2006/2007 Annual Monitoring Report on the Regional Land Transport Strategy

September 2007

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2006/2007 Annual Monitoring Report on the Regional Land Transport Strategy

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Executive summary

This report has been prepared in accordance with Section 182 of the Land Transport Act 1998 and reports progress in implementing the Wellington Regional Land Transport Strategy (RLTS) 2007 – 2016.

A wide range of performance indicators are used to measure progress against the outcomes and associated targets identified in the Wellington RLTS. Additional indicators provide comprehensive supporting information relevant to the region's transport network in sections titled 'environmental quality' and 'affordability', and in the appendices reflecting regional demographics and travel demand.

Further monitoring, investigation and development of new performance indicators is required to be able to measure progress against all RLTS outcomes to 2016. These are identified throughout this report. Work will continue in 2007/08 with the intention of the inclusion of these new indicators in the next AMR.

Key findings

Key findings across the various indicators include:

Road safety

The highest number of injury crashes in nine years was recorded for the Wellington region in 2006. This follows the trend since 2000 where total injury crashes have climbed strongly, indicating that current efforts to improve regional road safety require renewed focus.

Total casualties have also shown a steady increase in number since 2001. Despite climbing, Wellington region retains a lower casualty rate than Auckland and Canterbury regions.

Cyclist casualties

Cyclist casualties were at the second highest level for a decade in 2006 at 112 in total. Casualty numbers are required to decline by over a third if the RLTS target to 2016 of 'fewer than 75 cyclists injured in the region per annum' is to be reached. Only in 2000 and 2003 were cyclist casualties at a similar level to this target.

Fuel use and carbon dioxide emissions

Diesel and petrol consumption and consequent CO2 emissions for the region increased in 2007 exceeding both RLTS targets. Fuel sales reached 458 million litres in 2007 (453 in 2006), 16 million litres over the target maximum of 442 million litres per annum. This increase has occurred despite persistently high fuel prices.

The RLTS target of below 1,065 kilotonnes of transport generated CO2 emitted annually was exceeded by 34 kilotonnes in 2007. Carbon dioxide emissions were 1,099 kilotonnes, an increase of 13 kilotonnes from 2006. Fuel use in the region is likely to grow with diesel sales forecast to increase dramatically.

Journey to work

Motor vehicles resulted in 69% of total mode share for the journey to work from the 2006 census data, decreasing over the past two census periods. While this is heading towards the RLTS target of less than 62% mode share of region wide journey to work trips, over 10,000 more motor vehicle trips were made in 2006 than in 2001.

Active mode share of journey to work in 2006 was 13%, with an increase of 3,500 trips from 2001. This level of growth in trips will need to continue if the RLTS target of 15% of all region wide journey to work trips by 2016 is to be achieved.

Approximately 4,000 more trips by public bus or train were made on each of the last three census days. At 17% of total mode share for journeys to work in 2006, this steady increase in the public transport trips needs to be continued in order to progress towards meeting the RLTS target of 21% by 2016.

Road congestion

All day average congestion on the region's roads decreased by 3% in 2007 following a significant drop of 17% experienced in 2006. During the AM and inter-peak periods congestion actually increased in 2007,

however a four second decrease in delay per kilometre travelled occurred in the PM peak. The all day average congestion level has shown a decreasing trend since 2005, towards the target of less than 20 seconds delay per kilometre travelled. This result may have been influenced by the price of fuel, improvements in road network efficiency or use of alternative modes to car travel.

A 13% reduction in the perception of worsened congestion in the Wellington region was shown in 2006. Half of all Wellingtonians surveyed considered congestion had worsened over the previous two years (c.f. 62% in 2004).

Mode share

Despite good progress in achieving enhanced mode share for public transport and active modes in the Wellington region, the private car continues to be the dominant mode of transportation.

