

Study of the Relationship Between an Aging Population and the Transport System in the Bay of Plenty Region

Bay of Plenty Regional Land Transport Strategy Supporting Paper No.07

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Bay of Plenty Regional Council
5 Quay Street
PO Box 364
Whakatāne 3158
NEW ZEALAND

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Executive summary

Introduction

This report discusses the relationship between an aging population, and the transport system in the Bay of Plenty. It looks at how an older population will impact on the transport network, and it looks at how the transport network can help provide quality of life for older people.

Demographics

In 2041, 31% of the people living in the Bay of Plenty will be aged over 65 years. Over 9% of the total population will be over 80 years. It is expected that these people will want to 'age in place'.

People aged 65-80 years will be fit, independent and actively involved with their whanau and community. They will probably make most of their trips off peak. People over 80 years may have reduced functional capacity and so will make fewer trips per week. Those trips will be very necessary for their mental and physical health and wellbeing.

Providing for an older population

There are a number of infrastructural designs and systemic improvements that can be applied to the transport network to make it easier for older people to move around. It is also important for land use and transport planning to be well integrated.

The Organisation for Economic Co-operation and Development (OECD) has identified eight major policy priorities (listed below) to manage the mobility needs and safety issues for older people. These involve supporting older people as their transport needs change. It is also important that older people are included in making decisions about the transport network and about their own modes of transport.

- Support and funding to enable lifelong mobility
- Support for older people to continue driving safely
- Provision of suitable transport options to the private car
- Safer vehicles for older people
- Development of safer roads and infrastructure
- Appropriate land-use practices
- Involvement of older people in policy development
- Educational campaigns to promote maximum mobility and safety for older people

Implications

Having an older population means that there will be an increased demand for travel off peak, for Total Mobility and for PT services. There will be more older Māori people living in isolated rural communities. And there will be more people moving around the network off peak.

Benefits

By improving the age-friendliness of the transport network, we will be providing a quality network that will provide for more people in the Bay of Plenty region.

Recommendations

Infrastructural improvements should be made in line with the World Health Organisations checklist (appended). It is also important to include older people in the planning process to ensure their perspective and needs are considered and integrated into plans.

There are also some flaws in the current assumptions made in transport modelling. Assumptions are currently based on the number of people in a household, rather than the age of people in each mesh-block. Age is perhaps a better indicator of the transport demand, and provides the option to differentiate between peak and off peak trips.

It is important to continue to monitor the trends. The Bay of Plenty needs to keep an eye on the population demographics to ensure we are providing an appropriate transport system. It is also important to monitor the travel behaviour of older people. This will mean that modelling can be tailored to more correctly plan for transport demand.

Conclusion

Most importantly, the region needs to make an effort to provide an age friendly network because the rest of the people living in the Bay of Plenty region will also benefit.

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Part 1: Introduction

1.1 Problem statement

Currently, the Bay of Plenty is often described as ‘God’s waiting room’ for New Zealand. There is a higher percentage of people in the over 65 years age group than in any other region (other than Auckland), and in that over 65 years age group, there are a high proportion aged over 80 years. This over 80 age group are much more likely to require medical care, to have declining eyesight, and limited mobility.

Population projections show that the Bay of Plenty will be faced with a rapidly increasing, and proportionally older population over the next 30 years. This has planning implications for the provision of transport infrastructure and services. Previous research into the impacts of an aging population primarily covered implications for the health system. Very little research has been carried out to quantify the implications of population ageing for transport policy and the transport network in the Bay of Plenty.

Older people have different transport requirements to younger people. If it is well understood that a large proportion of the residents of the Bay of Plenty region are over 65 years, then something can be done to ensure that the transport network provides for an older population.

This report considers the relevant factors for the planning of an age-friendly region in two areas; the population over 65 years, and also at the population over 80 years as a sub-group of the previous. The age group of 65+ is the oldest age bracket recorded by Statistics New Zealand in the New Zealand Census ^[1]. It is also the age you are eligible for New Zealand Super, can access your KiwiSaver funds, and generally considered the age of retirement for New Zealanders ^[2]. Further analysis shows that people between 65 years and 80 years are more likely to live in their own homes and those over 80 are more likely to live in retirement villages or hospitals, although research shows that people prefer to stay in their homes for as long as possible ^[3]. The demographics of a population impact on the transport infrastructure and options that need to be made available, so it is important for the Bay of Plenty to consider what sort of transport services will best provide for an older population.

This report will also consider how an older population will impact on the transport network in regards to demand for certain modes of transport and demand for the transport network at certain times of the day.

This ageing population study will become a major component of the Bay of Plenty Regional Land Transport Strategy (RLTS). The study will indirectly work towards the New Zealand Transport Strategy (NZTS) objectives of assisting safety and personal security, improving access and mobility and protecting and promoting public health – each of these objectives are also identified as objectives in the development of the Bay of Plenty RLTS which will be adopted as draft in 2011.

1.2 Purpose

To identify and quantify the impacts of an increasingly aged population in the Bay of Plenty on land transport infrastructure and services and identify initiatives that will support transport needs for an older population.

1.3 Objectives

In working through the problem statement, seven key objectives have been constructed:

- (a) To quantify the proportion of the Bay of Plenty population that will be over 65 years, and over 80 years over the next 30 years.
- (b) To identify the qualities of an older person that will affect their transport needs.
- (c) To identify the critical transport factors contributing to quality of life for older people in the Bay of Plenty region.
- (d) To identify the associated implications for the region's transport network arising from an increasingly elderly population.
- (e) To identify what transport policies are currently in place to ensure quality of life for older people in the Bay of Plenty region.
- (f) To suggest some measures that transport planners and providers in the Bay of Plenty can undertake to mitigate the effects of an older population on the transport network.
- (g) To suggest some measures that transport planners and providers in the Bay of Plenty can undertake to improve the age friendliness of the transport network to ensure quality of life for older people in the region.

1.4 Methodology

This study begins with a literature review to frame the issues surrounding an ageing population and transport issues in the Bay of Plenty region. This is designed to give the research a firm grounding in regional population statistics and issues identified as part of the RLTS review process.

This report will also review international transport and geriatrics literature to identify transport demand and issues for an aging population. The literature review will uncover a various alternative modes of transport that are suitable for an aged population.

The report will then include a document review to discuss the legislative provision for older people in New Zealand. It will look at national and regional transport planning strategies, and will identify health and social legislation relating to provisions for older people. This will provide a better understanding of the needs and current provisions for older people from a social policy perspective.

The methodology used to carry out this investigation comprised the following:

- The reading and review of numerous relevant national and international academic literature, government publications and community publications.
- A discussion with PATAG who are considered the regional experts in this research area.
- Identifying the problem field and identifying seven key research objectives.

- Understanding national and regional legislation relevant to transport provisions for older people in the Bay of Plenty.
- Identification of possible changes to regional transport legislation to better provide for an ageing population.

1.4.1 Data collection

There is a lot of contradictory data relating to population projections for the Bay of Plenty. The most robust data comes from the Demographic Profile for the Bay of Plenty^[4]. Although this data is slightly out of date, it is considered by the regional council to be the most accepted data set available. The demographic profile includes projections out to 2051 which is beyond the timeframe for the RLTS, so wherever possible, the 2041 breakdown is included in this report. Statistic New Zealand have provided a population projection out to 2041, and the medium projections have been adopted throughout this document.

1.5 Structure of the report

Part 2 of this report:

- looks at population projections for the Bay of Plenty and quantifies the expected percentage of the population over 65, and over 80 years
- discusses the expectations of older people in terms of work, lifestyle and transport options
- reviews international literature relating to transport service provisions for older people
- identifies critical transport issues for older people, and best practice for transport infrastructure provisions for older people

In Part 3, the literature review is applied to the Bay of Plenty. An examination of national legislative provisions is carried out before identifying regional policies that provide a framework for transport services for older people

The “Analysis and Discussion” in Part 4 explains how the outcomes of the literature review can be linked with the Bay of Plenty examples, before concluding the report, and identifying opportunities for future research.

Part 2: Literature review – older people and transport options

2.1 Introduction

For the regional council to better understand the relationship between an aging population in the region, and the requirements of the regional transport network, it is important to gain a better understanding of the actual numbers. This will be quantified in Objective (a).

The regional council then needs to understand the qualities and expectations of people in each of the two oldest age categories (over 65, and over 80 years). This is discussed in Objective (b) and will help us understand the travel demands of this significant group of the population. The regional council also needs to understand which factors of the transport system will directly benefit or inhibit quality of life. This will be identified by answering Objective (c).

Objectives covered in Part 2 are:

- (a) to quantify the proportion of the Bay of Plenty population that will be over 65 years, and over 80 years over the next 30 years
- (b) to identify the qualities of an older person that will affect their transport needs
- (c) to identify the critical transport factors contributing to quality of life for older people in the Bay of Plenty region.

2.2 Population projections in the Bay of Plenty

The Bay of Plenty Demographic Profile to 2051^[4] shows significant growth in the percentage of the population in the 60-79 years age group and the 80 plus years age group. Every other age category has a smaller percentage than 2011 numbers. If you take population growth into consideration, this will result in significantly more people aged 65 years or older in the Bay of Plenty than at present^[4]. More detail is shown below.

