2005/2006 Annual Report on the Regional Land Transport Strategy

September 2006

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2005/2006 Annual Report
on the Regional Land Transport Strategy

FOR FURTHER INFORMATION

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Highlights

- Regional public transport patronage showed exceptional growth in the 2005/06 year. Peak passenger trips increased by 1.9 million due to significantly increased bus and train patronage. Off-peak passenger trips by all public transport modes also increased during 2005/06, by 4.6% or over 700,000 trips.
- The total number of cars travelling into the Wellington CBD during the morning commuter period decreased by 8% in 2006.
- Greater Wellington's road congestion dropped to 2003 levels across most periods of the day. All-day average congestion decreased 17% between 2005 and 2006 or from 25 seconds to 21 seconds delay per kilometre travelled.
- Road crash numbers continue to increase in general throughout the region. There has been an increase in total recorded casualties for all vehicle types since 2001 and total crash numbers have trended upwards from the year 2000. Regional casualties per 100,000 population figures remain lower than those of the Auckland and Canterbury regions.
- Cycle casualty numbers for the region increased to 112 in 2005, the highest toll for a decade.
- Regional fuel consumption increased by 1.2% between 2004 and 2005, slightly below the previous year's increase in fuel sales of 1.6%. Consequently transport-generated greenhouse gas emissions have also increased.
- The greater Wellington region showed much slower economic growth of 0.5% over the past year which was lower than the New Zealand average (1.0%) and that of Canterbury (0.9%) but above the Auckland region (0.3%).
- The private car continues to be the dominant mode of transportation.

2006 Regional land transport report card

The following report card has been developed to identify clearly our desired key outcomes and to show how well we are doing. It highlights that while good progress is being made in some areas, significant challenges remain unanswered.

	Desired Outcome	2006 Result	2005 Result	2004 Result	2003 Result
Improve access	Reduced road congestion	✓	✗	✗	✗
	Increased road accessibility	—	✗	✗	✗
	Increased public transport accessibility	—	✓	✓✓	✓✓
Implemented cost-efficient projects		✓✓	✓✓	✓✓	✓✓
Improved safety		✗✗	✗✗	✗✗	✗
Improve sustainability	Reduced fuel use and emissions	✗	✗	✓	✗
	Increased public transport use	✓✓	✓✓	✓	✓✓
	Matching adjacent capacity	?	?	?	?
	Reduced emergency risk	—	?	✓	?
	Increased walking and cycling	✓	✓	✓	✓✓

✓✓	Significant improvement
✓	Improvement
—	No change
✗	Decline
✗✗	Significant decline
?	Insufficient information

1 Background to the report

Statutory context

Regional Land Transport Strategy

The Land Transport Act 1998[1] requires every regional council to establish a Regional Land Transport Committee (RLTC). This committee must prepare a Regional Land Transport Strategy (RLTS). The current RLTS[2] was approved in November 1999, fulfilling legal obligations for the period 1999 to 2004 and setting out objectives, policies and plans for the 20 years to 2019.

The RLTS is a 'living' document and is currently under review. The new RLTS will be released for consultation in late 2006 and is expected to be adopted by mid 2007.

Since the release of the 2004/05 Annual Monitoring Report (AMR), the Regional Travel Demand Management Strategy (TDM Strategy 2005) has been adopted. The Western Corridor Transportation Study culminated in the adoption of the Western Corridor Plan (2006). Other studies to commence include the Ngauranga to Airport Strategic Transport Study and the North Wellington Public Transport Study. Also under development is the Regional Passenger Transport Plan.

Annual Monitoring Report

The Land Transport Act 1998 also states that an AMR must be prepared on progress towards implementing the RLTS. The report must be available within three months of the end of the financial year to which it relates. For Greater Wellington Regional Council (GWRC) this is 30 June and hence the AMR is due 30 September.

All reported indicators relate to the financial year ending at 30 June unless otherwise stated.

AMR contents

Enhanced monitoring

The law offers little specific guidance on what an AMR should contain. GWRC sees value in monitoring that goes beyond minimal legal requirements, reporting on trends in a range of indicators that drive transportation demand, both within the region and across its boundaries. Extensive reporting on road and public transport network performance, and on environmental measures, yields a detailed picture of regional performance, sustainability and trends.

Benchmarking ourselves against New Zealand's other two largest regions with significant transport issues, Auckland and Canterbury, gives some indication of regional New Zealand transport issues. This allows us to see how well we are doing at a national level.

A regional perception survey first carried out in 2003 has added further value to the largely objective data presented by offering an understanding of public perceptions of transport-related issues. The 1,000-person telephone survey was repeated by National Research Bureau Ltd in June 2004 and 2006. Auckland Regional Council (ARC) carries out a very similar two-yearly survey allowing further comparisons to be made between the two regions.

An 800-person 'active modes' survey was also repeated in 2006 updating 2001 and 2004 information on short trips made by walking and cycling. Provisional relative risk by transport mode per million trips is also given (updated national data 2002–2005).

New indicators to feature in the 2005/06 AMR include:

- Population age distribution: **Figure 2, p.4**
- Petrol price associated with car running costs: **Table 6, p.30**
- Total Mobility scheme expenditure (GWRC): **Figure 67, p.34**
- Carbon dioxide emissions: **Figure 90, p.45**
- Air quality (nitrogen dioxide plus two new monitoring stations): **Figures 92–97, pp.46–47**

Travel Demand Management Strategy targets

With the adoption of the TDM Strategy in 2005 the following 2005 to 2016 targets have been included in this report:

- Perceptions about the state of congestion: **Figure 26, p.17**
- Vehicle occupancy: **Figure 38, p.22**
- Carbon dioxide emissions: **Figure 90, p.45**

[1] As amended by the Land Transport Management Act 2003 and the Land Transport Amendment Act 2004

[2] The Wellington Regional Land Transport Strategy 1999–2004 (Wellington Regional Council, 1999)

Long-Term Community Council Plan targets

Through the development of its 2006–2016 Long-term Community Council Plan (LTCCP) GWRC has developed a series of long-term targets relating to transport sustainability. The targets featured in this report are:

- Short trip active mode (cycling and walking) use: **Figures 15 & 16, p.13**
- Road congestion: **Figure 25, p.16**
- Fuel consumption: **Figure 89, p.44**
- Air quality: **Figures 92–97, pp.46–47**

The inclusion of these and the TDM Strategy targets is a step towards integrating LTCCP and RLTS targets.

In some cases, data demonstrates that we are on the way to achieving set goals such as active mode choice for short trips up to 1km and quality of the region's air. This year the road congestion level target was almost met and the perception of the level of congestion target was met convincingly. However in other areas such as fuel consumption and associated carbon dioxide emissions, vehicle occupancy level, and the use of active modes for short trips between 1 and 2 km, targets have not been met.

Section outlines

Section 2 presents demographic variables driving regional land transport demand.

Section 3 presents measures of passenger and freight transport activity across Wellington regional boundaries.

Sections 4 to 8 describe regional transportation network performance in respect of each RLTS objective area:

- Accessibility and economic development
- Economic efficiency
- Affordability
- Safety
- Sustainability/environment.

Section 9 details responsibility for project and policy implementation. Progress in implementing RLTS projects and policies is not included this year as a new methodology is under development. Project and activity status to June 2007 will be reported in the 2006/07 AMR.

Section 10 summarises progress in and identifies obstacles to implementing the strategy.

Section 11 presents conclusions of the report.

Information availability

Most agencies co-operated in supplying information for the monitoring programme and GWRC gratefully acknowledges this. Sometimes however, relatively straightforward information proved to be difficult or impossible to obtain. Only data that is made available can be reported.

Collecting key information on air and surface water quality is expensive. The first regional transport-focused air quality monitoring station (located at the intersection of Victoria and Vivian Streets, Wellington) was commissioned in early 2004. Two further mobile air quality monitoring stations were commissioned and deployed during the past year providing much enhanced air quality data in relation to transport emissions. We continue to investigate surface water monitoring options and remain optimistic a programme will be established within the next few years.

Each AMR stands alone as information availability improves or data is replaced retrospectively. Therefore previous reports are not entirely compatible.

2 Regional demographic indicators

This section sets out and discusses trends in the following regional demographic variables driving transport demand:
Resident population
Population age distribution
Occupied dwellings
Unemployment
Regional economic activity
Building activity
Vehicle ownership per household
Car registration

Indicators

Resident population

Definition: The graph shows 'usually resident' population by district. The population forecasted in 2016 is also given. Forecasted population data is sourced from the medium series of the Statistics New Zealand subnational population projections, 2001 (base) – 2006 update, released February 2005. As the census is conducted five-yearly this indicator will be updated with 2006 data in the 2006/07 AMR.

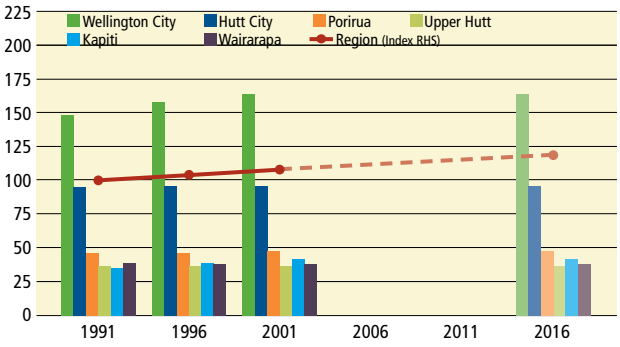

Figure 1: Resident population, actual and projected (000), by district. Index: 1991 = 100. Source: Statistics New Zealand

Interpretation: The total 2001 regional population was 423,700 with 38% living in Wellington City. Thirty-two percent were resident in the Hutt Valley, 11% in Porirua, 10% in Kapiti and 9% in Wairarapa.

Projected population changes show approximately 13% growth from 2001 levels over the region to a total of 480,000. Kapiti Coast is expected to experience an increase of more than 25%, equating to 10,000 people. The Wellington City population will increase the most in actual number (by 33,000) at over 20% and Porirua will grow by almost 10% or over 4,000. Though varied in scale, all districts in the region are forecast to grow in population by 2016.

Table 1 shows retrospective growth rates by district over the 10 years to 2001. Average annual growth since 1991 in Kapiti is seen at 2% while the Hutt Valley and Wairarapa experienced de-population. Regional population growth has averaged 2,343 people per annum since 1991, with a slight slowing since 1996. The overall growth rate 1991 – 2001 was 0.6% per annum.

District	1991 to 1996		1996 to 2001		1991 to 2001	
	Average annual change (over 5 years)		Average annual change (over 5 years)		Average annual change (over 10 years)	
Wellington City	1,856	1.2%	1,221	0.8%	1,538	1.0%
Hutt City	198	0.2%	-79	-0.1%	60	0.1%
Porirua City	16	0.0%	149	0.3%	83	0.2%
Upper Hutt City	-34	-0.1%	-69	-0.2%	-51	-0.1%
Kapiti District	729	2.0%	772	1.9%	751	2.0%
Wairarapa Combined	-17	0.0%	-60	-0.2%	-38	-0.1%
Wellington Region	**2,749**	**0.7%**	**1,934**	**0.5%**	**2,342**	**0.6%**

Table 1: Population growth rates, by district. Source: Statistics New Zealand

Comments: Population growth in the region is modest. Population growth fuels regional demand for travel. Kapiti's faster growth is partly driven by families relocating from Wellington and elsewhere in the region. This strong growth will create further demand for travel both within Kapiti Coast and between Kapiti and Wellington, exerting more pressure on existing transport networks.

Population age distribution

Definition: The graph shows the distribution of the population in broad age groups for the Wellington region. Information to 2001 is actual census data and beyond this date population projections are shown. Census data is collected five-yearly, so this indicator will next be updated in the 2006/07 AMR.

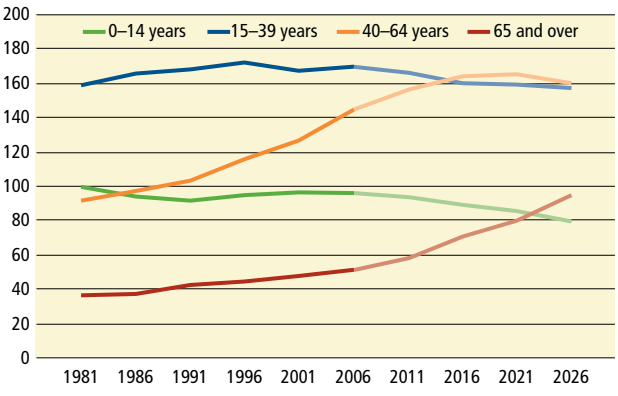

Figure 2: Age distribution by broad age groups (000), Wellington region. Source: Statistics New Zealand

Note: At 30 June; 1981–2001 data are estimated; 2006–2026 data are projected using the medium series of the subnational population projections, 2001 (base) – 2006 update, released February 2005.

Interpretation: Statistics New Zealand forecasts indicate that by 2016, the population of the 0-39 year age groups will decrease by around 5% from that of the same groups in 2001. Conversely, the 40+ age groups will increase significantly in number by 2016, up by over 30% from 2001.

Comments: By 2016, the older working age group (40-64 years) and the population aged 65 years and over are together, forecast to make up almost 50% of the total population. Currently (2001) these groups represent 40% overall.

Occupied dwellings

Definition: The graph shows occupied dwellings by district. Census data is collected five-yearly and this indicator will next be updated in the 2006/07 AMR.

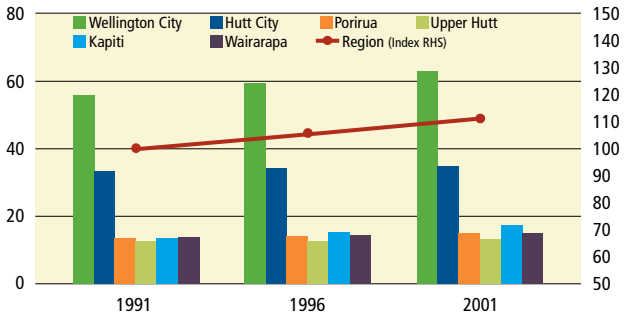

Figure 3: Occupied dwellings (000), by district. Index: 1991 = 100. Source: Statistics New Zealand

Interpretation: The number of occupied dwellings in the region has increased by over 5% in 1996 and 2001. **Table 2** shows changes in the average number of people per occupied dwelling over the past three censuses.

District	Number of persons per occupied dwelling		
	1991	**1996**	**2001**
Wellington City	2.7	2.7	2.6
Hutt City	2.9	2.8	2.8
Porirua City	3.4	3.3	3.2
Upper Hutt City	3.0	2.9	2.7
Kapiti District	2.6	2.5	2.4
Wairarapa Combined	2.8	2.7	2.6
Wellington Region	**2.8**	**2.8**	**2.7**

Table 2: Number of persons per occupied dwelling, by district. Source: Statistics New Zealand

Unemployment

Definition: The graph shows district labour force status, with unemployment as a percentage of population. Census data is collected five-yearly and this indicator will next be updated in the 2006/07 AMR.

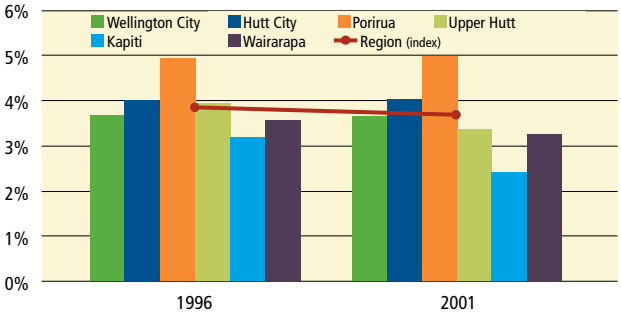

Figure 4: Unemployment, by district. Source: Statistics New Zealand

Interpretation: A downward regional trend masks inter-district differences. Unemployment rates have fallen most markedly in Upper Hutt, Kapiti and Wairarapa, while Porirua experienced a small increase in number unemployed. Porirua unemployment rates are the highest in the region.

Comments: Transportation demand is likely to be inversely correlated with unemployment rates. Higher levels of unemployment result in lower levels of transportation demand.

Economic activity

Definition: The graph shows a composite measure of economic activity that includes: business and consumer confidence; retail sales; new motor vehicle registrations; regional exports; registered unemployment; building consents; real estate turnover; job advertisements; accommodation; and results from the Household Labour Force Survey.

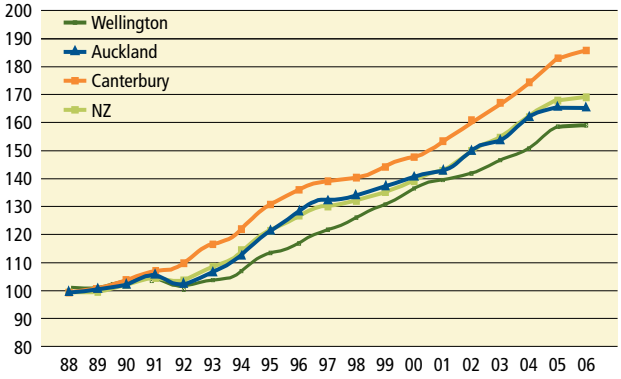

Figure 5: Economic activity, national and by region. March quarter. Index: 1987 = 100. Source: National Bank

Interpretation: After strong growth evident the year previous, economic activity has steadied in 2006. The Wellington region has experienced 0.5% (c.f. 5.5% in 2005), Auckland 0.3% (c.f. 1.8% in 2005) with the Canterbury region the strongest at 0.9% (c.f. 5.0% in 2005). All are below the New Zealand average of 1% (c.f. 3.4% in 2005).

Comments: Although steady regional growth has been shown between 1987 and 2005 by each region featured, the greater Wellington region has experienced the least overall increase in economic activity. Economic growth increases the demand for movement of people and freight. The current levelling off in activity will result in a lesser impact on the transport network.

Building activity

Definition: The graph shows the number of new residential and non-residential buildings in the region. The construction value is also given as an index. Figures are available monthly and relate to the year ended March.

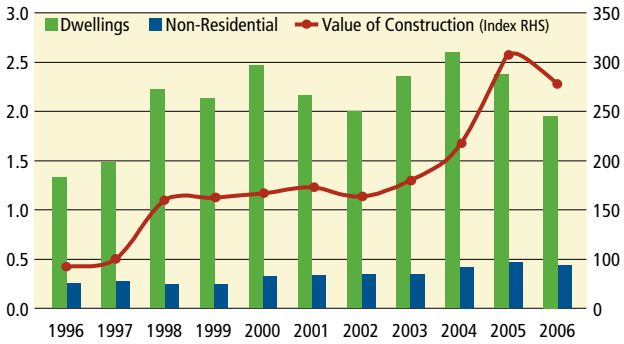

Figure 6: Building activity (000) and construction value, Wellington region. Year ended March. Index: 1997 = 100. Source: Statistics New Zealand

Interpretation: The number of building consents issued in the year ended March 2006 decreased by 15% across the region, driven by a decline in consents for residential properties. This decline in residential building consents and that of 2005 (9%) has reversed the significant growth shown from 2002–2004. Non-residential consents have decreased by almost 6% in 2006 after substantial increases over the two previous years.

After increasing in value by more than three times in 2005, the value of non-residential consents issued in 2006 has decreased by almost 7% in 2006. The 'value of construction' index has dropped accordingly.

Comments: The construction industry generates demand for transport as well as being a 'barometer' of regional economic activity. Demand for travel (both freight and passenger) is positively correlated with regional economic activity.

Whilst the value of construction is a useful measure of total construction activity, it should be noted that this is susceptible to variation in the unit costs associated with the construction sector, which do not necessarily have any implications for levels of transportation activity.

Vehicle ownership per household

Definition: The graph shows the average number of cars per household by district. Census figures are available five-yearly and this indicator will next be updated in the 2006/07 AMR.

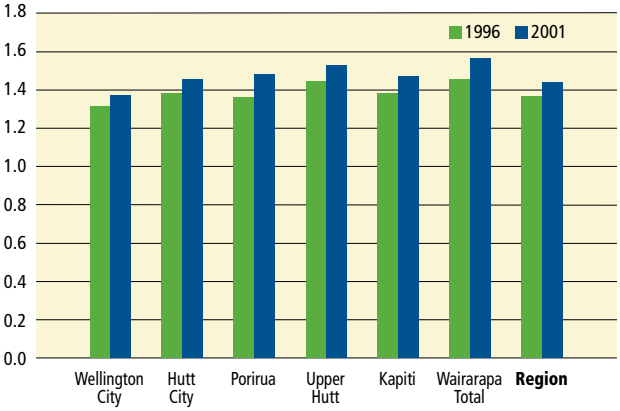

Figure 7: Average car ownership per household, Wellington region. Source: Statistics New Zealand

Interpretation: Over the five years from 1996 to 2001 the average number of cars per household rose from 1.37 to 1.44 or by 5%. Levels of car ownership correlate inversely with urban density: the lowest levels are in Wellington City and the highest in Wairarapa. Average car ownership per household grew in every district in 2001 with the highest rate (9%) in Porirua and the lowest in Wellington City (4%).

Comments: Increasing car ownership leads to greater car use and more demands on the road network which in turn, has a negative effect on the environment.

Car registration

Definition: The graph shows registered car numbers in Wairarapa and the rest of the region ('Wellington') recorded by Land Transport New Zealand.

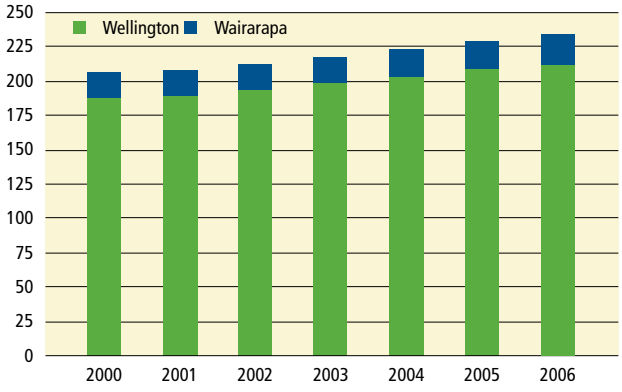

Figure 8: Car registrations (000), Wellington region. Source: Land Transport New Zealand

Interpretation: Over the six years from 2000 to 2006, the total number of cars registered rose from 207,136 to 233,981 or by 13%. This increase is consistent over the two areas for which data is depicted in the graph. Growth in car registrations for the region in 2006 is at approximately 2% which is again consistent with the increase in the Wellington and Wairarapa sub-regions.

Comments: The number of cars registered in the region continues to grow indicating an increase in availability of private cars.

Demographic summary

Demographic indices

Definition: The graph shows movement in demographic indices and a composite index. All are expressed relative to a base year of 1996.

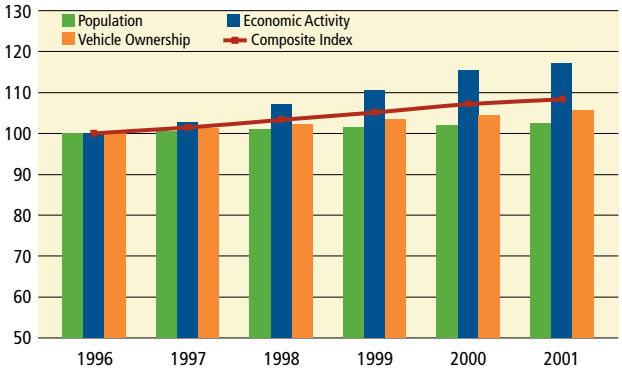

Figure 9: Demographic indices, Wellington region.
Index: 1996 = 100

Interpretation: Modest growth of 8% occurred between 1996 and 2001.

Regional level

Over the five years from 1996 to 2001, the regional population grew by 2.5% while vehicle ownership increased by 6%. The continuing relatively low cost of vehicle operation and increasing economic activity at 17% over the same period will have influenced this comparison.

The rate of growth in the composite index (the average of three indices: population, economic activity and vehicle ownership) was 8% between 1996 and 2001.

As the focal point of economic activity and home to 38% of the 2001 regional population, Wellington City has a strong influence on regional figures.

Sub-regional level

Population has declined in Wairarapa and Upper Hutt, while Kapiti's population has grown. There has been little change in unemployment rates, which remain highest in Porirua and elsewhere show a steady decline. Growth rates of total vehicle ownership by household are lowest in Wellington city, reflecting a trend for inner-city apartment living and proximity to employment. Conversely census data indicates that the highest rates and growth of vehicle ownership are in the more remote Wairarapa and Upper Hutt areas.

The highest rates of growth continue in the western corridor serving Kapiti, while Wairarapa and Hutt Valley growth remains relatively subdued. A trend towards CBD living can be expected to suppress growth in travel demand. This may be offset by the desire of many to live outside the Wellington urban area, increasing demand for peak-time commuter travel.

2

Outlook

The aging trend of the population is expected to continue with the 40+ age group reaching more than 50% of the total population by 2026.

To a large extent transport demand is driven by factors over which the RLTS has no control, such as fuel prices and economic activity. It is expected that the Wellington Regional Strategy will influence the future demographic and economic patterns of the region.

Implications for transportation planning

Transportation demand is expected to rise markedly driven by increasing car ownership, modest population growth and economic activity. Current initiatives to discourage peak-period car use (e.g. Travel Planning) rely mainly on a voluntary change in travel behaviour only and are anticipated to affect the demand for travel at the margins. Ultimately tolls, congestion pricing and parking fees will be needed to give travellers direct financial incentives to change their behaviour and ensure the network can efficiently accommodate transportation demand.