Summary of progress

The report also includes an overall summary of progress in implementing projects, activities and actions identified within the various RLTS implementation documents. A number of milestones were recorded for the 2006/07 year including:

Strategy

- Consultation and adoption of the Wellington RLTS 2007 – 2016
- Completion of the North Wellington Public Transport Study (November 2006)
- Commenced upgrade of the Wellington Transport Strategy Model in conjunction with 2006 Census

Passenger transport

- New Wairarapa rail rolling stock commissioned (seven carriages delivered in May/June 2007)
- Rail contract between GWRC and Toll New Zealand signed in November 2006
- Trolley bus contract between GWRC and Go Wellington/ Infratil signed in May 2007
- Introduction of new Metlink bus and train fare structure and new fares in September 2006
- Commencement of new Metlink bus stop signage roll out across the region

Roading

- Completion of the Wellington Inner City Bypass (March 2007)
- Completion of MacKays crossing overbridge (March 2007)
- Completion of the Waiohine Bridge replacement (November 2006)

Travel demand management, walking and cycling

- Final phase of pedestrian accessibility audits of public transport nodes completed
- Development and launch of the Wellington Region Travel Behaviour Change Travel Plan Programme
  - Appointment of a Sustainable Transport Planner and School Travel Plan Coordinator for the region
- Continuing implementation of the regional pedestrian, cycling and road safety plans
  - Coordination between local authorities on annual Bike the Bays (Miramar Peninsula), Bike the Trail (Hutt River Trail) and Porirua Family Wheels Day cycle events
  - Coordination with local authorities in expansion of "Stop, Look, Live " road safety campaign across the region
- Completion of the 'Getting Around' pilot community travel plan project funded by Ministry for the Environment's Sustainable Management Fund (partnering with the Sustainability Trust and Hutt City Council)

The report also sets out major programmes and projects which are scheduled to be commenced or completed in the 2007/08 financial year and identifies known and potential obstacles to implementing the RLTS.

Executive summary

2007 Regional land transport report card

This report card sets out the new Wellington RLTS key outcomes, associated 2016 targets, and the 2006/07 result for those indicators which measure progress in achieving them.

An assessment of the trend in progressing towards the 2016 targets from the last available result is also provided where possible. In some cases, no previous result was available as the RLTS targets are new and consequently many of the indicators are also new.

2006/07 Progress against Wellington RLTS key outcomes and 2016 targets

Key outcome	2016 Stretch target	2006/07 Result	Previous result	Trend
1.1 Increased peak period passenger transport mode share	Passenger transport accounts for at least 25 million peak period trips per annum	17.5 million	18.3 million in 2005/06 financial year	✗
	Passenger transport accounts for at least 21% of all region wide journey to work trips	17%	16% in 2001 census	–
2.1 Increased mode share for pedestrians and cyclists	Active modes account for at least 15% of region wide journey to work trips	13%	12.6% in 2001 census	–
3.1 Reduced greenhouse gas emissions	Transport generated CO_2 emissions will remain below 1,065 kilotonnes per annum	1,099 kilotonnes	1,086 in 2005/06 financial year	✗
4.1 Reduced severe road congestion	Average congestion on selected roads will remain below 20 seconds delay per km travelled despite traffic growth	20.4 seconds	21 seconds in 2005/06 AMR	✓
5.1 Improved regional road safety	There are no road crash fatalities attributable to roading network deficiencies.	No result available	No result available	?
6.1 Improved land use and transport integration	All large subdivisions and developments include appropriate provision for walking, cycling and public transport.	No result available	No result available	?
7.1 Improved regional freight efficiency	Improved road journey times for freight traffic between key destinations.	No result available	No result available	?

✔✔ strongly positive ✓ positive – neutral ✗ negative ✘✘ strongly negative ? insufficient information

Table1: Progress towards RLTS key outcome targets to 2016

Introduction

Statutory context

Land Transport Act 1998

The Land Transport Act 1998[1] requires every regional council to establish a Regional Land Transport Committee (RLTC). The primary responsibility of this committee is to prepare a Regional Land Transport Strategy (RLTS) to set the strategic direction for a region's land transport network. Every RLTS must contribute to the overall aim of achieving an integrated, safe, responsive and sustainable land transport system.

