

E mahi ngatahi e pai ake ai te taiao



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BAY OF PLENTY REGIONAL LAND TRANSPORT STRATEGY ANNUAL REPORT 2008-09

ENVIRONMENT BAY OF PLENTY
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Executive Summary

This is a report on progress in implementing the Bay of Plenty Regional Land Transport Strategy for the 2008/09 financial year.

Performance indicators

The RLTS contains a set of performance indicators. Performance indicators provide a quantitative measure of performance and useful information on the effectiveness of the strategy. Data has been collected on socio-economic indicators, and on performance indicators for the strategic outcomes in the RLTS:

Integration and land use	Economic development
Safety and personal security	Energy efficiency
Responsiveness	Access and mobility
Sustainability	Public health

Socio-economic indicators

There has been a general easing of the socio-economic factors contributing to travel demand in the 2008/09 year when compared with the preceding two years.

Integration and land use

The number of identified transport interchanges has steadily increased. Notable new interchanges include a regular bus link to Tauranga airport and more opportunities to transfer between bicycle and other modes.

Safety and personal security

The number of casualties on Bay of Plenty roads decreased in 2008. The crash rate per 10,000 people also improved on the preceding year.

Responsiveness

Perceptions of the Tauranga urban bus service have improved in the past two years, while there has been a gradual decline in the ratings for Rotorua.

Sustainability

A slight contraction in the Port of Tauranga's use of rail and coastal shipping suggests an increasing reliance on the road network for transporting goods to and from the Port.

Annual bus trips per capita continue to increase, particularly in the main urban centres.

Available data shows increasing numbers of cyclists in both Rotorua and Tauranga. While pedestrian numbers are up in Tauranga and down in Rotorua.

Economic development

The 2008 year saw a general easing in traffic volumes on key congested routes in both Tauranga and Rotorua. Travel time delays on the Tauranga network have stabilised in recent surveys. Port of Tauranga export volumes rebounded in 2008/09 due to increased demand for logs.

Energy efficiency

Regional fuel sales decreased by 4% in 2008/09. This is more likely to be linked to reduced travel demand associated with the economic recession than fuel efficiency gains.

Access and mobility

The vast majority of people live within walking distance of bus services in the region’s two largest urban centres. Significant gains have been made in the provision of accessible buses in the past year.

Total mobility indicators show that the service continues to meet expected demand.






Public health















There have been signs of improvement in levels of particulate matter in both Rotorua and Tauranga in the past two years.

The districts with extensive networks of unsealed roads are achieving the highest rates of reduction in vehicle kilometres travelled on unsealed roads.

Performance assessment

The table on the following page compares the performance of the region’s land transport system in 2008/09 with the previous two years:

Key							
	significant progress towards outcomes		some progress towards outcomes		some regression from outcomes		significant regression from outcomes
	No change, or there is currently insufficient information to make an assessment						

RLTS Scorecard			
Strategic Outcome	Assessment		
	2006/07	2007/08	2008/09
Integration and land use	—	—	
Safety and personal security			
Responsiveness	—	—	—
Sustainability		—	—
Economic Development			
Energy Efficiency	—	—	—
Access and Mobility			
Public Health			

Data on regional land transport performance indicators has now been collected and reported on for three years in the Bay of Plenty. Consistent data collection is providing a more complete picture of trends in the performance of the region’s land transport system.

Overall, the region has taken some positive steps towards achieving RLTS strategic outcomes in the past year. Significant progress has been made towards achieving the access and mobility objective, while some progress has been achieved in terms of integration and land-use, safety and personal security, economic development and public health. The performance of the region’s land transport system compares favourably with previous years.

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Chapter 1: Introduction

This is a report on progress in implementing the Bay of Plenty Regional Land Transport Strategy for the 2008/09 financial year.

1.1 Statutory context

The Land Transport Management Act (LTMA) requires every regional council to ensure that the relevant regional transport committee prepares a regional land transport strategy (RLTS). The LTMA also requires a regional transport committee to prepare a progress report on implementing the RLTS once every three years.

The region collects data on an annual basis in order to fulfil this and other transport monitoring requirements. While a progress report is only required every three years, to ensure continuity, the region will continue to compile an annual report on the data collected.

Commentary on progress in implementing RLTS actions will be included in the report on a three yearly basis. These three yearly progress reports must be forwarded to the Ministry of Transport, New Zealand Transport Agency, Commissioner of Police and territorial authorities in the region. All reports will also be made available to the public.

1.2 The Bay of Plenty Regional Land Transport Strategy

The current Bay of Plenty RLTS was adopted in June 2007. The RLTS has a vision of:

An integrated, safe, responsive and sustainable land transport system that meets the needs of the people of a vibrant and growing region.

Underpinning the vision is a set of strategic outcomes or 'desired states' arranged under the following headings:

Integration and land use	Economic development
Safety and personal security	Energy efficiency
Responsiveness	Access and mobility
Sustainability	Public health

These strategic outcomes provide the framework for all policy principles, actions and performance indicators in the RLTS.

The RLTS is prepared by the Bay of Plenty Regional Transport Committee (RTC). The RTC is a regional governance body with representation from Environment Bay of Plenty, the region's district and city councils, the New Zealand Transport Agency, cultural interests, and people drawn from the wider community to reflect the New Zealand Transport Strategy's objectives of economic development, safety and personal security, public health, access and mobility, and environmental sustainability.

The RTC has initiated a review of the current strategy. This review is programmed for completion by June 2011.

1.3 Performance indicators

The RLTS contains a set of performance indicators. The performance indicators are based around the eight key strategic outcomes in the strategy. The indicators were developed so that measurable targets can be set and progress towards these targets assessed through the annual reporting process. Performance indicators provide a quantitative measure of performance and useful information on the effectiveness of the strategy.

The current set of performance indicators is generally consistent with the national Transport Monitoring Indicator Framework. The RLTS review may identify refinements to the regional indicators to better align with the national framework.

1.4 Information in the report

The information in this report was collected from a range of different sources. Environment Bay of Plenty would like to thank the region's territorial authorities (Tauranga City Council, Western Bay of Plenty District Council, Rotorua District Council, Whakatane District Council, Kawerau District Council and Opotiki District Council), the New Zealand Transport Agency, the Port of Tauranga, and Statistics New Zealand for their assistance in compiling the data.

There are some information gaps evident in the report. However, trend data is beginning to provide a useful picture of the region's land transport system performance over time.

Data coverage varies in the report. Data has been collected regionally for some indicators, while data is more relevant at the district or city specific level for others. Much of the data has been collated at the territorial authority level. This data covers the six main territorial authorities in the region (Tauranga, Western Bay of Plenty, Rotorua, Whakatane, Kawerau and Opotiki).

The territorial authority boundaries do not provide an exact fit with the regional boundary. A small part of Taupo district lies within the Bay of Plenty, and a small area of Rotorua district is outside the region. The populations of these two areas are relatively small and their effect on regional figures is considered to be negligible.

The region has been divided into three sub-regional groupings in some data sets. The western Bay of Plenty sub-region includes the Western Bay of Plenty district and Tauranga City. The eastern Bay of Plenty sub-region incorporates Whakatane, Kawerau and Opotiki districts, while the Rotorua sub-region encompasses Rotorua district only.

In some cases, the data collected does not align with either regional or territorial authority boundaries. In these cases, the statistical boundaries are noted in the performance indicator definition.

1.5 Report structure

Chapter 2 measures trends in a set of socio-economic indicators that influence travel demand. A definition is provided for each indicator. The data is then presented, interpreted and analysed in terms of its implications for the region's land transport system.

Chapters 3 – 10 cover the performance indicators for each strategic outcome in the RLTS.

Chapter 11 provides an overall assessment of the region's land transport system performance in 2008/09 when measured against the strategic outcomes in the RLTS.

Chapter 2: Socio-economic indicators

This chapter measures trends in socio-economic indicators that influence travel demand. The following indicators are reported on:

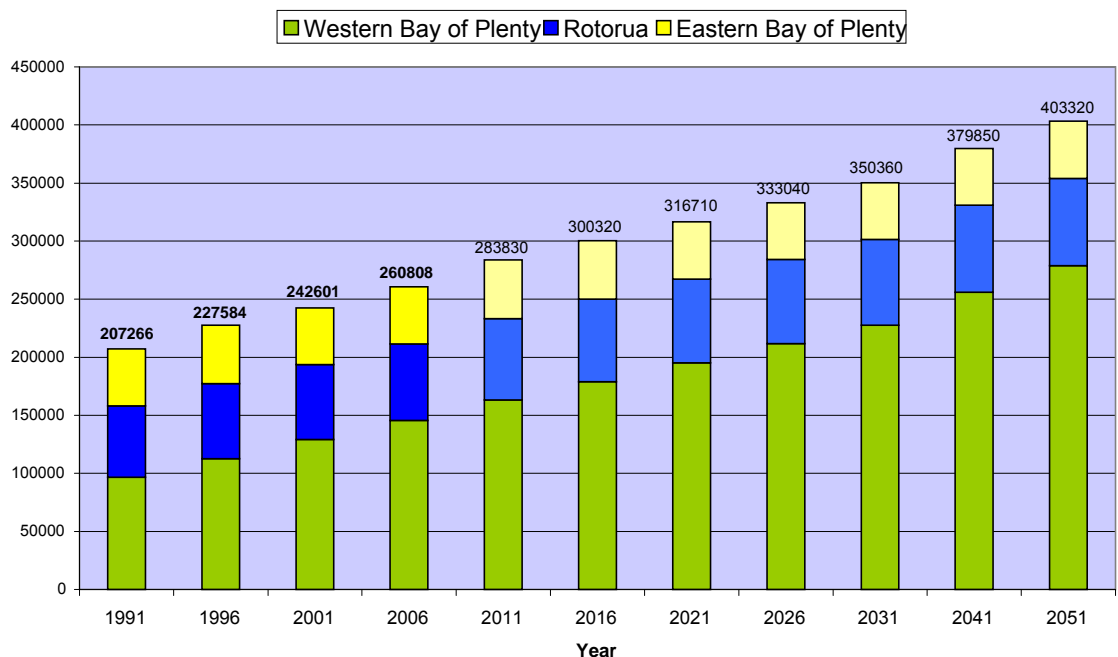
Population:	resident population
Households:	number of households average size of households
Regional economic activity:	new dwellings authorised
Vehicle ownership:	households without vehicle access number of licensed vehicles

2.1 Population

2.1.1 Resident population

Definition: Actual and projected ‘usually resident’ populations for each sub-region and the region. Source: Census 1991-2006; Bay of Plenty Demographic Forecast 2051 ‘modified medium variant’ projections.

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



Interpretation: The regional population was 260,808 in 2006. Fifty-seven percent 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-region.

The western Bay of Plenty is experiencing strong population growth. The population has grown by 51% in the last 15 years. 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 is static. The steady population increase of 7-10% for the whole region is driven by growth in the western Bay of Plenty.

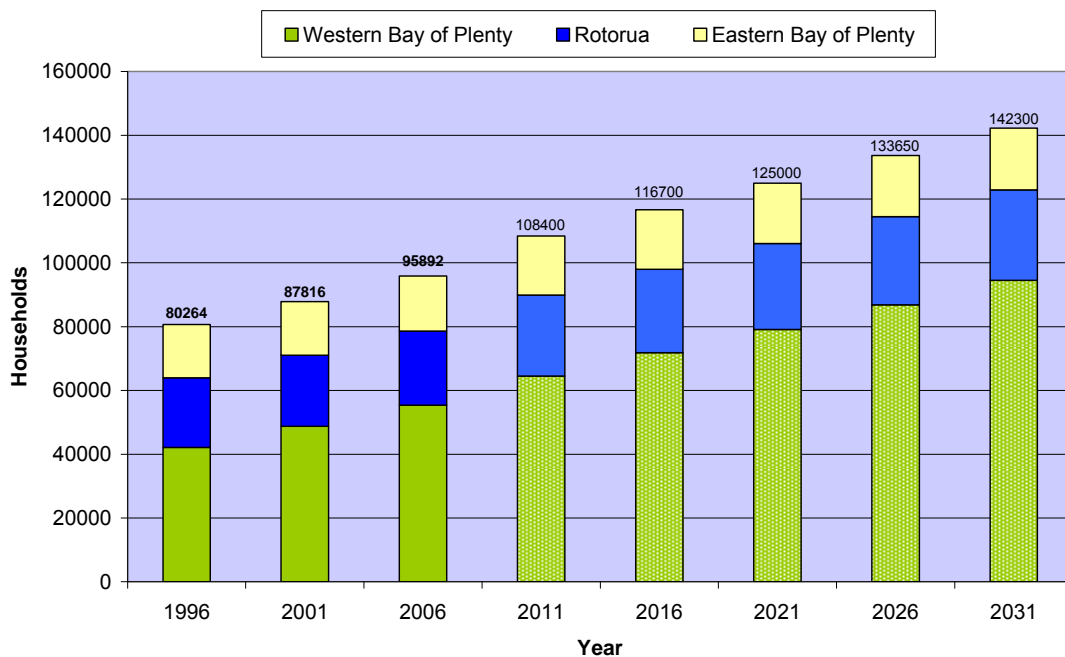
Analysis: Population growth into the foreseeable future will continue to drive increased travel demand in the western Bay of Plenty sub-region.

2.2 Households

2.2.1 Number of households

Definition: Number of households by sub-region (population living in private dwellings). Source: Census 1996-2006; Bay of Plenty Demographic Forecast 2051 'modified medium variant' projections.

Figure 2 Number of households, actual and projected, by sub-region



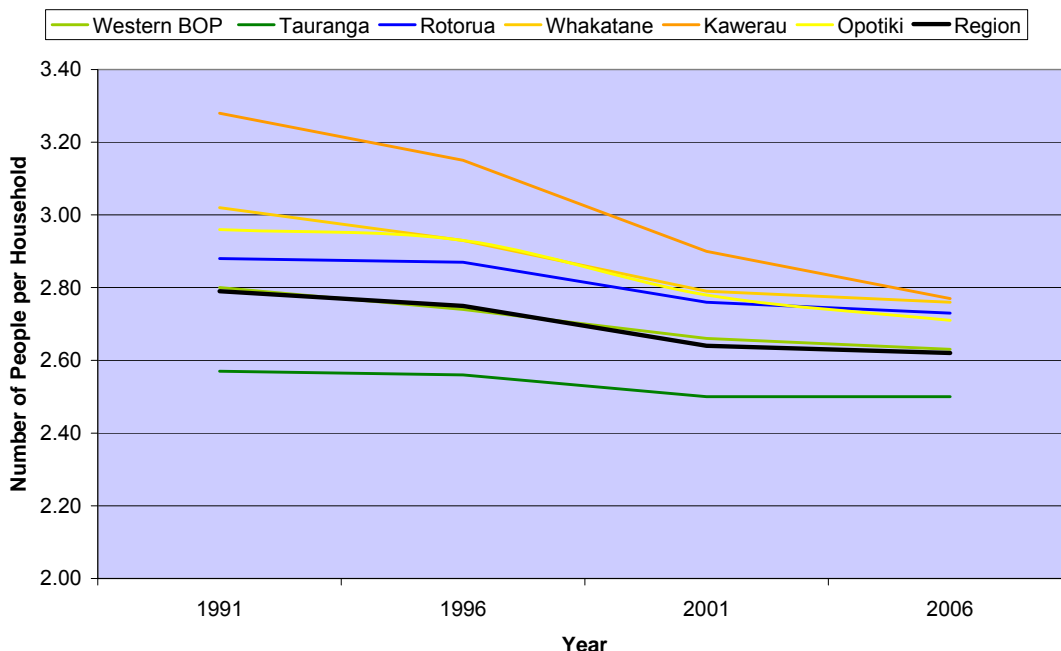
Interpretation: There were 95,892 households in the region in 2006. This is forecast to increase to 125,000 households in 2021. Growth in the number of households is largely driven by population growth in the western Bay of Plenty sub-region. The number of households in this sub-region is expected to increase by 43% in the next 15 years. This compares with growth of 16% in Rotorua and 9% in the eastern Bay of Plenty.

Analysis: Growth in the number of households is forecast to outstrip population growth in all three sub-regions. This trend will exacerbate the increased transport demand already driven by strong population growth in the western Bay of Plenty.

2.2.2 Household size

Definition: Average number of people per household. Source: Census 1991-2006, Statistics NZ.

Figure 3 Average household size by district/city



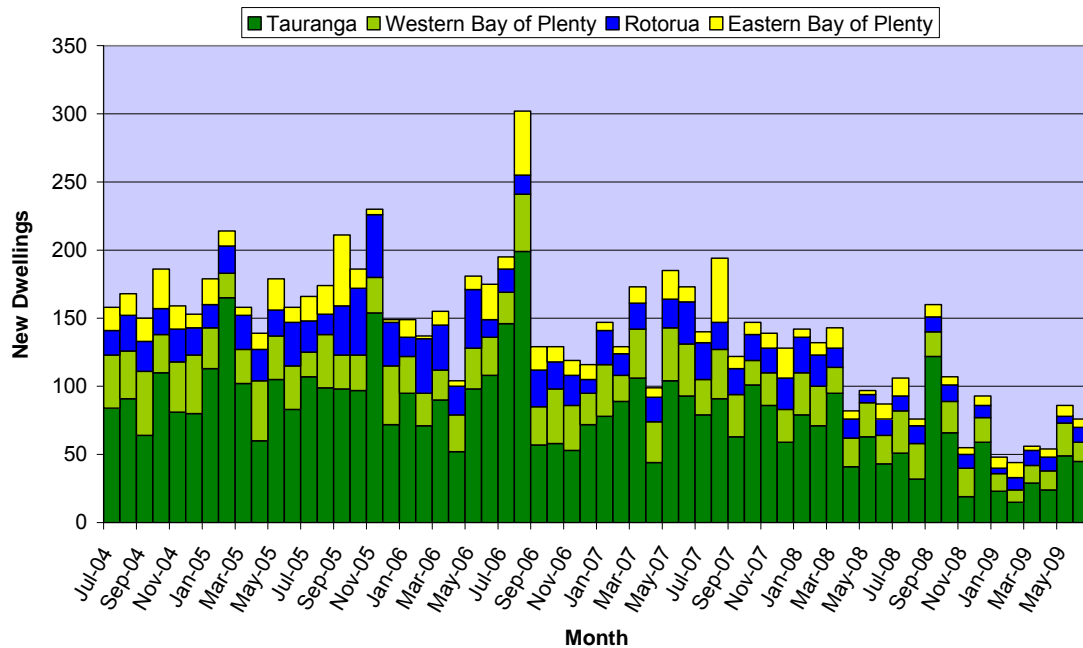
Interpretation: All districts in the region display a trend of decreasing household size over the past 15 years. The regional average has reduced from 2.79 in 1991 to 2.62 in 2006.