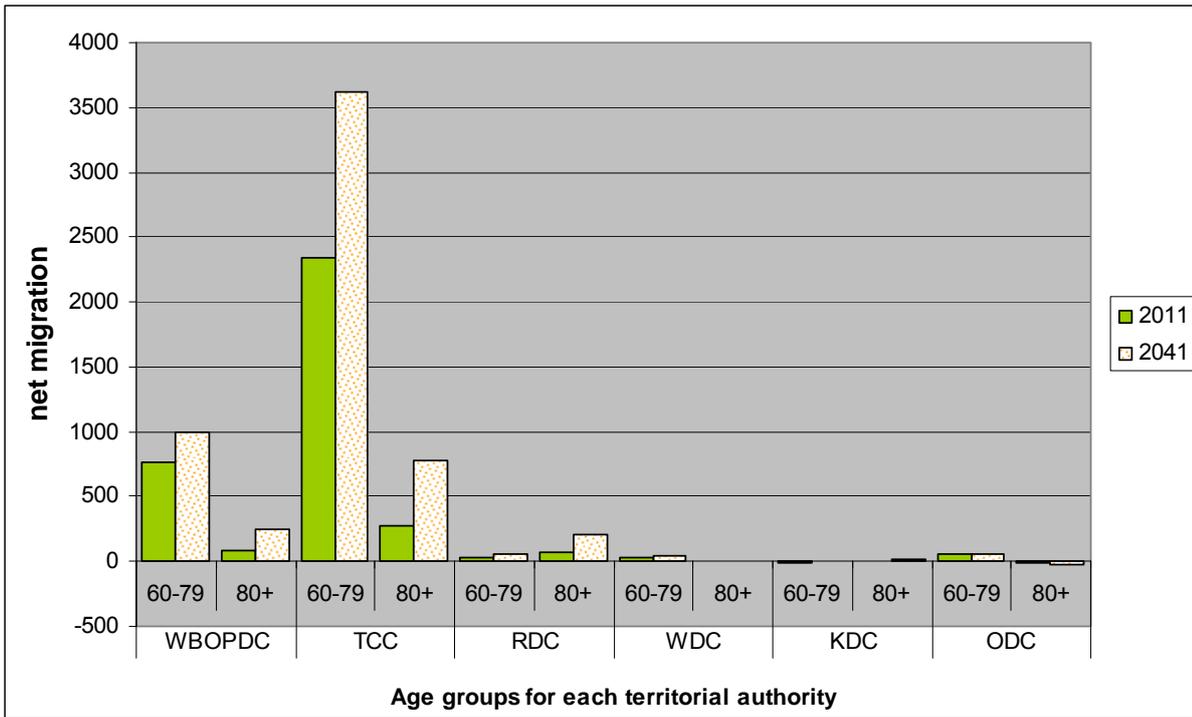


Figure 2.1: Net migration for 60-79 years and 80+ years age groups to 2041 by territorial authorities in the Bay of Plenty¹

The population of the Bay of Plenty region is expected to grow from 242,600 in 2001 to 403,320 in 2051. Nearly all of this growth is expected to be in the western Bay of Plenty sub-region. Rotorua district's population increases slightly, while the eastern Bay of Plenty sub region's population is predicted to fall^[4]. Figure 2.1 above shows that between 2011 and 2041 in Rotorua, the biggest growth will occur in the 80+ age group, and in the western Bay of Plenty sub region (Western Bay of Plenty District Council and Tauranga City Council) the biggest growth will be in the 60-79 years age group – and there will also be a significant increase in the number of people aged 80+ (Table 24, p.48 ^[4]).

¹ Note that the break down of age groups in Figures 2.1 is inconsistent with the age groups throughout the rest of this report because this data was extrapolated from the BOP Demographic Forecast, and the rest of the data in this report is from Statistics New Zealand.

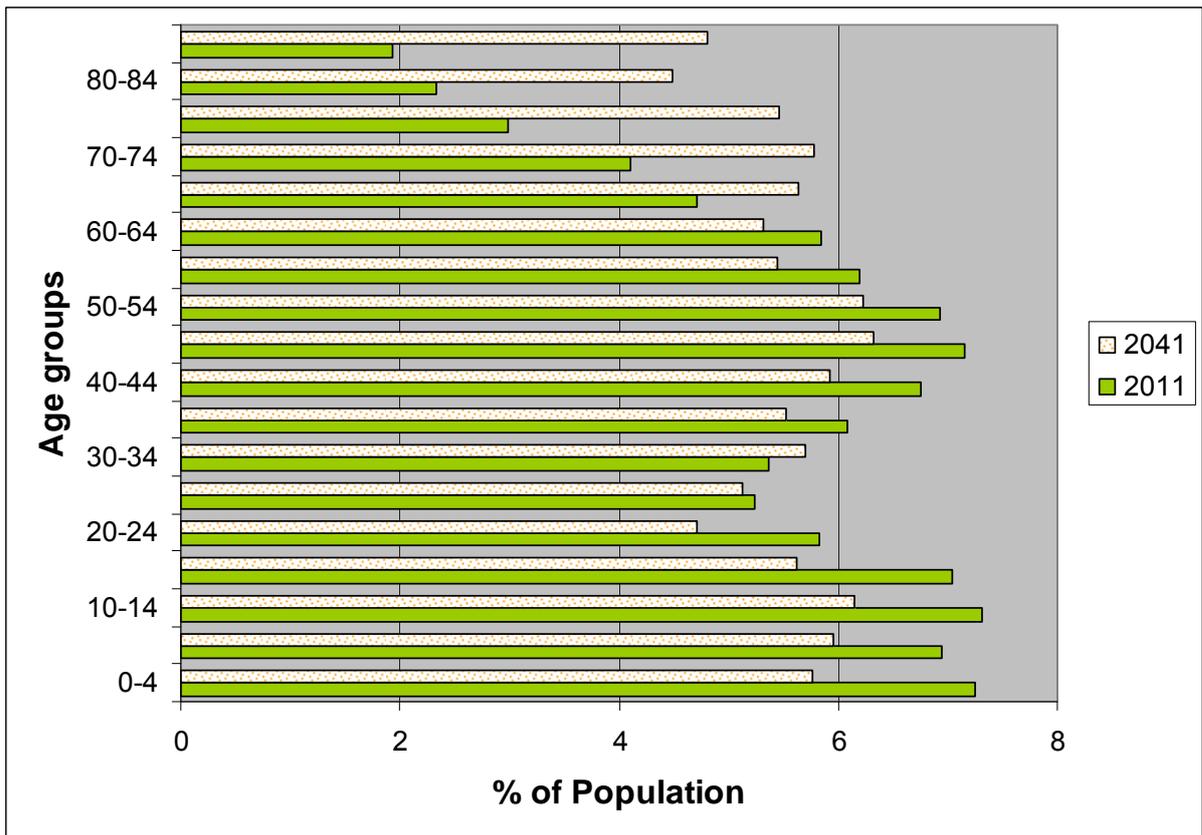


Figure 2.2: Percent of population in each age group for the Bay of Plenty in 2011 compared to 2041

Figure 2.2 above shows significant increases in the percentage of the population in the Bay of Plenty aged over 65 years and aged over 80 years. In 2011, around 21% of the population is aged over 65 years. By 2041, over 31% of the Bay of Plenty population will be aged over 65 years^[5]. Over 9% of the population will be aged over 80 years. The increase in the number of people aged 80+ years is due to higher life expectancy. This is accentuated by the large number of people born during the 1950s to early 1970s (baby boomers) starting to enter the 80+ age group. For New Zealand overall, about 21 % of the population is projected to be aged 65 years and over in 2031, up from 12 % in 2006 ^[1].

