

Bay of Plenty Regional Transport Trends and Issues

Bay of Plenty Regional Land Transport Strategy Supporting Paper No.05

Prepared by the Bay of Plenty Regional Council

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Part 1: Introduction

1.1 Background

This paper provides a summary of the key regional transport issues and trends to support and inform the development of the Bay of Plenty Regional Land Transport Strategy (RLTS).

The RLTS will be prepared in accordance with the requirements of the Land Transport Management Act 2003 (LTMA). The information contained in this paper includes indicators or measures that reflect the core LTMA requirements to be considered when preparing the RLTS. These requirements are based on the following transport outcomes:

- Assisting economic development
- Assisting safety and personal security
- Improving access and mobility
- Protecting and promoting public health
- Ensuring environmental sustainability

The New Zealand Transport Strategy and the Government Policy Statement on land transport funding are also aligned with these outcome areas.

1.2 Identifying and documenting regional transport trends and issues

The trends and issues have been developed from a variety of sources including consultant reports on specific issues such as freight, other reference documents and input from consultation with reference groups, focus groups, regional advisory group¹ and Regional Transport Committee.

Six reference groups were formed from industry and technical staff to provide input on the issues and future outcomes sought for the region in the future. Workshops were held with each of the groups to gain industry insight into current and future transport issues in each of the outcome areas.

Funding was raised as an issue in all of the reference group workshops and a separate section on funding has been included in this document to highlight some of the issues raised and reflect the importance of this subject area for the development of transport in the region.

Consultation was also undertaken through focus groups with residents from the three sub-regional areas of western Bay of Plenty, Rotorua and eastern Bay of Plenty. Meetings were held with focus groups in Tauranga, Rotorua and Whakatāne and the participants were asked to provide their views on existing transport issues and their vision for the future of the region for land use development and transport implications.

¹ The Bay of Plenty Regional Advisory Group has representatives from Kawerau District Council, Ōpōtiki District Council, Rotorua District Council, Tauranga City Council, western Bay of Plenty District Council, Whakatāne District Council, New Zealand Transport Agency.

The outputs from the Community Outcomes Survey 2010 and the Regional Bus Satisfaction Survey have also been used to provide community attitudes and perceptions on transport issues in the region.

1.3 **Report overview**

The report is structured around the following outline:

- Population and growth management
- Regional outcomes
 - Economic development
 - Sustainability
 - Integration and land use
 - Safety and personal security
 - Access and mobility
 - Public health
- Funding
- Conclusions

For each of the regional outcome areas, a range of indicators have been described along with a discussion on the potential transport implications for the region.

Part 2: Population and growth management

The forecast population growth in the Bay of Plenty region will increase future travel demands. The extent of the projected population growth and consideration of economic and employment activities is discussed below.

2.1 Population

2.1.1 Indicator – forecast population growth by region and sub-region

Figure 1 shows the actual resident population (between 1991 and 2006) and projected population at the regional and sub-regional levels (refer to Map 1 below). The regional population is forecast to grow by around 42% between 2011 and 2051 or by about 119,500 people. This is the equivalent of roughly adding the population of another Tauranga City² to the regional population.

² Based on the sub national population estimates at 30 June 2006 – 2009 for Tauranga City Territorial Authority http://www.stats.govt.nz/browse_for_stats/population/estimates_and_projections/subnational-pop-estimates-tables.aspx

Map 1 – Regional boundaries

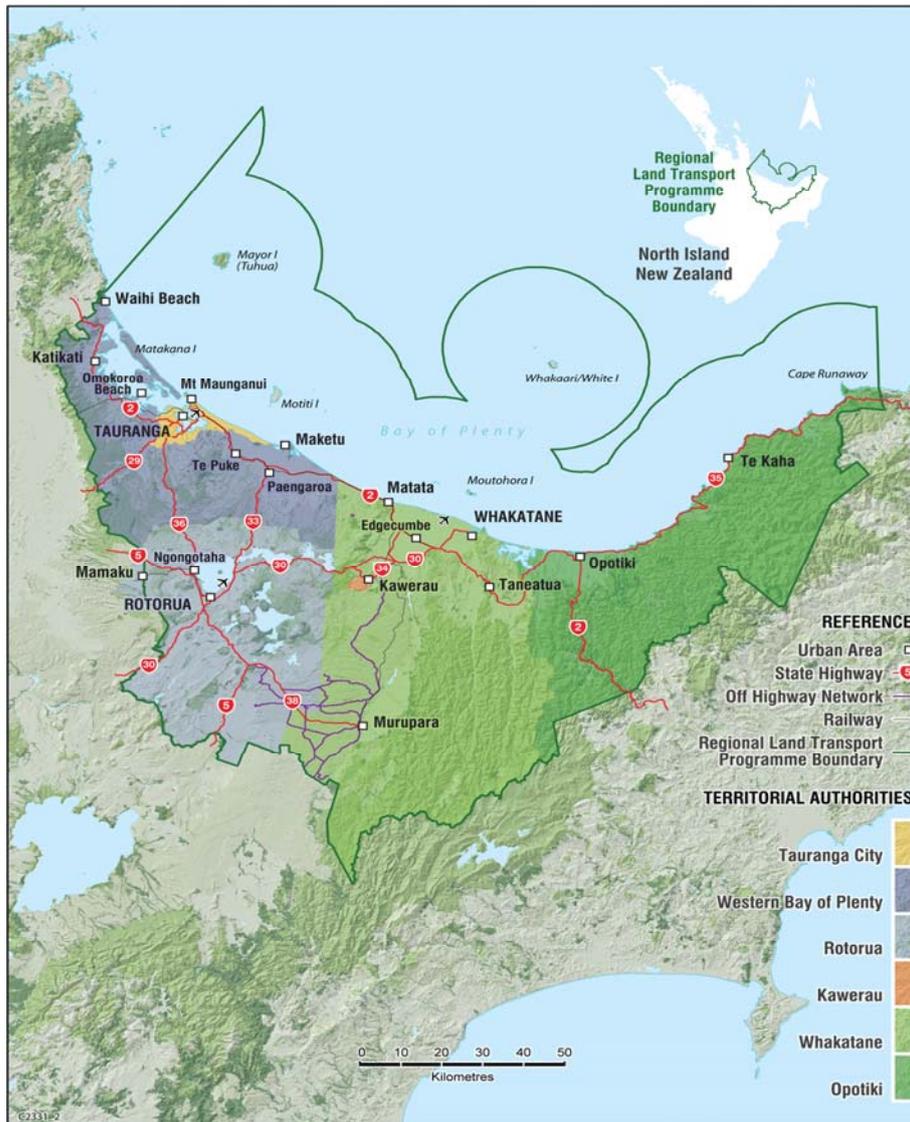
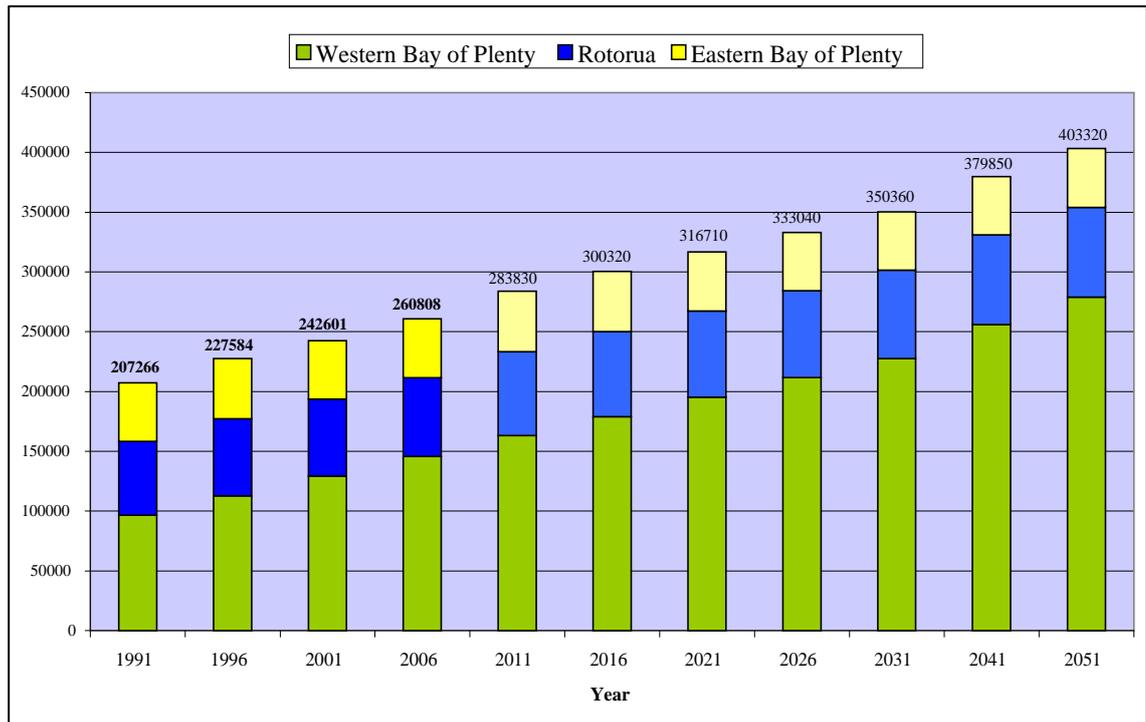


Figure 1 Resident population, actual and projected, by sub-region



Source: Census 1991-2006; Bay of Plenty Demographic Forecast 2051 'modified medium variant' projections.

The western Bay of Plenty sub-region has experienced strong population growth by 51% over the period 1991 to 2006. This is projected to increase by another 34% in the next 15 years. The population of Rotorua is slowly increasing, while the eastern Bay of Plenty population remains static. The steady population increase of 7-10% for the whole region is driven by growth in the western Bay of Plenty.

The increase and distribution in population growth is aligned with a corresponding increase in the number of households in each of the respective sub-regions (refer to Figure 3 below).

Around 56% of the region's population lives in the western Bay of Plenty sub-region, with 25% in Rotorua and 19% in the eastern Bay of Plenty sub-regions. Approximately 74% of the region's population live in urban areas.

In contrast to the growth in the western Bay of Plenty, both Kawerau and Opotiki districts experienced population declines over the same period.

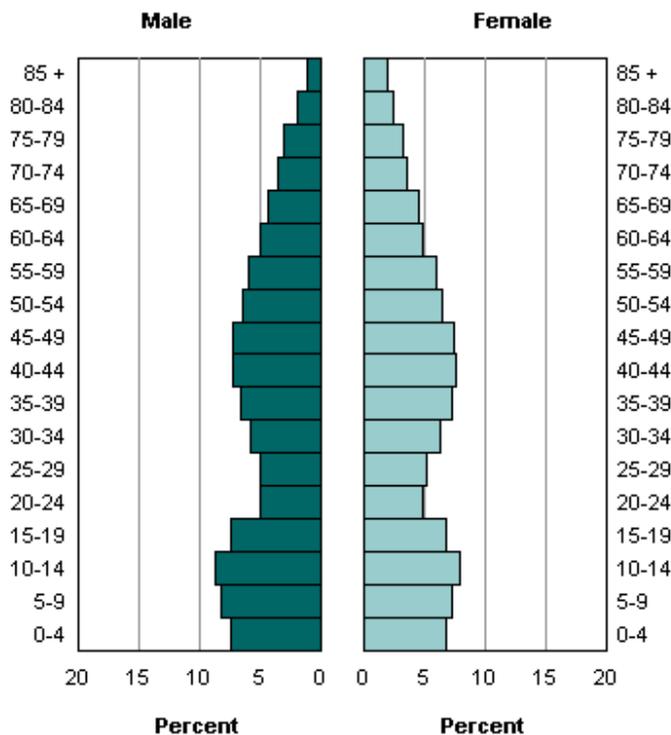
Transport policy implications – forecast population growth by region and sub-region

The projected population will underpin medium and longer term decisions on transport related investment. The distribution of future population growth and increase in households is likely to follow recent patterns of growth with the western Bay of Plenty sub-region and urban areas experiencing the strongest levels of growth. In the context of urban based growth, it is anticipated that additional pressure will be placed on limited existing infrastructure. This may result in increased peak period travel delays along key transport corridors and routes. Conversely, the growth in urban areas will also present opportunities to increase the (person) carrying capacity of routes through public transport initiatives and travel demand management measures (e.g. car sharing, travel plans, etc).

Transport demands in rural areas and smaller centres experiencing little or no population growth will require essential services to be maintained. This includes the maintenance of rural routes, upgrading unsealed roads³ and accommodating growth in freight related traffic.

2.1.2 Indicator – population and demographic profile

Compared to New Zealand as a whole, the region has a higher percentage of people in the under 15 and over 60 age groups. This population profile is indicated in Figure 2 below showing the regional population by age cohort and sex.



(SOURCE: Statistics NZ, 2006 Census)

Figure 2 Total population (age group and sex) Bay of Plenty region, 2006 Census

Population forecasts indicate a substantial increase in the region’s elderly population. The eastern Bay of Plenty sub-region and Rotorua district experience noticeable changes in population structure rather than population size. In the western Bay of Plenty sub-region changes to both the size and the structure of the population will be key planning considerations.

The percentage of the population over 65 years old is projected to grow from 16% to 20%. In 2006 there were 39,200 people aged over 65 years (Statistics NZ). By 2021 the region is forecast to have approximately 60,900 people aged over 65 years in the Bay of Plenty, and by 2031 there will be over 78,300 people over 65 years. All sub-

³ A substantial proportion of the western Bay of Plenty, Whakatane, Rotorua, and Opotiki rural road networks are unsealed. The western Bay of Plenty district’s 225km of unsealed roads is the highest in the region. The Tauranga and Kawerau local road networks contain negligible lengths of unsealed road.

All four districts with unsealed roads are actively undertaking seal extension programmes, although at different rates across the region. western Bay of Plenty district has achieved the largest reductions in absolute terms over the past two years. Unsealed roads in the Whakatane and western Bay of Plenty districts carry the most traffic per kilometre. (RLTS Annual Report 2009/10)

regions, cities, and districts will be home to more people aged 65 years and over in 2031, and the Bay of Plenty will have the second highest average annual population change (second only to Auckland).

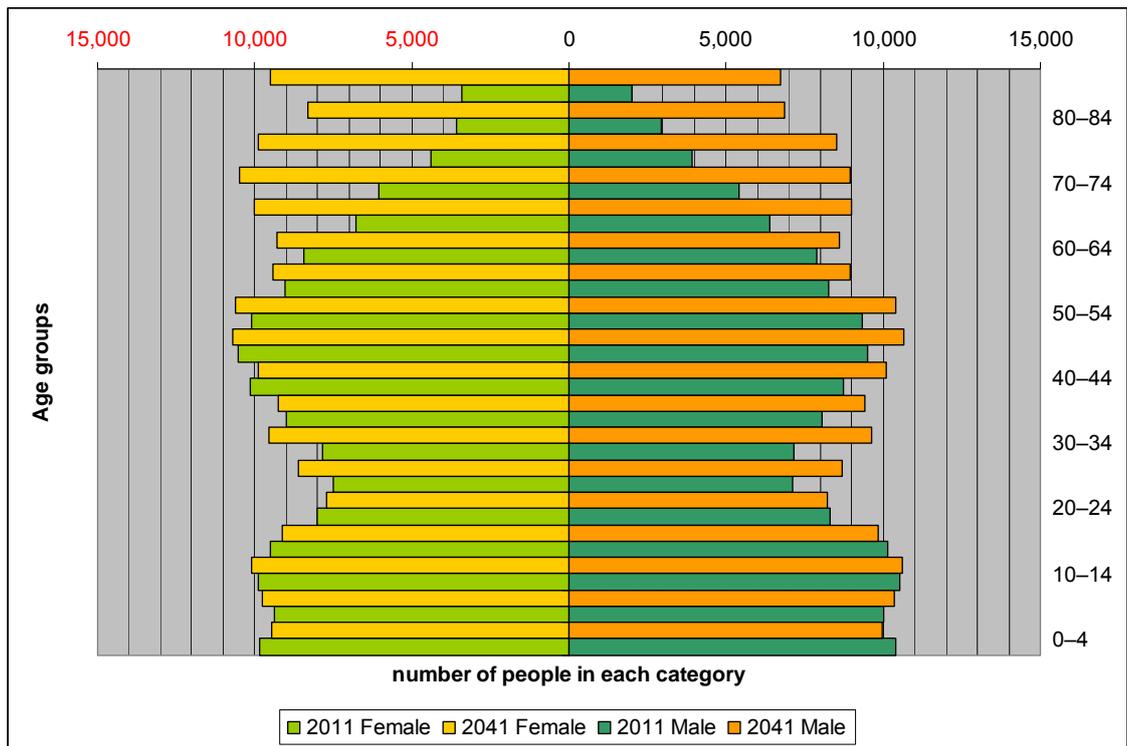


Figure 3 Comparison of the number of people in the Bay of Plenty region in each age group in 2011 and 2041 by gender. (Medium projection from projections produced by Statistics New Zealand according to assumptions agreed to by Bay of Plenty Regional Council. August 2010.)

Figure 3 shows that the increase in the Bay of Plenty population will be primarily in the older age groups (70+ years).

Transport policy implications – population and demographic profile

The aging of the region’s population will lead to changes in the demand for various public services, such as health facilities and transport. The young and elderly segments of the population also correspond to the portion of the population often without access to a car or who are unable to drive. The provision of viable transport options will therefore be of greater importance to these segments of the population, particularly the young and elderly located in isolated communities.

Related issues to the ageing population structure are the need to consider the affordability of transport options and the safety of transport users. For example, the increase in the number of elderly in the region suggests that the representation of vulnerable road users will also rise. This will require transport planners and providers to design and supply facilities that meet the needs of an ageing population.

