



# Regional summary - Waikato

This is a summary of data relevant to transportation in this region, viewed from a Land Transport NZ perspective. It's purpose is to inform the Land Transport New Zealand Board about the current transport system and about regional issues, plans and initiatives that will have an impact on regional transport into the future.

The data have been grouped in a way that aligns with the objectives of the NZ Transport Strategy, as follows:

1. Overview
2. Economy and Land Use
3. Assets
4. Access and Mobility
5. Safety
6. Health and Environment

Regional indicators are generally presented with a comparison to national data. Where possible a differentiation has also been made between Hamilton City and the remainder of the region— to highlight the difference in the characteristics of transport in the rural and urban areas.

## Summary

The Waikato Region has a population of about 400,000 (9.4% of the national total) of which 34% live in Hamilton. Average population densities in the southern part of the region and in Coromandel Peninsula are low (< 10 per km<sup>2</sup>). With 1,400 per km<sup>2</sup> the density is the highest in Hamilton City. The region has a total road length of 10,300 km, 11% of the national total. There are two main railway lines: the North Island main trunk and the East Coast main trunk.

Population growth of 14.4% (2001 to 2026) is projected for the region with most of the growth expected to occur within the Hamilton, Waikato and Waipa sub-region. Waikato is subject to a significant amount of through traffic.

In the last five years the structural maintenance costs have been increasing annually at an average of 16% and the costs per km are 30% higher than the national average. The asset condition of local roads is stable or improving.

The uptake of public transport is improving with a significant increase in bus boarding number (34%) over the last year. However, driving remains in the main transport mode for travel to work.

Road safety remains one of the critical issues in the Waikato Region. Although the crash numbers with fatal or serious injuries have been declining, the number of road fatalities contributing to the New Zealand total has been relatively high (around 20%).

Key Regional Indicators			
	Current	Average annual change (2003-2007)	Annual change (2006/2007)
<b>Population</b>	398,500	1.4%	2.8%
<b>VKT</b>	4,871m km	1.9%	0.3%
<b>GDP</b>	\$12,434m <small>(in current prices)</small>	-0.9% <small>(95/96 prices, estimated)</small>	-4.0% <small>(95/96 prices, estimated)</small>
<b>Bus boardings</b>	1.6m	17.9%	34%
<b>Structural maintenance</b>	\$103m	15.7%	20.3%
<b>Light vehicle registrations</b>	241,424 <small>(2006 data)</small>	3.4% <small>(2003 -2006)</small>	No data
<b>Heavy vehicle registrations</b>	12,965 <small>(2006 data)</small>	2.8% <small>(2003 -2006)</small>	No data
<b>Fatal and serious crashes</b>	289 <small>(2006 data)</small>	-3.1% <small>(2003 -2006)</small>	No data
<b>Transport CO<sub>2</sub> emissions</b>	1.6m tonnes <small>(2003 data)</small>	No data	No data

# 1. Overview



## General statistics for 2007

	Hamilton	Waikato	National	Waikato as % of Nation
<b>Estimates population</b> <i>(provisional, year ending June)</i>	136,500	398,500	4,228,000	9.4%
<b>Population growth 2003-2007</b> <i>(year ending December)</i>	8.0%	5.6%	5.6%	-
<b>Land area</b>	94 km <sup>2</sup>	25,600 km <sup>2</sup>	275,450 km <sup>2</sup>	9.3%
<b>Total TA expenditure on land transport</b> <i>(year ending June. Includes Local and national contributions to territorial authority expenditure. Regional Council and Transit costs are excluded.)</i>	\$11m	\$103m	\$1,312m	7.9%
<b>VKT</b> <i>(year ending June)</i>	618m km <i>(local roads only)</i>	4,871m km	39,831m km	12.2%
<b>Total road length</b> <i>(year ending June)</i>	586 km <i>(local roads only)</i>	10,320 km	93,576 km	11.0%
<b>GDP (2007 prices)</b> <i>(year ending March)</i>	-	\$12,430m	\$163,390m	7.6%
<b>GDP per capita (2007 prices)</b>	-	31,200\$	38,600\$	-