Inter-regional travel indicators

3

This section sets out and discusses trends in total travel to and from the Wellington region according to the following indicators:
Inter-regional passenger movements
Inter-regional freight movements

Indicators

Inter-regional passenger movements

Definition: The graph shows a passenger movement index. Figures relate to numbers of people crossing regional boundaries by air, sea (inter-island ferries only), rail or road (buses are excluded because information is unavailable). Because some data is commercially confidential, absolute numbers are not given. Some double counting of passenger movements will be included (e.g. passengers may arrive in the region by car and leave by ferry). An average vehicle occupancy factor of 1.7 has been applied to road traffic counts. Wellington airport's function as a domestic network hub results in many movements not destined for or originating in the region, but counted as crossing regional boundaries.

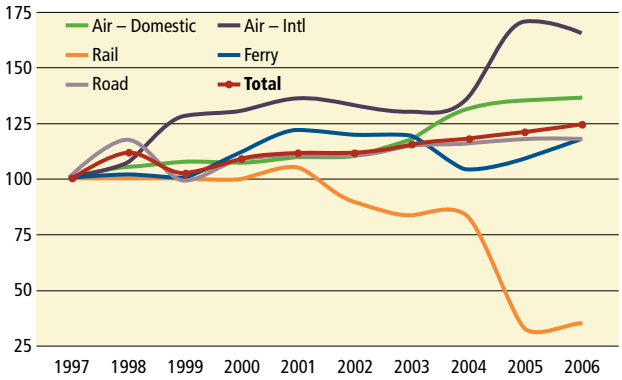

Figure 10: Inter-regional passenger movements. 1997 = 100. Sources: Wellington International Airport; Toll NZ; Strait Shipping; Transit New Zealand

Note: Air passenger figures refer to year ended March. Rail passengers include The Overlander and Northerner services until November 2004 when The Northerner rail service ceased operation; 2005 rail does not include four months of Northerner operation. Passengers by road refer to the previous calendar year.

Table 3 shows absolute numbers of travellers. Figures for the inter-island ferries (operated by Strait Shipping and Toll NZ) and inter-regional passenger trains (operated by Toll NZ) have been omitted to protect commercial confidentiality.

Mode	Number of persons (million)
Air – domestic	4.0
Air – international	0.6
Rail	Not available
Ferry	Not available
Road (except buses)	11.1

Table 3: Number of inter-regional passengers by mode. Sources: Wellington International Airport; Transit New Zealand

Note: Air = April 2005 – March 2006; Road = 2005 calendar year.

Interpretation: Since 2003 road has continued to be the dominant land transport mode for passenger movement to and from the region. The growth of air travel can be volatile, affected by airline industry changes, industry competition and fuel prices.

Domestic air passenger movements have grown by 35% between 1997 and 2006, despite a very slight drop from 2005. The growth rate of international passenger movement by air over the same period is 64% led by a sharp increase of almost 29% between 2004 and 2005. However, a decrease of nearly 4% on 2005 international air passenger numbers was experienced in 2006.

Inter-regional rail passenger numbers have declined since 2001, with an overall decrease of 21% from 2001 to 2004. A marked decrease in patronage of 63% is shown between 2004 and 2006, coinciding with the Northerner ceasing operation in 2005. Recent increases in ferry patronage have resulted in current passenger numbers at the highest level since 1997 (an overall increase of 22%). Growth of 11% was experienced between 2005 and 2006. Passenger numbers by road show a slight increase of less than one percent from 2005 to 2006, with 22% growth since 1997.

Overall, there is a steady growth trend in passenger movements averaging 2.7% per annum since 1997.

Comments: Road-based travel is vital to the region. Despite this, the two main routes, state highways 1 and 2 are vulnerable to closure in the event of landslides and earthquakes. Earthquake hazard also poses a risk to the region's second largest passenger mover, air, with the main Wellington international/domestic airport being located on uplifted land.

3

Inter-regional freight movements

Definition: The graph shows a freight movement index. Freight is measured in a range of non-comparable units. For this reason, and because some data is commercially confidential, absolute numbers are not given. The aggregate measure is based on several assumptions and is for indicative purposes only. Much recorded freight does not have a regional origin or destination and is counted twice in the figures. For example, a container of logs may enter the region by road and leave by sea. Air freight figures are unavailable.

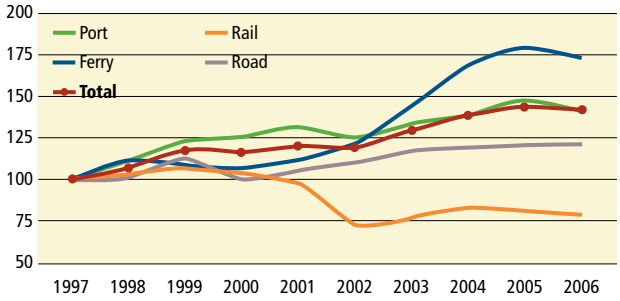

Figure 11: Inter-regional freight movements. 1997 = 100. Sources: CentrePort; Strait Shipping; Transit New Zealand; Toll NZ

Note: Road freight refers to the previous calendar year.

Interpretation: Inter-regional freight movement by ferry has shown a steady increase from 2000 followed by a significant growth rate totalling 43% since 2002. Some of this growth may be attributed to the addition of the Strait Shipping Bluebridge service in 2002. Over the nine-year period depicted in **Figure 11**, the total growth rate of ferry freight is 74%. Conversely, rail freight has shown an overall decline of 22% since 1997 despite experiencing modest growth in 2003 and 2004. Freight movement through the port and by road has also shown steady growth since 2002 of 12.5% and 11.0% respectively.

In 2006 all freight modes except road declined slightly. Overall there is a positive trend with the aggregate measure indicating growth of 4.6% per annum over the measured period.

Comments: Road is the key freight transport mode in the region with strong freight movement growth occurring over time. This reinforces the need to maintain and improve the quality and reliability of the state highway network.

Inter-regional travel summary

Inter-regional travel indices

Definition: Figure 12 shows movement in indices for inter-regional passenger and freight movements and a composite index. The index is expressed relative to a base year of 1997 and has not been weighted to reflect the equal importance of both passenger and freight movements in the region.

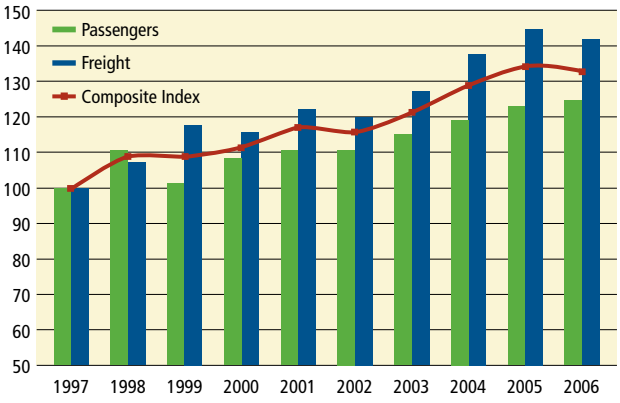

Figure 12: Total movements to/from region (indices). 1997 = 100.

Interpretation: Total passenger movements grew by 25% between 1997 and 2006. Freight movements in the same period grew by 41%. The composite index shows growth of 33% or approximately 4% per annum. The figures should not be taken entirely at face value as passengers and freight passing through the region and crossing its boundaries twice are counted twice.

Regional level

The main routes to and from the region, SH1 and SH2, account for around two-thirds of passenger movements across the regional boundary. SH1 accounts for over 80% of total movements, highlighting its national importance.

Passenger rail travel plays only a small part in inter-regional passenger movements, with the single remaining long-distance service being the daytime Overlander to and from Auckland. The Northerner night-time train ceased service in November 2004. The Bay Express service to Napier was also discontinued in 2001. Rail passenger movements have declined steadily in accordance with discontinued services. The current Capital Connection to and from Palmerston North is essentially a commuter service and is not included.

Sub-regional level

The figures are by definition regional totals, hence disaggregation by district is not possible.

Outlook

The tourism market is expected to remain buoyant for the foreseeable future; this will contribute to growth in all passenger modes, especially the inter-island ferry services.

Road traffic correlates strongly with regional economic activity, and there is a direct relationship between economic growth and freight growth. Wellington region's current economic growth trend is therefore expected to result in increased freight volumes and consequently, freight traffic across its boundaries.

The last remaining non-commuter passenger rail service to/from the region, The Overlander, is expected to cease operation on 30 September 2006. Inter-regional rail freight movements are expected to continue to decline in the face of competition from a deregulated road freight environment.

Implications for transportation planning

Demand for passenger and freight movement to and from the region is expected to grow steadily in future years. The predominance of road-based travel requires reliable connections, particularly the SH1 corridor to the north of Wellington. The absence of an inter-regional passenger rail service is likely to cause increased demand on the SH network.

Freight access to CentrePort and the ferry terminals by road and rail is affected by problems experienced on those networks. Improved access will lessen the impact on the volume of onward freight and passengers by sea.

Rail freight issues relate primarily to a lack of infrastructure and rolling stock, constraining use of the rail network. Efficiency improvements and addressing existing constraints on the rail network will increase the viability of medium and long haul freight by rail.

International air freight out of Wellington is limited both in terms of capacity and destination. As aircraft technology allows, air freight capacity is likely to improve. Passenger and freight access issues and any increase in future freight movements to/from the airport are being considered as part of the Ngauranga to Airport Study.

4 Accessibility and economic development indicators

This section sets out and discusses items relating to the RLTS accessibility and economic development objective: *to provide a transport system that optimises access to and within the region.* It considers the following performance indicators:

Perceptions of network reliability
Mode use
Short trip active mode use
Perceptions about the ease of walking and cycling
Travel time performance indicators: congestion, travel times and uncertainty
Perceptions about the state of congestion
State highway screenline traffic volumes
Wellington CBD cordon vehicle counts
Road traffic hourly profiles: Ngauranga
Heavy vehicles on key routes
State highway vehicle kilometres travelled
Road network use
Road network level of service
Vehicle occupancy on Wellington CBD cordon
Key route travel times: public transportation
Public transport service patronage
Total Mobility scheme patronage
Wellington CBD cycle and pedestrian movements
Mode of journey to work
Mode of travel to Wellington CBD
Work from home
CBD parking supply, perceptions of supply and price

Indicators

Perceptions of network reliability

Definition: The graph shows the percentage of people surveyed who rate the main commuter transport networks in the Wellington region as 'reliable'.

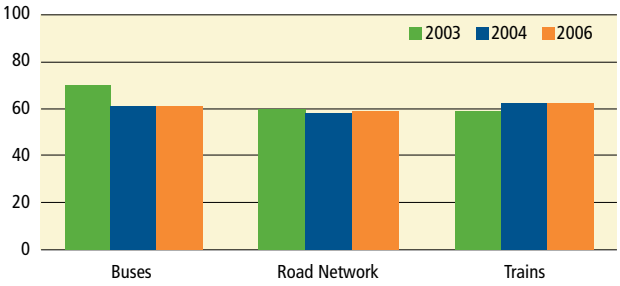

Figure 13: Reliability rating of regional transport networks (%). Source: GWRC transport perceptions surveys

Interpretation: As in 2004, respondents felt the roading network was the most unreliable of the transport network services surveyed at 11%, with 59% perceiving that it was reliable. Reliability rating of the bus and train networks remained the same in 2006 as 2004 at 61% and 62% respectively. Since 2003, the perception of the bus (especially) and roading networks has fallen. However, the train network reliability rating has improved slightly over the same period and is currently perceived as the most reliable network in the region.

Comments: Overall, approximately 60% of people think the transport networks in the Wellington region are reliable. This indicates that a relatively low level of service is being provided. Despite the bus network reliability rating falling almost 10% between 2003 and 2004, over 60% of the population sees the key public transport networks in the region as reliable, yet many still choose to use private vehicles for transport. Other factors must be leading to their mode choice.

Mode use

Definition: The graph shows how many people have used the four main modes of transport for any of their trips in the previous six months to June (private and public transport, walking and cycling).

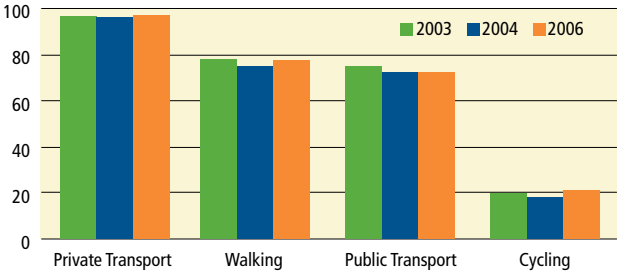

Figure 14: Transport modes used for any trips over the last six months (%), Wellington region. Source: GWRC transport perceptions surveys

Interpretation: Ninety-seven percent of respondents said they had made trips in the previous six months by private transport, 77% by walking (both slightly up on 2004 results) and as in 2004, 72% by public transport. Cycling trips represented 21% of trips in 2006 showing an increase from 16% in 2004.

Comments: Private transport remains the main travel mode of choice for the Wellington region. The Wellington CBD and other regional cities are pedestrian-friendly environments, reflecting that many people have made walking trips. An increase in cycling trips is shown representing the travel mode of choice for one-fifth of trips made by respondents.

Short trip active mode use: LTCCP target

Greater Wellington LTCCP target 2006–2016: ***By 2016 at least 80% of all trips up to 1 km and 60% of all trips between 1 and 2 km will be walked or cycled (74% and 19% respectively in 2004).***

2006 actual: **74% of trips up to 1km (17% above target); 27% of trips 1–2km (16% below target).**

Definition: The graphs show how the percentage of short trips by the active modes of cycling and walking compare with the GWRC LTCCP targets. The targets are based on 2001 active mode use levels for trips of less than 1km and between 1–2km in length. The 'Short Trip Active Modes' survey is undertaken two-yearly.

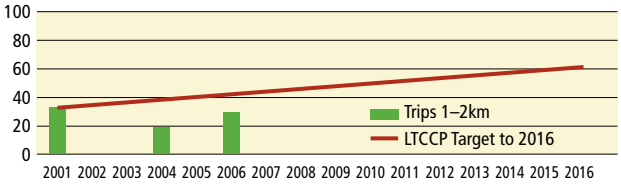

Figure 15: Trips between 1 and 2 km made by pedestrian or cycling modes (%), Wellington region. Source: GWRC Household Travel Survey 2001; GWRC Short Trip Active Mode surveys

Interpretation: In 2006, 27% of respondents made trips of 1–2km in length by the active modes of cycling or walking (c.f. 19% in 2004). This represents a shortfall of 16% from the associated 2006 LTCCP target level of 43%.

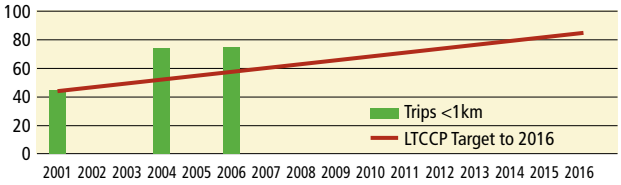

Figure 16: Trips of less than 1km made by pedestrian or cycling modes (%), Wellington region. Source: GWRC Household Travel Survey 2001; GWRC Short Trip Active Mode surveys

Interpretation: Seventy-four percent of trips less than 1km made by respondents were cycled or walked in 2006, exactly the same result as in 2004. The 2006 LTCCP target level of 57% has been surpassed by 17%.

Comments: As the methodology of the 2004 and 2006 active mode surveys is not identical to that of the 2001 survey it will be some years before an accurate trend will emerge. While a pleasing three-quarter of all trips of less than 1km in length were made by active modes in 2006, this result has not increased from 2004. Focused effort to increase the level of walking and cycling as the modes of choice for trips of 1–2km in length is warranted. Ongoing TDM, pedestrian and cycling strategy implementation aims to achieve increased uptake of these modes.

Perceptions of short trip active mode use

Definition: The graph shows how many short trips (up to 2km) respondents believed they could just as easily walk or cycle.

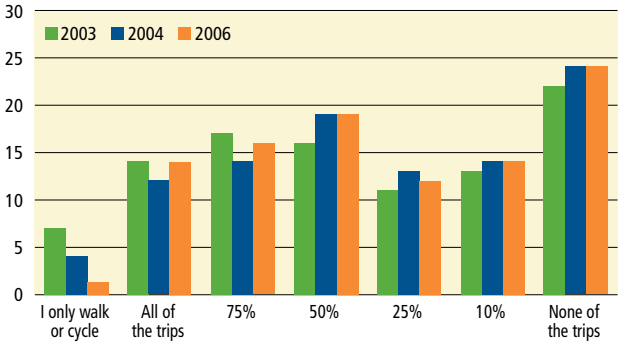

Figure 17: Percentage of short trips that could just as easily be walked or cycled, Wellington region. Source: GWRC transport perceptions surveys

Interpretation: Fifty-one percent of respondents in 2006 said that half or more of their short trips could just as easily be walked or cycled (c.f. 49% in 2004) with 14% saying that all of the trips could be made by active modes. As in 2004, 24% of respondents said that none of their trips could be made by walking or cycling.

Comments: GWRC aims to maintain and build active mode use to reach the LTCCP targets in the above indicator. Actions outlined in the pedestrian and cycling strategies (2004) and the 2005 Regional Travel Demand Management Strategy encourage and address an increase in walking and cycling.

Perceptions about the ease of walking

Definition: The graph shows how easily people find it to get around the Wellington region by walking. Results for the Auckland region are also given.

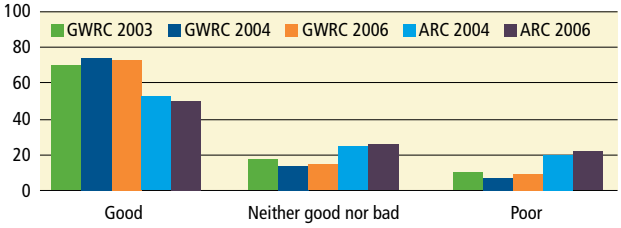

Figure 18: How 'hassle free' is getting around the region by walking? (%). Sources: GWRC and ARC transport perceptions surveys

Interpretation: Almost three-quarters of all 2006 respondents in the Wellington region rated getting around the region by walking as 'good'. This is over 20% more than those in the Auckland region with the same perception. Twenty-three percent of Aucklanders believe that getting around their region by walking is difficult, 14% more than Wellington region respondents.

Comments: Most Wellingtonians believe that getting around the region by walking is relatively easy, with only half of Auckland respondents thinking the same. This result is to be expected as Wellington's regional cities and towns are relatively compact and geographically small in scale, whereas the Auckland region has sprawled as it has grown.

A perception that walking is a difficult mode of travel can lead to less use of other active modes also such as public transport. Through measures included in the pedestrian and TDM strategies, GWRC aims to encourage further use of walking as a travel mode of choice.

Perceptions about the ease of cycling

Definition: The graph shows how easy people find cycling around the Wellington region to be. Results for the Auckland region are also given.

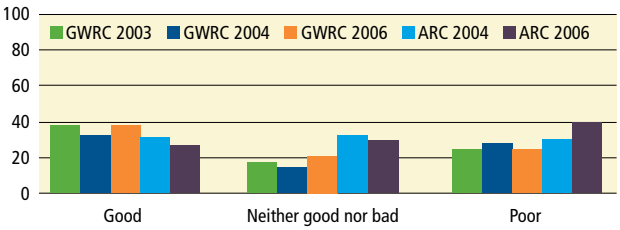

Figure 19: How 'hassle free' is it to get around the region by cycling? (%). Sources: GWRC and ARC transport perceptions surveys

Interpretation: Thirty-eight percent of Wellingtonians believe that getting around the region by cycle as 'good' (c.f. 33% in 2004), 11% more than Auckland respondents. In 2004, just 1% separated these two results. Forty percent of Aucklanders in 2006 believe that getting around their region by cycle is difficult (c.f. 31% in 2004) and 25% Wellington of respondents (3% less than 2004). Over 20% of respondents in Wellington region and 30% of those in Auckland were ambivalent.

Comments: A perception that cycling is difficult can lead to less use of this mode. One quarter of Wellingtonians believe that getting around their region by cycling is relatively difficult. The need for improved cycling facilities throughout the region is indicated. Providing greater ease for users of this mode will maintain current levels and increase uptake of cycling in the region. GWRC advocates for improved cycling infrastructure throughout the region.

Travel time performance indicators

Overview: Travel time performance indicators were established for Wellington in 2002 in conjunction with Transit New Zealand and the Ministry for the Environment.

The methodology is based on the Austroads 'travel time performance methodology', and involves floating car travel time surveys carried out on a sample of Wellington's strategic and regional arterial networks in March and November each year.

The performance indicators are used to monitor changes in travel time and congestion on a year-to-year basis, and to allow some comparison with other Australasian cities using the surveys.

Figure 20: Greater Wellington region travel time performance monitoring network. Source: Transit New Zealand

Travel times have been surveyed on the following representative regional routes:
Route 1: Paraparaumu – Wellington airport
Route 2: Upper Hutt – Wellington airport
Route 3: Porirua – Seaview (via SH58)
Route 4: Karori – Island Bay.

These routes differ slightly from those originally measured in May 2002, as it was identified that a number of 'pinch points' on the network were missed. These new routes are not expected to change in the future allowing trends to emerge.

This information yields congestion measured as minutes of delay per kilometre travelled (CGI) for the morning peak period (AM), inter-peak period (IP) and afternoon peak period (PM). Average network speeds and variability in travel time are also given.

Travel time performance indicators: congestion

Definition: Figure 21 shows a comparison of the congestion indicator between some New Zealand and Australian cities. New survey routes were established in Wellington in May 2003. Wellington's congestion as recorded by the March 2006 travel time surveys (compared with March 2005):
AM 0.44 (0.57) IP 0.17 (0.20)
PM 0.39 (0.43) All day 0.35 (0.42).

These results are shown in **Figure 22**.

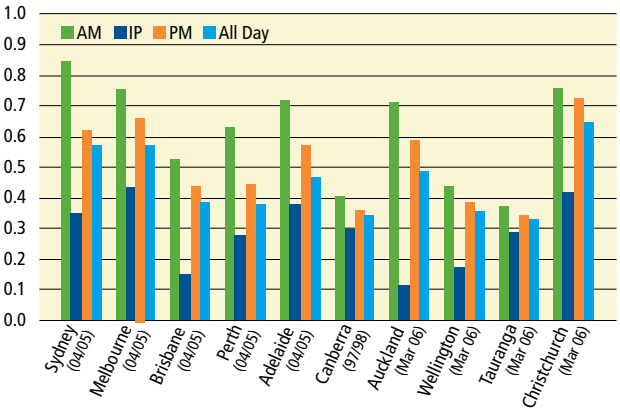

Figure 21: Comparison of CGI (mins delay/km travel) between New Zealand and Australian cities. Source: Transit New Zealand

Note: Data relating to New Zealand cities is for March 2006, while data for the Australian cities is the latest available and varies as shown. Care should be taken when comparing between cities, each metropolitan area has a unique road system, and the survey networks include different measures of urban and rural roads. The Christchurch survey includes a high proportion of urban roads, which increases the overall CGI for that region.

Interpretation: When directly compared with congestion in Auckland, Wellingtonians experience almost 17 seconds less delay per kilometre in the morning peak than do Auckland commuters. Interpeak congestion is greater in Wellington than Auckland reflecting the higher proportion of traffic on urban arterial routes in Wellington. Tauranga experiences more congestion in the interpeak period than both Auckland and Wellington. Direct comparisons with Christchurch cannot be made, as the network surveyed is entirely urban and therefore is not representative of the whole roading network.

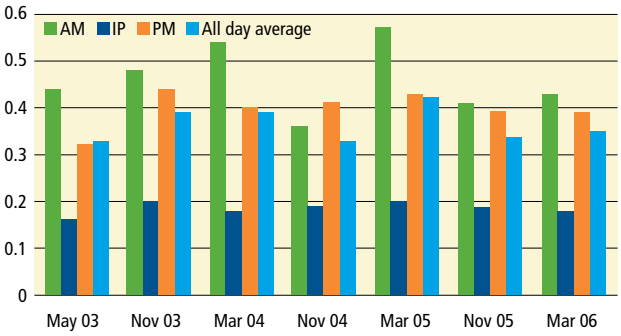

Figure 22: Wellington CGI (mins delay/km travelled). Source: Transit New Zealand

Note: Data is susceptible to seasonal and day-to-day aberrations in network performance such as crashes, breakdowns and road works.

Interpretation: A decrease in Wellington congestion is indicated across all surveyed periods between the March 2005 and March 2006 surveys. The most significant of these occurred in the AM peak with a decrease of 23% (nearly 8 seconds) to 26 seconds delay per km travelled. All day average congestion has subsequently decreased by 17% from March 2005 to 21 seconds delay per km travelled.

Comments: While the survey results reflect the level of service the road network offers, the fact that it is averaged out over the whole measured network means localised problems are masked. Wellington's congestion levels compare favourably with other New Zealand centres and have improved over the past year. The pattern of congestion in the Wellington region appears to be focused during the short peak periods on a number of pinch points over the network such as the merge of SH1 and SH2.

Wellington's congestion levels compare favourably with other New Zealand centres and have improved over the past year. Auckland's high and continually rising congestion levels may be a result of the city's critically loaded network, which means that even

small events can lead to disproportionately large effects on the network. Easing congestion has a positive effect on regional economy as freight by road is able to move more freely.

Travel time performance indicator: key route travel times

Definition: The graph shows the average vehicle speed for the road network. This is calculated by dividing the surveyed actual travel time by the length of the road network.

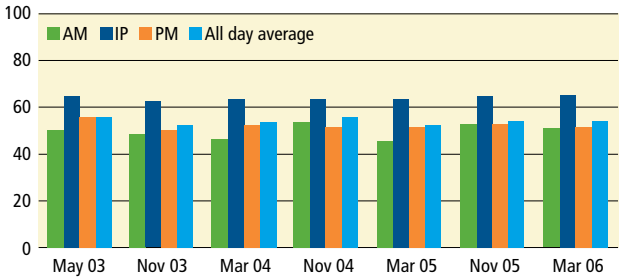

Figure 23: Network average vehicle speeds (km/h). Source: Transit New Zealand

Interpretation: Average travel speed increased across all periods of the day in March 2006 when compared with March 2005. The all day average travel speed increased by almost 6% to 55km/h. A seasonal variation may be emerging.