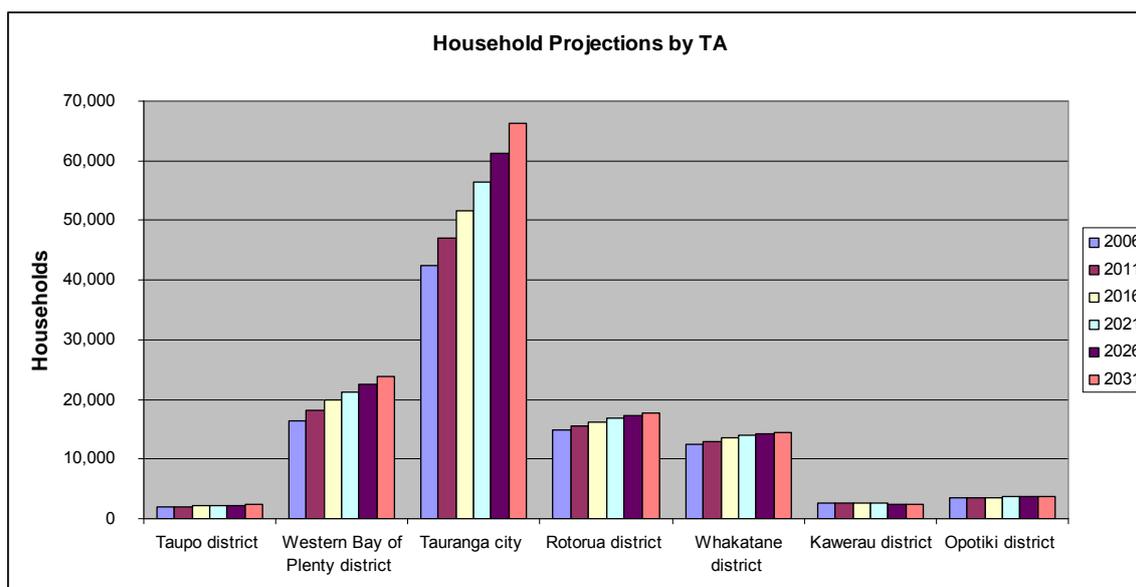
2.2 Households

2.2.1 Indicator – household growth

Projections for household growth between 2006 and 2031 by territorial authority are shown in Figure 3 below. The projections are based on the medium growth scenario and further assumptions were made regarding the proportion of households within the Rotorua and Taupo districts⁴ which both overlap with more than one regional council.

The growth in households mirrors the trend in population growth with Tauranga city and western Bay of Plenty experiencing the greatest increase in the number of households. A more moderate rate of household growth is expected in Rotorua district while the level of household growth in Kawerau and Oportiki districts is projected to remain flat. This reflects wider trends around the movement of people to larger urban areas and hence the demand for households where there may be greater economic opportunities compared with smaller centres in the region.

Over time, it is expected that average household sizes will be smaller⁵ with the growth in households being greater than the projected increase in the number of families and the population. The Bay of Plenty region is projected to have the third highest percentage increase in number of households (35 %) after the Auckland (46%) and Tasman (40%) regions⁶.



(SOURCE: Statistics NZ)

Figure 3 Household projections by territorial authority 2006 to 2031

⁴ A figure of 15% of households for Taupo and 60% of households within Rotorua were assumed to be within the Bay of Plenty Regional area for the purposes of presenting regional data.

⁵ The regional average household size has reduced from 2.79 in 1991 to 2.62 in 2006.

⁶ 'Demographic Forecast 2051, Movement and change in population and households in the Bay of Plenty Demographic Forecast 2051', Strategic Policy Publication 2006/01, August 2006 prepared by the Migration Research Group, The University of Waikato for the Bay of Plenty Regional Council, Bay of Plenty Regional Council

Transport policy implications – household growth

The growth in households and the changes in the average size of households, will present opportunities and challenges in regard to servicing the transport demands of more and potentially smaller households, for the western Bay of Plenty and Tauranga city in particular. Improving the co-ordination between transport and land use planning will require greater emphasis in the region's urban areas. At the macro level the distribution of households and capacity of transport and other infrastructure to support the additional households is a fundamental consideration. Planning and providing for transport options such as public transport between significant origins and destinations is an example implementing wider integration objectives. This includes the potential to consolidate growth in households along existing and established transport routes and corridors and the coupling of smaller households with compatible non-residential uses or activities.

In the short to medium term, the majority of growth is anticipated to be taken up by infill in existing residential areas and the development of greenfields sites on the edges of existing urban areas. The greenfield sites offer the opportunity to provide residential areas that offer a high level of connectivity for walking and cycling and the provision of efficient public transport routes. The planning and provision of public transport should be co-ordinated early on in the development of greenfield sites to reduce patterns of car dependency.

While densification is part of the planning tool kit to provide for continued growth there has been market resistance to planning provisions for development of medium density areas and this is now considered to be a longer term goal.

Parking policy will also need to be considered in terms accommodating the future growth in households in the Bay of Plenty's urban areas. This may require balancing the demand management and urban design objectives (e.g. influencing travel behaviour through the availability, cost and supply of parking and street design) against the practical and commercial benefits of providing parking in the context of increasing households (e.g. retaining parking for smaller households to support 'lifestyle' choices and preferences).

2.3 Business and employment

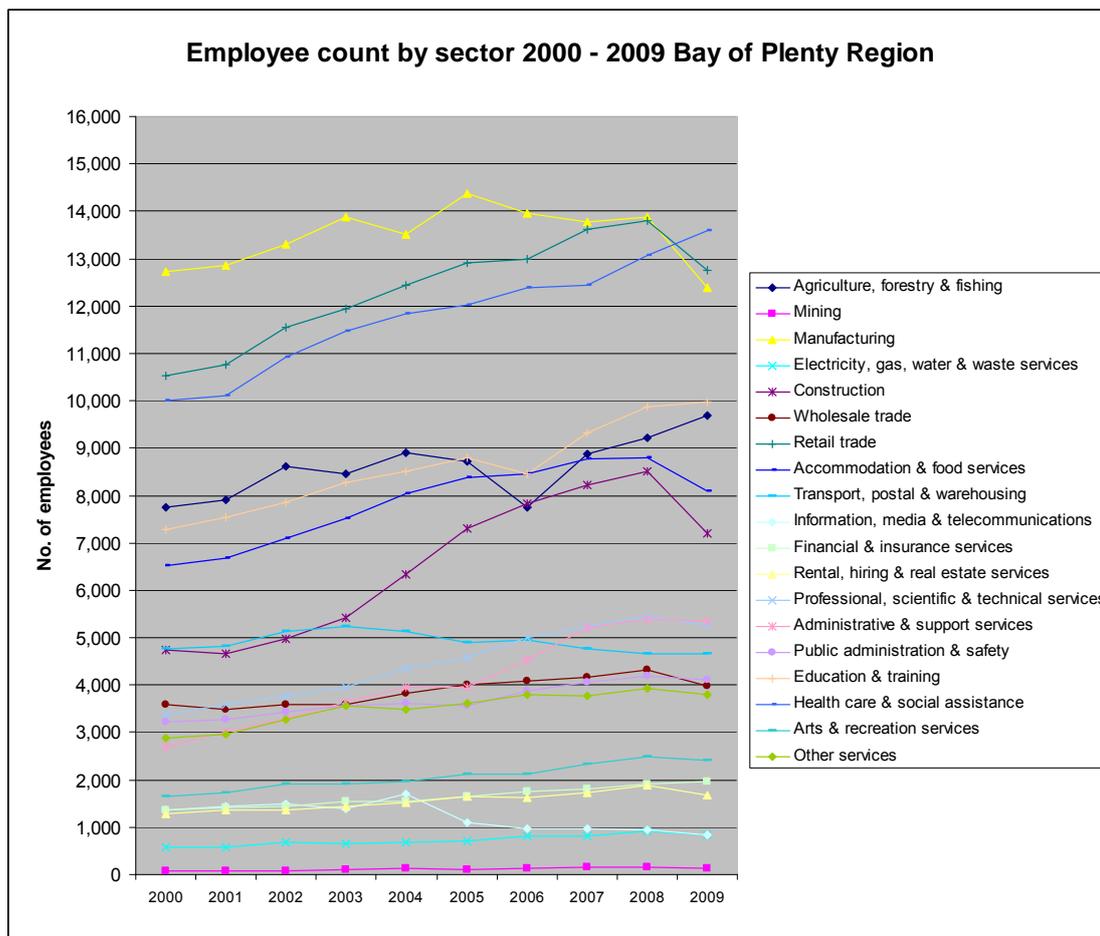
2.3.1 Indicator – employment trends and growth

Recent trends in employment numbers by business sector over the last decade are shown in Figure 4 below. Figure 4 indicates the dominant business sectors in the region as reflected by the employee numbers. The dominant sectors in terms of employee numbers are manufacturing, retail trade and health care and social assistance. Both manufacturing and retail trade experienced a sharp decline in employee numbers between 2008 and 2009. This decline coincides with the period of the global financial crisis. Other sectors to experience a noticeable decrease in employee numbers over this period include construction and accommodation / food service. The decline in these sectors was also a result of the global downturn with less new development occurring and a reduction in discretionary spending for households in favour of reducing debt levels.

Conversely, the health care, education and agriculture sectors experienced increases in employee numbers over the period of the recent global financial crisis with the health care sector being the largest sector in the region by employee in 2009. The impacts of the recent economic downturn as indicated in the Bay of Plenty's employment numbers by sector was a national trend.

The region contains one of the biggest concentrations of plantation forests in the country, with 13% of New Zealand's exotic plantation forestry (215,340 hectares) employing 22% of the country's forestry workforce. The processing and manufacture of wood products and paper and paper products are also important areas of employment in the region.

The region produces about 80% of the national kiwifruit production and the region contains about 30% of New Zealand's citrus production area. It is also one of the dominant regions for nashi, avocados, feijoas and passionfruit.



SOURCE: Statistics NZ, ANZSIC and Size Group (Annual-Feb), Employment Count, Bay of Plenty

Figure 4 Bay of Plenty Region Employee Count by Sector 2000 -2009

Transport policy implications – employment trends and growth

The employee count by sector reflects broader trends in economic activity and these are discussed in regard to two main areas of transport policy. The first is in relation to the movement of goods that is directly influenced by the level of business activity associated with each of the respective sectors. This includes the movement of goods as part of the production supply chain for both the local and international markets. Agriculture, forestry and fishing is one sector that has demonstrated robust levels of activity through the recent global financial crisis and this sector is expected to continue to contribute to the Bay of Plenty's economic activity in the future. Agriculture, the development of aquaculture and other export orientated sectors will continue to rely on the efficient and timely delivery of goods to the Port of Tauranga. Rural state highways make up part of this wider network and the maintenance of

these routes is an on-going policy consideration along with capital investment in key routes (e.g. Tauranga Eastern Link). Freight and heavy vehicle related movements form a core component of goods related journeys in the region. Policy considerations include the development and maintenance of a freight priority network that is supportive of overweight and over dimension vehicles and is aligned with the main freight demands. The continued development and maintenance of the rail system in the region is also essential for the efficient and effective intra and inter regional movement of goods. Figure 8 provides an overview of freight related flows to and from the region.

The second broad policy consideration is the movement of people and the impact of transport to facilitate participation in the region's economy. Figure 4 indicates strong growth trends in the healthcare and education sectors. These sectors often involve travel that occurs outside of conventional peak periods and comprise a higher share of shift based work and/or casual labour. The accommodation and food service sector also shares similar characteristics but has recently declined as a result of the global financial crisis. Transport issues will include the need to accommodate both peak period travel and off-peak demand generated by employees and those participating in the healthcare (e.g. outpatients and visitors) and education sectors (e.g. students).

The retail sector is also an essential aspect of the region's economy and while there has been a drop in employment in this area due to the global economic downturn, it is expected that this sector will continue to grow in the medium to long term. The region's CBD's are an essential component of the urban areas and transport policy needs to support growth and development in these areas such as through parking policy (e.g. no minimums) and focussing public transport on the central business districts as key employment centres. Transport policy can therefore support the potential economic benefits of agglomeration in CBD areas.

The importance of horticulture and forestry to the region's economy also suggests that there is a seasonal and itinerant workforce that generates its own set of transport demands

Part 3: Regional outcomes

3.1 Economic development

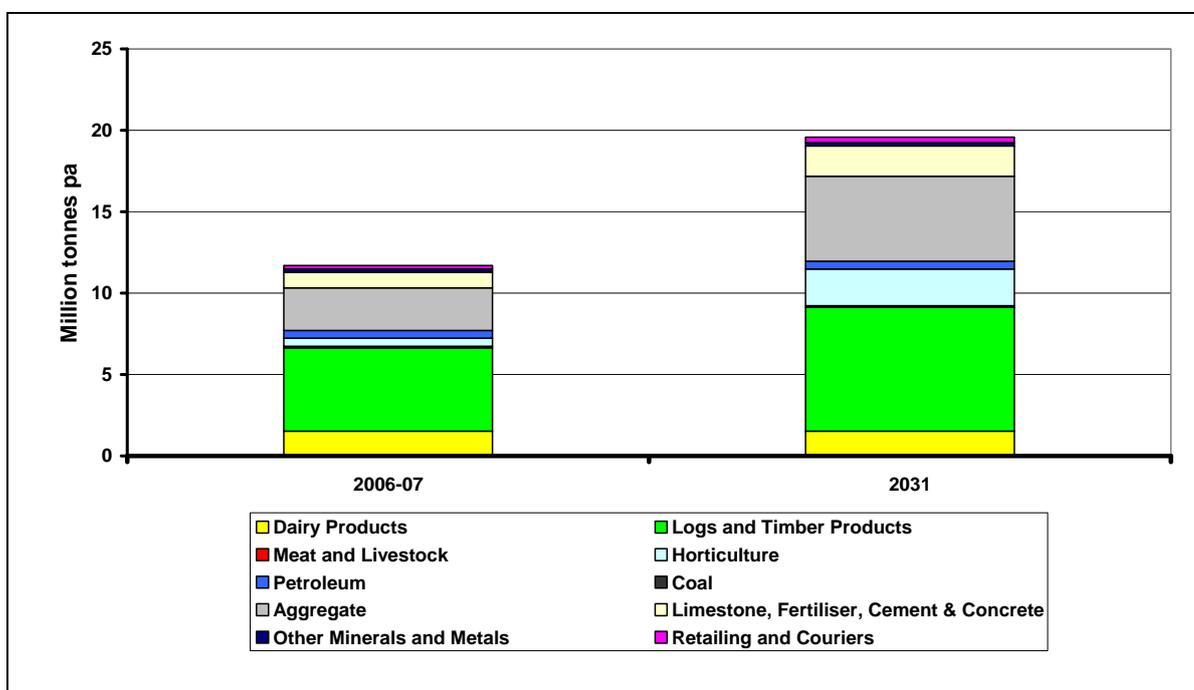
The region's transport network and system will support economic growth and employment. The efficient movement of goods, services and people is an integral part facilitating economic growth and activity in the region. In the Bay of Plenty region the movement of freight is recognised as a key component in supporting economic activity. Freight related indicators are described and discussed below along with tourism and congestion indicators.

3.1.1 Indicators – growth in freight traffic

Internal freight movements in the region as shown in Figure 5 are predicted to grow with the main areas of demand being:

- Growth in logs and timber products;
- Growth in horticulture, mainly driven by kiwifruit;
- Constant level of dairy activity; and
- Increase in movements of aggregates and limestone, fertiliser and other building materials

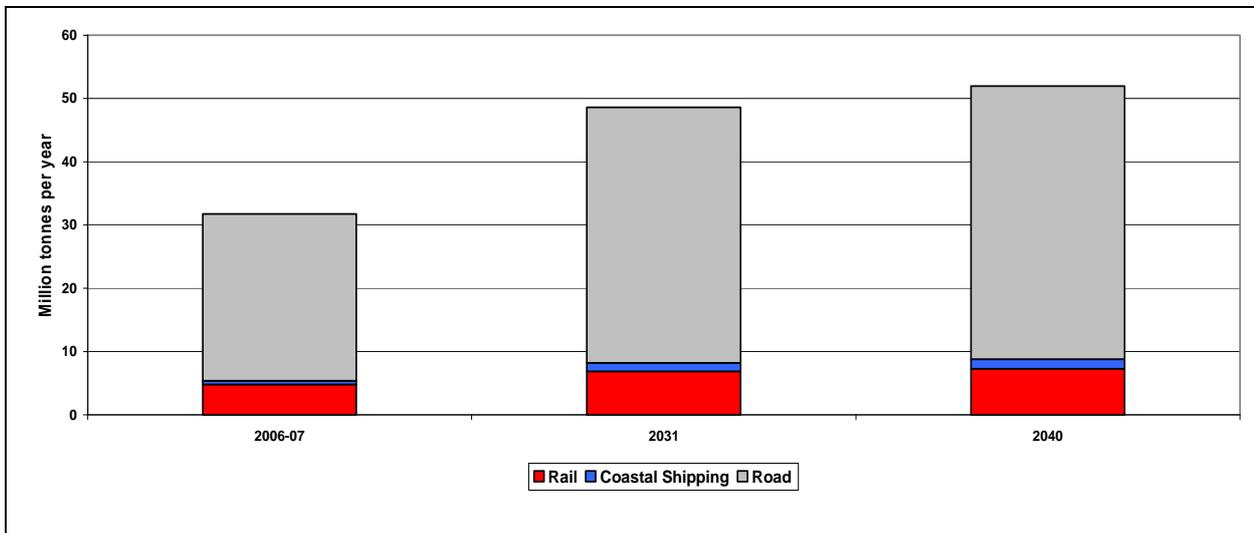
Although not included in these figures, aquaculture is also predicted to grow significantly in the eastern Bay of Plenty sub-region.



(SOURCE: Bay of Plenty Regional Freight Study 2010)

Figure 5 Growth in freight movements, 2006/07 to 2031- selected commodities

The current and predicted modal split for freight movements is shown in Figure 6, with the estimates being based on a 'business as usual' approach. The major increase in freight movement is predicted to be by road transport. Increases in the quantities of freight carried by rail and coastal shipping are also forecast to grow against existing levels. These increases in rail and coastal shipping are mainly the result of the overall forecasted increases in freight movements.



(SOURCE: Bay of Plenty Regional Freight Study 2010)

Figure 6 Forecasts of Regional Freight Movements by Mode, 2006/07 to 2040 (million tonnes)

The overall position is one of substantial growth with forecast volumes of freight traffic increasing by almost two thirds and with rail traffic increasing its modal share (as shown in Table 1 below). Although the increase in modal share is small, the underlying growth in the overall market implies a substantial growth of rail traffic within the region.