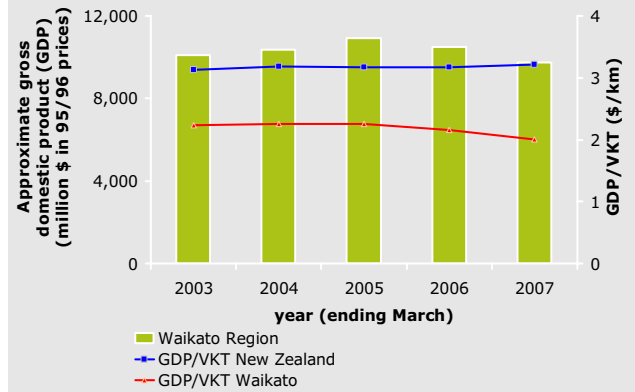
## 2. Economy and Land Use

### Land Use

Pastoral farming was the main land use in the Waikato Region in 1996 (58%) followed by indigenous vegetation (28%) and exotic forestry (12%). Urban land use only comprised 1% of the total area. However, since then the rural land use intensified significantly resulting in increased erosion problems and a degradation of water quality in rivers, lakes and groundwater with increased nitrogen concentrations being of particular concern. The highest stock densities can be found in Hauraki, Lowland Waikato and the Waipa River catchment. The west coast and Taupo have the lowest stock densities.

(Source: Terralink, Statistics New Zealand, Environment Waikato)

### GDP in relation to VKT



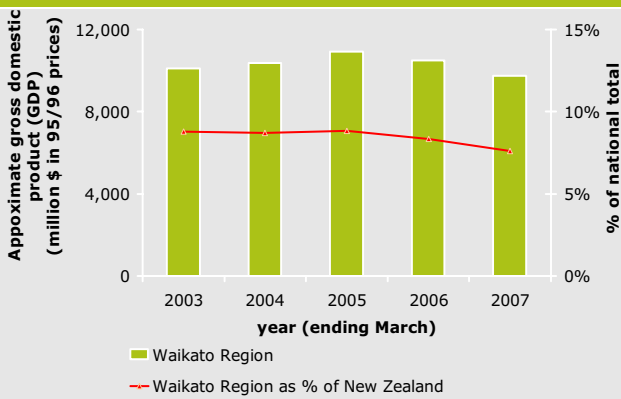
(Source: calculated from NZIER and Statistics NZ, Transit NZ local authorities)

### Industry Profile 2003

Main Industry Sector	Contribution to regional GDP	Contribution to national GDP
Manufacturing	14.1%	15.5%
Agriculture	12.7%	5.0%
Mining, construction, electricity, gas and water supply	11.8%	9.0% (incl. fishing and forestry)
Education, health and community services	10.3%	12.3%

(Source: Statistics New Zealand)

### GDP in 95/96 prices



(Source: calculated from NZIER and Statistics NZ)

### Comments

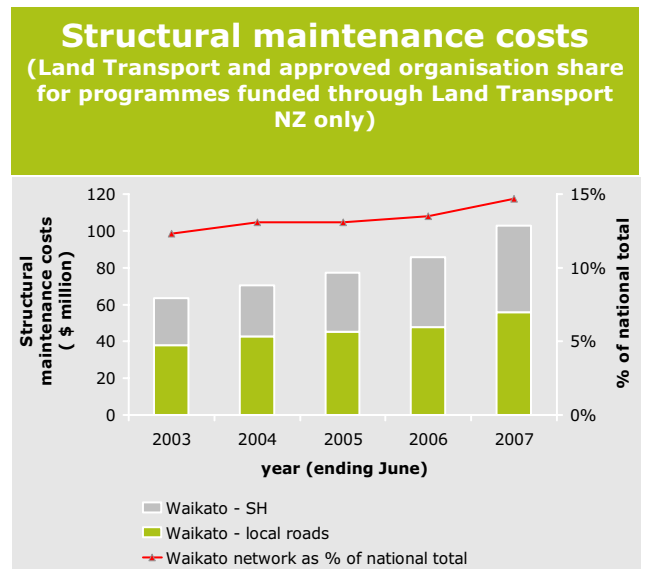
- In 2007 the estimated gross domestic product (GDP) for the Waikato Region was \$12.4 billion contributing 7.6% to the national GDP.
- The regional GDP in adjusted prices has decreased since 2005 with a drop of 7% in 2006/2007. In contrast the national GDP has increased continuously over the 2003-2007 time period and by 2% in 2006/2007.
- The manufacturing sector has been the main contributor to the regional GDP followed by the agricultural sector.
- The GDP to VKT ratio for Waikato is significantly lower than the New Zealand average. This can possibly be attributed to the high amount of through traffic.
- The key transport generating industries in the region include dairy, forestry, aggregates, coal, aquaculture, retail, light manufacturing and tourism. (RLTS, 2006)
- An inland port facility in Hamilton connecting the ports of Tauranga and Auckland has been developed by Fonterra and Toll Rail.