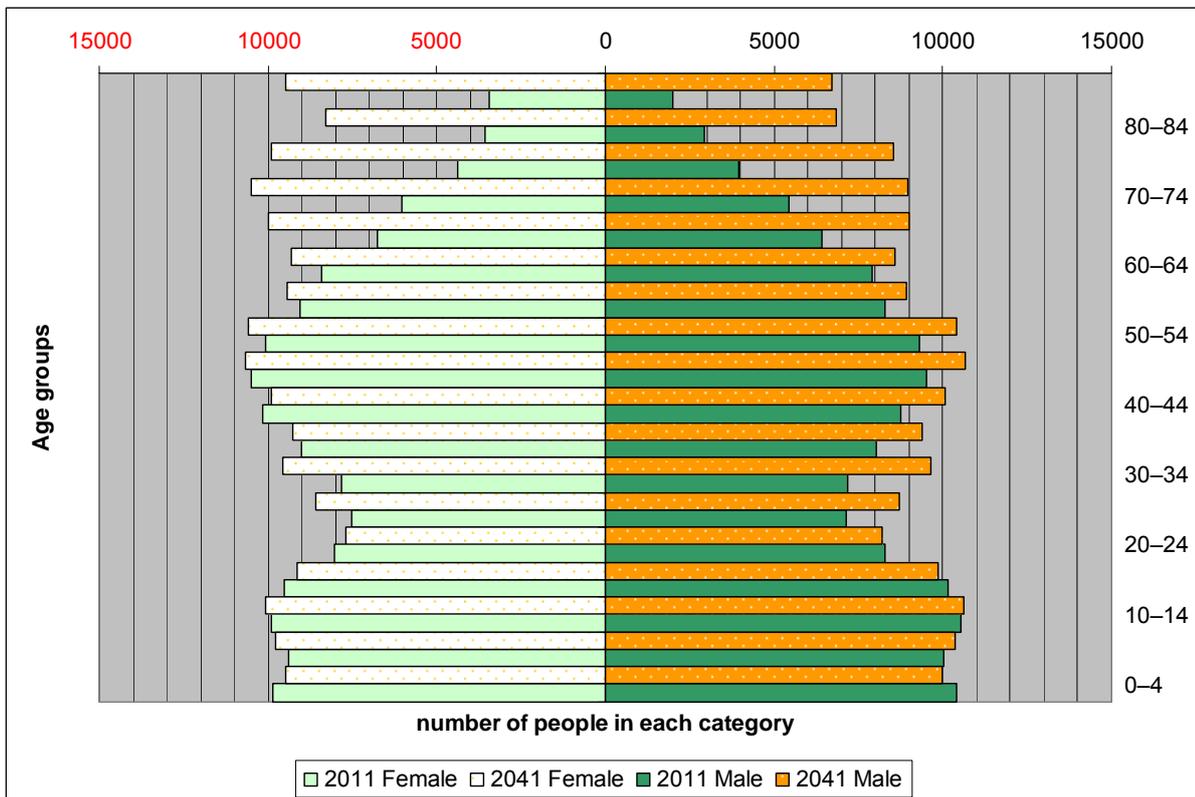


Figure 2.3: Comparison of the number of people in the Bay of Plenty region in each age group in 2011 and 2041 by gender.

The demographics Figure (2.3) above shows the number of people in each age category in 2011 compared to 2041 for the whole Bay of Plenty. It clearly shows significant growth in the number of both males and females aged 45 years and above. The biggest growth happens in the 70 years plus age groups.

2.3 Emerging trends for older people

Part 2.2 shows that there will be a higher percentage of people over 65 and over 80 years living in the Bay of Plenty in 2041. This chapter identifies the qualities of an older person that will affect their transport needs - Objective (b). In addressing this objective, it is important to remember that some people under 65 years who have similar qualities to most over 65 year olds, may have similar demands from the transport network, i.e. those whose eyesight excludes them from driving. In providing for older people, you are also providing an accessible network for those with reduced functional capability^[6].

The aim of health and social agencies is to maintain functional capacity through active aging and the parameters which influence active aging are shown below in Figure 2.4.

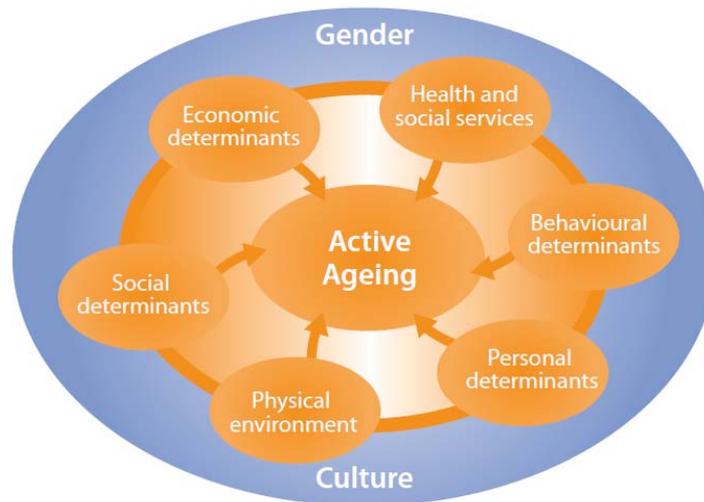


Figure 2.4: Determinants of Active Aging – World Health Organisation

The World Health Organisation^[6] identified a number of factors which determine active aging – or how well individuals age. Transport plays an important role in the physical environment as well as several of the other factors which affect the aging process.

In the future, many people will remain in employment beyond the traditional retirement age of 65 years^[7], but they may not work full time or traditional working hours^[8], and may transition into retirement^[9] rather than ceasing all employment at once, at the first opportunity (i.e. many people return to employment following their first ‘retirement’). In 2041 a 65 year old would have been 34 years old in 2010. That means that we can expect a 65 year old to show at least the same technological competence, and rate of skill improvement as a 34 year old does today. Australians are already showing a tendency to stay in employment longer, and Australian women make decisions about when to retired based on their, and their partners’ health^[10].

In 1999, the Ministry of Social Policy published a report titled ‘Factors affecting the ability of older people to live independently’. This report summarises on page 1 the physical conditions that define ageing:

Ageing can involve not just superficial changes, but decreased mobility and dexterity, decreased strength and stamina, and reduced sensory acuity. Statistically, the probability of morbidity or illness and some disabilities increases with age. Older age is associated with an increase in the prevalence of chronic diseases including heart attack, stroke, arthritis, osteoporosis, cancer and dementia. Older people are also likely to suffer more severe non-fatal injuries from falling. Older people are often more affected by, and take longer to recover from sicknesses, such as influenza^[11].

It is important to remember that not all people over the age of 65 have the conditions described above, and that some people under 65 will suffer from amongst other things, reduced sensory acuity (poor eyesight and hearing), chronic disease such as cancer, coronary heart disease and depression, and co-morbidity factors such as obesity and diabetes, which are becoming increasingly prevalent in the Bay of Plenty^[12]. These medical conditions could affect the transport needs of older people, and obviously some younger people also.

As one ages, one's functional capability changes and diminishes in later life. Figure 2.3 shows diagrammatically the changes in functional capability as one progresses from early life to older age.

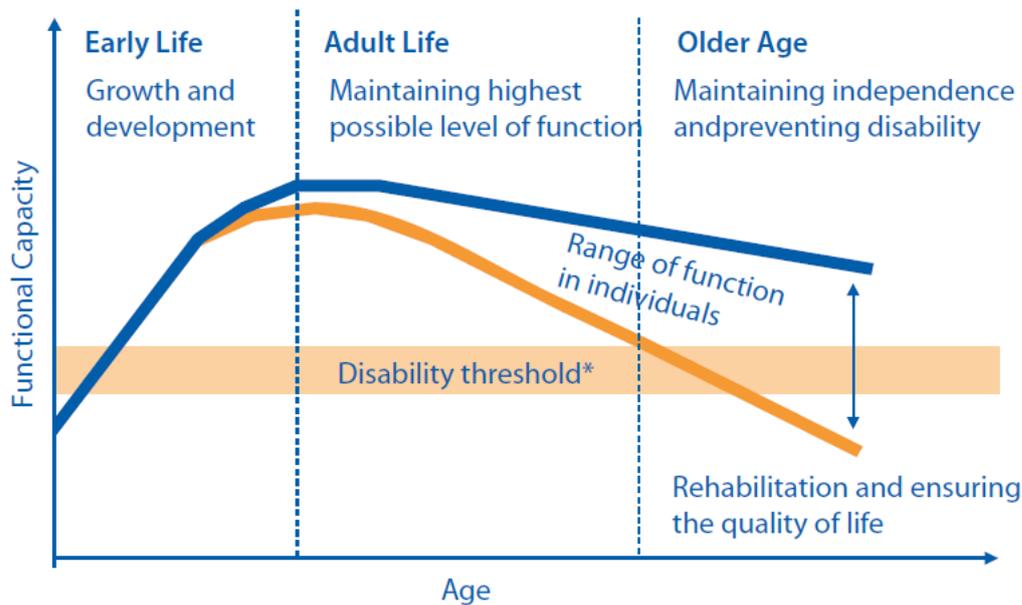


Figure 2.5: *Maintaining functional capacity over the life course – World Health Organisation^[6]*

In older age, particularly in the stage of eldership, many people start to fall below the disability threshold and this has considerable influence on their transport needs. The rate of decline of functional capability is largely determined by factors relating to lifestyle as well as external social, environmental and economic factors^[6]. The increasing levels of functional capability of the post retirement population is aided by participation in recreational, social and entertainment activities - creating increased demand for these activities.

From a road safety perspective, if older people are involved in a car crash, or are struck by a car whilst walking or cycling, they are more likely to die than younger people^[13]. If they do survive, older people are likely to take longer to recover than younger people, and may never return to walking, cycling or driving^[14]. “Older casualties are more fragile and will suffer more severe injuries than younger casualties in the same crash” (p.5^[15]).

“People aged 65 and over have far fewer trips associated with paid work and education compared to the population 15 years plus” (p.13^[16]) and most of those trips will be taken outside of the peak commuter period. The mean number of trips taken, and the annual distance travelled reduces as age increases^[16]. The main reason older people travel in the Waikato and Bay of Plenty is for social or recreational reasons, and for shopping^[16]. These findings are not expected to change significantly between 2003 (the year considered in the report) and 2041, even though older people are more likely to be working for longer. Currently the main reason (45%) for travel on the Tauranga bus service is for shopping^[17].