Internal flows are forecast to increase strongly reflecting the growth of logs and timber, aggregates and building materials and horticulture as shown in Figure 5. The rail modal share is forecast to increase, mainly reflecting the growth of log and timber movements, where rail is heavily involved in the transport of these products.

Inter-regional flows with other Upper North Island regions are forecast to grow less quickly, reflecting the cessation of coal related traffic and also the anticipated changes in distribution patterns. For example, more direct delivery to areas away from the Upper North Island reducing the volumes imported through Tauranga to national distribution centres in Auckland. The growth in inter-regional freight movement is likely to be dependent on future port upgrades for larger container ships visiting New Zealand and this is discussed further in Section 3.1.2.

While some overall growth in rail traffic to 2040 is forecast, its share of the total is predicted to decline under a business as usual approach. The share of coastal shipping is expected to increase with the growth of petroleum and cement movements from Northland. The share of road freight is expected to remain broadly unchanged.

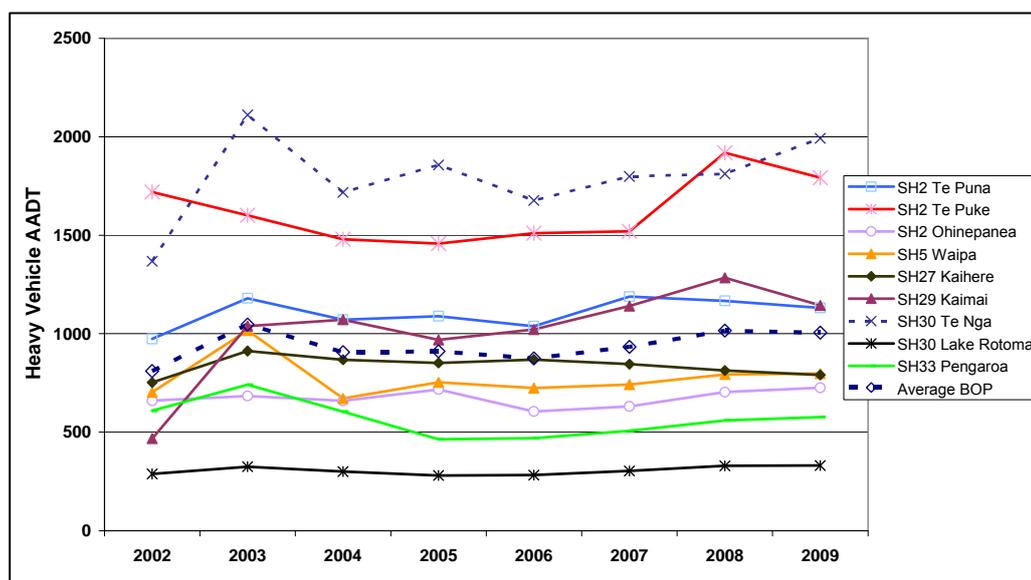
Other external movements are expected to grow by about 45%, below the average for the region as a whole. The rail share is forecast to grow slightly and coastal shipping by slightly more, although the volumes by both these modes are expected to remain small relative to the amount of freight carried by road.

Table 1 Forecasts of growth in freight movements to 2040 - total flows by type of movement (million tonnes)

Type of movement	Year	Total	Rail		Coastal Shipping		Road	
		M tonnes	M tonnes	Modal share	M tonnes	Modal share	M tonnes	Modal share
Internal	2006-07	17.4	1.4	8%	0.0	0%	16.0	92%
	NFDS to 2031	29.1	2.9	10%	0.0	0%	26.2	90%
	2040	31.4	3.2	10%	0.0	0%	28.2	90%
	Inc to 2040	181%	234%	130%	0.0	0%	176%	0.975
Inter-Regional within upper North Island Regions	2006-07	11.2	3.3	29%	0.5	4%	7.4	66%
	NFDS to 2031	15.2	3.7	24%	1.2	8%	10.3	68%
	2040	16.0	3.8	24%	1.3	8%	10.9	68%
	Inc to 2040	143%	116%	81%	288%	201%	146%	102%
Other Regions	2006-07	3.2	0.2	6%	0.1	3%	2.9	92%
	NFDS to 2031	4.3	0.3	6%	0.1	3%	3.9	91%
	2040	4.5	0.3	6%	0.2	4%	4.1	91%
	Inc to 2040	142%	146%	103%	187%	132%	140%	99%

(SOURCE: Bay of Plenty Regional Freight Study 2010)

Heavy vehicle movements (as shown in Figure 7) on the individual components of the state highway network in the Bay of Plenty and on the network as a whole, have typically increased only very modestly since 2002, with the exception of the flows through Te Puke, possibly reflecting growth in the kiwifruit harvest. The predicted increases in road freight movements are likely to lead to substantial increases on individual elements of the network in the future, even with the development of alternative routes, such as the Tauranga Eastern Link.



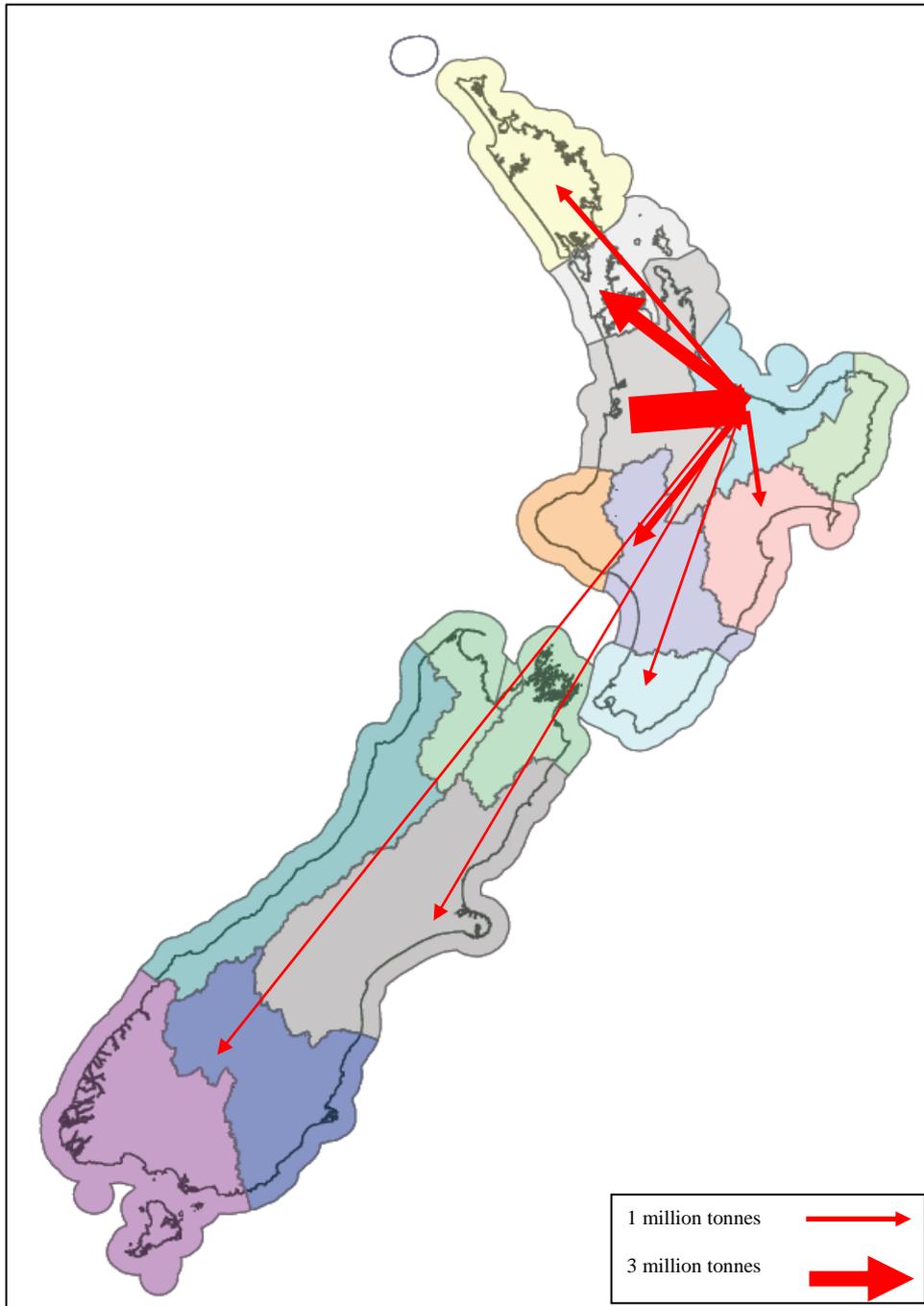
SOURCE: Bay of Plenty Regional Freight Study 2010)

Figure 7 Heavy vehicle flows on state highways in the Bay of Plenty region

Transport policy implications – growth in freight traffic

The growth in future freight traffic indicates a predominance of primary production related goods (horticulture, logs and dairy). Moving these goods to overseas markets reinforces the importance of having a freight network with strategic routes to service the Port of Tauranga.

The increase in the movement of logging and timber products is expected to be a major source of demand for freight traffic. Logging related trips are expected to be a major contributor to the increase in the share of rail based freight trips. Rail also has an important role in the movement of cargo between Tauranga and Auckland via the MetroPort inland port facility (refer to Figure 8 showing freight flows between the Bay of Plenty Region and other regions).



(SOURCE: Bay of Plenty Freight Study 2010)

Figure 8 Pattern of total freight flows to and from Bay of Plenty 2006/07 (million tonnes)

The implications of additional freight related movements include the need to identify a coherent freight network that connects key freight generating activities in the region. Coupled with the route identification are the on-going operational maintenance of these routes and requirements to accommodate overweight and over dimension freight vehicles. Other policy considerations include avoiding high volume freight movements through sensitive areas (e.g. residential) to minimise potential traffic / modal conflicts and environmental effects and opportunities to better utilise rail for intra and inter-regional freight movement.

3.1.2 Indicator – port related freight traffic

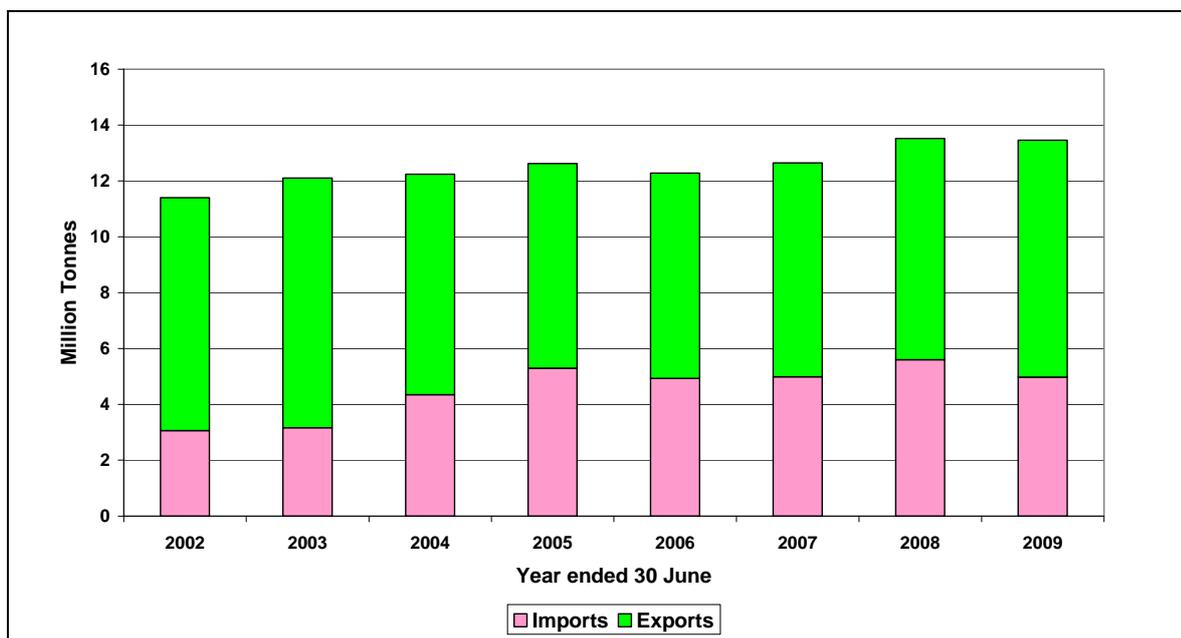
The Port of Tauranga is New Zealand's largest port by volume (13.5 m tonnes per annum) and the second largest container port (546,000 TEUs⁷). The port is strategic infrastructure for the Bay of Plenty region and New Zealand providing a major international link for the country's imports and exports.

The volumes of both imports and exports have fluctuated over the preceding decade although total import/export flows through the Port of Tauranga have increased by over 18% since 2002. Refer to Figure 9 showing the volume of freight traffic through the Port.

The fluctuations reflect changes in the level of market demand leading to changes in volumes of commodities harvested or produced, particularly for logs and timber, which accounts for 60% of exports. These volumes have also been affected by the costs and availability of shipping services to the main markets.

Other factors that have contributed to the fluctuations are the changes in demand for imports of basic commodities such as coal, the growth of imports of palm kernels (from nothing in 2006 to 0.4-0.5 million tonnes in 2008 and 2009) and the effects of the economic downturn, particularly for manufactured goods and fertiliser bases reflected in the reduction of TEU's in 2009.

Changes in the patterns of shipping services, particularly affecting the balance between the ports of Auckland and Tauranga, has affected the volumes of dairy products and other containerised cargo through the port.



(SOURCE: Bay of Plenty Regional Freight Study, 2010)

Figure 9 International freight traffic through the Port of Tauranga

⁷ Twenty foot equivalent containers

Transport policy implications – port related freight traffic

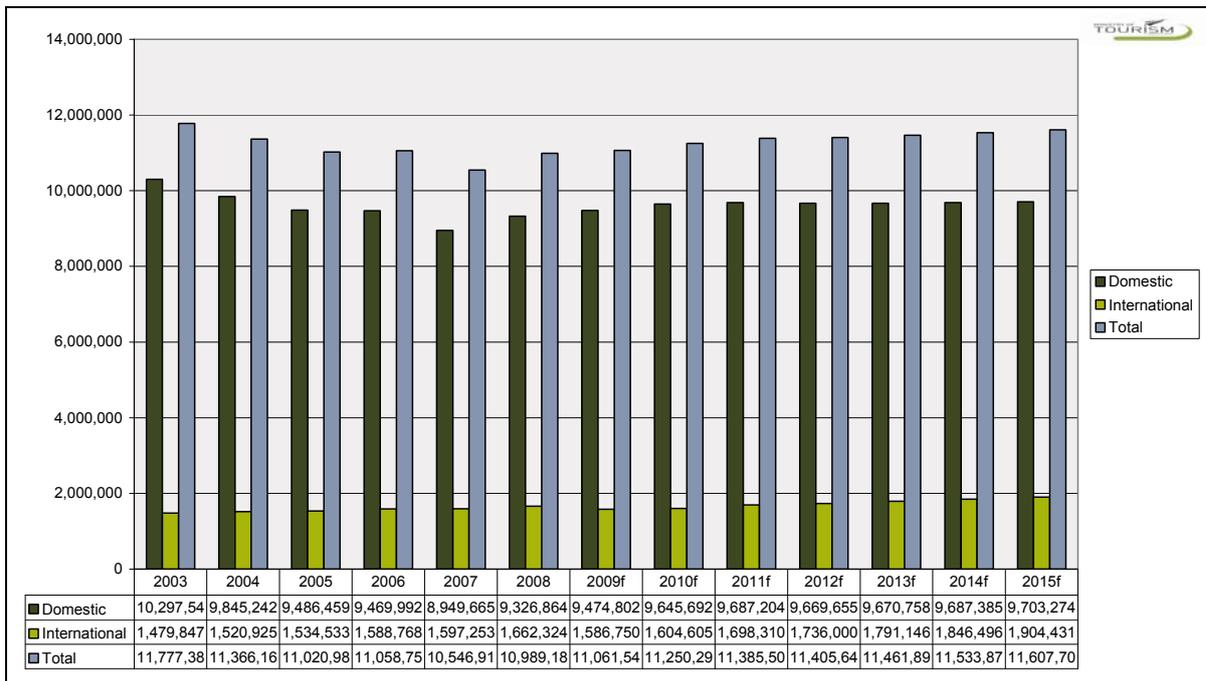
The trend towards larger ships visiting fewer ports is likely to further change freight distribution patterns, due to potential changes to off-site storage of such commodities as logs and more 'just in time delivery'. This may lead to localised transport issues with more defined peaks when these ships are in port.

As noted above, the growth in future import and export freight traffic reinforces the importance of having a freight network with strategic routes to service the Port of Tauranga.

3.1.3 Indicator – growth in tourism sector

The key trends in regional tourism growth for the Bay of Plenty Regional Tourism Organisation (RTO) area are shown in Figure 10 and include the following:

- Total visits by travellers to the Bay of Plenty RTO area are forecast to rise from 3.49 m in 2008 to 3.69 m in 2015 - an increase of 5.6% (194,900) or 0.8% p.a.
- International visits are expected to increase from 255,900 in 2008 to 297,500 in 2015, representing growth of 41,600 or 16.2%. The share of total visits generated by international visitors is expected to increase from 7.3% to 8.1%.
- Domestic visits are expected to increase from 3.24 m in 2008 to 3.39 m in 2015, representing growth of 153,400 or 4.7%. The share of total visits generated by domestic visitors is expected to decrease from 92.7% to 91.9%.