## Economy and land use –continued

### Emerging Issues

- Growth projections estimate that the population in the Waikato Region will grow by 14.4% between 2001 and 2026 (equivalent to 470,000 people). 94% of this growth is expected to occur in the Hamilton, Waikato and Waipa sub-region. (RLTS, 2006)
- The neighbouring regions Auckland and Bay of Plenty regions experience above average population growth which will put pressure on Waikato’s strategic transport corridors. (RLTS, 2006)
- The aggregate supply to Auckland and Bay of Plenty regions is becoming more important making up a significant portion of total freight volumes on state highways and a number of collector and local roads throughout the sub-region of Hamilton, Waikato and Waipa. (RLTS, 2006)
- Tourism is a major growth factor especially for the Waitomo and Otorohanga, Thames Coromandel and Taupo sub-region. (RLTS, 2006)
- The inland port facility in Hamilton is only 40% utilised (RLTS, 2006)
- Freight movement and tourism are in competition for the same road spaces / corridors.

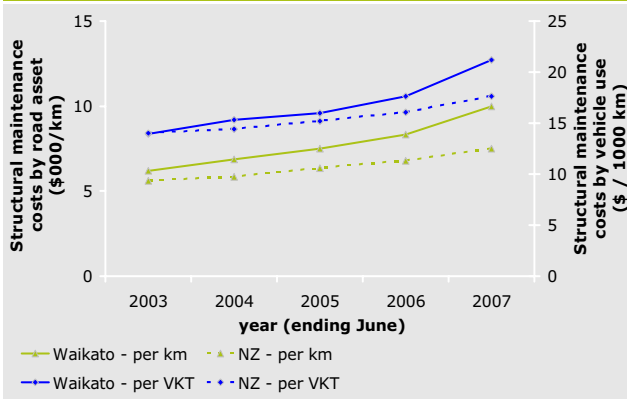
## 3. Assets



(Source: Land Transport NZ)

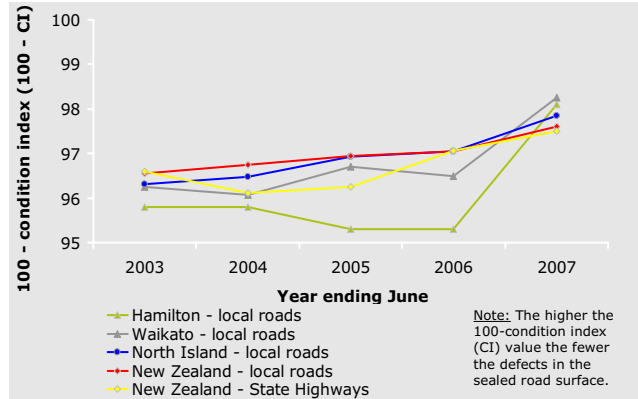
## Assets—continued

### Structural maintenance costs by road assets and vehicle use



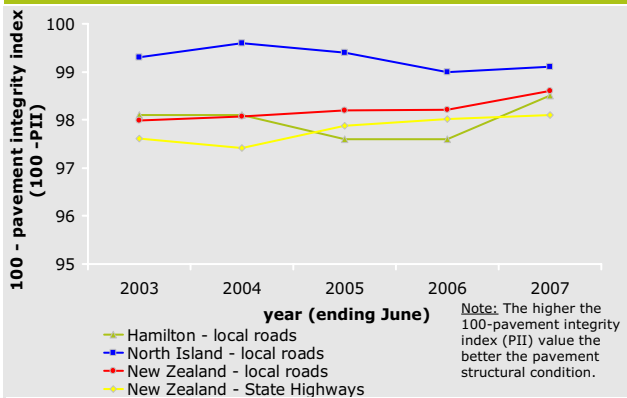
(Source: Land Transport NZ)

### 100 – Condition index



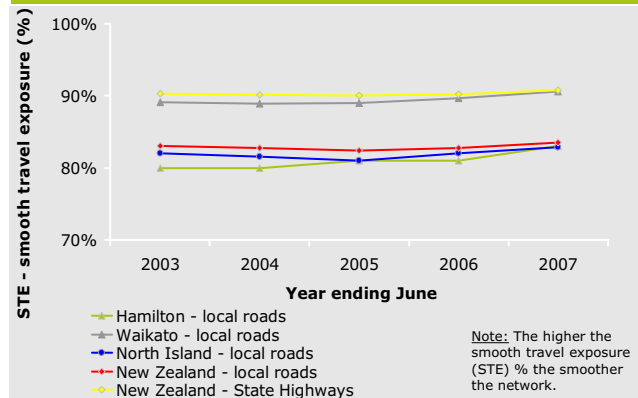
(Source: Local Authorities, Transit New Zealand)

