



Regional summary - Auckland

This is a summary of data relevant to transportation in the Auckland region, viewed from a New Zealand Transport Agency perspective. The purpose of this document is to inform the New Zealand Transport Agency and its sector partners about the current transport system, regional issues, plans and initiatives in the Auckland region 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 been made between the four Cities (Auckland City, Manukau, North Shore and Waitakere) and the remainder of the region, to highlight the difference in the characteristics of transport in the rural and urban areas.

Summary

The Auckland Region has a population just under 1.4 million (33% of the national total). Most of the regional population lives in Auckland City and Manukau City (31% and 25% respectively).

The northern and southern districts (Rodney and Franklin resp.) have relatively low population densities (<36 per km²), while population densities are highest in North Shore City (1,581 per km²), Manukau City (597 per km²) and Waitakere City (508 per km²). **Auckland City's population density is 382 per km².** The land area used for these calculations includes offshore islands.

The region has a total road length of 8,075 km; 8.6% of the national total. There are three railway lines (eastern, southern and western), including the 'Overlander' long distance passenger service which connects to Wellington during peak holiday periods.

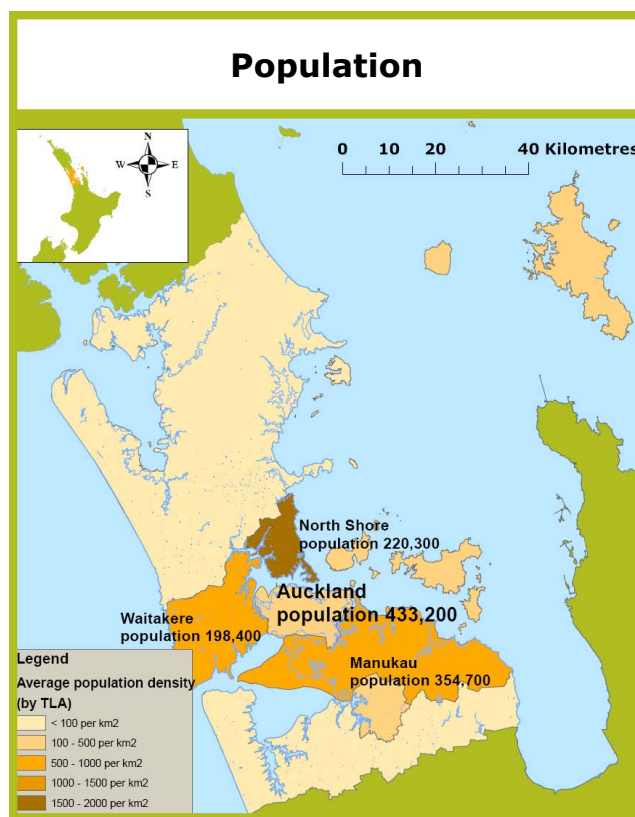
Looking forward, the Auckland Region population is expected to continue to grow faster than the national average. VKT numbers also show a continuous annual growth.

Road structural maintenance costs have been increasing significantly, with an average annual growth rate >13% since 2003.

Key Regional Indicators

	Current (2007)	Average annual change (2003- 2007)	Annual change (2006 - 2007)
Population	1,394,000	2.0%	1.7%
VKT	11,853M km	2.4%	1.0%
GDP	\$60,990M <small>(in current prices)</small>	10.1% <small>(95/96 prices, estimated)</small>	21.5% <small>(95/96 prices, estimated)</small>
Public transport boardings	52.5M	-0.53%	2.63%
Structural maintenance costs for roads	\$146.3M	13.2%	13.6%
Light vehicle registrations	869,870 <small>(2006)</small>	3.2% <small>(2003-2006)</small>	No data available yet
Heavy vehicle registrations	30,519 <small>(2006)</small>	5.5% <small>(2003-2006)</small>	
Fatal and serious crashes	541 <small>(2006)</small>	2% <small>(2003-2006)</small>	
Regional fuel sales (diesel plus petrol)	1,600M L	1.6%	1.4%

1. Overview



General statistics for 2007

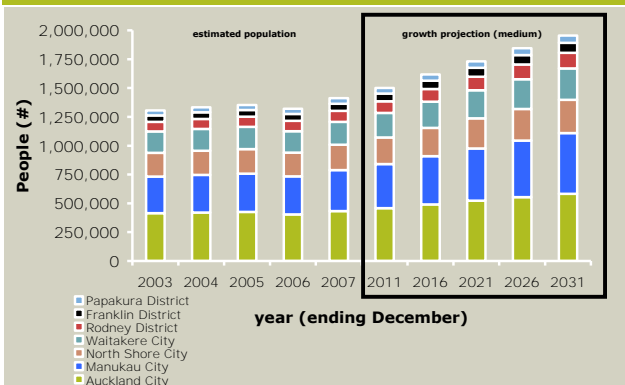
	Four Cities (including islands)	Auckland Region (including islands)	National	Auckland Region as % of Nation
Estimated population <i>(provisional, year ending June)</i>	Auckland 433,200 Manukau 354,700 North Shore 220,300 Waitakere 198,400	1,394,000	4,228,000	33%
Population growth 2003-2007 <i>(year ending December)</i>	Auckland 4.4% Manukau 11.7% North Shore 7.5% Waitakere 6.9%	8%	5.5%	-
Land area	Auckland 1,059 km ² Manukau 551 km ² North Shore 130 km ² Waitakere 367 km ²	5,600 km ²	275,446 km ²	2%
Total TA expenditure on land transport <i>(year ending June. Includes Local and national contributions to territorial authority expenditure. Regional Council and NZ Transport Agency costs are excluded).</i>	Auckland \$87.7 M Manukau \$64.0 M North Shore \$50.3 M Waitakere \$25.3 M	\$458.6 M	\$1,312 M	34.9%