(SOURCE: Ministry of Tourism)

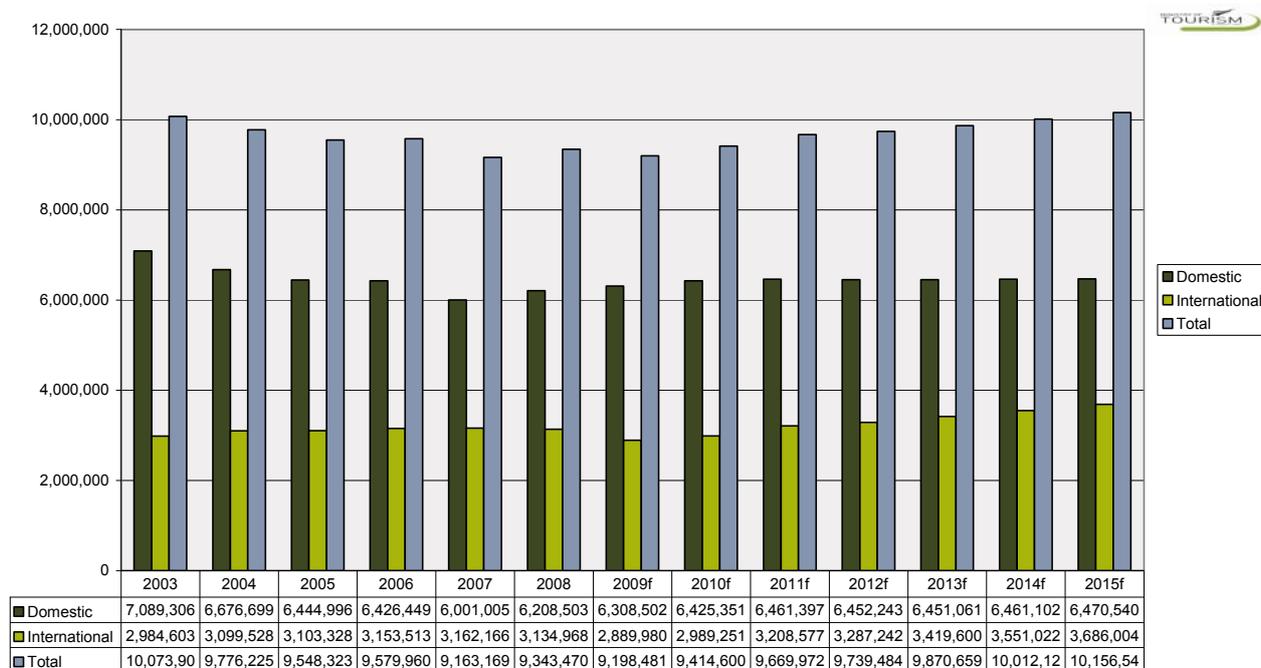
Figure 10 Tourism numbers for Bay of Plenty

The key trends in regional tourism growth for the Rotorua RTO area are shown in Figure 11 and include the following:

- Total visits by travellers to Rotorua RTO are forecast to rise from 3.04 m in 2008 to 3.31 m in 2015 - an increase of 9.0% (272,100) or 1.2% p.a.

- International visits are expected to increase from 849,300 in 2008 to 1.02 m in 2015, representing a growth of 167,200 or 19.7%. The share of total visits generated by international visitors is expected to increase from 28.0% to 30.7%.

Domestic visits are expected to increase from 2.19 m in 2008 to 2.29 m in 2015, representing growth of 104,900 or 4.8%. The share of total visits generated by domestic visitors is expected to decrease from 72.0% to 69.3%.



(SOURCE: Ministry of Tourism)

Figure 11 Tourism numbers for Rotorua

Transport policy implications – growth in tourism sector

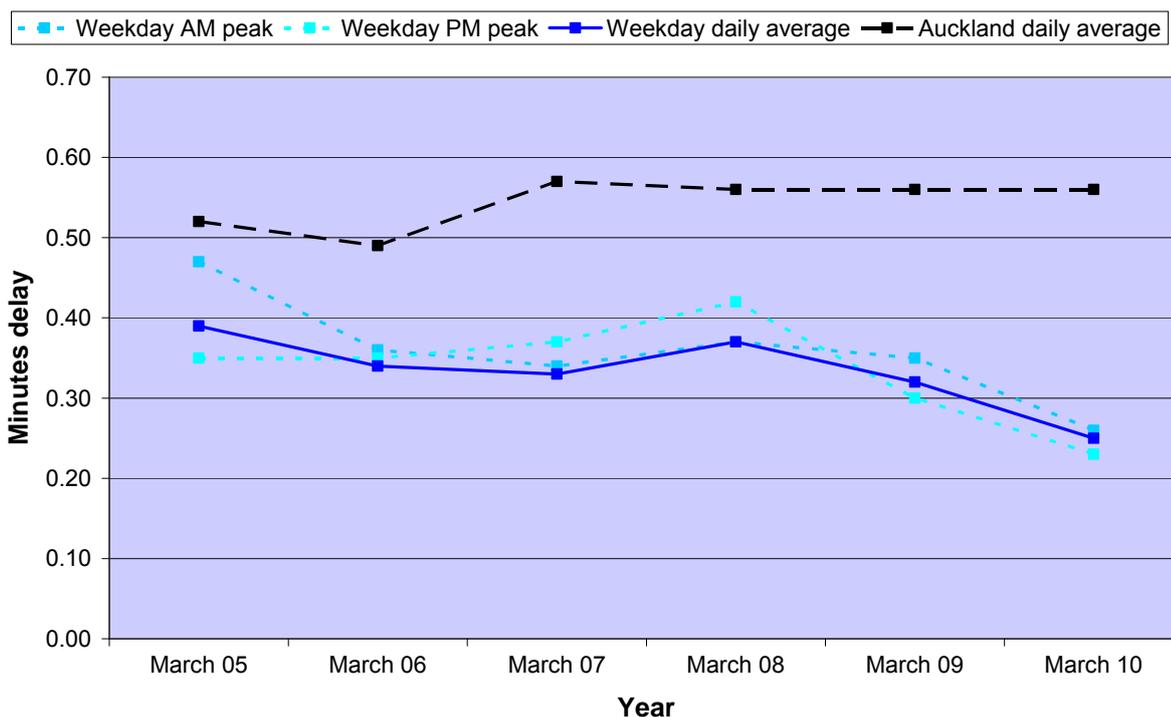
The success and capacity of the tourism sector to sustain growth is underpinned by transport systems that facilitate international and domestic travel across all modes (i.e. planes, ferries/ships, buses, cars, cycling and walking). Providing efficient, pleasant and comfortable transport facilities (including inter-changes) and services is essential to supporting the tourism sector. This includes providing a high level of service for transport related transfers or transitions between modes at key locations/nodes.

There are also seasonal considerations in regard to the demand for tourist related travel with the summer months representing the peak period. An example of this is to co-ordinate construction activity over the peak period to minimise potential delays and conflicts for tourist related travel.

3.1.4 Indicator – travel delays on congested routes

Travel delay on key selected routes⁸ in Tauranga (minutes delay per km) provides a measure of congestion. Figure 12 indicates a general trend of reduced travel time delays in Tauranga over the past five years. Auckland data has been included for the purpose of comparison. The travel figures for the 2009/10 year have shown significant increases in vehicle travel speeds for all periods of the day as the final elements of the Harbour Link project have been completed and come on-line.

Travel time delays on the Tauranga network stabilised at approximately 0.35 minutes per km in 2006 to 2008 and have since decreased significantly with the completion of the Harbour Link Project.



(Source NZ Transport Agency Travel Time Performance Indicators Report)

Figure 12 Vehicle travel speeds on key congested routes in Tauranga

Transport policy implications – Travel delays on congested routes

The estimated population growth expected to occur within the region will place greater pressure on the region’s transport network and resources. A ‘business as usual’ approach coupled with this anticipated population growth and rising levels of vehicle ownership will lead to a worsening in future congestion along key routes. Travel delays will impact on journey time reliability for public transport, freight and private vehicle movements. There is a need for transport policy to build in greater diversity and choice in the region’s transport options for freight and people. The reality of funding constraints and dispersed nature of smaller centres in the region will however require a targeted approach to the prioritisation and safeguarding of transport initiatives. For example, to manage the congestion related effects of traffic,

⁸ Route 1 - State Highway 2 and State Highway 33, Route 2 - State Highway 29 and the Harbour Bridge, Route 3 - Cameron Road and Marsh Street, Route 4 - Cambridge Road, Route 5 - Takitimu Drive, Route 6 - Fraser Street, 11th Avenue, Devonport Road, The Strand, and Dive Crescent, Route 7 - Maunganui Road, Rata Street and Totara Street, Route 8 - Domain Road, Papamoa Beach Road, Maranui Street and Girven Road.

the people carrying capacity may become an important driver along certain routes while freight and general traffic is identified as a priority along other parts of the region's transport network, including rail.

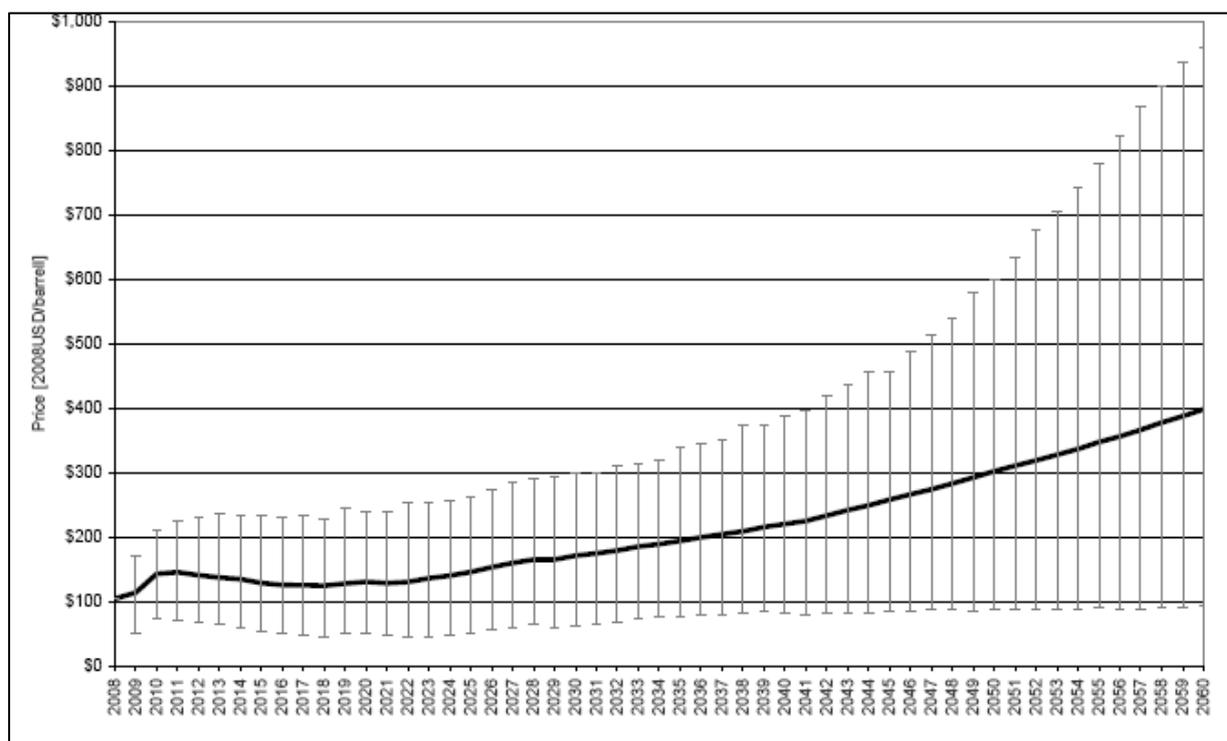
Part 4: Sustainability

Safeguarding the quality of the environment and managing the potential adverse environmental effects resulting from the implementation and ongoing operation of the transport network is a key policy outcome area. These are reflected in the macro level discussion below on oil prices and other indicators highlighting the use of non-renewable energy resources and levels of sustainable transport modes (walking, cycling and public transport).

4.1 Indicator – energy use and oil prices

Energy use in New Zealand is dominated by transport and the country is reliant on imported oil for almost half of our energy needs, making us vulnerable to international supply disruption and volatile oil prices.

The real price of oil has been subject to fluctuations and has increased significantly from 2002 to 2008. More recently the economic downturn has resulted in a decrease in oil prices. As shown in Figure 13, in the medium to long-term prices are anticipated to plateau and possibly decline slightly, but remain at historically high levels. Beyond 2028 oil prices are expected to increase sharply as accessible world supplies diminish.



(SOURCE: Price Forecasts for Transport Fuels and other Delivered Energy Forms, MR Cagney 2009)

Figure 13 Oil price forecasts and associated error bounds 2008-2060

The concept of Peak Oil is relevant to the above scenario of increasing oil prices and diminishing supply. Peak Oil is the point beyond which depletion of existing supply exceeds the development of new supply. As shown in Figure 13, this will lead to increasing costs as relatively accessible petroleum supplies are depleted. Petroleum

is not expected to suddenly run out but is likely to become more expensive as demand grows and production costs rise. Growing economies reliant on oil imports will either need to import more oil or produce more fuel from alternative sources such as deep ocean wells, biofuels, tar sands and liquefied coal.⁹

Transport policy implications – energy use and oil prices

The recent volatility of fuel prices and the long term forecast increase in oil based fuels highlights the need to develop a transport system that is resilient to future price changes. This will involve planning for energy efficient modes of transport including public transport, walking and cycling and rail freight.

The rising price of fuel can also function as a de-facto economic based demand management measure. The situation of rising fuel prices can create an incentive for some people to seek alternative and cheaper forms of transport. It is important that affordable travel options and alternatives are available to support the development of a resilient transport system.

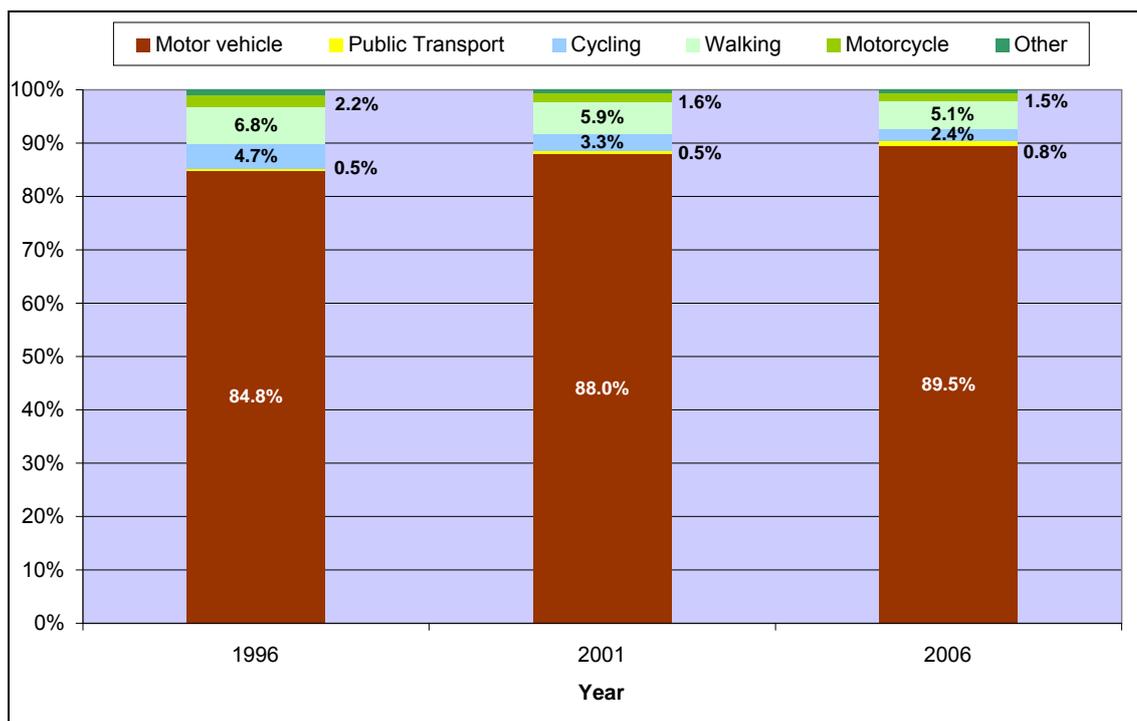
It is recognised however that travel by private vehicles and heavy vehicles will continue to have an important role in supporting the transport needs of the region. The development of more fuel and engine efficient technology options and new forms of transport energy for private and freight vehicles will contribute to improvements in energy use.

4.1.1 Indicator – mode split journey to work

As a corollary to the above discussion on developing a resilient transport system, Figure 14 shows regional journey to work data by mode. The census information between 1996 and 2006 indicates continued growth in the share of motor vehicle commuting. The share of walking and cycling trips has gradually eroded while the share of public transport journeys has increased slightly off a low base. The share of public transport journeys lags well behind other sustainable modes such as walking and cycling.

The journey to work data is useful in that trends can be identified over a period of time. However, the data is also limited in that it only represents a discrete segment of work related journeys that are undertaken in the morning peak and does not include other non-work trips (e.g. education or recreational) or other journeys taken outside of the morning peak period. These other peak and off-peak non-work trips may have a greater share of walking, cycling and public transport journeys and in some cases could also have higher vehicle occupancy rates than the typical morning journey to work.

⁹ 'Transportation Cost and Benefit Analysis II – Resource Consumption External Costs', by Todd Litman, Victoria Transport Policy Institute, June 2010



(SOURCE: Census 1996-2006, Statistics New Zealand)

Figure 14 Bay of Plenty mode split for travel to work

Table 2 indicates the mode share by district / city based on 2006 journey to work Census data. Travel by motor vehicle was most dominant in the urban areas of Tauranga and Rotorua and in the western Bay of Plenty district. Tauranga and Rotorua also recorded the highest proportions of public transport use, although mode share was still only around 1% of journeys to work in these districts. The table also shows that the 'active modes' (walking and cycling) retained the largest mode share in the eastern Bay of Plenty districts with smaller urban or rural based populations (i.e. Whakatane, Kawerau and Opotiki). These centres with the highest share of active modes also not unexpectedly correspond to the centres with the highest percentage of households without access to a car.