### 100 – Pavement integrity index



(Source: Local Authorities, Transit New Zealand)

### Smooth travel exposure (STE)



(Source: Local Authorities, Transit New Zealand)

### Road Length 2007

		Hamilton	Waikato	National	Waikato as % of Nation
Local roads	Urban	541 km	1,769 km	17,251 km	10.3%
	Rural	45 km	6,822 km	64,925 km	10.5%
	Special Purpose	-	1.4 km	507 km	0.3%
Local roads - total		586 km	8,592 km	82,683 km	10.4%
State Highways		No data	1,729 km	10,893 km	15.8%
<b>All roads</b>		<b>-</b>	<b>10,320 km</b>	<b>93,576 km</b>	<b>11.0%</b>

(Source: Local Authorities, Transit NZ)

## Assets—continued

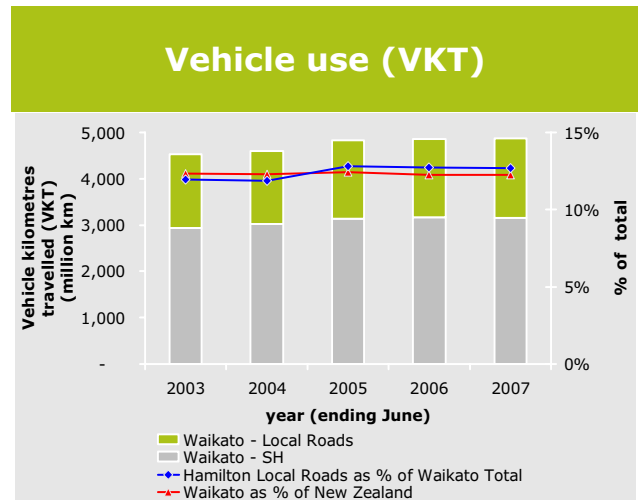
### Comments

- The railway network in the Waikato region comprises of 460km of rail lines. There are two main railway lines: the North Island main trunk and the East Coast main trunk. There are also a number of shorter branches connecting mainly industrial plants and the coal power station. The railway lines are owned by Ontrack and operated by Toll NZ. (LTRS, 2006)
- Waikato has a relatively dense state highway network, the total length comprising 15.8% of the national total.
- 11.0% of the national road network is located within Waikato region while in 2007 it received 14.7% of the funding for structural maintenance costs. The funding percentage has been increasing over the 2003-2007 period.
- There is a major airport in Hamilton, which also connects to international flights and a regional airport in Taupo. An inland port facility is also located in Hamilton.
- Structural maintenance costs per road kilometre are about 30% higher than the national average.
- The average condition of local roads in Hamilton and Waikato has significantly improved in 2007 and is now above the average for North Island and New Zealand local roads and New Zealand state highways.

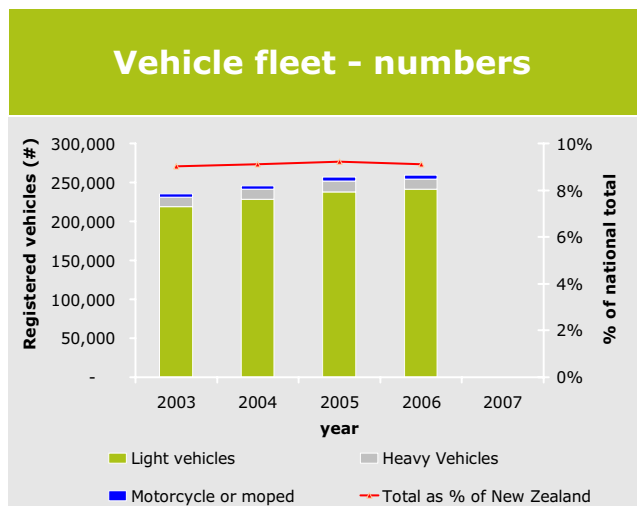
### Emerging Issues

- Route security issues have been identified in several places in the region. (RLTS, 2006)