General statistics for 2007 - continued

	Four Cities	Auckland Region	National	Auckland Region as % of Nation
VKT (year ending June)	Auckland 2,757 M km Manukau 1,697 M km North Shore 997 M km Waitakere 971 M km	11,853 M km	39,831 M km	30%
Total road length (year ending June)	Auckland: 1,419 km Manukau: 1,248 km North Shore: 680 km Waitakere: 808 km	8,075 km	93,460 km	8.6%
GDP (2007 prices) (year ending March)	-	\$60,990 M	\$163,390 M	37%
GDP per capita (2007 prices)	-	\$43,750	\$38,600	-

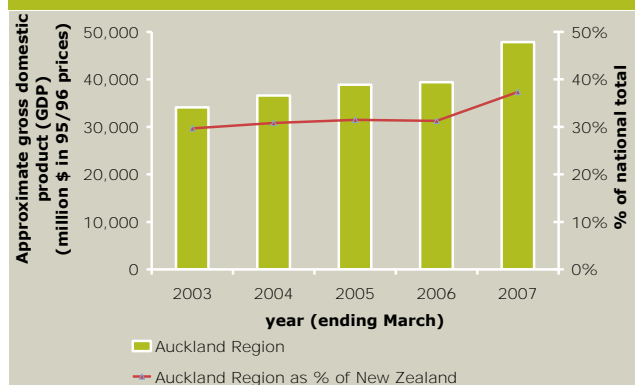
2. Economy and land use

Population growth



(Source: Statistics New Zealand)

GDP in 95/96 prices



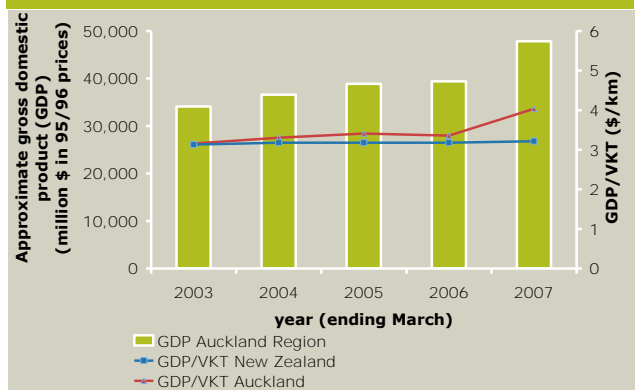
(Source: calculated from NZIER and Statistics NZ)

Industry profile 2003

Main industry sector	Contribution to regional GDP	Contribution to national GDP
Business services & finance	18.3%	24.6%
Manufacturing	16.2%	15.5%
Wholesale trade	9.8%	8.2%
Education, health & community services	9.7%	12.3%

(Source: Statistics New Zealand)

GDP in relation to VKT



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

Economy and land use —continued



(Source: Statistics NZ)

Land use

The region's geography, with its harbours, volcanoes and ridges, heavily constrains roading patterns and land use development in some locations.

There is a legal requirement to give effect to the growth concept as set out in the Auckland Regional Growth Strategy which integrates land use and transport planning.

(Source: RLTS 2005-2016, RLTS Annual Report 2006/07)

Comments

- The Auckland region is the main commercial centre of New Zealand, and is home to one-third of its population. Auckland generates one-third of the nation's income, but is not performing as well as many of the cities it competes with internationally. (Auckland Regional Business and Economy update —October 2005)
- **The Auckland region is New Zealand's major centre for transport, communications and wholesale trade, and has the country's principal seaport and airport for international shipping, passenger and airfreight. It acts as a service and distribution centre for all of New Zealand. 65% of New Zealand's imports and 31% of exports by value pass through Auckland's ports and airport.** (Regional Land Transport Strategy 2005-2016)

- Auckland's regional GDP has seen a significant growth of 21.5% in 2007. This rate is about five times higher than the national GDP growth rate.
- The sharp increase in GDP in 2007 was not associated with a sharp increase in VKT. The GDP/VKT ratio is now significantly above the New Zealand average.
- With a total GDP of \$60,990 million (in current prices) the regional GDP made up **37% of New Zealand's total GDP in 2007.**
- Urban growth since the 1960s has been characterised by infill (particularly in the central city) as well as greenfield development. Overall densities have increased compared to the development patterns before the 1990s. (RLTS 2005-2016)
- The rate and size of population growth has been variable across the region. Manukau City has experienced the highest increase in total numbers while Rodney District had the **highest relative growth. Auckland's metropolitan urban limit (MUL) has moved five times since 1999.** (RLTS Annual Report 2006/2007, ARC)
- Office activity is increasingly located within the high density centres and corridors. However, whole sale, retail and manufacturing growth mainly occurs outside the growth centres. (ARTA, Auckland Transport Plan 2007)
- Auckland has a very significant proportion of commercial travel. About 20% of all trips are made by heavy and light commercial vehicles moving 600,000 tonnes of goods within the Auckland region. (ARTA, Auckland Transport Plan 2007)

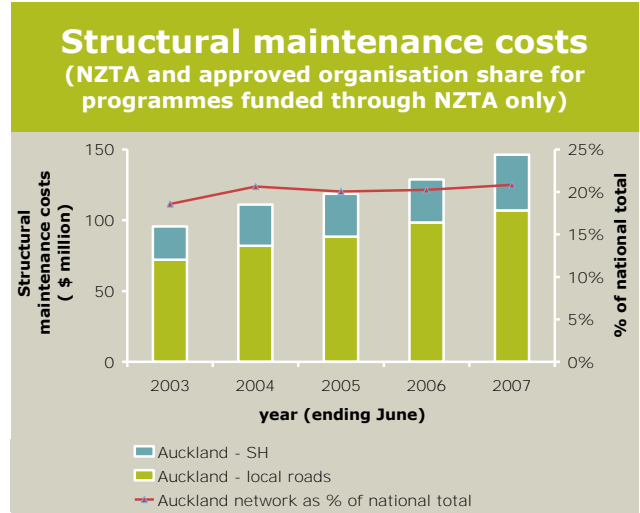
Emerging Issues

- The wealth of the region relies heavily on the productivity of the business community. **The region's productivity is dependent on an effective transport system to move resources to where they are needed and to take products to markets. The transport system needs to enable efficient movement to ensure the competitiveness of the region's business and rural sectors.** (RLTS 2005-2016)