A lot of older people are fiercely independent and are often reluctant to ask for help with transport as they don't want to overburden friends or family (Dwyer Gray and Renwick cited in^[16]). More people in all age groups are now deciding to drive alone, in 1997/98 49% of trips by 75+ years were made as vehicle drivers and in 2004/05, 54% of trips by 75+ years were made as vehicle drivers^[18]. The Population Ageing and Technical Advisory Group (PATAG) note that older people will continue to drive as long as they

can, and that social networks, rather than family will take over as the main informal transport provider into the future^[19]. With smaller family sizes now, it is less likely that there will be family members living nearby, and available to help parents with transport. Currently the main modes of transport used by older people are personal car, getting a lift with friends or family, taxi, bus, total mobility taxi, and mobility scooters^[20].

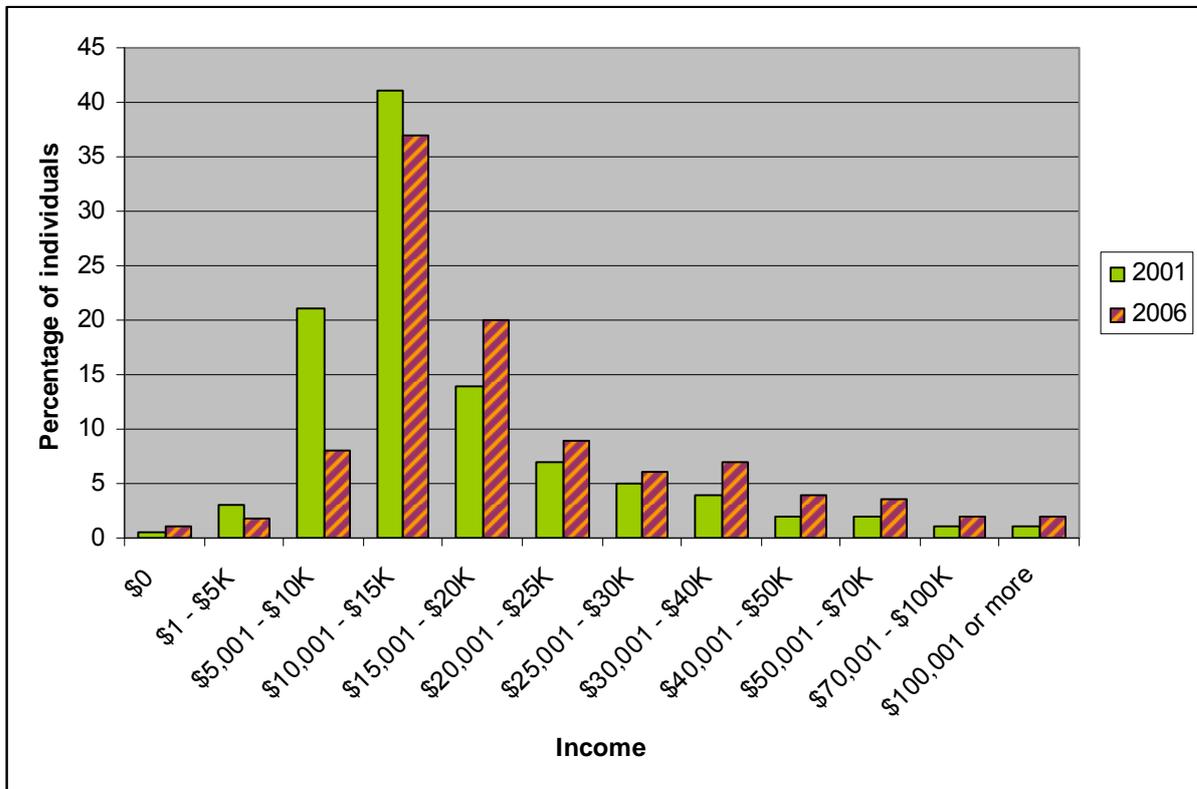


Figure 2.6: Reported income for individuals in the Bay of Plenty aged over 65 years. New Zealand Census, Statistics New Zealand.

Older people are more likely to be financially independent by 2041 with the introduction of the KiwiSaver scheme^[2], but in most cases they will have suffered a drop in income on retirement. The trend in increasing income for the over 65's is already evident in the comparison between the census figures for 2001 and 2006 as shown in Figure 2.6. However, this trend may be caused by wealthy retirees migrating from other parts of New Zealand.

Private pensions and schemes such as KiwiSaver will give older people the opportunity to purchase newer cars which are easier to use (automatics) and safer (with more built in safety features). This also means that they are more likely to be able to afford taxis, or contribute financially towards community transport options. Logically it also means they are less likely to identify financial issues as a barrier to travel, assuming the cost of fuel does not make the cost of these modes unattainable to the general public.

Older people will continue to be involved with the community by carrying out environmental work, volunteering for cultural activities, and by being involved with churches and other community groups^[20].

It is important for people to be able to 'Age in Place'^[3] without having to move each time their needs increase. This allows people to remain actively involved with the community, politics, family, the environment, and other things that are associated with the neighbourhood, and means reduced demand for travel if they are able to shop

nearby, or share a ride with neighbours^[21]. Today's population is more mobile than the past and most people will make several residential moves in their working life. As a result, family of the elderly are less and less likely than in the past to be residing in the same region as their children. For many elderly the option of relying on family for transport and general local support is not a practical option^[19].

To Māori elders or kaumatua, it is important for them to remain as part of their own communities. They support and care for mokopuna and whanau and vice versa. It is also important for them to grow old in the place of their birth as this is their turangawaewae. Their birth place which gives them the right to stand and speak. They are the tangata whenua of their communities. In their own communities, they freely practice their Maoritanga and their presence helps to maintain the ahi kaa (continued occupation to keep the home fires burning) of their whanau, hapu and iwi. Their roles are important in keeping alive the cultural traditions. They are generally the keepers of whakapapa (genealogy), waiata and tikanga (customs). If māori are made to move from their homelands, they become separated from their turangawaewae, their identity and status tangata whenua to this area. For spiritual and cultural reasons, it is important for kaumatua to be living in their own communities and near their own marae. It is also important that they have the support of their extended families when they become too old to care for themselves. For these reasons it is vital for them to have easy access to services.

2.4 Critical transport issues

Objective (c) is to identify the critical transport factors contributing to quality of life for older people in the Bay of Plenty region. There are a number of transport factors that affect quality of life, and these can be broken down into infrastructural and design issues, integration, systemic issues, and cost. These issues are discussed below.

2.4.1 General transport issues in the Bay of Plenty and older people specific issues

In developing the (RLTS), to date, the regional council has identified 18 major transport issues – these are discussed in detail in the RLTS so will not be covered here. Many of the issues however, are relevant specifically to older people and are identified below in Table 2.1. It is important to note that these issues are relevant to the Bay of Plenty as a whole, but also to older people.

Table 2.1 RLTS issues, and their relevance to older people

Issue (from RLTS development) ^[23]	Relevance to older people
<i>Planning for business and industry growth is not sufficiently integrated with the region's transport system to ensure the efficient movement of people and goods.</i>	<i>Retirement homes need to be located near to facilities or public transport services.</i>
<i>Further development of freight intensive industries within the region and forecast freight growth (inter and intra-regional) will increase demand on the region's transport system.</i>	<i>Roads will be busier, with bigger freight vehicles which can be scary for older people.</i>
<i>The region's transport system is overly reliant on non-renewable fuel sources making it susceptible to volatile oil prices.</i>	<i>The cost of travelling may increase significantly if we rely only on non-renewable fuel sources.</i>
<i>Levels of national funding available for walking, cycling, public transport services and the rail network risks, diminishing the value of previous investment in sustainable modes.</i>	<i>Need to continue to invest in infrastructure to ensure it is of an appropriate standard.</i>
<i>Ineffective integration between land use and the region's transport network can result in development patterns that increase the need for travel and reliance on motor vehicles. This in turn, increases road congestion, emissions and energy use and limits opportunities for more sustainable modes.</i>	<i>Need to ensure land use and transport links are well integrated to reduce the need to travel. Limiting the extend or urban sprawl, and increasing intensification will also reduce the need to travel.</i>
<i>The design and management of transport corridors does not adequately provide for the safety and personal security needs of all users and activities.</i>	<i>A poorly designed road network is unsafe for older people to use².</i>
<i>There is limited planning for the access and mobility needs of small communities and more isolated parts of the region. These communities tend to be exposed to increased risk of transport network failure.</i>	<i>It is expected that older people will live in isolated rural communities. It is noted that communities like Katikati have the fastest growing proportion of over 65's, but have little public transport.</i>
<i>The volatility of fuel prices and an ageing population will mean increasing future demand for accessible travel amongst those with few mobility options.</i>	<i>Older people are more likely to require modes other than private motor vehicle.</i>
<i>Increasing motor vehicle traffic is generating air and noise pollution and creating severance effects. This is affecting the quality of life of people living next to major roads and making it more unpleasant to walk and cycle along road corridors.</i>	<i>People need to be able to walk, cycle and breath fresh air to stay healthy and live longer.</i>
<i>The convenience of motor vehicles is encouraging sedentary lifestyles, which are contributing to increasing rates of obesity related illness.</i>	<i>Obesity increases the risk of dying at a younger age and leads to other health risks. It also results in decreased mobility.</i>

