline), health and community services (13%, growing), personal and other services (9%). Local jobs had increased by 2% since 2001 (compared with a national increase of 15%).

4.9 Marton

Marton is the largest town in the Rangitikei district, and in 2006 had a 'usually resident' population of 4680. It is situated in the lower Rangitikei basin on the Tutaenui Stream.

By road, Marton is approximately 44 kilometres north-west of Palmerston North and 37 kilometres south-east of Wanganui. State Highway 1 is approximately 4 kilometres east via Calico Line and about 9 kilometres south-east via Wellington Road. State Highway 3 is about 14 kilometres west via Wanganui Road. The North Island and Wellington main trunk lines meet about 4 kilometres south-east of the town. At the time of this research, the Overlander train stopped at the town twice every day during the summer, on its way between Auckland and Wellington (in the winter the service operated from Friday to Sunday). Marton residents had access to InterCity buses and a weekday commuter bus service to Palmerston North.

The coastal lowlands around Marton are known for their quality and productivity as farm land. The **town's first major industry was a flour mill**, followed by a variety of agricultural and food-related **manufacturing industries. The opening of Lake Alice Hospital in 1950 increased Marton's population** and employment opportunities, and sawmilling, joinery manufacture, general engineering, and clothing **and textile manufacture have also provided employment. Although the town's population has seen a** substantial decline since 1996, partly because of the closure of Lake Alice Hospital, the recently opened Canterbury Meat Packers facility, north of Bulls on State Highway 1, has provided a new source of employment for Marton residents.

In 2006, just under half (43%) **of the town's** workforce was employed in Marton (a reduction from 57% in 1996), and 3–6% travelled to Wanganui, Palmerston North City, Bulls (strongly increasing) and Lake Alice for work. Few workers travelled south to the towns that are mentioned in this study that are past Bulls, although 4% went to other regions, probably Wellington. Of those working in Marton, a high 63% were local residents, with 16% coming from the surrounding Lake Alice rural area, 4% from Wanganui, and 3% from Palmerston North. Very few came from the south (eg Levin, Foxton and rural areas).

Table 4.8 Marton census data

Topic	Comments
Population, households and growth	The population was declining, with a 1% decrease since 2001 (compared with the national average of 8% growth) and a substantial decline of 12% between 1996 and 2006. The number of households had started to increase since 2001, but overall had declined by 2% since 1996, with the average number of household members falling from 2.6 in 1996 to 2.4 (national average 2.7). Unoccupied dwellings were below the national average (10%), at 8% of total dwellings.
Age	The age-group profile showed an older population than the national average for 2006, with fewer children under 5 years, the same proportion of people under 20 years (nationally 30%), 20% aged 65 plus (nationally 12%), and fewer working-age people (50%, compared with the national average of 59%). The proportion of older people was increasing steadily.
Household composition	Fewer households than the national average were not owned by residents (27%, compared with 31% nationally). More households were likely to be one-person households (30%, compared with 23% nationally), and this proportion was increasing.
Income	Average household income was low, despite large increases in the upper-income brackets. The 2006 median (\$32,200) was a large 37% below the national median level (\$51,400). A huge 40% of households earned less than \$30,000 a year, compared with 25% nationally, and just 14% earned over \$70,000, compared with 29% nationally. Personal income had not increased as fast as the national average at the middle- and upper-income levels, with the 2006 personal median income at \$18,300 being 25% below

Topic	Comments
	the national median of \$24,400.
Stability and diversity	<p>The ethnic mix was more European (72%) and far more Māori (25%) than the national averages of 68% and 15%.</p> <p>In 2006, 41% of residents were living in the same house as five years previously, 21% had been in residence less than a year, and 29% for more than 10 years. Compared with the national averages, households in Marton had been more stable.</p> <p>Eighty-seven percent of residents were New Zealand born (compared with 73% nationally).</p>
Welfare dependency	<p>Thirty-four percent of households received income from government support schemes (excluding superannuation), higher than the 28% national average, but well down from 43% in 2001.</p> <p>Median weekly rents had only increased by \$10 since 1996, to \$125, which is very low compared with the national median of \$201.</p>
Access to vehicles and means of travel to work	<p>Ownership of vehicles overall was lower than the national averages, with fewer than half (42%) of households having access to two or more motor vehicles (52% nationally) and 11% of households without access to a motor vehicle (nationally 8%).</p> <p>On census day 2006, three people were recorded as taking public transport to work, down from 15 in 1996. The proportion of people who drove a vehicle to work was 58.1% (similar to 1996 figures), compared with 59.6% nationally; 5.8% were a passenger in a vehicle, which is a bit higher than in 1996 (4.9%) and the 2006 national average of 4.6%. Although the 2006 figure of 11% walking or biking to work was down from 17.2% in 1996, this was high compared with 7.2% nationally. Around 6% of residents worked from home (8% nationally), which was up from 5% in 1996.</p>
Communication	<p>The number of residents with no access to telecommunications fell from 7% in 1996 to 3% in 2006 (nationally 2%).</p> <p>Access to the internet rose from 25% of households in 2001 to 47% in 2006. While the rate of increase in internet access was higher than that of New Zealand as a whole, this was still well below the national proportion in 2006 (58%).</p>
Employment	<p>Full-time employment had increased by 1% since 1996, and part-time employment had increased by 8%. These increases were well below the national averages of 22% and 20%. Full-time employment was up 14% since 2001. Unemployment had fallen from 11% in 1996 to 6% in 2006 (from 8% to 5% nationally).</p> <p>The majority of working residents worked in manufacturing (19%, increasing), retail trade (12%, declining), education (10%, declining), health and community services (8%, declining) and construction (8%, increasing). The biggest increases were in manufacturing and construction. The total number of residents working was 2133 (compared with 1413 in 2006). The majority of jobs in Marton were made up of manufacturing (23%, increasing), retail (16%, declining) and education (12%, stable). Local jobs had increased by 2% since 2001 (compared with a national increase of 15%).</p>

4.10 Bulls

Bulls is located at the junction of State Highways 1 and 3. It is the closest town to the RNZAF Base Ohakea, and is 13 kilometres south of Marton and 30 kilometres north-west of Palmerston North. At the time of this research, it was serviced by InterCity buses.

The 2006 census showed that the population of Bulls was in decline, down by 6% from 2001 to a total of 1659. However, since 2001 there had been a 41% increase in jobs in Bulls, with employment dominated by the Ohakea airbase, which employs around 900 personnel. The other dominant industry was meat processing at Riverlands Manawatū and the recently developed Canterbury Meat Packers

(CMP) plant at Greatford, just north of Bulls on State Highway 1. The plant employed 240 staff and operated year round.

In 2006, less than a quarter of working residents worked in Bulls – almost a fifth (19%) travelled to nearby Ohakea, and 15% went to Palmerston North City. Few workers travelled west to Wanganui, or to the smaller towns of Foxton, Marton, Feilding or Levin, although 4% went to other regions, probably Wellington. The location of workplace of around 25% of residents was not defined. Of those working in Bulls, a third were local residents and nearly a fifth (18%) came from surrounding rural areas, as well as 16% from Marton, 7% from Feilding and 7% from Palmerston North. Very few workers came from the south (eg Levin and Foxton).

Table 4.9 Bulls census data

Topic	Comments
Population, households and growth	The population was declining significantly, with a 6% decrease since 2001 (compared with the national average of 8% growth) and a decline of 11% between 1996 and 2006. The removal of the Skyhawk fighter squadron from Ohakea in July 2004 would have been an influence on these figures. After falling by 6% between 1996 and 2001, the number of households had stabilised, with the average number of household members down from 2.6 in 1996 to 2.5 (national average 2.7). Unoccupied dwellings were higher than the national average (10%), at 15% of total dwellings.
Age	The age-group profile in 2006 showed a similar proportion of people under 20 years (30%) as the national average, slightly more people aged 65 plus (14% , compared with 12% nationally), and fewer working-age people (56% compared with 59% nationally). The proportion of young children (under 5 years) was falling steadily.
Household composition	Many more households than the national average were not owned by residents (43%, compared with 31% nationally), probably because of the air force at Ohakea, which has government-owned housing. The proportion of one-person households was about average (24% compared with 23% nationally), but this proportion was increasing rapidly.
Income	Household income had increased quickly in the higher income brackets when compared to the national average, but the 2006 median income was still at \$42,700, 17% below the national median level (\$51,400). In 2006, 29% of households earned less than \$30,000 a year, compared with 25% nationally. The proportion of people who earned over \$70,000 rose significantly, from just 5% in 1996 to 17% (compared with 29% nationally). Personal income had followed the same pattern of increase, and the 2006 personal median income of \$24,700 was 1% above the national median of \$24,400.
Stability and diversity	The proportion of Europeans had dropped from 87% in 2001 to 71% (compared with 68% nationally) and 22% for Māori (national average 15%). In 2006, 35% of residents were living in the same house as five years previously, 28% had been in residence less than a year (higher than national average of 23%), and 23% for more than 10 years. Eighty-eight percent of residents were New Zealand born (compared with 73% nationally).
Welfare dependency	Twenty-nine percent of households received income from government support schemes (excluding superannuation), similar to the 28% national average. Median weekly rents had doubled to \$111 since 1996, but were still well under the national median of \$201.
Access to vehicles and means of travel to work	Ownership of vehicles overall was very similar to the national averages, with 52% of households having access to two or more motor vehicles, and 7% of households without access to a motor vehicle. Households with access to three or more vehicles had doubled, from 7% in 1996 to 14% in 2006. On census day 2006, no one was recorded as taking public transport to work. The proportion of people who drove a vehicle to work had risen slightly since 1996 to 57.3%

Topic	Comments
	(compared with 59.6% nationally), and 5.6% were a passenger in a vehicle, which was similar to 1996 levels and the national average of 4.6%. The proportion of people who walked or biked to work was down from 20% in 1996 to 13.9%, but this was still high compared with 7.2% nationally. Around 4% of residents worked from home in 2006 (8% nationally), which was the same as in 1996.
Communication	The number of residents with no access to telecommunications fell from 5% in 1996 to 3% in 2006 (2% nationally). Access to the internet rose, from 31% of households in 2001 to 53% in 2006. While the rate of increase in internet access was higher than that of New Zealand as a whole, this was still below the national proportion in 2006 (58%).
Employment	Full-time employment had decreased by 4% since 1996, well below the national average of 22%. Part-time employment had increased by 28%, higher than the national average of 20%. Employment did increase between 2001 and 2006, and unemployment fell from 7% in 1996 to 4% in 2006 (from 8% to 5% nationally). The majority of residents worked in government administration and defence (25%, declining), manufacturing (11%, increasing), retail trade (8%, declining), accommodation, cafes and restaurants (7%, stable). The biggest increases were in manufacturing, and property and business services. The total number of residents working was 864, compared with 549 in 2006. The majority of jobs in Bulls were made up of manufacturing (30%, a big increase), accommodation, cafes and restaurants (17%, increasing) and retail (13%, declining). Local jobs had leapt by 41% since 2001 (compared with a national increase of 15%).

4.11 Dannevirke

By road, Dannevirke lies 55 kilometres north-east of Palmerston North and 125 kilometres south-west of Napier. It is situated on terraces in the upper valley of the Manawatū River, with the Ruahine Ranges to the west and a broken chain of hills to the east. State Highway 2 and the Napier-Palmerston North railway both pass through the town (although there is no railway station). At the time of this research, Dannevirke was serviced by the Intercity and Bay Xpress buses. In the 2006 census, its 'usually resident' population was 5520.

In 2006, more than half (54%) of **the town's** workforce was employed in Dannevirke (down from 60% in 1996), and 14% worked in the large surrounding rural areas of Norsewood/Herbertville and Papatawa. Palmerston North City employed just 2% of workers living in Dannevirke. Very few residents travelled north to Waipukurau and **Hawke's** Bay for work. Of those working in Dannevirke, the majority (66%) were local residents (down from 71% in 1996). A quarter came from the surrounding rural areas of Norsewood/Herbertville and Papatawa, 5% came from further south (eg Woodville 2%, Palmerston North 2% and Pahiatua 1%) and just 1% from the north (eg **Hawke's** Bay).

Table 4.10 Dannevirke census data

Topic	Comments
Population, households and growth	The population was static or slowly increasing, with an increase of 3% between 2001 and 2006 (compared with the national average of 8% growth) and no change between 1996 and 2006. The number of households had increased slightly since 2001, by 3%. The average number of household members had fallen from 2.6 in 1996 to 2.5 (national average 2.7). Unoccupied dwellings were below the national average (10%), at 8% of total dwellings.
Age	Males made up a low 47% of the population. The age-group profile showed a similar proportion of people aged under 20 (31%) to the

Topic	Comments
	national average (29%), with an ageing population. Nineteen percent of the population was aged 65 plus (compared with 12% nationally), and therefore there were fewer working-age people (50%, compared with the national average of 59%).
Household composition	The proportion of households that were not owned by residents was similar to the national average (31%). More households were likely to be one-person households (31%, compared with 23% nationally).
Income	Household income was low, even though it had grown faster than the national average since 1996. The 2006 median (\$36,500) was 29% below the national median level (\$51,400). A high 34% of households earned less than \$30,000 per year, compared with 25% nationally (a marked improvement on the figure of 49% in 1996), and 14% earned over \$70,000, compared with 29% nationally. Since 1996, personal income had also increased faster than the national average, although the 2006 personal median income, at \$20,900, was still 14% below the national median of \$24,400.
Stability and diversity	The proportion of Europeans (70%) was similar to the national average (68%), and there were substantially more Māori (27%, compared with 15% nationally). In 2006, 39% of residents were living in the same house as five years previously, 22% had been in residence less than a year (similar to the national average), and 28% for more than 10 years (higher than the 23% nationally). Eighty-seven percent of residents were New Zealand born (compared with 73% nationally).
Welfare dependency	Thirty-three percent of households received income from government support schemes (excluding superannuation), which was higher than the national average (28%). Median weekly rents had increased by \$38 since 1996 to \$138, which was low compared with the national median of \$201.
Access to vehicles and means of travel to work	Ownership of vehicles overall was lower than the national averages, with 43% of households having access to two or more motor vehicles (52% nationally), and 11% of households (down from 17% in 1996) not having access to a motor vehicle (8% nationally). On census day 2006, six people were recorded as taking public transport to work, up from 0 in 1996. The proportion of people who drove a vehicle to work was 58.9% (compared with 59.6% nationally), and 7.6% were a passenger in a vehicle (higher than the national average of 4.6%). These proportions were similar to 1996 levels. Ten percent walked or biked to work (down from 16.4% in 1996) compared with 7.2% nationally. Around 4% of residents worked from home (8% nationally).
Communication	The number of residents with no access to telecommunications fell from 8% in 1996 to 4% in 2006 (nationally 2%). Access to the internet rose, from just 19% of households in 2001 to 41% in 2006. While the rate of increase in internet access was very high compared with New Zealand as a whole, this was still well below the national proportion in 2006 (58%).
Employment	Full-time employment had increased by 12% since 1996 (compared with 22% nationally), and 13% since 2001. Part-time employment had increased by 22% (20% nationally). Unemployment had fallen from 8% in 1996 to 5%, which was the same as the national trend. The majority of working residents worked in manufacturing (25%, increasing), retail trade (15%, increasing), agriculture, forestry and fishing (9%, static) and health and community services (8%, increasing). The biggest increases were in manufacturing, retail trade, property and business services, and construction. The total number of residents working was 2499, with 2064 recorded as working in Dannevirke. The majority of jobs in Dannevirke were made up of retail trade (22%, increasing), manufacturing (22%, increasing), and health and community services (12%, increasing). Local jobs had increased by 11% since 2001 (compared with a national increase of 15%).