Analysis: Decreasing household size explains the trend of household numbers increasing at a higher rate than population growth in the Bay of Plenty. This trend is likely to increase travel demand as each individual household is more likely to require at least one private motor vehicle. Decreasing household size also puts downward pressure on vehicle occupancy rates.

2.3 Regional economic activity

2.3.1 New dwelling units

Definition: Five year trend for number of new dwelling units authorised in the Bay of Plenty (building consents issued). Source: Statistics New Zealand. Baseline measure for regional economic activity. The construction industry also generates demand for transport.

Figure 4 Number of new dwelling units authorised

Interpretation: Data for the period July 2004 – June 2009 shows fluctuations in the number of new dwelling units authorised, with a significant outlier in August 2006.

The regional average for the five year period was 140 new dwelling units per month. The data shows a general easing of activity from August 2006. The figures show that regional trends are largely driven by activity in Tauranga.

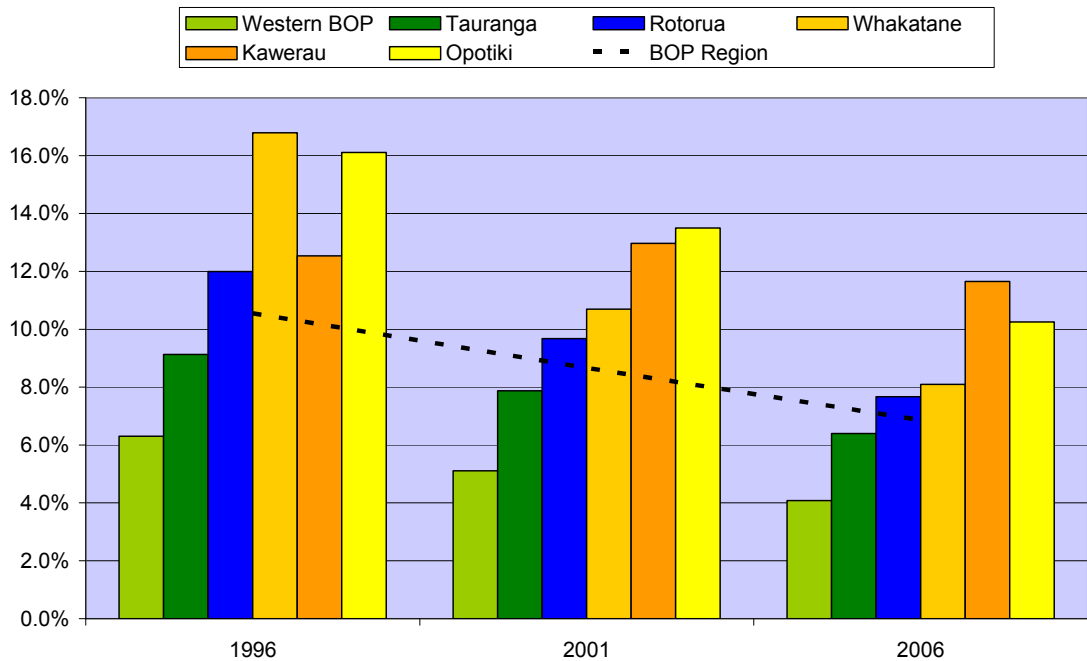
Analysis: While the figures are subject to significant fluctuations, the data shows a general reduction in the number of new units authorised monthly over the five year period. The easing of building activity since the middle of 2008 has coincided with a period of general economic contraction. This trend may have a dampening effect on the rate that transport demand increases, particularly in Tauranga where the majority of new dwelling units are authorised.

2.4 Vehicle ownership

2.4.1 Motor vehicle access

Definition: Percentage of households without access to a motor vehicle by district/city. Source: Census 1996-2006, Statistics NZ. Baseline measure of travel demand (growth in car ownership increases travel demand).

Figure 5 Percentage of households without access to a motor vehicle



Interpretation: In the past decade there has been a substantial decrease in the proportion of households without access to a motor vehicle. The already low figures for the Western Bay of Plenty district and Tauranga city have decreased further, while the largest decreases have been experienced in Whakatane (from 16.8% to 8.1%) and Opotiki (from 16.1% to 10.3%). However, over 10% of households in Kawerau and Opotiki still do not have access to a motor vehicle.

Analysis: The figures show that access to motor vehicles is continuing to increase across the region. Increased access is likely to induce greater demand for travel by private car, particularly if the options provided by other modes (e.g. public transport, cycling and walking) are not perceived to be attractive, convenient and safe.

It should be noted that the district/city wide figures do not provide the full picture in terms of household access to motor vehicles. In the past, figures have displayed a significant variation in levels of access within each city or district. More detailed mapping of motor vehicle access will be required to highlight ‘pockets’ within the region for which lack of access to a motor vehicle remains a significant issue.

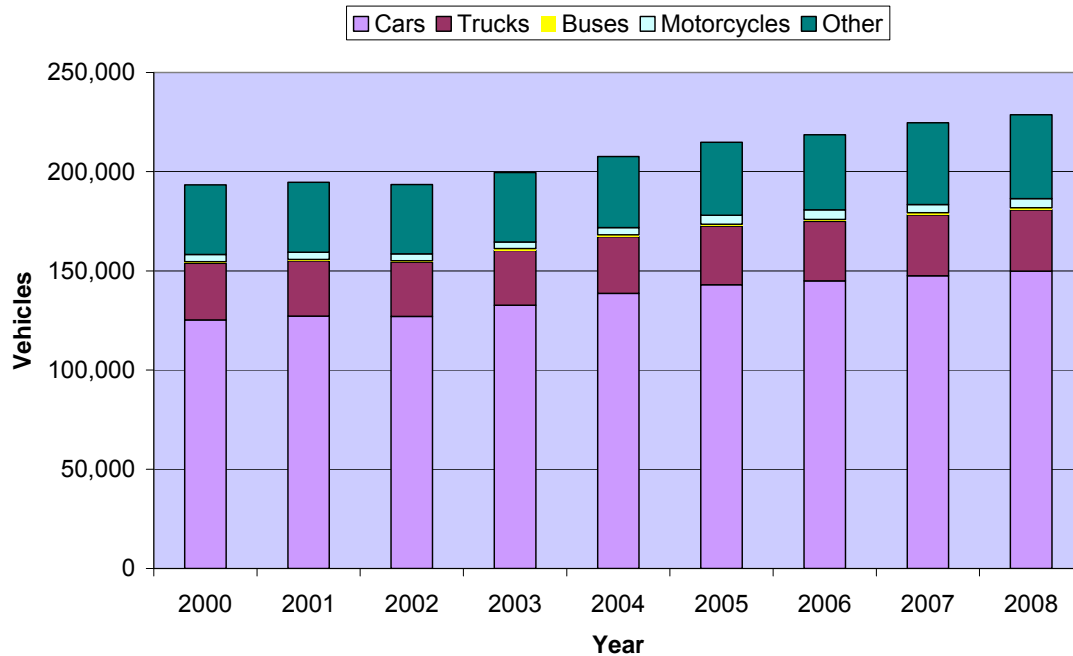
Not having access to a car does not necessarily mean that a household is transport disadvantaged. It may be that they have chosen not to have a car, or do not need one because they are close to local services, or because there is a reliable bus service they can use. However, it is important to recognise that these households may have difficulty accessing certain services, for example, health services.

2.4.2 Number of licensed vehicles

Definition: Number of licensed vehicles in the Bay of Plenty (Tauranga and Rotorua postal districts). Source: NZ Transport Agency: Motor Vehicle Registration Statistics. The number of licensed vehicles is a baseline measure of travel demand (growth in licensed vehicles means increased travel demand).

Note: Rotorua postal district extends south towards Waiouru and includes Tokoroa, Taupo and Turangi. 'Cars' includes vans, taxis, utilities and rentals; 'motorcycles' includes mopeds; 'other' includes trailers, tractors, exempt vehicles and miscellaneous.

Figure 6 Number of licensed vehicles in the region



Interpretation: Overall, the figures show steady growth in the size of the region's vehicle fleet, particularly since 2003. Car ownership increased 20% between 2000 and 2008. In comparison, the number of registered trucks has only increased 8% in the same period. The largest growth rate has occurred in the number of registered buses. The bus fleet has grown from 766 in 2000 to 1,117 in 2008. Motorcycle registrations have fluctuated significantly over the nine year period.

Analysis: The increase in registered cars is consistent with the increase in population and decrease in the proportion of households without access to a motor vehicle. The growth trend in car numbers also appears to be resilient in the face of external factors such as fuel price rises and the economic recession. The fluctuating number of registered motorcycles indicates a more discretionary mode of transport, which may be more responsive to changes in external factors such as fuel prices.

Chapter 3: Integration and land use

This chapter measures trends in integration and land use indicators. The following indicators are reported on:

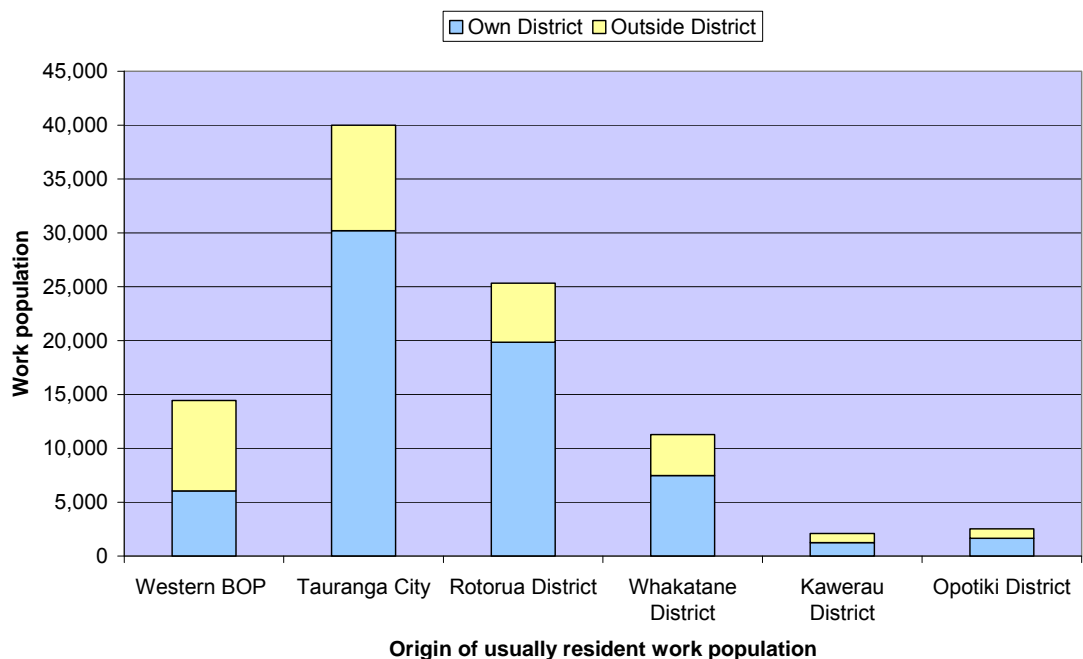
- Integration of land use and transport: travel to work outside district/city
- Integration between modes: number of transport interchanges
- Integration of public transport services: percentage of integrated tickets sold

3.1 Integration of land use and transport

3.1.1 Travel to work outside district/city

Definition: Number of employed people who travelled to work outside the district/city in which they are usually resident on census day 2006. Measures travel to work trends as an indicator of ‘Live, Work and Play’ and related principles. Source: Census 2006, Statistics New Zealand. Note: Figures exclude those who worked at home or did not go to work on census day.

Figure 7 Proportion of work population travelling outside district/city to work



Interpretation: Western Bay of Plenty had the highest proportion of people travelling outside the district to work (58%). Of these, 55% (4593 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%) who worked outside the district on census day, with fewer Rotorua residents travelling through to Tauranga or the western Bay of Plenty district.

Analysis: This travel to work data has been collected to provide a baseline measure as concepts such as 'Live, Work and Play' are implemented. Unsurprisingly, Western Bay of Plenty district displays the highest proportion of residents travelling outside the district to work. 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. 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.

3.2 Integration between modes

3.2.1 Number of transport interchanges

Definition: To transfer between different transport modes to complete a single journey. Transport interchanges are places where the change between modes of travel is easy. For the purposes of this definition, transport interchanges must be accessible to the general public.

Potential transport interchanges in the Bay of Plenty:

- Bus station (a terminus or a significant stop allowing transfer between routes).
- Car park (significant continuous area of public parking with some level of restriction; park and ride facility).
- Taxi rank (designated area where taxis are parked).
- Airport (with connections to other modes).
- Bicycle racks (secure parking for significant numbers of cycles [15+]), or cycles available for hire.
- Ferry terminal.

Table 1 Bay of Plenty transport interchanges (2009)

District/City	Number of interchanges ¹	Location	Mode transfer
Western BOP	11	Commerce Lane, Te Puke	Bus - pedestrian
			Car - bus (informal park & ride)
		Just off State Highway, Omokoroa	Car - bus (informal park & ride)
		Matakana Island wharf	Ferry - car
			Ferry - pedestrian
		Seaforth Road, Waihi Beach	Car - bus (informal park & ride)

¹ Each example of transfer between modes was counted as an individual interchange. Therefore, one location may have multiple transport interchanges.

District/City	Number of interchanges	Location	Mode transfer
			Bus - pedestrian
		Talisman Drive, Katikati	Car - bus (informal park & ride)
			Bus - pedestrian
		The Esplanade, Omokoroa	Ferry - car
			Ferry - pedestrian
Tauranga	25	Bayfair	Bus - bus
			Bus - pedestrian
		Durham Street car park	Car - pedestrian
		Elizabeth Street car park	Car - pedestrian
		Harington Street car park	Car - pedestrian
		Masonic Park car park	Car - pedestrian
			Car - cycle
			Cycle - pedestrian
		Pilot Quay car park	Car - pedestrian
		Salisbury Wharf	Ferry - bus
			Ferry - pedestrian
		Shadelands Lane car park	Car - pedestrian
			Car - cycle
			Cycle - pedestrian
		Spring Street car park	Car - pedestrian
		Strand car park	Car - pedestrian
		Tauranga Airport	Air - air
			Air - bus
Air - car			
Air - taxi/shuttle			
Tauranga Wharf	Ferry - car		
	Ferry - pedestrian		
Wharf Street bus terminus	Bus - bus		
	Bus - pedestrian		
	Bus - taxi		
Rotorua	20	Carpark building	Car - pedestrian
			Central Mall car park
		Information Centre	Bus - bus
			Car - bus
			Bus - pedestrian
			Bus - taxi
		Cycle - pedestrian	
		Pukuatua Street	Bus - bus
			Bus - pedestrian
		Rotorua Airport	Air - air
Air - bus			
Air - car			
Air - cycle			
Air - taxi/shuttle			
Taxi stands (x 6)	Pedestrian - taxi		
Whakatane	7	Boon Street	Bus - pedestrian
			Bus - taxi
		Information centre	Bus - bus
			Bus - pedestrian
		Pine Drive, Murupara	Bus - pedestrian
		Whakatane Airport	Air - car
Air - taxi/shuttle			
Kawerau	1	Plunket Street	Bus - pedestrian
Opotiki	4	Elliot Street/St John Street	Bus - pedestrian
		Information Centre	Bus - pedestrian
			Pedestrian - taxi
		St John Street/Bridge Street	Bus - pedestrian
Region	68		

Interpretation: A total of 68 transport interchanges have been identified in the region to date. The number has increased from the 42 identified in 2006/07. The two large urban centres of Tauranga and Rotorua together account for two-thirds of the interchanges. The bus-pedestrian category recorded the highest count (14), followed by car-pedestrian (10), pedestrian-taxi (7), bus-bus (5) and car-bus (5) transfers.

Analysis: The number of transport interchanges identified in the region has steadily increased. This trend can be largely attributed to the identification of existing interchanges. However, there have been some notable new interchanges established. For example, Tauranga Airport is now served by a regular bus service allowing the easy transfer between air and bus modes.

3.3 Integration of public transport services

3.3.1 Percentage of integrated tickets sold

While this is a performance indicator in the RLTS, there is currently no data available on the proportion of integrated tickets sold, as this initiative has not yet been implemented.