Comments: The increase in travel speed should have led to a general reduction in travel time on the region's roads. These results reflect an improved overall level of service on the road network in 2006. Localised problem areas on the surveyed routes where congestion occurs are masked by the average results.

Travel time performance indicator: variability in travel time

Definition: The graph shows a measure of the range of actual travel time results and is used to monitor the reliability or certainty of travel times. The measure is expressed as a percentage of the average travel time.

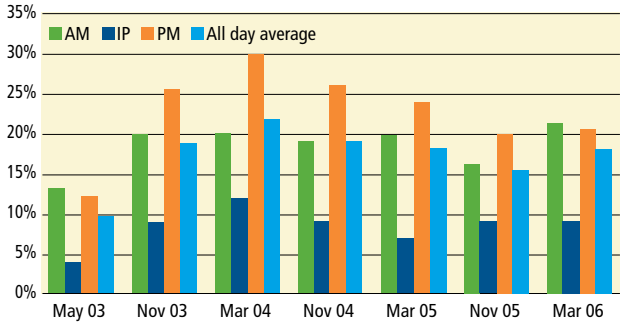

Figure 24: Travel time uncertainty. Source: Transit New Zealand

Interpretation: Variability in travel time improved only in the PM peak between March 2005 and March 2006. The period of the day exhibiting the most variability in travel time for the Wellington region is now the AM peak. In March 2006, AM travel times varied by 22%. This demonstrates a change from the PM peak as the more unreliable travel period, a trend established since the November 2003 survey. The all day average percentage uncertainty in travel time remained the same at 18% from 2005 to 2006 (March).

Comments: Despite lessened average congestion levels and improved average travel speed, uncertainty in the time taken to make a journey during the morning commuter period has deteriorated in 2006. No change in the all day average variability in travel time from March 2005 is shown however.

Congestion: LTCCP target

Greater Wellington LTCCP target 2006–2016: ***Average congestion on selected roads will remain below 20 seconds delay per km travelled despite traffic growth.***

2006 actual: **21 seconds delay per km travelled.**

Definition: The graph shows all day average congestion in March each year on a selection of the region's roads. 2006 results are compared with the GWRC LTCCP target to 2016.

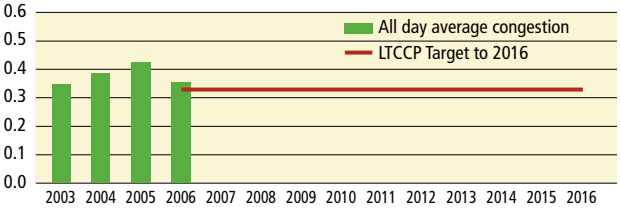

Figure 25: Greater Wellington regional congestion (mins delay/km travelled). Source: Transit New Zealand

Interpretation: The LTCCP target of no more than 20 seconds delay per km travelled has been exceeded by 1 second in March 2006.

Comments: The significant decrease in congestion of 17% in 2006 is apparent after the steady increase in congestion levels shown over the three years previous. The regional Travel Demand Management Strategy identifies measures to further improve the level of congestion on the roads by promoting alternatives to car travel. As the strategy undergoes implementation, workplace and other travel plans are under development throughout the region.

Perceptions about the state of congestion: TDM Strategy target

TDM Strategy target to 2016: ***Sixty percent or less of people with the perception that congestion has got worse.***

2006 actual: **49% of people in the Wellington region thought congestion was worse than two years previous.**

Definition: The graph shows how Wellingtonians and Aucklanders believe traffic congestion has changed over the previous two years.

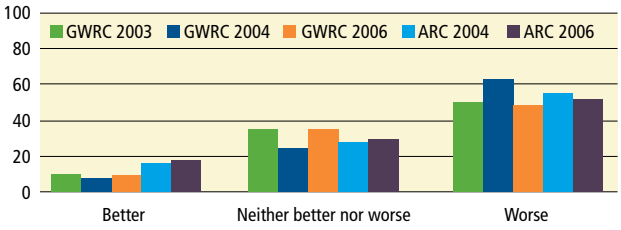

Figure 26: Do you think traffic congestion is better than it was two years ago? (%). Sources: GWRC and ARC transport perceptions surveys

Interpretation: In 2005, 49% of Wellingtonians considered congestion had worsened over the previous two years (c.f. 62% in 2004). This result is 11% below the TDM Strategy target threshold of 60%. Thirty-five percent thought congestion was neither better nor worse and 10% said it had improved. Aucklanders' perception that congestion levels were worse in 2006 remained similar to the 2004 result at 53%.

Comments: A 13% reduction in the perception of worsened congestion in the Wellington region is shown in 2006. Only 2% more respondents in 2006 (c.f. 2004) felt that congestion had improved. More people in Auckland than in Wellington perceive that congestion is worsening.

State highway screenline traffic volumes

Definition: The graph shows annual average daily traffic (AADT) volumes derived from automatic counters operating on each road section over a calendar year. Results must be interpreted cautiously as many vehicles are counted several times, depending on their route through the network.

Counts record only vehicles on the network; vehicle trips that are avoided because of perceived congestion cannot be quantified.

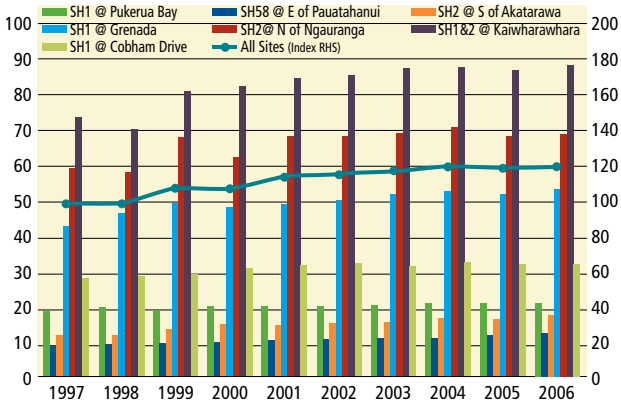

Figure 27: State highway screenline traffic volumes (000), AADT. Index: 1997 = 100. Calendar year. Source: Transit New Zealand

Interpretation: A slight increase in traffic volumes was shown at all sites in 2006 apart from Cobham Drive. The index representing all state highway screenline sites has remained relatively static since 2004. Across the screened state highway network steady growth has been shown since 1997, with 2006 traffic volumes 19% above 1997 levels.

Comments: While traffic volumes seem to be levelling out further year's data will confirm this. Overall, demands on the road network will increase as road travel continues to be the region's predominant form of transport.

Wellington CBD cordon vehicle counts

Definition: Wellington City Council commissions classified vehicle counts in March and October each year. The information displayed in this graph shows results for March only.

The 'cordon' comprises Oriental Parade, Majoribanks Street, Elizabeth Street, Pirie Street, Cambridge Terrace, Buckle Street, Tasman Street, Taranaki Street, Cuba Street, Victoria Street, Willis Street, Aro Street, Abel Smith Street, Vivian Street, Ghuznee Street, Dixon Street, The Terrace, Boulcott Street, Aurora Terrace, Bolton Street, Bowen Street, Hill Street, Hawkestone Street, Murphy Street, Hobson Street, Thorndon Quay and Aotea Quay.

4

Traffic heading into the city is counted during the two-hour morning commuter peak. Buses are not counted.

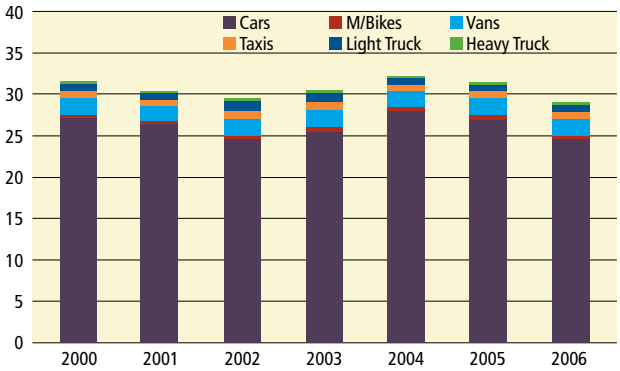

Figure 28: Wellington CBD cordon inbound traffic volumes (000), weekday AM two-hour peak, March. Source: Wellington City Council

Interpretation: Total inbound road traffic volumes decreased by 9% between 2005 and 2006. The volume of heavy trucks increased markedly from 2005 but the total number much is lower than other vehicles at just under 300. Taxis also increased by over 5% in 2006. All other vehicle classifications decreased as follows: cars by 8%, vans by 15%, light trucks by 9% and motorbikes by 19% (although small in number by comparison with other vehicle types at about 460).

Comments: Both the peak period volume of private cars and overall traffic entering the Wellington CBD has decreased since 2004 following an increase from 2002–2004. The total vehicle volume counted in 2006 is the lowest since 2000. Non-car classified vehicles make up approximately 14% of the total fleet volume counted therefore the decrease in the volume of cars dominates the overall volume decrease. The almost 20% decrease in volume of motorbikes does not match anecdotal evidence of recent increases in sales and motorbike parking spaces in the Wellington CBD at capacity.

Road traffic hourly profiles: Ngauranga

Definition: The graph shows hourly flow distribution on SH1 and SH2 at Ngauranga over the course of an average weekday, Saturday and Sunday, in March and October 2005.

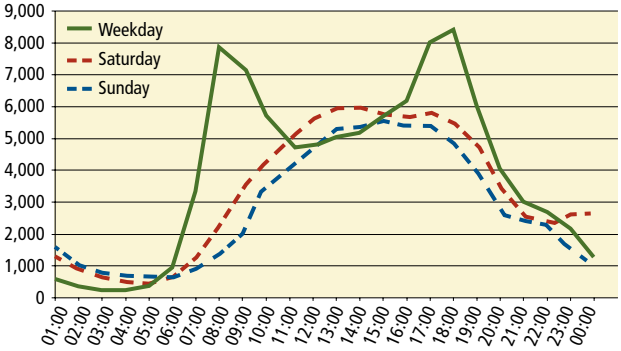

Figure 29: Average hourly traffic volumes at Ngauranga (combined directions), 2005, weekday, Saturday and Sunday. Source: Transit New Zealand

Interpretation: The weekend profiles show a single broad peak occurring across the middle of the day with Sunday's profile slightly narrower than that of Saturday. This analysis uses combined two-way traffic volumes. Directional volumes would show more pronounced peaks especially in the direction of commuter traffic volumes. Peak weekday hourly volumes are approximately 40% higher than peak weekend hourly volumes.

Comments: Capacity is not an issue at Ngauranga on the weekend as can be seen when the profiles are compared with the peak weekday hourly volumes.

Definition: The graph shows a comparison of average weekday hourly traffic volumes at the same location, SH1 and SH2 at Ngauranga in March and October 1999, 2004 and 2005.

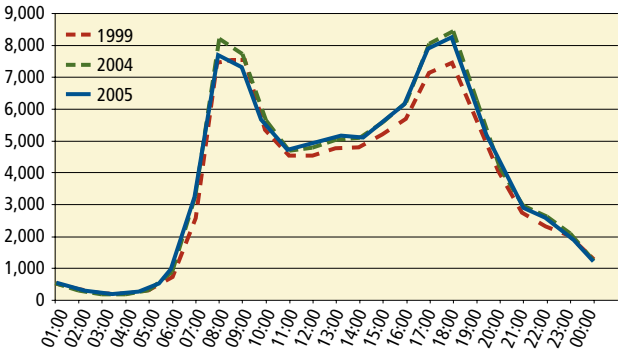

Fig 30: Average weekday hourly traffic volumes at Ngauranga (combined directions), 1999, 2004 and 2005. Source: Transit New Zealand

Interpretation: The three profiles have the same overall shape however the 2004 hourly traffic volumes are shown to be consistently higher than those for the corresponding hours in 1999, particularly in the

evening commuter peak period. The 2005 profile follows closely that of 2004 with a slightly lower PM peak evident. The 2005 profile also falls off more rapidly in the morning peak.

Comments: The slight peak spreading which occurred between 1999 and 2004 (an increase in volumes outside the peak periods) has not continued in 2005. Morning and evening commuter peaks and hence hourly traffic volumes are slightly lower in 2005.

Heavy vehicles on key routes

Definition: Data for the graphs displaying heavy vehicle percentages is obtained from permanent telemetry sites. These sites record the length of each vehicle, with anything more than 5.5 metres defined as 'heavy'. The percentage of heavy vehicles on selected key routes is shown on both weekdays and weekends. Pukerua Bay site data was unavailable for 2002 and 2003. This indicator has not been updated with 2005 data.

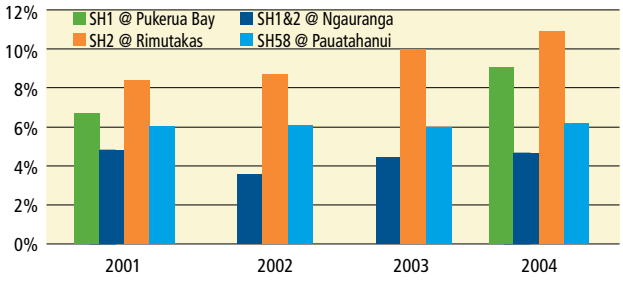

Figure 31: Percentage of heavy vehicles on major routes (weekdays). Sources: GWRC; Transit New Zealand

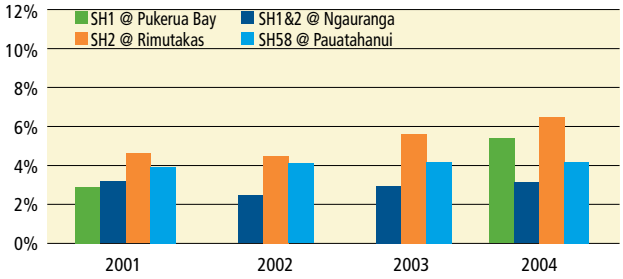

Figure 32: Percentage of heavy vehicles on major routes (weekends). Sources: GWRC; Transit New Zealand

Interpretation: Heavy vehicles as a percentage of total weekday and weekend traffic increased at all monitored sites in 2004. Heavy vehicle counts at Ngauranga increased by 5% on weekdays and by 9% on weekends in 2004. Heavy vehicles make up a greater proportion of total traffic at sites further removed from the urban areas, e.g. Rimutaka and Pukerua Bay, reflecting high intra-urban light vehicle volumes. A weekday increase of 9% occurred at Rimutaka, however the volume of heavy vehicles passing this site is small when compared with that on the overall network.

Comments: Closer to the major urban areas and during weekends, there are more light vehicles on the network, resulting in lower absolute and percentage figures for heavy vehicles. Commercial vehicle traffic is related to economic activity and the volume of heavy vehicles is increasing at a faster rate than general traffic. For the region's continued economic wellbeing it is important to allow for this growth while not compromising the needs of other road users.

State highway vehicle kilometres travelled

Definition: The graph shows information that Transit New Zealand gathers from traffic counters to determine total annual vehicle kilometres travelled (VKT) on each section of regional state highway. Information for 2002 and 2003 is indicative only and should not be compared with data for subsequent years.

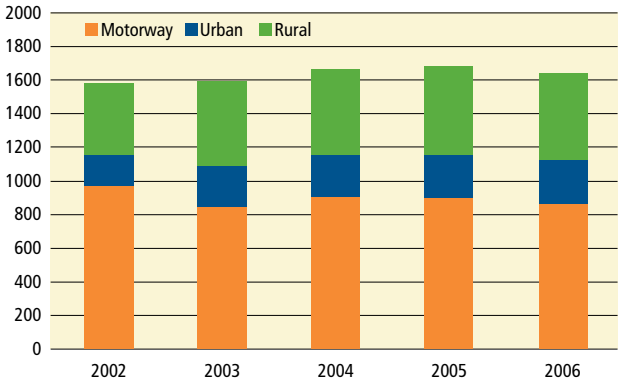

Figure 33: State highway VKT (M). Source: Transit New Zealand.

Note: Information for 2002 and 2003 is indicative only.

Interpretation: VKT on the state highway network decreased slightly in 2006 for the first time since data has been available. Overall growth in VKT from 2002 (estimated) to 2006 has dropped back to 3.5%. This is slightly less than the growth in state highway traffic volumes shown over the same period at 4.4%.

Table 4 shows that over half of state highway VKT is occurring on the motorway system.

District	State highway network, 2006	
	Percentage of network length	Percentage of VKT
Motorway	24	53
Urban	16	16
Rural	60	31
Region	**100**	**100**

Table 4: State highway network characteristics, Wellington region, 2006. Source: Transit New Zealand

Comments: State highway network loadings vary widely by location. Rural Wairarapa requirements are very different from those of central Wellington. Continued monitoring is needed to ensure state highway network components give the best service possible within topographical and financial constraints.

Road network use

Overview: The Wellington Transport Strategic Model (WTSM) road network comprises the main arterial and some secondary roads throughout the greater Wellington region. Reporting on this full network obscures the results for roads that have the greatest impact on these results – those considered 'critical' in moving people and freight on the roads between the major destinations in the region.

For this reason, three strategic routes have been identified:

- Western Strategic Network: SH1 from Waikanae to Ngauranga
- Eastern Strategic Network: SH2 from Kennedy Good Bridge to SH1 at Ngauranga; Hutt Road from Hutt City to Petone; Melling Link and The Esplanade at Petone
- Southern Strategic Network: SH1 from Ngauranga through to the airport; Hutt Road; Thorndon Quay; Aotea Quay and the waterfront route through Basin Reserve to Wellington Hospital via Adelaide Road.

These routes are shown on the map. Modelled results are used for the following network indicators: expected road network use and road network level of service for both the full strategic network and the Southern Strategic network.

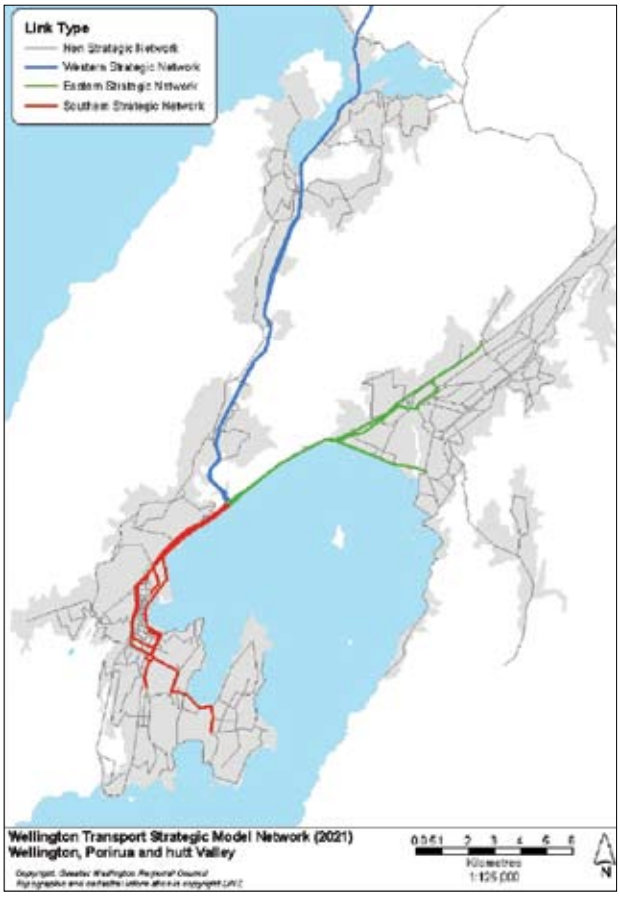

Figure 34: WTSM model network (2021), Wellington, Porirua and Hutt Valley. Source: GWRC

Expected road network use

Definition: The graph shows information derived from WTSM, which has been confirmed by observation rather than measurement or survey. Future-year forecasts should be taken as indicative only. The model comprises sub-models for the weekday morning and afternoon commuter peaks, and the period between these peaks (the inter-peak period). Totals cover the entire modelled regional network, including all principal routes. Minor local roads are not included.

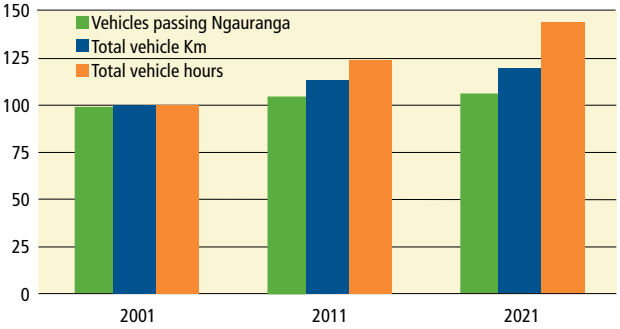

Figure 35: Modelled road network use, Western Strategic Network, AM peak period. Index: 2001 = 100. Source: WTSM

Interpretation: The Western Strategic Network, comprising SH1 from Ngauranga to Waikanae, is expected to experience greater growth in the total number of trips than any other part of the strategic network. If road and traffic conditions stay as they are, changes in the number of vehicles should be matched by similar changes in VKT and hours. Forecasts indicate that by 2021, vehicle hours (up 44%) will increase much faster than VKT (up 19%), while the number of vehicles will increase by only 7%. Total travel times are expected to increase as congestion worsens. Total travel distances will rise as a result of location changes as families move to rural areas and in response to congestion (seeking faster but longer routes).

Comments: The road network faces increasing demands as traffic volumes and travel distances increase. Over the next few years, higher rates of growth can be expected in inter-peak periods as commuters choose to travel outside traditional peaks.

Road network level of service

Overview: Information is derived from GWRC's transportation strategy model, which has been confirmed by observation rather than measurement or survey. Future-year forecasts should be taken as indicative only. The model comprises sub-models for the weekday morning and afternoon commuter peaks, and the inter-peak period. It compares forecast traffic volumes with network capacity, thus identifying 'levels of service' (LOS). The US Highway Capacity Manual defines this term, but the assessment here is based on the following 'proxy' measures (the calculated volume-to-capacity ratios for each section of road):
LOS A: primarily light traffic, free-flow conditions
LOS B: mostly light traffic, some disruptions
LOS C: some permanent queuing at intersections
LOS D: high volumes, delays due to congestion
LOS E: operation at capacity
LOS F: over-capacity – breakdown of traffic flow.

Graphs show the percentage length of road network operating at each LOS. In general, the AM peak period has lower LOS than the PM or inter-peak period. For this reason, results for the AM peak period are shown.

Road network LOS: full strategic network

Definition: The graph shows the complete modelled network, which comprises the main arterial and some secondary roads throughout the greater Wellington region.

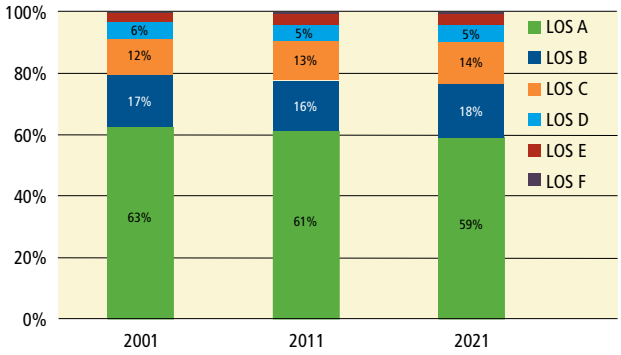

Figure 36: Road network LOS, full network, AM peak period. Source: WTSM

Interpretation: The percentage of the road network at LOS E or F remains below 5%. More than 75% of the modelled network operates at LOS A or B in the morning peak.

Comments: Reporting results for this full network obscures the results for the roads that have the greatest impact on results – those considered 'critical' in moving people and freight on the roads between the major destinations in the region.

Road network LOS: Southern Strategic Network

Definition: The graph shows LOS on the Southern Strategic Network (Ngauranga – Airport).

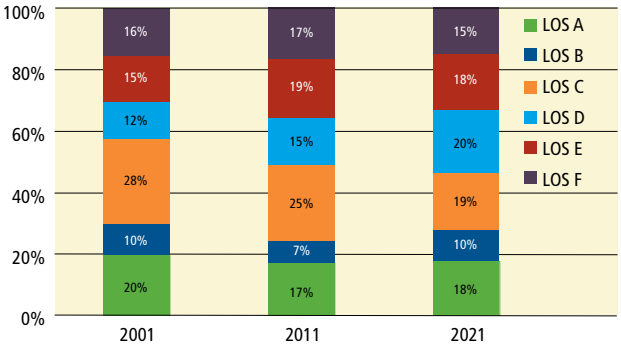

Figure 37: Road network LOS, Southern Strategic Network, AM peak period. Source: WTSM

Interpretation: This part of the network, comprising the main roads from Ngauranga southwards to the airport and hospital, is expected to experience the worst LOS of any section of the region's roading network. In the morning peak, more than 30% of the modelled network has demand close to or above its capacity. This is expected to worsen through to 2011, before getting slightly better by 2021 with the expected installation of the Ngauranga to Aotea tidal flow system on SH1. The proportion of the Southern Strategic Network that is not subject to some form of

permanent queues is below 30%. Increasing traffic demands will eventually erode LOS as congestion worsens and affects a wider area.

Comments: Without improved efficiency or capacity, LOS will progressively deteriorate as traffic demands grow. The results will be greater congestion in existing problem areas and the spread of congestion to areas now operating satisfactorily.

Vehicle occupancy: TDM Strategy target

Greater Wellington TDM Strategy target to 2016: ***The average number of occupants per vehicle entering the Wellington CBD during the AM peak period will increase to 1.5.***

2006 actual: **1.37 vehicle occupants**

Definition: Wellington City Council commissions surveys in March and October each year. Information is presented for March only.