4.12 Feilding

Feilding is located 7.5 kilometres east of the main highway, State Highway 3, and is 19 kilometres north of Palmerston North via State Highway 54. Its neighbours include Bulls at its north-west, Palmerston North at its south, and Woodville at its south-east. At the time of this research, it was serviced several times a day by buses into Palmerston North. The Overlander train also stopped in the town. In the 2006 census, **Feilding's** 'usually resident' population was 10,062, with slightly higher proportions of under-20-year-olds and over-65-year-olds than the national averages.

In 2006 only a third of working residents worked in Feilding (down from 39% in 1996), and 29% travelled to Palmerston North City (a trend that was strongly increasing). No other work destination drew more than 4% of Feilding residents, and the total for the combined surrounding rural areas was 9%. Two percent went to other regions, probably Wellington. Of those working in Feilding, a high 62% were local residents, with 13% coming from surrounding rural areas. Twelve per cent came from Palmerston North (a figure that was increasing), but far more workers travelled from Feilding to Palmerston North than the reverse. Very few workers came to Feilding from the south (eg Levin, Foxton and rural areas).

Table 4.11 Feilding census data

Topic	Comments
Population, households and growth	The population was slowly growing, with a 2% increase since 2001 (compared with the national average of 8% growth) but a decrease of 1% between 1996 and 2001. The number of households had increased 6% since 2001, resulting in the average number of household members falling from 2.6 in 1996 to 2.5 in 2006 (national average 2.7). Unoccupied dwellings were well below the national average (10%) at 5% of total dwellings.
Age	Males made up 48% of the population. The age-group profile was slightly younger than the national average, with 24% of people aged 5-19 years (22% nationally). The proportion of children under 5 years, at 7%, was the same as the national average. The proportion of older people (65 years plus) was increasing substantially, and at 17% was higher than the national average of 12%.
Household composition	Fewer households than the national average were not owned by residents (27%, compared with 31% nationally). More households were likely to be one-person households (27%, compared with 23% nationally), and this proportion was increasing.
Income	Household income had increased faster than the national rate, but the median (\$39,500) was still 23% below the national median level (\$51,400). In 2006, 33% of households earned less than \$30,000 per year, compared with 25% nationally. A low 19% earned over \$70,000, compared with 29% nationally. Personal income had also increased faster than the national rate, although the 2006 personal median income of \$21,100 was still 14% below the national median of \$24,400.
Stability and diversity	The proportion of Europeans (77%, down from 90% in 2001) was more than the national average of 68%, and the proportion of Māori was 13%, similar to the national average. In 2006, 39% of residents were living in the same house as five years previously, 23% had been in residence less than a year, and 26% for more than 10 years. This was similar to New Zealand averages. Eighty-eight percent of residents were New Zealand born (compared with 73% nationally).
Welfare dependency	Thirty-two percent of households received income from government support schemes (excluding superannuation), which was higher than the national average (28%). Median weekly rents had increased by \$37 since 1996, to \$163, below the national median of \$201.

Topic	Comments
Access to vehicles and means of travel to work	<p>Ownership of vehicles was lower than the national averages, with 9% of households not having access to a motor vehicle (8% nationally), and less than half (47%) of households having access to two or more motor vehicles (52% nationally).</p> <p>On census day 2006, 36 people were recorded as taking public transport (bus) to work, down from 51 in 1996. The proportion of people who drove a vehicle to work was 64.9%, the same as in 1996, and higher than the 2006 national average of 59.6%. Five percent were a passenger in a vehicle, while 7% walked or biked (down from 9.6% in 1996). Around 4% of residents worked from home (8% nationally).</p>
Communication	<p>The number of residents with no access to telecommunications fell from 5% in 1996 to 2% in 2006 (nationally 2%).</p> <p>Access to the internet rose, from 28% of households in 2001 to 51% in 2006. While the rate of increase in internet access was higher than that of New Zealand as a whole, this was still below the national proportion 2006 (58%).</p>
Employment	<p>Full-time employment had increased by 12% since 1996, and by 16% since 2001. Part-time employment had increased at about the same rate (11%). These increases were below the national averages (22% and 20%). Unemployment had fallen from 8% in 1996 to 5%, which was the same as the national trend.</p> <p>The majority of residents worked in retail (15%, declining), manufacturing (15%, declining), health and community services (11%, increasing), construction (8%, increasing) and property and business services (8%, stable). The biggest increases were in accommodation, cafes and restaurants, health and community services, property and business services, and construction. The total number of residents working was 6420, with just 3270 recorded as working in Feilding. Jobs in Feilding consisted of retail (22%, static), manufacturing (12%, increasing), health and community services (11%, declining), and property and business services (10%, increasing). Local jobs had increased by 7% since 2001 (compared with a national increase of 15%).</p>

4.13 Pahiatua

Pahiatua is set in the valley drained by the Mangatainoka River and Mangaramarama Creek, with the Puketoi Range to the east. It is located on State Highway 2, 165 kilometres north-east of Wellington and 167 kilometres south-west of Napier, and it is linked to Palmerston North (in the north-west) by the 37-kilometre Pahiatua Track, which winds over the foothills of the Tararua Ranges. Although town planners designed Pahiatua with the Wairarapa railway passing through its centre, the plans changed and instead, the rail route lies to the west, and there is no local train station. Its 2006 population was 2562, with a high proportion of over-65-year-olds and a correspondingly low proportion of 20-65-year-olds, compared with the general population of New Zealand.

Pahiatua's economy revolves around dairying, mixed farming, fat-lamb production, milk processing, clothing manufacture and engineering. In 2006, half of working residents worked in Pahiatua (slightly down on 54% in 1996), 11% worked in the surrounding rural area of Mangatainoka, and 7% travelled to Palmerston North City. While very few workers travelled north to places such as Woodville and Dannevirke, 4% travelled to other regions, probably Masterton. Of those working in Pahiatua/Mangatainoka, 59% were local residents (down from 67% in 1996). Nearly a fifth (18%) came from the surrounding rural area, 5% came from the south (eg Eketahuna and Nireaha-Tiraumea), and 8% from the north (eg Papatawa, Woodville and Dannevirke). Four per cent came from Palmerston North to work, and 3% came from other regions, possibly Masterton.

Table 4.12 Pahiatua census data

Topic	Comments
Population, households and growth	The population was slowly declining, with a decrease of 2% since 2001 (compared with the national average of 8% growth) and a decline of 5% between 1996 and 2006. The number of households had increased slightly (2%). The average number of household members had fallen from 2.5 in 1996 to 2.4 in 2006 (national average 2.7). Unoccupied dwellings were lower than the national average (10%), at 7% of total dwellings.
Age	Males made up a low 47% of the population. The age-group profile showed a similar proportion of people aged under 20 as the national average (29%), and the population was ageing - there were more older people aged 65 plus (18%, compared with the national average of 12%), and therefore fewer working-age people (51%, compared with the national average of 59%).
Household composition	Fewer households than the national average were not owned by residents (28%, compared with 31% nationally). More households were likely to be one-person households (30% compared with 23% nationally), and this proportion was increasing rapidly.
Income	Household income was low, and between 2001 and 2006 it grew by just under the national average rate. The 2006 median (\$36,200) was 30% below the national median level (\$51,400). A large 37% of households earned less than \$30,000 per year (compared with 25% nationally), and 17% earned over \$70,000, compared with 29% nationally. Personal income had also increased by less than the national average, with the 2006 personal median income of \$19,300 still 21% below the national median of \$24,400.
Stability and diversity	The ethnic mix was more European (78%) and more Māori (20%) than the national averages of 68% and 15%. In 2006, 39% of residents were living in the same house as five years previously, 23% had been in residence less than a year, and 26% for more than 10 years. This was similar to the national averages. Ninety percent of residents were New Zealand born (compared with 73% nationally).
Welfare dependency	Thirty-two percent of households received income from government support schemes (excluding superannuation), higher than the national average (28%). Median weekly rents had increased by just \$11 since 1996 to \$121, which was very low compared with the national median of \$201.
Access to vehicles and means of travel to work	Ownership of vehicles overall was lower than the national averages, with 45% of households having access to two or more motor vehicles (52% nationally) and 10% of households not having access to a motor vehicle (8% nationally). On census day 2006, no one was recorded as taking public transport to work, down from 6 in 1996. A low 55.5% drove a vehicle to work (compared with 59.6% nationally), and 4.2% were a passenger in a vehicle - similar to 1996 levels. A high 14.4% walked or biked (compared with 7.2% nationally), although this was down from 17.8% in 1996. Around 7% of residents worked from home (8% nationally).
Communication	The number of residents with no access to telecommunications fell from 5% in 1996 to 4% in 2006 (nationally 2%). Access to the internet rose, from just 21% of households in 2001 to 42% in 2006. While the rate of increase in internet access was very high, compared with New Zealand as a whole, this was still well below the national proportion in 2006 (58%).
Employment	Full-time employment had increased by 10% since 1996 (7% since 2001) and part-time employment had increased by 7%. These increases were below the national averages (22% and 20%). Unemployment had fallen from 6% in 1996 to 4% in 2006 (from 8% to 5% nationally). The majority of working residents worked in retail trade (15%, increasing), agriculture, forestry and fishing (14%, increasing), manufacturing (12%, declining), property and business services (8%, increasing), and education (8%, static). The biggest increases were in

Topic	Comments
	agriculture, forestry and fishing, retail trade and property and business services. The total number of residents working was 1293, with 1074 people recorded as working in Pahiatua. The majority of jobs in Pahiatua were made up of retail trade (24%, increasing), manufacturing (11%, declining), education (11%, slight decline) and health and community services (11%, slight decline). Local jobs had increased by 5% since 2001 (compared with a national increase of 15%).

4.14 Foxton

By road, Foxton is located 39 kilometres south-west of Palmerston North and 114 kilometres north-east of Wellington. It is six **kilometres inland from its 'sister' town, the coastal settlement of Foxton Beach**, which is situated near the mouth of the Manawatū River on the North Island's west coast. Foxton lies on the northern bank of the Manawatū River, surrounded by a flat alluvial plain, with State Highway 1 passing through from south to north. The nearest railway station is 19 kilometres south, in Levin, and apart from a once-weekly bus to and from Foxton Beach, at the time of this research the town was not serviced by any inter-**city bus services. Foxton's 2006 population** (including Foxton Beach) was 4446.

The town's major employment sources were a chicken plant and dairy and sheep farming. In 2006, wool carpet manufacturer Feltex (a recent industry) collapsed and the plant closed.

In 2006, 60% of working Foxton residents travelled outside of Foxton to work, up from 51% in 1996 – 15% travelled to Palmerston North (strongly increasing), 9% to Levin, and 4% of working residents went to other regions to work, probably Wellington. Of those working in Foxton, a high 66% were local residents, with 14% coming from surrounding rural areas, 8% from Levin (strongly increasing), and 5% from Palmerston North. Very few workers came from other towns.

Table 4.13 Foxton census data

Topic	Comments
Population, households and growth	The population was declining, with a 4% decrease since 2001 (compared with the national average of 8% growth) and a substantial decline of 7% between 1996 and 2006. The number of households had declined slightly since 2001, but overall had increased by 1% since 1996. The average number of household members fell from 2.4 in 1996 to just 2.2 (national average 2.7). Unoccupied dwellings were well above the national average (10%), at 25% of total dwellings.
Age	Males made up 48% of the population. The age-group profile showed a much older population than the national average. While the proportion of people aged under 20 years (27%) was only a little below the national average (29%), there were substantially more people aged 65 plus (22%) than the national average (12%), and fewer working-age people (51%, compared with the national average of 59%). These proportions had been reasonably steady since 1996.
Household composition	The number of households that were not owned by residents was close to the national average (30%, compared with 31% nationally). More households were likely to be one-person households (33% compared with 23% nationally), and this proportion was increasing.
Income	Household income was still very low, despite large increases in household income levels. The 2006 median (\$26,900) was a very large 48% below the national median level (\$51,400). A huge 45% of households earned less than \$30,000 per year, compared with 25% nationally. Just 11% earned over \$70,000, compared with 29% nationally. Personal income at the middle and upper income levels had also increased faster than the national average, but the 2006 personal median income, at \$17,100, was still 30% below

Topic	Comments
	the national median of \$24,400.
Stability and diversity	The ethnic mix was more European (75%) and substantially more Māori (26%) than the national averages of 68% and 15%. In 2006, 36% of residents were living in the same house as five years previously, 24% had been in residence less than a year, and 26% for more than 10 years. Eighty-seven percent of residents were New Zealand born (compared with 73% nationally).
Welfare dependency	Forty percent of households received income from government support schemes (excluding superannuation), which was much higher than the 28% national average, but well down from 47% in 2001. Median weekly rents had increased by \$33 since 1996 to \$133, which was low compared with the national median of \$201.
Access to vehicles and means of travel to work	Ownership of vehicles overall was lower than the national averages, with fewer than half (41%) of households having access to two or more motor vehicles (52% nationally), and 10% of households not having access to a motor vehicle (8% nationally). On census day 2006, 18 people were recorded as taking public transport to work (bus 15, train 3), up from 6 in 1996. The proportion of people who drove a vehicle to work had risen from 55.8% in 1996 to 60% (compared with 59.6% nationally), and 5.3% were a passenger in a vehicle. The proportion of people who walked or biked to work was down from 13.3% in 1996 to 9.5% (compared with 7.2% nationally). Around 5% of residents worked from home (8% nationally). This was well down from 8% in 1996.
Communication	The number of residents with no access to telecommunications fell from 12% in 1996 to 4% in 2006 (nationally 2%). Access to the internet rose, from just 16% of households in 2001 to 39% in 2006. While the rate of increase in internet access was very high, compared with New Zealand as a whole, this was still well below the national proportion in 2006 (58%).
Employment	Full-time employment had increased by 22% since 1996 (up 24% since 2001), and part-time employment had increased by 15%. These increases were close to the national averages of 22% and 20%. Unemployment had fallen from 14% in 1996 to 8% in 2006 (from 8% to 5% nationally). The majority of working residents worked in manufacturing (16%, static), retail trade (13%, increasing), agriculture, forestry and fishing (9%, increasing), health and community services (9%, a small increase) and construction (7%, increasing). The biggest increases were in property and business services, agriculture, forestry and fishing, and construction. The total number of residents working was 1737, with 1062 recorded as working in Foxton. The majority of jobs in Foxton were made up of manufacturing (18%, increasing), retail (17%, increasing), agriculture, forestry and fishing (12%, increasing) and education (12%, increasing). Local jobs had increased by 13% since 2001 (compared with a national increase of 15%).

4.15 Shannon

Shannon lies about 3 kilometres south-east of the Manawatū River, on the flat land of the Manawatū Plain, approximately 20 kilometres east of the North Island's west coast. By road it is about 17 kilometres south-east of Foxton, and via State Highway 57 it is 16 kilometres north-east of Levin, and 33 kilometres south-west of Palmerston North. At the time of this research, Shannon was serviced by the Capital Connection commuter train between Palmerston North and Wellington, as well as by the Overlander train between Wellington and Auckland, and by InterCity buses. At the 2006 census, its population was 1371. The town had a much higher proportion of Māori (42%) than the national average of 15%, because of the rehousing of a number of casual Māori workers in Shannon in the 1950s and

1960s. Like most of the towns in this study, Shannon had a lower proportion of working-age people and a higher proportion of over-65-year-olds than the New Zealand average. It also had a declining number of children under five years old.

A number of manufacturing industries were established in Shannon in the 1960s, but by the late 1980s **only one remained**. The region's main industries are dairy, sheep, and mixed farming, and Shannon operates as a servicing and distribution centre. Its largest employer is the Richmond Fellmongery, and the town is also known for Owlcatraz, an educational park.