Chapter 4: Safety and personal security

This chapter measures trends in safety and personal security indicators. The following indicators are reported on:

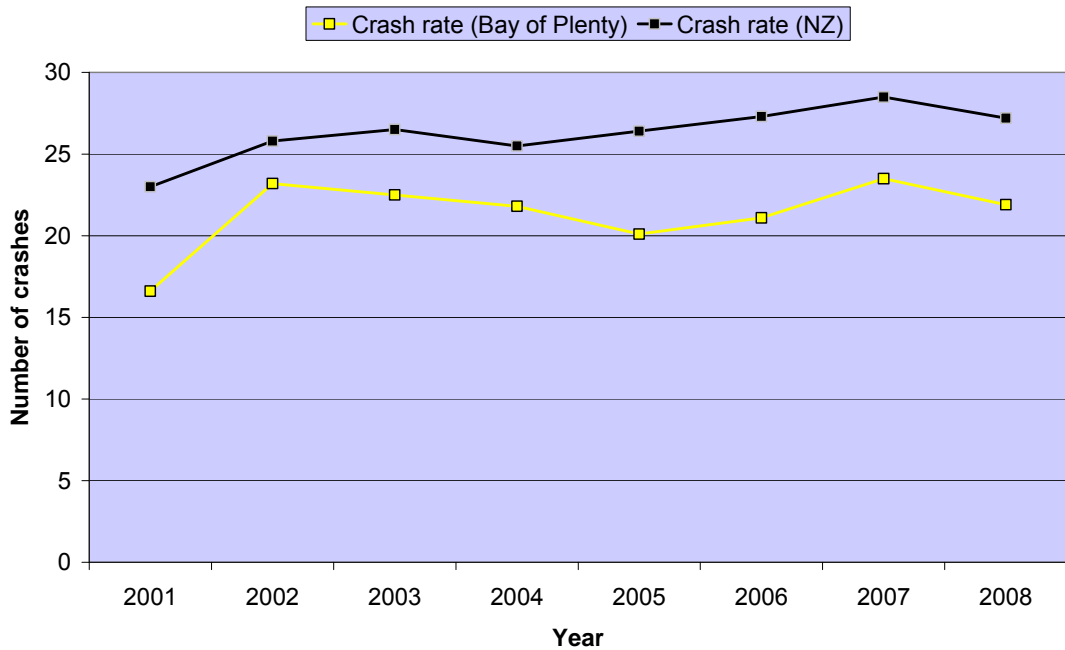
Crashes: crash rates
 Casualties: number of casualties

4.1 Crashes

4.1.1 Crash rates

Definition: Crash rate per 10,000 population for the Bay of Plenty region (compared with New Zealand average). Crash rates are for reported fatal and injury crashes. Crash rates provide an overall measure of the safety of the road network. Source: Motor Vehicle Crashes in New Zealand 2001-2008, Ministry of Transport.

Figure 8 Crashes per 10 000 population, Bay of Plenty and New Zealand



Interpretation: Bay of Plenty crash rates trended downwards between 2002 and 2005, before increasing by three additional crashes per 10,000 people in the 2006-2007 period. Recent figures show a reduction in the Bay of Plenty crash rate in 2008, matching the reduction in the national crash rate. The Bay of Plenty crash rate remains significantly below the national rate.

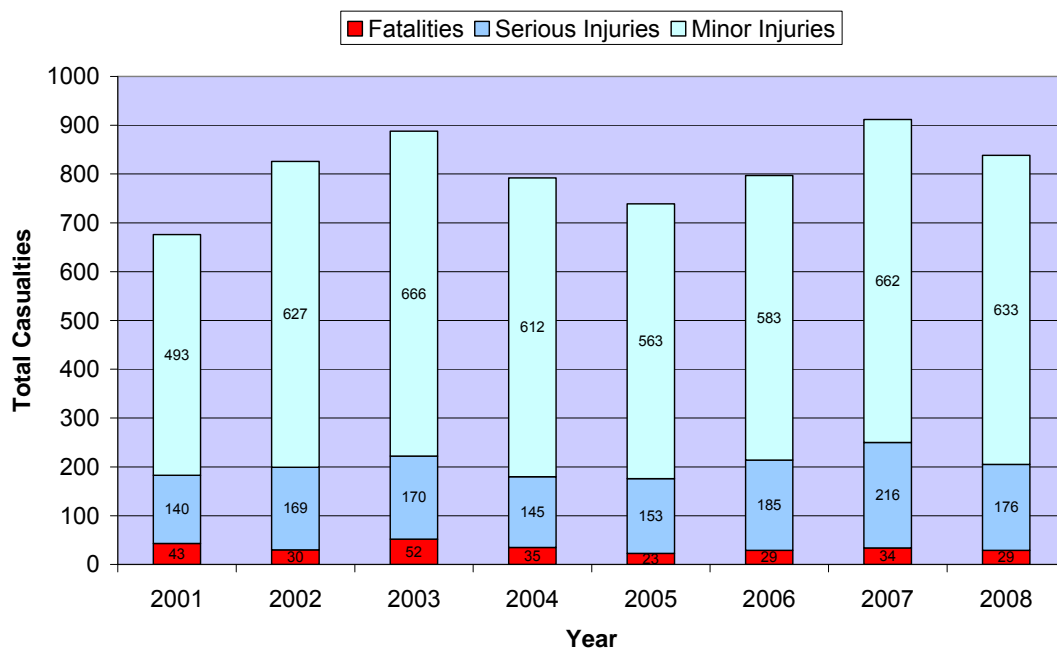
Analysis: Bay of Plenty crash rates continue to fluctuate, with no discernible trend over the reporting period. Regional rates fluctuate more than national rates because regional figures report on a smaller number of events. This means that, proportionally, each additional event has a greater influence on the regional rate. The Bay of Plenty crash rate has also tended to mirror the national rate, suggesting a relationship between the regional crash rate and factors operating at the national level.

4.2 Casualties

4.2.1 Number of casualties

Definition: Total number of casualties on Bay of Plenty roads per year. Provides a measure of the overall safety of the road network and the severity of injuries. Source: Motor Vehicle Crashes in New Zealand 2001-2008, Ministry of Transport.

Figure 9 Number of casualties on Bay of Plenty roads



Interpretation: Bay of Plenty casualty figures have fluctuated over the past eight years. The total number of casualties spiked in 2003 and 2007. The highest number of fatalities (52) were recorded in 2003, while a high proportion of serious injuries were recorded in 2007. The figures for 2008 show a reduction across all three trauma categories from the 2007 figures.

Analysis: The casualty figures show a similar pattern to crash rates with no distinct trend evident. Consequently, no firm conclusions can be drawn on the overall safety of the road network for the reporting period. It is interesting to note that the two years recording the highest number of casualties display different characteristics

when crash rates are taken into account. The Bay of Plenty crash rate actually declined in 2003, indicating that this was a particularly bad year for multiple fatality or injury crashes. In contrast, the high number of casualties in 2007 coincided with a marked increase in the region's crash rate.

Chapter 5: Responsiveness

This chapter measures trends in responsiveness indicators. The following indicator is reported on:

Perceptions of public transport: percentage of bus users who rate services as excellent

5.1 Perceptions of public transport

5.1.1 Percentage of bus users who rate services as excellent

Definition: Percentage of usually resident bus users in Tauranga and Rotorua who rate Environment Bay of Plenty contracted bus services as ‘excellent’ in annual bus satisfaction survey. Source: Environment Bay of Plenty Annual Bus Satisfaction Survey.

Figure 10 Percentage of users who rate bus services as excellent

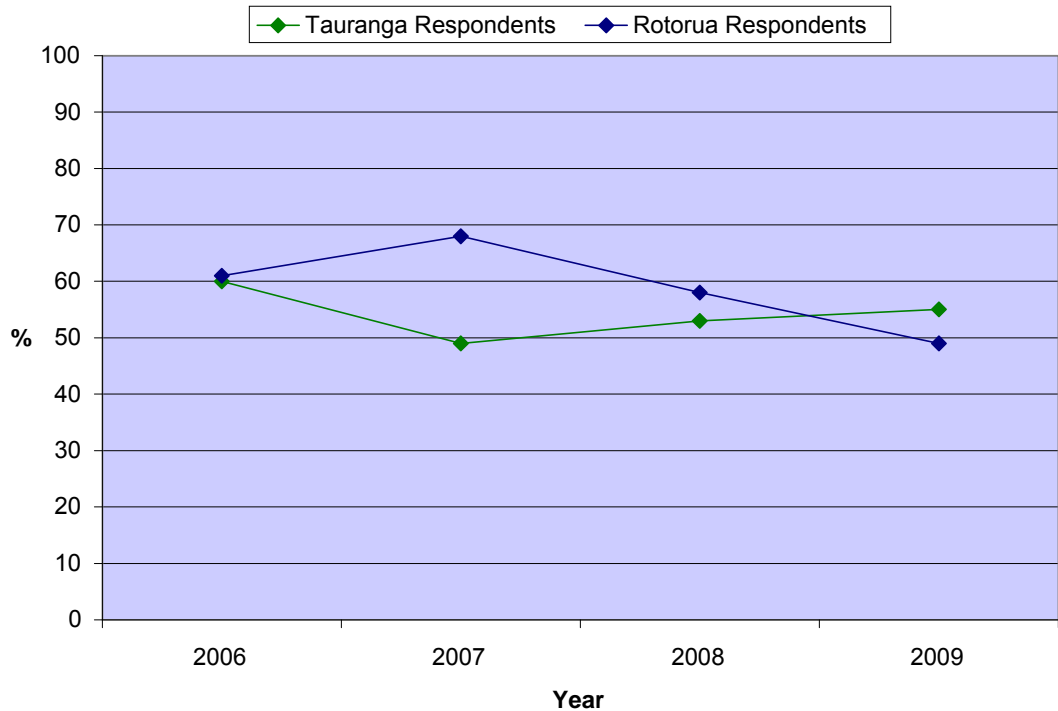


Table 2 Percentage of users who rate bus service attributes as excellent

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

Interpretation: 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. In contrast, Tauranga recorded a marked decrease in its 'excellent' rating in 2007, before registering an increased approval rating in the subsequent two years.

Table 2 shows the percentage of users who rated various bus service attributes as 'excellent'. The 2009 figures show an improvement in perceptions of most service attributes in Tauranga, while there has been a general decline in the proportion of 'excellent' ratings in 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 Rotorua respondents are inclined to rate safety and personal security as excellent.

Analysis: The figures for both Tauranga and Rotorua show that significant proportions of users perceive their bus services to be excellent, the highest possible rating in the annual bus satisfaction survey. Previous experience suggests that public transport users' expectations tend to increase as levels of service improve. The increased ratings for the Tauranga service over the past two years can at least partly be attributed to recent improvements including new bus standards and increases in service availability and frequency. The fact that there have been no significant changes to the Rotorua service in the past two years could explain the gradual decline in the 'excellent' rating as respondents experience no substantive improvements on existing levels of service.

There is an encouraging trend in Tauranga 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 corresponding Rotorua figures indicate that action may be required to address the decline in respondents' perceptions of safety and personal security at bus stops and during trips.

Chapter 6: Sustainability

This chapter measures trends in sustainability indicators. The following indicators are reported on:

Mode share:	modal split for travel to work modal split for freight
Vehicle occupancy:	proportion of people who drove to work
Public transport use:	annual bus trips per person
Number of cyclists:	cyclist counts on key routes
Number of pedestrians:	pedestrian counts on key routes

6.1 Mode share

6.1.1 Modal split for travel to work

Definition: Main means of travel to work for people aged 15 years and over on census day (1996, 2001, 2006). Note: figures exclude those who worked at home, did not go to work or did not state their travel mode. Motor vehicle includes drivers and passengers. Source: Census 1996-2006, Statistics New Zealand.

Figure 11 Bay of Plenty mode split for travel to work

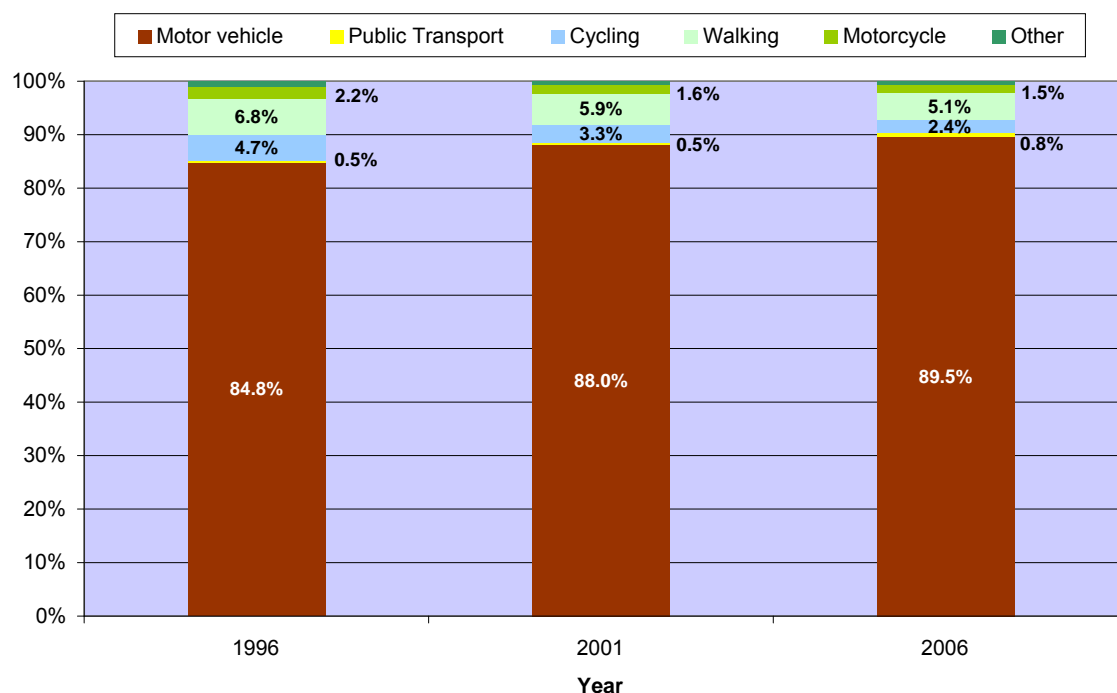


Table 3 Mode split for travel to work in 2006, by district/city

Local authority	Mode					
	Motor vehicle	Public Transport	Cycling	Walking	Motor cycle	Other
Western BOP	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%

Interpretation: Figure 11 shows the increasing predominance of the private motor vehicle as a means of travelling to work over the past ten years. The regional motor vehicle mode share increased from 84.8% in 1996 to 89.5% in 2006. All other modes, with the exception of public transport, experienced a decline in mode share over the same period. Public transport use doubled in absolute terms and experienced a slight increase in mode share between 2001 and 2006. However, public transport mode share remains well below that of modes such as walking and cycling, and is negligible when compared with use of the private motor vehicle.

Table 3 indicates that there is some variation within the region in the most recent mode share figures (2006). Travel by motor vehicle was most dominant in the two largest urban centres (Tauranga and Rotorua) and particularly in the Western Bay of Plenty district, which is adjacent to the largest city in the region. Tauranga and Rotorua also recorded the highest proportions of public transport use, although mode share was still only just reaching 1% of total journeys. 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 (Whakatane, Kawerau, Opotiki).

Analysis: Census based travel to work figures show an increasingly unsustainable travel profile as the more sustainable modes are being replaced by use of the private motor vehicle. This is not surprising as the socio-economic indicators show motor vehicles are becoming increasingly accessible to a greater proportion of the population, and the regional fleet vehicle fleet is growing on a yearly basis. The figures also show that the Western Bay of Plenty is the most heavily reliant on the private motor vehicle. Again, this is not surprising given the high proportion of workers from this district who travel to Tauranga to work.

While public transport use has increased slightly, there is still some way to go if increased patronage is to be reflected in mode share gains. In fact, the proportion of people using public transport for work trips in the two major urban centres has remained fairly static at about 25% over the past four years (Table 4). The figures suggest that further demand management work targeting commuters may be required to substitute some of the travel to work trips currently made by car.

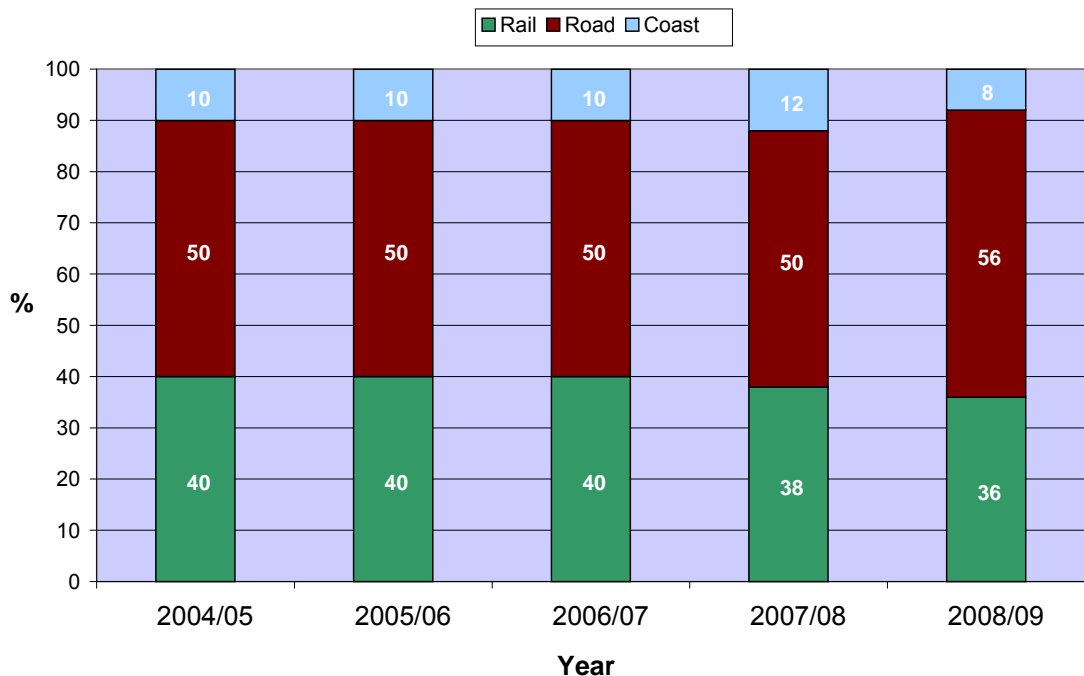
Table 4 Main purpose of travel on Tauranga and Rotorua bus services

What is the main purpose of your travel on the bus service?	% of Respondents			
	2006	2007	2008	2009
Shopping	35	39	41	38
Work	23	20	28	23
Recreation	11	15	19	23
School	5	2	1	4
Study (non school)	2	2	2	3
Doctor/Hospital	4	5	5	2
Visit friends	4	4	2	2
Sport	-	1	-	1
Other	16	12	2	4
Total	100	100	100	100

6.1.2 Modal split for freight

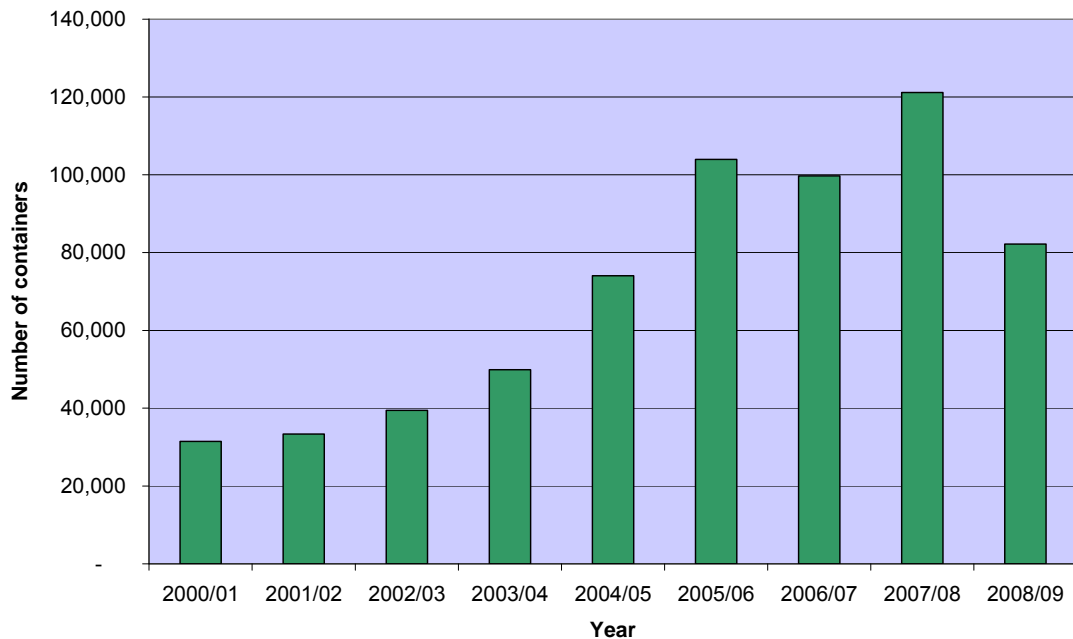
Definition: Modal split for freight loaded at Port of Tauranga. Figures are for total throughput. Source: Port of Tauranga.