The cordon comprises Oriental Parade, Majoribanks Street, Elizabeth Street, Pirie Street, Cambridge Terrace, Buckle Street, Tasman Street, Taranaki Street, Cuba Street, Victoria Street, Willis Street, Aro Street, Abel Smith Street, Vivian Street, Ghuznee Street, Dixon Street, The Terrace, Boulcott Street, Aurora Terrace, Bolton Street, Bowen Street, Hill Street, Hawkestone Street, Murphy Street, Hobson Street, Thorndon Quay and Aotea Quay.

Only traffic heading into the city is counted during the two-hour morning commuter peak, and figures show average numbers of vehicle occupants. Buses are not counted.

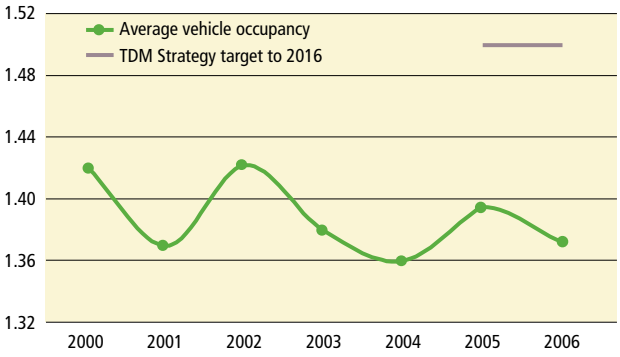

Figure 38: Wellington CBD cordon inbound vehicle occupancy, two-hour weekday AM peak. Source: Wellington City Council

Interpretation: Average occupancy of vehicles into the Wellington CBD decreased again to 1.37 people in 2006. Typical occupancy remains at approximately 1.4 people per vehicle, still below the TDM Strategy target of 1.5 occupants. The highest occupancy level of 1.42 was recorded in both 2000 and 2002.

Comments: The high proportion of single- or double-occupancy vehicles represents an inefficient means of transportation. An emphasis on moving people rather than vehicles would significantly improve efficiency. The implementation of a national Rideshare programme would positively impact vehicle occupancy at peak periods. GWRC continues to advocate for the development of a national Rideshare tool and is currently coordinating workplace travel plan development for the region. These are both initiatives of the Travel Demand Management Strategy which seek to increase car occupancy in the region. The TDM Travel Behaviour Change Programme has also commenced implementation phase.

Key route travel times: public transportation

Definition: Travel times derive from timetables for routes 1 to 4. Routes 5 and 6 face congestion in the Golden Mile (Lambton Interchange to Courtenay Place) rendering timetables unreliable. Information on these routes is collected by a GWRC survey. The graphs show routes covered, which are:
Route 1: Upper Hutt – Wellington Airport (rail/bus)
Route 2: Wellington Airport – Upper Hutt (bus/rail)
Route 3: Paraparaumu – Wellington Airport (rail/bus)
Route 4: Wellington Airport – Paraparaumu (bus/rail)
Route 5: Courtenay Place – Lambton Interchange (bus)
Route 6: Lambton Interchange – Courtenay Place (bus).

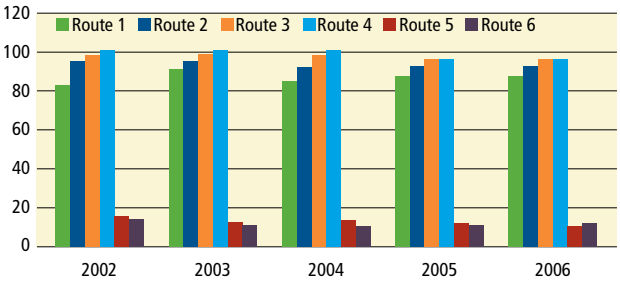

Figure 39: Public transport travel time (mins), AM peak. Sources: Bus/rail timetables, GWRC survey

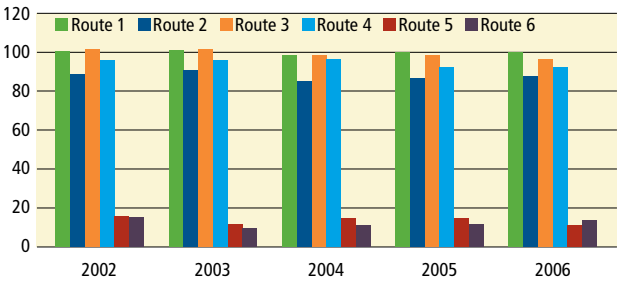

Figure 40: Public transport travel time, inter-peak, (mins). Sources: Bus/rail timetables, GWRC survey

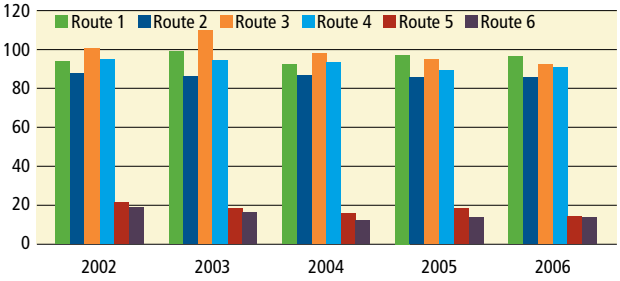

Figure 41: Public transport travel time (mins), PM peak. Sources: Bus/rail timetables, GWRC survey

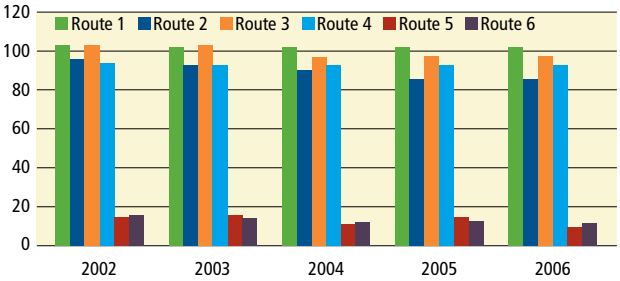

Figure 42: Public transport travel time (mins), Saturday. Sources: Bus/rail timetables, GWRC survey

Interpretation: The northbound Golden Mile journey (route 5) travel time decreased during all periods surveyed in 2006 while travel time on route 6 increased. Travel time on route 3 decreased in the inter-peak and PM periods. Route 4 travel time also decreased during the PM peak. The apparent decrease in both peak and inter-peak travel time on routes 3 and 4 between 2004 and 2005 is a result of reduced bus/rail transfer time due to a train timetable change in November 2004.

Comments: The installation of bus lanes along the Golden Mile led to a decrease in travel times in the PM peak between 2003 and 2004. A speed restriction of 30km/h for all traffic was introduced along the northern section of the Golden Mile including Lambton Quay, Willis Street in mid 2006. This does not seem to have influenced travel time by bus on routes 5 and 6.

Generally, journey times can be longer during off-peak and weekend periods, as there is reduced service frequency and trains stop at all stations along each route. High level of service on the public transport network is required to encourage travellers to switch from private car travel, especially for the peak-period commute to work. This requires measures to reduce bus travel time variations, and further integration between bus and rail services to minimise the 'cost' of transfer to many passengers. The introduction and regional implementation of "txtBUS", "txtTRAIN" and further proposed travel information enhancements along with integrated ticketing will improve public transport level of service.

Public transport service patronage

Definition: GWRC collates information on public transport patronage for the funding system. The graphs show the number of passenger trips taken, total distance travelled and average length of trip on the main public transport modes, for both combined peak and off-peak periods.

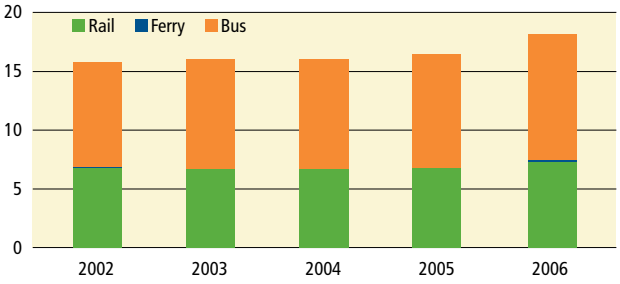

Figure 43: Public transport patronage: number of trips (M), by mode, combined peak periods. Source: GWRC

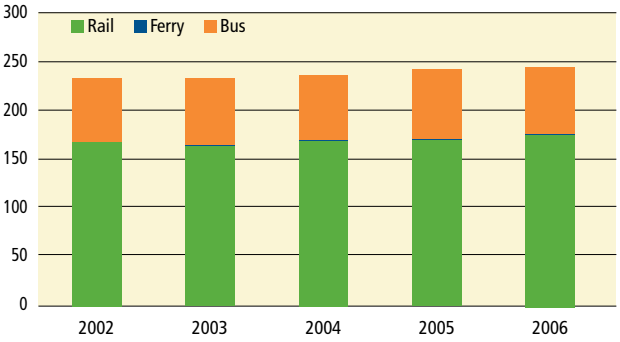

Figure 44: Public transport patronage: passenger km (M), by mode, combined peak periods. Source: GWRC

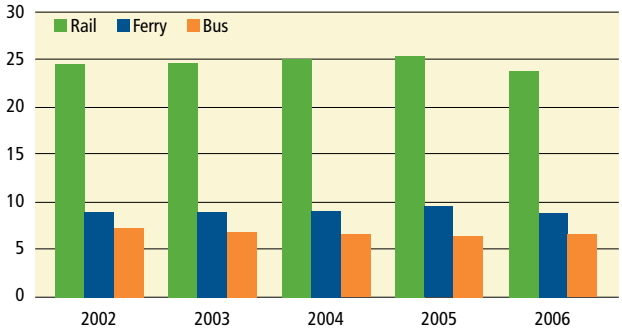

Figure 45: Public transport patronage: average trip length (km) by mode, combined peak periods. Source: GWRC

Interpretation: The total number of peak passenger trips by public transport increased by 11.6% (1.9 million) between 2005 and 2006 led by an increase in bus patronage of 12.8% or 1.2 million passenger trips. Train patronage also increased by 10%

(670,000 passenger trips) in 2006. Ferry passenger trips also increased substantially during the peaks. Total off-peak passenger trips increased by 4.6% between 2005 and 2006 due to increases on all modes: bus increased by 3.4%, rail by 8.6% and ferry passenger trip numbers rose by over 12% (however actual ferry passenger numbers are small by comparison with other modes).

A slight increase in combined peak period passenger kilometres travelled (1.2% in total) is evident in 2006 for both bus and rail. Off-peak kilometres travelled remained the same between 2005 and 2006.

Average journey length during the combined peak periods actually decreased by 10% in 2006 due to decreased distance travelled across all three modes. The average length of trip during the off-peak has also decreased by 3% in total.

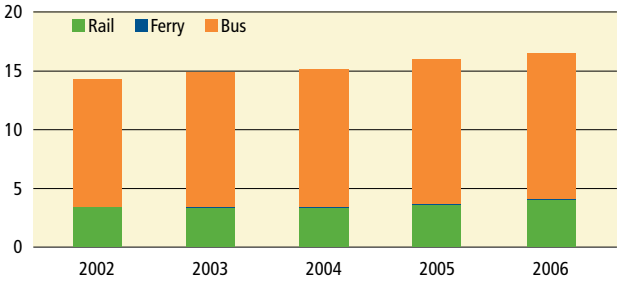

Figure 46: Public transport patronage: number of trips (M), by mode, off-peak period. Source: GWRC

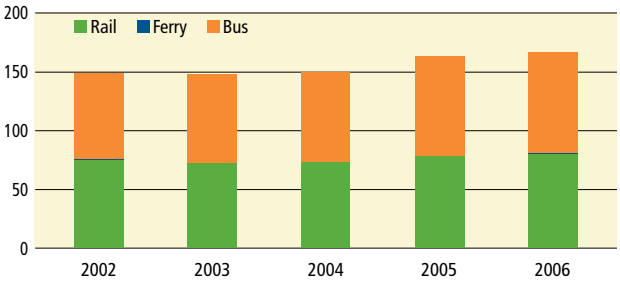

Figure 47: Public transport patronage: passenger km (M), by mode, off-peak. Source: GWRC

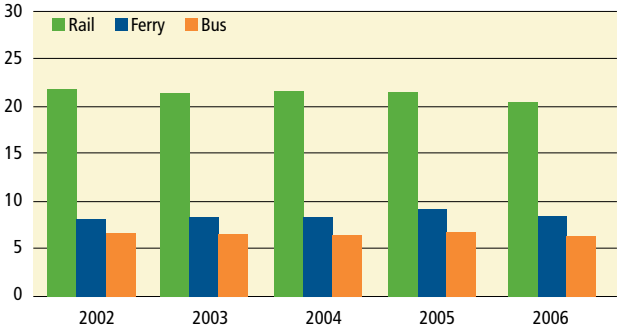

Figure 48: Public transport patronage: average trip length (km) by mode, off-peak period. Source: GWRC

Buses consistently account for most journeys by public transport during the combined peak at almost 60% of total passenger trips since 2002. However, rail trips are typically three to four times longer so account for most passenger kilometres (70% in peak periods).

Comments: The Wellington region rail network is struggling to cope with recent increases in passenger numbers and many peak services are at capacity. New rail rolling stock will not be available until 2010 and financial constraints limit the number of additional bus services which can be introduced.

Total Mobility scheme patronage

Definition: Table 5 shows the number of average monthly and annual Total Mobility passengers from 2002.

Year	Average monthly passengers	Total passengers	% increase
2002/03	18,559	222,710	-
2003/04	19,630	235,561	5.8%
2004/05	22,287	267,440	13.5%
2005/06	21,090	259,955	-2.8%

Table 5: Total Mobility passenger numbers. Source: GWRC

Interpretation: Total Mobility passengers increased in number by 20% from 2002/03 to 2004/05. Following the significant increase of 13.5% in 2005, numbers have decreased by almost 3% in 2006.

Comments: Total mobility patronage is expected to increase in future as knowledge of the scheme increases.

Wellington CBD cycle and pedestrian movements

Definition: The graph shows results from the cordon and screenline location surveys that Wellington City Council undertakes every March and October. Information here is for March only, and no information is available for other local authority areas. The following aspects are surveyed:

- pedestrians in- and outbound to/from the central city during the morning peak period
- cycles in- and outbound to/from the central city during the morning peak period
- cycles at suburban locations during the morning peak period
- pedestrians along the Golden Mile during weekday lunch-times
- pedestrians between the CBD and waterfront during weekday lunch-times.

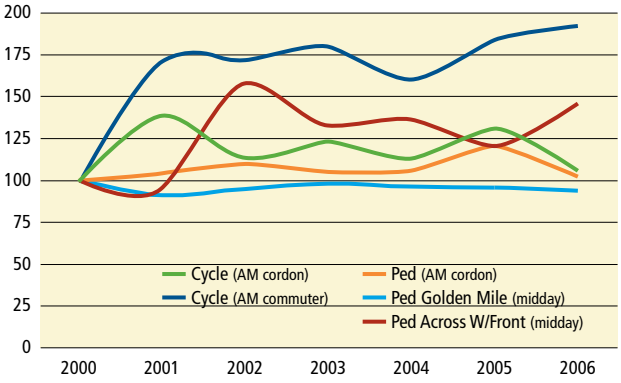

Figure 49: Wellington CBD pedestrian and cycle movements, weekday two-hour period, March. Index: 2000 = 100. Source: Wellington City Council

Interpretation: Cycle and pedestrian counts vary widely according to weather conditions at the time of the survey. The number of commuter cyclists in the morning peak increased again in 2006 with a significant rise in actual number evident since 2004 of almost 150 (21%). Cyclists and pedestrians crossing the CBD cordon both decreased however. Lunchtime pedestrian numbers between the CBD and waterfront showed an increase in 2006 and remained fairly static on the Golden Mile.

Comments: Walking and cycling are becoming more popular means of travelling to work. Demands for active transport must be accommodated and encouraged by the provision of safe and convenient networks for pedestrians and cyclists.

Mode of journey to work

Definition: The graph shows the main mode of travel to work for the regional population on census day. Census information is collected five-yearly and covers a single day. Data is available for 1996 and 2001 and this indicator will next be updated in the 2007/08 AMR.

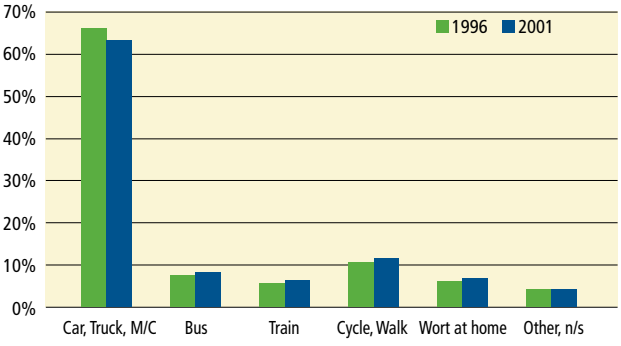

Figure 50: Main mode of journey to work, Wellington region, census day 1996 and 2001. Source: Statistics New Zealand

Interpretation: These results must be interpreted with care. Reliable trends cannot be established from two data points, particularly as yearly results are influenced by the weather on census day. While private cars accounted for nearly two-thirds of journeys to work, it would appear that there was a shift towards public transport and active modes (walking, cycling) on census days.

Comments: Once 2006 census data is available a clearer indication of the mode of choice for the journey to work will be evident. More recent data reported earlier in this chapter has shown decreasing congestion on the road network and increased public transport patronage.

Mode of travel to Wellington CBD

Definition: The graph shows the percentage of people travelling into the Wellington CBD on census day. Census information is collected five-yearly and covers a single day. Data is available for 1996 and 2001 and this indicator will next be updated in the 2007/08 AMR.

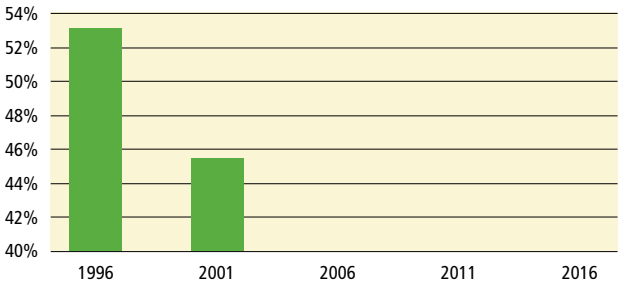

Figure 51: People travelling into Wellington CBD by private car, truck or van, census day 1996 and 2001. Source: Statistics New Zealand

Interpretation: These results must be interpreted with care. Reliable trends cannot be established from two data points, particularly as yearly results are influenced by the weather on census day. Between the 1996 and 2001 censuses the percentage of people travelling into the Wellington CBD by private vehicle fell by 8% to 45%.

Comments: While encouraging, further data is required to see if the decrease in number of people travelling into Wellington CBD by private vehicle in 2001 has been sustained.

Work from home

Definition: The graph shows the percentage of people working from home on census day by district. Census information is collected five-yearly and covers a single

day. Data is available for 1996 and 2001 and this indicator will next be updated in the 2007/08 AMR.

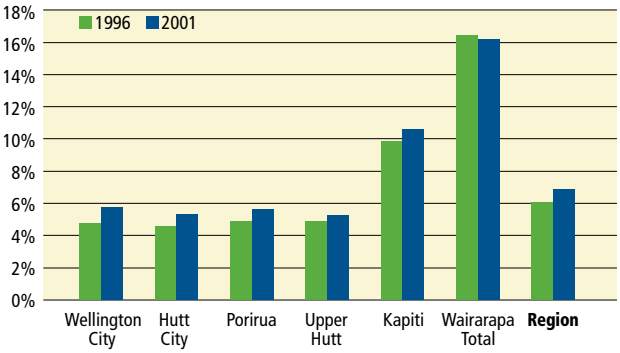

Figure 52: People working, who work at home, by district, census day 1996 and 2001. Source: Statistics New Zealand

Interpretation: These results must be interpreted with care as a trend cannot be established from two data points. The percentage of those working from home showed a slight increase in all districts except Wairarapa in 2001.

Comments: Uptake of technological advances that make it easier for people to work from home or to telework at least some days each week will reduce peak period traffic demands.

CBD parking supply

Definition: The graph shows parking supply in city centres from a Booz Allen Hamilton March 2003 report commissioned by GWRC. The data should be taken as only indicative of parking supply in the region.

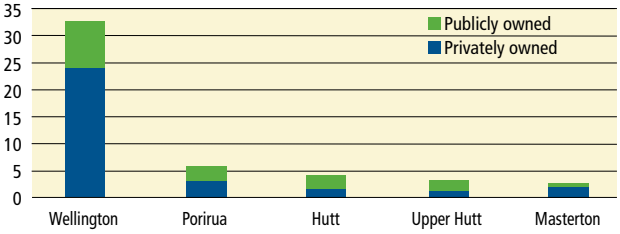

Figure 53: Parking supply by city centre, Wellington region (000). Source: Wellington Regional Parking Study 2003, Booz Allen Hamilton.

Interpretation: Wellington City has the largest number of carparks in the region, with a total of 32,000, of which 25,000 are privately owned. Parking supply in the other regional centres is not significant from a regional perspective.

Comments: The availability and cost of city centre parking are factors considered by residents when deciding on the mode of travel to work, for shopping or leisure. As the city with the most employees in the region Wellington has the largest number of carparks available.

Parking supply in Wellington CBD: perceptions of number needed

Definition: The graph shows what people think about the availability of parking in the Wellington CBD.

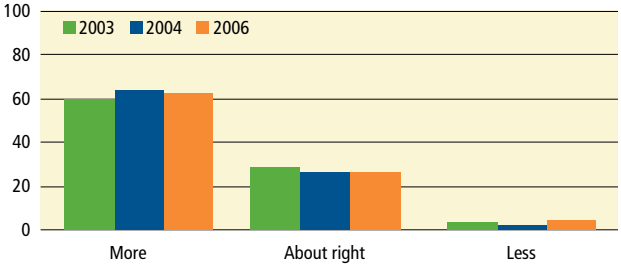

Figure 54: Perceptions of Wellington CBD parking supply (%). Source: GWRC transport perceptions surveys

Interpretation: Some 63% of respondents in 2006 think there should be more car parks in Wellington (c.f. 64% in 2004). Twenty-six percent think the number is about right, the same number as 2004. Only 4% think there should be fewer car parks in Wellington CBD (c.f. 2% in 2004).

Comments: It is not surprising that people would like more car parks in the city, as anecdotal evidence suggests that finding a convenient carpark can be difficult. This result is positively correlated with the cost of parking results below.

Parking supply in Wellington CBD: perceptions of parking prices

Definition: The graph shows what people think about the cost of carparking in the Wellington CBD.

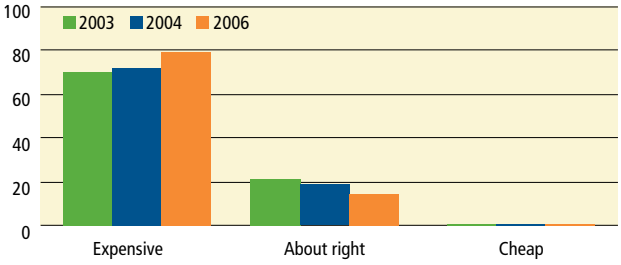

Figure 55: Perceptions of Wellington CBD parking pricing (%). Source: GWRC transport perceptions surveys

Interpretation: The graph shows that 79% of people think the cost to park in Wellington CBD is too expensive (c.f. 72% in 2004). Fourteen percent think the cost is about right (c.f. 19% in 2004) and only 1% think it is cheap as they did in 2003 and 2004.

Comments: Parking pricing is one method of deterring people from driving into city centres. The fact that over 75% of people think parking is expensive and over 60% think parking supply is inadequate demonstrates a level of parking constraint already operating in the Wellington CBD.

Accessibility and economic development summary

Accessibility and economic development indices

Definition: The graph shows the movement in indices for accessibility and economic development and a composite index. All are expressed relative to a base year of 2003. The index has been weighted 3:1 for average vehicle speeds/public transport travel times versus state highway volumes/public transport patronage. This weighting reflects passenger kilometres travelled by mode on the regional strategic transport network.

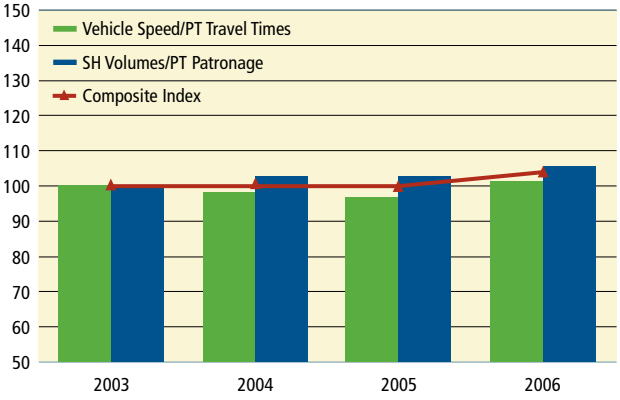

Figure 56: Accessibility and economic development. Index: 2003 = 100

Interpretation: A slight increase in the index in 2006 is shown.

Regional level

State highway traffic volumes have remained fairly static for the past three years. VKT on the state highway network has increased by 3.5% between 2002 and 2006 although there was a slight decrease in 2006, most likely due to a significant rise in fuel prices. Congestion levels have decreased in 2006.

Most short trips less than 1km long made in the region are walked or cycled. Only a quarter of trips between one and two kilometres are made by active modes however. Most people surveyed find it easy to walk in the Wellington region, with just under 40% saying the same about cycling.

2001 census results suggest that fewer people in the Wellington region are travelling to work by private car, although this mode accounts for over 60% of journey-to-work trips. Corresponding gains in walking, cycling and public transport were shown in 2001. More people were also working from home, as technological advances have allowed.

Sub-regional level

There is little information available at the sub-regional level.

The number of occupants per vehicle entering the Wellington CBD in the AM peak remains below 1.4. Morning peak period cycle and pedestrian numbers continue to fluctuate though have increased at all surveyed points except the Golden Mile since 2000. Commuter cyclists crossing suburban locations have shown the largest increase at 92% from 2000 to 2006.