Most working residents in Shannon travelled to other areas for work, with just 22% working in Shannon (down from 30% in 1996). Over a quarter (27%) of working residents travelled south to Levin (16%, strongly increasing), Mangaore-Manukau (9%) and Waiopahu (2%), with 14% going north to Palmerston North City (13%) and Opiki (1%). Four percent went to Foxton, while 6% went to other regions, probably Wellington. Of those working in Shannon, a high 67% were local residents. A fifth (21%) came from the south (eg Levin 12%, Mangaore-Manukau (7%) and Waiopahu (2%), and very few came from the north (Palmerston North). Numbers travelling into Shannon for work were low.

Table 4.14 Shannon census data

Topic	Comments
Population, households and growth	The population was declining, with a 3% decrease since 2001 (compared with the national average of 8% growth) and an overall decline of 5% between 1996 and 2006. The number of households had declined by 2% since 2001. The average number of household members fell from 2.7 in 1996 to 2.6 (national average 2.7). Unoccupied dwellings were about the same as the national average, at 10% of total dwellings.
Age	The age-group profile showed a large school-age population, with people aged 5–19 years making up 27% of the population (compared with 22% nationally). There were more people aged 65 plus (14%, compared with 12% nationally) and therefore fewer working-age people (52%, compared with the national average of 59%). The number of children under 5 years was falling rapidly.
Household composition	The number of households that were not owned by residents was lower than the national average (28% compared with 31% nationally). More households were likely to be one-person households (28% compared with 23% nationally), and this proportion was increasing.
Income	Household income was very low and grew by less than the national average. The 2006 median (\$24,900) was a very large 52% below the national median level (\$51,400). A huge 43% of households earned less than \$30,000 per year, compared with 25% nationally. Just 8% earned over \$70,000, compared with 29% nationally. Personal income had increased faster than the national average, but the 2006 personal median income, at \$16,400, was still 33% below the national median of \$24,400.
Stability and diversity	The proportion of Europeans (67%) was about the same as the national average, but there were substantially more Māori (42%, compared with 15% nationally). In 2006, 44% of residents were living in the same house as five years previously, 18% had been in residence less than a year, and 29% for more than 10 years. Residents in Shannon were less mobile (tended to stay in the same house) than the national average. Eighty-nine percent of residents were New Zealand born (compared with 73% nationally).
Welfare dependency	Fifty-three percent of households received income from government support schemes (excluding superannuation), which was much higher than the 28% national average, but down from 59% in 2001. This explains the very low income levels. Median weekly rents had increased by just \$20 since 1996 to \$120, which was very low compared with the national median of \$201.
Access to vehicles	Ownership of vehicles overall was lower than the national averages, with 43% of households

Topic	Comments
and means of travel to work	<p>having access to two or more motor vehicles (52% nationally), and 12% of households not having access to a motor vehicle (8% nationally).</p> <p>On census day 2006, six people were recorded as taking public transport to work. The proportion of people who drove a vehicle to work had risen from 57.8% in 1996 to 62.3% (compared with 59.6% nationally). The proportion of people who travelled as a passenger in a vehicle dropped from 9.5% in 1996 to 5.9% in 2006, and the number who walked or biked was down from 11.6% in 1996 to 7.1% (compared with 7.2% nationally). Around 5% of residents worked from home (8% nationally).</p>
Communication	<p>The number of residents with no access to telecommunications fell from 13% in 1996 to 4% in 2006 (nationally 2%).</p> <p>Access to the internet rose, from just 18% of households in 2001 to 39% in 2006. While the rate of increase in internet access was very high compared with New Zealand as a whole, this was still well below the national proportion in 2006 (58%).</p>
Employment	<p>Full-time employment had increased by 20% since 1996 (up 11% since 2001), which was close to the national average of 22%. Part-time employment had remained static, well down on the national average of 20%. Unemployment was still high at 11% in 2006, only slightly down from 13% in 1996 (compared with a reduction from 8% to 5% nationally).</p> <p>The majority of working residents worked in manufacturing (19%, declining), retail trade (11%, increasing), agriculture, forestry and fishing (11%, static), health and community services (7%, static) and wholesale trade (7%, increasing). The biggest increases were in wholesale and retail trade. The total number of residents working was 513, with 168 people recorded as working in Shannon. The majority of jobs in Shannon were made up of retail (20%, increasing), wholesale trade (14%, increasing) and education (14%, declining). Local jobs had decreased by 11% since 2001 (compared with a national increase of 15%).</p>

4.16 Levin

Levin is located 50 kilometres south-west of Palmerston North and 95 kilometres north of Wellington, near the intersection of State Highways 1 and 57. It lies at the foot of the Tararua Ranges, with the Manawatū River to the north and the Ōhau River to the south, and is about 12 kilometres inland from **the North Island's west coast. Its 2006 urban population (including Waitāre and Hōkio)** was 18,549, making it the largest town in the Horowhenua district. It had a much higher proportion of people over 65 years than the national average (24% compared with 12%), with a correspondingly lower proportion of working-age people (47% compared with 59%). The proportion of people under 20 years was 29%, similar to the national average. At the time of this research, its residents had access to the Overlander and Capital Connection trains, InterCity and Naked Buses, as well as commuter buses into Palmerston North. In March 2009, it was announced that State Highway 1 between Levin and Wellington was one of **the seven 'roads of national significance'** that would enter an accelerated programme to reduce congestion, improve safety and support economic growth.

Among its important manufacturing industries were clothing and textiles and the town was hard-hit in the 1980s when the government lifted protectionist tariffs on many products, including imported clothing. At the same time, public sector employment that had boosted the local economy diminished with the policy of deinstitutionalisation that led to the downsizing and eventual closure of local health, education and social welfare facilities. The former Kimberley Hospital and Training School, which provided psychopaedic training and residential care, had a population of more than 700 in the late 1970s. More recently, **Levin's economy has improved, and the manufacturing industry remains** important to the town. The Carter Holt Harvey packaging plant is the largest employer, and the town is also well known for its clothing factory outlet shops.

Fifty-seven percent of working residents stayed in Levin for work, down from 65% in 1996. Palmerston North City was an increasingly popular work destination, accounting for 4% of workers living in Levin. Five percent went to work in the surrounding rural areas, while 7% went to other regions, probably Wellington. Of those working in Levin, a high 65% were local residents (down from 73% in 1996). Twenty percent came from the surrounding rural areas (up from 15% in 1996), reflecting the expansion of rural residential development since then. There had also been an increase in the number of people coming from Palmerston North to work, but the proportion remained low at 2%. Foxton, Shannon and Waitāre were each a source of 2–3% of workers in Levin.

Table 4.15 Levin census data

Topic	Comments
Population, households and growth	The population was static, with no change since 2001 (compared with the national average of 8% growth) and an overall decline of 1% between 1996 and 2006. The number of households had gradually increased (by 4%) since 2001. The average number of household members fell from 2.5 in 1996 to a low 2.3 in 2006 (national average 2.7). Unoccupied dwellings were lower than the national average (10%), at 7% of total dwellings.
Age	Males made up a low 46% of the population. The age-group profile showed the same proportion of people aged under 20 (29%) as the national average, and there was a markedly ageing population, with more people aged 65 plus (24%, compared with 12% nationally) and therefore far fewer working-age people (47%, compared with 59% nationally).
Household composition	The number of households that were not owned by residents was lower than the national average (28%, compared with 31% nationally). More households were likely to be one-person households (32% compared with 23% nationally), and this proportion was increasing rapidly.
Income	Even though household income had grown by about the same rate as the rest of New Zealand, it was still very low. The 2006 median (\$29,100) was a large 43% below the national median level (\$51,400). A high 44% of households earned less than \$30,000 a year (compared with 25% nationally), and just 11% earned over \$70,000 (compared with 29% nationally). Personal income had increased by around the same rate as the national average, but the 2006 personal median income, at \$17,400, was still 29% below the national median of \$24,400.
Stability and diversity	The ethnic mix was more European (73%) and more Māori (21%) than the national averages of 68% and 15%. In 2006, 37% of residents were living in the same house as five years previously, 23% had been in residence less than a year, and 24% for more than 10 years. This was very similar to the national averages. Eighty-two percent of residents were New Zealand born (compared with 73% nationally).
Welfare dependency	Thirty-seven percent of households received income from government support schemes (excluding superannuation), which was much higher than the 28% national average. Median weekly rents had increased by just \$28 since 1996 to \$153, which was low compared with the national median of \$201.
Access to vehicles and means of travel to work	Ownership of vehicles overall was much lower than the national averages, with only 35% of households having access to two or more motor vehicles (52% nationally) and 13% of households not having access to a motor vehicle (8% nationally). On census day 2006, 36 people were recorded as taking public transport to work (bus 9, train 27), up from 9 in 1996. The proportion of people who drove a vehicle to work was similar to 1996, at 57.4% (compared with 59.6% nationally); 5.5% were a passenger in a vehicle; and the number who walked or biked had dropped from 16.4% in 1996 to 10.9% (compared with 7.2% nationally). Around 5% of residents worked from home (8% nationally).

Topic	Comments
Communication	<p>The number of residents with no access to telecommunications fell from 6% in 1996 to 2% in 2006 (the same as the national level).</p> <p>Access to the internet rose, from just 21% of households in 2001 to 41% in 2006. While the rate of increase in internet access was very high compared with New Zealand as a whole, this was still well below the national proportion in 2006 (58%).</p>
Employment	<p>Full-time employment was up 6% since 2001, and had increased by 4% since 1996. Part-time employment had increased by 13%. These increases were below the national averages of 22% and 20%. Unemployment was down from 9% in 1996 to 7% in 2006 (from 8% to 5% nationally).</p> <p>The majority of working residents worked in manufacturing (15%, declining), retail trade (15%, static), health and community services (13%, declining) and construction (8%, increasing). The biggest increases were in construction and education. The total number of residents working was 6036, with 5268 recorded as working in Levin. The majority of jobs in Levin were made up of manufacturing (20%, static), retail trade (18%, slight decline) and health and community services (13%, slight increase). Local jobs had increased by 5% since 2001 (compared with a national increase of 15%).</p>

4.17 Conclusion

The settlements described in this chapter were representative of a range of social and economic processes occurring in non-metropolitan regions of New Zealand at the time of this research. There were pockets of population growth, but most settlements showed a slow population decline (and in a few cases, a rapid decline). In the past, local economies had often been strong and some were still proving surprisingly resilient. Such areas of the country were also attracting and retaining residents for a range of reasons, including historical/traditional family links, affordability, and lifestyle factors (eg being **less crowded and 'busy' than larger urban areas**). Government and private sector industries were choosing to locate in these areas, typically because of land supply (or other natural resources), historical ownership, or location in relation to transport networks. Local manufacturing industries and the agricultural sector were providing a continuing source of income, which sustained the local economy. However, many services were lacking, and residents of these towns were strongly connected to the wider region in which they lived for employment opportunities, education and training, or other services. Transport was vital to economic sustainability for both the community and households/individuals.

In the next chapter, we flesh out the census data by drawing on responses from residents to a short **questionnaire that gathered information about people's travel destinations** and their means of transport, as well as their willingness to use different transport modes, and explore in more detail the reality for residents with different transport needs.

5 Data – self-administered questionnaire

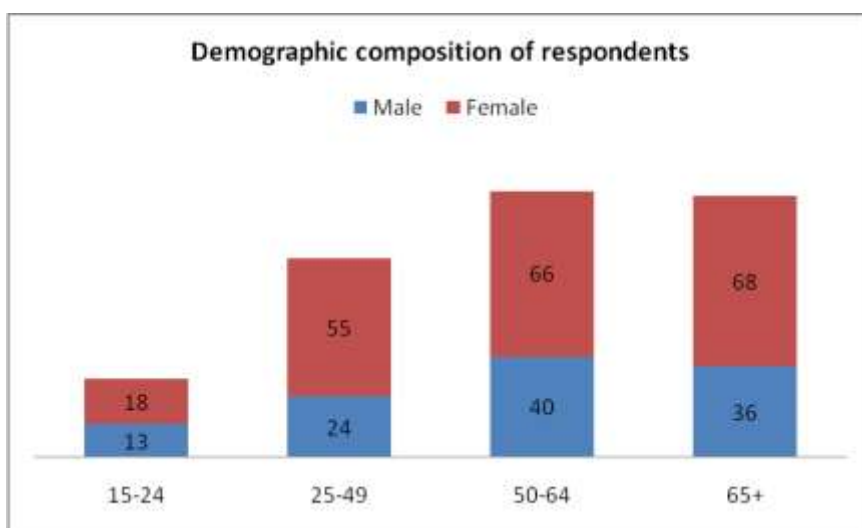
5.1 Introduction

To supplement the **census data analysis**, further data was collected about people's travel behaviour and attitudes via a self-administered questionnaire distributed to almost 1000 residents of a dozen small towns. The format of the questionnaire drew on a survey instrument that was developed by Horizons Regional Council for its research on urban bus services. While respondents were self-selected to some extent, the distribution of the questionnaires sought to ensure a geographic spread and also to achieve responses from key user groups, such as those who had to travel for health services, as well as to reach the working-age population. **The aim of the questionnaire was to identify people's main reasons** for travel and the destination of their travel. A total of 328 completed questionnaires were received back.

5.2 Demographic characteristics of respondents

One-third of the respondents (33.4%) were aged 65 and over, and another third (32.5%) were aged 50–64. Nearly a quarter (24.2%) were aged 25–49, and just under 10% were from the 15–24 age group. Sixty-five percent of respondents were female. Figure 5.1 below shows the age and gender of respondents.

Figure 5.1 Age and gender of respondents



The three main reasons respondents were choosing to live in the area were:

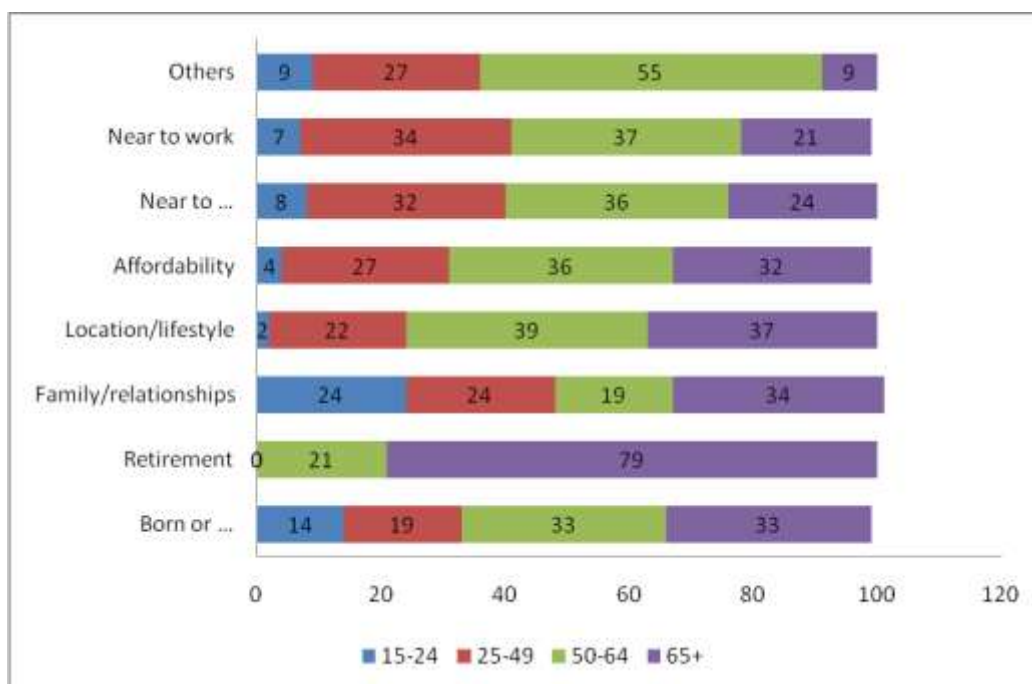
- 1 location or lifestyle (32.1%)
- 2 proximity of the town to their workplace (18.8%)
- 3 affordability (18.4%).