Figure 12 Modal split for freight loaded at Port of Tauranga



Interpretation: Port of Tauranga modal split figures for 2008/09 show a slight contraction in the proportion of total volume transported by rail and coastal shipping. The proportion transported by road increased to 56% of total volume. Total throughput of 13.5 million tonnes was comparable to the previous year. The number of containers railed between the Port and MetroPort in south Auckland decreased by 32% in the 2008/09 year (Figure 13).

Figure 13 Containers railed between Port of Tauranga and MetroPort (South Auckland)



Analysis: Modal split figures for the past two years show an increasing reliance on the road network for transporting goods to and from the Port of Tauranga. The recent growth in containers railed between the Port and MetroPort has also reversed in the last year. This decrease can be attributed to shipping line consolidation and the contraction of import container volumes during the economic recession.

6.2 Vehicle occupancy

6.2.1 Proportion of people who drove to work

Definition: Proportion of drivers amongst people who travelled to work by car, truck or van on census day. Measure of vehicle occupancy (a high proportion of drivers implies low vehicle occupancy rates). Source: Census 1996-2006, Statistics New Zealand.

Figure 14 Proportion of drivers amongst people travelling to work by motor vehicle in the Bay of Plenty

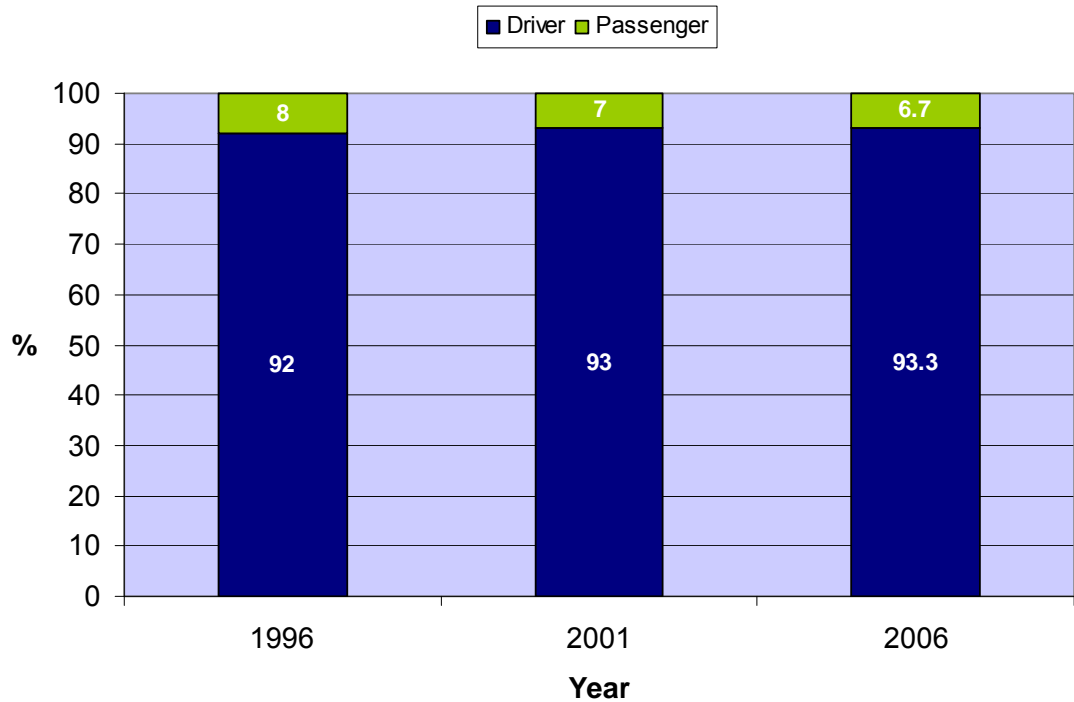


Table 5 Proportion of drivers amongst people travelling to work by motor vehicle (2006), by district/city

Local authority	Driver	Passenger
Kawerau District	90.7%	9.3%
Opotiki District	91.4%	8.6%
Rotorua District	91.8%	8.2%
Whakatane District	92.3%	7.7%
Tauranga City	94.2%	5.8%
Western Bay of Plenty District	94.4%	5.6%
Region	93.3%	6.7%

Interpretation: The graph shows that the proportion of drivers amongst people travelling to work by motor vehicle has been consistently above 90% in the past 10 years. Table 5 breaks the 2006 figures down to the district level, showing that Kawerau district had the lowest ratio of drivers to passengers (90.7%) while western Bay of Plenty District had the highest ratio at 94.4%, slightly above that of Tauranga (94.2%).

Analysis: Like the mode share figures, the proportion of drivers to passengers displays a highly unsustainable pattern of travel behaviour. The ratio of drivers to passengers is above 9:1, suggesting a very low vehicle occupancy rate. The figures do not account for non-working members of the population who may be sharing journey to work trips e.g. school age children. Regardless, the figures do show a very low level of car sharing between members of the workforce.

Some variation is apparent within the region. The highest proportions of drivers are found in the western Bay of Plenty district. However, there seems to be no differentiation between urban centres and more rural districts, with Rotorua registering the third lowest ratio of drivers to passengers.

6.3 Public transport use

6.3.1 Annual bus trips per person

Definition: Annual bus trips per person on Environment Bay of Plenty contracted services by district/city. Comparative measure of public transport use. Figures differentiate between services operating within large urban centres (Tauranga, Rotorua) and in districts with smaller urban centres (Western Bay of Plenty, Whakatane, Opotiki, Kawerau). Source: patronage data supplied to Environment Bay of Plenty by operators. Population figures are Census night population counts and Statistics New Zealand population estimates for subsequent years.

Figure 15 Annual bus trips per person, Tauranga and Rotorua

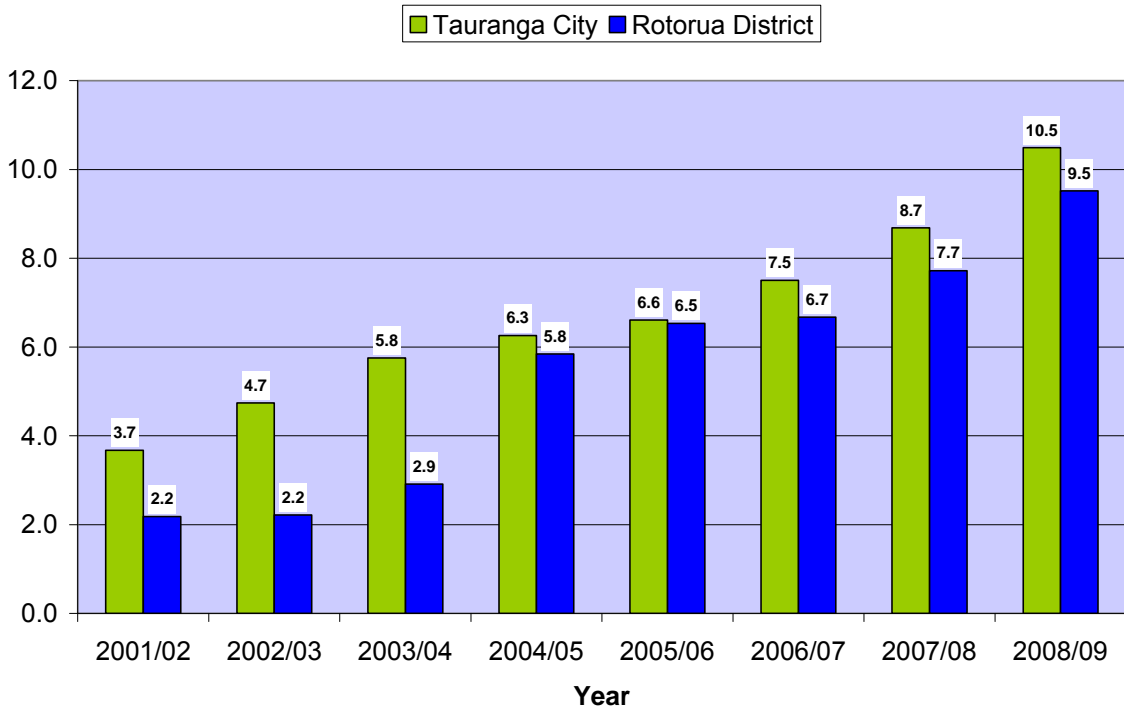
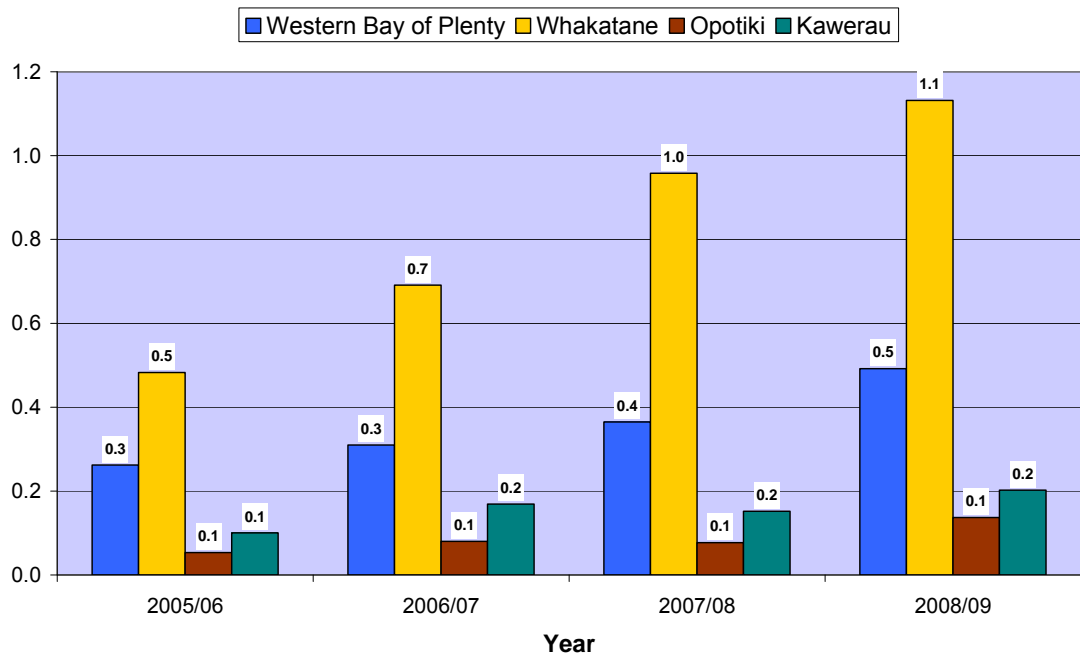


Figure 16 Annual bus trips per person, Western Bay of Plenty, Whakatane, Opotiki and Kawerau



Interpretation: Bus trips per capita in Tauranga have steadily increased throughout the reporting period, 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 approached the 10 trips per year threshold in the most recent reporting period.

Whakatane has experienced a steady increase in patronage, generating 1.1 trips per capita in 2008/09. 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. Figures for Opotiki and Kawerau have been relatively static over the reporting period.

Analysis: 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 since the 2006 census. The next census in 2011 will provide a clearer indication whether this has translated into mode share gains for the public transport system.

Whakatane and the Western Bay of Plenty are also demonstrating 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.

6.4 Number of cyclists

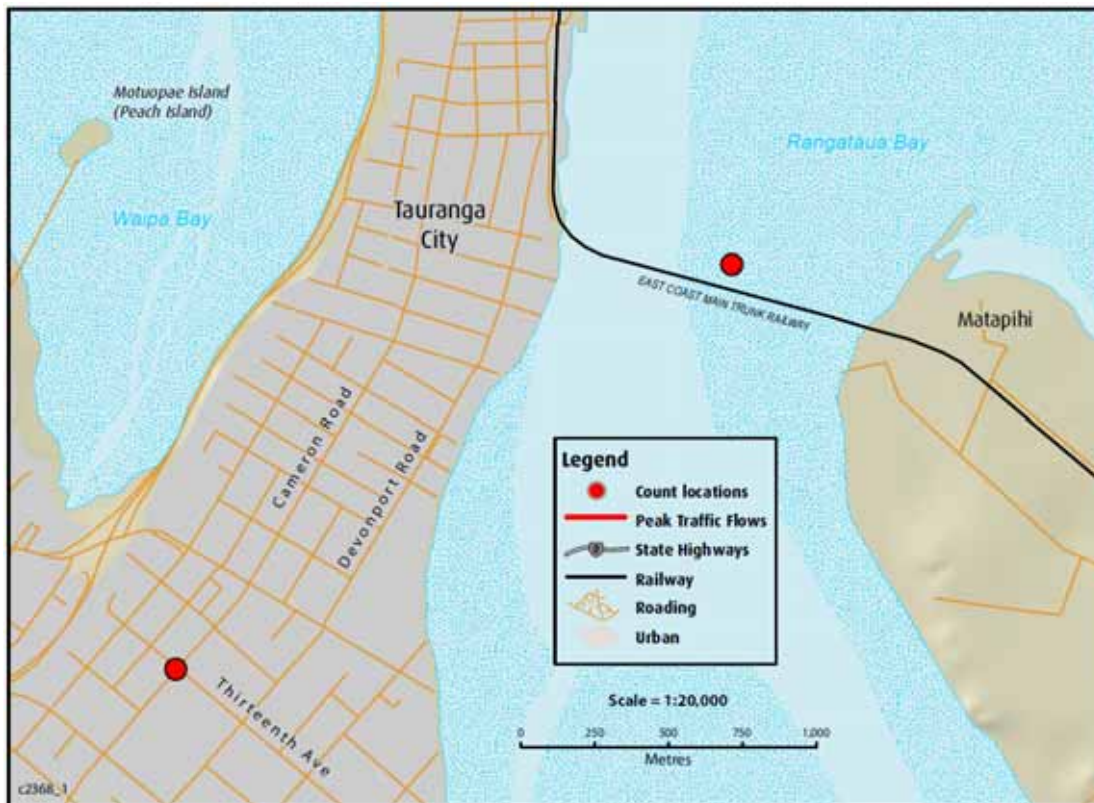
6.4.1 Cyclist counts on key routes

Definition: Cyclist counts on key routes in Tauranga and Rotorua (conducted at the same sites, at the same time, on the same days each year). Measures use of a sustainable mode. Sources: Tauranga City Council and Rotorua District Council.

Table 6 Cyclist counts on key routes in Tauranga

Location ²	Cyclists		
	2006	2008	2009
Cameron Road at 13 th Ave	158	172	209
Matapihi Bridge	245	265	-

Figure 17 Cyclist and pedestrian count locations, central Tauranga



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

Table 7 Cyclist counts on key routes in Rotorua

Location ³	Cyclists	
	2004	2009
Intersection SH5 / Lake Rd / Clayton Rd	93	124
Intersection Edmund Rd / Clayton Rd	27	87
Intersection SH30A / Fenton St	-	44
Intersection SH5 / Malfroy Rd	-	142
Intersection SH30A / Ranolph St	-	72
Intersection SH5 / Pukuatua St	-	121
Intersection SH30 / SH30A (Te Ngae Rd / Sala St)	-	136

Figure 18 Cyclist and pedestrian count locations, Rotorua



Interpretation: 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.

Analysis: 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

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

urban locations. More comprehensive and consistent data needs to be collected before this can be recognised as an indicator of changing travel behaviour.

6.5 Number of pedestrians

6.5.1 Pedestrian counts on key routes

Definition: Pedestrian counts on key routes in Rotorua⁴ and Tauranga⁵ (conducted at the same sites, at the same time, on the same days each year). Measures use of a sustainable mode. Sources: Rotorua District Council and Tauranga City Council.