Table 2 Mode split for travel to work in 2006, by district/city

Local authority	Mode					
	Motor vehicle	Public Transport	Cycling	Walking	Motor cycle	Other
Western Bay of Plenty	91.6%	0.4%	1.0%	4.5%	1.8%	0.7%
Tauranga	90.3%	1.0%	2.6%	4.3%	1.1%	0.6%
Rotorua	89.2%	1.3%	2.3%	5.1%	1.5%	0.6%
Whakatane	86.2%	0.2%	3.2%	7.3%	2.6%	0.6%
Kawerau	84.9%	0.0%	3.8%	9.0%	1.7%	0.6%
Opotiki	86.6%	0.5%	1.9%	7.9%	2.6%	0.5%
Region	89.5%	0.8%	2.4%	5.1%	1.5%	0.6%

(SOURCE: Census 2006, Statistics New Zealand)

Transport policy implications – mode split journey to work

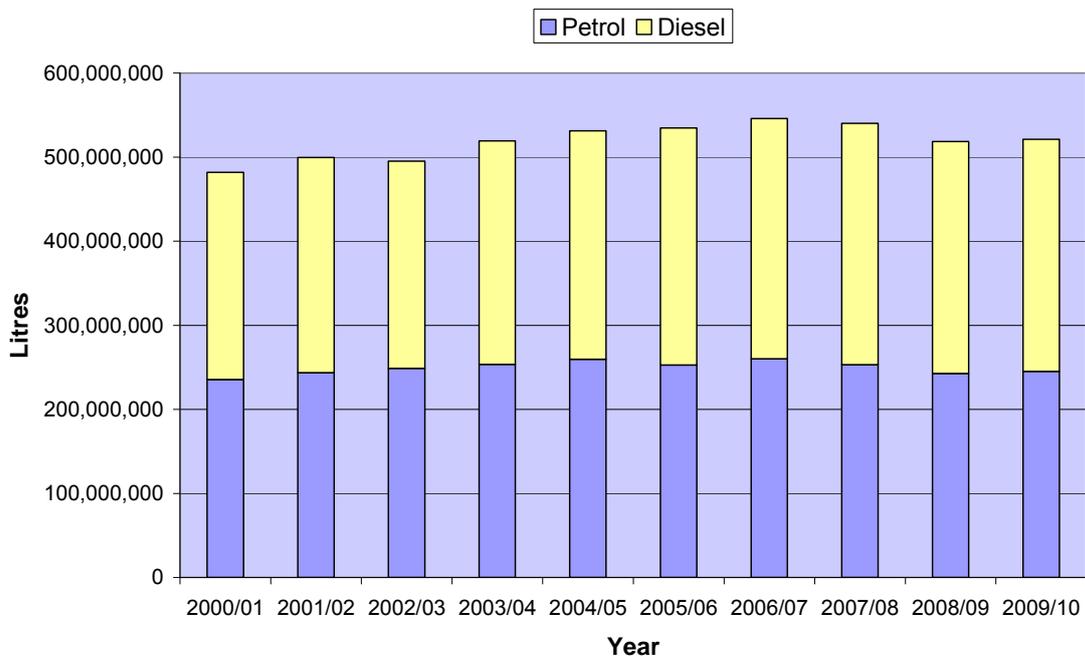
The mode split data reinforces the increasing reliance on private motor vehicle use for commute related travel to urban areas in the region. For example, Tauranga and Rotorua are key employment areas for the western Bay of Plenty district. The longer distance of journeys from the wider western Bay of Plenty catchment to the urban areas of Tauranga and Rotorua, suggests a greater reliance on private cars. The viability of providing cost effective transport options for such journeys is often low given the dispersed nature of households. There are however, opportunities to consider demand management measures such as work place based travel planning and car sharing options.

The low proportion of journeys to work by public transport in urban areas suggests that there is scope and opportunity to significantly improve the mode share of public transport. This will require co-ordinated land use, appropriate parking and public transport policy development, to ensure that future growth and of investment in public transport infrastructure and services are mutually supportive.

4.1.2 Indicator – fuel sales

Figure 15 shows fuel sales over the period 2000/01 to 2008/09 with the highest recorded level in sales over this period being in 2006/07. Since this peak, there have now been two consecutive years of decreasing fuel sales, with a 4% drop between 2007/08 and 2008/09. Fuel sales have shown a slight increase in 2009/10 following this two year decrease. Diesel continues to account for slightly more than 50% of sales in the Bay of Plenty, comprising 53% of all fuel sales in 2008/09.

The recent downward trend in fuel sales has coincided with continued population growth and increases in the region's vehicle fleet. While this may point to improvements in fuel efficiency, other indicators suggest that there has been a general decrease in travel demand over the same period. For example, traffic volumes on key congested routes have for the most part decreased in the past year. Socio-economic indicators also point to a general easing of activity associated with the period of economic recession. Population growth in the region has slowed relative to previous periods and it is likely that as the country moves out of recession the upward trend in sales will return, despite increased vehicle efficiencies.



(SOURCE: Derived from sales figures collected for taxation purposes)

Figure 15 Quantity of fuel sold in the Bay of Plenty

Transport policy implications – fuel sales

There is a link between the level of fuel sales and the price of fuel (Figure 13), with the decline in fuel sales corresponding to the period of increasing fuel prices (2008/09). This relationship illustrates the role of economic factors in influencing the demand for vehicle trips. Fuel sales and the price of fuel are determined by 'external' factors that are beyond the influence of regional transport policy. It is however, recognised that a broad based transport system with investment in multiple modes will be in a better position to absorb the flow-on effects of fluctuations in fuel use and price.

Fuel sales are also a direct reflection of the wider environmental outcomes associated with transport activities in regard to greenhouse gas emissions. At the national level, the contribution of transport related emissions has significantly increased over the past 20 years and in 2008 made up 18% of New Zealand's total emissions. With the introduction of greenhouse gas reduction targets through the New Zealand Transport Strategy and Government Policy Statement, regional policy needs to reflect transport processes, methods and priorities that help to achieve these targets.

4.2 Transport and land use integration

Land use planning initiatives are a potentially influential demand management policy when considered in conjunction with the provision of transport infrastructure and services. The diversity, density, location and design of land use activities can often provide the conditions for high levels of accessibility in terms of the opportunities to access different transport options. The relationship between land use planning and transport is discussed in terms of access to public transport facilities, inter-district travel patterns and the distribution of residential building consents.

4.2.1 Indicator – percentage of population living within 500 metres of a bus stop

Data on public transport coverage as presented in Table 3 was collected for the first time in 2006/07, to provide a baseline figure for future reporting. Figures for the subsequent two years show that public transport accessibility has been maintained over the reporting period. The slight variation between years in Tauranga and Rotorua can be attributed to minor changes to urban boundaries and bus routes.

The figures show that a high proportion of both the Tauranga and Rotorua urban populations live close to a public transport access point. The complex geography of Tauranga means that some smaller, less intensively populated areas in the city do not currently have ready access to public transport services. In contrast, Rotorua’s relatively compact urban core allows greater accessibility to be achieved with current levels of service provision. For the first time in 2009/10 the report measured the percentage of population living near a bus stop (rather than a bus route) in Rotorua. Rotorua passengers must now board at a bus stop as the hail and ride system is no longer applicable.

Public transport accessibility is also improving in the eastern Bay of Plenty. The smaller, more dispersed populations in the eastern Bay of Plenty make it difficult to achieve high levels of accessibility with a traditional public transport service provision model. However, the eastern Bay of Plenty services do achieve a broad geographical coverage, albeit at a low frequency.

Area	2006/07	2007/08	2008/09	2009/10
Tauranga urban area	85.0%	86.9%	83.6%	85%
Rotorua urban area ¹⁰	-	95.2%	94.3%	91%
Eastern Bay of Plenty	15.1%	28.0%	28.0%	34%

(SOURCE: Environment Bay of Plenty, Tauranga City Council and Statistics New Zealand)

Table 3 Percentage of population living within 500 m of a bus stop

Transport policy implications – percentage of population living within 500 m of a bus stop

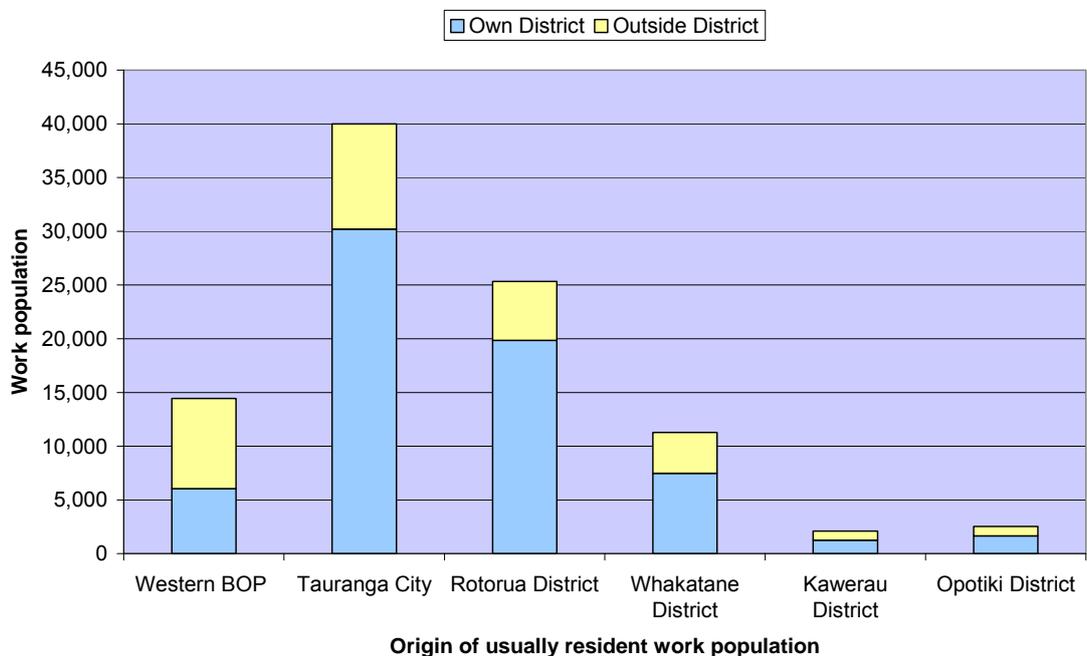
The percentage of population living within 500 m of a bus stop provides a high level indication of public transport coverage. This indicator broadly suggests that the majority of the population within the Tauranga and Rotorua urban areas is serviced by some form of bus service. When considered in conjunction with other indicators such as the public transport mode share (Figure 14 and Table 2), it is apparent that there is a range of other policy factors that need to be progressed to translate this high level of accessibility into public transport trips. These include better matching trip origin and destination profiles with service improvements and developing complementary demand management measures. Improvements in the quality, performance and attractiveness of public transport options are required as an incentive to achieve a shift from private vehicles to public transport. These improvements need to be balanced against affordability and funding considerations.

¹⁰ Rotorua operated a hail and ride system until 2010. Previously the report measured the proportion of the urban population living within 500m of a bus route. The accessibility measure has changed for the latest reporting period and is now consistent with the other two sub-regions.

The opportunities for identifying the greatest potential areas of mode shift are explicitly linked to integrating land use planning and transport planning outcomes at the spatial and analytical levels. Land use planning is a potentially influential demand management measure as the location, design, quantum and distribution of land use patterns will support investment and provision of transport infrastructure and services.

4.2.2 Indicator – travel to work outside district/city

Figure 16 shows the number of employed people who travelled to work outside the district/city in which they are usually resident on census day 2006. The western Bay of Plenty had the highest proportion of people travelling outside the district to work (58%). Of these, 55% (4,593 people) travelled to work in Tauranga city. Tauranga and Rotorua, the two largest urban centres in the region, had the lowest proportion of residents travelling beyond their boundaries to work. The Waikato region attracted the highest proportion of Rotorua residents (25% of those who worked outside the district on census day), with fewer Rotorua residents travelling through to Tauranga or the western Bay of Plenty district.



(Source: Census 2006, Statistics New Zealand)

Figure 16 Proportion of work population travelling outside district/city to work

Transport policy implications – travel to work outside district/city

This travel to work data has been collected to provide a baseline measure of the level of household / employment ‘self-sufficiency’ within sub-regions and districts. Unsurprisingly, western Bay of Plenty district displays the highest proportion of residents travelling outside the district to work as Tauranga City provides the largest employment centre in the sub-region. This figure may change over time as more locally based employment opportunities are provided within the western Bay of Plenty district.

The Rotorua figures indicate a relatively self-contained workplace-residence relationship, but Rotorua has stronger workplace ties to the Waikato than other districts within the Bay of Plenty region. This may account for greater inter-regional

journeys between Rotorua and the neighbouring Waikato employment/service centres but the transport impacts of this situation are not expected to be significant. Whakatane and Kawerau also display strong interdependencies, with 37% of those working outside Kawerau travelling to Whakatane and 27% in the opposite direction. This demonstrates that despite significant employment opportunities being provided in both districts, a sizeable proportion of the workforce chooses to travel between districts to work.

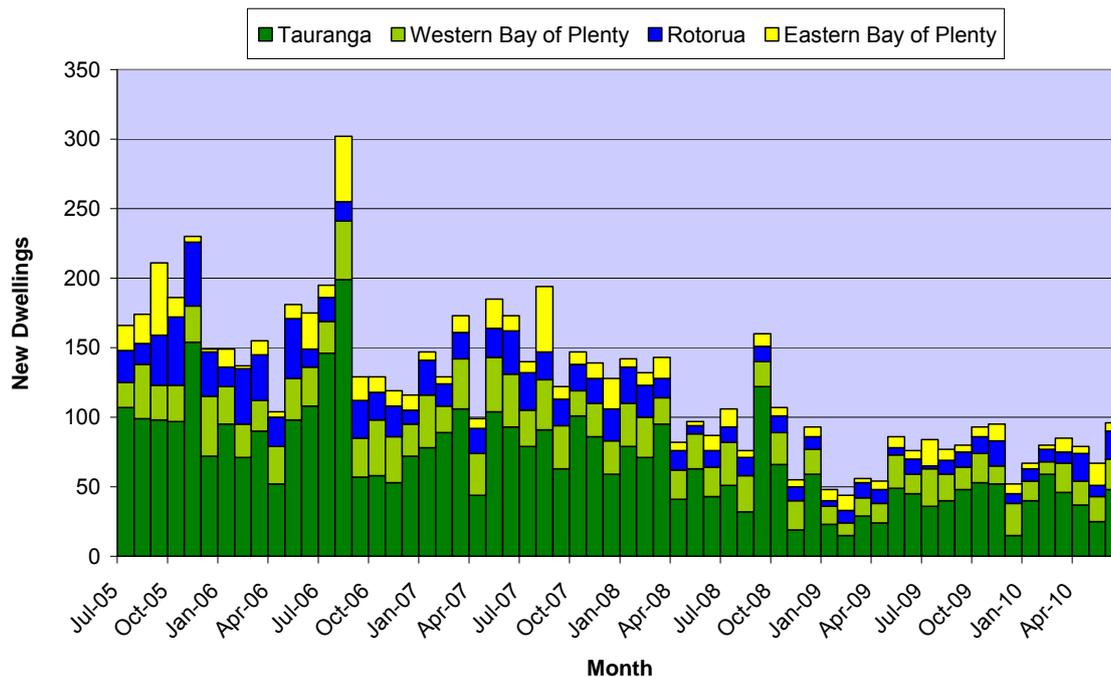
This situation emphasises the need to develop demand management measures that can effectively address inter-district trips in the short term. This may include promoting, designing and funding employer/workplace based measures (e.g. mini van services, car sharing, etc) as a means of achieving higher levels of average vehicle occupancy and increased take up of alternatives to private vehicle trips. Changes to the employment base and increasing work opportunities within smaller centres are more likely to be a medium to longer-term scenario.

4.2.3 Indicator – building consents for new dwellings

Figure 17 shows the quarterly trends over the past five years for the number of building consents issued for new dwelling units in the Bay of Plenty region. This data provides an indication of economic activity in the residential construction sector while also identifying the levels and location of household growth.

Over the last five years, the number of building consents issued for new dwelling units has fluctuated with August 2006 representing the historic high over this period. From early to mid 2007 there has been a general downwards trend in the total number of residential building consents issued. This corresponds to the period of economic downturn resulting from the tightening in available credit and funding.

While the figures are subject to significant fluctuations, the data shows a general reduction in the number of new units authorised monthly in all three sub-regions over the five year period. The slow growth of building activity since early 2009 corresponds with slow market recovery over the past 12 months. The figures show that regional trends are largely driven by activity in Tauranga and that fluctuations can occur through significant 'one-off' developments affecting the month to month data.



(Source: Statistics New Zealand)

Figure 17 – Building consents for new dwellings

Transport policy implications – building consents for new dwellings

The general reduction in new dwellings authorised may have a dampening effect on the rate that transport demand increases, particularly in Tauranga where the majority of building consents for new dwelling units are issued. There is scope to further investigate this data in relation to the spatial distribution of building consents for both residential and non-residential building activities. For example, to analyse the level of alignment between building consent data and planned growth areas and the existing and future transport network.

The distribution of building consent data also provides insights into the success of policy initiatives to encourage a greater balance within sub-regions between the location of jobs (employment) and workers (households). For example, developing opportunities for employment within the western Bay of Plenty to improve the level of ‘self-sufficiency’ within the sub-region (also refer to Figure 16).

4.3 Safety and personal security

The range of transport safety related considerations includes both traffic/road safety and aspects of safety that impact on personal security. The Safer Journeys 2010-2020 road safety strategy provides a national policy framework to address the former. Policy considerations to address the latter aspect of personal security can be addressed through an understanding of Crime Prevention Through Environmental Design (CPTED) principles and the role of urban design in improving the quality of public spaces. Personal security related issues are also discussed in the context of public transport in Section 4.4.5 and Table 7 of this report.