² See section 2.4.2 for more detail

2.4.2 Infrastructural and design issues

Physical infrastructure and the design of public space will impact on the ability of older people to move around. If there are areas that are physically impossible for people to pass by (staples in the middle of walkways are too narrow for mobility scooters), or areas that feel unsafe they are likely to present as a barrier to movement^[24]. The World Health Organisation has written a checklist for age-friendly cities^[6]. The relevant checklists are appended. There are a number of measures that transport planners and providers can take to make it easier for older people to move around. Some examples are:

- Ensure curbs are not too high or too steep to allow mobility scooters to get on and off footpaths^[25].
- Ensure footpaths have no trip hazards, are wide enough, and are continuous on both sides of the road for pedestrians, mobility scooters, push chairs, walking frames and wheel chairs to move around safely.
- Ensure public space has crime prevention through environmental design (CPTED) so that older people can feel safe in public spaces^[26].
- Remove or redesign staples on walkways to allow mobility scooters to get through.
- Provide good urban design in public spaces.
- Provide adequate lighting of public space, car parks, roads and footpaths^[26].
- Install age friendly infrastructure at bus stops, including larger fonts on bus timetables, seating and weather proof shelters^[17].
- Consider designing new road markings and signage^[16] to make it easier for people who are losing their eyesight, to understand the road network^[27], and allow older people to feel comfortable continuing to drive for longer^[19].
- Locate public seating (particularly in hilly areas) for older pedestrians.
- Provide easy access priority parking for elderly or disabled that is located near service providers. Ensure this parking is monitored^[6].

2.4.3 Integration between land use and transport planning

The Government Policy Statement^[28] emphasises the importance of transport strategies and packages being developed alongside, and clearly connected to land use strategies and implementation plans. This means that new developments (residential or commercial) need to have appropriate links to required services – e.g. having supermarket, medical centres and other shopping facilities near to new large residential developments. It also means ensuring appropriate transport links – easy to use roads, buses, or footpaths are in place for large residential care facilities. This needs to be put in place early – perhaps as part of the consent process, or by using structure plans at a city wide level^[19].

2.4.4 Systemic transport issues

There are a number of factors that make up the transport system. It includes the road network, walking and cycling facilities, the bus network, informal transport networks, and other public spaces. Older people are less likely to drive if the transport system is

too complicated to use^[16]. Some things that transport planners and providers can do to ensure the transport system is not too complicated include:

- Ensuring easy physical access to the transport system (as explained above in Chapter 2.4.2).
- Ensuring people know what modes are available and how to use them safely^[16] i.e. knowing where safe walkways, railway crossings, or pedestrian crossings are, knowing which bus route to use where, and how much it will cost; knowing how to get on to the total mobility scheme.
- Making driving easier by using self explaining roads^[29], and consistent physical infrastructure and signage^[30].
- Don't change the road rules too often, and provide coping strategies for people to help manage changes^[16].
- Ensure its affordable to chose different modes of transport^[31].
- Encourage older drivers to use roads off peak as there is a higher crash rate for older drivers in heavy traffic^[16].
- Having a wide range of transport options available at various times of the day to make it easier for older people to move around when they need to^[16, 21].

In saying that, it is ideal to encourage older people to stop driving when it is no longer safe for them to do so. It is not safe to have older people driving cars for as long as possible. It should be noted, however, that elderly drivers tend to be more tentative and somewhat slower in their reaction time. Their slow driving can result in more congestion and long queues and in turn be a source of frustration for other drivers needing to get to their destination in a short time. This frustration can lead to dangerous passing by younger drivers. This problem can be alleviated by more passing lanes or slow driver bays, allowing the build up to be cleared at regular intervals.

Although older people would prefer to drive their own cars, this is not always practical – particularly as they get even older, and dependence on automobiles is a barrier to ageing in place^[32]. It is important to ensure that a wide range of travel options are available, and are convenient, affordable and safe for older people to use^[31].

2.4.5 Cost of transport

It is identified above (in Chapter 2.3) that older people will have more financial independence in the future. However, it needs to be remembered that post retirement, the majority of older people will be on a reduced and probably a fixed income which may not be inflation protected. Therefore, costing is one factor that affects the modes of transport available to individuals and the cost of transport contributes to quality of life in the Bay of Plenty. For example, there are costs involved with:

- owning a safe vehicle^[16] and maintaining it properly
- using the bus regularly
- having access to a van at a retirement village
- travelling to medical appointments

- relying on friends or family for transport

The cost of transport affects whether older people can get to medical and non-medical appointments, grocery shopping, personal care appointments, social outings, and other quality-of-life trips^[3]. It is possible to decrease the demand for older people to travel, by providing internet shopping, and the option to work from home,^[24] although it is important to be aware that travel is also a social activity, and avoiding travel altogether could impact on the mental and physical health of older people^[33].

“In an ideal world, Residential Care Home or Assisted Living Residence would have the necessary funding to be able to fulfil the transportation needs of all their residents. But as it stands, the costs of such transportation are far greater than the funding currently available” (p.6^[3]). Perhaps in the future, these facilities will be located near the required services, or will be well linked using an accessible transport network. Also if residents are more financially independent, transport needs will be paid for by residents.

It also should be noted as indicated earlier, that people post retirement travel outside the peak commuting hours when there is often a reduced public transport service. Consideration needs to be given to the provision of regular public transport services at this time to meet the post retirement peoples’ needs.

2.5 International literature – transport for older people

International literature can help to identify the critical transport factors contributing to quality of life for older people overseas, which provides good indicators relevant to the Bay of Plenty region. An OECD³ report in 2001, discussed the mobility needs and safety issues for over 65 year olds^[34]. It identified eight major policy priorities (p.4-5^[34]):

- Support and funding to enable lifelong mobility
- Support for older people to continue driving safely
- Provision of suitable transport options to the private car
- Safer vehicles for older people
- Development of safer roads and infrastructure
- Appropriate land-use practices
- Involvement of older people in policy development
- Educational campaigns to promote maximum mobility and safety for older people

Funding to support lifelong mobility includes such things as encouraging older people to keep fit, to continue to drive, and to learn to use alternative modes of transport including taxis and buses. An American website ‘about.com’ lists ten best practices to help communities serve an ageing population^[30]. This includes preventative health care, nutrition education, age-appropriate fitness programs and recreational facilities, safe driving assistance, special planning and training for public safety personnel and other first responders, home modification programs, tax assistance and property relief, job training, retraining and lifelong learning opportunities, community engagement opportunities, and a single point of access to all ageing information and services in the community. A study in Australia around older people’s participation in social and

³ Organisation for Economic Co-operation and Development

recreational activities, identified transport access (cost and the number and timing of bus services) as a major factor for whether older people of lower socio economic status participated in physical activity^[35].

Arrive alive – a South African website notes that the most important factors for keeping older people safe on the roads are family involvement, road infrastructure, vehicle manufacturers, education and road safety advice relevant to older people^[14]. It is also important to continue to assess a persons ability to keep driving safely^[15]. The AARP public policy institute in America identifies that in countries where reliance is on privately owned motor vehicles then people need to drive for as long as they can safely^[36].

Walking, public transport, specialised transport and taxis are all viable options for older people to use instead of driving. Walking In particular is beneficial to older people as it keeps them fit and more mobile. Older people who walk are more likely to be fitter, and more involved with the community^[36]. It is important also that infrastructure encourages older people to walk^[26]. In Canada, Fitzgerald identifies some of the biggest issues for transportation planning for an older population. She discussed impairment amongst seniors and the fact that older people are more likely to have impairments that require public transport alternatives in lieu of private transport. Fitzgerald also identified that older users expect a higher level of public transport service in regards to reliability, comfort, accessibility, adaptability, availability and affordability^[37].

It is important for older people to make their own decision about when to stop driving, and most older people choose to stop driving before they become too cognitively or physically impaired, but unfortunately this means that most crashes that happen to older drivers, happen to fitter independent older people (as they are the only ones still driving)^[38].

Car designs need to be easy to use for older people, but the difficulty lies in persuading car manufacturers to include these safety designs and features^[39].

Safer roads and infrastructure has a lot to do with the busyness of a road, and the ability for older people to drive on, or walk across the road. It can be anything from curb height to sight lines, and speed of traffic. Good intersection design can have a significant impact on the number of crashes that older people have at intersections^[40].

Council can encourage good land use practices by applying urban design standards and ensuring connectivity between communities and services. For example, it is not a good idea to locate retirement villages far away from shopping centres. It is unsafe to sever the pedestrian link by locating a busy road between shopping or medical facilities and an older community. Higher connectivity and density in residential areas encourages walking, which has positive health impacts for older people^[41].