Economy and land use —continued

- Opportunities such as the Rugby World Cup in 2011 heighten the need for greater **investment in Auckland's public transport** network and civic infrastructure. (LTCCP 2006—2016)
- Population in the Auckland region is growing at a faster rate than in any other region. The associated increase in vehicle use is putting pressure on existing transport networks, infrastructure and passenger transport services. The growth is expected to continue. (Auckland Transport Plan 2007)
- Road congestion remains the key issue for the regional freight transport industry. Ernst & Young (1997) have estimated the direct financial impact of congestion on the profitability of the regional manufacturing and distribution sectors to be around NZ\$ 100 million. (ARC 2006, Summary Auckland Regional Freight Study)
- Other issues relating to freight transport are; commercial viability of freight transport by rail, the need for integration of freight and land use planning and the lack of reliable data and knowledge about the nature and extent of regional freight issues. (ARC 2006, Summary Auckland Regional Freight Study)
- Road freight is expected to dominate in the foreseeable future despite of efforts to increase freight transport by rail or sea. (ARC 2006, Summary Auckland Regional Freight Study)

3. Assets



(Source: NZ Transport Agency)

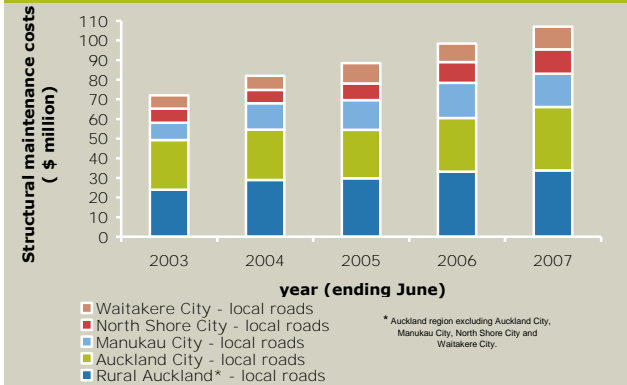
Road length 2007

		Four Cities	Auckland Region	National	Auckland as % of Nation
Local roads	Urban	Auckland: 1,269.4 km Manukau: 1,012.3 km North Shore: 644.1 km Waitakere: 583.2 km	4,226 km	17,251 km	24.5%
	Rural	Auckland: 156.8 km Manukau: 255.0 km North Shore: 41.0 km Waitakere: 202.7 km	3,557 km	64,925 km	5.4%
	Special purpose	Auckland: 0 km Manukau: 0 km North Shore: 0 km Waitakere: 0 km	0 km	507 km	0%
Local roads - total		Auckland: 1,426.2 km Manukau: 1,267.3 km North Shore: 685.1 km Waitakere: 785.9 km	7,783 km	82,683 km	8.7%
State Highways		No data	327 km	10,893 km	3%
All roads		-	8,110 km	93,576 km	8.7%

Assets — continued

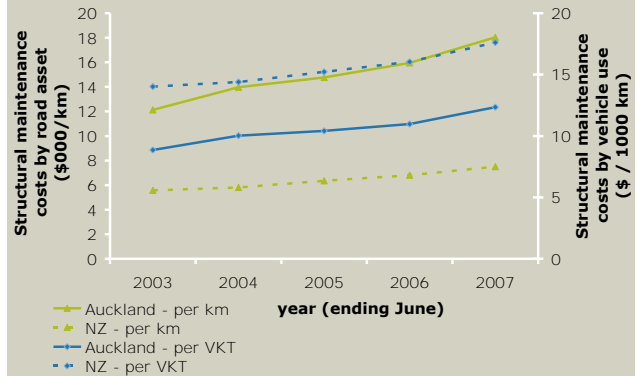
Structural maintenance costs— local roads

(NZTA and approved organisation share for programmes funded through NZTA only)



(Source: Local Authorities, NZ Transport Agency)

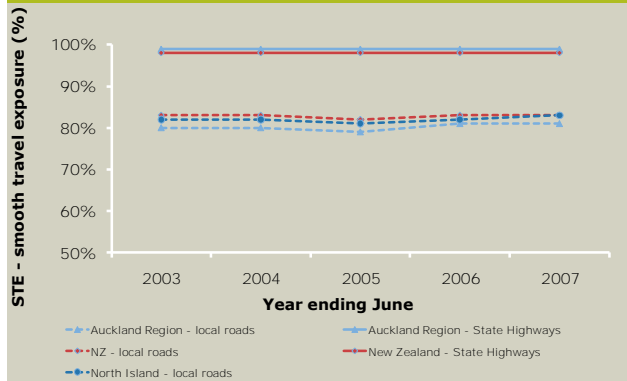
Structural maintenance costs by road assets and vehicle use



(Source: Local Authorities)

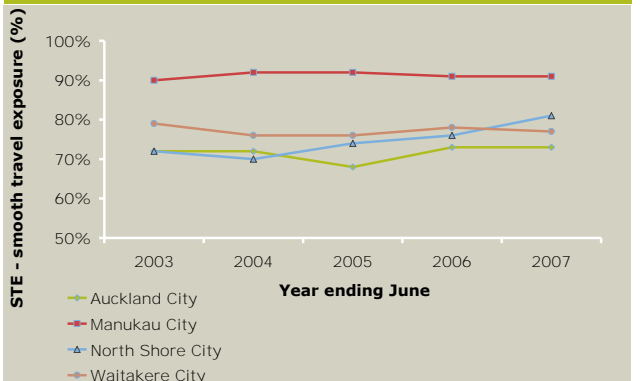
Smooth travel exposure (STE) - region

Note: The higher the smooth travel exposure (STE) % the smoother the network.