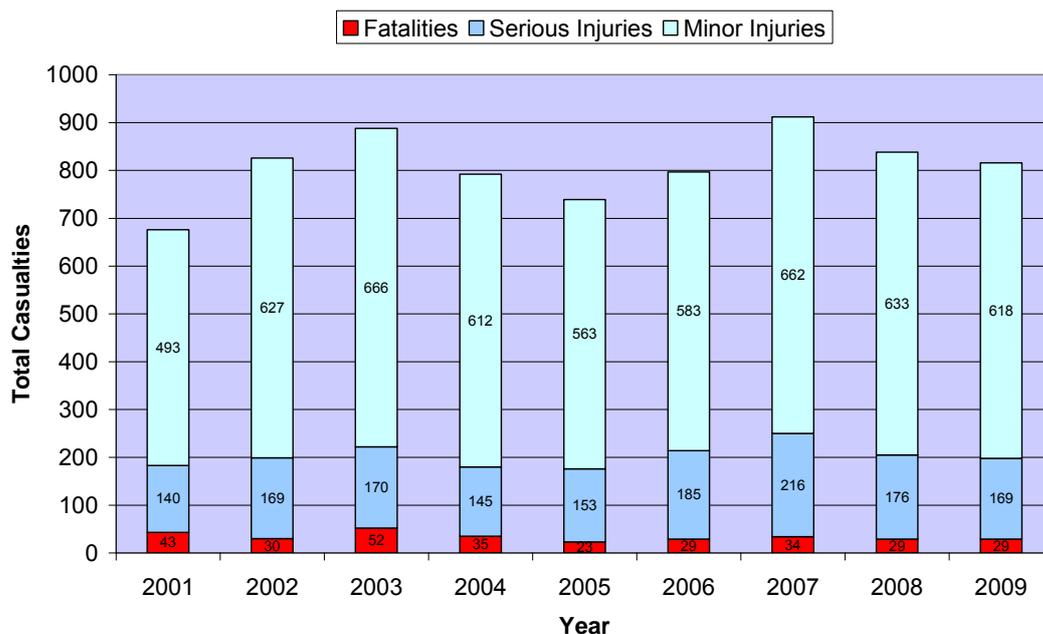
Nationally, progress in reducing road deaths and serious injuries has slowed in recent years, showing that there is a need for a new approach to road safety. If the

current approach continues relying on the existing set of road safety initiatives, it is estimated that in 2020 around 400 people will still lose their lives, over 3,000 people will be seriously injured and around 13,000 will suffer minor injuries.

These estimates are about the same as current levels of death and injury which means progress will continue to slow. The safety improvements from the current road initiatives will continue to be largely offset by the increased road use that comes with population increases and economic growth¹¹. Recent road safety data is outlined in terms of the level of casualties, causes of crashes and the New Zealand Road Assessment Programme.

4.3.1 Indicator – number of casualties

The total number of casualties on Bay of Plenty roads per year is shown in Figure 18. This information provides a measure of the overall safety of the road network and the severity of injuries. Bay of Plenty casualty figures have fluctuated over the past nine years. The total number of casualties spiked in 2003 and 2007. The highest number of fatalities (52) was recorded in 2003, while a high proportion of serious injuries were recorded in 2007. The figures for 2009 show a reduction in the number of serious and minor injuries from the 2008 figures, but no change in the number of fatalities. There is no clear trend on the overall safety of the road network for the reporting period.



(SOURCE: Motor Vehicle Crashes in New Zealand 2001-2009, Ministry of Transport)

Figure 18 Number of casualties on Bay of Plenty roads

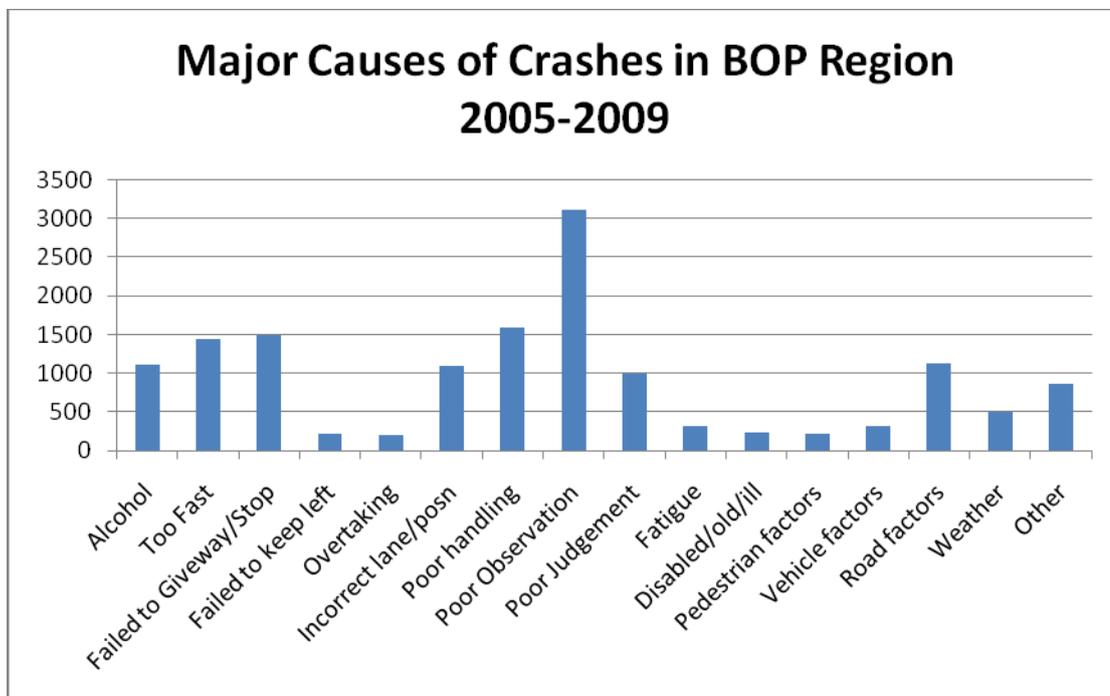
Transport policy implications – number of casualties

Safety and personal security is a constant and fundamental consideration in the planning, design and provision of the region's transport system across all modes. Policy considerations include the need to develop solutions or a package of solutions that will contribute to both national and regional road safety objectives. These solutions need to be focused around the issues of particular concern or relevance to the region (refer to section 3.4.2 below discussing the causes of crashes) and may include a combination of education, engineering and enforcement measures.

¹¹ Safer Journeys – New Zealand's road safety strategy 2010 - 2020

4.3.2 Indicator – causes of crashes

As indicated in Figure 19, major contributors to crashes continue to be inattention and poor observation, poor handling, failure to give way/stop, driving too fast for conditions and loss of control. Crashes caused by poor handling have steadily increased as a factor over the last three years. There has been a steady decrease in the number of intersection crashes over the past five years



(SOURCE: Bay of Plenty Road Safety Trends. 2010)

Figure 19 Major contributors to crashes in the region

Transport policy implications – causes of crashes

Safer Journeys 2010-2020 outlines a number of short-term and longer-term priority actions to address road safety. The priority areas identified in the Safer Journeys strategy include the following:

- Increasing the safety of young drivers
- Reducing alcohol / drug impaired driving
- Safe roads and roadsides
- Increasing the safety of motorcycling

Many of the actions identified within each of the priority areas have a regulatory basis (e.g. raising the driving age and lowering the drink drive limit). Within this national framework, there is a need to establish regional safety priorities that will help to address region specific causes of crashes. The changes resulting from Central Government regulation will likely have a positive impact on some of the historical causes identified in Figure 19 such as alcohol related crashes. The role of enforcement is critical in the successful implementation of these regulatory changes.

However, there are a wide range of causes that will require a targeted approach in terms of adopting engineering and/or educational and behavioural based policies and measures. The safety aspects of providing for active modes (walking and cycling) is one of the areas requiring particular emphasis to help achieve mode share objectives and targets.

4.3.3 Indicator – New Zealand Road Assessment Programme (KiwiRAP)

The New Zealand Road Assessment Programme, KiwiRAP¹² has investigated and assessed the safety of road networks. KiwiRAP has assessed the safety performance of New Zealand’s rural state highways with speed limits of 80 kms or greater. The assessment includes consideration of line markings, road alignment, lane and shoulder width, median protection barriers, roadside environment and intersection design. A ranking system has been established as part of the KiwiRAP framework with one star being the least safe roads and five stars representing the safest routes. Table 4 shows the proportion of the state highway network in each star band and Table 5 presents similar information based on vehicle kilometres travelled (VKT).

The majority of the Bay of Plenty’s state highway network are two or three star routes. These are typically undivided and divided roads with varying deficiencies in road features. The proportion of two star roads in the Bay of Plenty region is slightly higher than the national figure (Table 4). However, in terms of VKT, the proportion of two star routes is significantly more in the Bay of Plenty region (51%) than the proportion at the national level (33%) and in the neighbouring Waikato region (38%).

Region	Proportion in each Star Rating				
	1-star	2-stars	3-stars	4-stars	5-stars
Waikato	0%	39%	58%	3%	0%
Bay of Plenty	0%	42%	56%	2%	0%
New Zealand	0%	39%	56%	5%	0%

SOURCE: KiwiRAP brochure Waikato and Bay of Plenty, 2010

Table 4 – Proportion of state highway network within each KiwiRAP star band

Region	VKT (x10 ⁹ VKT/year)	Proportion in each Star Rating				
		1-star	2-stars	3-stars	4-stars	5-stars
Waikato	25.19	0%	38%	55%	7%	0%
Bay of Plenty	10.91	0%	51%	45%	5%	0%
New Zealand	154.76	0%	33%	40%	28%	0%

SOURCE: KiwiRAP brochure Waikato and Bay of Plenty, 2010

Table 5 Proportion of state highway network by annual VKT within each KiwiRAP star band

¹² KiwiRAP was initiated in New Zealand as a partnership between government agencies (NZ Transport Agency, Ministry of Transport, Accident Compensation Corporation and New Zealand Police) and the New Zealand Automobile Association

Transport policy implications – New Zealand Road Assessment Programme (KiwiRAP)

The KiwiRAP assessment framework provides a snapshot of the relative safety of state highway routes in the region. The assessment of routes provides a baseline against which future investment in road safety improvements can be measured, e.g. increasing the proportion of routes within the three and four star categories. The outputs of the KiwiRAP assessment will also support the prioritisation of funding for state highway improvements in the region.

4.4 Access and mobility

Access refers to people's ability to access goods, services and activities that society considers essential. There is recognition that some activities are particularly important to society (e.g. social infrastructure such as hospitals and schools and strategic infrastructure such as airports and ports), justifying policies that ensure access to them. This can require giving certain transport activities priority over others.

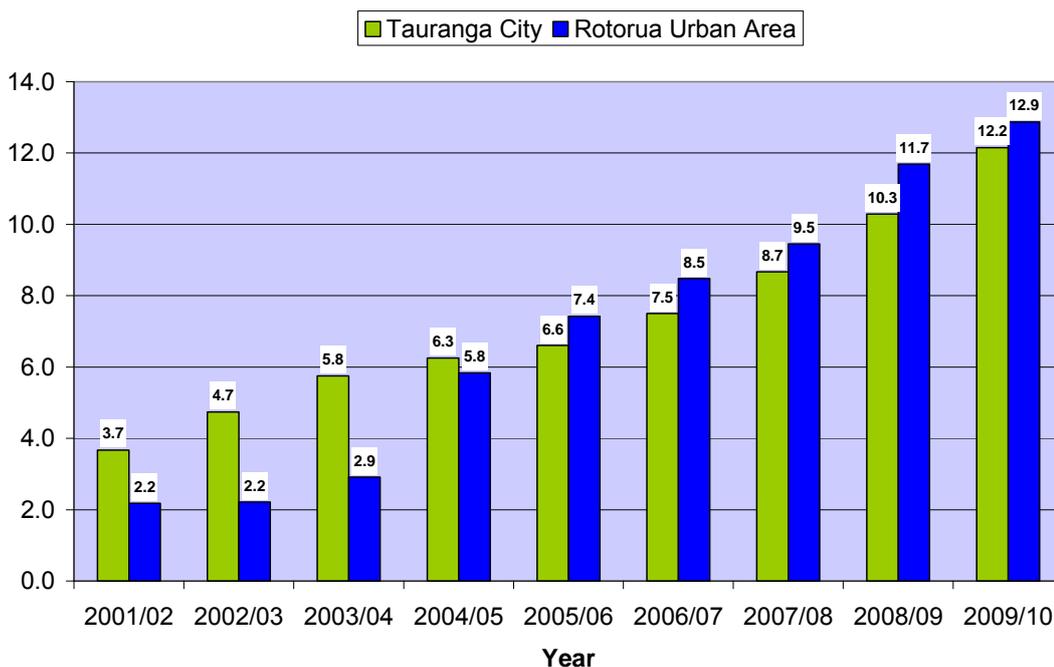
Mobility refers to physical travel that provides access. Historically, much of people's mobility requirements could be achieved through walking, but as communities and their services become more dispersed, an increasing proportion of trips require motorised travel, largely in the form of private vehicle trips with some public transport or taxi travel. When these other mobility options are not available, people's access is reduced or denied, unless land use policies provide for services in close proximity to residential areas. These elements of access and mobility are discussed in terms of bus trips per person, Total Mobility services, accessible buses and public transport user satisfaction surveys.

4.4.1 Indicator - public transport: annual bus trips per person Tauranga and Rotorua

Figure 20 shows that bus trips per capita in Tauranga have steadily increased, rising above 10 trips per year for the first time in 2008/09. The growth in Tauranga trips per capita has also accelerated in the past three years. Bus trips per capita in Rotorua have grown at a similar rate to those in Tauranga and reached over 12 trips per year in the most recent reporting period.

The trend of increasing patronage has continued in the 2009/10 year for both centres and patronage on intra-regional routes is also increasing.

The data is showing strong growth in annual bus trips per person in the main urban centres of Tauranga and Rotorua. Both services have experienced patronage growth exceeding estimated population growth.



(SOURCE: Patronage data supplied to Environment Bay of Plenty by operators and population figures based on Statistics New Zealand population estimates)

Figure 20 Annual bus trips per person, Tauranga and Rotorua

Transport policy implications – annual bus trips per person Tauranga and Rotorua

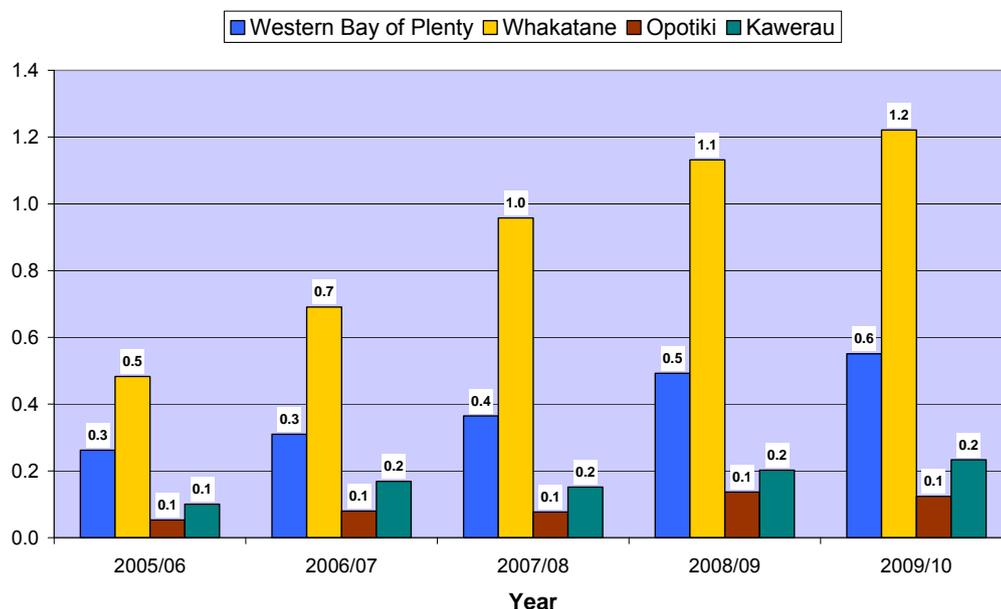
The growth in bus trips per person in Tauranga and Rotorua is a positive trend but also needs to be considered in the context of wider modal share objectives (refer to Figure 14 and Table 2) where the overall share of public transport trips is low.

The challenge is to develop transport policies that will have a positive impact on both the supply and demand sides of public transport. This will involve identifying areas of service improvement (frequency, reliability, supporting facilities, etc.) and aligning these improvements with areas of potential demand. Broadening the base of public transport users particularly in the urban areas will require a balancing of service requirements such as frequency and coverage. Improvements to the level of public transport service should also be co-ordinated with demand management initiatives such as parking management, travel planning, education and marketing, to ensure that potential benefits and patronage targets can be realised. The design and location of new subdivisions and developments can also have a significant impact on the early uptake of public transport and other active modes of transport.

4.4.2 Indicator – public transport: annual bus trips per person western Bay of Plenty, Whakatane, Opotiki and Kawerau

As shown in Figure 21, Whakatane has experienced a steady increase in patronage, generating 1.2 trips per capita in 2009/10. Newly introduced figures for services operating in the western Bay of Plenty district show an increase of around 0.1 trips per year for each year patronage data is available.

Whakatane and the western Bay of Plenty have experienced steady growth in trips per capita, although from a much lower base than Tauranga and Rotorua. Whakatane has now achieved the short-term target of more than one trip per person per year. Service improvements in the western Bay of Plenty mean that this is also a realistic target for the district. Opotiki and Kawerau trips per capita are relatively static and are likely to remain so unless there is an increase in service frequency.



(SOURCE: Patronage data supplied to Environment Bay of Plenty by operators and population figures based on Statistics New Zealand population estimates)

Figure 21 Annual bus trips per person, western Bay of Plenty, Whakatane, Opotiki and Kawerau

Transport policy implications – public transport: annual bus trips per person western Bay of Plenty, Whakatane, Opotiki and Kawerau

One of the challenges for districts outside of the main urban areas is to provide bus based transport where it is difficult to justify and sustain fixed route services, due to the dispersed and low density patterns of population. Options for those without access to a private vehicle in rural communities need to be identified. This may include community based transport services which are initiated locally and support the flexible provision of services, particularly for transport disadvantaged groups.

4.4.3 Indicator – public transport: percentage accessible buses in the region

Data on the percentage of accessible buses¹³ was collected for the first time in 2006/07 to provide a baseline for future reporting (refer to Table 6). In 2007/08, three new accessible buses were added to the Rotorua fleet. In 2009, a new urban bus contract began operating in Tauranga. This new service includes 35 fully accessible buses.

The figure shows that significant accessibility improvements have been made to urban bus services in the Bay of Plenty over the past two years. However, there is still considerable potential to improve accessibility for people with physical and mental impairments in parts of the region outside Tauranga.

¹³ Accessible bus is defined as a “kneeling” bus with a front-door ramp, and which is step-free between the front and back door, or for over 60% of the length of the bus.