SWBR Architects in Rochester, New York^[32] identify the most important thing that local government can do, is to involve older people in the planning process now, and apply 'senior perspective' to review and improve plans, programs, practices and places.

2.6 Conclusions

Part 2 has answered the first three objectives:

- (a) To quantify the proportion of the Bay of Plenty population that will be over 65 years, and over 80 years over the next 30 years.
- (b) To identify the qualities of an older person that will affect their transport needs.

- (c) To identify the critical transport factors contributing to quality of life for older people in the Bay of Plenty region.

There will be significantly more older people living in the Bay of Plenty in 2041 than there are now. The biggest growth will be in the percentage of people aged 60-79 in Tauranga. There will also be a significant increase in the percentage of very old people (over 80 years) living in the western Bay of Plenty sub-region. Over 31% of the population will be over 65 years.

People aged 65-80 years are likely to continue to be active, and mobile. These people may continue to be employed, but probably not in traditional full time work. They are likely to travel less often, and not as far. These people are likely to continue to live in the community, rather than in retirement homes. We expect them to choose to travel independently; more commonly outside the peak commuting hours, by private car, walking, cycling, or catching the bus. People aged 80+ years are likely to be less mobile. They are more likely to rely on informal transport providers such as community groups, or retirement village transport for travelling.

There are a number of infrastructural designs and systemic improvements that can be applied to the transport network to make it easier for older people to move around. It is also important for land use and transport planning to be well integrated.

The OECD has identified eight major policy priorities to manage the mobility needs and safety issues for older people. These involve supporting older people as their transport needs change. It is also important that older people are included in making decisions about the transport network and about their own modes of transport.

Part 3: Transport options for older people in the Bay of Plenty

3.1 Introduction

Now that we have a better grasp on how many older people could live in the region, and what modes of transport they are likely to use, we need to have a look at existing policy. This will give us an understanding of the framework within which transport options are delivered. We will look at what transport options are currently available to older people in the Bay of Plenty to provide a baseline. We will then answer objectives (d) and (e) to help us understand the future implications.

Objectives covered in Part 3 are:

- (a) To identify the associated implications for the region's transport network arising from an increasing elderly population.
- (b) To identify what transport policies are currently in place to ensure quality of life for older people in the Bay of Plenty region.

3.2 Policy provisions

There are a number of national and regional social agencies who have policy that relates to older people in the Bay of Plenty. Table 3.1 below lists some of the agencies that are responsible for older people in the Bay of Plenty. It also identifies some of the leading researchers on aging population issues.

Table 3.1: Agencies responsible for older people in the Bay of Plenty

Agency	Level of involvement	Key policy
Ministry of Social Development	National	Statement of Intent 2005 - Older People ^[42]
Office for Senior Citizens	National	The Positive Ageing Strategy ^[11]
Ministry of Health	National	Health of Older People Strategy 2002 ^[43]
New Zealand Transport Agency	National	Medical Aspects of Fitness to Drive ^[44]
Bay of Plenty District Health Board	Regional	BOP District Strategic Plan 2005-2015 ^[45]
Age Concern	Local	Towards a Positive Future – Policies and Aims of Age Concern New Zealand ^[46]
Population Aging Technical Advisory Group	Local	Smart Ageing Action Plan ^[47]
The National Health Committee	Advice	N/A – the NHC provides research and policy advice ^[48]
New Zealand institute for research on ageing	Advice	N/A – the NZiRA provides research ^[49]

There are obviously a lot of other agencies that look after older people in the Bay of Plenty. These groups include (but are not limited to) Grey Power, the Foundation for the Blind, and other church and community groups.

The policies listed above in Table 3.1 include research, strategies and actions to improve the quality of life for older people in New Zealand and the Bay of Plenty. This shows that there are a lot of agencies working towards making life easier for older people, but the difficulty is going to be applying these policies to a much larger sector of the community. There will also be a smaller percentage of the population at a working age and so delivering the policies.

Most of these policies are health or social related strategies. Koopman-Boyden and Waldegrave identified that policy at Government and community level should ensure older people have easy access to transport, and can participate in community activities and in home based services^[50]. The most important regional transport policy to older people is the Bay of Plenty RLTS.

3.2.1 **Regional Land Transport Strategy**

The Regional Land Transport Strategy (RLTS) sets the direction for the region's transport system for the next 30 years. The Bay of Plenty Regional Transport Committee is currently reviewing the RLTS. This aging population study will directly influence the RLTS.

Issues identified in the RLTS review to date that are relevant to older people are identified above in Table 2.1. These issues were reinforced by the PATAG during a presentation on the development of this study^[3]. Policies in the new RLTS should manage these issues.

3.3 **Bay of Plenty – geography, location, population, movement patterns**

The Bay of Plenty population is currently located primarily in the western sub region around Tauranga. This is also the area expecting to see the most growth in the number of older people. There is likely to be some growth in Rotorua and Opotiki^[1].

Communities in isolated areas with large Māori populations such as Opotiki and East Cape currently have a very small number of older people. The Ministry for Social Development expects that older Māori people are likely to remain in the place that they have lived all their lives^[11]. So the Bay of Plenty should expect to find more older Māori people living in isolated rural areas.

The Bay of Plenty is also a very attractive place for people to move to in their retirement. High sunshine hours and a beautiful landscape attracts a lot of older people to the Bay of Plenty^[4]. This means that potentially there will be older people living here who have never lived in the Bay of Plenty, and who do not have close family members living nearby. This means that these people will rely on the community.

3.4 **Transport services currently available in the Bay of Plenty**

A case study of the transport services currently available in the Bay of Plenty are listed in a previous study^[51]. The following paragraph outlines some of the formal and informal transport services currently available to (and patronised by) older people in the Bay of Plenty.

3.4.1 Formal

The regional council contracts bus services across the Bay of Plenty region. People who hold a SuperGold Card⁴ are eligible for free travel on off-peak services on weekdays and all day on weekends and public holidays. The percentage of SuperGold card users on some of the urban and rural bus services in the Bay of Plenty are shown below.

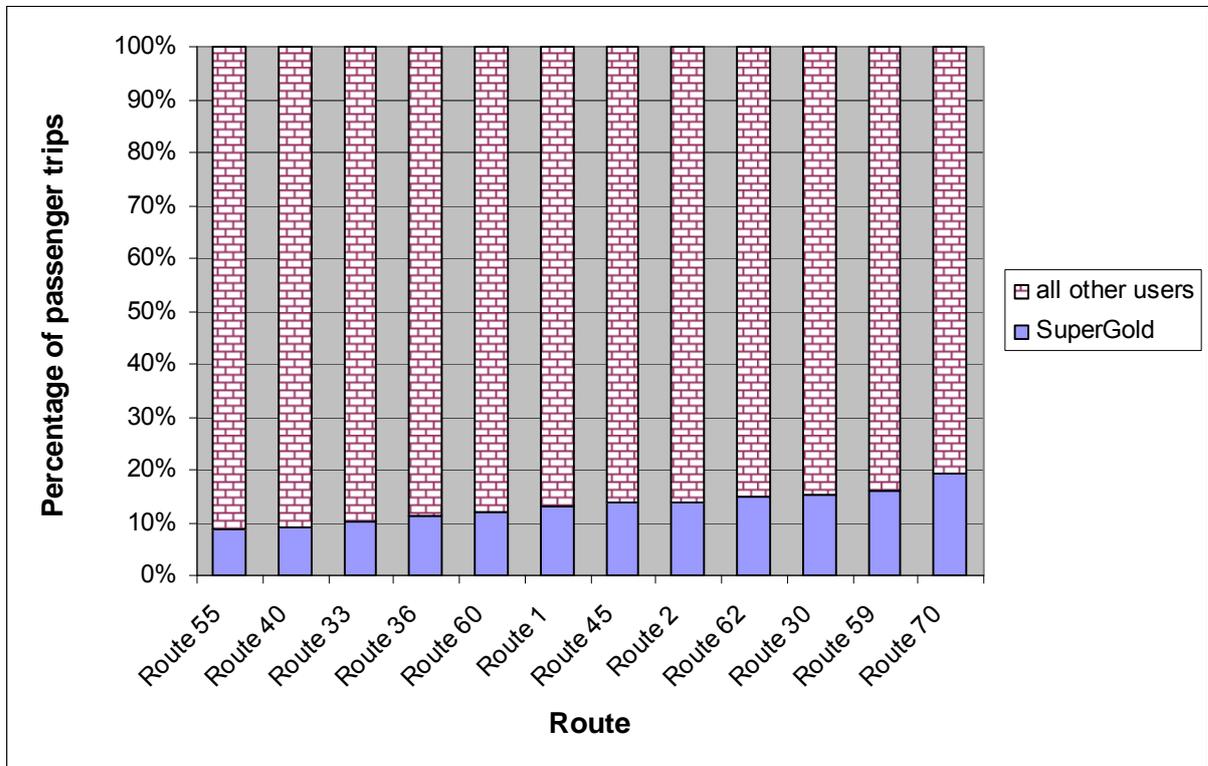


Figure 3.1: The percentage of trips made by SuperGold Card holders on the Tauranga bus network in 2009/10

Figure 3.1 above shows that SuperGold card users use Tauranga urban bus service. Whilst people over 65 years currently make up around 17% of the Tauranga population, Figure 3.1 shows that they make up around 13% of passenger trips on the Tauranga network. In saying this – in Part 2 above we have identified that people over 75 years are significantly less likely to use the bus. About 9% of the Tauranga population is aged 65 – 74 years. Therefore, around 9-10% of the population make approximately 13% of bus trips on the Tauranga network[5].