Section 182(1) of the Land Transport Act requires the preparation of an Annual Monitoring Report (AMR) which documents progress in implementing the RLTS. The AMR must be available within three months of the end of the financial year it relates to. In the case of Greater Wellington Regional Council (GWRC) the financial year ends on 30 June, hence the GWRC AMR is due on 30 September each year.

Wellington Regional Land Transport Strategy

The current Wellington RLTS 2007 – 2016 was adopted in July 2007 following an extensive review and consultation process. This new strategy replaces the previous Wellington RLTS 1999 – 2004 and includes a new strategic framework for planning the region's transport network over the next ten years and longer term.

The Wellington RLTS includes a long term vision, six objectives, and a comprehensive list of policies, desired outcomes and associated targets. The strategy outcomes have been given a hierarchical structure of 'key outcomes' and 'related outcomes' to clearly signal priorities for the strategy over the next ten years. The key outcomes in the Wellington RLTS are:

- Increased peak period passenger transport mode share
- Increased mode share for pedestrians and cyclists
- Reduced greenhouse gas emissions
- Reduced severe road congestion
- Improved regional road safety
- Improved land use and transport integration
- Improved regional freight efficiency.

The strategy targets were developed to signal the magnitude of the changes sought in relation to each strategy outcome. These targets provide a benchmark against which to measure progress. More ambitious 'stretch' targets have been set in relation to the strategy 'key outcomes' to signal the need for greater emphasis and progress in relation to these areas.

AMR contents and structure

Enhanced monitoring

The Land Transport Act 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.

Where possible, 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.

Data sourced from Statistics New Zealand in relation to the national census carried out in March 2006 has allowed update in this AMR of those indicators which previously relied on 2001 census data.

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 repeated in 2006, updating 2001 and 2004 information on short trips made by walking and cycling. Relative risk by transport mode per million hours travelled is also given (updated national data 2003-2006).

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

Introduction

Structure of the 2006/07 AMR

Since publishing the 2005/06 AMR, a new Wellington RLTS 2007 – 2016 has been adopted, as described earlier in this section. As a result, the 2006/07 AMR is structured in a different way to previous years where indicators had been grouped under each objective of the RLTS.

The 2006/07 AMR has been structured around the key and related outcomes identified in the new strategy. This enables the indicators measuring progress against each outcome area and associated targets to be clearly identified.

As a result of the new RLTS outcomes and targets, a number of new indicators are included in this AMR. In some cases, indicators for some of the RLTS targets have not yet been fully developed and these are identified throughout the report for further work.

There are also a number of indicators relating to environmental quality and affordability which were traditionally reported under the relevant objective areas. While these indicators do not directly measure a particular RLTS outcome, it is still considered important to report them as they contribute to our understanding of the complete range of issues affecting our region's transport network. These indicators are included under sections titled *Environmental quality* and *Affordability*.

An overall summary of progress in implementing the actions and projects which sit alongside the RLTS in various corridor plans, implementation plans and the Regional Transport Programme are described in the *RLTS implementation* section. Obstacles to implementing the strategy are also identified here. Detailed reporting of progress for each action and project is no longer reported through the AMR, but instead is reported through the quarterly Agency Progress Reports to the RLTC.

The appendices of the report include a number of indicators reflecting regional demographics and travel demand to provide some additional context for the AMR.

Targets

The targets identified in the Wellington RLTS, associated with the various strategy outcomes, have been included on the various indicator graphs in this AMR to demonstrate where we are at now compared to the RLTS 2016 target.

Targets with the following focus which are identified in the GWRC 2006 – 2016 Long-term Community Council Plan (LTCCP) in relation to transport sustainability are also included:

- Reduced road congestion (aligned with RLTS target)
- Increased active mode use for short trips
- Fuel consumption (aligned with RLTS target)
- Air quality

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.

An area which is still proving difficult to collect information on, primarily due to resource issues, is surface water quality. 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.

The Regional Transport Network

The Wellington RLTS provides a forward plan for development of the region's transport network and the AMR monitors the progress of a number of indicators which affect that network. Wellington's regional transport network is shown in Figure 1 below.