Figure 19 Pedestrian counts on key routes in Rotorua

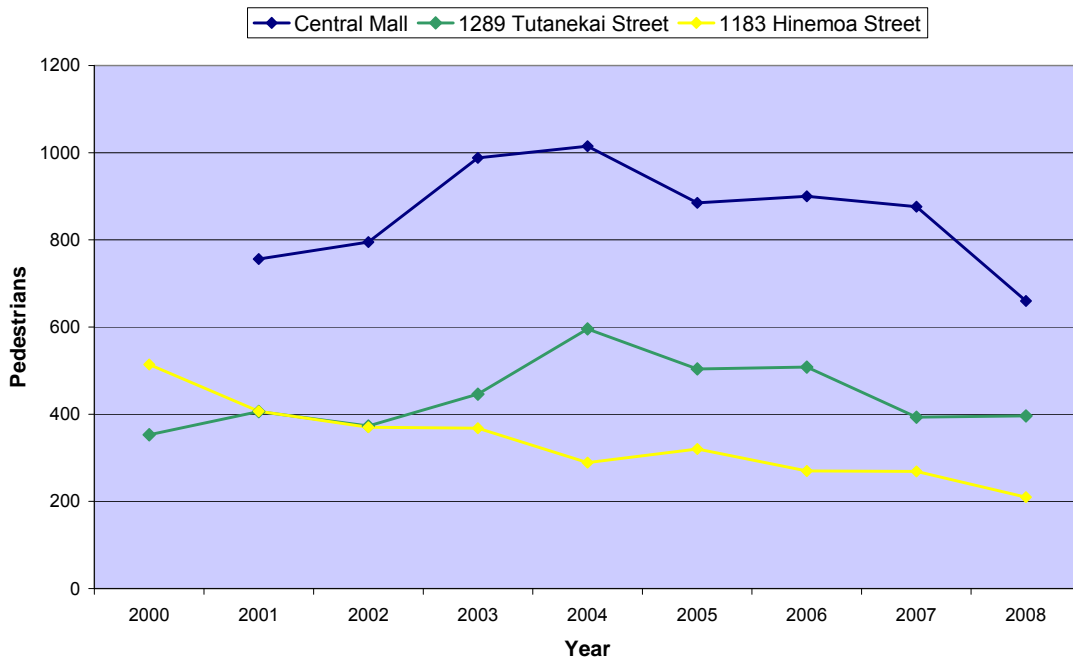


Table 8 Pedestrian counts on key routes in Tauranga

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

Interpretation: 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 19 shows significant fluctuations in pedestrian counts over the recorded period. A comparison between 2001 and 2008 reveals a 19% decrease in pedestrian numbers across the three sites. However, Hinemoa Street is the only site showing a general trend of decreasing pedestrian numbers. The Central Mall and

⁴ The Rotorua counts were conducted 10:30-11am and 2:30-3pm.

⁵ The Tauranga counts were conducted 7-9am and 2-6pm.

Tutanekai Street sites are displaying greater variation between years, but no discernable trends.

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 8).

Analysis: 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 Rotorua.

Chapter 7: Economic development

This chapter measures trends in economic development indicators. The following indicators are reported on:

- Traffic volumes: morning and evening peak flows on key congested routes
- Travel times: travel delay on key congested routes
- Freight movements: volume of exports loaded at Port of Tauranga

7.1 Traffic volumes

7.1.1 Morning and evening peak flows on key congested routes

Definition: Morning and evening peak traffic flows per hour on key congested routes in Tauranga and Rotorua. Measures vehicle numbers on the region’s roads. The traffic volumes are typically averaged from daily counts over one week intervals. Data was not collected on the same week and peak times varied slightly depending on location. The duration (1 hour) remained constant. Source: NZ Transport Agency peak traffic flow reports.

Figure 20 Morning and evening peak traffic flows on key routes in Tauranga

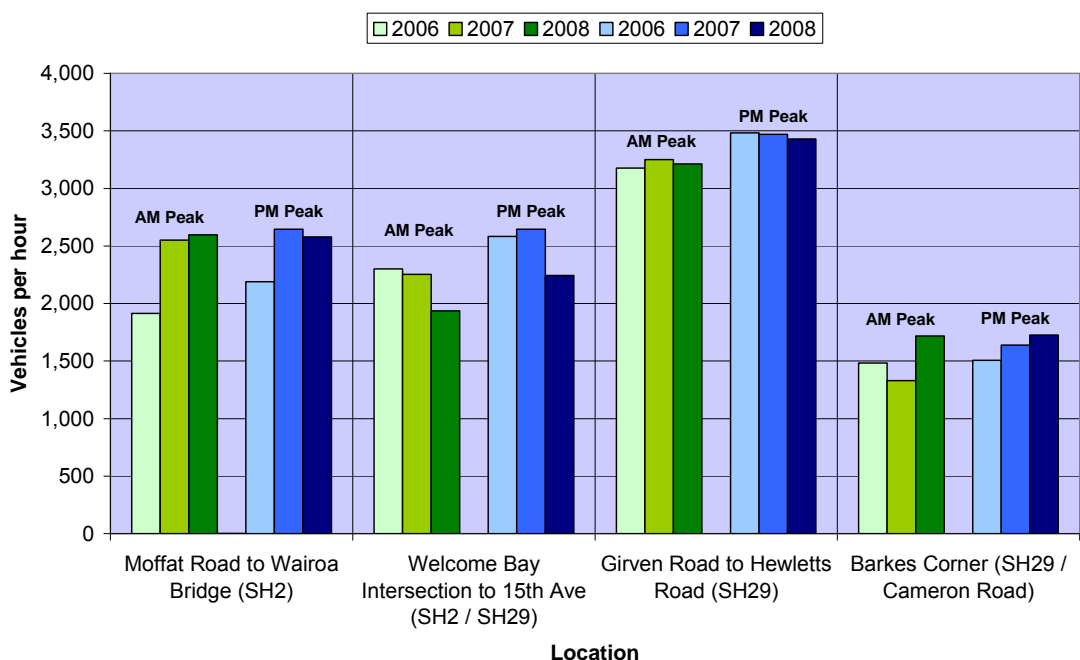


Figure 21 Peak traffic flow locations, Tauranga

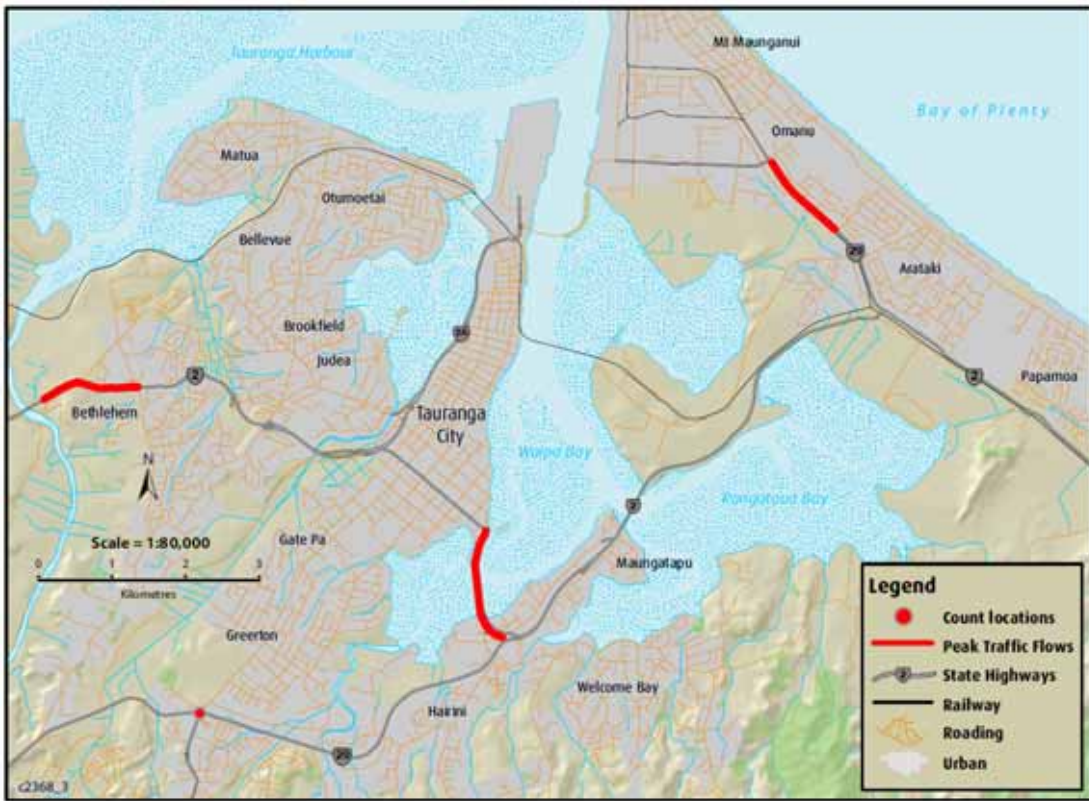


Figure 22 Morning and evening peak traffic flows on key routes in Rotorua

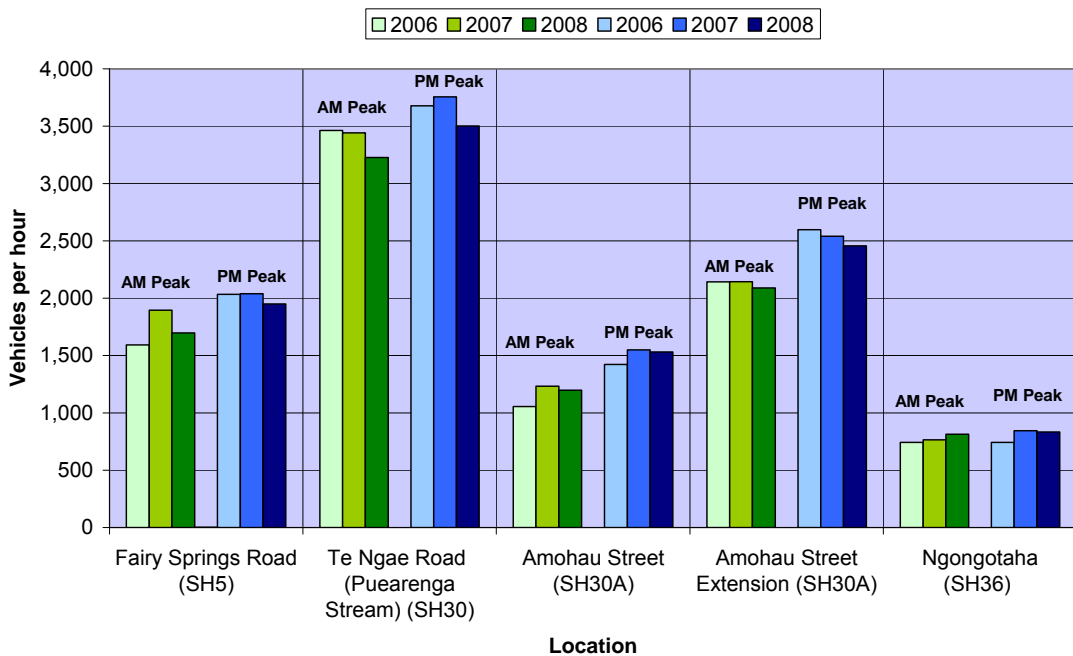


Figure 23 Peak traffic flow locations, Rotorua

Interpretation: There were reduced traffic volumes in five of the eight data sets for Tauranga in 2008. There was a noticeable reduction in traffic volumes at the Welcome Bay intersection. This may be due to localised traffic management changes at the Welcome Bay and Maungatapu roundabouts. Increased traffic at Barks Corner was the other significant change between 2007 and 2008.

Reduced traffic volumes were also recorded at four of the five sites in Rotorua. Ngongotaha was the only site that maintained traffic volumes at levels close to the previous year.

Analysis: The 2008 year saw a general easing in traffic volumes on key congested routes in both Tauranga and Rotorua. This may be linked to the economic recession having a general dampening effect on traffic demand. While reduced traffic demand may be a consequence of a general downturn in economic activity, it does have a positive side. Reduced traffic flows on key congested routes leads to less delay for commuters and greater transport efficiency in providing goods and services to consumers.

7.2 Travel times

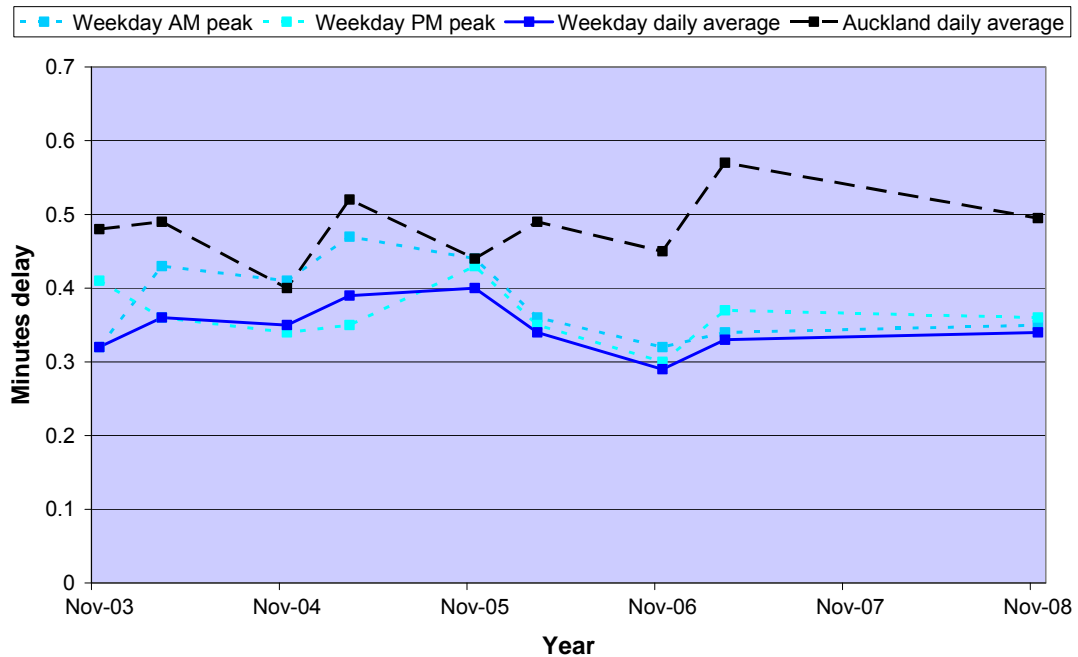
7.2.1 Travel delay on key congested routes

Definition: Travel delay on key congested routes in Tauranga (minutes delay per km). Provides a measure of congestion using travel time delays as an indicator.

Start times: AM Peak 7:30 am to 9:30 am, PM Peak 4:00 pm to 6:00 pm. **Routes:** 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. Source NZ Transport Agency Travel Time Performance Indicators Report.

Figure 24 Minutes delay per km on key congested routes in Tauranga



Interpretation: Travel time delays in Tauranga increased at a steady rate between November 2003 and November 2005, peaking at approximately 0.4 minutes delay per km in November 2005. Subsequent surveys show a decrease and then stabilisation of delay between November 2005 and November 2008. Auckland data has been included for the purpose of comparison. Figures show that average travel time delays on the Tauranga network are tracking consistently below those for Auckland.

Analysis: Although there is a gap in the published data for 2007, travel time delays on the Tauranga network appear to have stabilised at approximately 0.35 minutes per km in recent years. Morning peak hour delays have emerged as more of an issue in the two most recent published surveys. Expectations are that there will be further short-term reductions in travel time delays as improvements to the Tauranga strategic network, such the Harbour Bridge four-laning, come on stream.

7.3 Freight movements

7.3.1 Volume of exports loaded at Port of Tauranga

Definition: Gross weight of overseas cargo loaded at Port of Tauranga (million tonnes). Provides an indicator of infrastructural capacity for the movement of goods. Sources: Overseas Cargo Statistics, Statistics New Zealand.