(Source: NZ Transport Agency)

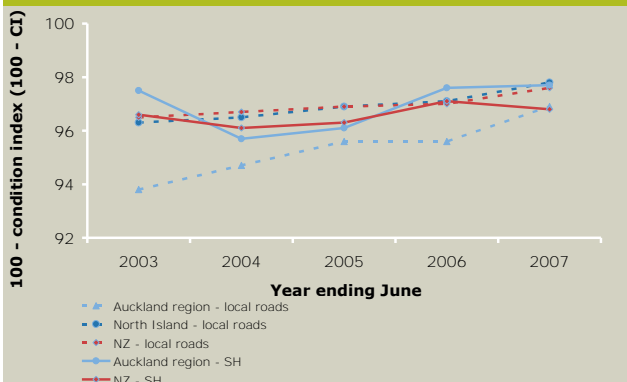
Smooth travel exposure (STE) local roads - Auckland four cities



(Source: Local Authorities)

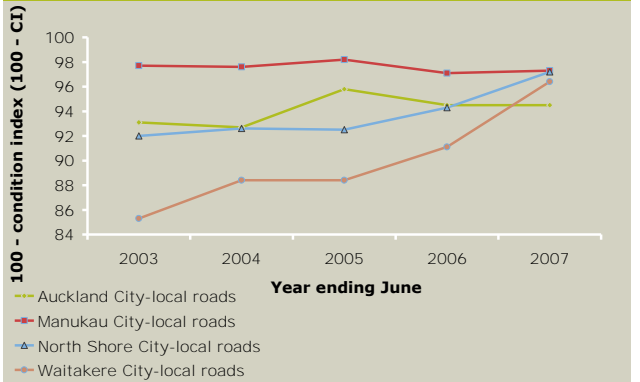
100 — Condition index — region

Note: The higher the 100-condition index (CI) value the fewer the defects in the sealed road surface.



(Source: NZ Transport Agency)

100 — Condition index local roads — Auckland four cities

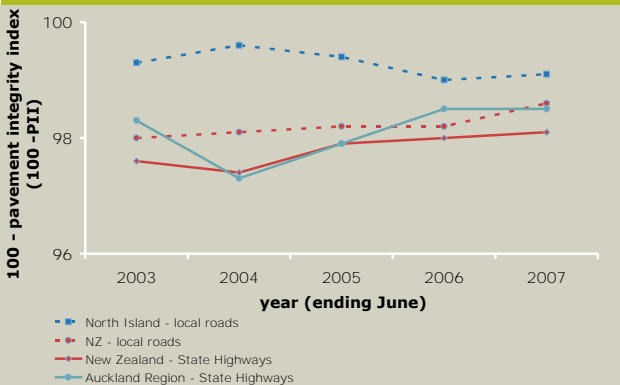


(Source: Local Authorities, NZ Transport Agency)

Assets — continued

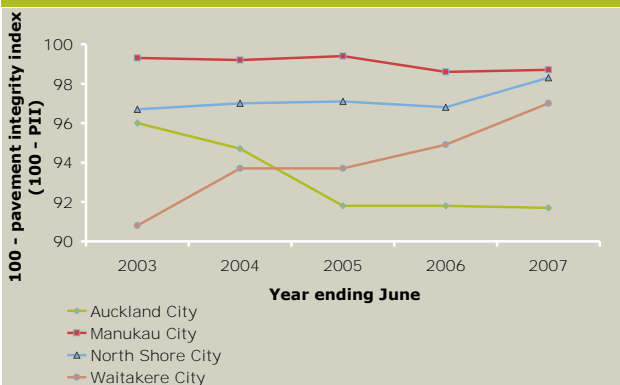
100 — Pavement integrity index

Note: The higher the 100-pavement integrity index (PII) value the better the pavement structural condition.



(Source: Local Authorities, NZ Transport Agency)

100 — Pavement integrity index local roads—Auckland four cities



(Source: Local Authorities)

- The busiest part of the transport network is the north-south motorway system that passes through the centre of the urban area and also serves as a major access to the CBD. This concentrates north-south travel in a corridor which is facing severe capacity constraints and where expansion would pose difficulties (especially regarding structures such as Auckland Harbour Bridge, Newmarket Viaduct, Khyber Pass Viaduct etc.). (RLTS 2005-2016)
- In the Auckland region structural maintenance cost per km are about 2.5 times greater than the New Zealand average. However, when viewed related to the high vehicle use in the region, Auckland's structural maintenance costs fall below the New Zealand average.
- Waitakere's local roads have been upgraded over the last 5 years and now show a comparable quality of sealed road surface to the other 3 cities in the region.
- Progress has been made by Auckland Region and the Crown in the Transport Strategic Alignment Project towards addressing the funding gap identified in the 2005/2006 RLTS. (RLTS Annual Report 2006/07)

Comments

- Underinvestment over recent decades, coupled with a private car culture, has resulted in a transport network unable to keep up with Auckland's rapid growth. (RLTS 2005-2016)
- Since the 1990s there have been limited extensions to the transport system. The notable exceptions are the extension of the rail system to Britomart, the extension of SH1 to Silverdale, the Grafton Gully improvements, the south eastern arterial and the construction of the motorway from Mangere towards the airport. (RLTS 2005-2016)