Some lived in the area because of family and relationships (13.6%) and some because they were born and raised in the area (7.2%). Very few were choosing the area because it was near to school and retirement places (5% and 2.8% respectively). Other reasons given included real estate investment,

health, and 'random decision', but the percentage of responses was very small for each of these (2% or less).

Figure 5.2 below shows the age breakdown for the different reasons given for living in the area. For the younger age group, the main reason (mentioned by over 40% of respondents) was family or relationships. This possibly reflected the economic dependence of many young people on their family. For the working-age population (25–64 years), the main reason was proximity to work. This highlighted the economic importance of the towns for paid employment. Location/lifestyle factors were mentioned as the main reason for living in the town by older age groups (36.4% of those aged 50–65).

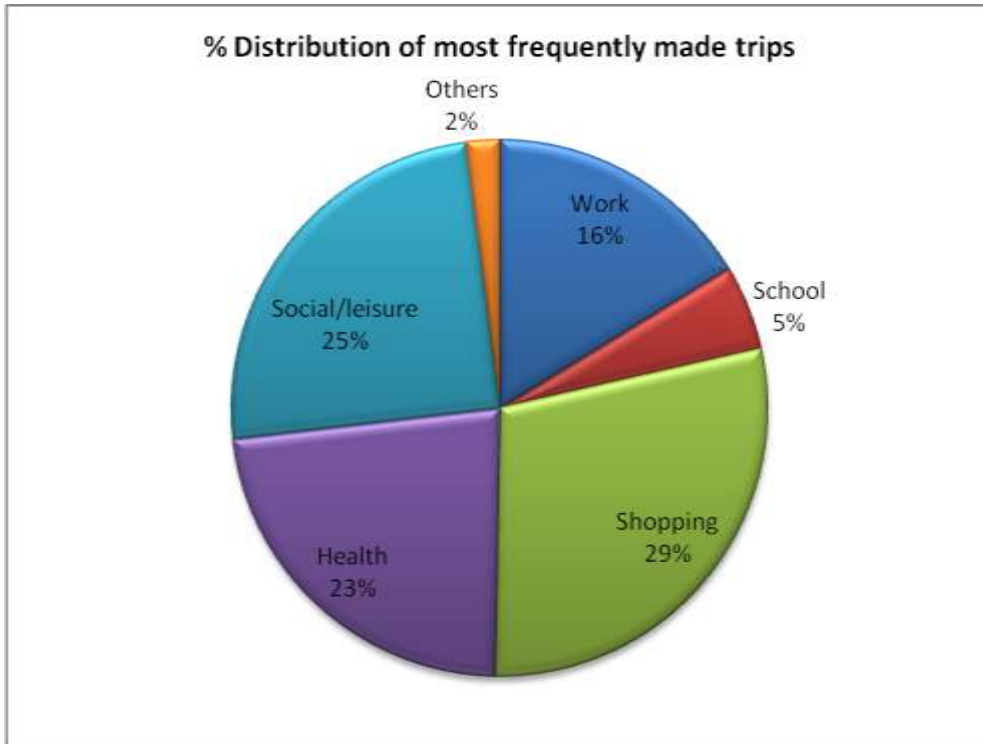
Figure 5.2 Respondents' reasons for choosing to live in the area



5.3 Reasons for travel out of the home town

Shopping was the main reason for trips out of town, mentioned by more than a quarter of respondents (29%), as shown in figure 5.3. The next most common reason was social/leisure activities, which included visiting family and/or friends. This was mentioned by a quarter of respondents (25%). One quarter (25%) of out-of-town trips were for activities such as sports and social gatherings. Just over a fifth of trips (23%) were health related, with just under a fifth (16.3%) being for work. Other trips were related to activities such as business travel, bank/payment transactions, out-of-town trips, library visits, and church attendance, which comprised 2% of responses.

Figure 5.3 Respondents' reasons for trips away from their home town



As shown in figure 5.4 on the next page, while most travel was usually within the home town (37%), there was also a substantial amount of travel out of the town for shopping, social/leisure and other activities.

Figure 5.4 Location of activities for which respondents travelled



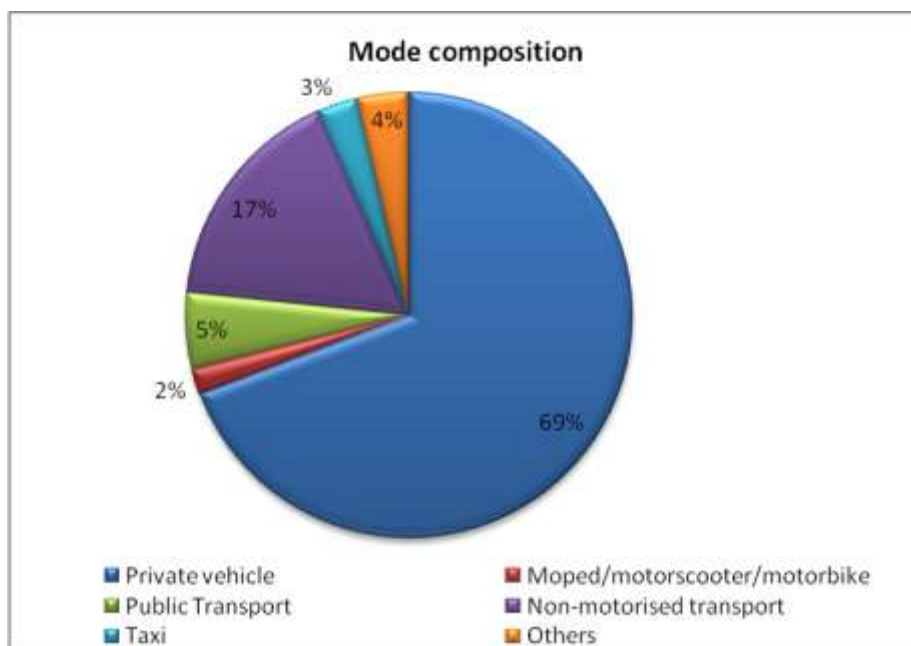
Trips related to work, school and health were usually made within the home town. Other trips, such as for shopping, social/leisure and other activities, were mostly made outside the home town.

Over half (55.4%) of respondents who travelled for work did so within their home town (particularly for respondents from Marton, Feilding, Foxton, Shannon, Levin, Pahiatua and Wanganui). More than a quarter of respondents who travelled for work (28.6%) indicated that they worked at a nearby larger town (53.3% in the case of Eltham). Another 15.5% worked more than 20 kilometres from the home town's boundary, and just 0.6% worked elsewhere in the region/country.

5.4 Mode of transport

When asked what mode of transport they most commonly used for their travel, the majority (69.3%) indicated they used a private vehicle (see figure 5.5 below). Nearly 30% drove alone, while just over 20% travelled with another person. Just over 10% travelled as a passenger in family vehicle, and 7.4% travelled **as a passenger in someone else's vehicle**. Nearly 20% of respondents walked or cycled. Only 5.5% said that they used public transport. Other modes of transport commonly used included taxi (2.9%), health/hospital shuttle, van or bus (1.4%), and company vehicle (0.8%). Skateboarding, mobility scooters, and planes and ferries for out-of town trips represented the remaining 1.5% of responses.

Figure 5.5 Modes of transport most commonly used for respondents' travel



The pattern of distribution of transport mode across age groups was interesting, as the pattern was quite similar for all the groups (see figure 5.6 below). Each group used a private vehicle as the primary mode of transport. Most drove alone, except for the 15–24 age group, who mostly travelled with someone else (this was likely to be an adult with a **full driver's license**, a spouse, or friends). Non-motorised means of transport, such as walking and cycling, were used by a substantial number of respondents, while public transport usage consistently ranked third in all age groups. This was followed by moped/motorscooter/motorbike, modes that were becoming a popular alternative to the car. Those using taxi and hospital vans were mostly aged 65 and over.

Figure 5.6 Modes of tranport most commonly used by each age group

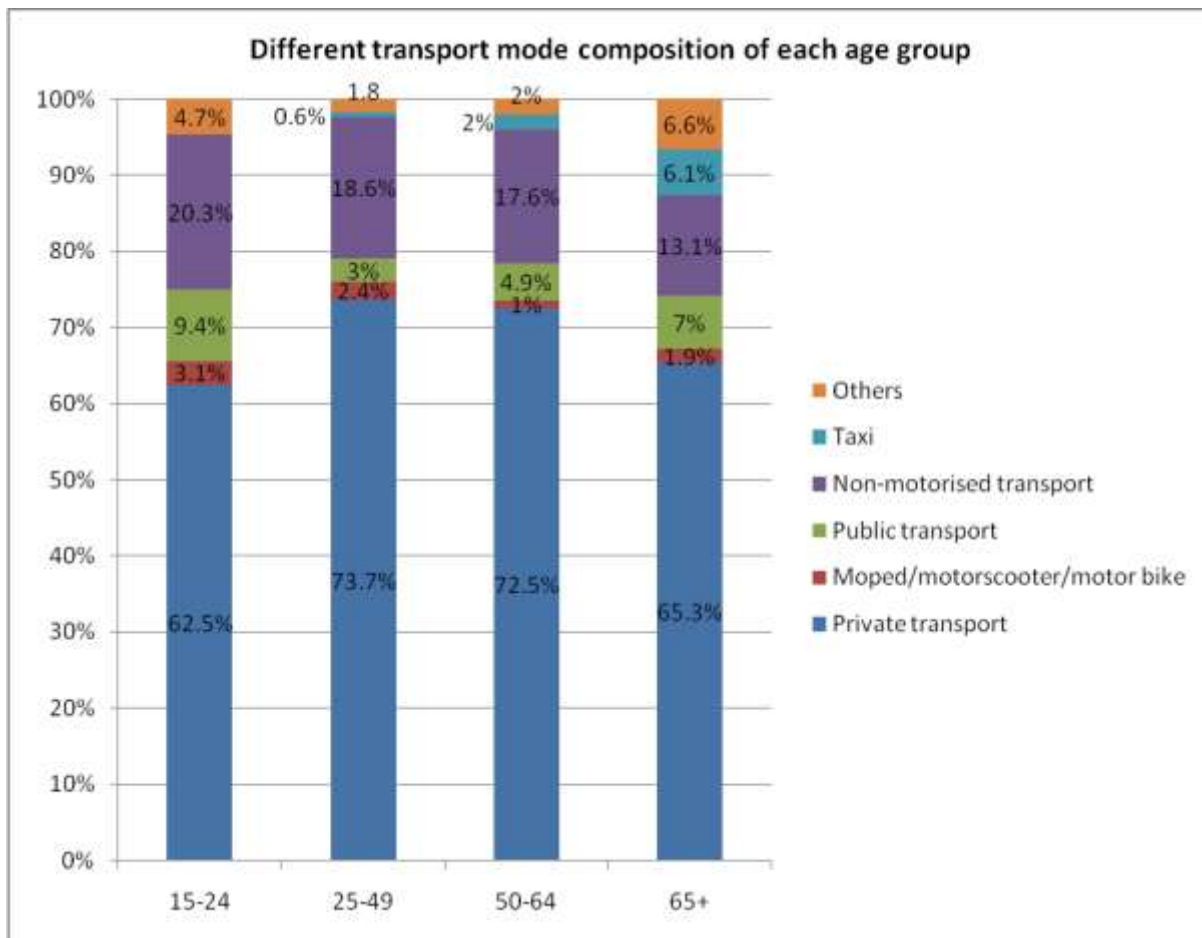
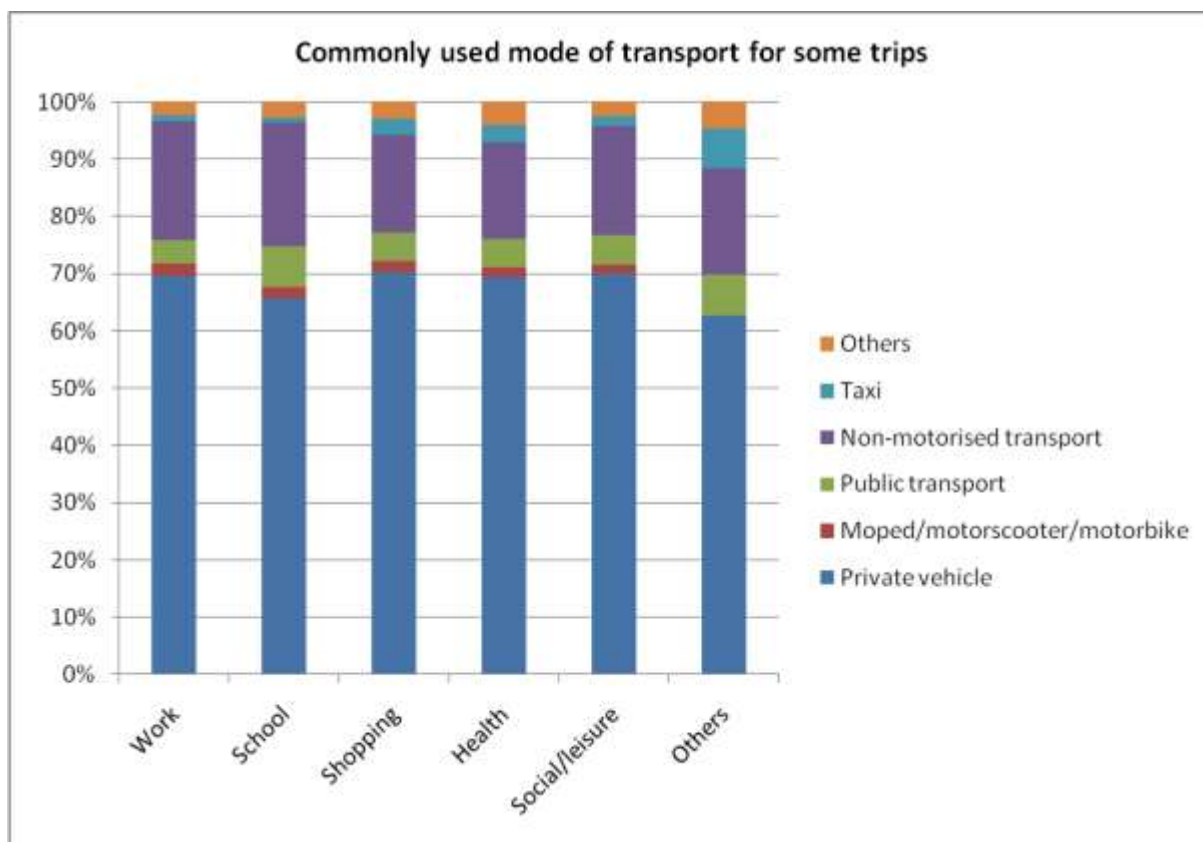


Figure 5.7 on the next page shows the form of transport used for different types of journeys.

Figure 5.7 Respondents' most commonly used mode of transport



5.5 Perceptions of public or shared transport

The questionnaire sought information about people's perceptions of public or shared transport. Under half of respondents (42.2%) indicated they would not consider this mode, while nearly a third (32.6%) said they would. A substantial number (25%) ticked both yes and no, because they would consider it for certain situations but not in others.

As shown in figure 5.8, the majority of the respondents (31.9%) said they would consider using public or shared transport because of savings in cost and time. They gave reasons such as **'It is quicker'** and **'It saves me time and money'**. The next most common reason, mentioned by over a fifth of respondents (21.4%), was a perception that public or shared transport is more environmentally friendly. The prevalence of this factor might reflect a bias amongst those who took the time to respond, as many of them may have been positively disposed towards public transport. The third most commonly mentioned reason (reported by a third of respondents) was personal preference, with respondents making comments such as **'I simply like it'** and **'For social reasons'**. Other respondents, who were favourably disposed towards using public or shared transport, said that they would use it under certain circumstances, such as:

'If I don't drive any more (either because of health or technical issues, such as car problems, loss of license, etc).'