State Highway 1 and the North Island Main Trunk (NIMT) rail line enter the region near Otaki and extend southwards through Kapiti Coast, Pukerua Bay, Porirua and Northern Wellington and through to the Wellington City Central Business District (CBD). State Highway 1 continues through to Wellington International Airport. State Highway 2 and the Wairarapa Line railway enter the region north of Masterton and extend south-west through Wairarapa, the Hutt Valley and on to merge with State Highway 1 and the NIMT line at Ngauranga. State Highway 58 provides a vital east-west link between State Highways 1 and 2.

The regional transport network provides vital access to key regional destinations including the Wellington City CBD, regional centres, CentrePort (Wellington's sea port) and Wellington International Airport for freight and passengers, and Wellington's regional hospital in Newtown. It also provides important access for local trips within communities.

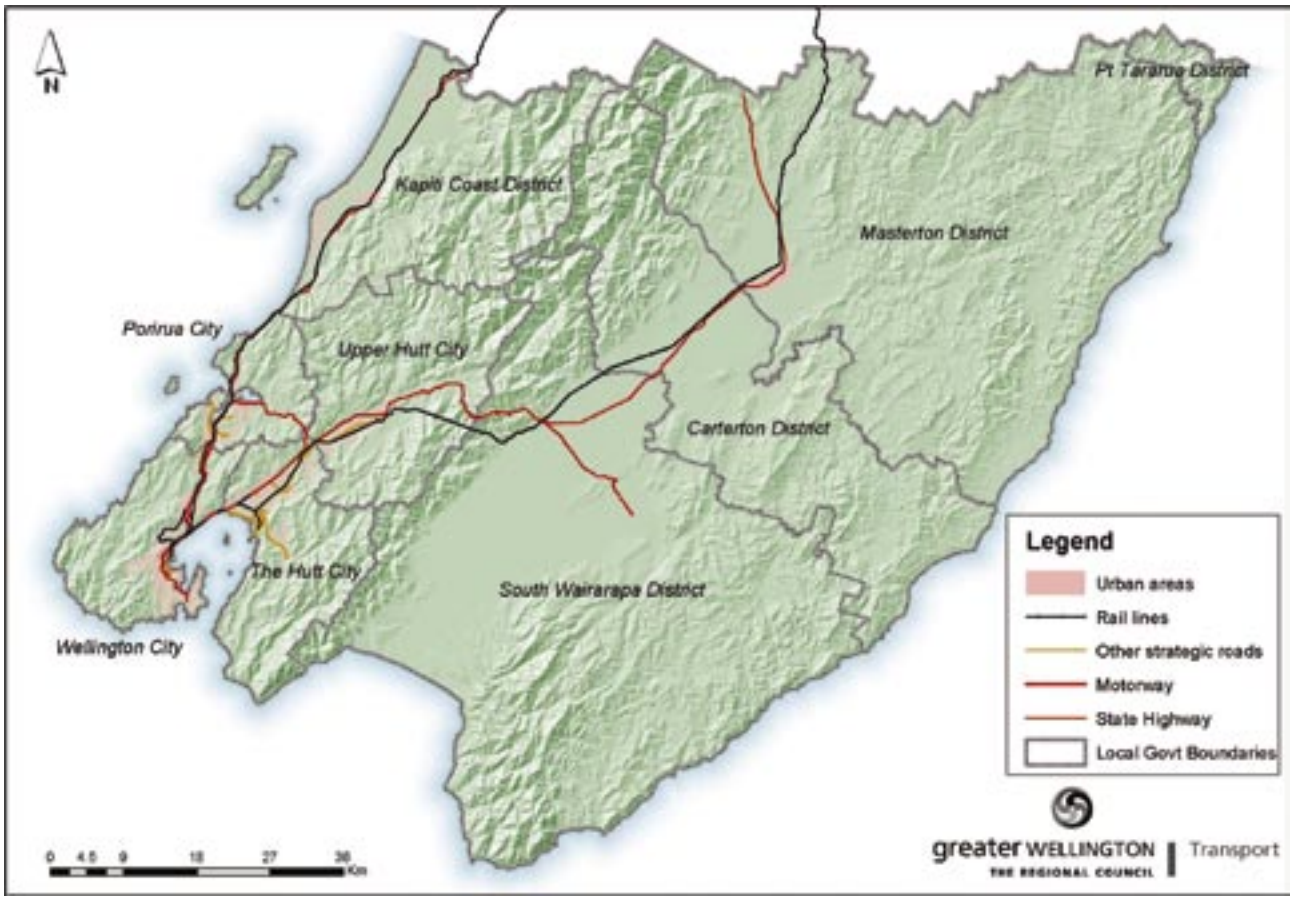

Figure 1: Wellington's regional transport network.

Passenger transport outcomes

Introduction

This section discusses items relating to the RLTS passenger transport outcomes.

The following key outcome for passenger transport is sought for the region's land transport network:

- **Increased peak period passenger transport mode share**

The performance indicators associated with this key outcome are:

  - Peak trips by public transport
  - Peak passenger kilometres by public transport
  - Peak average trip length by public transport
  - Mode of journey to work: public transport
  - Wellington CBD cordon mode share

The following related outcomes and associated performance indicators for passenger transport are:

- **Increased off-peak passenger transport use and community connectedness**
  - Off-peak trips by public transport
  - Off-peak passenger kilometres by public transport
  - Off-peak average trip length by public transport
- **Improved passenger transport accessibility for all, including disabled people or from low income groups**
  - Wheelchair accessible public transport services