⁴ New Zealand residents over 65 years of age (and some others) are eligible for a SuperGold Card.

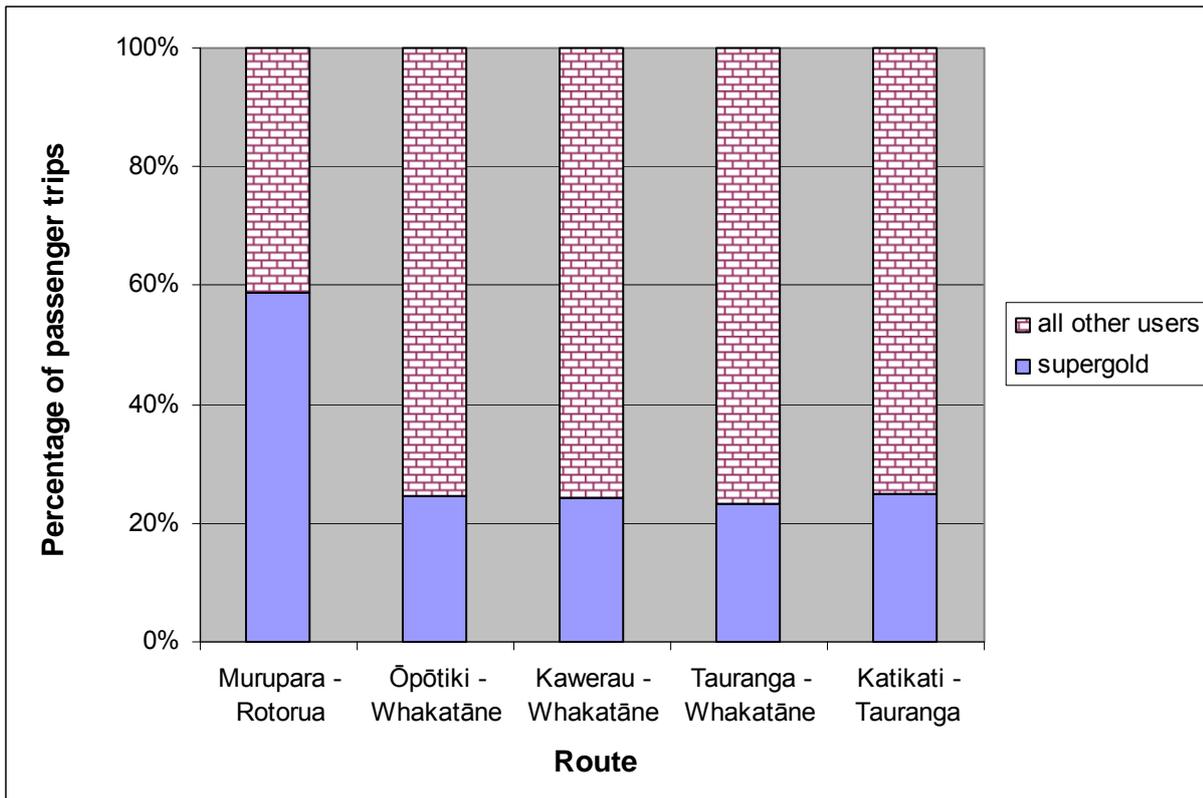


Figure 3.2: The percentage of bus trips made by SuperGold Card holders on the Bay of Plenty rural bus services in June 2010.

Figure 3.2 above shows that SuperGold card users use the rural bus services. Over 20% of trips made on the rural bus services in the Bay of Plenty are made by SuperGold Card holders. Because the SuperGold Card can only be used on services operating off peak, I have not shown all of the services subsidised by the Bay of Plenty Regional Council.

Total Mobility allows eligible people with impairments to use appropriate transport to help make their community participation better. The regional council subsidises taxi trips for people with impairments. Twelve percent of registered Total Mobility users in the

Bay of Plenty are aged 65-74 years, and 72% are aged over 75 years. This shows the reliance that over 75 year olds have on taxi, or private car^[52].

3.4.2 Informal

It is important to formally recognise the role of caregivers and the assistance they can provide to older people living at home, and remaining involved with the community^[53].

There are a number of informal networks through church or marae groups, or friends that provide transport for older people. Informal transport also includes volunteer community transport services^[16].

3.5 Transport needs of older people

Older people in America are less likely to make car trips for work purposes, or to take passengers somewhere, as they are more likely to be retired, and less likely to have dependent children. One in five Americans over 65 do not drive. Non-drivers are more

likely to be women, living alone, on lower incomes, living in an urban area, and in fair or poor health, or disabled. Non-drivers also take fewer trips each day.

Chapter two above explains that older people have a variety of transport needs depending primarily on their physical ability. Younger, fitter people aged over 65 are likely to continue working – although maybe not full time. They value their independence and mobility, and can continue to contribute to society^[50].

As people become a bit older, they may not be able to continue driving so might use passenger transport to make regular trips into the city for shopping or social activities^[33].

3.6 Implications for the transport network

Once people reach the age of 75, they are much less likely to drive, and also make fewer trips^[36]. They become reliant on other modes of transport - particularly friends or family. PATAG and other research suggest that family will not necessarily be available to take these people on outings. Perhaps a new industry will arise providing very low cost community transport provided by private cars for groups, or individual older people. Currently, older people who can afford it have access to taxis, or mini-vans at the retirement home. These trips are important for social reasons^[16]. It is important that policy does not exclude the operation of these services.

The implications for the transport network are that we can expect:

- increased patronage off peak on buses
- an increase in the demand for taxis
- an increase in the use of private motor vehicles, retirement village transport, and taxis during the day
- perhaps a decrease in the percentage of peak private vehicle movements as the workforce will make up a smaller percentage of the population
- an increase in demand for 'shopper' buses, and PT routes servicing rural communities
- increased cost to the ratepayer to provide Total Mobility and PT services to a larger percentage of the community

3.7 Implications for the quality of life of older people

If transport policy is improved, and changes are made to provide for the transport needs of older people in the Bay of Plenty, we can expect that the quality of life of older people will improve in the following ways:

- more physical activity
- may be employed for longer because travel to and from work will not be an issue
- more actively involved with community and with planning their city
- live independently in their own homes as part of their community

- have better access to health care
- drive themselves until an older age, and make sensible choices about when to stop driving
- more socially and economically active

3.8 **Conclusion**

There are both costs and benefits associated with improving transport policy to provide for an aging population. It is important to realise that such significant changes to the demographics in the Bay of Plenty could have a negative impact on the economy. As such, any policy changes that encourage older people to continue to be physically, socially and economically active should be progressed. The services that are currently provided are used by older people, so they are providing adequately for today's population level, but more services will need to be provided as the population of older people increases.

Part 4: Analysis and discussion: recommendations

4.1 Introduction

In Part 2 and Part 3 we have identified who will be living in the Bay of Plenty, what their needs will be, and some of the policy implications. In Part 4 some solutions are discussed. Objectives (f) and (g) can both be applied to regional transport policy – the RLTS.

Objectives covered in Part 4 are:

- (a) To suggest some measures that transport planners and providers in the Bay of Plenty can undertake to mitigate the effects of an older population on the transport network.
- (b) To suggest some measures that transport planners and providers in the Bay of Plenty can undertake to improve the age friendliness of the transport network to ensure quality of life for older people in the region.

As identified in Part 3, we are currently providing services that are well patronised by people aged 65 – 75 years. In saying that, it is important to note that although there are some things that we can do specifically for older people...

Most people over 65 have very similar transportation needs to the needs of the general population. The best way for transit providers to meet the transportation needs of most older [people] is to meet the transportation needs of the general adult population. Their needs are similar — shopping, getting to work, medical appointments, going to restaurants and visiting friends — to other age groups. (p.8.^[54]).

4.2 Critical assessment of RLTS policies

Following completion of the new draft RLTS it would be prudent to assess the new policies against the World Health Organisation checklists (in Appendix 1) and against the recommendations made by the OECD report ‘Aging and Transport’ on page 15. As these policies are not yet finalised, the assessment cannot be done in this report.

Many of the items on the checklist are infrastructural, and so not the responsibility of the regional council. However, the RLTS sets out guiding policy for the Bay of Plenty region, so the regional council should check that policies in the RLTS allow the items on the checklist to be implemented.

4.3 Infrastructural improvements

Chapter 2.4.2 outlines a number of infrastructural improvements to ensure that the transport network contributes to an age friendly environment. These improvements can be expensive, but if city and district councils agree to design and construct high quality urban spaces, then the result will be positive for the whole of the Bay of Plenty.