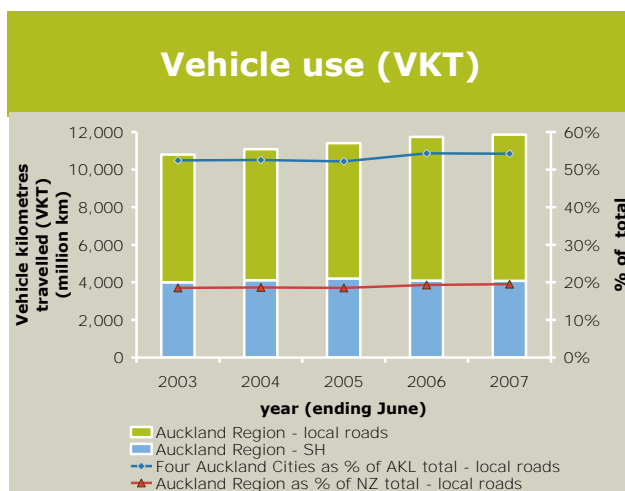
Emerging Issues

- As more of Auckland's roading system operates closer to capacity, the system will be increasingly vulnerable to random traffic events such as crashes and road works. The region already experiences occasional catastrophic congestions and many routes have unreliable travel times. (RLTS 2005-2016)

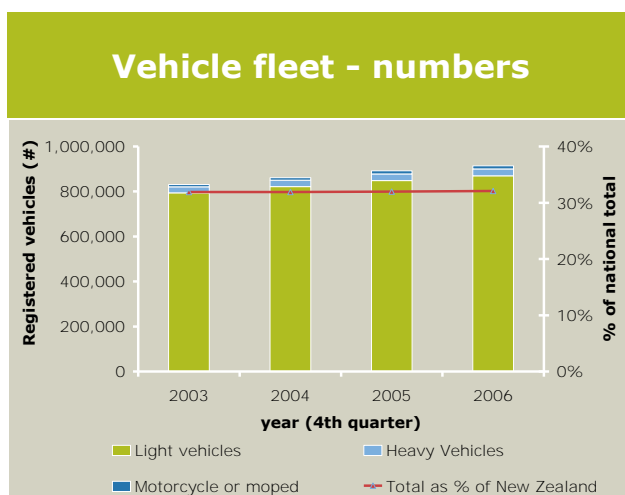
Assets — continued

- Delays in the movement of people and goods are caused by missing links in the strategic and regional arterial network and a general lack of road and people carrying capacity. (ARTA, Auckland Transport Plan, 2007)
- Ongoing improvements to the transport system are needed to avoid increased transport costs that will constrain economic development opportunities. (ARTA, Auckland Transport Plan, 2007)
- The RLTS allocates 62% of the investment funding into roading, 34% into passenger transport and 4% into travel demand management. This represents an increase in investment for passenger transport and travel demand management. (ARTA, Auckland Transport Plan 2007)

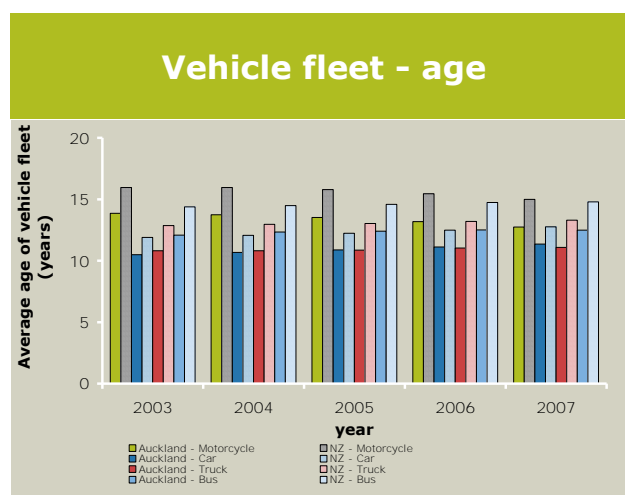
4. Access and mobility



(Source: Local Authorities, NZ Transport Agency)

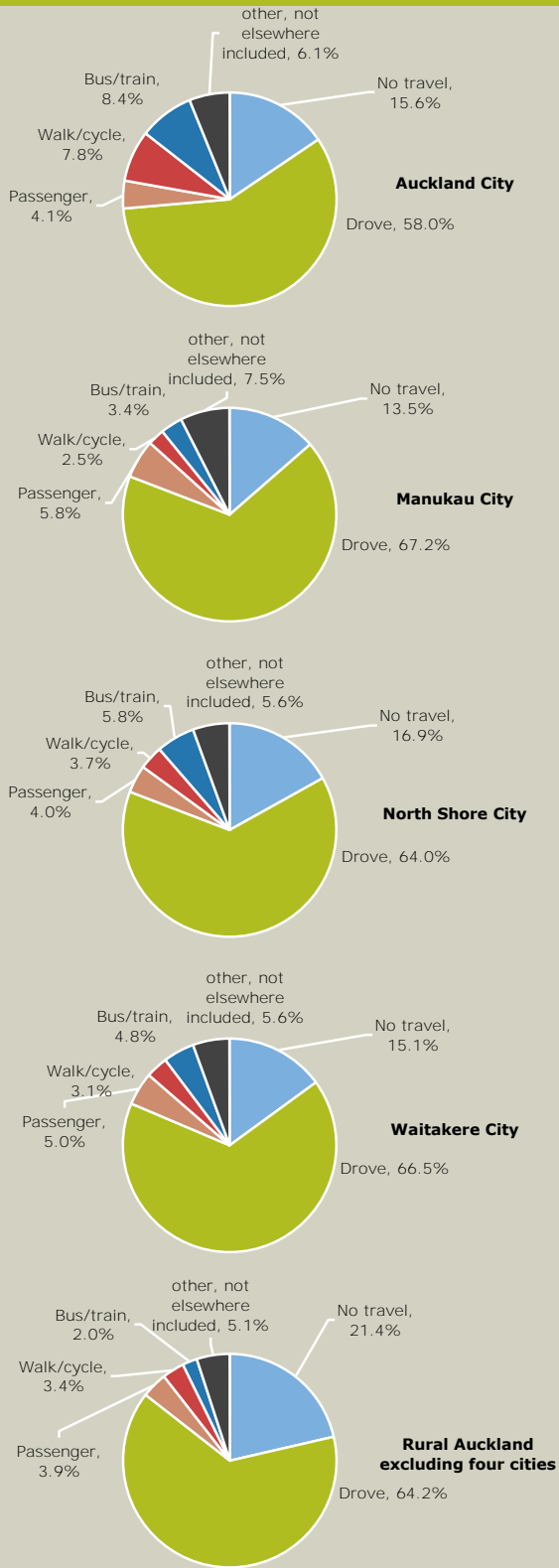


(Source: Motor Vehicle Register)