A 9% decrease in total inbound traffic volumes to Wellington City in 2006 was lead by the decrease in cars of 8% during the morning commuter peak period.

Outlook

Daily traffic volumes are likely to continue to grow by around 3% to 4% per annum, with some decline in the proportion of private car journeys to work.

Take-up rates of home and teleworking are also likely to increase driven by demands for lifestyle change although this will have a marginal effect on regional travel demands. Active modes will remain variable day to day, but their use is expected to increase with a growing awareness of the potential health benefits and improvements in more cycle and pedestrian networks.

The passenger transport network will not be able to accommodate continuing growth in patronage. There is a three-year time lag before new rail rolling stock will be operational. The rail service may not currently be meeting passenger expectations during the peak periods. For this reason, and along with easing congestion and fuel prices, more people may revert to commuting by private vehicle.

4

Implications for transportation planning

Model forecasts indicate that by 2021 on the Western Strategic Network, vehicle hours (up 44%) will increase much faster than VKT (up 19%), while the number of vehicles will only increase by 7%. Also, more than 75% of the modelled network is anticipated to operate at LOS A or B (free-flow conditions or some minor delays) in the morning peak.

Initiatives encouraging the use of public transport especially for peak-period commuter trips remain important, but travel by car will continue to be the predominant form of regional transport. This is partly due to dispersed development in the Wellington region. Traffic volumes are expected to grow alongside economic activity. Increasing traffic demand will not be met without the construction of significant new infrastructure.

RLTS proposals seek to maximise road network efficiency while encouraging travellers to use public transport and active modes for appropriate journeys. Current measures are relatively passive and rely on voluntary behavioural change. It is likely that direct incentives, such as road charges, congestion pricing and tolls, will be required in future to change travel behaviour.

While already a relatively high number of people make short trips by active modes, GWRC aims to encourage significantly more trips by walking and cycling.

Economic efficiency indicators

This section sets out and discusses items relating to the RLTS economic efficiency objective: *to implement the most efficient options and to ensure that all users of land transport are subject to pricing and non-pricing incentives and signals which promote decisions and behaviours that are, as far as possible, in accordance with efficient use of resources and of optimal benefit to the user.*
It considers the following performance indicators:
Road network congestion costs
Public transport user costs and perceptions of those costs
Private transport user costs and perceptions of those costs
Car operating costs
Fuel price index

Indicators

Road network congestion costs

Definition: The graph shows delay being the difference between modelled travel time on the road network and that in uncongested, free-flow conditions (weighted for the volume of traffic).

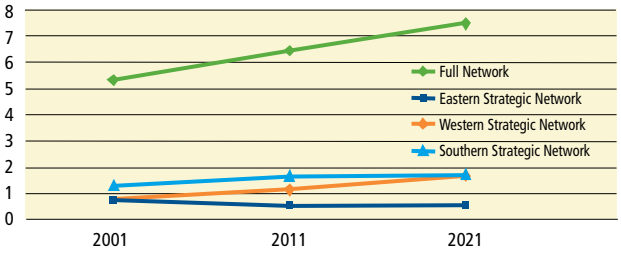

Figure 57: Annual hours of delay on road network (M).
Source: WTSM

Interpretation: Current estimates (2004) are that 5.5 million hours of vehicle delay are experienced per year on Wellington region's roads, costing around $110M per annum. Without any roading improvements this is expected to rise to 7.5 million hours ($150M) per year by 2021. Delays on the strategic network are expected to grow more slowly than delays across the entire network, indicating that increased traffic volumes are likely on non-major roads in attempts to avoid congestion on the major routes. The Eastern Strategic Network is expected to have decreased delays when the Dowse to Petone upgrade is completed (by 2011).

Comments: While growing congestion is a concern, the Wellington region does not experience congestion on the scale of Auckland or most Australian cities. Opportunities should be taken to improve the capacity and efficiency of the roading and public transport networks to ease the cost of congestion.

Public transport user costs

Definition: The graph shows single adult fares (as at March each year) in the morning commuter peak period on the following key routes:

- Wellington – Paraparaumu (rail)
- Wellington – Upper Hutt (rail)
- Wellington – Johnsonville (rail)
- Courtenay Place – Johnsonville (bus)
- Wellington railway station – airport (bus)
- Wellington railway station – Victoria University, Kelburn (bus)
- Wellington railway station – Island Bay (bus).

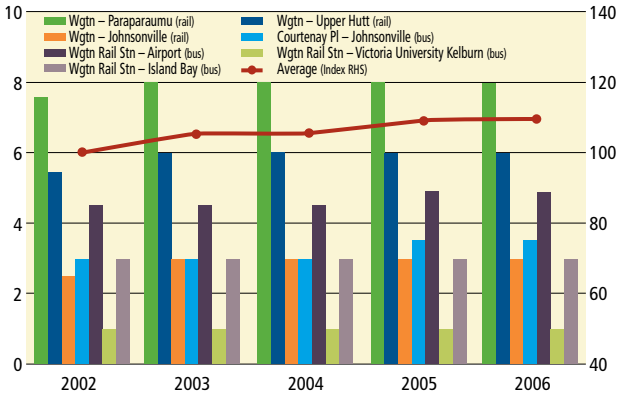

Figure 58: Public transport user costs ($), March.
Index: 2002 = 100. Sources: Metlink; bus/rail operators

Interpretation: There were no changes to fares between March 2005 and March 2006. The public transport fare index increased slightly between 2004 and 2005, owing to fare increases on two of the measured routes.

Comments: Public transport must be a competitively priced mode choice to attract travellers away from private car use, especially for peak-period journeys to work. Fares are one element in this comparison, along with perceived service quality, reliability and convenience.

Perceptions of public transport user costs

Definition: The graph shows the percentage of people in both the Auckland and Wellington regions who stated that cost affects their use of public transport.

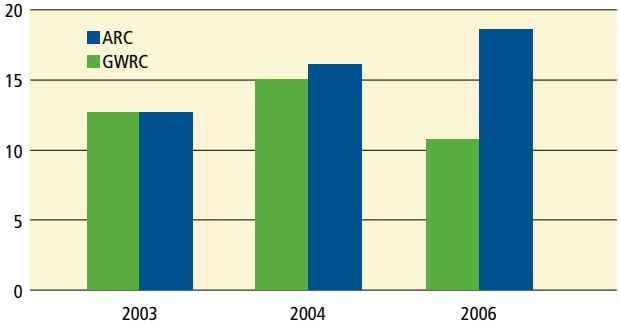

Figure 59: Public transport costs as a barrier to use (%), Wellington and Auckland regions. Source: GWRC and ARC transport perceptions surveys

Note: First ARC results are sourced from a 2002 survey.

Interpretation: Eleven percent of those Wellington region residents surveyed in 2006 considered the cost of public transport services to be a hindrance to their use of it. This is a decrease of 4% from 2004. By comparison, 18% in the Auckland region had the same perception in 2006.

Comments: Cost is not a major barrier to public transport as the travel mode of choice. Other factors such as convenience and irregularity of service which are not reported here are more dominant reasons for people to avoid using public transport more often.[1]

Car operating costs

Definition: The graph shows vehicle operating costs per kilometre for a two-litre, petrol-engine car driven 14,000km a year. Costs are broken down into fixed (unrelated to vehicle use) and running (proportional to use). Parking charges are not included.

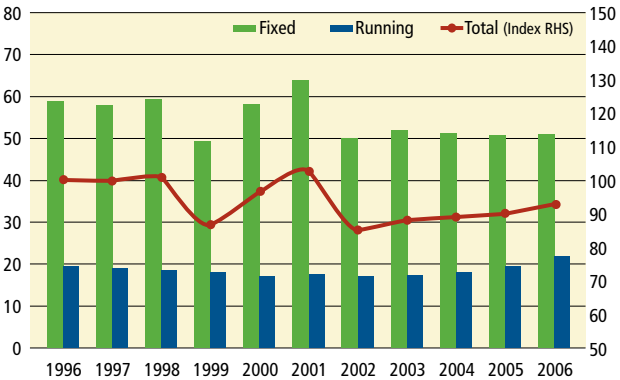

Figure 60: Petrol driven car operating cost (cents). Index: 1996 = 100. Source: Automobile Association of New Zealand

Note: For 1601–2000 cc car; 12, 000 km/yr 1996–2001, 14,000 km/yr 2002–present.

Year	Month	Petrol per litre ($)
1996	May	0.92
1997	May	0.94
1998	May	0.91
1999	May	0.82
2000	March	1.02
2001	January	1.01
2002	March	1.05
2003	January	1.09
2004	March	1.17
2005	April	1.32
2006	May	1.73

Table 6: The price of petrol used in the running cost calculation in **Figure 60**. Source: Automobile Association of New Zealand

Interpretation: The total cost of operating a two-litre car grew by over 4% between 2005 and 2006. Fixed costs rose by 1% after a slight decreasing trend since 2002. The combined direct running costs of petrol, oil, tyres, repairs and maintenance have continued to rise since 2002 with a significant increase of 13% from 2005 to 2006.

Cars were used more in 2002 than in previous years. The average running distance per year increased to 14,000 km from 12,000 km which had the effect of lowering the cost per kilometre by 7%.

Comments: The costs of owning, operating and maintaining a car are usually considered when choosing a mode of transport. However, often comparison of public transport costs with only the variable or marginal costs of running a car are made. Although the price of petrol is a prominent consideration in travel mode choice, it has little effect on overall cost.[2] This is demonstrated by the minor increase of car operation cost in 2006 despite a significant increase in petrol price. If included in this analysis, parking charges would increase car use cost relative to that of public transport.

[1] National Research Bureau (2006). Greater Wellington Regional Council Transport Perceptions Survey: June 2006.
[2] Automobile Association of New Zealand (2006). Car costs: What does it cost to drive for a year? In AA Directions (Winter 2006), p. 61.

Perceptions of private transport user costs

Definition: The graph shows the percentage of people who considered cost to be a barrier to their use of private transport. Comparison between the Auckland and Wellington regions is made.

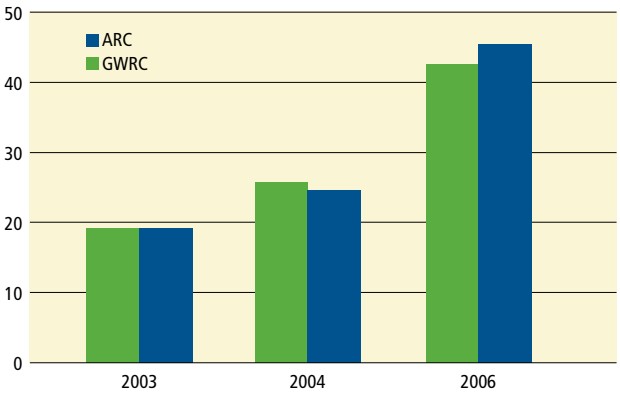

Figure 61: Private transport costs as a barrier to use (%), Wellington and Auckland regions. Source: GWRC and ARC transport perceptions surveys

Note: First ARC results are sourced from a 2002 survey.

Interpretation: Forty-three percent of those in the Wellington region felt that the cost of using a private vehicle hindered their use of it in 2006 compared with only 26% in 2004. The results are almost identical in Auckland with an increase from 25% sharing this view in 2004, to 46% in 2006.

Comments: A major shift in perception has occurred between the 2004 and 2006 surveys in both Wellington and Auckland with just under half of respondents indicating that cost is a barrier to private vehicle use. It is likely that the increasing price of fuel has led to this result.

Fuel price index

Definition: The graph shows the March quarter measure of the fuel component of the Farm Expenses Price Index (FEPI). The FEPI measures price changes of fixed inputs of goods and services to the farming industry. The data is collected quarterly as part of the Commodity Price Survey.

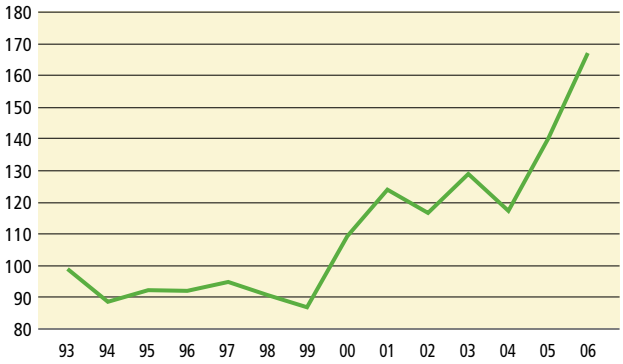

Figure 62: Fuel component of national Farm Expenses Price Index. March quarter. 1993 = 100. Source: Statistics New Zealand

Interpretation: The fuel price index increased by over 24% between 2005 and 2006 building on a 21% increase the year previous. Since 2001, an overall increase of 40% is shown and over the past 10 years the index has almost doubled.

Comments: The price of fuel has shown some volatility and in recent years has risen sharply.

Economic efficiency summary

Economic efficiency indices

Definition: The graph shows the movement in indices for economic efficiency and a composite index. All are expressed relative to a base year of 2003. Public transport user costs and car operating costs are equally weighted.

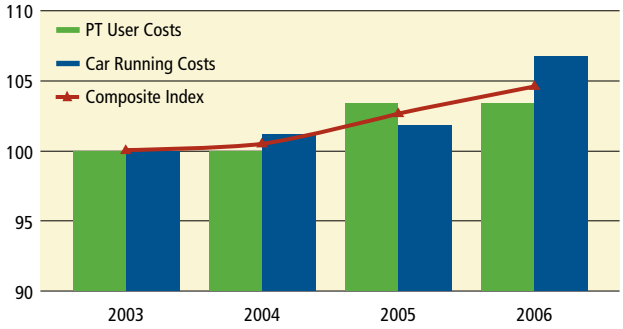

Figure 63: Economic efficiency indices. 2003 = 100

Interpretation: No increase in public transport user costs occurred in 2006. However car operating costs have risen 4% since 2005 causing a corresponding increase in the composite index.

Regional level

Over 5.5 million hours of vehicle time were spent on congested regional roads in 2004. Public transport fares across the region did not change between March 2005 and March 2006. There was a 4% decrease in the number of Wellingtonian's who considered the cost of public transport to be a barrier to their use of it. The number of people in the region considering cost to be a hindrance to their use of private transport increased by 17%.

Sub-regional level

No sub-regional information is available.

Outlook

Time spent using the transport network is likely to increase with population growth and economic activity. While congestion levels are not on the scale of Auckland or the larger Australian cities, average time spent on the road network will rise as congestion intensifies and spreads to previously uncongested roads and times of day.

Implications for transportation planning

The costs of congestion will rise as regional demand for travel increases. This situation could be averted by encouraging the choice of sustainable modes such as public transport, and walking and cycling ('active' modes) for shorter trips. More efficient use of the road network and peak-period commuter trips made by public transport will also ease congestion. The Wellington region Travel Behaviour Change Travel Plan Programme aims to address some of these issues and will enter its implementation phase over the next year.

It remains to be seen whether recent increased public transport patronage will be sustained as some peak services have reached capacity. September 2006 Metlink fare increases coupled with a reduction of the price of fuel since approximately June 2006 may make the private vehicle a more attractive travel option.

It is critical then, in order to maintain public transport as a reasonable alternative to the private vehicle, to continue to progressively invest in public transport and provide frequent, reliable service that meets the needs of the public. Services need to be targeted to help manage car use and attract current drivers. Higher order public transport, such as Bus Rapid Transit can create a new level of parity between public transport and vehicles. Increasing investment in park and ride facilities, transit priority measures or dedicated bus lanes will all assist in easing congestion and addressing the associated costs of congestion to the region.

Easing congestion on the road network as shown by the travel time performance indicators (Chapter 4: Accessibility and economic development indicators) may also have an effect on mode choice. Anecdotal evidence suggests that congestion has further improved since March 2006.

Affordability indicators

This section sets out and discusses items relating to the RLTS affordability objective: *to plan for a land transport system that recognises funding constraints and ability to pay.* It considers the following performance indicators:
Capital works expenditure
Maintenance works expenditure
Public Transport subsidy expenditure
Total Mobility scheme expenditure
Household travel expenditure

Indicators

Capital works expenditure

Definition: The graph shows total annual expenditure on capital works associated with the road network, by road-controlling authority (RCA). Note that Transit New Zealand's expenditure includes property purchases for new roading developments.

Capital expenditure: new works and replacement/renewal of existing assets for the roading network including expenditure on public transport improvements such as bus lanes/bus shelters which are a part of the roading network and funded or part-funded by GWRC. This includes new traffic signals, roundabouts, road links, footpaths, bus lanes, street furniture, street lighting and seal replacement on roads and footpaths.

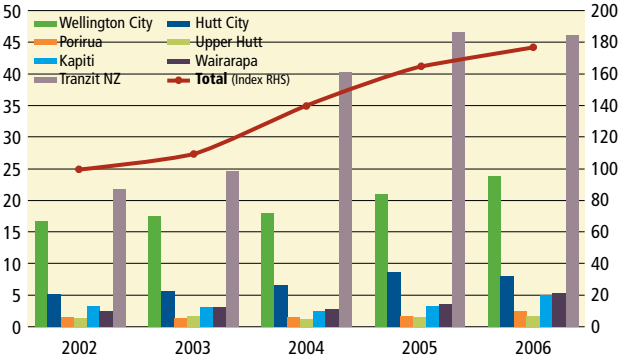

Figure 64: Capital works expenditure ($M) by RCA, by year. Index: 2002 = 100. Sources: local authorities, Transit New Zealand

Note: Capital works expenditure has been confirmed where possible; however some expenditure also remains unconfirmed.

Interpretation: Overall the index has increased 77% over the five years to 2006. Investment in capital works exceeded $92M in 2005/06. This represents an increase of 8% between 2004/05 and 2005/06.

Comments: The cost of delivering road maintenance and construction has been driven up in recent years due to the roading sector in New Zealand experiencing significant real price pressure. This results in reduced activity for the same level of investment.[1]

Maintenance works expenditure

Definition: The graph shows total annual expenditure on maintenance works associated with the road network, by road-controlling authority (RCA). Note that the 2002 figure reported for Transit New Zealand is an estimate only.

Maintenance expenditure: operational and maintenance expenditure for the roading network excluding replacements/renewals and any expenditure on emergency works.

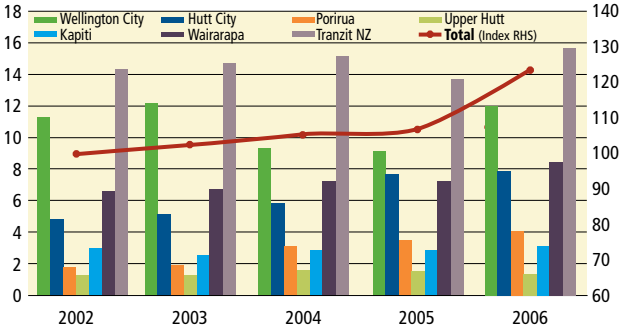

Figure 65: Maintenance works expenditure ($M) by RCA, by year. Index: 2002 = 100. Sources: local authorities, Transit New Zealand

Note: Maintenance works expenditure has been confirmed where possible; however some expenditure also remains unconfirmed.

Interpretation: The index increased by 16% between 2005 and 2006.

Comments: Maintenance expenditure has increased at well above the rate of inflation during 2005/06. Increases in expenditure are due to the same factors that have influenced the increase in capital expenditure on the roading network.

[1] Doherty, K. (2006). Transit New Zealand Value for Money Project Update.

Public transport subsidy expenditure

Definition: The graph shows combined GWRC and Land Transport New Zealand financial contributions to the public transport contracted services operating costs.

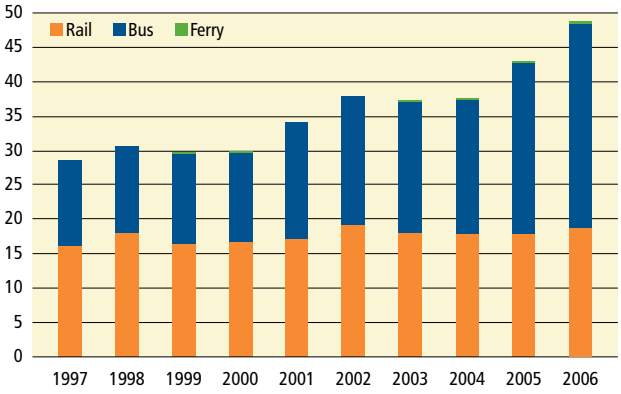

Figure 66: Public transport operating expenditure on contracted services ($M). Source: GWRC

Interpretation: As public transport services have increased over time, so too have the cost contributions of GWRC and Land Transport New Zealand to those services. The total subsidy has increased by 14% overall in 2005/06 following on from 13.5% in 2004/05.

Comments: The cost of public transport service contracts is not strictly on a per-passenger basis, so parallels between public transport expenditure and public transport patronage cannot be made. For example, factors such as community accessibility and severance are taken into account when funding services.

Total Mobility scheme expenditure

Definition: The graph shows total GWRC and Land Transport New Zealand expenditure on the Total Mobility Scheme since 2000. This scheme assists people who have difficulty using public passenger transport services and is administered by GWRC. A voucher system provides a 50% discount on taxi fares to people who meet certain eligibility criteria.

Eligibility criteria are endorsed by the Ministry of Transport. GWRC has operated the scheme under these criteria over the six-year period shown in the graph.

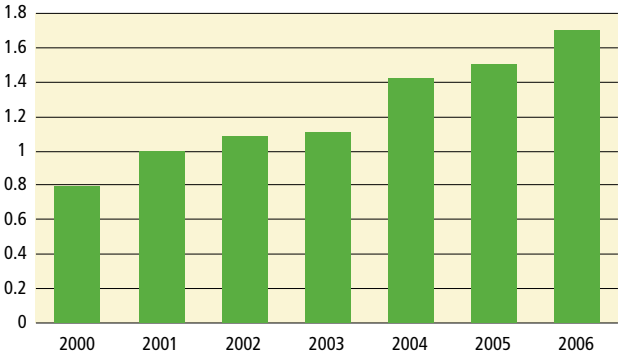

Figure 67: Total Mobility scheme expenditure ($M). Source: GWRC

Interpretation: Expenditure on the Total Mobility Scheme continues to rise.

Comments: Increased expenditure is mainly due to increased patronage. Fuel price increases may be impacting on the cost of the scheme also. Expenditure increase is also linked to the aging population with approximately 75% of the current client base over the age of 65 years. This is in line with other areas of the country.

Knowledge of the scheme is increasing, resulting in growth in client numbers. Additional demand on the scheme can also be attributed to a move to house more people with disabilities in the community.

Household travel expenditure

Definition: The graph shows national average weekly household expenditure. This data by individual region is unavailable. The Household Economic Survey collects this information three-yearly so the next update will be in the 2007/08 AMR.

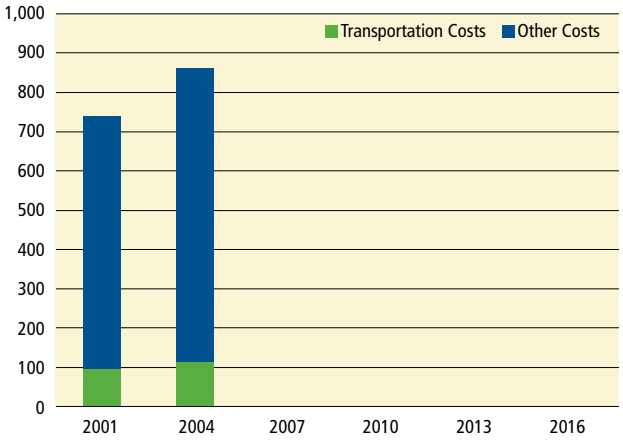

Figure 68: National average weekly expenditure per household ($). Source: Statistics New Zealand

Interpretation: The total average weekly household expenditure for 2003/04 was $860.80, of which domestic travel accounted for $114.60 or 13% (approximately equal to the contribution of travel expenditure in 2001). Total household expenditure increased by almost 17% and travel expenditure by 20% between 2001 and 2004.

Comments: The proportion of average weekly travel expenditure relative to average total expenditure per household remains unchanged between the two surveys. Like any economic good or service, consumption is influenced by price. If the cost of travel increases relative to other costs, total travel demand is likely to reduce, and vice versa.

Affordability summary

Affordability indices

GWRC does not currently hold enough information to establish indices for this category.

Regional level

Capital and maintenance expenditure on the roading network, public transport subsidy and Total Mobility scheme expenditure have all increased over 2005/06. However, this expenditure does not necessarily reflect increases in services or productivity directly due to cost increases in the sector being high.

Sub-regional level

Growth in capital and maintenance expenditure on the roading network is evident in most areas. These are the only indicators disaggregrated to territorial authority level.

Outlook

The outlook for regional expenditure has improved significantly with the Government announcements of additional funding of $965M over the next 10 years to improve the region's transport system. However this does not fully meet the funding required to implement the Regional Land Transport Programme. This additional funding is not indexed to inflation and is therefore rapidly losing value due to cost escalation pressures currently being experienced.

Implications for transportation planning

The transport network requires ongoing investment to maintain and improve accessibility and efficiency levels. In particular, continuing investment in public transport infrastructure and services needs to be made to meet the changing requirements of the community. Demographic changes and increasing transport needs of those with mobility challenges may then be addressed with all socio-economic groups catered for.

7 Safety indicators

This section sets out and discusses items relating to the RLTS safety objective: *to provide a safer community for everyone through a transport system that achieves or improves on the targets of the National Road Safety Plan through the Regional Road Safety Strategy.* It considers the following performance indicators:
Injury crashes by district
Casualties by district
Casualties by severity type
Casualties by region
Fatalities and hospitalisations
Relative risk by transport mode
Cycle casualties by district
Perceptions of cycle safety and child cyclist safety
Pedestrian casualties by district
Perceptions of pedestrian safety and child pedestrian safety
Motorcycle casualties by district
Perceptions of road network safety
Perceptions of public transport safety
Personal security

Indicators

Total injury crashes

Definition: The graph shows total recorded injury crashes for all vehicle types in the Wellington region.