'If petrol prices rise again.'

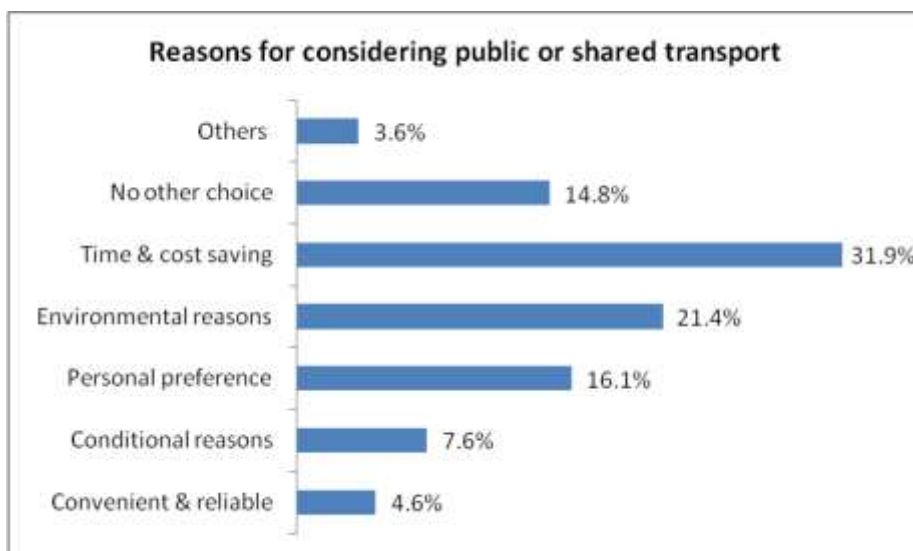
'If it is accessible.'

*'If services run at **appropriate times.**'*

*'If it is **convenient.**'*

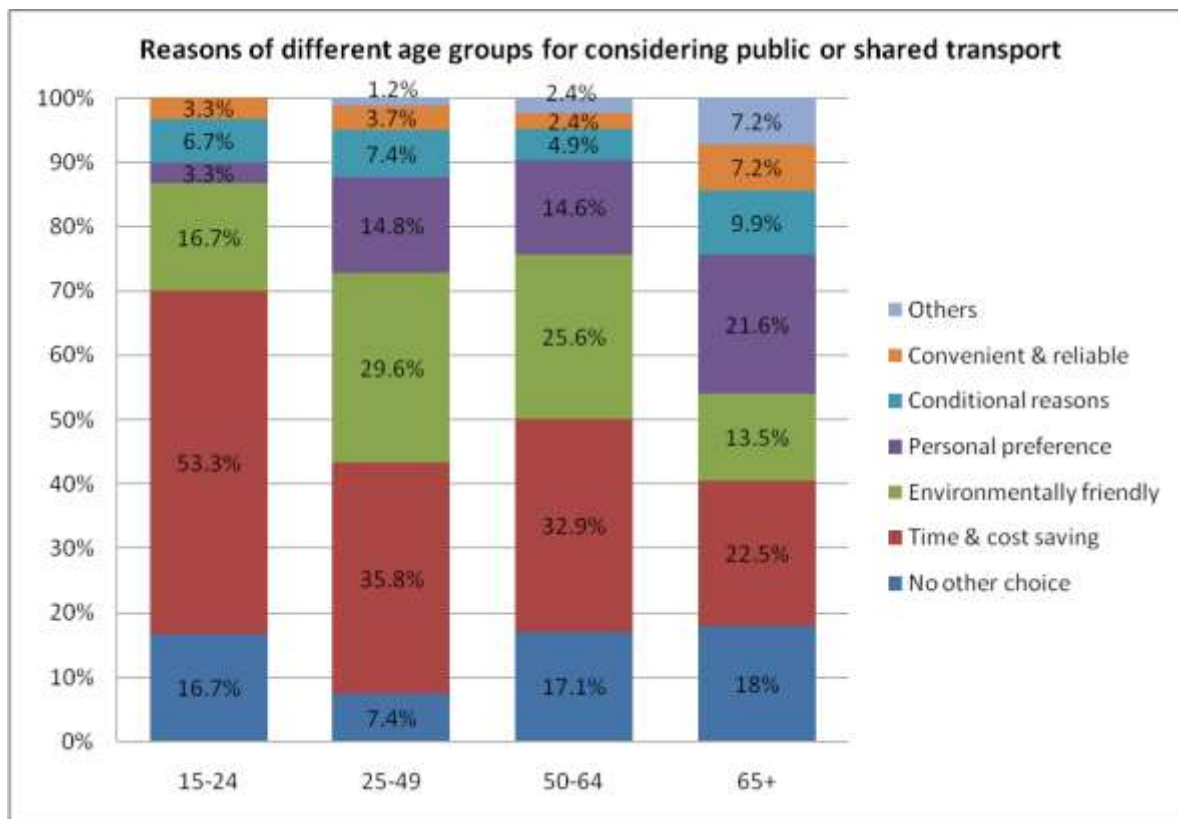
*'If it actually **saves time and money.**'*

Figure 5.8 Reasons for considering the use of public or shared transport



Across all age groups, time and cost saving were the most important factors when using, or considering using, public or shared transport. This was particularly strong in the 15–24 age group, with more than half of the respondents (53.3%) giving this reason. As the age of respondent increased, a combination of factors was more common, with the 25–49 and 50–64 age groups particularly likely to cite environmental reasons. For those aged 65 and over, it was more of a personal preference, but there was also a large proportion within the 50–64 and 65-and-over age groups saying that they had **'no other choice'**. This is a significant point, because access to transport and mobility in the community are often critical factors in maintaining personal dignity.

Figure 5.9 Reasons for considering the use of public or shared transport, by age group



Factors influencing **people's unwillingness to consider using** shared or public transport included accessibility and convenience issues (mentioned by nearly 48.6% of the total responses), such as infrequent services, location of bus stops, and waiting time. This was followed by flexibility issues such as 'travelling outside normal working hours and services are unavailable **then**', while others had 'multiple tasks to complete'. Additional comments from respondents included:

'I like to detour.'

'Have school kids so timing is crucial.'

'I collect pig food from various outlets and I need to shop for my job.'

'Sometimes tricky to fit into your timetable when working.'

'Start times vary. Easier to use own vehicle.'

'Times not suitable to go after work to see doctor.'

'Might do extra hours (and miss the bus) or have to pick something up after work.'

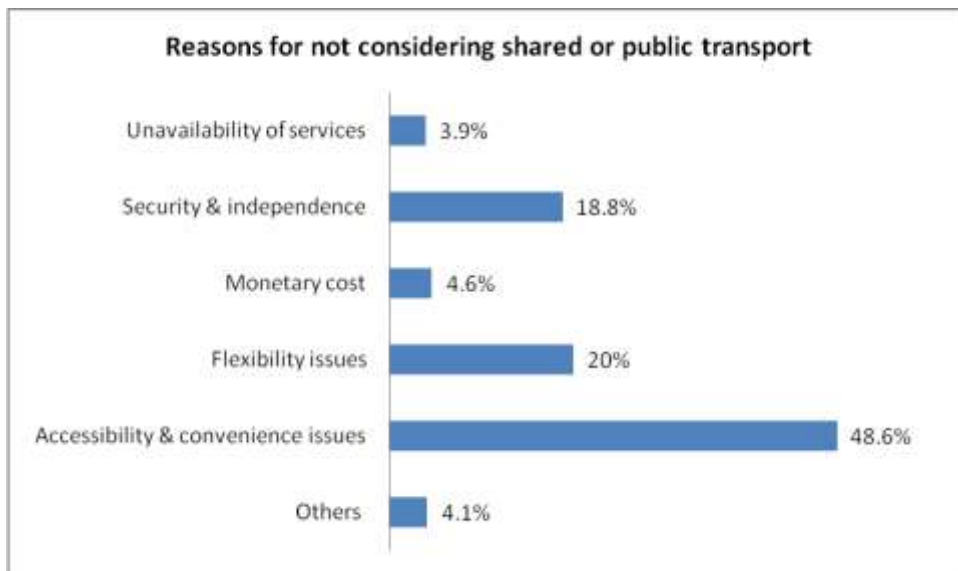
Nearly a fifth of respondents (18.8%) raised the issues of security and independence, with some saying that they felt safer travelling in their own cars, while others indicated that they preferred their own space. Comments included:

'I need independence when I want to go somewhere.'

*'Like to go at a time I want to go – **don't want to be timetabled.**'*

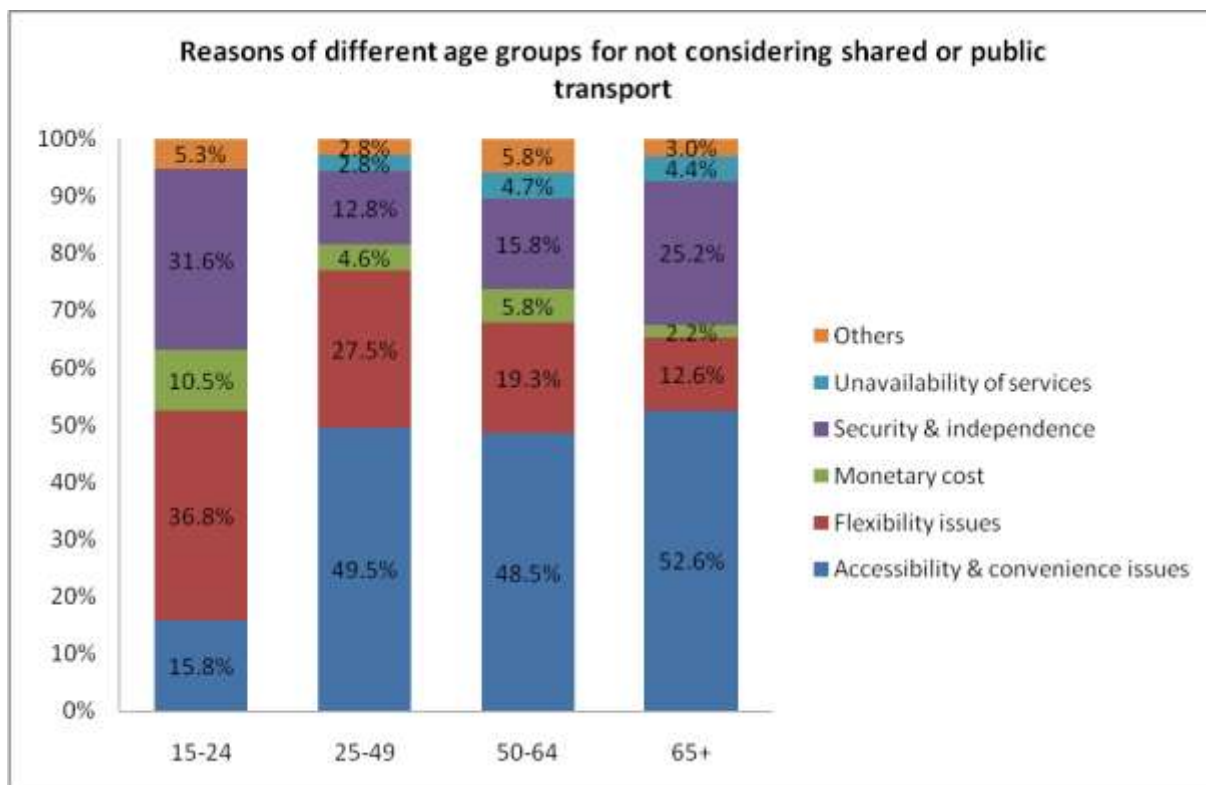
Access to their cars, whether personal or company owned, also gave them a reason not to use public or shared transport.

Figure 5.10 Reasons for not considering the use of public or shared transport



As shown in figure 5.11, although accessibility and convenience were the most commonly mentioned reasons for not using public transport, these were not reasons given by 15–24 year olds. Those in the older age groups mentioned concerns about security, and most preferred to drive, in order to maintain their independence.

Figure 5.11 Reasons for not considering the use of public or shared transport, by age group

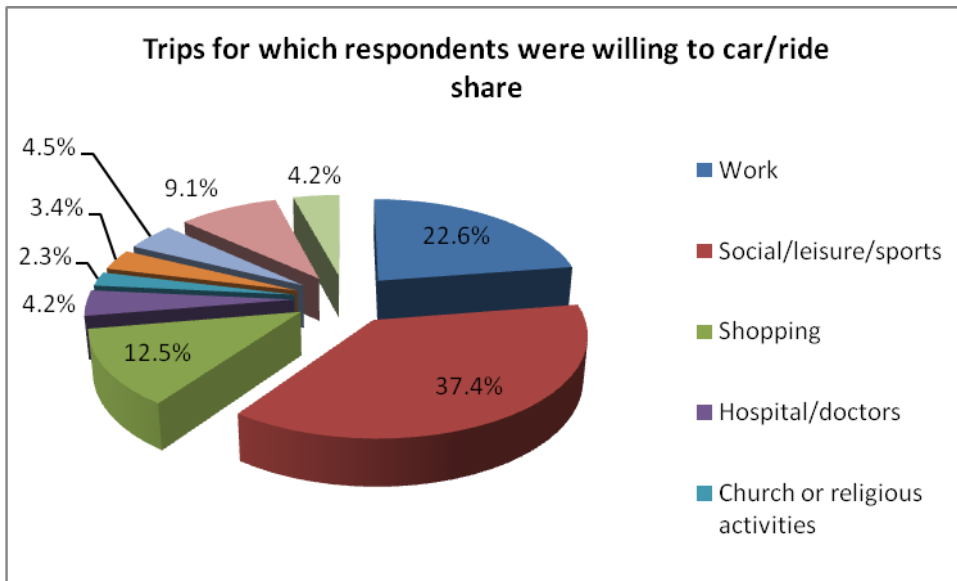


5.6 Views about sharing vehicles

Figure 5.12 (following) shows that nearly three-quarters of respondents (72.6%) indicated they were **willing to share their car or travel in another person's car for some trips**. Just over a fifth (22.7%) said they were unwilling to share their vehicle, or **travel in another person's car**, for some trips. (Nearly 5% of respondents ticked both 'Yes' and 'No'.)