(Source: Motor Vehicle Register)

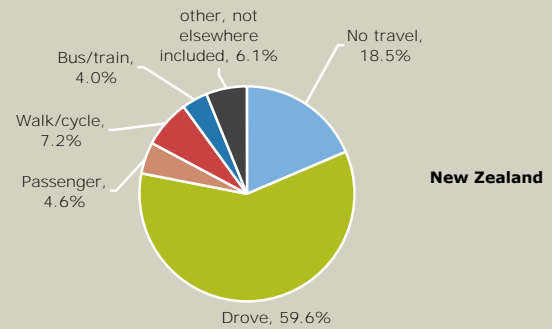
Travel mode share 2006 (travel to work)



(Source: Statistics NZ, 2006 Census)

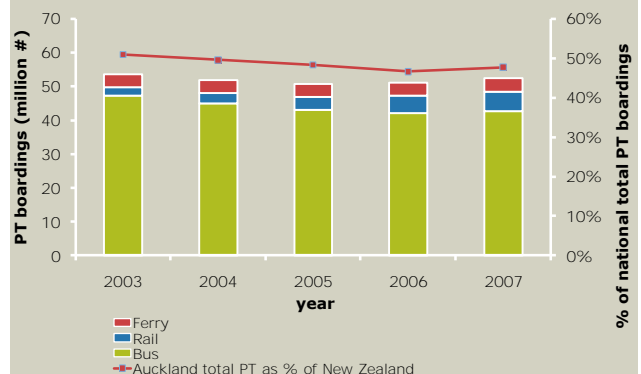
Access and mobility —continued

Travel mode share 2006 (travel to work) —continued



(Source: Statistics NZ, 2006 Census)

Passenger transport boarding numbers



(Source: Auckland Regional Council)

Distance to bus routes

80% of the target community in the Auckland region lives within 500m of a bus route.

(Source: LTP Online Returns)

Access and mobility —continued



(Source: Auckland Regional Council)

Comments

- Car ownership in the Auckland region is one of the highest in the world. There is 1 car for every 2 people, meaning that most adults who are capable of driving, own a car. (RLTS 2005-2016)
- About half the car trips in Auckland are less than 5 km, with 18% of trips less than 2 km. Approximately 64% of all trips less than 2 km during the morning peak are made by car and most of them are to drop children off at school. Many of these trips could be by more active modes such as walking and cycling. (RLTS 2005-2016)
- Approximately 55% of vehicle kilometres travelled on local roads concentrate on roads in the four major cities.
- Public transport works best serving areas of high activity, such as employment centres. Therefore, people using public transport tend to be employed, while the service seems to work least well for those who most need its affordability. (RLTS 2005-2016)
- The Total Mobility Scheme uptake in 2007 was lower than in the four previous years. An alternative wheel chair service (Dial A Ride) is available during weekdays under contract to ARTA. However, a different fee structure applies. (ARTA website: www.arta.co.nz, 04 Nov 2008)
- All trains, 56% of buses and 75% of ferries are now wheelchair accessible. (ARC, RLTS Annual Report 2006/2007)
- The Auckland rail system extends from Pukekohe in the south and from Waitakere in the west to the Auckland CBD (Britomart Transport Centre). There are 3 groups of services: the Western Line, Southern Line and the Eastern Line. (ARTA website: www.arta.co.nz, 23 Oct 2008)
- Total passenger transport boarding numbers peaked in 2003 but then declined. Since 2005 boarding numbers have been slowly increasing again with the 2007 numbers being above the 2003 level. Railway services is the only passenger transport mode featuring strong growth between 2003 and 2007 with boarding numbers increasing by an average of 32% per year. This is thought to be a result of improvements to rail services.
- Currently, over 7,000 Aucklanders choose to cycle to work and school every day. The creation of a Regional Cycle Network is expected to double this number by 2016. (ARTA website: www.arta.co.nz, 23 Oct 2008)
- School travel plans and walking school buses are taking 4,500 car trips off the road each morning. (ARTA website: www.arta.co.nz, 23 Oct 2008)

Access and mobility —continued

Emerging Issues

- The region needs a well designed public transport system, providing more travel choices over a wider area. (RLTS 2005-2016)
- Activities planned over the next 10 years to realise the above include: providing a rail connection to Manukau City Centre; double-tracking the Western rail line; train station and ferry terminal upgrades; completing and extending the Northern Busway; completing the Central Transit Corridor between the CBD and Newmarket; improving bus connections to rail stations and ferry terminals; improving bus efficiency through bus priority lanes, lights etc. The region aims to increase public transport trips to around 100 million trips by 2016 (which means almost doubling **today's PT trips**). (ARTA website: www.arta.co.nz, 23 Oct 2008)
- **The RLTS endorsed a "high passenger transport option" aiming to significantly reduce traffic congestions.** The Passenger Transport Network Plan 2006-2016 was developed to implement this option. Key elements include further development of various transit networks, early introduction of passenger transport to development areas and other improvement of infrastructure. (ARC, RLTS Annual Report 2006/2007)
- The aim of the Rail Development Plan 2006 is to create a high-quality, high-frequency rail service. The vision is to increase the annual rail passenger numbers from about 5.7 million in 2007 to some 30 million by 2030. This will be achieved by the continuation of the core network upgrade (CNU) which includes track extensions, station upgrades, increasing number of trains in service and electrification of the network. (ARC, RLTS Annual Report 2006/2007)
- The central city has the largest concentration of employment opportunities in the region—far more than its population. This generates heavy morning and evening commuter flows. It would be efficient and convenient to serve this area with public transport. (RLTS 2005-2016)
- Legislation is being drafted that will give regions the power to set standards that all commercial PT services will be required to meet over time. (ARC, RLTS Annual Report 2006/2007)