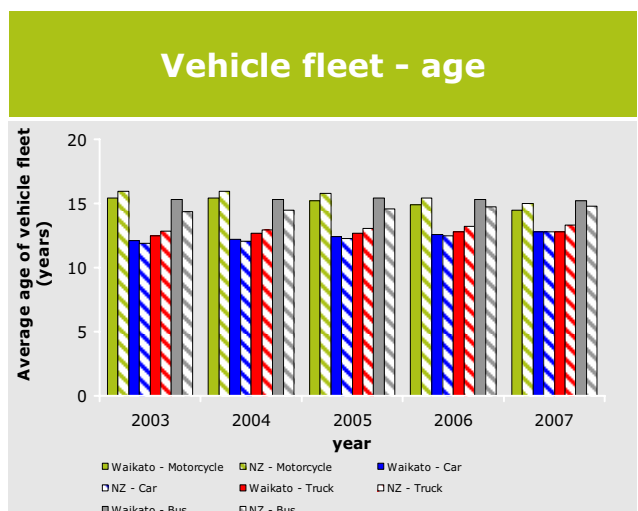
## 4. Access and Mobility



(Source: Local Authorities, Transit NZ)



(Source: Motor Vehicle Register)

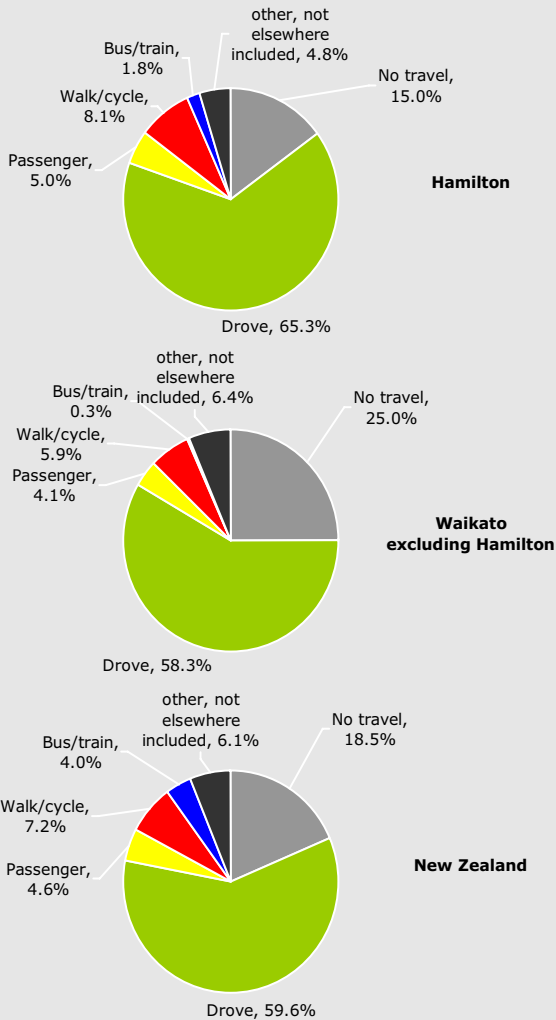


(Source: Motor Vehicle Register)



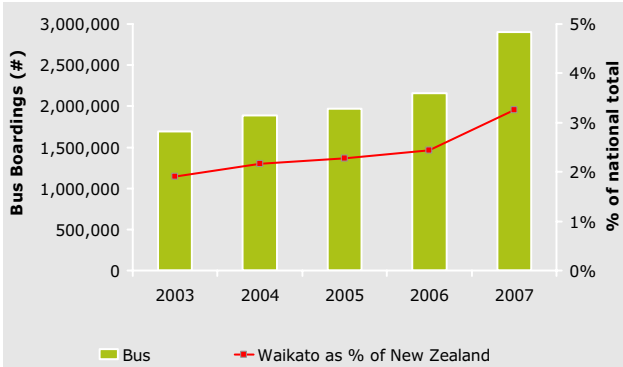
## Access and Mobility—continued

### Travel mode share 2006 (travel to work)



(Source: Statistics NZ, 2006 Census)

### Bus boarding numbers



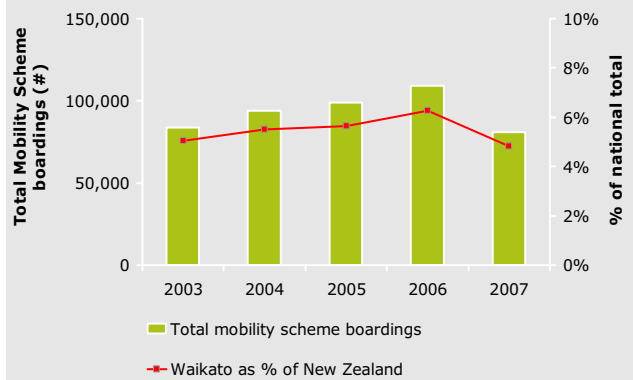
(Source: ???)