  - Household proximity to public transport
  - Affordability of passenger transport services
  - Public transport user costs
  - Perceptions of public transport user costs
  - Perceptions of public transport safety
  - Total Mobility Scheme patronage
- **Reduced passenger transport journey times compared to travel by private car**
  - Journey time comparison
  - Journey time by public transport
- **Increased passenger transport reliability**

The terms 'passenger transport' and 'public transport' are often used interchangeably, however, when defined they do have slightly different meanings. Passenger transport has a wider meaning and covers both scheduled public transport services and other passenger services (e.g. taxis and the Total Mobility Scheme). The term 'passenger transport' is consistently used throughout the RLTS and Passenger Transport Plan, however as some indicators within the AMR rely on data obtained in relation to scheduled public transport services only, the term 'public transport' is used where appropriate.

Key outcome

1.1 Increased peak period passenger transport mode share

Target: Passenger transport accounts for at least 25 million peak period trips per annum

Peak trips by public transport

Definition: The graph presents the number of passenger trips taken by train, bus and ferry during the AM and PM peak periods. The RLTS target of 25 million trips per annum by 2016 is also shown.

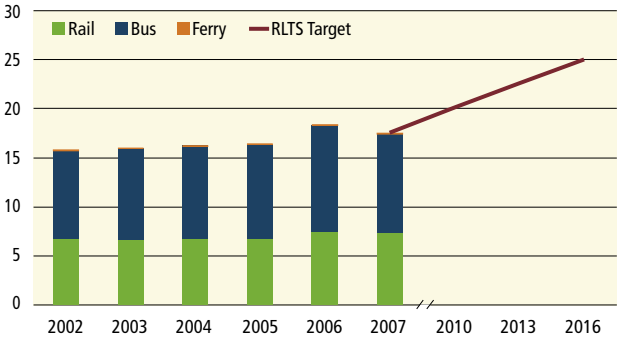

Figure 2: Public transport patronage: number of passenger trips (M), by mode, combined peak periods. Source: GWRC

Interpretation: The total number of peak passenger trips by public transport decreased by 4.4% or over 800,000 in 2007 after the sizeable increase of 11.6% (1.9 million) the year previous. Passenger trips by bus decreased by nearly 750,000 (7%) while train trips fell by only 1% (70,000). Ferry passenger trips increased by 3% during the peaks, numbering nearly 2,000.

Comments: At 17.5 million peak period passenger trips in 2007, a considerable increase is required to meet the target of 25 million passenger trips per annum by 2016.