Table 6 Percentage of accessible buses in the Bay of Plenty public transport system

	2006/07	2007/08	2008/09	2009/10
Region	<5%	<5%	73%	70%
Tauranga urban service	-	-	100%	100%
Rotorua urban service	-	27%	27%	27%

(SOURCE: Environment Bay of Plenty)

Transport policy implications – public transport: percentage accessible buses in the region

The provision of accessible buses in the region is an important component in serving the needs of those with physical impairments. Buses which are accessible will contribute to policy objectives around universal access and form part of the whole of journey¹⁴ approach to transport planning and policy development. Accessible buses will also enable the mobility impaired to access employment and economic opportunities. The potential of accessible buses to substitute for Total Mobility trips is discussed below in section 3.5.4.

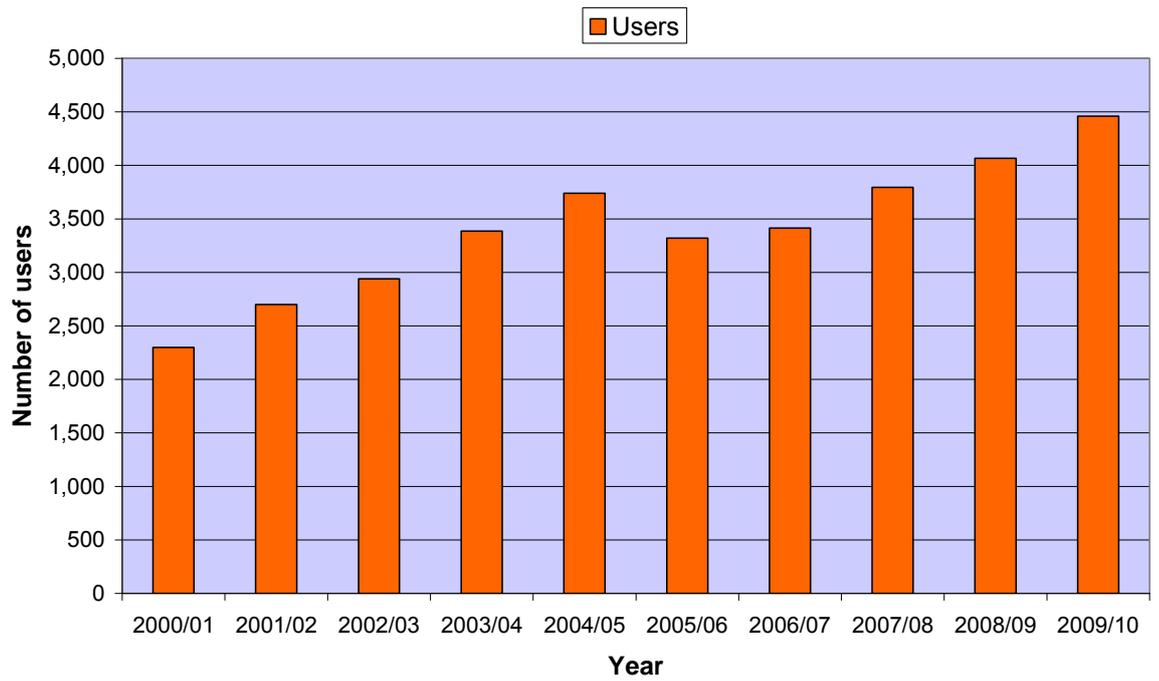
4.4.4 Indicator – Total Mobility users and trips

Figures 22 and 23 indicate the Total Mobility¹⁵ users and trips over the past 10 years. The number of registered users has increased in the past three years to peak in 2009/10 while the number of trips has steadily decreased. The 94,500 trips taken in 2009/10 was the lowest annual total in the past ten years.

The figures indicate that the Total Mobility scheme is continuing to meet anticipated demand. Feedback suggests there is a link between improved bus frequency and accessibility in the main urban centres leading to a reduction in Total Mobility trips. This has enabled some scheme members to substitute Total Mobility trips with bus trips. Total Mobility is still being used for longer journeys where door to door service is essential, e.g. hospital visits or appointments with health specialists.

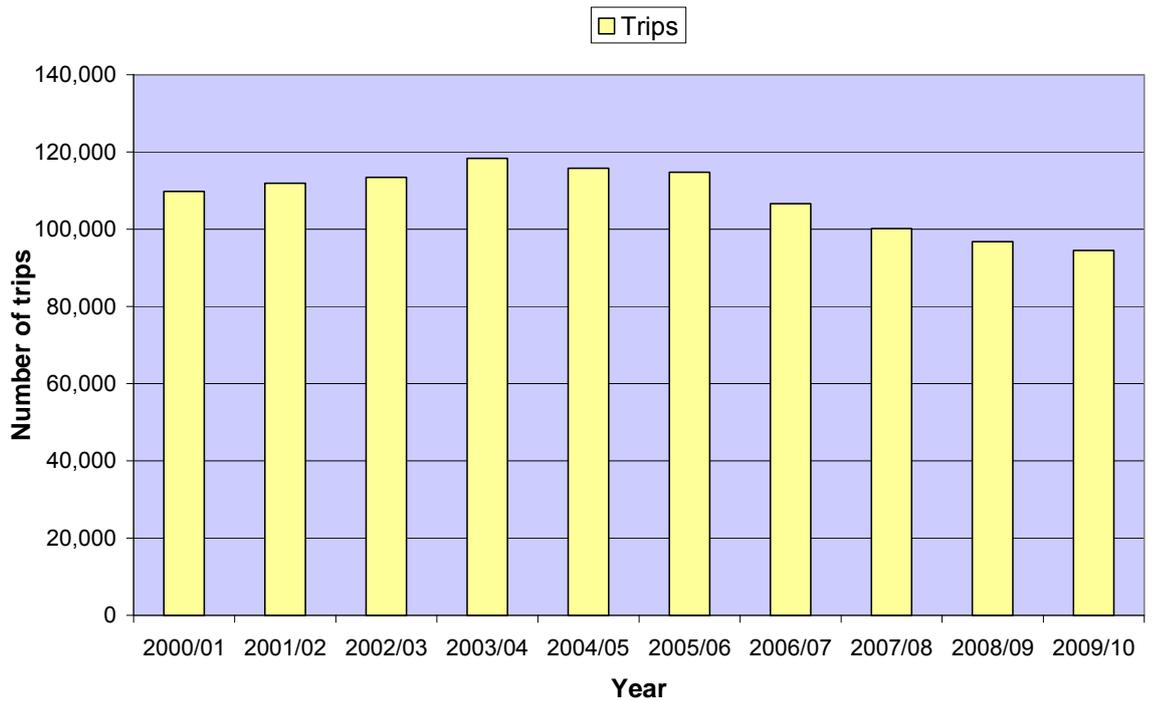
¹⁴ A whole of journey approach refers to understanding and planning for the 'door-to-door' travel needs that are involved in a journey. This includes having an understanding of the role of different modes in a single journey (e.g. walking, public transport, etc) and how these separate components can enhance or detract from the experience of the overall journey.

¹⁵ The Total Mobility scheme provides subsidised fares and adapted vehicles for the mobility impaired.



(SOURCE: Environment Bay of Plenty)

Figure 22 Total Mobility Scheme users and trips



(SOURCE: Environment Bay of Plenty)

Figure 23 Total Mobility Scheme: annual number of trips

Transport policy implications – Total Mobility users and trips

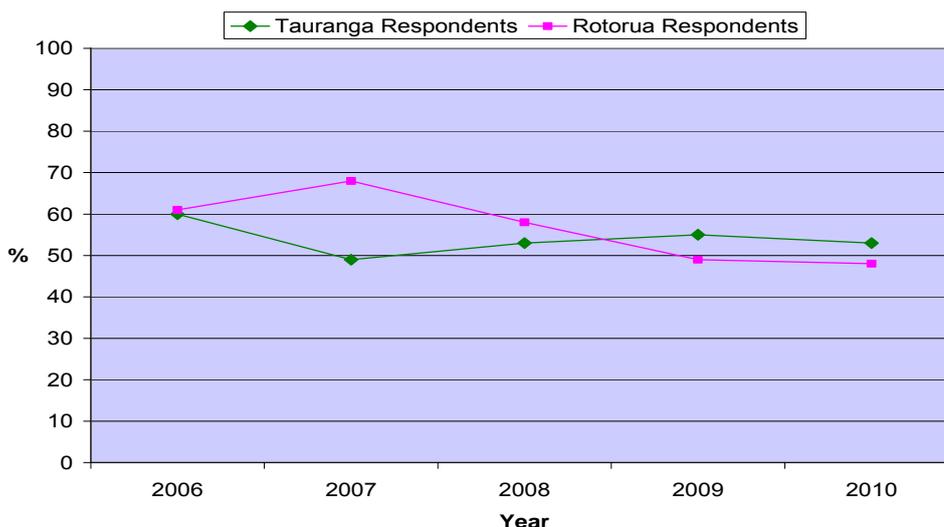
The Total Mobility scheme is a service that supports the impaired traveller who cannot access private or public transport. This service provides for essential trips, such as to healthcare facilities for those in the community with particular mobility constraints. Maintaining the Total Mobility scheme is part of the suite of policy initiatives that contribute to transport choices for the transport disadvantaged. The potential substitution of Total Mobility trips with public transport trips is a positive step in enhancing travel choices through the availability of accessible buses.

4.4.5 Indicator – public transport satisfaction surveys

Figure 24 indicates the percentage of usually resident bus users in Tauranga and Rotorua who rate Bay of Plenty Regional Council contracted bus services as 'excellent' in annual bus satisfaction survey.

Bus users were asked to state their perceptions of bus service performance levels in Tauranga and Rotorua on a scale from 'dreadful' to 'excellent'. In 2006, Tauranga (60%) and Rotorua (61%) generated almost identical figures for 'excellent' ratings. Results since 2006 show some differences between the two centres. Satisfaction with the Rotorua service peaked in 2007, with 68% of users rating the service as excellent. There was a steady decline in this rating in the following two years, but this levelled out in 2010. In contrast, Tauranga recorded a marked decrease in its 'excellent' rating in 2007, before registering an increased approval rating in the subsequent two years. This decreased slightly in 2010.

Table 7 shows the percentage of users who rated various bus service attributes as 'excellent'. The 2010 figures show a reduction in perceptions of most service attributes in Tauranga and Rotorua. Tauranga users' perceptions of safety and personal security at both bus stops and on the bus, have improved from low points in 2007. A decreasing proportion of both Tauranga and Rotorua respondents are inclined to rate safety and personal security as excellent.



(Source: Environment Bay of Plenty Annual Bus Satisfaction Survey)

Figure 24 Percentage of users who rate bus services as excellent

Attribute	Tauranga respondents					Rotorua respondents				
	2006	2007	2008	2009	2010	2006	2007	2008	2009	2010
Overall bus service	60%	49%	53%	56%	53%	61%	68%	58%	51%	48%
Service reliability	45%	32%	35%	42%	41%	55%	45%	56%	37%	41%
Service frequency	41%	34%	45%	47%	51%	64%	66%	67%	53%	60%
Vehicle quality/comfort	53%	37%	38%	38%	45%	56%	61%	55%	41%	36%
Journey time	49%	32%	46%	48%	45%	64%	58%	66%	49%	48%
Service availability	51%	34%	49%	45%	48%	64%	61%	67%	55%	54%
Safety and personal security at the stops	74%	34%	48%	51%	41%	63%	54%	57%	41%	38%
Value for money	69%	55%	65%	72%	68%	66%	68%	70%	63%	64%
Safety and personal security during the trip	78%	39%	56%	53%	51%	72%	61%	61%	46%	44%

(Source: Environment Bay of Plenty Annual Bus Satisfaction Survey)

Table 7 Percentage of users who rate bus service attributes as excellent

Transport policy implications – public transport satisfaction surveys

Experience suggests that public transport users' expectations tend to increase as levels of service improve. The increased ratings for the Tauranga service over the previous two years can at least partly be attributed to recent improvements, including new bus standards and increases in service availability and frequency.

The levelling off of 'excellent' ratings in Tauranga in 2010 shows that users have a higher expectation of the service. With no significant changes to the Rotorua service in the past three years, there has been a gradual decline in the 'excellent' rating. Respondents have experienced no substantive improvements on existing levels of service and in some cases have experienced a decrease in levels of service as the current system struggles to cope with increasing patronage.

The challenge is being able to maintain and fund excellent levels of service and to use this as leverage to attract more patrons. The ability to influence the quality based outcomes of public transport contracts is an area for further policy development.

There is a concerning trend in Tauranga and Rotorua users' perceptions of safety and personal security when using the public transport system. This attribute relates to the wider public environment and is not solely determined by level of service improvements. The figures indicate that action may be required to address the decline in respondents' perceptions of safety and personal security at bus stops and

particularly during trips. This aspect of the survey relates to the matters discussed under section 3.4 of this report addressing safety and personal security. In regard to the treatment of the wider transport environment there is a need to consider the integrated and seamless design of public spaces that interface with transport facilities. This involves consideration of urban design and CPTED principles when siting and designing public transport stops and interchanges.

4.5 Public health

The development and operation of the region's transport system can potentially have positive and negative effects on the health and well-being of the region's population. For example, the negative external effects resulting from the on-going operation of traffic can have detrimental public health impacts in terms of air pollution and noise. Conversely, engaging in active transport modes (walking and cycling) as a physical activity can have personal health benefits.

4.5.1 Indicator - transport related pollutants

The Bay of Plenty Regional Council has a programme monitoring the levels of CO and PM10 vehicle pollutants recorded at fixed residential sites in Tauranga and Rotorua. This data¹⁶ provides a background measure of transport-related emissions.

Results indicate that background levels of carbon monoxide are not a significant issue in either of the region's two largest urban centres. The level of particulate matter, which is associated with diesel combustion amongst other sources, appears to be more of an issue, particularly in Rotorua. However, monitoring at the Rotorua site shows signs of steady improvement in background levels of particulate matter over the past five years.

Transport policy implications – transport related pollutants

The existing levels of pollutants are generally within guidelines and have not exceeded the relevant environmental standards. The link between vehicle emissions and adverse health impacts is clear, with a previous study having estimated that the exposure to emissions of particulate matter, contribute to the premature mortality of approximately 399 people per year at the national level¹⁷. The risks are most pronounced in the urban environment where the potential for vehicle congestion and high concentrations of pollutants is greatest. With the growth in population and increased transport demand expected in urban areas, there is a need to ensure that future levels of vehicle pollutants are managed within the relevant standards.

The policy initiatives include advocacy to Central Government for reducing pollutants at source. For example, requirements for used diesel vehicles to meet minimum emissions standards as set out in the 2007 Vehicle Exhaust Emissions Rule (Emissions Rule). Policies that encourage a shift from private vehicles to walking, cycling and public transport will also contribute to a reduction in vehicle emissions.

¹⁶ An eight hour moving average of carbon monoxide (CO) and 24 hour average data for particulate matter (PM10) measured against the equivalent national environmental standard.

¹⁷ 'Health effects due to motor vehicle air pollution in New Zealand', prepared for the Ministry of Transport, G.W. Fisher, K. A. Rolfe, Prof. T. Kjellstrom, Prof. A. Woodward, Dr S. Hales, Prof. A. P. Sturman, Dr S. Kingham, J. Petersen, R. Shrestha, D. King, January 2002

4.5.2 Indicator - cyclists counts

Cyclist counts on key routes in Tauranga and Rotorua (conducted at the same sites, at the same time, on the same days each year) are shown in Tables 8 and 9. A limited amount of data has been collected in Tauranga to date. The data that has been collected in two central Tauranga locations is showing a year on year increase in cyclist numbers. Rotorua implemented a more comprehensive cycle counting programme in 2009. This baseline data is a good starting point for measuring future trends in cycle use in Rotorua, providing the count is replicated annually. Unfortunately data was not collected in Rotorua in 2010.

Table 8 Cyclist counts on key routes in Tauranga

Location ¹⁸	Cyclists			
	2006	2008	2009	2010
Cameron Road at 13 th Avenue	158	172	209	383
Matapihi Bridge	245	265	-	79

(Source: Tauranga City Council)

Table 9 - Cyclist counts on key routes in Rotorua

Location ¹⁹	Cyclists	
	2004	2009
Intersection State Highway 5 / Lake Road / Clayton Road	93	124
Intersection Edmund Road / Clayton Road	27	87
Intersection State Highway 30A / Fenton Street	-	44
Intersection State Highway 5 / Malfroy Road	-	142
Intersection State Highway 30A / Ranolph Street	-	72
Intersection State Highway 5 / Pukuatua Street	-	121
Intersection State Highway 30 / State Highway 30A (Te Ngae Road / Sala Street)	-	136

(Source: Rotorua District Council)

4.5.3 Indicator – pedestrian counts

Pedestrian counts on key routes in Rotorua²⁰ and Tauranga²¹ are shown in Table 10 and Figure 25.

Pedestrian count data has been collected for several years in a number of locations in central Rotorua. Data has been reported for three sample locations. Figure 25 shows significant fluctuations in pedestrian counts over the recorded period. A comparison between 2001 and 2009 reveals that 2009 numbers are nearly back up to the 2001 count, but still about 10% less than the peak in pedestrian numbers across the three sites in 2004. However, Hinemoa Street is the only site showing a general trend of decreasing pedestrian numbers. The Central Mall and Tutanekai Street sites are displaying greater variation between years, but no discernable trends.

¹⁸ The Tauranga counts were conducted 7-9 am (morning peak) and 2-6 pm (evening peak).

¹⁹ The Rotorua counts were conducted 7:30-9am and 3:30-5:30pm.

²⁰ The Rotorua counts were conducted 10:30-11am and 2:30-3pm.

²¹ The Tauranga counts were conducted 7-9am and 2-6pm.

There is limited pedestrian count data available for Tauranga. Figures provided to date do show year on year increases in pedestrians at the two recording sites (Table 10). Data was not collected in 2008.