### Distance to bus routes

**49% of the target community in Waikato lives within 500m of a bus route.**

(Source: LTP Online—Annual Achievement Return for Waikato 06/07)

### Total mobility scheme boarding numbers



(Source: Environment Waikato)

### Comments

- Waikato region is dependent on the private car use and road-based movement of freight. (RLTS, 2006)
- In 2006 Driving was the main means of travel to work in Hamilton (65%) as well as the remaining area of Waiakto (58%). The New Zealand average is 60%. In Hamilton 8.1% walk or cycle to work which is above the New Zealand average of 7.2%.
- The only passenger rail service in the region is the Auckland to Wellington inter-regional service.
- The number of bus boardings between 2003 and 2006 has increased at an annual average of 8%. In 2006/2007 numbers have boosted by 34%.
- Total mobility schemes currently operate in Hamilton, Tokoroa and Taupo. Boarding numbers are increasing. (RLTS, 2006)

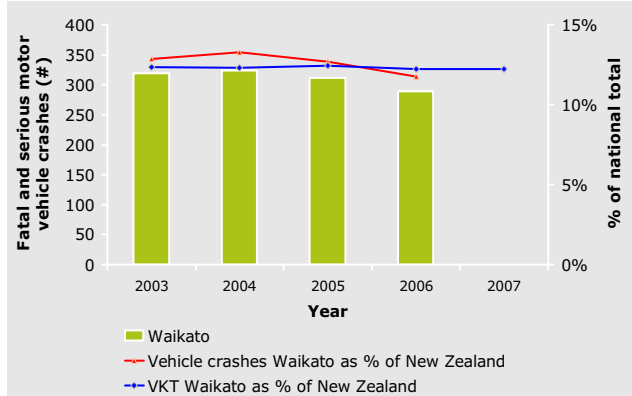
## Access and Mobility—continued

### Emerging Issues

- A high proportion of traffic in the Waikato region is through traffic, particularly inter-regional freight traffic to and from the ports in Auckland and Tauranga. (RLTS, 2006)
- Heavy traffic volumes have been growing by an average of 5% per year. Heavy traffic counts on strategic routes are very high. (RLTS, 2006).
- A closer integration between the bus services offered by the Regional Council and the Ministry of Education is envisaged. (RLTS, 2006).
- An urban rail network for passenger transport could be considered for development in Hamilton. (National Rail Strategy to 2015, MoT). Investigations have been carried out in an ATR study and further in the 'Auckland to Hamilton Passenger Rail Study'.
- Some of the total mobility schemes in the region have reached capacity. As a result of the 2006 government review of the total mobility scheme and changes to the New Zealand Disability Strategy funding was set aside in Environment Waikato's LTCCP to extent this service to a greater number of users between 2006 and 2016. (RLTS, 2006).
- The regional Walking and Cycling Strategy is expected to be completed in June 2008.
- Kopu Aggregate Barging (Thames to Auckland) was funded for three years.
- The Hamilton airport provides for domestic and limited international passenger service. The current runway length does not allow the operation of larger aircraft with greater freight capacity (RLTS, 2006). There are plans for the land surrounding the airport to establish a important regional freight and logistics hub. (RLTS, 2006)
- Population ageing: an older population will have greater needs for passenger transport to access services. (RLTS, 2006)
- Travel demand management is in its early days. (RPTP, 2007)
- The Hamilton Alternatives to Roothing Transportation Study (2005) has found that travel demand management, land use planning, travel plans, active modes and bus improvements are the most practicable options to reduce congestion.