Figure 25 Volume of exports loaded at Port of Tauranga

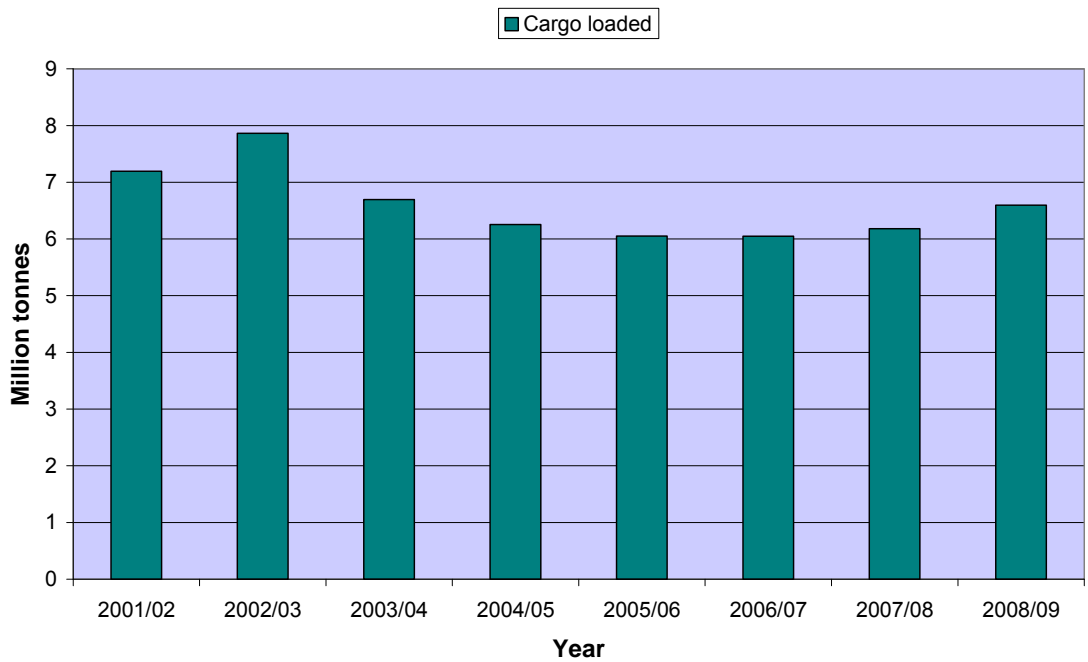
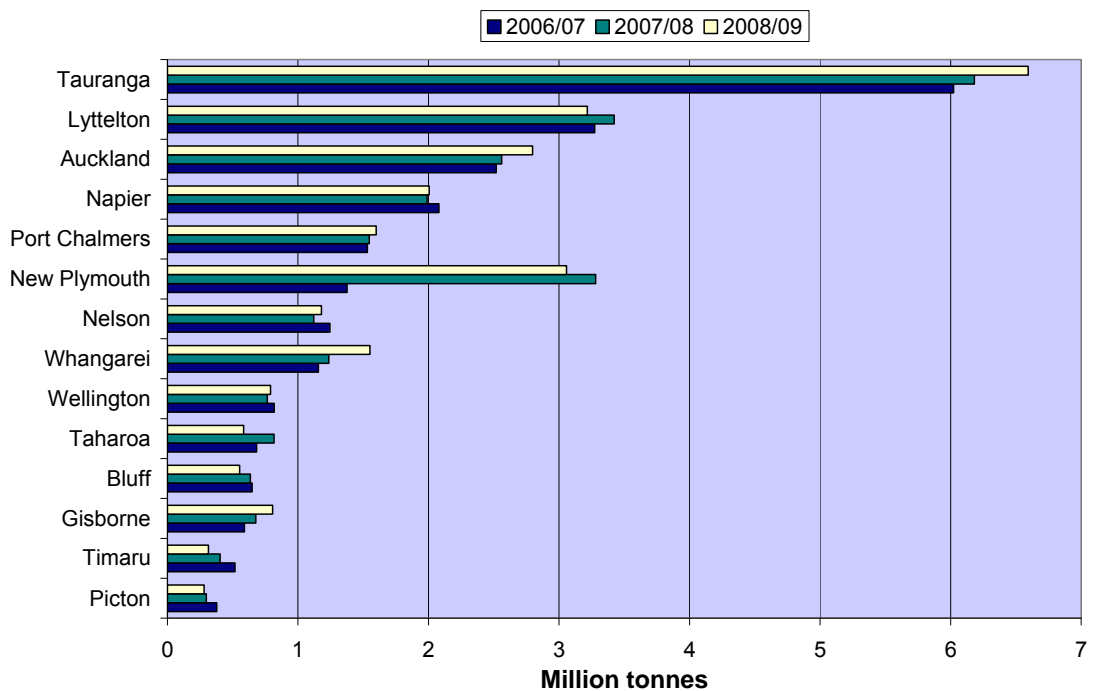


Figure 26 Volume of exports loaded at New Zealand ports



Interpretation: Export volumes increased by 6.5% in the 2008/09 year following several years of reasonably static volumes (Figure 25). Tauranga ranks as New Zealand’s primary port by volume exported, accounting for more than twice the volume of the next ranked port (Figure 26). The comparison between ports also shows that Tauranga’s export volumes have increased at a time when several other New Zealand ports experienced a reduction in exports.

Analysis: The export figures reinforce the Port of Tauranga's strategic importance at the centre of the country's major export-earning industries. The higher export volumes in 2008/09 can largely be attributed to increased log exports on the back of strong growth in demand from the Chinese market.

The relatively high modal split for rail allows significant volumes of bulk commodities such as logs to be transported efficiently to the Port. Figures from previous years also show that the Port has the capacity to handle substantially higher export volumes. For example, in 2002/03 the Port handled almost 1.5 million tonnes more exports than in 2008/09. However, volumes above this figure may test the ability of the Port and its supporting transport infrastructure to maintain current levels of efficiency.

Chapter 8: Energy efficiency

This chapter measures trends in energy efficiency indicators. The following indicator is reported on:

Fuel consumption: quantity of fuel sold

8.1 Fuel consumption

8.1.1 Quantity of fuel sold

Definition: Quantity of petrol and diesel sold in the Bay of Plenty (local authority fuel tax boundaries). Provides a measure of fuel use in the region. Source: Sales figures collected for taxation purposes.

Figure 27 Quantity of fuel sold in the Bay of Plenty



Interpretation: The graph shows that fuel sales over the recorded period peaked in 2006/07. There has now been two consecutive years of decreasing fuel sales, with a 4% drop between 2007/08 and 2008/09. Diesel continues to account for a slight majority of sales in the Bay of Plenty, comprising 53% of all fuel sales in 2008/09.

Analysis: Fuel sales have decreased in the past two years. This downward trend 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 traffic 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.

Chapter 9: Access and mobility

This chapter measures trends in access and mobility indicators. The following indicators are reported on:

Public transport coverage:	access to bus services
Accessible buses	percentage of accessible buses
Total mobility:	registered users and number of trips

9.1 Public transport coverage

9.1.1 Access to bus services

Definition: Percentage of usually resident population living within 500 m of a bus stop, Tauranga, Rotorua and Eastern Bay of Plenty services. Tauranga and Rotorua figures are for populations within city boundaries. The Eastern Bay of Plenty figure is for the total populations of the Whakatane, Opotiki and Kawerau districts. Calculation assumes the population is evenly distributed over a meshblock. Sources: Environment Bay of Plenty, Tauranga City Council and Statistics New Zealand (Census 2006).

Table 9 Percentage of population living within 500m of a bus stop

Area	2006/07	2007/08	2008/09
Tauranga urban area	85.0%	86.9%	83.6%
Rotorua urban area ⁶	-	95.2%	94.3%
Eastern Bay of Plenty	15.1%	28.0%	28.0%

Interpretation: Data on public transport coverage 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. Levels of accessibility across the region are depicted in the maps on the following pages (Figures 28 – 33).

Analysis: 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

⁶ Rotorua currently operates a hail and ride system. The accessibility measure is the proportion of the urban population living within 500m of a bus route.

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.

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 maps show that Eastern Bay of Plenty services do achieve a broad geographical coverage, albeit at a low frequency.