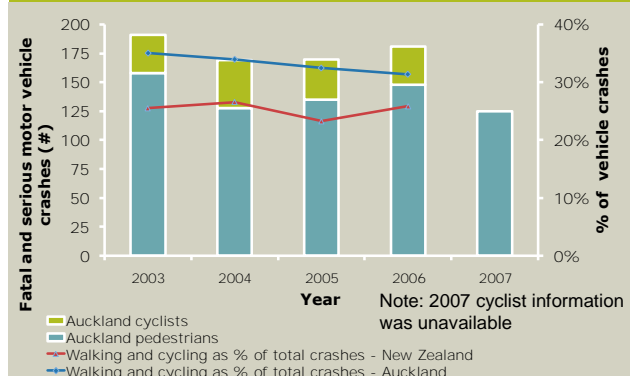
5. Safety

Fatal and serious vehicle crashes



(Source: NZ Transport Agency, CAS database)

Fatal and serious vehicle crashes involving cyclists and pedestrians



(Source: NZ Transport Agency, CAS database)

Fatal and serious road casualties



(Source: NZ Transport Agency)

Comments

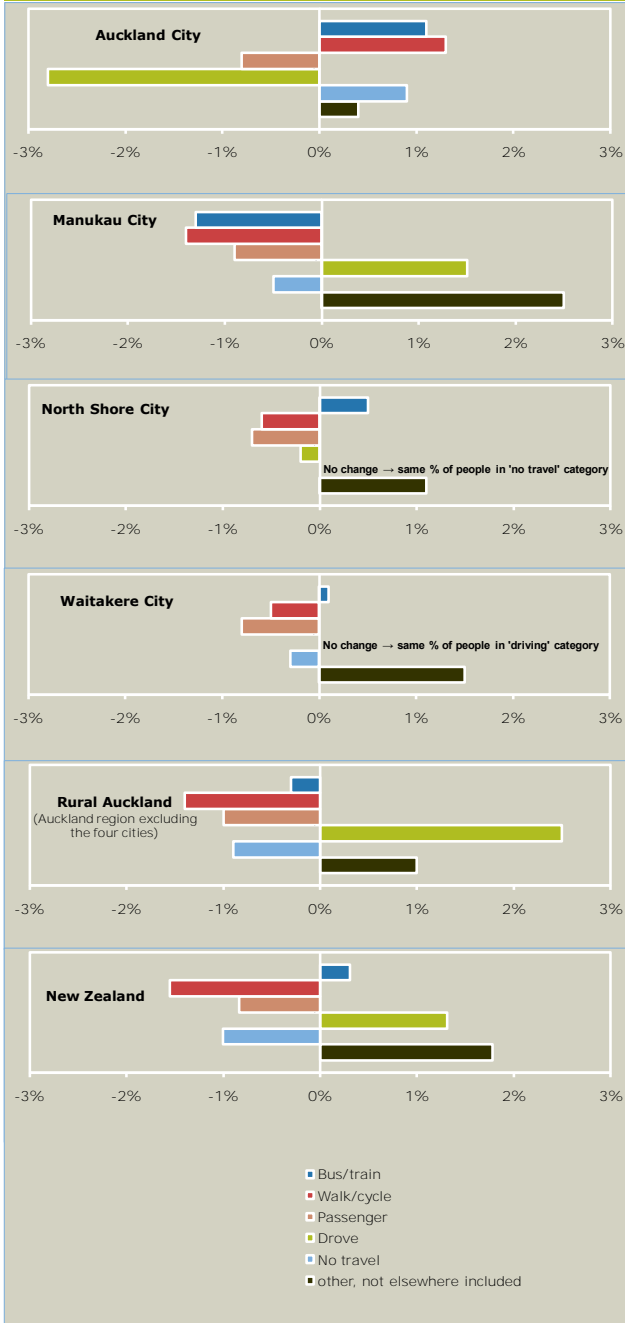
- Road safety is a major issue for the Auckland region. On average 1 person dies and another 10 people are hospitalised every 5 days from crashes on the region's roads. (RLTS 2005-2016)
- More people die on Auckland roads than in any other region in New Zealand, accounting for over 20% of all road deaths. (RLTS 2005-2016)
- The main characteristics of local road crashes with fatal and serious injuries in 2006 were identified as involving vulnerable road users, roadside hazards and poor observation. (NZTA, Briefing Notes Road Safety Auckland Region)
- In 2006 the community perceived private transport modes to be safer than public transport modes. Cycling is thought to be the least safe mode of transport. (RLTS Annual Report 2006/2007, ARC)

Emerging Issues

- Real or perceived security concerns around the passenger and active transport modes could impede the uptake of these modes and need to be addressed. (ARTA, Auckland Transport Plan 2007)
- The Auckland Regional Road Safety Plan is scheduled to be launched in December 2008. The draft plan aims to reduce the annual number of fatal and serious injury crashes to 408 or less by 2010. Other goals aim for safety improvements relating to speed, alcohol, pedestrians, cyclists, intersections, restraints and passenger transport. The goals will be achieved through a combination of enhanced safety management, engineering enforcement and further development of a safety culture. (ARTA website: www.arta.co.nz, 10 Dec 2008)
- In the Draft Auckland Regional Road Safety Plan emerging issues have been identified as: cyclists and motorcyclist safety, speed culture and illegal racing, beach driving, inappropriate use of seatbelts for children, driver distraction (e.g. mobile phone use) and the need to integrate transport planning with population growth and land use planning. (ARTA, Draft Regional Road Safety Plan)