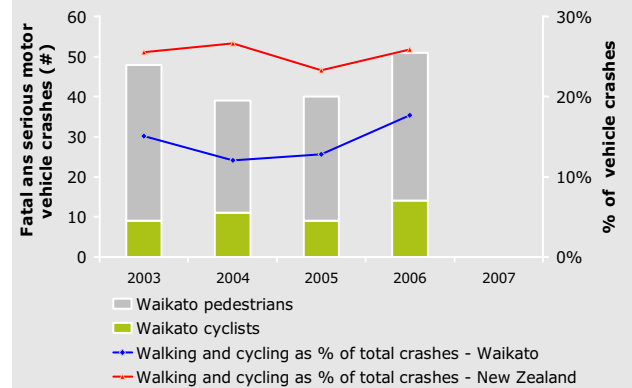
## 5. Safety

### Fatal and serious vehicle crashes



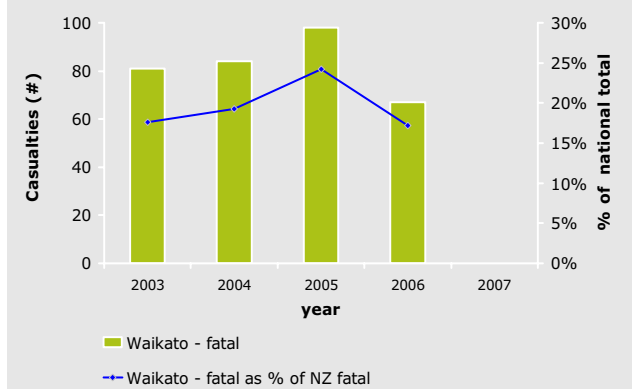
(Source: Land Transport NZ, CAS database)

### Fatal and serious vehicle crashes involving cyclists and pedestrians



(Source: Land Transport NZ, CAS database)

### Road Casualties



(Source: Land Transport NZ )



## Safety—continued

### Comments

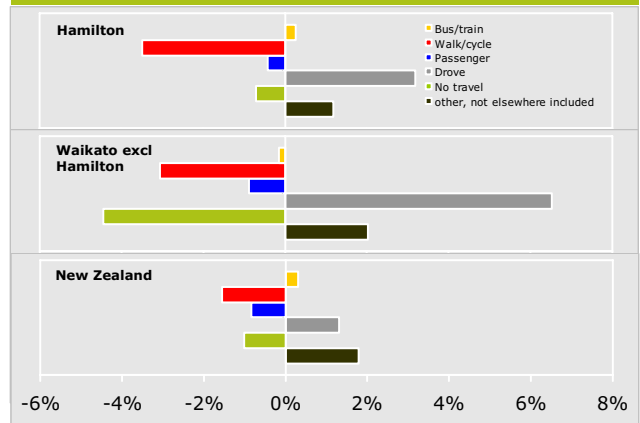
- The number of fatal and serious injury vehicle crashes has been declining between 2003 and 2006.
- About 20% of all fatal road casualties occur in the Waikato Region while the region only contributes 12% to the national VKT.
- Waikato has the highest rate of fatalities on state highways in New Zealand and the trend is rising. (RLTS, 2006)
- It also has the highest crash density and contains 20 out of the 100 national worst black routes. (RLTS, 2006)
- The main cause of road crashes in the region is driver behaviour.

### Emerging Issues

- Although efforts have been going into the improvement of road safety within Waikato Region it remains one of the critical issues. (RLTS, 2006).
- Rail crossing crashes are an issue, especially in the Huntly area. ONTRACK has a programme in place to improve the level rail crossings, but the main cause of the crashes is believed to be driver behaviour. Rail safety issues will likely increase as the use of rail transport is expected to grow and is promoted in the RLTS. A collaborative approach between ONTRACK, road controlling authorities and motorists is required. (RLTS, 2006)
- A Regional Road Safety Strategy is expected to be completed in June 2008.