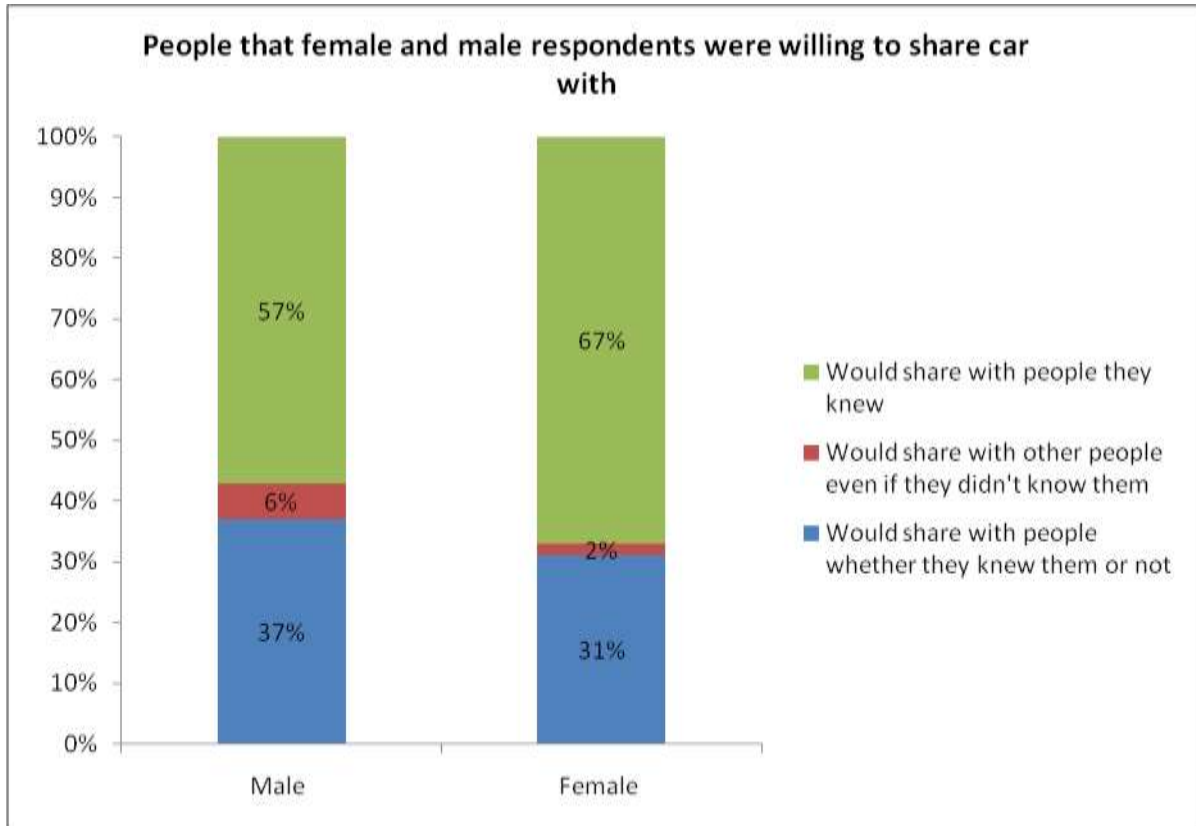
For those who were willing to share their cars or travel with another person for some trips, travel to social/leisure/sports received the highest response rate (37.4%). This was followed by trips for work (22.6%), shopping (12.5%), hospital or **doctor's appointments** (4.2%), school (3.4%), and church or religious activities (2.3%).

Figure 5.12 Destinations considered viable for car or ride sharing



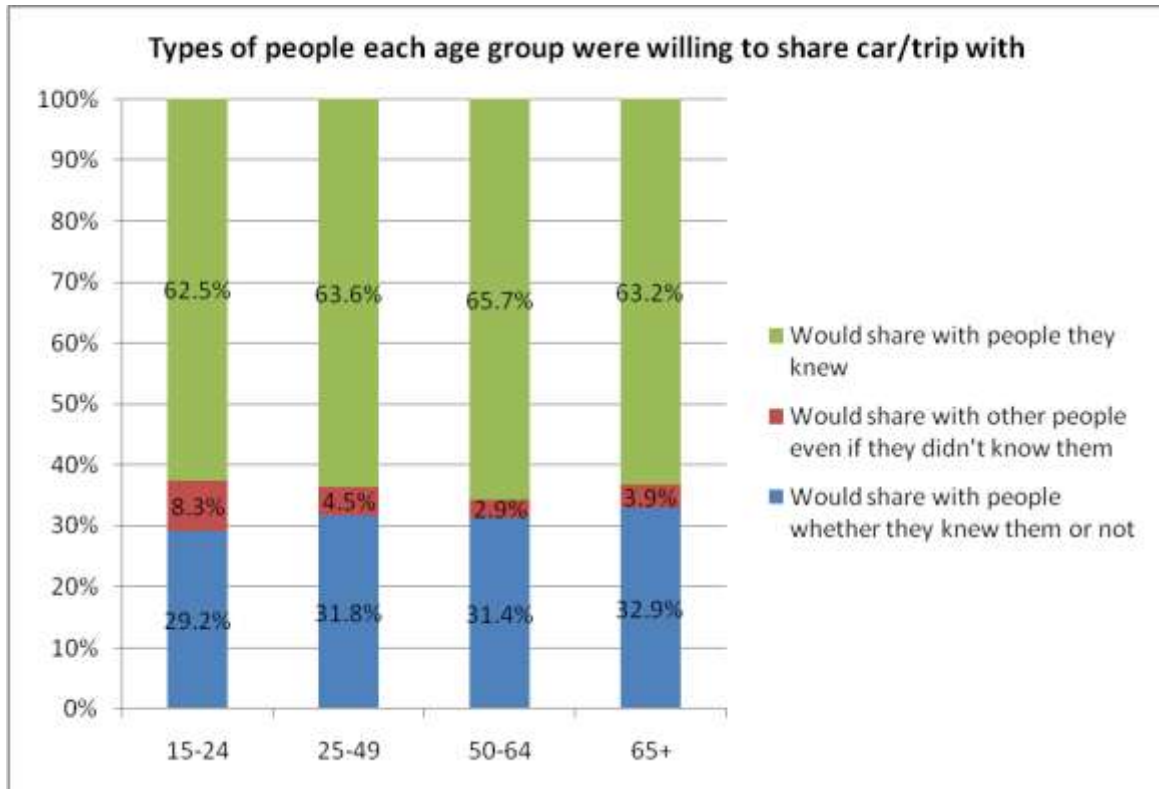
As shown in figure 5.13, males were more willing to share rides or their car with strangers than female respondents. The latter were more comfortable to share a vehicle with people whom they knew.

Figure 5.13 Willingness to car share, by gender



However, when the results for different age groups were compared, younger respondents were more willing to share their car with strangers than older respondents, as shown in figure 5.14.

Figure 5.14 Willingness to car share, by age



Those who were not willing to share a car gave time and convenience as the main reasons (mentioned by 28.4% of the total responses, see figure 5.15). Comments included:

'As a teacher I have irregular hours.'

'Not to work – I need to move quickly.'

'That would create extra travel.'

'Maintenance on my car.'

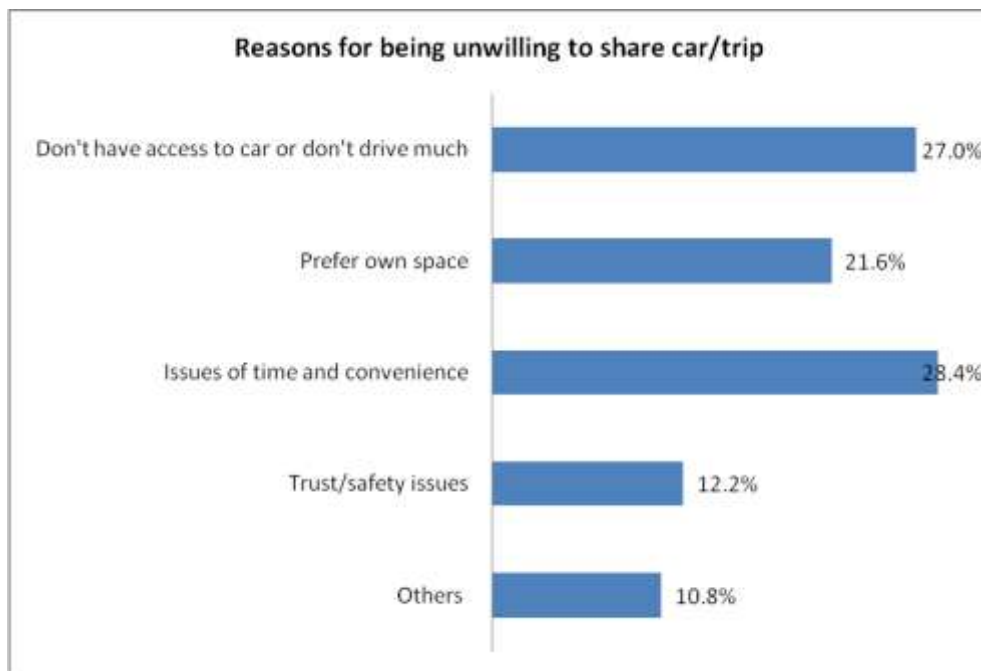
About a fifth simply commented **'Because I don't want to'**, **'Don't feel like it'**, **'Doesn't feel good'**, or expressed a personal preference for their own space or independence (21.6% of responses). Trust or safety issues were mentioned specifically in 12.2% responses. However, around 27% said that they did not have access to car, or did not drive, so could not share their vehicle. The remaining 10.8% of the total responses gave varied reasons such as:

'No space in the car.'

'Not required to share.'

'Not on longer trips.'

Figure 5.15 Reasons for unwillingness to car share



As shown in figure 5.15, time and convenience considerations were most important for those in the 25–49 and 50–64 age groups. Those in the younger age group, however, were more likely to say they preferred not to share because they wanted their own space. They were also concerned with security. This was consistent with their response that flexibility and security/independence were their main reasons for not considering either shared or public transport. This may reflect the fact that this age group has only recently gained independence and therefore it has some novelty value.

5.7 Conclusion

The data gathered through questionnaires offers guidance for policy makers and planners who may wish to provide choices for transport users in small towns and rural areas, and for those seeking to design and promote shared transport.

In contrast with the New Zealand Household Travel Survey (Ministry of Transport 2009b), which gathers data on travel behaviour, the aim of this research was to collect data on both travel behaviour *and* attitudes. **The specific focus was respondents' attitudes toward shared transport.** It is widely acknowledged that while survey respondents often express support for public transport, their actual behaviour suggests they support public transport use by *other* users rather than themselves, and instead they prefer to use their own vehicle. While the data gathered via the self-administered questionnaire has many limitations, including those related to sample composition, the design of the questionnaire (including the wording) sought to allow for frank, unmediated responses. Also, the distribution of questionnaires sought to capture the views and experiences of key groups, including those of working age, the retired/elderly, and those with high health needs.

Notwithstanding the limitations of the sample composition, these results make it clear that people are willing to consider shared transport when other priorities, such as time savings, safety and convenience, are also met.

6 Data - interviews

6.1 Introduction

Interviews were conducted with 19 residents of Marton, who were asked to describe their travel, particularly with respect to trips away from Marton (see appendix B for the interview schedule). Information was sought about what forms of shared or public transport would work for them, and their knowledge and experience of carpooling and car sharing. Interviewees were also asked to explain how they planned for travel and whether their transport arrangements might change over the next 5–10 years.

Table 6.1 Age range of respondents

Age group	Female	Male
15–24	-	2
25–49	5	1
50–64	3	3
65+	3	2
Total	11	8

6.2 Interview data

The **interviewees'** responses indicated that transport choices were constrained by availability, knowledge, cost, and personal circumstances (such as health status). Flexibility was clearly important for respondents, the majority of whom indicated that travel outside Marton was for social and/or leisure purposes, which could also be combined with other activities.

6.2.1 Employment status

The majority of the working-age interviewees were employed (see table 6.2) and of these 12, five were self-employed or working from home at the time of the interview.

Table 6.2 Work-status of respondents

Age group	Work in or around Marton	Work outside Marton	Retired or not working
15–24	2	-	-
25–49	5		1
50–64	3	2	1
65+			5
Total	10	2	7

One self-employed person made the point that where there was no viable alternative to car ownership (ie forced car ownership), people would have to go without other things in order to continue to have the use of a car:

'I will still be driving a car and ... short of outlawing it for private use, I can't imagine, given the current outlook, that changing. The cost of petrol, as the government discovered when it went up ... doesn't take cars off the road. Until there is a viable alternative, people will just pay and they will go without other things to pay. Because we've got no choice ...

we won't stop owning a car, we won't stop driving – not unless there is a really viable alternative.'

This cost factor was reflected in comments on the economic value of at least one member of a family having access to a carpool:

'Well, I think too that one of the advantages with my husband's work with the van is ... that it probably saves us a good five grand a year. ... I'm not travelling every day now, but I think if I was when petrol was really high, it probably would have been a factor [to consider] ... and the wear and tear on your car.'

Lack of access to shared transport, and the economic cost of running private motor vehicles, constrained respondents' travel out of Marton:

'... At the end of the day ... it really comes down to what is, for us, most economical, both in time (because we see time as also having a cost) and actual cost.'

'... My wife normally [shops] ... she used to go to Pak & Save in Palmerston North, but by the time you've paid the petrol and whatever, it's not economical, so she does most of her shopping here. From time to time she'll go into Wanganui or Palmerston North, but only if she's got something else to do.'

'... We used to quite often do [shopping] weekly, and now we're more fortnightly going out of town ... on the off week, we just ... grab a few things here.'

'... I think mainly now, with being retired, you've got to ... watch the pennies, so to speak. [The choice of whether to travel] would more be 'Can I afford to?' If it's a fair distance away I would think twice about it, or come to an arrangement with somebody else and slip them a petrol voucher or something like that.'

Even those who did not currently regard themselves as cost constrained identified that further fuel cost increases would influence their travel planning:

'I think that cost is always a factor to anybody, and ... you think twice about going anywhere at the moment ... over the last 12 months anyway. One time we never thought anything of it, but we do now ... we think twice ... but then there's trips we have to make. I have to go to Levin ... because my parents are down there, so often when we head to Levin ... we might do other things while we're down there.'

'... It's a question of keeping the costs of our transport down and so we do have multiple trips ... we'll visit friends en route and we'll do tasks, multi-tasks around ... in Palmerston [North] itself and then multi-tasks coming home ... as well.'

'... I've got about four years to go to retirement and that will be a time when finances will become tight. We know that already and so that means we will start limiting the number of trips we make because of the cost of them.'

In some cases fuel costs and lack of access to shared transport have resulted in a person having to change jobs:

'... If there was such an arrangement [shared or public transport] and if there were transport facilities like that, I would have been able to continue with my job at the hospital [in Palmerston North].'

Economic factors had also reduced the number of short trips made:

'I think when it really went up – the petrol – we did stop the short running backwards and forwards and we'd do more in a trip ... then that can leave you absolutely exhausted at the end of the day, though.'

'Certainly when the prices went up before ... we were honing down to one trip to Marton a day ... you're getting the post ... dropping the person off ... picking [them] back up, you're doing this, that and everything else, and it usually ends up at a two-hour trip in the end, by the time you've got everything done. ... We saved costs there and we also cut back on ... [money] for churches and stuff. Because we are non-denominational, we can go to any church – people were going to Palmy, people were going to Feilding, people going just up Marton ... just because [it was] their favourite church and they felt at home there, but ... it started not getting worthwhile driving a vehicle into Palmy for the two people that wanted to go to this church, so we cut that off ... most people go to Feilding, so we run ... our big 13-seater Hiace van ... in there and everyone that wants to go to Feilding all fit in.'

6.2.2 Availability and flexibility

Many interviewees identified a requirement for public or shared transport services that were flexible to their needs and available at times other than via the commuter service or services offered by InterCity. These times included evenings, at weekends, and during the day other than at commuter times.

'A big thing would be that it would need to run after hours, because a lot of what I want to do out of town is after hours, and that includes things like going to the pictures, as well as the other things that I do on a regular basis.'

'I guess the ideal would be some kind of flexibility with time. I don't know how that would work, because there's ... fairly regular times that I have – but sometimes I want to go early or do something else. ... You'd need some kind of flexibility with it, but ... I think after hours would really be the crucial one for me.'

'... It leaves fairly early in the morning for us (we're not morning people) – at five, [and back at] about five at night. It's ... not ideal for our personal [routines] ... we travel quite a lot later [in the day]. Also, [with] the bus you can't cart as much. ... We end up with an empty car going over and a full car coming back. ... if we didn't have to combine ... [different errands] we could use [the bus] more for just going over to Palmerston North for the day and having an enjoyable day ... more of a leisure-type experience than getting stuff done ... we'd use it more.'

'Wayne ... tends to go into Palmy about once a week for business and ... he does all the shopping [for us and another family] as well. ... A while ago [the other family was] going on Monday ... and there would be about three or four trips a week. Now it's pretty well down to one ... scheduled per week, and ... the odd other one that's an emergency ... so it's just very minimal.'