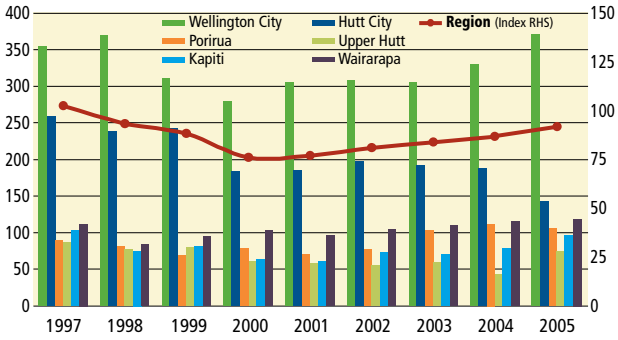

Figure 69: Total injury crashes (including fatalities) by district. Calendar year. Index: 1997 = 100. Source: Land Transport New Zealand

Interpretation: There was a general, longer-term downward trend in most districts and across the whole region until 2000. Since 2001, total regional injury crashes have continued to increase, particularly in Wellington City, Porirua City and Wairarapa. Total numbers of injury crashes are currently below 1997 levels in all other territorial authority areas.

Wellington City has shown a 14.5% increase in 2005 following an increase of 8% in 2004. Upper Hutt's injury crash numbers have fluctuated in recent years and have risen from 43 in 2004 to 72 in 2005. Kapiti increased by 26% although, like Upper Hutt, the actual number of crashes is smaller compared to some other areas. Total injury crashes in Wairarapa rose 3.5% in 2005 driven by Masterton's increase of 25% from 2004 with 71 crashes recorded. South Wairarapa crash numbers dropped back to 26 in total after an increase to 41 in 2004. Porirua has decreased by 6.3 % in 2005 following an increase of 8.7% in 2004. Injury crashes in Hutt City also decreased 23% in 2005.

Comments: Vehicle safety improvements, driver education and proactive safety engineering on local roads have previously all contributed to reductions in crash numbers. However, crash numbers continue to trend upwards from the year 2000.

Casualties by district

Definition: The graph shows total recorded casualties for all vehicle types across the Wellington region.

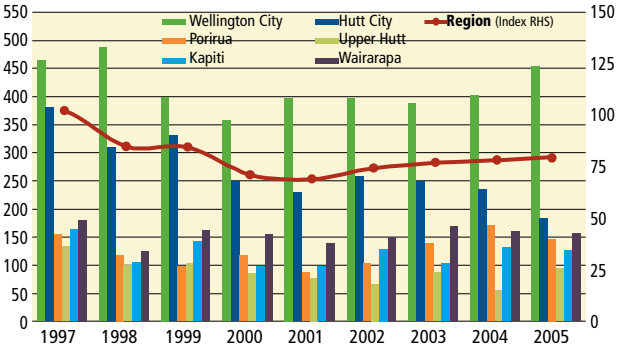

Figure 70: Total casualties (including deaths) by district. Calendar year. Index: 1997 = 100. Source: Land Transport New Zealand

Interpretation: In a similar vein to total injury crashes, total recorded casualties showed a longer-term downward trend in most districts and across the region as a whole until 2001, after which an increase is apparent.

In 2005 casualty numbers decreased slightly in Wairarapa overall along with South Wairarapa (down from 58 to 39). An increase of 12% was experienced in Masterton however and Carterton District casualty numbers rose from 24 to 32 in 2005. Total casualty numbers decreased in Hutt and Porirua cities in 2005, down by 22% and 14% respectively. Kapiti achieved a slight decrease after an increase of 27% 2004. In 2005 Upper Hutt casualties rose from 54 to 95, the highest number for many years. Wellington City reached a seven-year high number of casualties, increasing by 13% in 2005.

Comments: In 1999 the RLTS set a ceiling for 2001 of 1,200 casualties in total. Fewer casualties than this

level have been recorded since 2000 when the total fell to 1,054. Despite this goal having been met the above data shows an increase in total recorded casualties for all vehicle types since 2001.

Casualties by severity type

Definition: The graph shows casualties classified by severity: fatal, serious and minor. The severity of a crash is determined as the most severely injured casualty in the crash.[1]

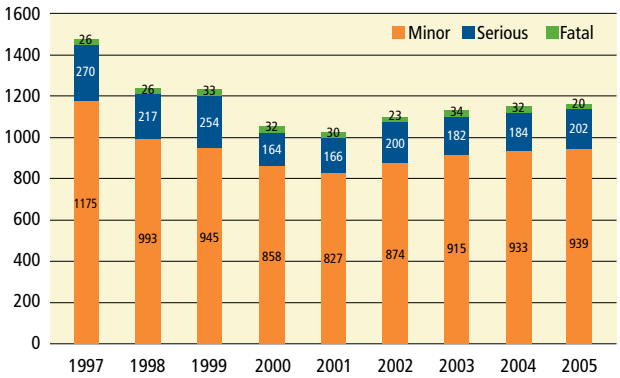

Figure 71: Total casualties, by type, by calendar year. Source: Land Transport New Zealand

Note: Fatal = injuries that result in death within 30 days of a crash. Serious = fractures, concussion, internal injuries, crushing, severe cuts and lacerations, severe general shock necessitating medical treatment, and any injury involving removal to and detention in hospital. Minor = injuries which are not serious but which require first aid, or cause discomfort or pain to the person injured, e.g. sprains and bruises.[2]

Interpretation: Fatalities decreased by 12 in number to a total of 20 in 2005. Serious casualties increased by approximately 10% in 2005 while minor casualty numbers were very similar to 2004. Serious and fatal casualty numbers were very similar in 2003 and 2004.

Comments: Improved vehicle safety, driver education and proactive road safety engineering have all contributed to the reduction in casualties to 2001. A continuation of the road safety interventions of education, engineering and enforcement is necessary to improve casualty rates in the region.

Casualties by region

Definition: The graph shows the number of casualties per 100,000 population in Wellington, Auckland and Canterbury regions.

[1]and [2] Land Transport New Zealand (2006). Wellington Region Road Safety Report 2001 to 2005. p. 3.

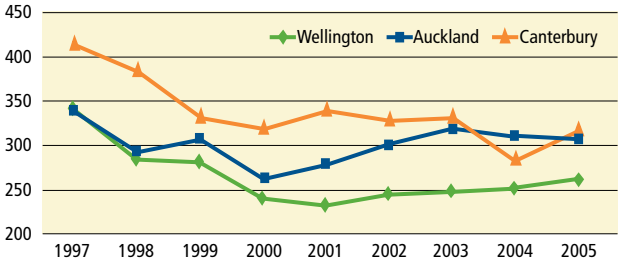

Figure 72: Casualties per 100,000 population, by calendar year. Sources: Land Transport New Zealand, Statistics New Zealand

Interpretation: At 255 casualties per 100,000 population (a slight increase from 2004) Wellington retains the lowest casualty rate of the three regions measured. Canterbury has shown the greatest reduction in casualties per 100,000 population between 1996 and 2005 at 33%, followed by Wellington with 27%, while Auckland has achieved a decrease of 21% over the nine-year period. The Canterbury region experienced an increase in number of casualties per 100,000 population of almost 8% in 2005 with Auckland experiencing a slight reduction.

Comments: While Wellington's casualty rate is considerably better than that of our peer regions the data shows an increase in total recorded casualties for all vehicle types since 2001.

Fatalities plus hopitalisations

Definition: The graph shows the number of deaths plus the number of people hospitalised; deaths plus those hospitalised more than one day; deaths plus those hospitalised for more than three days, as well as regional targets for road casualties as set by the Wellington Regional Road Safety Strategy (2004) in line with the national Road Safety to 2010 strategy.

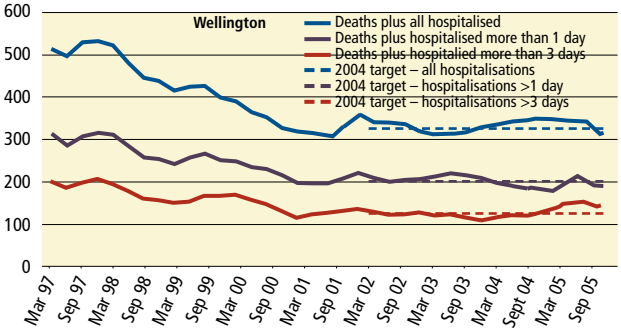

Figure 73: Number of deaths plus hospitalisations (12-month totals) resulting from road crashes. Source: Land Transport New Zealand

Interpretation: Trends are generally plateauing with a decrease across each category shown in late 2005.

Comments: The Wellington region has not consistently achieved the 2004 interim targets remaining above the 'deaths plus hospitalised more than 3 days' target in 2005. However the number of deaths plus the number of people hospitalised have dipped below the remaining two targets for the first time since March 2004. If trends continue it will be unlikely that the (lower) 2010 targets will be achieved unless proven road safety interventions are rejuvenated by all agencies involved in regional road safety.

Relative risk by transport mode

Definition: The graph shows provisional national casualties reported per million trips, by transport mode. A regional breakdown will be available in 2007.

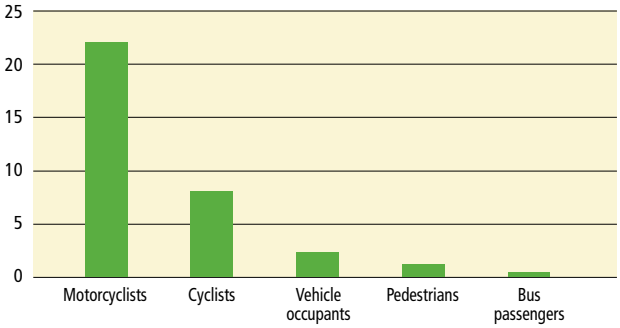

Figure 74: National casualties per million trips by transport mode, 2002–2005 (provisional). Sources: Ministry of Transport; Land Transport New Zealand; New Zealand Household Travel Survey

Note: Trip refers to a segment of travel by a single mode, for a single purpose, to one stop. For example, walking to the bus, riding the bus to town and walking to work would be three trips. Driving to work via a stop at the shop is two trips. Vehicle occupants refer to trips made in light, four-wheeled vehicles i.e. cars, vans, utilities and sports utility vehicles (SUV).

Interpretation: The relative risk of each mode is determined using an 'exposure-to-risk' indicator of casualties per million trips. Provisional 2002–2005 data shows that a cyclist is 3.6 times as likely as a vehicle occupant on any given trip to become a casualty and 7.5 times more likely than a pedestrian. Bus travel represents the mode of travel with least casualty risk and motorcyclists face the greatest risk of casualty.

Comments: Reducing cyclist risk is a priority for road safety initiatives. Cycling is safe but cyclists are vulnerable road users and while there is only one chance per 40,000 hours cycled of experiencing a casualty it is 'less safe' than some of the other modes.[3] Pedestrian travel is starting from a good base and initiatives on pedestrian safety are likely to be about maintaining that level. National and regional road safety initiatives will assist with addressing vehicular risk.

Cycle casualties by district

Definition: The graph shows cycle casualty numbers by district.

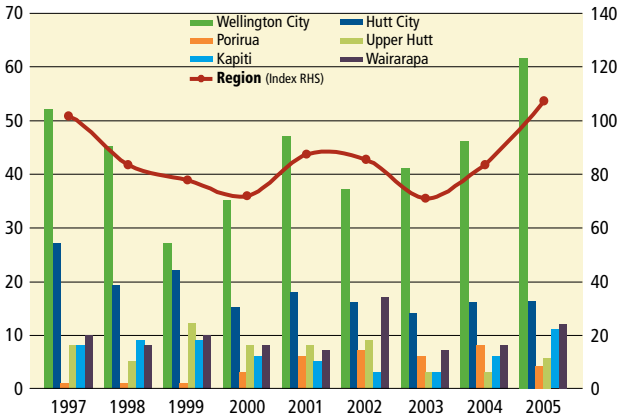

Figure 75: Cycle casualties, by district. Calendar year. Index: 1996 = 100. Source: Land Transport New Zealand

Interpretation: In 2005 cycle casualty numbers across the region were the highest for a decade increasing by 30% from 2004 to 112 in total. Numbers in Wellington City have risen 68% since 2002 with a 35% increase in 2005 although actual numbers are low at 62 in total. Hutt City, Upper Hutt, Kapiti and Masterton also experienced an increase in cycle casualties in 2005. Porirua City was the only district to show a decrease in 2005 with half the number of cycle casualties as 2004.

Comments: Cyclist casualties are disproportionately high given the low number of trips made by cycle. Cyclists are vulnerable road users; however cycling is a transport mode that needs to be encouraged. The GWRC Regional Cycling Strategy (2004) supports and promotes the cycling culture in the region.

Perceptions of cycle safety

Definition: The graph shows how safe respondents think people are when using bicycles in both the Wellington and Auckland regions.

[3] Greater Wellington Regional Council (2004). Regional Cycling Strategy May 2004, p. 19.

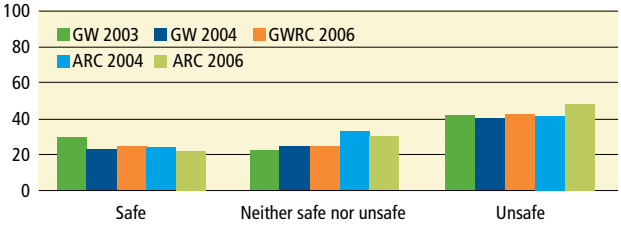

Figure 76: How safe do you think people are when cycling? (%). Sources: GWRC and ARC perception surveys

Interpretation: Forty-two percent of Wellington region respondents said they think people feel 'unsafe' when cycling (c.f. 40% in 2004) while 26% reported they think people generally are 'safe' (c.f. 23% in 2004). Auckland region respondents choosing the 'unsafe' category increased from 41% in 2004 to 47% in 2006.

Comments: GWRC and the community must focus on providing a safe environment for all transport users. Greater Wellington's Regional Cycling Coordinator appointed in 2004 is working to improve perceptions of cycle safety in the region.

Perceptions of child cyclist safety

Definition: The graph shows the percentage of people in the Wellington region who would or do allow a child to cycle unsupervised in the vicinity of their home and to or from school.

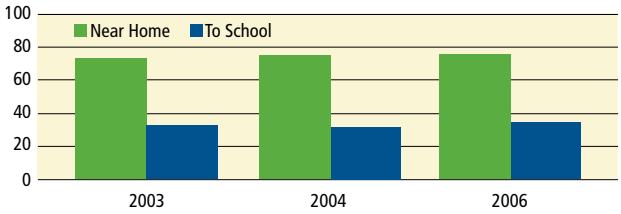

Figure 77: Allowing a child (under 12 years) to ride their bicycle unsupervised (%), Wellington region. Source: GWRC perception surveys

Interpretation: While 74% of respondents would allow children to cycle unsupervised near their home (c.f. 73% in 2004) only 37% would let them cycle to school (c.f. 32% in 2004). The main reasons given for not allowing children to cycle to school were the volume of traffic and poor driver behaviour (50% of respondents). Other reasons included the condition of the roads (16%), speeding traffic (9%) and a lack of road sense by children (10%).

Comments: For GWRC and the wider community the focus is on providing a safe environment for transport users of all ages. Many parents and caregivers drive their children to school as they feel it is too dangerous on the roads for young cyclists. This leads to increased congestion and traffic danger at the school gate, and children who lack physical activity and road sense.

Pedestrian casualties by district

Definition: The graph shows pedestrian casualties by district.

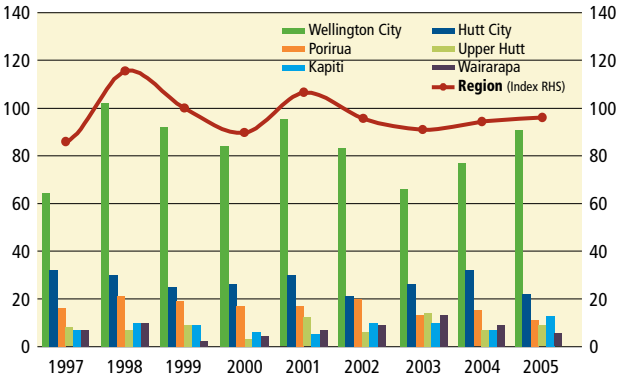

Figure 78: Pedestrian casualties, by district. Calendar year. Index: 1996 = 100. Source: Land Transport New Zealand

Interpretation: Pedestrian casualty numbers throughout the region fluctuate from year to year and exhibit a fairly flat trend overall. The regional trend is largely driven by Wellington City, where approximately 50% of casualties occur. This may be explained by the high proportion of pedestrian trips undertaken in the city.

In the past year Wellington City's pedestrian casualty numbers increased by 18% after a similar increase in 2004. Hutt City experienced a 31% rise in 2005 with 10 more pedestrian casualties than the year previous. Casualty numbers in Kapiti rose from 7 in 2004 to 12 in 2005 and there were four fewer pedestrian casualties in Porirua City. Upper Hutt also experienced two less casualties in 2005. Three fewer pedestrian casualties resulted in the Wairarapa area in 2005 compared with 2004.

The region's pedestrian casualty figures as a whole increased by 2.7%, continuing a slight upward trend since 2003.

Comments: The GWRC Regional Pedestrian Strategy 2004 aims to address safety issues associated with pedestrians. Provisional data shows that the risk of a pedestrian experiencing a casualty is roughly half that of vehicle occupants and approximately one-eighth

that of cyclists.[4] The occurrences of pedestrian versus vehicle crashes on urban roads in the Wellington region were high when compared with the rest of New Zealand during the period 2001–2005.[5]

Perceptions of pedestrian safety

Definition: The graph shows how safe respondents think people are when walking, Wellington and Auckland regions.

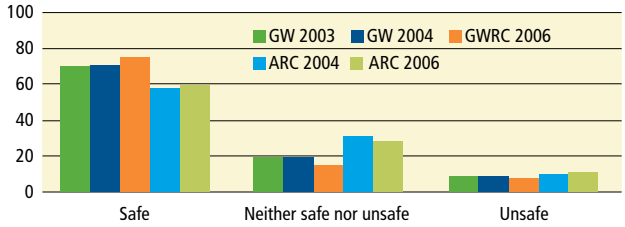

Figure 79: How safe do you think people are when walking? (%) Sources: GWRC and ARC perception surveys

Interpretation: In the Wellington region, 76 % of respondents said they felt people were 'safe' while walking (c.f. 71% in 2004) while like in previous surveys, only 8% said they thought it was 'unsafe'. This compares favourably with ARC's survey, with 17% more people feeling 'safe' in Wellington than in Auckland.

Comments: With such a high number of people walking in the Wellington region, it is not surprising that a large number feel safe doing so. This result correlates well with the relatively low risk of being involved in a crash with a motor vehicle.

Perceptions of child pedestrian safety

Definition: The graph shows the percentage of people in the Wellington region who would or do allow a child to walk unsupervised in the vicinity of their home and to or from school.

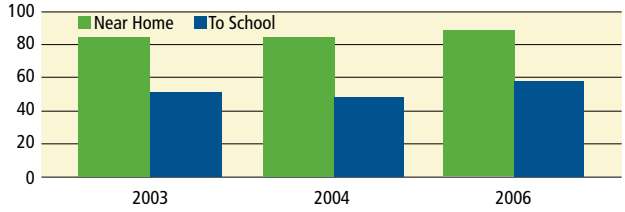

Figure 80: Allowing a child (under 12 years) to walk unsupervised (%), Wellington region. Source: GWRC perception surveys

[4] Ministry of Transport; Land Transport New Zealand; New Zealand Household Travel Survey (2002–2005 provisional data).
[5] Land Transport New Zealand (2006). Wellington Region Road Safety Report 2001 to 2005. p. 43, 76.

Interpretation: Eighty-eight percent of respondents would allow children to walk unsupervised near their homes (c.f. 84% in 2004), while only 59% would allow them to walk to school (c.f. 52% in 2004).

The main reason given for not allowing children to walk to school unsupervised relates to 'stranger danger' issues (35% of respondents). This is a significant improvement from the 2004 perception survey figure of 42% and that of 49% in 2003. Other reasons given included the volume of traffic and main roads the children would need to contend with (21%), and that the distance was too great (19%).

Comments: A slight increase in the number of respondents allowing children to walk unsupervised is shown in 2006. While the actual recorded occurrence of 'stranger danger' incidents is very low, the media play a large role in over-reporting such incidents, leading to a climate of fear.

Many parents and caregivers drive their children to and from school as they feel their communities are unsafe. This leads to less physically active children and congestion both at the school gate and on the roads generally. A continued focus on providing and promoting a safe environment for transport users of all ages by GWRC will benefit the community as a whole.

Motorcycle casualties by district

Definition: The graph shows motorcycle casualties by district.

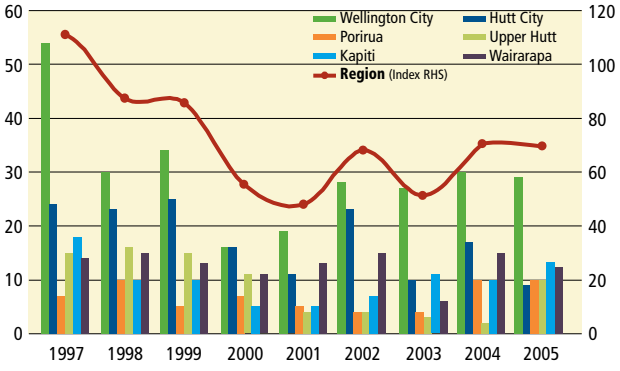

Figure 81: Motorcycle casualties, by district. Calendar year. Index: 1996 = 100. Source: Land Transport New Zealand

Interpretation: Until 2000, a clear downward trend in motorcycle casualties is shown; however in the years following casualty numbers have fluctuated. The number of motorcycle casualties in 2005 increased in Upper Hutt by eight and in Kapiti District by three. Porirua City motorcycle casualties remained the same

as 2004 at 10 in total with Hutt City decreasing by eight casualties to a similar total in 2005. The Wairarapa area also experienced an overall decrease in number of motorcycle casualties from 2004 to 2005. Casualties in Wellington City decreased by one in 2005 to a total of 29.

Comments: The strong downward trend in motorcyclist casualty figures has halted and although fluctuating, the overall number seems to be on the increase.

Perceptions of road network safety

Definition: The graph shows how safe respondents in the Wellington and Auckland regions feel when using a car.

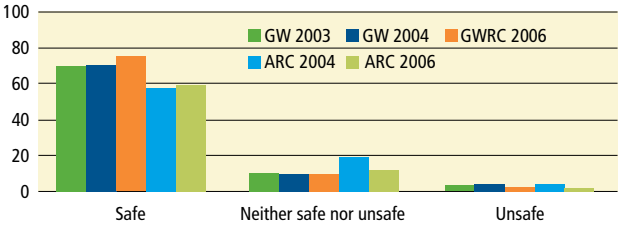

Figure 82: How safe do you feel when using a car? (%) Sources: GWRC and ARC perception surveys

Interpretation: Eighty-seven percent of Wellington respondents said they felt 'safe' when using a car (c.f. 85% in 2004), while only 2% thought it was 'unsafe' (c. f. 4% in 2004). This result is similar to ARC's survey with 2% more people reporting feeling 'safe' in Wellington than in Auckland (c.f. 8% in 2004).

Comments: With such high mode use, many people perceive they are safest when in their vehicle.

Perceptions of public transport safety

Definition: The graph shows respondents' perceived safety when using public transport in Wellington and Auckland regions.

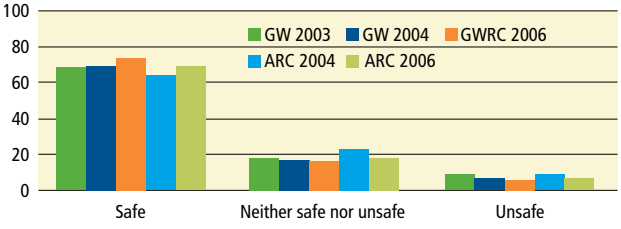

Figure 83: How safe do you feel when using public transport? (%) Sources: GWRC and ARC perception surveys

Interpretation: In the Wellington region 74% of respondents said they felt 'safe' when using public transport (c.f. 69% in 2004) and 6% 'unsafe' (c.f. 7% in 2004). This compares favourably with ARC's survey, with 5% more people feeling 'safe' in Wellington than in the Auckland region.

Comments: GWRC and the community must continue to focus on providing a safe environment for public transport users.

Safety perceptions on public transport

Definition: The percentage of respondents who did not cite safety as a reason for avoiding using public transport in the past 12 months is represented in the graph.

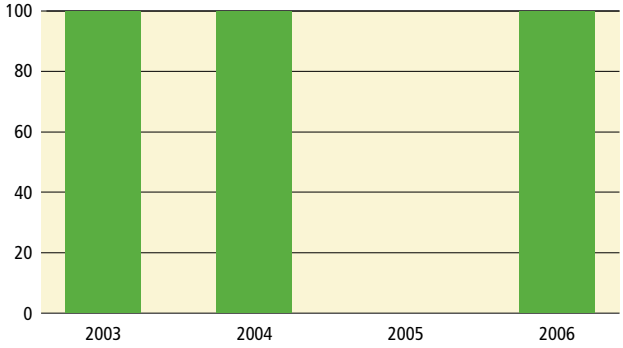

Figure 84: People surveyed who did not cite safety concerns as a reason for avoiding the use of public transport. Source: GWRC perception surveys

Interpretation: In the 2006 survey, of the 248 respondents who said they had not used public transport in the past 12 months one cited safety concerns as a reason. This compares with no one citing safety as a reason why they did not use public transport in the previous 12 months in either the 2003 or 2004 surveys.