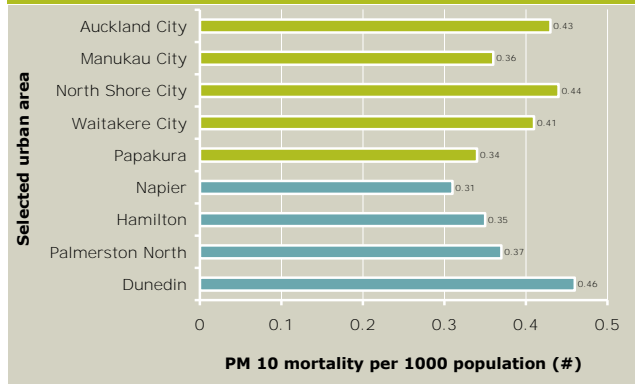
6. Health and Environment

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



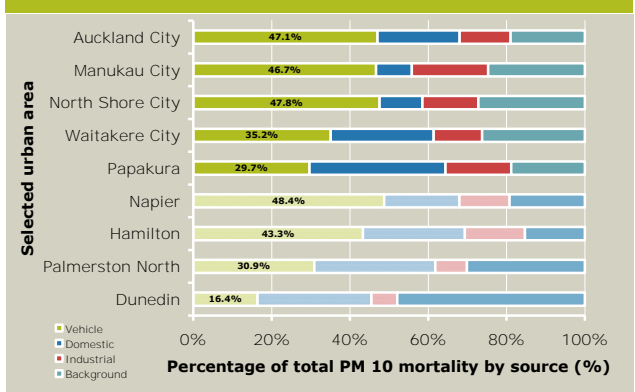
Note: The NZ Transport Agency has serious doubts about data contained in the report *Health and air pollution in New Zealand*. However, for the completeness of this document the data in the following graphs was sourced from this report.

PM10 air pollution – mortality per 1000 population



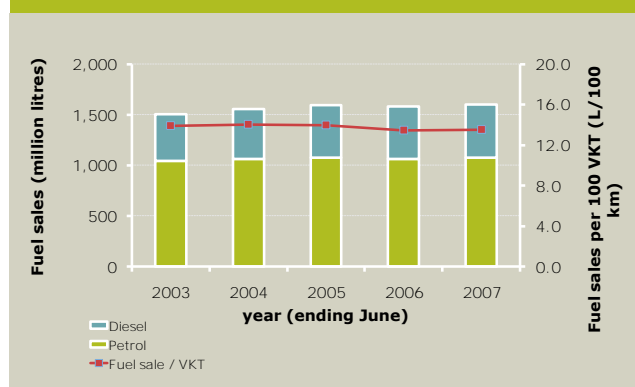
(Source: Health and air pollution in NZ, 2007 - research funded by Health Research Council of NZ, MfE, MoT)

Sources of PM10 mortality



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

Regional fuel sales



(Source: Calculated by Auckland Regional Council from information sourced by ARC and Statistics New Zealand)

Health and Environment— continued

Comments

- The great majority of people in the region drive to work (>60%). Active modes of transport (walking & biking) and the use of public transport seem relatively popular within Auckland City, but hardly find interest amongst inhabitants of the remaining region.
- In Auckland City the share of people walking or cycling to work increased between 1996 and 2006 by 1.3%. Over the same time period the share of people choosing active modes declined while driving increased in the remaining district.
- Fuel sales have increased significantly since 1990 with diesel sales being up by 180% and petrol sales being up by 44%. However, fuel sales for both fuel types appear to have levelled off in 2005.
- The first vehicle emissions testing station in New Zealand was opened at Browns Bay in June 2007. More have opened since. (<http://www.zeroe.co.nz/testing-stations.htm>)
- The increasing reliance on private cars for short trips rather than active modes could lead to health problems. (ARTA, Auckland Transport Plan 2007)

Emerging Issues

- Although the average levels of most of the key air pollutants have decreased since 1999, peak levels still exceed the Air Quality National Environmental Standards (AQNES) which were introduced in 2005. National as well as regional measures to reduce vehicle emissions will be needed. (RLTS Annual Report 2006/2007, ARC)
- In the Auckland region motor vehicles are the greatest single contributor to urban air pollution: 48% PM₁₀; 54% CO₂; and 83% CO and NO_x. (Airfacts 15, ARC 2008)
- The Air Quality Management Strategy for the Auckland urban airshed includes a set of reduction targets and proposed strategies aiming to meet AQNES by 2013. (Airfacts 15, ARC 2008)
- About 250 Aucklanders die prematurely every year as a result of vehicle sourced PM₁₀ emissions. (Airfacts 15, Auckland Regional Council 2008)
- The Auckland Sustainability Framework (ASF) was endorsed by the Regional Growth Forum in 2007 as the overarching sustainability framework. It provides mechanisms to integrate and align all other strategies and actions towards achieving a common set of integrated sustainability goals. The ASF was **developed by all of the region's councils** working with central government, mana whenua and the academic, business and community sectors. (RLTS Annual Report 2006/2007, ARC)
- A Sustainable Transport Plan (STP) was released in February 2007. It sets out a 10 year programme to assist in achieving the travel demand management targets set in the RLTS. The STP contains walking and cycling action plans, school, workplace and tertiary travel plans as well as neighbourhood accessibility plans and land use guidelines for development. (RLTS Annual Report 2006/2007, ARC)