6.2.3 Accessibility and comfort

For those with health needs, the accessibility and comfort of any form of shared transport was a constraint that affected both their ability and willingness to travel outside of Marton:

'[It's] partly to do with the bus, it's the steps, it's like climbing Mount Everest! ... I've got short legs ... [so with] my hip problem I find it difficult getting on the last two steps. ... There's two trips I went on. ... [On one] we went to Ashley Park out the other side of Waverley. ... The bus they had that day was most uncomfortable – it was too high for me and ... the seats were too deep – and so the next trip (they went to New Plymouth) ... I said no thank you, it was far too far for me to travel. And then the next trip was to Wellington and I said no thank you, I don't want to go to Wellington – they went to Te Papa, but climbing in and out of the bus is more tiring than anything ... so there's lots of activity things that don't suit me.'

'I went up to Taupo for a reunion. ... I find it very uncomfortable in buses. ... This leg is permanently stiff and it's quite hard with some of the seats to get my foot underneath [the seat in front of me].'

This also applied to the location of the stopping points for any form of shared transport:

'... It depends whereabouts the terminus was at the other end, whereabouts it stopped – with my ... lack of mobility, I can't go too far anywhere.'

'I'd have to get a taxi from my house that takes me up to the bus-stop, which I have to be there by ... 8:30 [am] because they've got the school children's run ... [so] you're sitting up there in the cold bus shelter.'

'Did I tell you about the little bus shelter we've got up in Marton? ... It's very inconvenient. It's got a concrete top [and] a wooden seat ... people have been there eating things, spilling things all over the seat ... and some people have even been sick on ... the footpath – and the rain drives in on the seat and you cannot sit on the seat – you're sitting ... on the back of the seat, which is not very safe for elderly people. Many times, I've had to go down and stand in the Club shelter ... out of the rain. ... There are a lot of quite sensible-shaped shelters in Porirua and Palmerston North ... [that] come out further than ... the people [who] are in the bus shelter.'

'... Where the bus pulls in [at Palmerston North], it's quite a long walk [to the shops] ... and it's very difficult ... getting ... back to the bus stop.'

Location of stops was also a factor even for those without mobility difficulties:

*'I guess the other thing is where things stop ... where **you can get on and off, whether it's door-to-door, or whether you have to ... be dropped off at a certain point and then [do] ... a 50-minute walk to wherever it is you actually want to go, or get a taxi or another bus ... [that is,] how easy it is to get to the final destination as opposed to just somewhere within the town boundaries.'***

6.2.4 Cost and affordability

For some interviewees, travel was restricted for economic reasons and had to be based on specific events/needs:

[Interviewer]: 'So every two weeks you will make a trip into Palmerston?'

*'... **Sometimes more frequently if there's other events that we must go to ... but [if] they're three weeks apart ... there'll be three trips.'***

Elderly interviewees in particular indicated that travel cost was a concern, particularly in relation to their pension payment cycle:

*'**You'd [have to] work it out ... for when pension day falls, because if it's an off-pension week, nine or 10 of us couldn't afford to go anywhere anyway.'***

*'**There's quite a few Marton people who ... go [on the bus to Taihape]. I don't know where they get the money from, because it's \$10 to go.'***

*'**I'm skimping by the end of the fortnight. I work on a budget.'***

*'**Now I'm on a single pension ... it's very difficult to manage.'***

6.2.5 Trip chaining

Fourteen interviewees identified a need to combine multiple activities into one trip, to minimise costs and maximise their use of time whilst on trips away from Marton.

'I took my daughter to ... an orchestral concert. [While I was there I] visited my mum and did some groceries and errands ... picked up mail, banking.'

Accessing 'big box' retail stores on the periphery of towns (eg Bunnings in Palmerston North) as part of trip chaining activities was seen as a reason to not consider carpooling or ride sharing:

*[Interviewer]: 'When you make these trips out of town, would you usually plan a whole lot of activities, **or would you just go for one specific thing, or...?'***

'Well, generally, except for something specific like, for example, the folk concert or the hospital appointment, we would plan activities so we did a list of things in one trip.'

[Interviewer]: 'Could you give me examples of the kinds of things that you might bundle up together, the kinds of activities?'

'A trip to Bunnings for me ...'

*'It would be mainly shopping we would do ... **that's more or less what we go out of town for ...**'*

'Clothes that we can't get in Marton ...'

'Specific shopping for things that we can't get here would be the main reasons.'

*'... We do those combination trips where we're going from one end of town to the other. ... Parents live at the far end of town, and we go to places like Bunnings ... **places that aren't right in the city centre ... so ... that's just easier for us to take our own car.**'*

The necessity of trip chaining, combined with the need to be flexible enough to respond to emergencies such as children becoming ill whilst at school, was seen as a barrier to using forms of shared transport.

*'It is a case of being able to get up and go, and I think one of the issues ... with carpooling is ... **if you've got young children** [that are] sick or the school rings you, being able to get back and ... **see to the children.**'*

6.2.6 Supporting existing services

Several interviewees commented that it was important to actively support existing bus services, to ensure that those services continued to serve the town:

*'... When [the bus service] was first offered, I made up my mind that I was going to use that service ... **I've had different people offer me a ride, and I've said no, I'm supporting my bus. Now that might sound crazy, but I wanted to keep that bus going. [While] I wasn't going to be the only one that would keep that bus going ... it wouldn't have helped if I hadn't gone, and I've appreciated it.**'*

'I don't expect things to keep on going if I [don't support them] ... And if it hadn't kept on going, I would have turned round at the end of that and said ... "I did my best to support it".'

*'What you're looking at is a service that's on a regular basis ... and it's like anything, people have got to be educated to use it. ... [When] you look at what [might be] viable ... a lot of people say **'That's a good idea'**, but when you do put [a service] up, nobody wants to use it - **that's a use issue.**'*

6.2.7 Availability of shopping in Marton

Whilst for some interviewees the range of shops in Marton provided sufficient variety for their day-to-day needs, it was identified that purchases of certain products involved trips outside of Marton:

'Mainly when we go over to Wanganui it's just for a break, [but] there's certain things you can't get [here]. There's no shoe shop, [and] if you want to buy underwear ... we can get it at the supermarket for men, but for ladies (unless you can afford ... going to McGruers and paying top dollar) ... I can go to the Warehouse and ... get about three pairs for virtually the price of one. It's just ... personal bits and pieces – you do most of your shopping in town, but there's odds and sods that you can't get here.'

'I really need to go out of town soon because I'm a church person, and next month we're going camping over to Pohangina, so I need a pair of gummies and ... a raincoat ... so I need to go out of town to get those.'

'You have to go to Palmerston North to get an organic vegetable around here, which is just crazy.'

Internet shopping was seen by several respondents as an alternative to lack of choice for shopping. This option was seen as both an economic and an environmental response to the limited choice in Marton. However, this option was constrained by the inability to purchase perishable goods locally via the internet:

'Here it's a bit of a nuisance: because we live 'rurally', we can't receive any dairy products, refrigerated items or anything like that, so basically you're down to dry goods that you can buy in larger quantities ... so there's no real advantage [to internet shopping].'

'We can order shopping online here from Woolworths; I know it's available ...'

[Interviewer]: 'Here in town?'

'Yes, Woolworths do online shopping. It was the first thing we looked for, 'cos I don't enjoy going shopping. ... That's fine as long as you don't want any consumables ... you can't order any fresh fruit and veges, [and] you can't order any milk or dairy products, which kind of negates the whole purpose. If I can't do it all, I'm not going to do any of it – I'm not going to get half the order and then go out anyway, that's just ridiculous.'

6.2.8 Health-related travel

With an ageing population there was a significant level of need for health-care services:

'... There are all sorts of transport problems for people in a community like this, and ... particularly with the elderly. For example, I was talking to a relative today who doesn't drive and has to get herself to Wanganui Hospital for a very minor operation that can't be done here. ... I think Red Cross are taking her. There is a shuttle available, but it's ... not particularly easy for her ... to organise that.'

Patients requiring hospital treatment needed to travel to Wanganui or Palmerston North. There were six hospital shuttles per week taking patients from Marton for dialysis in Palmerston North. On one occasion, the shuttle bus driver overslept and one patient, who had dialysis three times per week, had to make his own arrangements:

*'He took the van. ... He had to park in a car park, then he had to get himself (and all he had was his walking stick) ... to the main entrance – [by then] he was on his knees, so they had to go and get him a wheelchair I worried all day [whether] **he'd got down** there in a whole piece, until he got home again.'*

6.2.9 Location decision making

As noted in chapter 4, nearly half of the Marton employees worked in the town in 2006, down from 57% in 1996. Travel to other areas for work was scattered, with Wanganui, Palmerston North City, Bulls and Lake Alice each receiving 3–6% of working residents. Four percent went to other regions, probably Wellington.

Respondents indicated that needing to make travel arrangements for work and health-related trips, and the costs involved, could lead to population loss:

*'If people have got work out of town and they find the travel too difficult, then they move, **and that isn't good for us. So it would make sense** ... to look at the options [for carpooling or ride sharing organised by Project Marton].'*

*'When Transit took over the run, originally there were around about eight or nine people regularly on the trip [on the commuter bus between Marton and Palmerston North]. Over the years, that increased to around about 14 per trip, **and now it's doing a slight decline**, back to about 10 per trip. ... **I kept a record of all of the people who travelled** with me in a database, and I noticed that the majority of them, after about two years, moved over to Palmerston [North] for some reason – either for work, or for recreation, or just to be closer to their workplace.'*

*'I have tried to sell the house here because of the stress and the size of the section (quarter acre) ... **I'm getting past looking after it**, but there haven't been any bites. **Haven't even had an offer on the property** ... I would have liked to have shifted to ... where ... **my church people would care for me ... in either Wanganui or Palmerston [North] – there's no point in shifting to Feilding or somewhere because you're still in the same boat.**'*

6.3 Conclusion

The interviews revealed **considerable diversity in people's travel needs**, but also some similar experiences in terms of lack of choice and difficulty using the extremely limited alternatives to private vehicles. As a result of these difficulties and the generally poor quality of infrastructure and service, public transport was often viewed very negatively.

However, people often willingly shared transport (eg families transporting children from more than one **household to children's activities**; people sharing a vehicle to travel to work outside the town; patients using a health shuttle) because of the economic (and other) benefits. This suggested there was scope to promote shared and flexible transport.

7 Discussion and conclusions

7.1 Introduction

This research began with the recognition that small settlements in New Zealand face challenges (as do their counterparts internationally) in delivering public transport solutions to those who cannot, or choose not to, use private transport. Internationally (as we showed in chapter 2), a range of initiatives that we have collectively referred to as shared and/or flexible transport services have been implemented, with varying degrees of success. Our aim was to explore the scope for such initiatives in New Zealand, given that transport disadvantage is likely to increase as a result of demographic and economic trends.

In this chapter we summarise our key findings and consider these in the light of contemporary trends and policy goals. In the next chapter, we conclude with some suggestions for further research.

Specifically, we identify a potentially significant role for shared transport in New Zealand's non-metropolitan regions, but we also suggest that many more of New Zealand's urban centres could benefit from the development of innovative forms of shared transport, such as those that are currently operating successfully in several similar parts of the world.

7.2 Summary of key findings

Changing patterns of work and leisure, an ageing population, increasing income inequality, internal migration, and the growth and decline of regional populations have been reflected in recent censuses, which show declining populations in many non-metropolitan areas (apart from a few high-amenity areas such as the coastal settlement of Oakura near New Plymouth, in this study). At the same time, small towns and rural areas retain, or even attract, residents seeking the more affordable housing found there, and proximity to family.

While the census data provided some insights into various relevant factors on one particular day – eg the geographical and age distribution of the population, the relationship between place of residence and place of employment, car ownership rates, and mode of travel to place of employment – it could **not reveal people's attitudes** and preferences. To gain insights into these, self-administered questionnaires were distributed in a number of small settlements in non-metropolitan regions, and more searching interviews were also conducted with some residents of Marton.

Both the international literature and our research revealed that travel attitudes and behaviour should not be conflated. **People's travel behaviour** was likely to be determined by the availability of different modes, rather than by preference. Socio-economic characteristics, travel patterns, travel purposes, and reasons for living in small towns shaped **residents' attitudes and behaviour towards shared transport**. Having alternatives to private vehicles was important for both economic and social well-being. Older people in particular had a high degree of reliance on the various health shuttle services – increasing the frequency and seating capacity of these shuttles, and extending the service to other groups, could increase social participation for older and low-income people.

As many residents of small towns and rural areas had little experience of public transport, they needed to be assisted to think about how alternatives to private transport (ie various forms of shared transport) could work for them, particularly as technological innovations become more widely available and allow **coordination of different individuals' travel**.

This study highlighted that because of increasing fuel prices, a degree of informal sharing was already occurring, especially among families with children who needed transport to school and sports and recreational activities. This informal sharing provided a model for a much more broadly based sharing of transport by people in other age groups for their travel to work, health appointments, shopping and social/recreational activities.

Where shared transport involved any physical infrastructure, such as places to await vehicles or places to exchange information, attention to the quality of waiting and/or transfer facilities was needed, including design, safety, comfort and location. The central-city bus terminal in New Plymouth was a positive example of a fully enclosed and architecturally designed facility. Such a facility did not have to be large, but required ample secure Internet access, so that tickets could be purchased online. Having a cafe integrated into the facility, or located nearby, would be ideal.

Another requirement was for technology to allow provision of real-time electronic information about arrivals and departures; preferably web-driven, so that the information that appeared in the displays in the actual waiting area could be downloaded on a personal computer or cellphone, or displayed on a flat-screen, wall-mounted monitor in a cafe down the road. Public or private investment in such facilities and their supporting IT systems would make it easier to organise and recruit drivers and agencies for more informal local paratransit, ride sharing and car sharing. It was widely recognised that quality public transport infrastructure was required if people were to be encouraged to move away from private vehicles – the appeal of the private vehicle was often its greater comfort, even if it was less convenient because of issues such as finding and paying for parking, etc.

We found that the Australian experience had particular relevance to New Zealand and demonstrated that there was significant scope for innovative solutions. Shared transport services could avoid the difficulties associated with scheduling conventional (mass) public transport services. In areas with small and declining populations, such shared transport could assist with local and regional economic growth by ensuring that residents had access to employment and local services. Increasing availability of, and access to, information and communications technologies meant that shared transport services were increasingly easy to organise and utilise.

7.3 Enhancing economic growth and productivity

As noted in chapter 1, transport is vital for the economic and social well-being of individuals, households and communities. Research by Statistics New Zealand (2009a) on commuting patterns highlights the effect of the economic recession on commuting behaviour. The May 2009 Government Policy Statement on Land Transport Funding identifies the goal of increasing economic growth and productivity as **a priority for the government's investment in land transport**. The GPS seeks to reflect the existing modal choices that are 'realistically **available to New Zealanders**'.

In effect, this means more investment in roads for private vehicles, and static or reduced investment in public transport other than in the major metropolitan areas of Auckland, Wellington and Christchurch. This reflects both the policy of the government and an overriding concern with contemporary economic trends as a result of the global financial crisis. Previous targets for reductions in single-occupant vehicle (SOV) trips have been **replaced by a series of 'impacts' that the government wishes to achieve** via the new guidance and funding framework. Investment in public transport for the population outside of the metropolitan areas of Auckland, Wellington and Christchurch will be somewhat more constrained.

However, this research has shown that many groups in the population in non-metropolitan areas do not have access to private vehicles or public transport, and alternatives in the form of shared or flexible transport are vital for their economic and social well-being. Moreover, achieving a modal shift away from SOV trips, a focus of recent transport investment decisions, is important if New Zealand is to meet international obligations to reduce greenhouse gas emissions.