Comments: Less than 1% of those who said they had not used public transport in the past 12 months, cited safety concerns as a reason for not using public transport (2006). Safety is therefore, not a reason to avoid using public transport for Wellington region residents.

Personal security

Definition: The graphs show a selection of data relating to personal security in the greater Wellington region. The data refers to the Wellington policing district, which differs slightly from GWRC boundaries (excludes Otaki and includes the Chatham Islands). The data also relates to all reported offences, including but not limited to convictions.

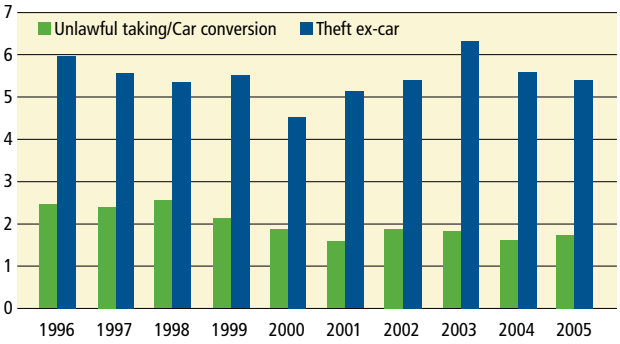

Figure 85: Unlawful taking or theft of a motor vehicle and theft ex-car, (000), Wellington regional policing district. Calendar year. Source: New Zealand Police

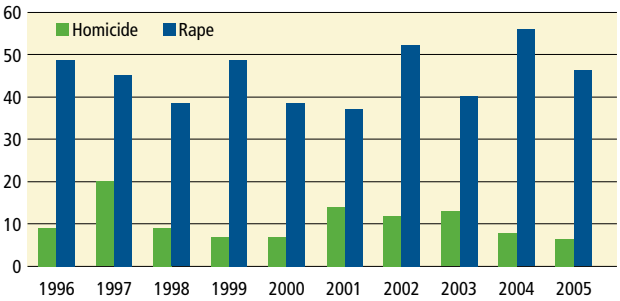

Figure 86: Homicide and rape, Wellington regional policing district. Calendar year. Source: New Zealand Police

Note: Homicide includes murder, manslaughter, infanticide and attempts or conspiracy to commit homicide.

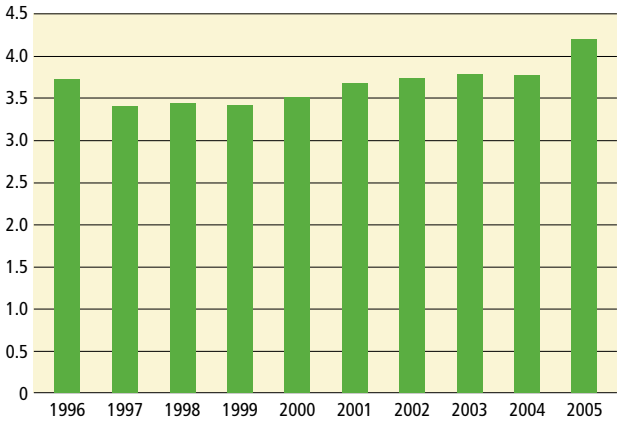

Figure 87: All assaults, (000), Wellington regional policing district. Calendar year. Source: New Zealand Police

Interpretation: Both the total number of assaults in the region and the unlawful taking or theft of a motor vehicle increased by approximately 12% in 2005 while theft from cars decreased by 4%. Homicides numbers have continued to decrease since 2003 when 13 were recorded, to six in 2005. Reported rapes in the region in 2005 also decreased by nine in total after a significant increase in number in 2004.

Comments: Users of environmentally sustainable forms of transport such as walking, cycling and public transport are very likely to encounter other members of the community. High levels of perceived personal security are required if people are to be willing to use or allow their children to use these transport modes.

Safety summary

Safety indices

Definition: The graph shows movement in the safety index. The index is expressed relative to a base year of 1996 and has been weighted 9:1 for total regional casualties versus total vehicle-related crime and assault figures. This weighting reflects confidence in Land Transport New Zealand road safety data and the relatively low relevance of the personal security indicators.

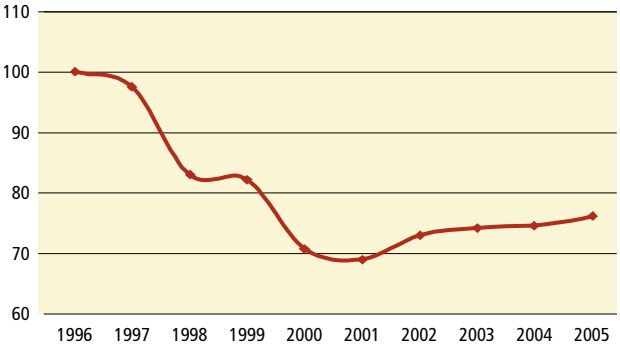

Figure 88: Safety index: 1996 = 100. Sources: Land Transport New Zealand; New Zealand Police

Interpretation: Between 2001 and 2002 there was deterioration in the road safety and personal security index. The trend has levelled out in recent years although a slight increase is shown in 2005.

Regional level

As the safety index is heavily weighted towards road casualties, an increased focus on road safety issues throughout the region is required to improve overall regional safety.

The region's level of reported crimes shown here indicated improvement in the numbers of homicide, rape and theft of motor vehicles in 2005. Theft from vehicles and the number of overall assaults in the region worsened in 2005 however.

Sub-regional level

Annual casualty and injury rates fluctuate at the sub-regional level. The general decrease across these indicators prior to 2001 has been replaced with an overall upward trend in recent years.

Outlook

The challenge for the future is to build on and continue to improve the existing culture of safety for the region.

Achieving the aim of improved regional road safety will depend on concerted efforts across engineering, education and enforcement, as signalled in the Regional Road Safety Strategy 2004. Continued improvement in vehicle safety standards will also help achieve this aim.

Implications for transportation planning

Continued cross-agency efforts are required to improve road safety through engineering, enforcement and education programmes. Continued progress on these three interventions could result in improvements in pedestrian and cyclist casualties which is an ongoing issue for the region. The 2004 Regional Road Safety Strategy action programme also aims to address road safety issues via a range of performance measures.

Opportunity exists for more effective coordination in planning and implementing road safety initiatives for the greater Wellington region. Combined resources in a focused effort between agencies with road safety responsibilities will result in more effective programme delivery and enhanced road safety.

Promoting the social, health and environmental benefits of active transport on the journey to and from school is also of continuing importance for GWRC and the community. An improved perception of safety in the community and the region will encourage increased use of walking, cycling and public transport.

8 Sustainability/environment indicators

This section sets out and discusses items relating to the RLTS sustainability objective: *to provide a land transport system that recognises the needs of the community; avoids, remedies or mitigates against adverse effects; uses resources in an efficient way; supports an optimal demand for energy.* It considers the following performance indicators:
Fuel consumption (LTCCP target)
Carbon dioxide emissions (TDM Strategy target)
Fuel consumption by region
Air quality (LTCCP target)
Noise adjacent to arterial routes
Surface water quality
Land use patterns

Indicators

Fuel consumption: LTCCP target

Greater Wellington LTCCP target 2006–2016: ***Less than 442 million litres of petrol and diesel per annum will be used for transport purposes.***

2005 actual: **464 million litres**

Definition: The graph shows calendar-year total petrol and diesel sales for the region as collected monthly for the local body fuel tax. Although some non-retail sales occur, and some fuel is purchased outside the region but used in it (and vice versa), this is nevertheless a reliable measure of total regional fuel consumption. Sub-regional disaggregation adds little value to the data as fuel is not necessarily used in the area in which it is purchased.

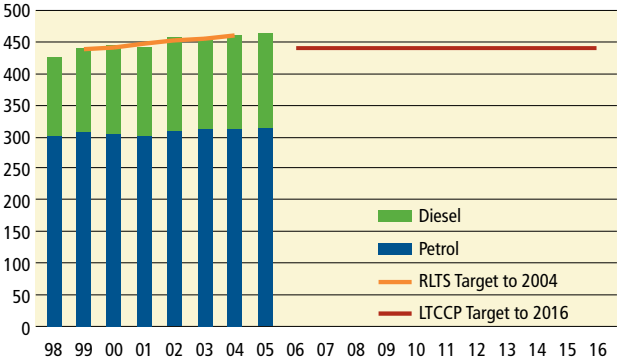

Figure 89: Fuel (diesel and petrol) consumption (M litres), Wellington region. Calendar year. Sources: local authorities

Interpretation: Regional petrol and diesel sales grew by 1.2% to 464 million litres in total over the year 2004 to 2005, having risen by 1.5% the year previous. The 2005 increase was driven mainly by a 2.7% growth in diesel sales, following a 5% increase in 2004. Petrol sales are growing slowly, with 0.3% demonstrated in 2005. Fuel sales in the western part of the region (where over 86% of regional fuel is sold annually) experienced growth of 1.2% while in Wairarapa overall fuel sales increased by 0.4%.

Comments: The LTCCP target of less than 442 million litres of fuel consumed per annum is based on 2001 petrol and diesel sales and is consistent with the TDM Strategy target to 2016. The target was exceeded by 22 million litres or 5% in 2005. Although fluctuating, total fuel sales for the region continue to demonstrate slow growth. In order to lower fuel consumption and meet this target in future, efforts throughout the region will need to concentrate on reducing private vehicle use. The Action Plan of the Wellington Regional Travel Demand Management Strategy (2005) outlines measures to address this issue. In particular, a regional travel behaviour change programme consisting of such initiatives as travel plans for schools, workplaces and communities was developed throughout the latter part of 2005 whereby a range of measures and travel choices can be actively supported and promoted to help reduce dependency on vehicle use.

Carbon dioxide emissions: TDM Strategy target

Greater Wellington TDM Strategy target 2005–2016: ***Transport-generated CO_2 emissions will remain below 1,065 kilotonnes per annum (2001 level).***

2005 actual: **1,118 kilotonnes**

Definition: Carbon dioxide is the most common and significant greenhouse gas formed from the combustion of fossil fuels.[1] The graph shows transport-generated CO_2 levels for the region. Total fuel consumed (and consequently combusted) is directly correlated to the amount of CO_2 produced. Carbon dioxide emission levels for the region have been calculated from fuel consumption using production rates from the 2005 Ministry of Transport Vehicle Fleet Emissions Model (VFEM). The factors are: 2.3 kg of CO_2 per litre of petrol and 2.64 kg/litre for diesel.

[1] Statistics New Zealand (2006). Energy, Economy and Emissions: 1997 to 2003, p. 7.

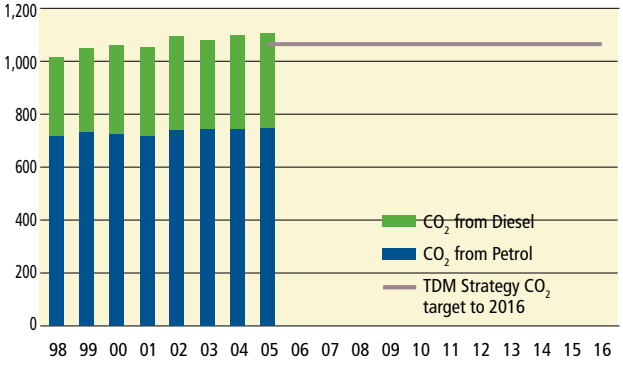

Figure 90: Transport-generated CO_2 (kilotonnes), Wellington region. Calendar year. Sources: local authorities; Vehicle Fleet Emissions Model, Ministry of Transport 2005.

Interpretation: As CO_2 emission levels have been calculated from fuel used, the same pattern seen in **Figure 89** is evident here. In 2005, land transport fuel combustion produced 1,118 kilotonnes of CO_2 in the Wellington region, 53 kilotonnes in excess of the target.

Comments: Diesel usage in the region is forecast to dramatically increase.[2] As the factors above show, diesel combustion produces more CO_2 per litre than petrol. Therefore, if the proportion of fuel sales that is diesel continues to increase, CO_2 emissions will increase even if fuel sales remain constant.

Fuel consumption by region

Definition: The graph shows total petrol and diesel sales in the Wellington, Canterbury and Auckland regions, as collected monthly for the local body fuel tax.

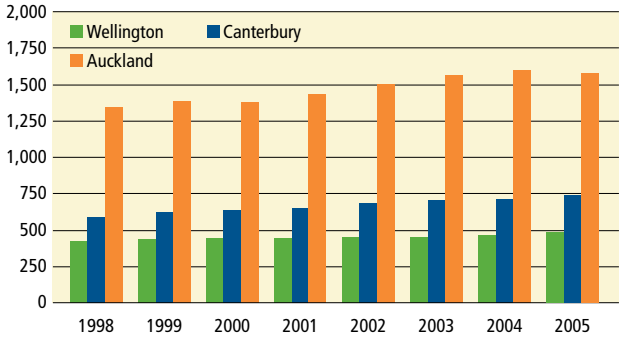

Figure 91: Total fuel consumption by region (M litres). Sources: GWRC, ARC and ECan (Environment Canterbury)

Note: Data is reported by financial year for ARC and ECan; calendar year for GWRC.

[2] Greater Wellington Regional Council (2005). Regional Travel Demand Management Strategy, p. 30.

Interpretation: In 2005 Auckland fuel sales dropped nearly 1%, lead by a decrease of 1.4% in petrol consumption. Overall fuel use in the Canterbury region increased by almost 4% with growth in diesel use at 14%. Petrol sales were down by 4.4% however.

Diesel sales have made pronounced increases in all three regions since 1998. Canterbury shows the highest growth rate in diesel consumption at over 50% between 1998 and 2005 with Auckland at 30%, although the increase in actual volume is very similar at around 122 million litres. By comparison Wellington region's diesel use grew by 20% between these same years.

Approximately twice as much petrol as diesel is sold in both Auckland and Wellington regions while the volumes are roughly equivalent in Canterbury.

Comments: Transport-produced ambient vehicle emissions are linked to fuel consumption. Fuel sales are, therefore, a reasonable proxy measure for overall air pollution attributable to motor vehicles. Canterbury and particularly Auckland have high levels of air pollution attributable to vehicle emissions. Wellington's level of air pollution is currently relatively low by comparison.

Air quality: LTCCP target

Greater Wellington LTCCP target 2006–2016: ***There will be no recorded instances when air pollution reaches the "alert" level of the national air quality guidelines or 66% or greater of the national air quality standards.***

2005/06 actual: **no recorded instances due to transport sources.**

Background: Motor vehicle emissions are one source of the pollutants impacting on the air quality of the greater Wellington region. Pollutants from motor vehicle emissions can have a major impact on health and have been attributed to causing premature death in human populations due to cancer and cardiovascular and respiratory diseases.

Research undertaken in 1998 by the Resource Investigations Department, Environment Division at GWRC identified the intersection of Vivian and Victoria Streets, central Wellington City, as a location

where air quality is under pressure from motor vehicle emissions.[3] This is primarily due to the intersection being part of a busy arterial route to and from the central city with traffic volumes of approximately 40,000 vehicles on weekdays and 30,000 during weekends. Multi-storeyed buildings also line the route causing a "canyoning" effect which can lead to a build up of pollutants. GWRC's first permanent transport air quality monitoring station was established at this site in February 2004.

The suitability of this site continues to be favourable as the inner-city bypass nears completion. A similar number of vehicles will continue to use the route but with one-way traffic on Vivian Street flowing in the opposite direction (towards the airport).

The station continuously monitors three key pollutants: carbon monoxide (CO), fine particulate matter (PM_{10}) and nitrogen dioxide (NO_2). Meteorological data including temperature, wind speed and direction are also measured. Wellington City Council provides data on vehicle movements through the intersection.

Definition: Figures 92, 93 and **94** show monitored CO, PM_{10} and NO_2 results from the corner of Vivian and Victoria Streets, Wellington City. As monitoring commenced at this site in 2004, a full year of data is available. LTCCP target levels and National Environmental Standard (NES) threshold concentration levels are also shown.

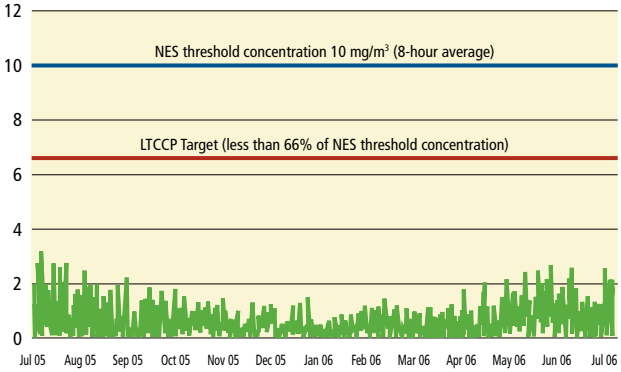

Figure 92: Eight-hour average CO concentrations at Vivian/Victoria Streets intersection, Wellington City (mg/m³). Source: GWRC

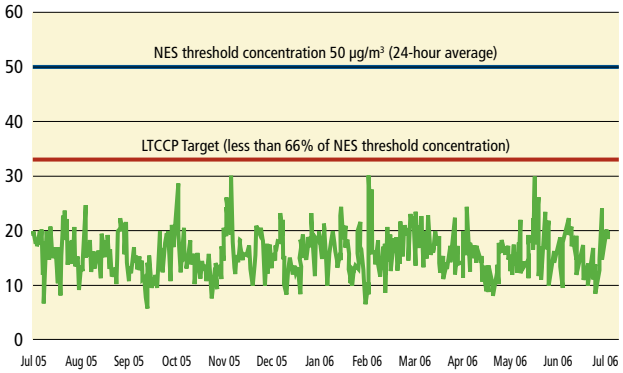

Figure 93: 24-hour average PM_{10} concentrations at Vivian/Victoria Streets intersection, Wellington City (µg/m³). Source: GWRC

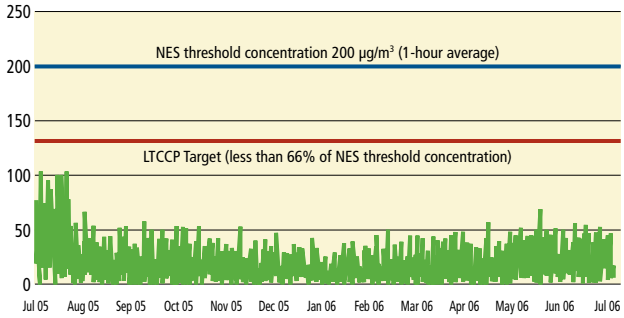

Figure 94: 1-hour average NO_2 concentrations at Vivian/Victoria Streets intersection, Wellington City (µg/m³). Source: GWRC

Interpretation: There were no instances during 2005/06 when any of the three monitored pollutants reached either the LTCCP target or NES threshold concentration due to transport emissions.

The Transport Policy and Strategy Division at GWRC has commissioned and placed two further air quality monitoring stations within the greater Wellington region during the past year. These mobile stations are trailer-mounted and have been located adjacent to state highways to monitor motor vehicle emissions. Data will be collected for a minimum of one year at each site before the stations are moved to other suitable locations in the region.

The first of the two mobile stations has been located in Ngauranga Gorge, Wellington City by the GWRC water pumping station. The station is adjacent to SH1and monitors vehicle-generated pollutants from this busy section of the strategic network.

[3] Davy, P. (1998). Monitoring of carbon monoxide at Vivian and Victoria Streets, Wellington, p. II.

Definition: Figures 95, 96 and **97** show monitored CO, PM_{10} and NO_2 results from the mobile station in Ngauranga Gorge, Wellington City. The station became operational in November 2005 therefore a full year of data is not yet available. LTCCP target levels and NES threshold concentration levels are shown.

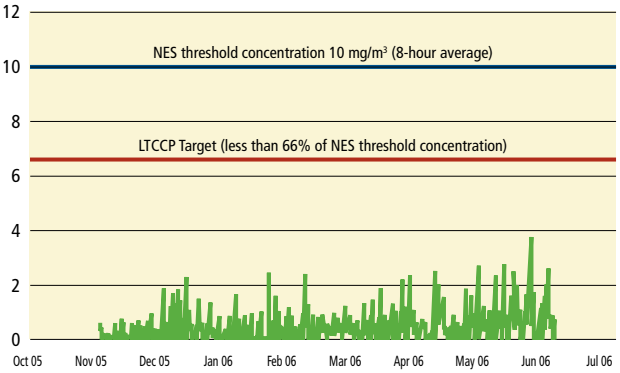

Figure 95: Eight-hour average CO concentrations at Ngauranga Gorge, Wellington City (mg/m³). Source: GWRC

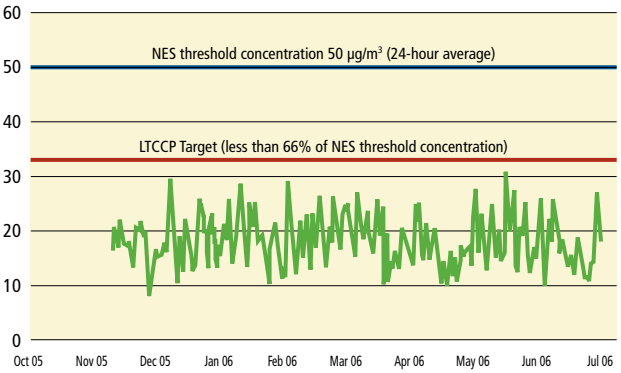

Figure 96: 24-hour average PM_{10} concentrations at Ngauranga Gorge, Wellington City (µg/m³). Source: GWRC

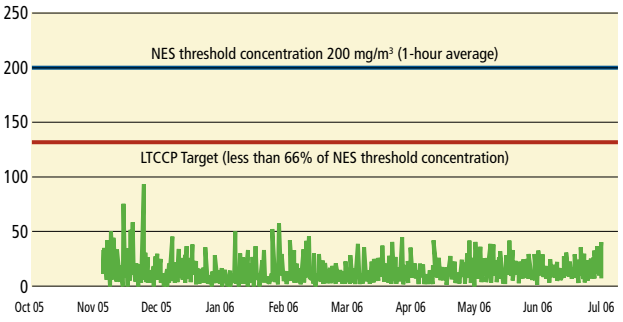

Figure 97: 1-hour average NO_2 concentrations at Ngauranga Gorge, Wellington City (µg/m³). Source: GWRC

Interpretation: There were no instances during 2005/06 when any of the three monitored pollutants reached either the LTCCP target or NES threshold concentration due to transport emissions.

The second mobile air quality monitoring station was located adjacent to SH2 at the Melling Interchange, Hutt City, in early 2006. This is a busy intersection between local roads and the state highway. Melling Rail Station is close by with two Park and Ride facilities and a skateboard park also located in the vicinity.

As the monitoring station only began operating in April 2006, there is not yet enough data available to report. Carbon monoxide and PM_{10} are monitored currently with the imminent purchase of a nitrogen oxides (NO_x) analyser by Transport Policy and Strategy allowing NO_2 monitoring to commence shortly.

Comments: Results from monitoring sites which are heavily influenced by motor vehicle emissions show that concentrations of CO, PM_{10} and NO_2 were within the LTCCP target. All GWRC transport air quality monitoring stations are operated and maintained by the Environmental Monitoring and Investigations Department of the Environment Management Division.

GWRC Transport Policy and Strategy is committed to monitoring the impact that land transport has on air quality in the region as an ongoing initiative. Further roadside sites will be identified and the mobile air quality monitoring stations relocated once a full year's data has been acquired at their current locations. It is intended that the stations will be brought back to the current sites in future to assess any changes in air quality.

Noise adjacent to arterial routes

Definition: The graph shows noise measurements (at 24-hour L_{eq}[4]) for one week at several sites next to the following arterial roads:

- Vivian Street, Wellington
- Urban motorway, Kaiwharawhara, Wellington
- Western Hutt Road, Lower Hutt
- Mana Esplanade, Porirua.

[4] This is a decibel figure with which the total loudness-equivalent noise averaged over the 24-hour day can be compared with that calculated by the same method for another point of interest. This gives a decibel guide to noisy versus quiet situations and can only be arrived at by 24-hour continuous monitoring of each site.

8

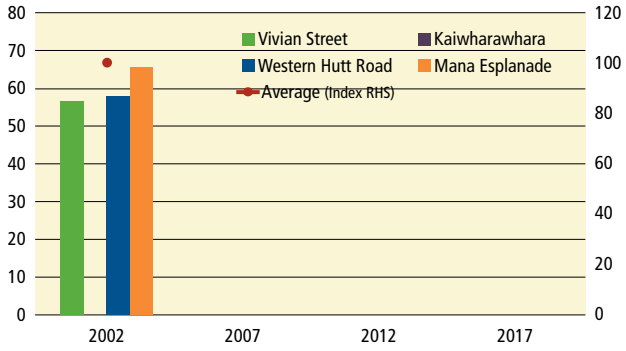

Figure 98: Noise adjacent to arterial routes (noise level 24hr L_{eq}, dBa, one-week average). Source: GWRC survey, 2002

Interpretation: As only noise levels from 2002 surveys are available no trend can be established. A fault in the Kaiwharawhara monitoring equipment meant no data was collected.

Comments: No conclusions can yet be drawn from this information. This indicator will be measured every five years and will next be updated in 2007. There are currently no guidelines for noise levels adjacent to arterial roads in the greater Wellington region.