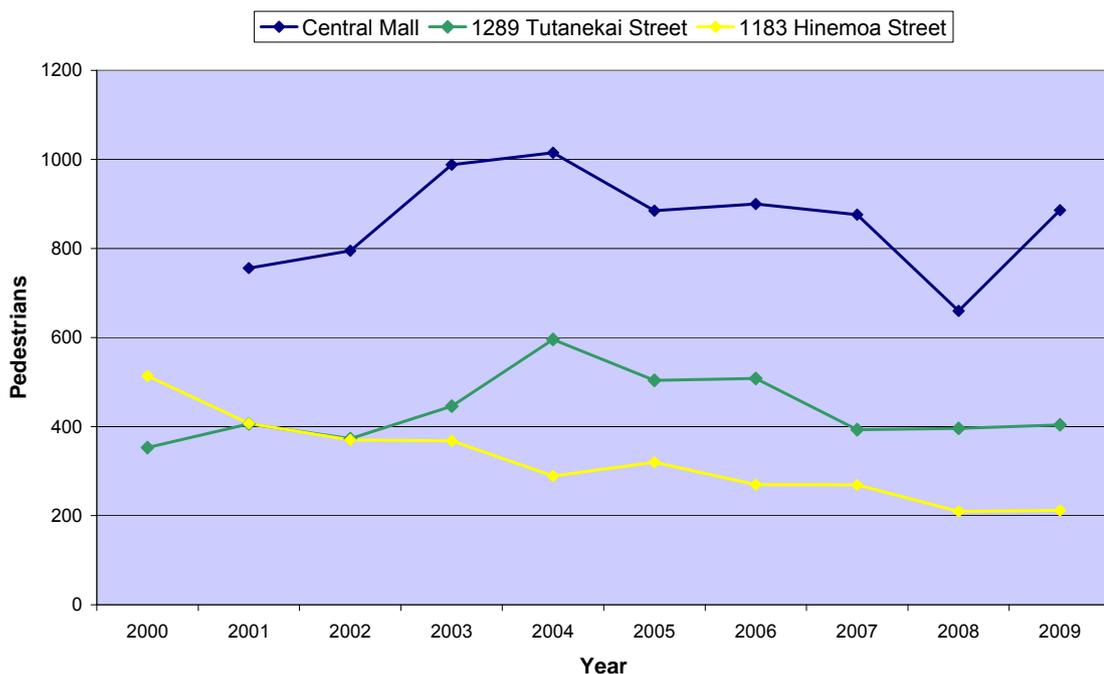
The Rotorua data was collected at three sites in close proximity to each other in the central business district (CBD). The fluctuations could be attributed to changes in relatively localised factors, for example, new origin/destination patterns due to changes in trip generating activities either within or outside the CBD. Action to stimulate pedestrian demand may be required to pre-empt any long-term decline in pedestrian activity within the CBD.

The current data has a limited geographical distribution. Ideally, the data set will be expanded across more sites in the future, including those outside the CBD, in order to gain a better understanding of pedestrian activity in Tauranga and Rotorua. Recent improvements to the pedestrian infrastructure on Matapihi Bridge may have contributed to the significant increase in pedestrians counted in 2010.

Table 10 Pedestrian counts on key routes in Tauranga

Location	Pedestrians				
	2006	2007	2008	2009	2010
Cameron Road	115	127	-	321	420
Matapihi Bridge	35	37	-	60	127

(Source: Tauranga City Council)



(Source: Rotorua District Council)

Figure 25 Pedestrian counts on key routes in Rotorua

Transport policy implications – cyclists and pedestrian counts

There is still insufficient cycle count data to draw any firm conclusions on trends in cycle use in the region's two main urban centres. However, the data collected to date in Tauranga and Rotorua is showing increased cycle traffic at key urban locations. More comprehensive and consistent data needs to be collected before this can be recognised as an indicator of changing travel behaviour.

In general terms, an increase in the uptake of walking and cycling will have public health benefits as people engage in physical activities as part of their daily routines²². There are also potential wider environmental benefits as people shift from vehicle use to active modes.

At the policy level there are multiple considerations to facilitate greater uptake of walking and cycling and turn around the low levels of such trips in the region (refer to Figure 14). These include the following items:

- Planning and designing safe, direct and continuous inter-connected networks of walking and cycling facilities.
- Providing for cycling trip end facilities.
- Prioritising appropriate treatments in high demand pedestrian areas or environments (e.g. town / retail centres) and recognising the role of urban design.
- Encouraging land use planning outcomes that present greater opportunities for walking and cycling (e.g. mixed use, ground floor shops, minimising inefficient use land for parking).
- Developing and supporting community and workplace travel planning programmes where walking, cycling and public transport form a core part of the initiatives.
- Recognising the role of walking in adopting a whole of journey approach²³.
- Ensuring new greenfield developments incorporate good urban design qualities (e.g. the Seven C's)
- Land use planning that makes provision for live, work, play

The data included in the walking and cycling monitoring data suggests that policy initiatives should be developed to provide a framework for prioritising multiple modes along key urban routes. Cameron Road is a route that has a number of competing demands and based on the monitoring data has experienced growth in walking and cycling trips while also functioning as a key public transport and general traffic route. Tools such as corridor management plans that are underpinned and integrated with land use planning is an example of a tool that can be used to establish transport priorities.

²² Active lifestyles will counter the health effects of a sedentary lifestyle (14.8% of adults living in the Bay of Plenty / Taranaki / MidCentral DHB areas are sedentary compared with 15.0% in NZ total population) and obesity (27.5% of adults living in Bay of Plenty / Taranaki / MidCentral DHB areas are obese compared with 26.5% for the NZ population). (MoH - NZ Health Survey 2006/2007)

²³ A whole of journey approach refers to understanding and planning for the 'door-to-door' travel needs that are involved in a journey. This includes having an understanding of the role of different modes in a single journey (e.g. walking, public transport, etc.) and how these separate components can enhance or detract from the experience of the overall journey.

4.5.4 Indicator – deprivation index

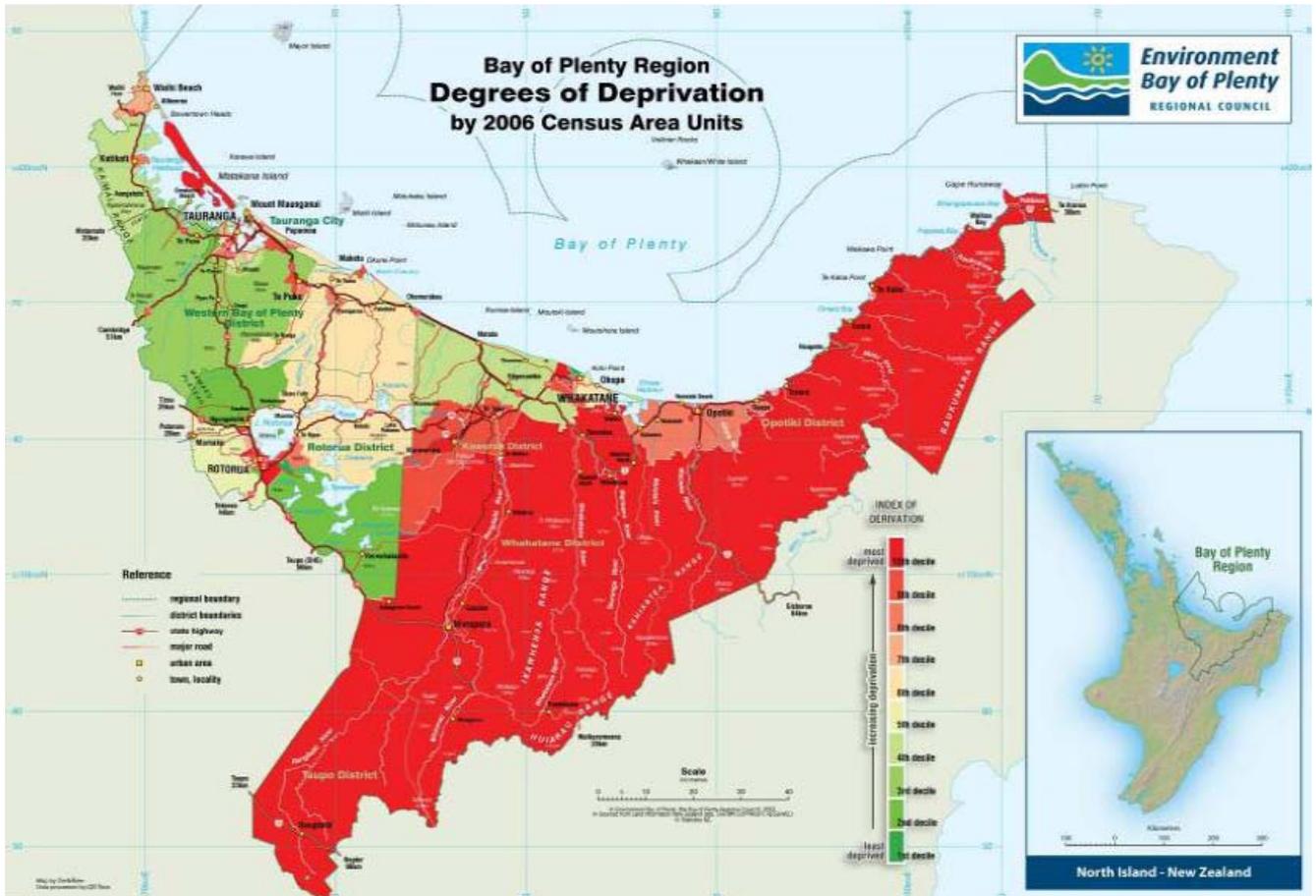
The New Zealand deprivation index combines nine variables from the 2006 Census reflecting dimensions of material and social deprivation. These dimensions reflect lack of income, communication, employment, transport, qualifications, support, living space and an owned home. The index reflects a continuum from lack of deprivation to deprivation, rather than from affluence to deprivation. The index was developed from a health sector perspective for three principle purposes - resource allocation, research and advocacy.²⁴

Figure 26 shows the most deprived areas as red and the least deprived areas in green. When considering the populated areas of the region, the centres in the eastern Bay of Plenty (Whakatane and Opotiki) have overall higher levels of deprivation than the urban areas in the western Bay of Plenty. There are also pockets of higher levels of deprivation in the larger urban centres such as Tauranga, and Rotorua. The deprivation index reflects a general lack of resources and opportunity to access economic activities.

One of the variables of the index is access to a car. Paradoxically the areas of higher deprivation are also the areas with the highest uptake of walking (refer to Table 2) which can have positive public health benefits in terms of increasing the levels of individual physical activity. However, children living in areas of high neighbourhood deprivation were more likely to be obese than children living in all other areas²⁵.

²⁴ 'A Socio-economic Profile of the People of the Bay of Plenty region', Bay of Plenty Regional Council, May 2009

²⁵ MoH - NZ Health Survey 2006/2007



(SOURCE Statistics New Zealand)

Figure 26 – Degrees of deprivation Bay of Plenty region (2006 Census)

Transport policy implications – deprivation

In terms of facilitating greater social equity, there is a need to implement policies that will improve access to transport options in areas of high deprivation. The provision of affordable and reliable public transport is a challenge in dispersed areas of lower population density. Alternative means and mechanisms are required to ensure more equitable access to transport services (e.g. community or company based shuttle systems).

Identifying and encouraging economic development opportunities at the local level, in areas of high deprivation should also be encouraged and can be facilitated through proactive land use planning policies.

Part 5: Funding

Funding for transport activities has been raised as an issue through a number of forums. The Land Transport Management Act (LTMA) requires the Regional Transport Committee (RTC) to “take account of the land transport funding likely to be available within the region for implementing the strategy during the period covered by the strategy” (Clause 4(B) of Schedule 7). The Act also requires the RTC to “be satisfied that the strategy contributes to the aim of achieving an affordable, integrated, safe, responsive and sustainable land transport system (Clause 3(i) of Schedule 7).

5.1 Sources of funding

There are currently four main sources of public funding for transport:

- National Land Transport Fund (through the New Zealand Transport Agency (NZTA));
- Local funds (territorial authorities and regional council);
- Road pricing (territorial authorities and NZTA);
- Kiwi rail (central government).

National Land Transport Fund

The Government Policy Statement on Land Transport Funding (GPS) indicates the amount of NZTA national funding available over the next ten years within funding bands for each activity class. The National Land Transport Programme (NLTP) shows NZTA funding for each authorised organisation, at activity level for the next three years. There is no funding information available at the regional level beyond the next three years, and no funding information available at all beyond ten years.

Local Funds

Local councils (territorial and regional) are required to part fund all local transport activities, with the proportion of local funds required, based on a Financial Assistance Rate (FAR) set by the NZTA. Most construction (roads and walking and cycling infrastructure) and maintenance is funded at a rate of approximately 50%, with transport planning and community programmes receiving 75% FAR. The local share is generally funded through general and targeted rates and an assortment of development levies. There are limits on how much local funding can be increased to fund the local share of transport projects, as this source of funding has a direct impact on the level of rates people pay. It may also impact on the cost of land and development in the Council areas if development levies are increased to offset the local share of transport improvements.

Public transport operation is funded through fare revenue and the balance is shared 50/50 between the regional council and NZTA. The local share funded from regional council rates that vary around the region depending on whether general or targeted rates are used to fund the services. Regional fare revenue in the Bay of Plenty currently pays for approximately 32% of the operating cost of the services provided and central government have expressed the desire for the national fare revenue to be about 50%. Given the variability of the services around the region, varying between low density rural services and juvenile urban services, 50% would be difficult to achieve regionally.

Road Pricing

Tolling of new and existing roads is currently a mechanism available under the LTMA to charge for road use nationally. Tolls can be levied and collected, provided the activity promotes the five objectives of the LTMA (access and mobility, safety and personal security, public health, economic development, and environmental sustainability) and there is an alternative route available. Tolling was introduced by central government as a means to bring forward capital projects that would not otherwise get funded in the timeframes desired by the region. Other techniques for electronic charging for road use are being developed overseas, but they are not at the stage where they can be applied in New Zealand.

One of the few tolled roads in New Zealand is Route K in Tauranga and is a local road under the control of Tauranga City Council. The Tauranga Eastern Link (TEL), which is one of the seven roads of National Significance (RoNS), is also proposed to be a toll road when it is completed and operational.

Kiwirail

Kiwirail has recently announced a \$4.6 billion 10 year rail 'turn-around plan' which is a 10 year programme designed to create a sustainable rail business. The plan is in response to a Central Government announcement that rail funding would be made available, subject to a long term plan to create a business capable of standing on its own feet financially. The funding is therefore to be used for investment in the business' assets rather than as an operating subsidy. The Government has committed in principle to a total package of \$750 million over the next three years, with final decisions on funding subject to individual business cases. This funding is being sourced from the Central Government consolidated fund rather than the NLTF.

5.2 Funding gaps and challenges

In the preparation of the Bay of Plenty Regional Land Transport Programme 2009/10–2011/12, it was recognised that there was a funding gap in the 10 year financial forecast. It is recognised that funding will continue to be an ongoing issue for the region.

Challenges influencing the availability and allocation of funding include:

- Equitable financial assistance rates for different modes. For example, state highways are fully funded from the National Land Transport Fund, while public transport services and infrastructure, local roading, walking, cycling, and travel demand management generally require a local body contribution of around 50 %.
- Emphasis on the completion of Roads of National Significance (RoNS) will require a correspondingly significant share of the National Land Transport Fund. This will mean that trade-offs will be made between the funding of RoNS and non-RoNS projects. The funding of non-RoNS transport projects of regional significance may potentially be further delayed.
- It is difficult for local government to increase rates significantly above the rate of inflation which is a constraint for investment in non-state highway projects.
- Development levies cannot be increased significantly without impacting on the affordability of development

- Changes in transport funding policy such as the National Farebox Recovery Policy²⁶. The parameters and targets set by the Farebox Recovery policy will have implications in regard to funding of 'start-up' up services and expanding existing services. This could result in additional funding burden on the local share and ultimately result in stagnating or declining levels of service.

The funding constraints around transport mean that there will be challenges to identify and access new funding from alternative sources, such as private-public partnerships for transport, parking pricing and ways to reduce overall transport costs.

There are a wide range of transport objectives and outcomes that have been outlined under the Land Transport Management Act. The realisation of these objectives is constrained by funding availability and as a result there is a requirement to prioritise and accordingly allocate limited funding resources. Identifying opportunities to 'integrate' transport outcomes with other funding/budget work streams (e.g. economic development, streetscape, centre enhancement, etc.) is one approach to realising local level transport objectives.

²⁶ The purpose of this policy is to encourage a greater focus on efficiency and to work with approved organisations (eg regional councils) to determine, on a case-by-case basis, what constitutes an equitable sharing of the costs between public transport users, ratepayers and road users through the NLTP, who pay for the provision of public transport services. The NZTA's intention is to work collaboratively with regional councils to achieve a national farebox recovery ratio of no less than 50 percent nationally in the medium term.

Part 6: Conclusions

The review of transport issues and trends in the Bay of Plenty has highlighted the diversity of issues that need to be addressed and the inter-related nature of these issues. An overall challenge for the region is to achieve balance between numerous competing transport demands within both urban and rural environments that meet access, economic, safety and environmental outcomes. This is in the context of a growing and ageing population where there are clear disparities in economic and accessibility opportunities between the region's larger urban areas and smaller rural centres.

Given future population growth and funding constraints in the region, it is expected that greater emphasis will be required around managing transport demands and enabling sustainable forms of transport to meet national and regional transport objectives.

Key findings include the following:

- The region will need to accommodate the population of another Tauranga city (119,500 people) by 2051.
- The percentage of the population over 65 years old is projected to grow from 39,200 people to approximately 78,300 people by 2031.
- Future household growth will be focused in the urban areas and the average household size will reduce over time.
- Manufacturing and primary production related activities will continue to be an important component of the regional economy. The health care and social services sector is likely to continue to grow to support the projected ageing population.
- Internal freight movements within the region are expected to grow strongly as a result of increasing log and timber related movements.
- In the medium to long term, oil prices are expected to increase as supply tightens and demand increases.
- Travel by private vehicles is the dominant means of transport in the region with low levels of walking, cycling and public transport trips.
- The western Bay of Plenty has the highest proportion of residents travelling outside of the district to work.
- Over the past decade there have been fluctuating levels of road related casualties with the driver error related factors being the dominant causes.
- Bus trips per person have been steadily increasing in Tauranga and Rotorua.
- The level of transport related pollutants are generally in compliance with national standards.
- A distinct disparity in the levels of higher deprivation in the eastern Bay of Plenty against the generally lower levels of deprivation in the western Bay of Plenty.

- Funding will be a key constraint to achieving the region's transport outcomes. The current prioritisation and allocation of funding through the National Land Transport Fund may result in under funding of walking, cycling, public transport and demand management initiatives and inequity in funding across modes.