Figure 28 Public Transport Accessibility – Tauranga

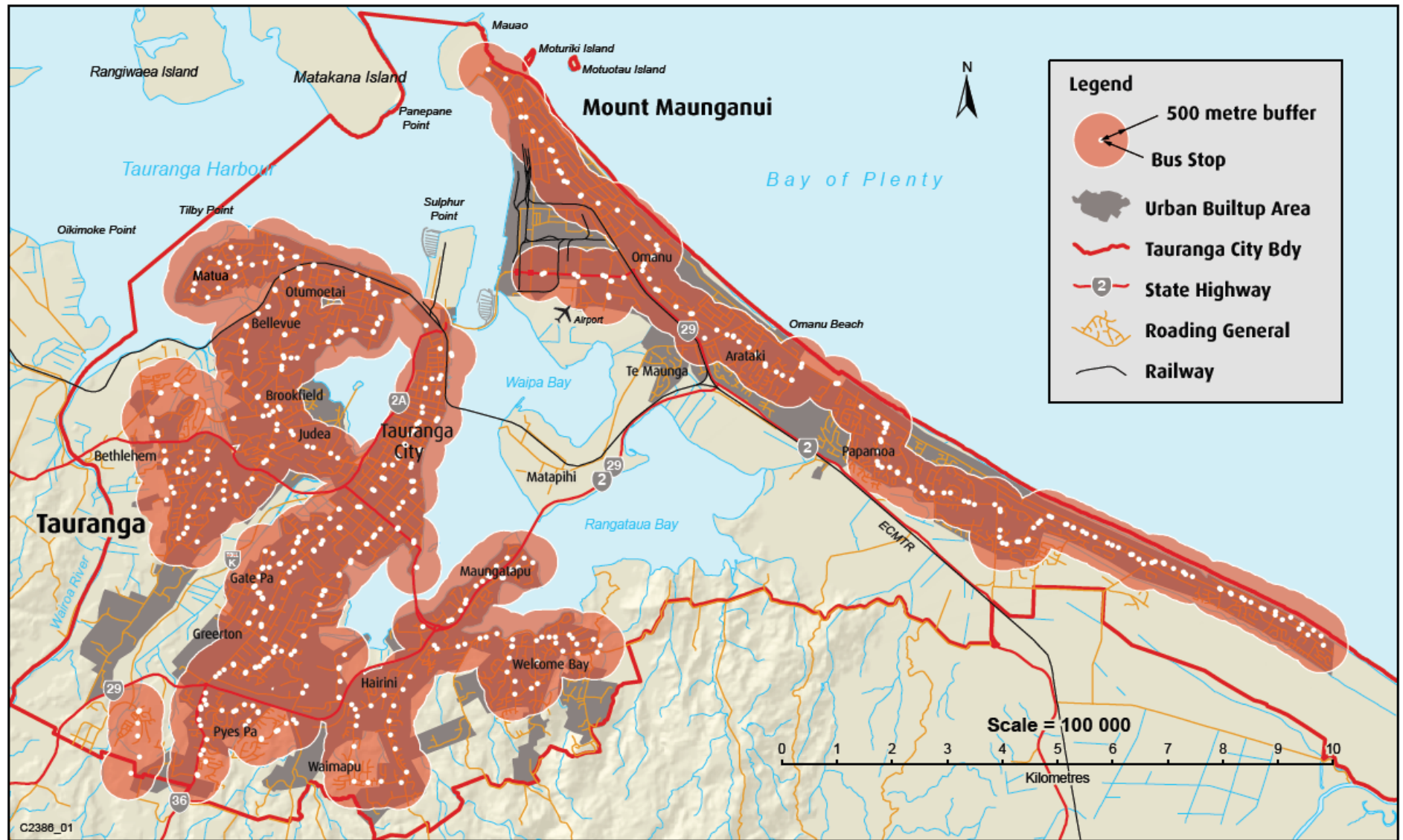


Figure 29 Public Transport Accessibility – Rotorua

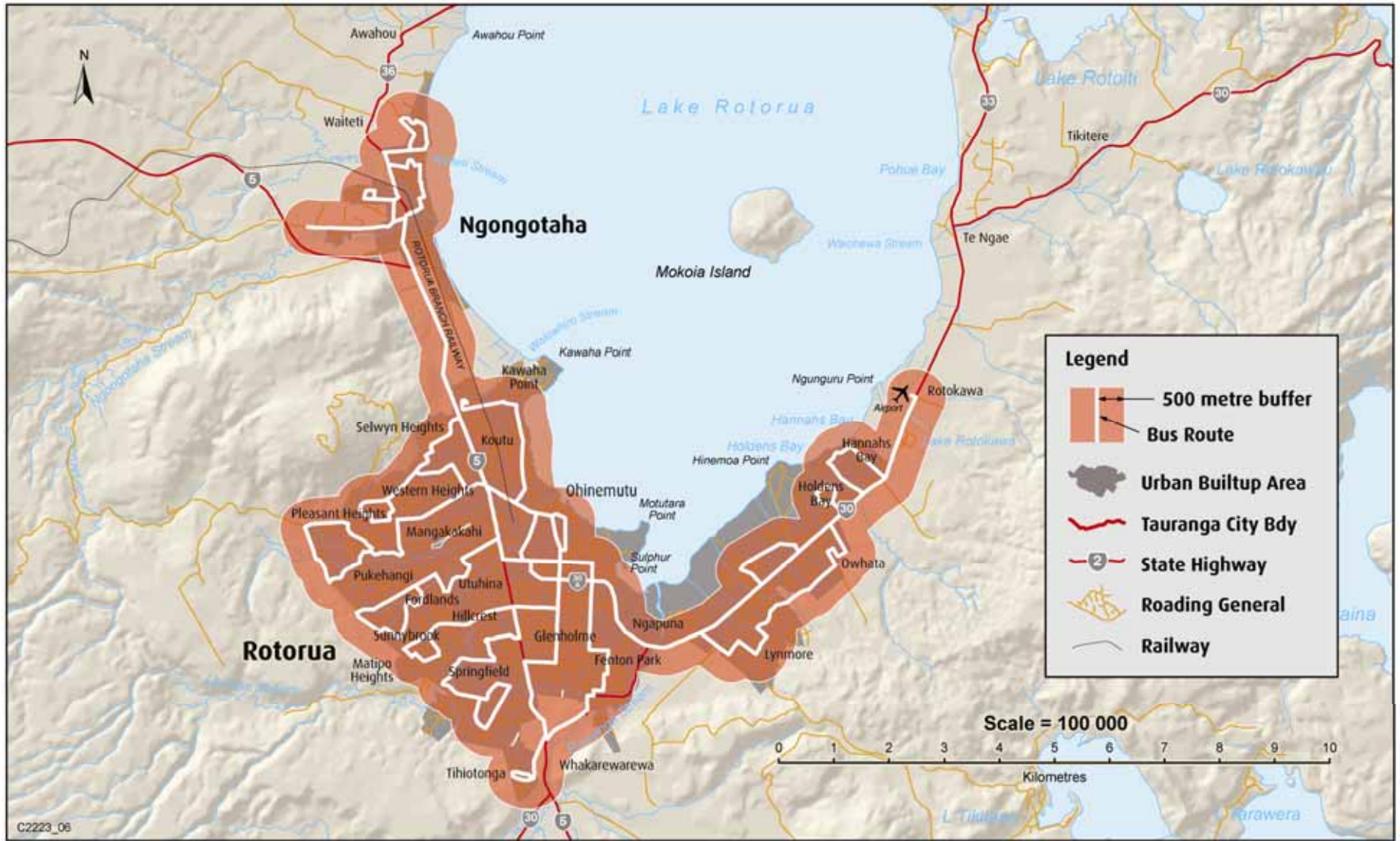


Figure 30 Public Transport Accessibility – Eastern Bay of Plenty

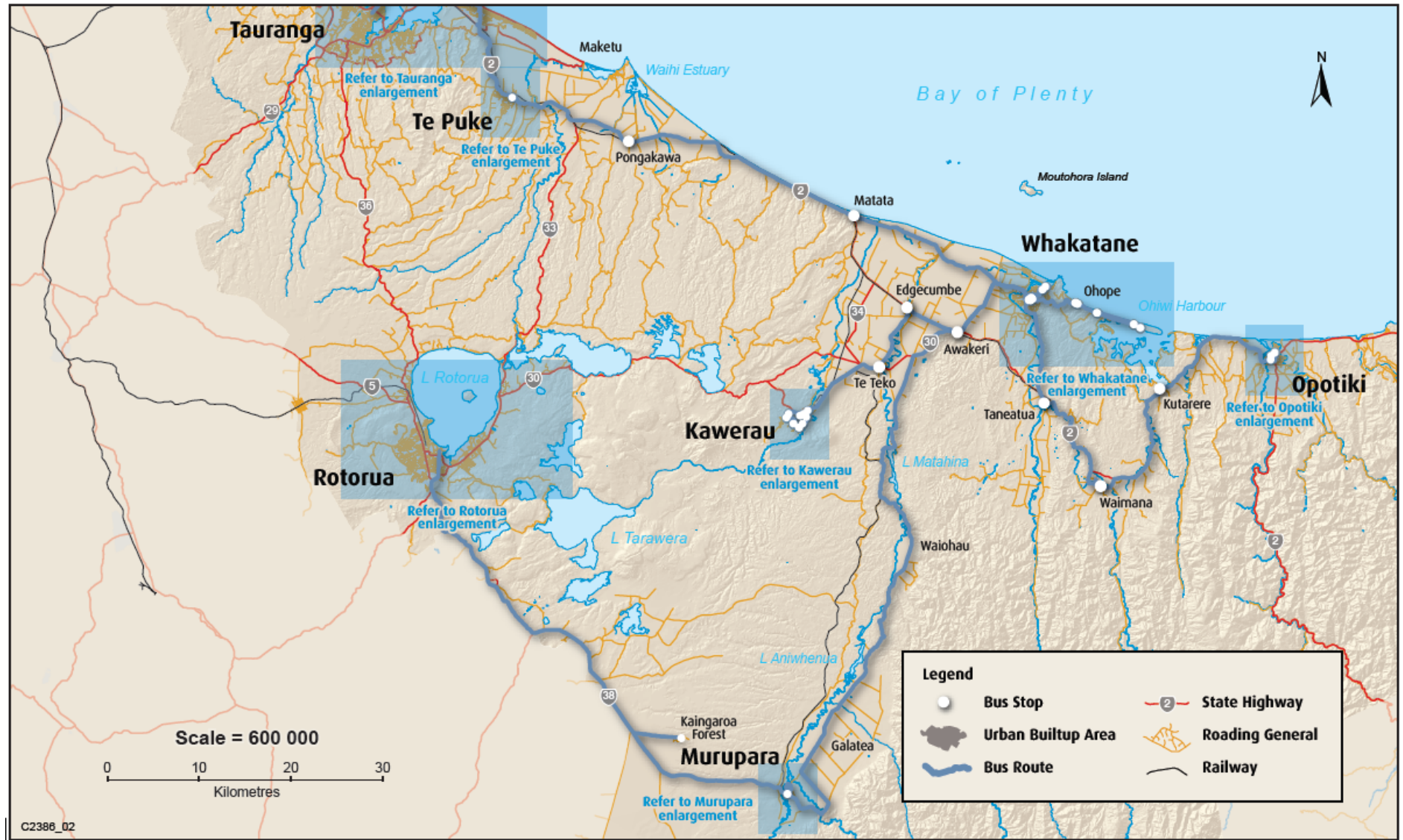


Figure 31 Public Transport Accessibility – Te Puke and Murupara

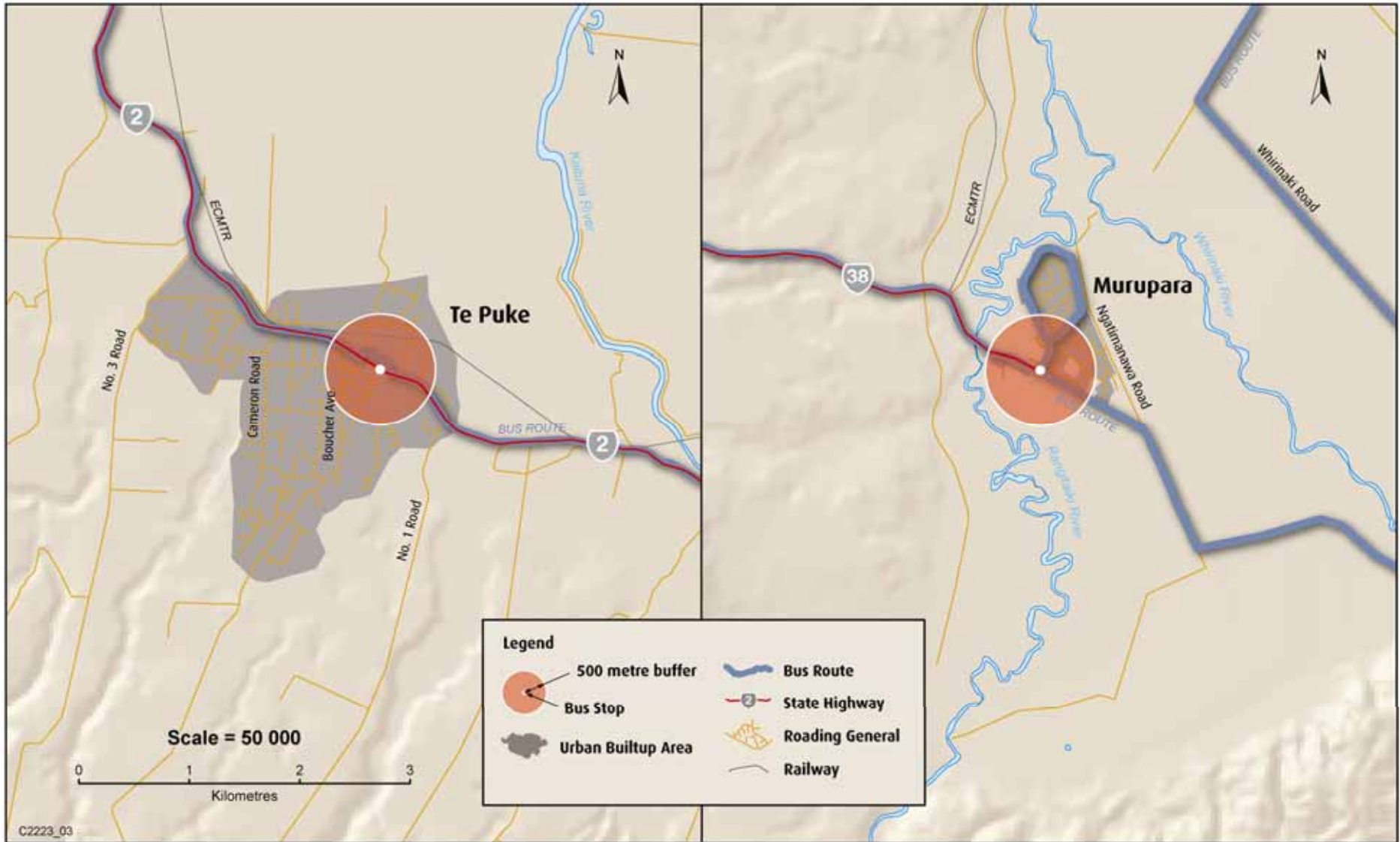


Figure 32 Public Transport Accessibility – Kawerau and Opotiki

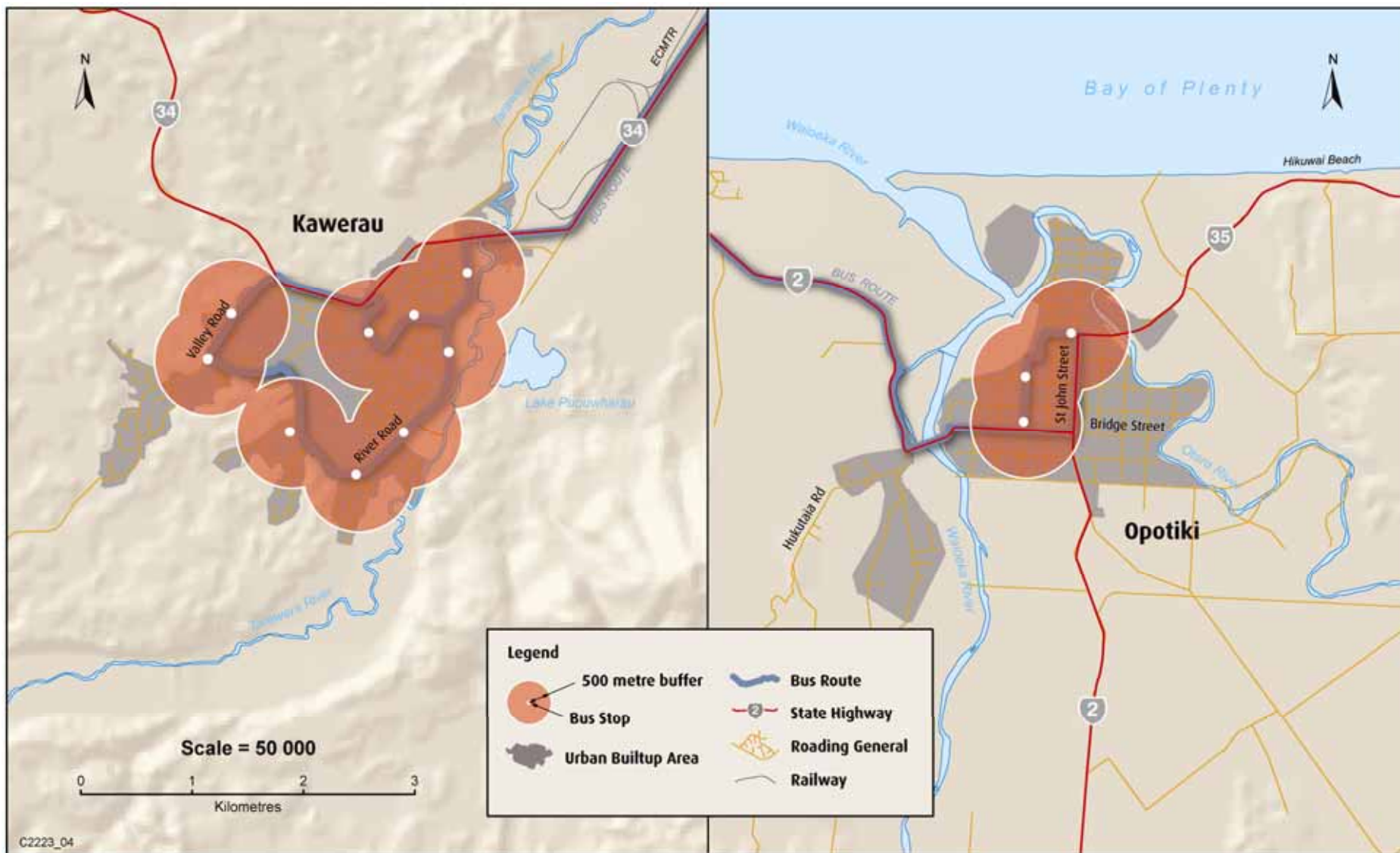
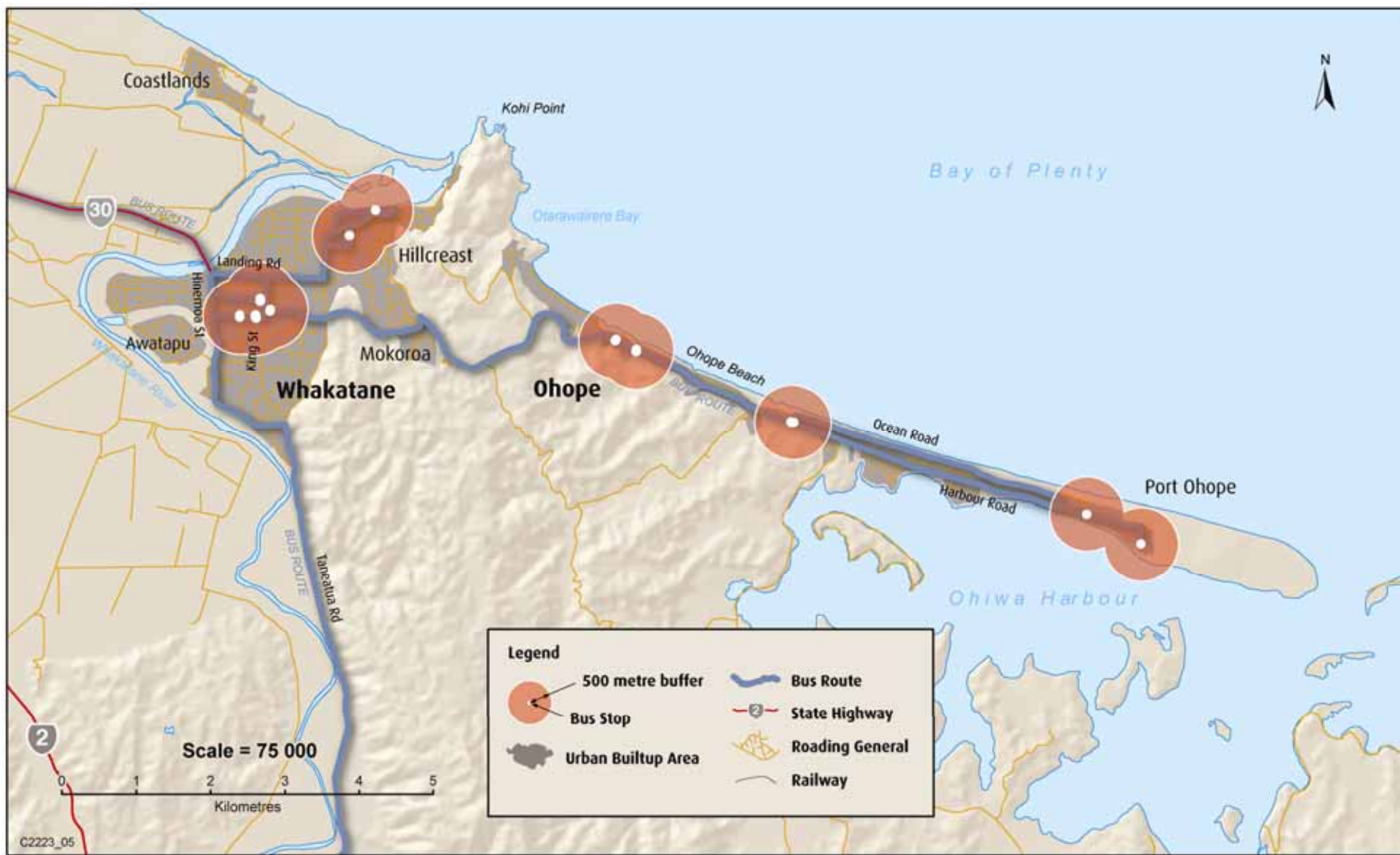


Figure 33 Public Transport Accessibility – Whakatane and Ohope



9.2 Accessible buses

9.2.1 Percentage of accessible buses

Definition: Percentage of accessible buses in the public transport system. The indicator provides a measure of accessibility for people with impairments. 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. Source: Environment Bay of Plenty.

Table 10 Percentage of accessible buses in the Bay of Plenty public transport system

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

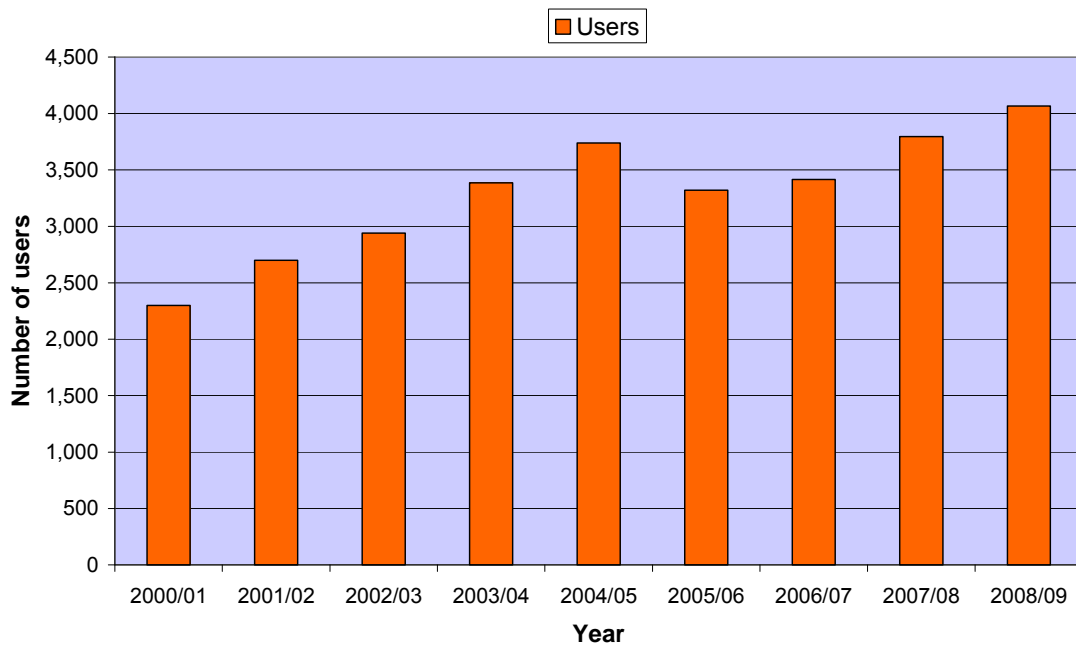
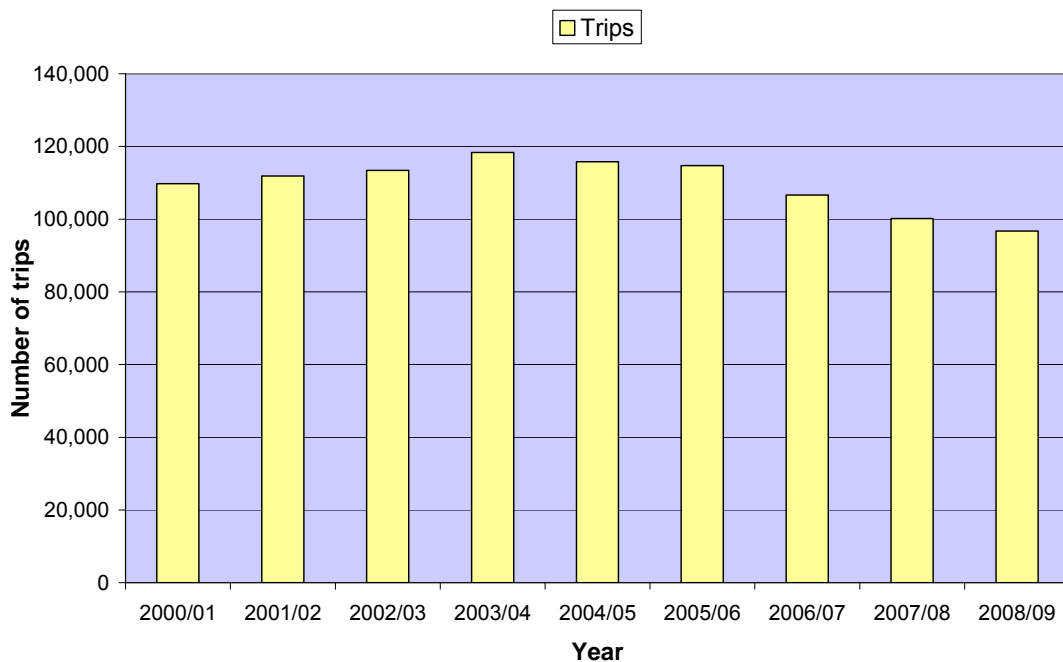
Interpretation: Data on the percentage of accessible buses was collected for the first time in 2006/07 to provide a baseline for future reporting. In 2007/08 three new accessible buses were added to the Rotorua fleet. In 2009, a new urban bus contract began operating in Tauranga. This new service includes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

Analysis: 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 impairments in parts of the region outside Tauranga.

9.3 Total mobility

9.3.1 Registered users and number of trips

Definition: Number of registered users and number of trips taken using the region’s total mobility scheme. The scheme provides subsidised fares and adapted vehicles for the mobility impaired. The performance indicator provides a measure of access to services for people with impairments. Source: Environment Bay of Plenty.

Figure 34 Total mobility scheme – registered users**Figure 35** Total mobility scheme – annual number of trips

Interpretation: The number of registered users has increased in the past two years to a new peak of 4,067 in 2008/09. In contrast, the number of trips has steadily decreased. The 96,761 trips taken in 2008/09 was the lowest annual total in the past nine years.

Analysis: The figures indicate that the total mobility scheme is continuing to meet anticipated demand. While the number of registered users has steadily increased in recent years, the number of trips per user has declined. Feedback suggests there is a link between improved bus frequency and accessibility in the main urban centres

and 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.

Chapter 10: Public health

This chapter measures trends in public health indicators. The following indicators are reported on:

Transport emissions: levels of carbon monoxide and particulate matter

Unsealed roads: length and amount of traffic

10.1 Transport emissions

10.1.1 Levels of carbon monoxide and particulate matter

Definition: 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. The levels of CO and PM10 are recorded at fixed residential sites in Tauranga and Rotorua to provide a background measure of transport-related emissions. Source: Environment Bay of Plenty.