Surface water quality

Contaminants in discharges from the national road network include fuels, additives, oil, grease and brake and tyre residues containing a variety of toxic and ecotoxic components. These can include heavy metals and organic compounds. Research indicates that environments such as enclosed harbours and estuaries are most susceptible to adverse effects of road runoff. Evidence also exists that the cumulative effects of discharges from road networks can also adversely impact on certain types of streams, wetlands and lakes. New highway construction and traffic growth is expected to exacerbate this situation.[5]

A tool to identify sensitive receiving environments at risk from road runoff has recently been developed. A pilot study has also been undertaken in Porirua Harbour including Pauatahanui Inlet and an associated wetland, and the section of Porirua Stream adjacent to the estuary. This area comprises a sensitive receiving environment and a mixture of local roads and state highways (SH1 and SH58).[6]

These and other national developments in road runoff analysis will help to inform the future establishment of a surface water quality monitoring programme for the region.

Land use patterns

Definition: The map shows the density and location of new subdivisions less than eight hectares in size in the western part of the region, from June 1997 – June 2006.

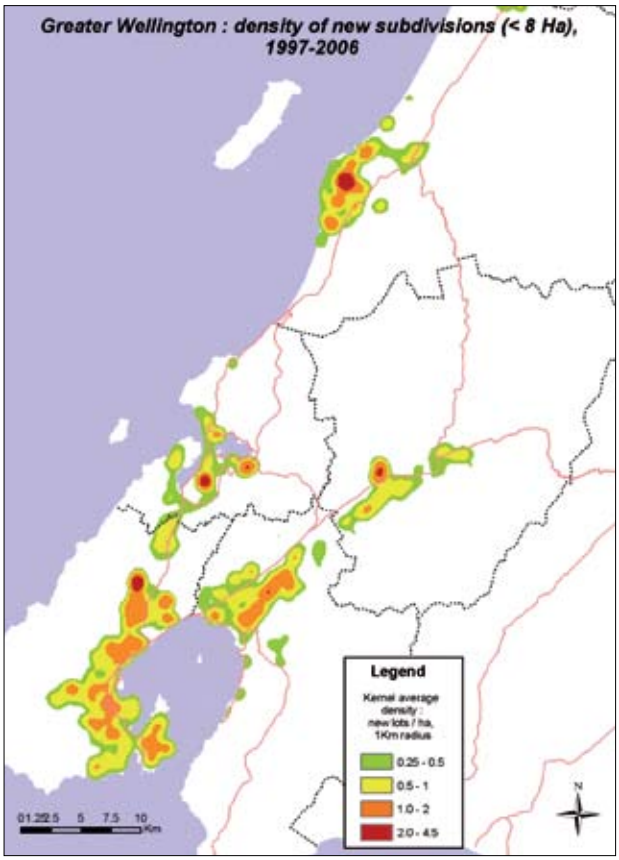

Figure 99: Density of new subdivisions < 8 Ha in area, Wellington region, 1997–2006. Source: GWRC

[5] Gardiner, L. & Armstrong, B. (2006). Identifying sensitive receiving environments at risk from road runoff. Proceedings of the NZWWA Stormwater Conference, Rotorua, New Zealand, 4–5 May 2006.

[6] Gardiner, L. & Armstrong, B. (2006). Identifying sensitive receiving environments at risk from road runoff. Proceedings of the NZWWA Stormwater Conference, Rotorua, New Zealand, 4–5 May 2006.

Definition: The graph shows the location and number of new lots created in the Wellington region between 1997/08 and 2005/06.

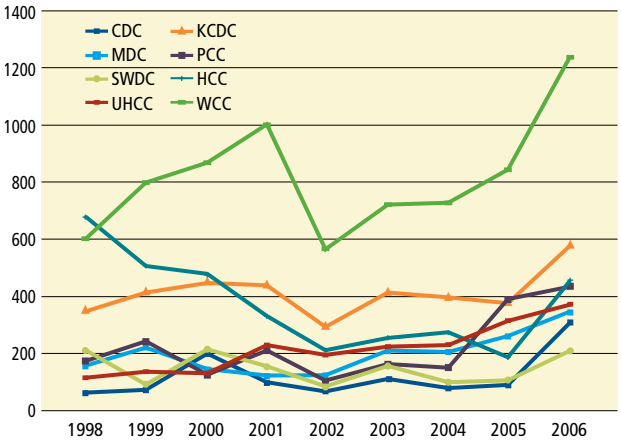

Figure 100: New lots created < 8 Ha in area, by district, 1997–2006. Source: GWRC

Interpretation: Urban expansion in the Wellington region is not so much a result of major developments as the cumulative effect of many small developments. In the western region the most "filling in" of urban gaps is occurring on the Kapiti Coast. Wellington City has seen the most residential intensification through redevelopment and refurbishment of central city buildings.[7] This is not evident on the density map as it does not include unit title subdivisions. Land use densification and infilling is also occurring in central Hutt City especially around the rail corridor.

Greenfield subdivisions turn open spaces into new urban areas. Greenfield projects on former farmland have occurred in Upper Hutt, Wairarapa and on the Kapiti Coast. Expansion along the urban fringe is mostly evident in north Wellington, Whitby and the Aotea Block in Porirua, and the western Hutt hills.[8]

New lots increased in number across all areas of the region in 2006 at more than 50% overall. The most pronounced increase occurred in the Carterton District with 305 new lots representing growth of over 200%. Hutt City showed an increase of over 150% in new lots after a decrease in 2005. Kapiti Coast, Masterton and Wellington City all experienced approximately 50% growth in 2006 with a record 1,250 new lots created in Wellington City.

[7] Greater Wellington Regional Council (2005). Measuring up: The state of the environment report for the Wellington region 2005. p. 150.

[8] Greater Wellington Regional Council (2005). Measuring up: The state of the environment report for the Wellington region 2005. p. 150.

Comments: The TDM Strategy features the performance indicator: More efficient land use. The desired outcome is higher density development, particularly near Public Transport nodes. A strategy target is yet to be determined, awaiting the outcome of the Wellington Regional Strategy (WRS).

Establishing higher density housing in areas which are already built up, e.g. new residential development in existing buildings is an environmentally sustainable practice. This central densification and infilling as demonstrated in Wellington and Hutt cities can be sustainable as it does not create new urban areas from which there is a need to travel.

Urban sprawl leads to an increased dependence on private vehicle use, as subdivisions are often located away from public transport networks. Long cul-de-sacs, a common feature of new subdivisions can also require walking and cycling some distance to local or main amenities. Land use planning integrated with existing and future transport nodes will provide more sustainable transport choices.

Sustainability/environment summary

Sustainability/environment indices

Further data availability will allow the establishment of an index for this category.

Regional level

Regional fuel consumption has grown by 9% over the past six years. Carbon dioxide emissions resulting from land transport fuel combustion are calculated from fuel used and have therefore increased at the same rate.

Air pollution due to transport emissions continues to be less of a problem in Wellington than in other regions.

Just under 4,000 new lots of less than eight hectares in area were established throughout the greater Wellington region over the year to 2006. This compares with approximately 2,500 new lots in 2005 and brings the total created across the region since 1998, to almost 23,000.

Sub-regional level

Urban expansion is evident in Kapiti Coast and Porirua East, Whitby, northern Wellington and western Upper Hutt. All cities and districts experienced an increase in the number of new lots created during 2005/06. Carterton District and Hutt City showed major growth rates in new lots.

No other currently available information is disaggregated at the sub-regional level.

Outlook

Fuel sales are likely to grow with more private vehicle ownership and use. This will in turn, exert further pressure on the region's air quality. Increasing fuel prices may encourage the use of transport modes alternative to the private vehicle.

Approximately 40% of New Zealand's CO_2 emissions are attributed to the transport sector.[9] Transport emissions make up approximately 18% of total greenhouse gas emissions in New Zealand and are increasing at around 4% per annum.[10]

A reduction in transport sector emissions will therefore significantly impact overall greenhouse gas levels.[11]

By 2016, CO_2 emissions from transport in the Wellington region are forecast to increase by 22.5% from 2001 levels.[12] The Wellington Transport Strategic Model does not take into account factors such as fuel efficiency improvements and emerging and future vehicle technology, therefore the forecast is likely to be high.

Implications for transportation planning

Land transport activity, especially the use of private vehicles, has significant detrimental effects on the environment. Measures to reduce overall car use and improve car travel efficiency will reduce fuel consumption, air and water pollution, and noise levels adjacent to arterial routes.

Reducing the need to travel and improving the efficiency of the transport network will contribute to a reduction in the amount of fuel consumed by vehicles and the associated CO_2 produced. Greater Wellington's travel demand management policies such as promoting the use of active modes and public transport aim to reduce the impact the transport sector has on the environment.

Supporting and advocating for integrated land use and transport planning through district plans, the Regional Policy Statement and the Wellington Regional Strategy will influence higher density development around public transport infrastructure.

Specific integrated land use strategies that can encourage public transport use and other more sustainable modes of transport include downtown redevelopment and intensification, clustered suburban development, more compact residential development in and along public transport corridors, mixing land use activities (work, recreation, residential), pedestrian and cycle-friendly urban design, and the physical integration of new development with public transport services. These strategies, often called Transit-Oriented Development (TOD) should be encouraged as they offer an alternative to auto-oriented development through integrating transportation and land use planning. This provides the necessary context for implementing other TDM strategies and ultimately reducing automobile dependence.

Encouraging a change in travel behaviour by increasing public awareness of alternative transport choices is also a key objective of the Wellington Regional TDM Strategy (2005).

The outcomes of this report inform the current review of the RLTS.

[9] New Zealand Climate Change Office website. Business Councils and Other Sectors: Transport. Viewed 23 June 2006. http://www.climatechange.govt.nz/sectors/transport.html in Hyder Consulting (2006), Regional Land Transport Strategy Policy Positions, p. 14.
[10] Climate Change Solutions: Whole of Government Climate Change Work Programmes (2006) in Hyder Consulting (2006), Regional Land Transport Strategy Policy Positions, p. 14.
[11] Hyder Consulting (2006), Regional Land Transport Strategy Policy Positions, p. 14.
[12] Environmental Management Services Ltd (2006). Greater Wellington Regional Council Draft Wellington Regional Land Transport Strategy: Environmental Performance Review, p. 8.

RLTS project and policy implementation progress

Context

Implementation of the RLTS requires cooperation between all agencies in the region. This combined effort aims to deliver the best integrated transport network possible with available resources.

Responsibility matrix

Charts 1 to 4 identify RLTS policy and project proposals for the Wellington region, and indicate the agencies responsible for implementing them.

Progress reporting

The RLTC receives quarterly reports on current regional project and activity status. A new methodology is currently being developed in conjunction with the RLTS review which also includes progress on sub-strategy implementation. The progress report to 30 June 2007 will feature in the 2006/07 AMR.

Chart 1: Responsibility matrix for Objective 1: Accessibility and economic development

KEY		GWRC	WCC	HCC	UHCC	PCC	KCDC	Wairarapa	Transit NZ	Bus Operators	Toll NZ	ONTRACK
●	Lead Responsibility											
○	Secondary Responsibility											
	Project Completed											
A: Policies												
1.1.1: Improve accessibility of public transport		●	○	○	○	○	○	○		●	●	○
Extensions of bus/rail services where reasonable demand exists		●	○	○	○	○	○	○		●	●	
Provide facilities for parking and carrying cycles where demand exists		●	●	●	●	●	●	●				○
Enhance physical access onto buses and trains												
1.1.2: Maintain urban rail as an arterial priority in the public transport network		●									●	○
1.1.3: Allow commercial bus and ferry services on parallel routes to rail services where they complement and increase overall public transport use		●										
1.1.4: Enhance the quality, reliability and priority of public transport facilities and services		●								●	●	○
Refurbishment/renewal of bus/rail units		●								●	●	○
Bus services given priority in congested areas		●	○	○					●	○		
1.1.5: Improve the interchange between bus, rail, car and cycle												
Improve Wellington rail/bus interchange		●	●							○	○	○
Provide commuter car and cycle parks at rail stations		●	●	●	●	●	●	●			○	○
1.1.6: Improve pedestrian and cycle access to key public transport nodes		●	●	●	●	●	●	●				○
Provide safe, convenient and sheltered pedestrian access to/from public transport												
1.2.1: Improve the existing road network to attain inter-peak efficiency		○	●	●	●	●	●	●	●			
1.2.2: Provide heavy traffic bypasses of local communities on the strategic roading network		○	●	●	●	●	●	●	●			

Chart 1: Responsibility matrix for Objective 1: Accessibility and economic development

KEY		GWRC	WCC	HCC	UHCC	PCC	KCDC	Wairarapa	Transit NZ	Bus Operators	Toll NZ	ONTRACK
●	Lead Responsibility											
○	Secondary Responsibility											
	Project Completed											
1.2.3: Increase the flexibility of the strategic roading network Provision of strategic links Traffic management		 ○ ○	 ● ●	 ● ●	 ● ●	 ● ●	 ● ●	 ● ●	 ● ●			
1.2.4: Provide for freight movement		○	●	●	●	●	●	●	●		●	○
1.2.5: Promote the need to provide for increased tourist movement		●	●	●	●	●	●	●	●			
1.3.1: Promote land development that minimises the total demand for travel		●	●	●	●	●	●	●				
1.3.2: Promote land development that ensures that public transport, walking and cycling are convenient and safe alternatives to the private car		●	●	●	●	●	●	●			○	○
1.4.1: Develop and enhance safe and attractive walking and cycling routes		○	●	●	●	●	●	●	●			
B: Projects												
Construct the first stage of the Kapiti Western Link Road		○					●		●			
Implement the Active Traffic Management System at Ngauranga Gorge									●			
Construct improvements on the Kaitoke Hill Road		○							●			
Maintain continuous improvements on the Rimutaka Hill Road		○							●			
Construct the Ngauranga – Aotea tidal flow system		○							●			
Design and construct an upgrade of the Korokoro/Dowse intersections on SH2				○					●			
Construct next phase of the inner-city bypass through Buckle and Arthur Streets		○	●						●			
Enhance traffic management to improve pedestrian, cycle and vehicle flows		○	●	●	●	●	●	●	●			
Upgrade the route through Newtown on Adelaide Road from the Basin Reserve to John Street		○	●						○			
Develop a Western Corridor Implementation Plan (Otaki – Ngauranga Merge), replaced by the Western Corridor Plan (April 2006).		●	●			●	●		●			○

Chart 1: Responsibility matrix for Objective 1: Accessibility and economic development

KEY		GWRC	WCC	HCC	UHCC	PCC	KCDC	Wairarapa	Transit NZ	Bus Operators	Toll NZ	ONTRACK
●	Lead Responsibility											
○	Secondary Responsibility											
	Project Completed											
Continue land purchase on the Transmission Gully route		○							●			
Provide additional commuter car and cycle parks at major railway stations		●	○	○	○	○	○	○			●	○
Build a new railway station at Raumati		●					○				●	●
Extend the urban electric rail service to Waikanae		●					○				●	●
Increase weekday urban rail service frequency from the Kapiti Coast, Hutt Valley and Wairarapa to Wellington		●									●	○
Allow commercial commuter bus and ferry services to operate from Porirua and the Hutt Valley to Wellington CBD		●								●		
Increase local bus services to connect with increased rail services		●								●	●	○
Improve bus/rail connection at Porirua railway station		●				●				●	●	○
Investigate the construction of a bus lane from Petone to Ngauranga on SH2 without compromising cycling on this route, construct if possible		●		○					●			
Improve bus priority through CBD traffic		●	●	●								
Enhance bus/rail interchange at Wellington railway station		●	●							●	●	○
Establish priority routes for Newtown buses servicing the southern and eastern suburbs		●	●							●		
Establish an integrated ticketing system		●								●	●	○
Improve pedestrian linkages from Wellington railway station to the CBD		●	●									○
Establish additional cycle parks at major railway stations		●									●	○
Enhance traffic management to improve pedestrian, cycle and traffic flow		○	●	●	●	●	●	●	●			

Chart 2: Responsibility matrix for Objectives 2 and 3: Economic efficiency and affordability

KEY		GWRC	WCC	HCC	UHCC	PCC	KCDC	Wairarapa	Transit NZ	Bus Operators	Toll NZ	ONTRACK
●	Lead Responsibility											
○	Secondary Responsibility											
	Project Completed											
A: Policies												
2.1.1: Provide for additional pricing for the use of the roading network as a step towards ensuring all users pay the cost of their use, including externalities		●							●			
2.1.2: Provide for pricing on major new roads to manage the demand on the road network and to help pay for additional projects and services		●							●			
2.1.3: Advocate for levies on the price of long stay parking in publicly and privately owned facilities in the Wellington CBD		●	●									
2.1.4: Undertake a more detailed investigation of the role of road pricing in the region		●										
2.2.1: Balance the capacity of the existing strategic transport network		●	○	○	○	○	○		●			
2.2.2: Influence management of the number and distribution of long stay parking spaces in major urban centres and encourage short stay parking		●	●	●	●	●	●					
2.2.3: Provide for pricing at peak times to manage road demand and reduce road congestion		●							●			
2.2.4: Promote supporting measures which will help reduce peak road demand		●	○	○	○	○	○		○	○	○	
2.2.5: Investigate and plan for the growth in major recreational traffic flows		●	○	○	○	○	○		○			
2.2.6: Introduce traffic calming in residential areas		○	●	●	●	●	●	●				
B: Projects												
Detailed investigation of road pricing in the region		●							○			

Chart 3: Responsibility matrix for Objective 4: Safety

KEY		GWRC	WCC	HCC	UHCC	PCC	KCDC	Wairarapa	Transit NZ	Bus Operators	Toll NZ	ONTRACK
●	Lead Responsibility											
○	Secondary Responsibility											
	Project Completed											
A: Policies												
4.1.1: Develop programmes that improve skills and behaviour of people using the transport system		○	●	●	●	●	●	●				
4.1.2: Plan development and design to improve road infrastructure and safety		○	●	●	●	●	●	●	●			
4.1.3: Develop a safety culture with respect to travel assisted by more effective co-ordination of the planning and implementation of road safety programmes		●	●	●	●	●	●	●				
4.1.4: Encourage greater use of cycling and walking for local trips		●	○	○	○	○	○	○	○	○	○	○
B: Projects												
Complete safety improvements at MacKays Crossing									●			
Complete safety improvements on SH1 north of Paremata									●			
Provide safety improvements to SH58									●			

Chart 4: Responsibility matrix for Objective 5: Sustainability

KEY		GWRC	WCC	HCC	UHCC	PCC	KCDC	Wairarapa	Transit NZ	Bus Operators	Toll NZ	ONTRACK
●	Lead Responsibility											
○	Secondary Responsibility											
	Project Completed											
A: Policies												
5.1.1: Promote environmentally benign transport mechanisms		●	○	○	○	○	○	○	○	●	●	○
5.1.2: Make cycling and walking more attractive		●	●	●	●	●	●	●	●			○
5.1.3: Price at peak times on the road network to mitigate adverse impacts of road use		●	○						●			

10 Strategy implementation

Overall progress achieved

RLTS implementation continues to be slower than anticipated. Uncertainty and delays result from issues over the long-term rail contract with Toll NZ and financial constraints.

Highlights of the 2005/06 year include:

- continuing review of the RLTS, coordinated with the Wellington Regional Strategy development
- first consultation stage on the RLTS - Strategic Options (August – December 2005)
- adoption of the Western Corridor Plan (April 2006)
- launch of 'Metlink', the new name for Greater Wellington's public transport network (October 2005)
- Metlink 'txtBUS' available region-wide (bus timetable information via mobile phone)
- continuing development of the Passenger Transport Plan
- North Wellington Public Transport Study commenced
- Ngauranga to Airport Strategic Transport Study commenced
- continuation of the Road Pricing Study
- Freight Strategy Study completed
- Kaitoke to Te Marua realignment completed (roading)
- Plimmerton to Mana improvements completed (roading)
- adoption of the Regional Travel Demand Management Strategy (December 2005)
    - development of a Wellington Region Travel Behaviour Change Travel Plan Programme
    - appointment of a Sustainable Transport Leader
    - Stage 1 of the Capital & Coast District Health Board Staff Travel Plan approved
    - Sustainable Management Fund – funding approved and partners established for a pilot community travel plan project (Sustainability Trust and Hutt City Council)
- continuing implementation of the action programmes of the regional pedestrian, cycling and road safety strategies
    - Phase 1 and 2 of pedestrian accessibility audits of public transport nodes completed and reported
    - hosting the very successful Bike the Bays (Miramar Peninsula) and Bike the Trail (Hutt River Trail) – annual events organised by the Regional Cycling Coordinator
    - facilitation of a regional 'Drive to the conditions' road safety campaign
- construction and deployment of two mobile air quality monitoring stations to monitor land transport emissions around the region – Ngauranga Gorge (November 2005) and Melling Interchange (March 2006)
- public health promotion – vehicle emissions testing and awareness campaign (March – April 2006).

Major 2006/07 actions programmed

Major programmes and projects anticipated to **be completed** in 2006/07 include:

- consultation and adoption of the new RLTS including the Regional Passenger Transport Plan
- new Wairarapa rail rolling stock
- commencement of implementation planning for Western Corridor rail projects
- commencement of the replacement of Wellington's trolley bus fleet
- passenger transport user information improvements, e.g. 'txtTRAIN' available in 2007
- introduction of new Metlink bus and train fare structure and new fares
- new Metlink bus stop signs rolled out across region

- completion of the Wellington Inner City Bypass
- completion of MacKays crossing overbridge
- completion of the Waiohine Bridge replacement
- upgrade of Wellington Transport Strategy Model in conjunction with 2006 census
- completion of the Sustainable Management Fund pilot community travel plan project (with the Sustainability Trust and Hutt City Council)
- Phase 3 of pedestrian accessibility audits of public transport nodes completed
- progress the recommendations from Phases 1 and 2 of the pedestrian accessibility audits of public transport nodes
- completion of the North Wellington Public Transport Study
- completion of the Ngauranga to Airport Strategic Transport Study.

Major programmes anticipated to **commence or continue** in 2006/07 include:

- commence new rail rolling stock procurement process
- commence construction of the Dowse to Petone interchange
- commence construction of the Centennial Highway median barrier
- commence Transmission Gully Motorway preparation activities
- continue the development of the Western Link Road process
- continue the implementation of the Wellington Region Travel Behaviour Change Travel Plan Programme
- continue the implementation phase of the Capital & Coast District Health Board Staff Travel Plan and design phase of same for patients and visitors.

Obstacles to implementing the RLTS

Rail service improvement impediments

Some improvements to the regional rail service continue to be delayed as the negotiation of a long-term rail contract with Toll NZ is progressing slowly due to reviews by Land Transport New Zealand.

Legislative/institutional impediments

There is a requirement for agencies to 'take into account' the relevant RLTS (LTMA, 2003) when preparing land transport programmes. This is a weak requirement which results in little commitment by some agencies to RLTS provisions and priorities.

Funding impediments

Despite the Government promising a total of $965M additional funding to support the region's transport needs over the next 10 years, very little of this funding has yet flowed into purchasing additional services or projects. This is primarily due to project start-up lead times and difficult funding allocation processes.

Funding of the local share component of project costs presents affordability issues for a number of projects and activities. Such issues continue to be discussed with Land Transport New Zealand.

11 Conclusions

This report's main conclusions are:

- Regional public transport patronage showed exceptional growth in the 2005/06 year. Peak passenger trips increased by 1.9 million due to significantly increased bus and train patronage. Off-peak passenger trips by all public transport modes also increased during 2005/06, by 4.6% or over 700,000 trips.
- The total number of cars travelling into the Wellington CBD during the morning commuter period decreased by 8% in 2006.
- Greater Wellington's road congestion dropped to 2003 levels across most periods of the day. All-day average congestion decreased 17% between 2005 and 2006 or from 25 seconds to 21 seconds delay per kilometre travelled.
- Road crash numbers continue to increase in general throughout the region. There has been an increase in total recorded casualties for all vehicle types since 2001 and total crash numbers have trended upwards from the year 2000. Regional casualties per 100,000 population figures remain lower than those of the Auckland and Canterbury regions.
- Cycle casualty numbers for the region increased to 112 in 2005, the highest toll for a decade.
- Regional fuel consumption increased by 1.2% between 2004 and 2005, slightly below the previous year's increase in fuel sales of 1.6%. Consequently transport-generated greenhouse gas emissions have also increased.
- The greater Wellington region showed much slower economic growth of 0.5% over the past year which was lower than the New Zealand average (1.0%) and that of Canterbury (0.9%) but above the Auckland region (0.3%).
- The private car continues to be the dominant mode of transportation.

Glossary

000	Thousand
AADT	Annual average daily traffic
AMR	Annual Monitoring Report
ARC	Auckland Regional Council
CBD	Central business district
CDC	Carterton District Council
c.f.	Compared with
CGI	Congestion indicator
ECan	Environment Canterbury
FEPI	Farm Expenses Price Index
Golden Mile	Lambton Interchange to Courtenay Place
GWRC	Greater Wellington Regional Council
HCC	Hutt City Council
KCDC	Kapiti Coast District Council
LOS	Level of service
LTCCP	Long-term Community Council Plan
LTCCP Target	GWRC LTCCP target to 2016
LTAA 2004	Land Transport Amendment Act 2004
LTMA 2003	Land Transport Management Act 2003
M	Million
Metlink	Greater Wellington's public transport network
MDC	Masterton District Council
NES	National Environmental Standard
PCC	Porirua City Council
Police	New Zealand Police
RHS	Right hand side
RLTC	Regional Land Transport Committee
RLTS	Regional Land Transport Strategy
SH	State highway
SWDC	South Wairarapa District Council
TOD	Transit-Oriented Development/Design
UHCC	Upper Hutt City Council
VFEM	Vehicle Fleet Emissions Model
VKT	Vehicle kilometres travelled
WCC	Wellington City Council
WRS	Wellington Regional Strategy
WTSM	Wellington Transport Strategy Model

Water, air, earth and energy: elements in Greater Wellington's logo combine to create and sustain life. Greater Wellington promotes **Quality for Life** by ensuring our environment is protected while meeting the economic, cultural and social needs of the community.

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