Clearly, it is important, not just in a time of recession, for the government's investment in land transport to be economically sustainable. The scope of the current research did not allow for a rigorous evaluation of the relative costs and benefits of private transport and shared/public modes. Rather, it was assumed that reducing SOV trips would have economic benefits to both the users and, through reduced congestion and reduced use of roads, to the wider community. Vehicle occupancy rates of 1–1.3 persons indicate a significant spare capacity in the existing road network. The challenge for creating shared transport services lies in the **coordination of different individuals'** travel. Economic, social and environmental benefits will accrue to these communities, and the country as a whole, from improved transport choices. A lack of alternatives to the private car is likely to exacerbate the economic and population decline of non-metropolitan towns throughout New Zealand, which are often further compounded by the concentration of other population characteristics such as low incomes, limited employment opportunities, and higher-than-average proportions of older people.

7.4 Small and declining populations

The census data showed that the population of all the case studies (except Oakura in Taranaki) was either slowly declining or stagnant. Marton and Bulls in the Manawatū-Wanganui region lost more than 10% of their population between 1996 and 2006.

Our survey data confirmed the New Zealand Household Travel survey findings that the travel behaviour of residents in rural areas differs from that of residents of urban areas. Shopping (29%), health care (23%) and social/leisure (21%) were important purposes of travel. Only 16% of respondents stated that journey-to-work trips were their main purpose for travel. However, more than 80% of the people living in the case-study towns relied on private vehicles for journey-to-work trips, and most of the households living in these towns had one or two cars. Our survey showed that driving alone (31%) and riding in a car as a passenger (38%) were the most common modes of travel, followed by walking (13%), public transport (6%), cycling (4%), taxi (3%), motorbike (2%), hospital van (1%), company car (1%) and 'others' (1%).

This data indicated that small and declining populations need the provision of different forms of shared and flexible transport (rather than conventional public transport) to help promote the goal of economic growth. These transport services would need to be designed in such a way that they accommodated the specific travel needs of the residents of small towns.

7.5 Reasons for living in small towns

The analysis of the questionnaire data showed that lifestyle choice (32%), proximity to work (19%) and affordability (18%) were the main reasons for living in small towns. Other reasons included family links (14%), place of birth (7%), proximity to school (5%), retirement place (3%) and 'other' (2%). Since people will continue to live outside of metropolitan regions for these reasons, they need access to economic participation.

Given that the median income of the residents living in the case study towns was in the range \$24,000–\$40,000, which was below the national median income (\$51,400), it was not surprising that

affordability and proximity to work were important factors in locational choice. Only Oakura, near New Plymouth, had a higher median household income (\$67,100) level than the national median household income level. For settlements with a high proportion of low-income residents, it is especially important that affordable transport options are available. Research by the US 'think tank' Surface Transportation Policy Partnership (2005) revealed that families in the US were paying a high price to meet their transportation needs, and families in areas with fewer transportation choices carried an even greater burden.

To maximise economic participation, it is both necessary for sources of employment to be maintained in small towns, and also for travel to metropolitan centres to be achievable and affordable. The current lack (or highly restricted forms) of public and shared transport that were available in the case-study towns, combined with low median-income levels, presents clear evidence of the 'forced' car ownership described by Hunter et al (2008). As reflected in the comments of Marton respondents, cars were owned by people at low income levels and were seen as an item of household expenditure that could not be foregone.

As noted above, affordability and lifestyle choice were important reasons for people to live in a small town – low property values provided a source of affordable housing for people on low incomes. However, as indicated in the responses for Marton residents, the benefit of housing affordability could, to some degree, be offset by the costs associated with shopping and travel. Because land-use and transport planning are not integrated in New Zealand, current rural residential development does not include planning for transport.

7.6 Current and future population ageing

All of the case-study towns, except Oakura and Waipawa, showed a population balance that was skewed towards older people. An ageing population, coupled with low median-income levels, has implications for social participation/exclusion. Loss of their driver licence was a common potential or existing problem for older respondents in Marton.

Lack of transport alternatives, coupled with cost, can create a major problem for access to health, shopping and leisure services. Health issues frequently generate the need to travel away from small towns for medical appointments, and a high degree of reliance on the various health shuttle services. These services may rely on volunteer drivers and have various degrees of cost associated with them. Experience in Marton suggested that some hospital shuttles could have been running at capacity, and that demand exceeding supply was a source of worry for passengers with high health needs.

As mentioned earlier, increasing the seating capacity and frequency of health shuttle-type services, and extending the service to other groups, could provide a method of increasing the level of social participation of older and low-income people.

7.7 Trip chaining

The data showed clear evidence of trip chaining. The majority of respondents made deliberate efforts to combine a variety of different tasks into one trip outside of their home town. The degree of trip chaining was directly influenced by increasing travel costs. However, the need to trip chain meant that respondents saw shared transport services as too constraining on their ability to trip chain.

7.8 Exploring latent demand and promoting alternatives

Because people in small towns often have little experience of using public transport, they may find it difficult to think about how shared and flexible transport services could expand their travel choices. With the release of *Safer journeys – New Zealand’s road safety strategy to 2020* (New Zealand Government 2010), which included an increase in the legal driving age and more stringent requirements for the restricted driver licence test, young people in particular are likely to have reduced opportunities to drive. For them, as for the older groups who no longer drive, alternatives to using private vehicles will become more important.

Almost half of the questionnaire respondents expressed reservations about the use of public transport. Their reasons were that people had either never experienced public transport, or had negative impressions associated with public transport (possibly because they had never experienced its positive features). However, the same people were open to sharing their car with someone else. Thus, there could be considerable potential for increased use of shared transport through coordinating car sharing in an appropriate network. There has been significant interest shown by residents in the Greater Wellington Regional Council area, including residents in the Kapiti Coast district, in using carpooling, which is one form of car sharing. Improving ICT can promote carpooling and enhance its expansion. Our research suggested that improving the image and levels of flexible transport services could encourage people to change their mode of transport to something less private and more shared, if not exactly public.

Community-based organisations, such as Project Marton, could have a role in facilitating car sharing schemes. As a lack of affordable and appropriate transport alternatives is likely to further the population decline of small towns, facilitating car sharing and other flexible transport services, whilst not necessarily increasing employment opportunities within small towns, could help to maintain their viability by making them affordable for transport as well as housing. Overseas examples of flexible rural transport services could provide the basis for models that would work in New Zealand.

7.9 Land-use and transport integration

New Zealand’s three metropolitan regions (Auckland, Wellington and Christchurch) are characterised by high levels of travel towards the metropolitan city. Such travel can be effectively managed by providing efficient and reliable public transport (rail as well as buses). In contrast, in regions dominated by a provincial city there is a moderate employment relationship between the city and its surrounding small towns. Therefore a provincial city is weaker than a metropolitan city in terms of providing economic benefits (in particular, employment) to people living in surrounding towns. However, the associated pattern of land use produces very flexible travel in these regions, whereby the residents of smaller towns seek to maximise access to the amenities of a city whilst also maintaining an attachment to smaller settlements with their particular attributes (especially more affordable housing). The extension of roading networks has facilitated greenfields development (ie the development of previously undeveloped land), and has been stimulated by urban development. This largely reactive approach to ‘planning’ for land use and transport is inherently unsustainable – economically, socially and environmentally.

Pressure for local and central government expenditure on roading (both maintenance and new construction) diverts funds from other important civic amenities and requires increasing levels of taxation, through taxes on consumption, income, business or property. Individuals, households and communities will experience more economically sustainable land transport funding if enhanced use is

made of existing spare transport capacity. Substantial capacity lies in the greater use of shared transport and other multiple-occupant vehicle transport options.

Conventional passenger transport (bus and rail) may not be viable in many small towns in non-metropolitan regions, given the modest level of employment-related travel between these towns and the larger urban area.⁵ However, shared transport services, such as demand-responsive or shared transport, have the potential to deliver substantial economic and social benefits in non-metropolitan **regions. In addition, they will have a positive impact on New Zealand's transport**-related greenhouse gas emissions and use of fossil fuels. Furthermore, the interviews conducted for this research indicated that the gap between metropolitan and non-metropolitan areas in access to, and use of, information and communication technologies was rapidly diminishing. Just as residents of metropolitan public transport services have been experiencing enhancements to their use of public transport through improved technology (ranging from integrated ticketing to real-time and on-line information), so, too, residents in non-metropolitan areas could harness the benefits of technology in their use of flexible transport services.

Although a holistic approach to land-use and transport integration focuses on reducing the need to travel, this New Zealand data has complemented international research that has shown that shifting from SOV to flexible and shared transport can improve the sustainability of transport systems in non-metropolitan regions. At the local level in small towns, it is possible to create greater self-sufficiency with local services reached by walking and cycling. However, access to provincial cities, for particular reasons such as shopping and access to health facilities and services, can be enhanced through flexible transport or shared transport. A key principle of this approach is recognising the mutual interdependence of the residential, commercial and social (including health) dimensions of provincial cities and smaller towns in non-metropolitan regions, and then designing and planning shared transport that addresses the characteristic pattern of travel in these regions. In many regions, including those in this study, linear groupings of settlements outside the main urban centres mean that shared and public transport services can be organised efficiently. The larger urban centre that is the destination of travel gains benefits from reduced congestion and other costs associated with incoming private vehicles from rural areas.

7.10 Conclusion

For land transport funding to contribute to economic productivity and growth, there must be investment in expanded transport options. While efforts to stimulate a modal shift might seem to incur costs, these are generally short term and are a necessary part of a transition to a more economically, socially and environmentally sustainable transport system. With an ageing population, which in some places is compounded by a declining population, the need to expand transport choices and reduce dependence on private vehicles used for single-occupant journeys is increasingly urgent. Shared and flexible transport services (including DRT) **can offer residents of New Zealand's rural areas and smallest towns innovative transport solutions and increased transport choice.**

⁵ In suggesting that conventional passenger transport may be less viable, we do not wish to understate the latent demand that may become more evident as the costs of using roads and fuel change. We note that in a number of areas there is increasing demand for passenger transport, both road and rail.

8 Recommendations

This research has highlighted the need for better understanding of the travel behaviour and the wider social and economic needs of residents of rural areas. In addition, it draws attention to the benefits that would be gained from improving transport services between rural and urban areas. Social exclusion and socio-economic disadvantage are likely to be exacerbated by entrenching dependence on private transport. With an ageing population, there is likely to be growing demand for, and potential to operate, flexible transport services that offer a range of solutions to transport disadvantage. As well as meeting the needs of an ageing population, such services would provide benefits for the working-age population, especially those who need to travel from rural to urban areas. Furthermore, the viability and vitality of small towns could be enhanced through developing a transport system that is **matched with residents' needs and overcomes** any residual resistance to public transport.

A lack of alternatives to private transport is a significant determinant of current transport mode-share distributions. The resulting car dependence, especially in low-income households, has economic implications that should be a focus of further research.

In recent years, significant increases in public transport patronage in metropolitan areas have indicated that people are willing to use public transport when it is available. Responses from participants in this research, and recent statistics from regional councils on increased patronage of rural bus services, suggest that in the three regions in our research (and in similar areas of New Zealand), there are considerable opportunities to reduce road congestion and improve transport choices through shared and public transport.

Pilot programmes (such as DRT, car sharing, ride sharing, etc) should therefore be designed to identify options for increasing transport choices. In the same way that funding is being allocated to a few **'model communities' to deliver walking and cycling environments that make either walking or cycling** the easiest transport choice for the community, funding should be provided for local authorities that can develop a different planning and investment paradigm based on shared and public transport.

Vehicle-sharing software is available internationally and could be readily accessed in local community facilities, such as libraries, and via local businesses – a 'shared-transport model community' would provide an opportunity to introduce such technology. Other innovative approaches could be encouraged, such as selling large numbers of **inexpensive tickets at 'option value' in order to stimulate** demand in the same way that ski-field operators offer discounts on season passes.

Decision making about funding of public transport should utilise life cycle assessment principles that take a broad and long-term perspective of resource use. At present, it would appear that existing benefit-cost ratios have limited parameters that skew economic analysis in favour of private transport. Research should specifically consider the future trends in energy costs and other impacts of peak oil, which appear to have influenced increases in public transport patronage in both urban and rural areas in 2008-09.

Finally, there is an urgent need to review existing methodologies used by New Zealand transport funding bodies for determining the benefit-cost ratios (BCR) of different transport infrastructure and services, compared with international best practice, to ensure that the externalities of private transport are more comprehensively assessed. In particular, the BCR methodology used by transport funding agencies needs to incorporate a measure of the costs and benefits associated with aspects such as:

- population increase and decline

- social exclusion
- changes in property values
- access to employment as a result of reduced or enhanced transport services
- the impacts of the availability of public transport on local economic development
- the relative influence of public and private modes on road safety goals
- a broad range of determinants of road congestion.

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Appendices

Appendix A Questionnaire

If you want to go in a draw for a chance to win a \$50 grocery voucher, please fill in your name and phone number.

Name: _____ Phone Number: _____





Going somewhere?

We would like to know how and why you make your travel choices and what alternative forms of transport you might be willing to use.

Fold 1


Your response will help us to consider how to expand transport choices for people in your community.

We value your input, so please return this survey freepost by Friday 9 January 2009.



Massey University
(This research is funded by the New Zealand Transport Authority)

Fold 2

Free 

FREEPOST 1140904
Transport Research Project
School of People, Environment and Planning
Massey University
Private Bag 11-222
Manawatu Mail Centre
Palmerston North 4442

Please answer the following questions by ticking ALL relevant boxes and adding any extra information.

Q1. Which town do you live in?

Q2. Why did you choose to live there?

Near to work

Near to school

Affordability

Location/ lifestyle

Other _____

Q3. Where do you usually travel?

For work (where do you work?)

For school (which school?)

For shopping (where?)

For health related trips (where?)

For social/leisure (where?)

Other (where?) _____

Q4. What is your most common way of getting to and from those places listed in Q3?

Private vehicle:

driving alone

driving with someone else

as passenger in family vehicle

as passenger in someone else's vehicle

Moped/motor scooter/motorbike

Public transport

Cycling

Walking

Other _____

Q5. Would you consider using public or shared transport (e.g. small door-to-door bus/van/shuttle/ sharing of car or taxi) if available?

YES, because:

I have no other choice

It is quicker

It saves me time and money

It is more environmentally-friendly

I like it

Other (please specify) _____

NO, because:

Services are infrequent

I need to travel outside of normal working hours (i.e. 8am-6pm) and services may not be available

Lack of accessible vehicles

It's expensive

I feel safer travelling in my own car

Bus stops are not near my house

I prefer my own space

Takes too long

Other (please specify) _____

Q6. Would you be willing to share **your car** or **travel in another person's car** for some trips?

YES - Where to? (e.g. work, leisure)

NO - Why?

Q7. If your answer in Q6 is YES, are you willing to share them with:

people you know (e.g. family members, friends, workmates, classmates, etc.)

other people even if you don't know them

Are you: Male Female

What is your age group?

15-24 years

25-49 years

50-64 years

65+ years

Thank you

Appendix B Interview schedule

- 1 How do you typically travel? On own/with others?
- 2 During your most recent trip outside of Marton (eg PN/Wanganui) which form of transport did you use?
 - Car as a driver? And why? What activities/transport uses did you combine?
 - Car as a passenger? And why? What activities/transport uses did you combine?
 - PT/Bus? And why? (ie do you believe that PT can or cannot be used to combine different activities?)
- 3 Have you considered car sharing or carpooling?
 - Why yes/or why no?
 - Would you support a formalised carpooling/sharing scheme?
- 4 What are the most important factors that you take into account when travel planning?
- 5 What forms of shared or public transport would work for you?
- 6 Are there constraints that mean you might not be able to share transport? If so, what are they?
- 7 Thinking 5–10 years ahead, do you think your transport arrangements will be the same or different? For instance, if you are currently running a car, do you think in the future it will be less affordable/feasible for you:
 - for economic reasons?
 - for health reasons?
 - for social reasons?
 - for environmental reasons?