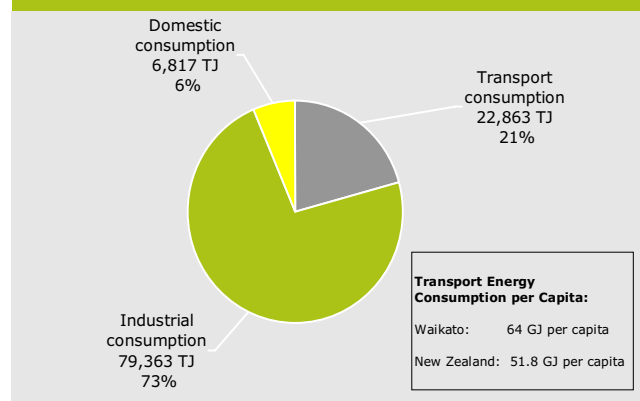
## 6. Health and Environment

### Changes in travel mode share 1996 –2006 (travel to work)



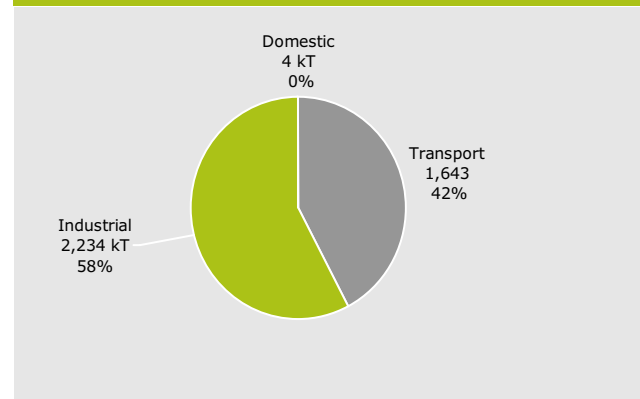
(Source: Statistics NZ)

### Regional energy consumption by sector—2003



(Source: Environment Waikato, MED, Statistics NZ)

### Vehicle CO<sub>2</sub> emissions—2003

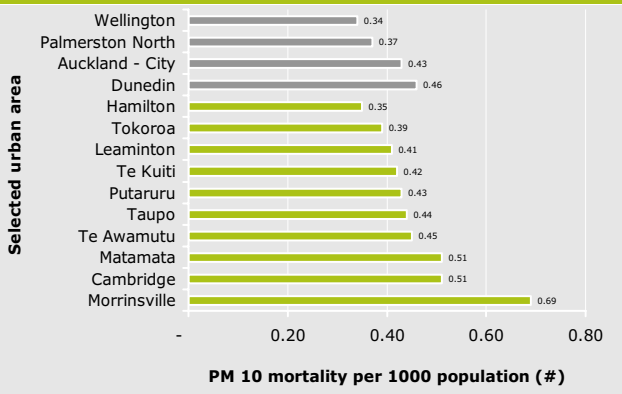


(Source: Environment Waikato)

## Health and Environment—continued

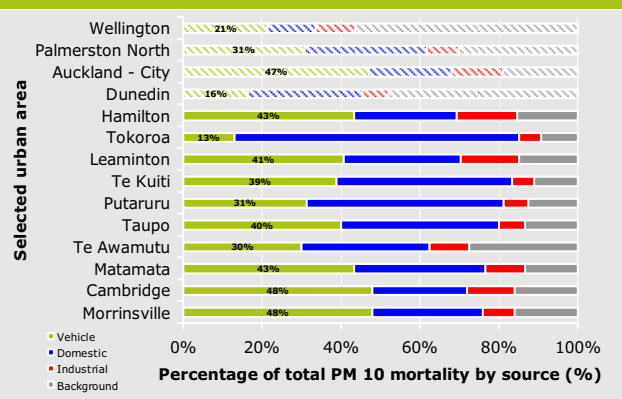
**Note:** Land Transport New Zealand has serious doubts about data contained in the report titled *Health and air pollution in New Zealand*. However, for the purpose of this document the data in the graphs below have been sourced from this report.

### PM10 air pollution – mortality per 1000 population



(Source: Health and air pollution in NZ, 2007 - research funded by Health Research Council of NZ, MfE, MoT)

### Sources of PM10 mortality



(Source: Health and air pollution in NZ, 2007 - research funded by Health Research Council of NZ, MfE, MoT)

## Comments

- Public transport appears to be on a rising trend with a boost in numbers in 2007. The percentage of people choosing to bus to work has slightly increased from 1996 to 2006.
- There are currently no passenger rail services, except for the Auckland to Wellington route.
- The share of people walking and cycling to work is decreasing in Hamilton as well as the remaining area of Waikato.
- The increase in the percentage of people driving to work is greater than the New Zealand average. This applies to Hamilton (increase by 3%) as well as to the remaining area of Waikato (increase by 6.5%).
- No recent energy consumption and CO2 emission data are currently available. It has been estimated that, in 2003, about 21% of all energy was consumed for transport.
- The regional transport energy consumption per capita consumption in 2003 was significantly higher than the New Zealand average.

## Emerging Issues

- Concerns about personal security are a major barrier to the uptake of walking and cycling. (RLTS, 2006)
- Environment Waikato work together with district councils and schools to reduce school traffic and associated congestions around schools as well as improve safety. The initiatives may include school travel plans and walking school buses. (RLTS, 2006 and WRPTP, 2007).
- The next Regional Energy Survey by Environment Waikato is due to be released in 2008.