Figure 36 Carbon monoxide levels, Otumoetai Road, Tauranga

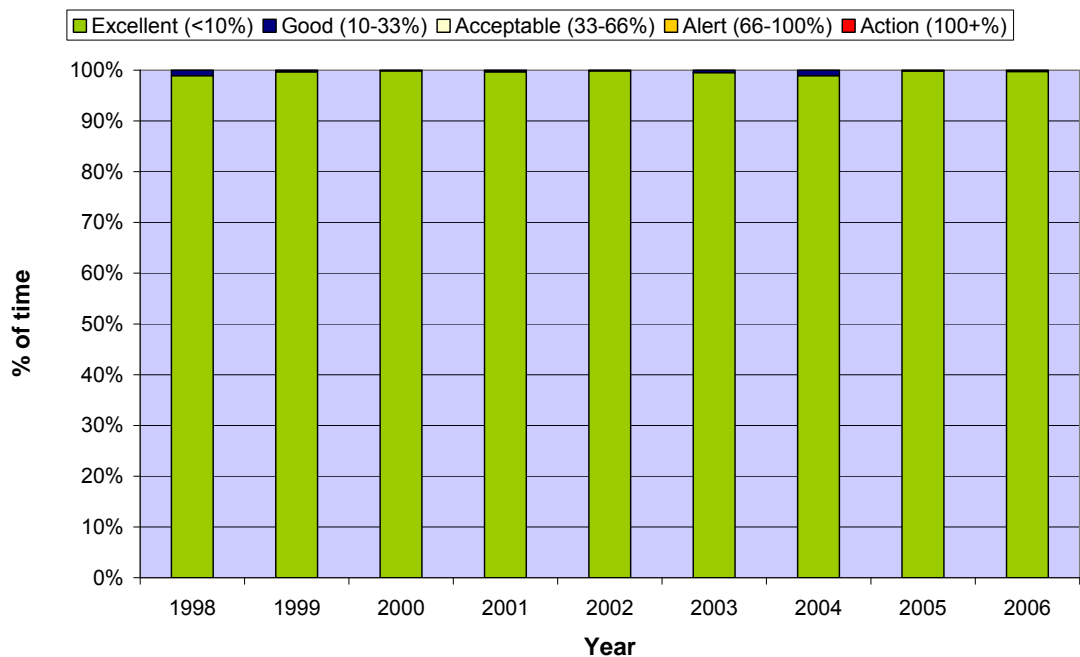


Figure 37 Carbon monoxide levels, Pererika Street, Rotorua

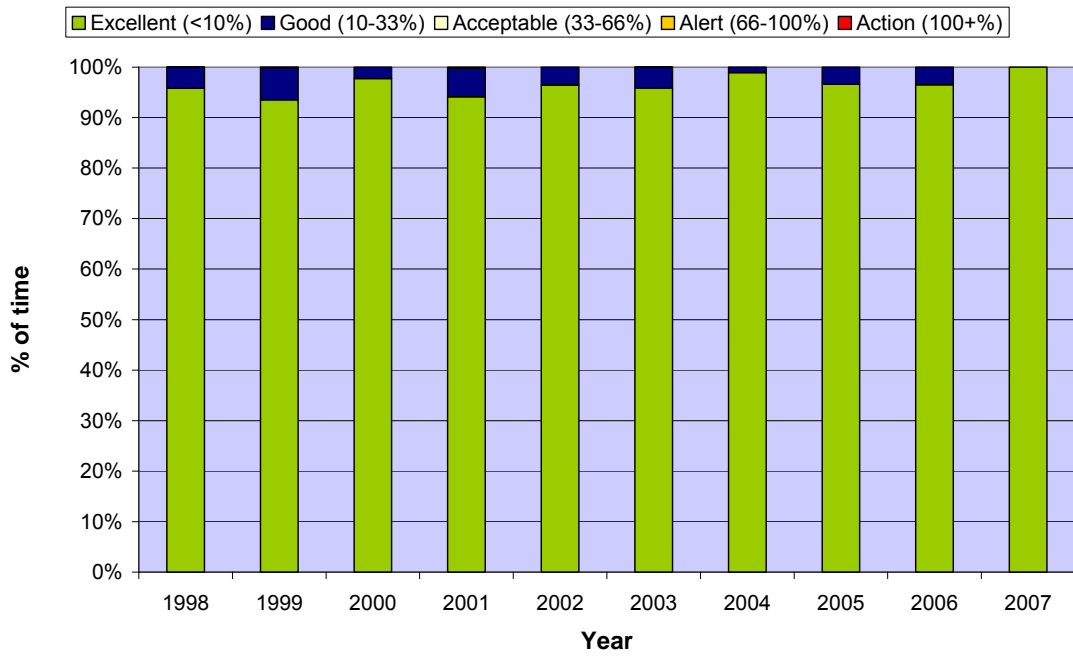


Figure 38 Particulate matter (PM10) levels, Otumoetai Road, Tauranga

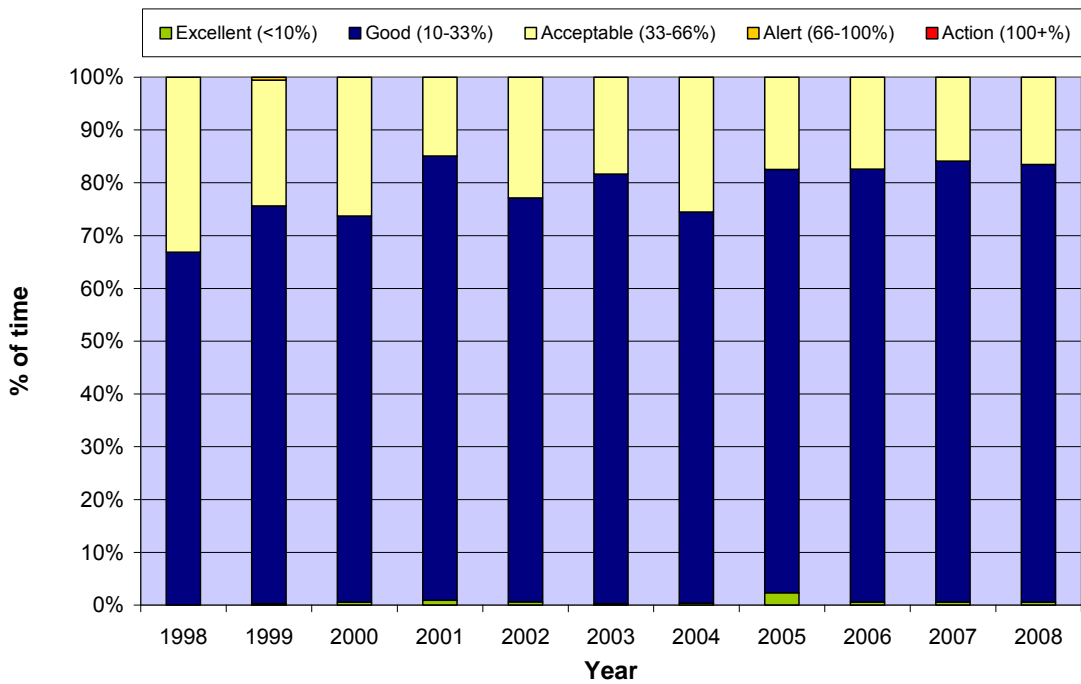
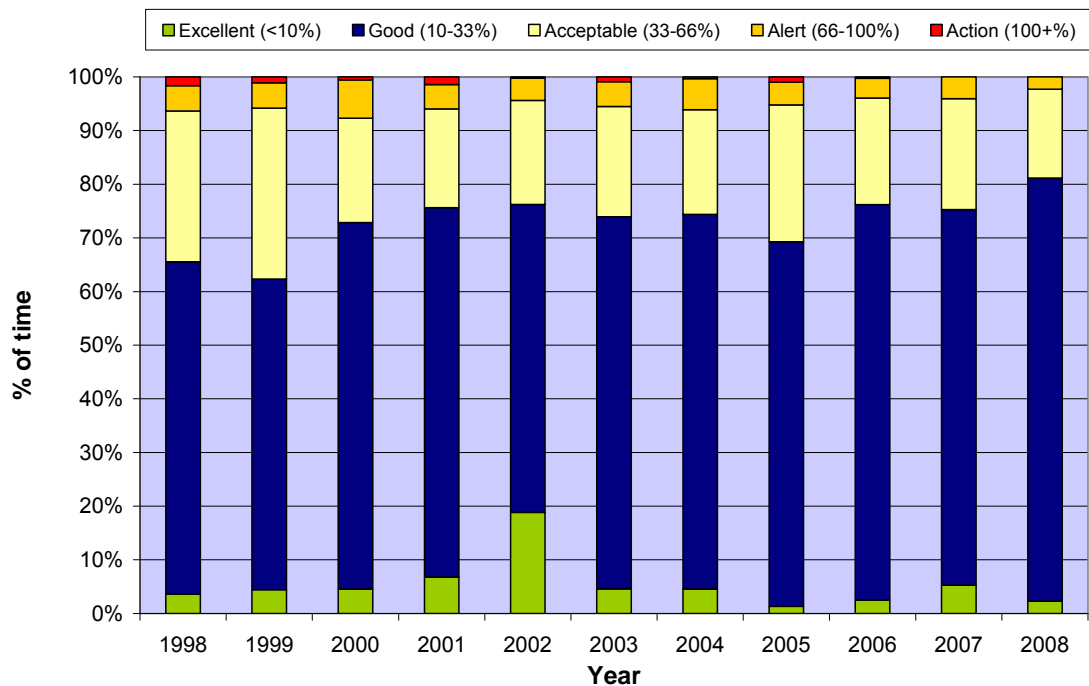


Figure 39 Particulate matter (PM10) levels, Pererika Street, Rotorua



Interpretation: Monitoring of carbon monoxide was discontinued at the Otumoetai Road site in 2006 and Pererika Street site in 2007. However, the most recent data sets show that the vast majority of readings at both sites were ‘excellent’ (less than 10% of the threshold in the national environmental standard).

Both the Tauranga and Rotorua sites show a significantly higher proportion of days in which levels of particulate matter approached the equivalent national environmental standard. The vast majority of readings at the Tauranga site were ‘good’ or ‘acceptable’ in 2008, continuing the trend of the past four years.

Monitoring at the Rotorua site shows somewhat higher concentrations of particulate matter when compared with Tauranga. Readings are still approaching the national environmental standard on a small but significant number of occasions. However in 2008, a higher proportion of readings were in the ‘good’ range, and particulate levels have not exceeded the standard on any occasion in the past two years.

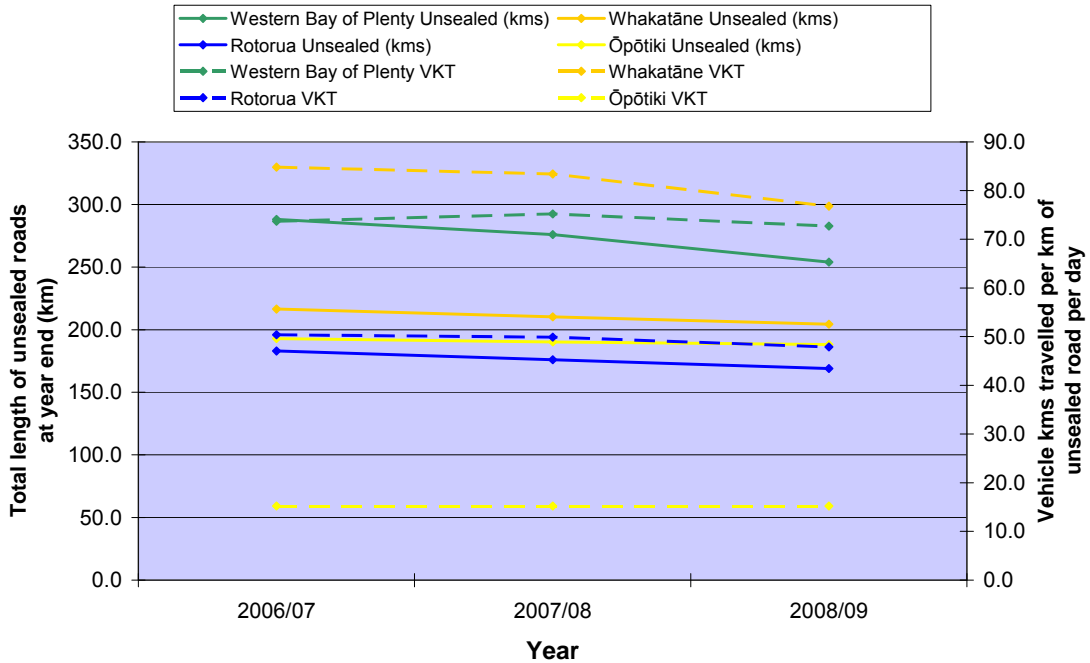
Analysis: Results indicate that background levels of carbon monoxide are not a significant issue in either of the region’s two largest urban centres. Levels of particulate matter, which is associated with diesel combustion amongst other sources, appears to be more of an issue, particularly in Rotorua.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

10.2 Unsealed roads

10.2.1 Length and amount of traffic

Definition: Percentage annual reduction in the length of unsealed roads, and the average amount of traffic on unsealed roads, by district/city. The indicators provide a measure of the amount of dust generated by traffic on unsealed roads. Source: district and city councils.

Figure 40 Territorial authority length of unsealed roads and kilometres travelled on unsealed roads



Interpretation: A substantial proportion of the Western Bay of Plenty, Whakatane, Rotorua, Opoitiki rural road networks are unsealed. The Western Bay of Plenty district’s 254km of unsealed roads is the highest tally in the region. The Tauranga and Kawerau local road networks contain negligible lengths of unsealed road and are not included in these figures.






Analysis: The figures show that 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 Whakatāne and Western Bay of Plenty districts carry the most traffic per kilometre. While population proximity is also a factor in terms of public health impacts, these are parts of the region where dust nuisance may be an issue. The figures also show that these two districts are achieving the highest rates of reduction in vehicle kilometres travelled on unsealed roads.



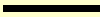

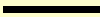

Chapter 11: Conclusions


Data on regional land transport performance indicators has been collected and reported on for three years in the Bay of Plenty. Consistent data collection is providing a more complete picture of trends in the performance of the region's land transport system. The accompanying table provides an assessment of the region's progress towards achieving the strategic outcomes in the RLTS during the 2008/09 year.

The socio-economic indicators in Chapter 2 of the report provide the context for the assessment. Socio-economic indicators such as growth in population and the number of households display long-term trends contributing to increased travel demand. Some demand indicators, for example the authorisation of new dwellings, have slowed appreciably during the period of economic recession. On the other hand, the growth in registered vehicles has continued apace, although there has been an increase in the uptake of less energy intensive modes such as motorcycles. Overall, there has been a general easing of the socio-economic factors contributing to travel demand in the 2008/09 year when compared with the preceding two years. The RLTS strategic outcome indicator trends need to be considered within this socio-economic context.












Key							
	significant progress towards outcome		some progress towards outcome		some regression from outcome		significant regression from outcome
	No change, or there is currently insufficient information to make an assessment						

Strategic Outcome	Assessment
Integration and land use	<p>A high proportion of residents in the western Bay of Plenty in particular travel outside their district of residence to work. The figures show there is some way to go before Live, Work and Play principles are reflected in more self-contained travel to work patterns.</p> <p>The number of identified transport interchanges has steadily increased. Notable new interchanges include a regular bus link to Tauranga airport and more opportunities to transfer between bicycle and other modes.</p> 

Strategic Outcome	Assessment	
Safety and personal security	<p>The number of casualties on Bay of Plenty roads decreased in 2008. The crash rate per 10,000 people also improved on the preceding year. The region's crash rate remains significantly below the national rate. While these results are positive, both figures continue to fluctuate year to year, with no long-term downward trend apparent to date.</p>	
Responsiveness	<p>Perceptions of the Tauranga urban bus service have improved in the past two years, while there has been a gradual decline in the ratings for Rotorua. There has been an encouraging trend in Tauranga users' perceptions of safety when using public transport.</p>	
Sustainability	<p>Census figures show the increasing dominance of the motor vehicle as a means of travel to work, and negligible gains for public transport in terms of modal split.</p> <p>There was a slight contraction in the proportion of Port of Tauranga's total throughput transported by rail and coastal shipping in 2008/09. This suggests an increasing reliance on the road network for transporting goods to and from the Port.</p> <p>Annual bus trips per capita continues to increase, particularly in the main urban centres.</p> <p>There is limited data available on walking and cycling. However, Rotorua initiated comprehensive cycle counts in 2009. The available data shows increasing numbers of cyclists in both Rotorua and Tauranga. While pedestrian numbers are up in Tauranga and down in Rotorua.</p>	
Economic development	<p>The economic recession has had the perverse effect of improving the transport system's performance in support of economic development. The 2008 year saw a general easing in traffic volumes on key congested routes in both Tauranga and Rotorua. Travel time delays on the Tauranga network have stabilised in recent surveys. Port of Tauranga export volumes rebounded in 2008/09 due to increased demand for logs.</p>	
Energy efficiency	<p>Regional fuel sales decreased by 4% in 2008/09. This is more likely to be linked to reduced travel demand associated with the economic recession than fuel efficiency gains.</p>	
Access and mobility	<p>The vast majority of people live within walking distance of bus services in the region's two largest urban centres. Significant gains have been made in the provision of accessible buses in the past year. All buses in the Tauranga urban service are now accessible.</p> <p>Total mobility indicators show that the service continues to meet expected demand.</p>	

Strategic Outcome	Assessment	
Public health	<p>Monitoring shows background carbon monoxide levels as being 'good' to 'excellent' in both Tauranga and Rotorua. There are relatively higher levels of particulate matter, especially in Rotorua. However, there have been signs of improvement in the measurements from both cities in the past two years.</p> <p>The districts with extensive networks of unsealed roads are achieving the highest rates of reduction in vehicle kilometres travelled on unsealed roads.</p>	

Overall, the region has taken some positive steps towards achieving RLTS strategic outcomes in the past year. Significant progress has been made towards achieving the access and mobility objective, while some progress has been achieved in terms of integration and land-use, safety and personal security, economic development and public health. The scorecard below shows that performance of the region's land transport system in 2008/09 compares favourably with previous years.

RLTS Scorecard			
Strategic Outcome	Assessment		
	2006/07	2007/08	2008/09
Integration and land use	—	—	
Safety and personal security			
Responsiveness	—	—	—
Sustainability		—	—
Economic Development			
Energy Efficiency	—	—	—
Access and Mobility			
Public Health	