4.4 **Community involvement**

To ensure the transport network is not negatively impacted on by an increase in the number of older people living in the region, it is important to involve older people in decision making and plan building^[34]. Planners should carry out face to face research and consultation with older people to ensure the plans are meeting their needs. Remember that older people have different lifestyles and abilities so will have different demands and requirements from the people that are usually consulted.

4.5 **Transport modelling**

To better plan for roads and other modes of transport, it is important that modelling correctly takes into account the behaviours of older people. For example, it would be useful to quantify when older people will be travelling, and how they will choose to travel. This would help council to understand what the impact will be on peak hourly flows.

Currently, models make assumptions based on the type of household. A household with two people is assumed to function in a particular way. Currently our modelling has no way of differentiating between a household with two people who are young, and working 40+ hours per week, and a household with two people who may be retired or semi- retired. The travel patterns of these two households (both two people households) may be significantly different in regards to the demands they make on the transport network.

The Bay of Plenty needs to consider this and make some changes to the current working models that are used to plan large road developments. The current models are the 'Tauranga Transport Model (TTM)', 'Whakatāne Transport Model', and the 'Rotorua Transport Model'. Each of the above models fails to differentiate the travel behaviours of the predicted 25% of the population aged over 65 years in 2041.

Specific changes are beyond the scope of this report, but it is important that the regional council investigate possible amendments to the current transport modelling assumptions. To plan for road construction and improvements, it is important to correctly model the travel behaviour of those aged over 65 years.

4.6 **Continued monitoring**

Continue to monitor the work patterns and travel patterns of older people. This will give us a better understanding of the preferred modes of transport, and the policy changes needed to encourage older people to continue to work, or actively contribute to society.

There are likely to be some increases in participation [in the labour force] amongst people over the age of 65 years as numbers in the younger labour force fall with on-going structural changes in the national and sub-national populations. (p.13^[4]).

4.7 **Conclusion**

There are a few changes to policy, infrastructure, consultation, modelling, and monitoring that could be made. These changes would result in a more tailored and responsive transport service, which would provide for a significant sector of our community. The changes would mean that there are fewer negative impacts on the Bay of Plenty transport network, and would ensure quality of life for older people in the region. In providing an age friendly transport network, the network will provide a better transport network for everyone in the Bay of Plenty.

Part 5: Conclusion

There are two groups of older people with quite different transport needs. Those aged 65 to 80 years are younger, fitter and more active, and have much the same transport needs as any other population group. Those aged 80 years plus often require more personalised, assisted transport such as Total Mobility or community transport. Population projections show significant growth is expected in the Bay of Plenty in all age groups above 65 years. By 2041, over 31% of the population will be aged over 65 years. The biggest growth is projected to occur in the 70 years plus age groups.

It is expected that older people will continue to be actively involved with their society and community. It is likely that people will continue to work well past the traditional retirement age of 65 years – although they may not work full time. They are likely to be a source of voluntary services for the older population and have valuable expertise which can be harnessed. People aged over 65 years can have decreased mobility, strength, stamina and sensory acuity. Some younger people are also affected by these conditions, so planning for older people will result in a transport network that is safer and easier for all to use.

Older people are fiercely independent and will continue to drive their cars themselves for as long as possible. It is important to help older people make the right choice about when to stop driving. To make sure this happens, other modes of transport must be readily available and accessible.

To promote social, economic, and physical health it is important for older people to be able to choose to 'Age in Place'. Integrated land use and transport planning can help achieve this. Council can also help achieve this by following urban design recommendations for connectivity, infrastructure and public space.

The implications for the region's transport network are that there will be more older people living in isolated rural communities who will need access to health facilities in main urban areas. There will also be more demand on other Council subsidised services. Older people aged 65 – 80 years currently use the bus or drive themselves. People aged over 80 years are more likely to rely on total mobility or informal transport providers.

Policy, service and infrastructure improvements will result in better quality of life for over 25% of the region's inhabitants. Most people over the age of 65 years have the same transport needs as the rest of the populations so having a better understanding of the needs of older people will be beneficial to the region as a whole.

There are a few changes that could be made to current processes, including community involvement or consultation, transport modelling, and monitoring of demographic changes and preferred modes of transport to improve the age friendliness of the transport systems in the Bay of Plenty.

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Appendices

Appendix 1 – WHO checklists

The World Health Organisation^[6] has identified a number of checklists for an age friendly city. The following are the relevant 'transportation', and 'outdoor spaces' checklists for an age friendly city:

Age-friendly transportation checklist⁵

Affordability

- Public transport is affordable to all older people
- Consistent and well displayed transport rates are charged

Reliability and frequency

- Public transport is reliable and frequent (including services at night and weekends)

Travel destinations

- Public transport is available for older people to reach key destinations such as hospitals, health centres, public parks, shopping centres, banks, entertainment centres and senior's areas
- All areas are well serviced with adequate well-connected transport routes within the city and between neighbouring cities
- Transport routes are connected between the various transport options

Age-friendly vehicles

- Vehicles are accessible with floors that lower, low steps, and wide and high seats
- Vehicles are clean and well maintained
- Vehicles have clear signage indicating the vehicle number and destination

Specialised services

- Sufficient specialised transport services are available for people with disabilities

Priority seating

- Priority seating for older people is provided and is respected by other passengers

Transport drivers

- Drivers are courteous, obey traffic rules, stop at designated stops, wait for passengers to be seated before driving off, and park alongside the curb so that it is easier for older people to step off the vehicle

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Safety and comfort

- Public transport is safe from crime and is not overcrowded

Transport stops and stations

- Designated transport stops are located in close proximity to where older people live, are provided with seating and with shelter from the weather, are clean and safe and are adequately lit
- Bus stops and stations are accessible, with ramps, escalators, elevators, appropriate platforms, public toilets, and legible and well-placed signage
- Transport stops and stations are easy to access and are located conveniently
- Station staff are courteous and helpful

Information

- Information is provided to older people on how to use public transport and the range of options available
- Timetables are legible and easy to access
- Timetables clearly indicate the routes of buses accessible to disabled people

Community transport

- Community transport services, including volunteer drivers and shuttle services are available to take older people to specific events and places.

Taxis

- Taxis are affordable, with discounts or subsidised taxi fares provided for older people with low incomes
- Taxis are comfortable and accessible with room for wheelchairs and/or walking frames
- Taxi drivers are courteous and helpful

Roads

- Roads are well maintained, wide and well lit, have appropriately designed and placed traffic calming devices, have traffic lights and signals at intersections, have intersections which are clearly marked, have covered drains and have consistent clearly visible and well placed signage
- The traffic flow is well regulated
- Roads are free from obstruction that might block a driver's view
- The rules of the road are strictly enforced and drivers are educated to follow the rules

Driving competence

- Refresher driving courses are provided and promoted

Parking

- Affordable parking is available
- Priority parking bays are provided for older people close to buildings and transport stops
- Priority parking bays for disabled people are provided close to building and transport stops, the use of which is monitored
- Drop-off and pick-up bays close to buildings and transport stops are provided for handicapped and older people

Age-friendly outdoor spaces and buildings checklist⁶

Environment

- The city is clean, with enforced regulations limiting noise levels and unpleasant or harmful odours in public places.

Green spaces and walkways

- There are well-maintained and safe green spaces, with adequate shelter, toilet facilities and seating that can be easily accessed.
- Pedestrian-friendly walkways are free from obstructions, have a smooth surface, have public toilets and can be easily accessed.

Outdoor seating

- Outdoor seating is available, particularly in parks, transport stops and public spaces, and spaced at regular intervals; the seating is well-maintained and patrolled to ensure safe access by all.

Pavements

- Pavements are well-maintained, smooth, level, non-slip and wide enough to accommodate wheelchairs with low curbs that taper off to the road.
- Pavements are clear of any obstructions (e.g. street vendors, parked cars, trees, dog droppings, snow) and pedestrians have priority of use.

Roads

- Roads have adequate non-slip, regularly spaced pedestrian crossings ensuring that it is safe for pedestrians to cross the road.
- Roads have well-designed and appropriately placed physical structures, such as traffic islands, overpasses or underpasses, to assist pedestrians to cross busy roads.
- Pedestrian crossing lights allow sufficient time for older people to cross the road and have visual and audio signals

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Traffic

- There is strict enforcement of traffic rules and regulations, with drivers giving way to pedestrians.

Cycle paths

- There are separate cycle paths for cyclists.

Safety

- Public safety in all open spaces and buildings is a priority and is promoted by, for example, measures to reduce the risk from natural disasters, good street lighting, police patrols, enforcement of by-laws, and support for community and personal safety initiatives.

Services

- Services are clustered, located in close proximity to where older people live and can be easily accessed (e.g. are located on the ground floor of buildings).
- There are special customer service arrangements for older people, such as separate queues or service counters for older people.

Buildings

- Buildings are accessible and have the following features:
 - elevators
 - ramps
 - adequate signage
 - railings on stairs
 - stairs that are not too high or steep
 - non-slip flooring
 - rest areas with comfortable chairs
 - sufficient numbers of public toilets

Public toilets

- Public toilets are clean, well-maintained, easily accessible for people with varying abilities, well-signed and placed in convenient locations.