Passenger transport outcomes

The disruptions to Wellington bus services experienced in February/March 2007 (due to driver shortages and traffic congestion) impacted on passenger trip numbers. As fuel prices dropped in 2007 more commuters may have chosen to travel by private car during peak periods.

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) - see the following indicators in this section: *Peak/off-peak passenger kilometres by public transport and Peak/off-peak average trip length by public transport.*

Peak passenger kilometres by public transport

Definition: The graph shows the total distance passengers travelled by train, bus and ferry during the AM and PM peak periods.

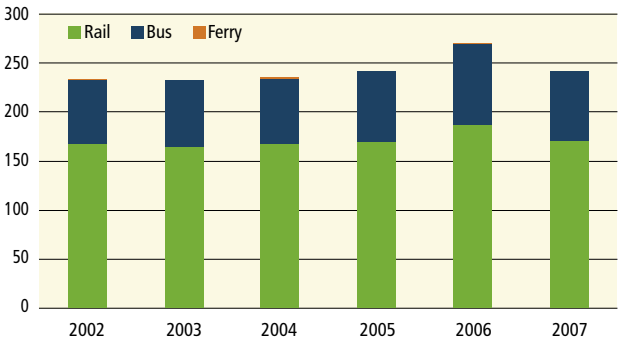

Figure 3: Passenger km (M) by public transport mode, combined peak periods. Source: GWRC

Note: Passenger kilometre data for major bus operators has been recalculated in 2007 based on the same methodology now used to provide annual performance measure data to Land Transport New Zealand. Data is based on a region-wide passenger trip length survey ensuring a consistent methodology is used across all main bus operators.

Interpretation: Combined peak period passenger kilometres travelled have fallen to the 2005 level of 242 million kilometres. In 2007 peak period bus travel reduced by 13 million kilometres (16%) and passenger rail by 15 million kilometres (8%).

Comments: The reduced travel distance reported in 2007 reflects the decrease in patronage shown in Figure 2 above.

Peak average trip length by public transport

Definition: The graph shows the average length of trip taken by passengers travelling by train, bus and ferry during the AM and PM peak periods.

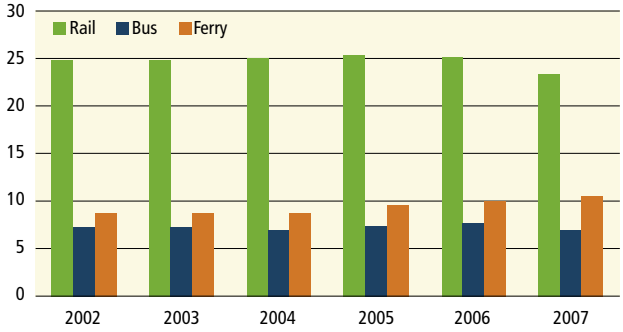

Figure 4: Average trip length (km) by public transport mode, combined peak periods. Source: GWRC

Note: Passenger kilometre data for major bus operators has been recalculated in 2007 based on the same methodology now used to provide annual performance measure data to Land Transport New Zealand. Data is based on a region-wide passenger trip length survey ensuring a consistent methodology is used across all main bus operators.

Interpretation: In 2007, rail trips decreased by 1.8 kilometres in average length (about 7%). Average trip length by bus fell by nearly 10% (0.7 kilometres) while ferry trip length increased by almost half a kilometre on average.

Comments: Of the two major public transport modes, the average length of passenger trip by rail during the combined peak is over three times the length of trips by bus. A decrease in average trip length by both bus and train is noted in 2007.

Target: Passenger transport accounts for at least 21% of all region wide journey to work trips

Mode of journey to work: public transport

Definition: The graph uses New Zealand Census data to show the mode share of public transport for the region's 'main means of travel to work'. The RLTS target of 21% of all region wide trips per annum by 2016 is also shown.

Public transport was defined as travel by public bus or train. Ferry travel was not included as it featured under the 'other' category in the census (along with taxi and plane). As the census is conducted five-yearly this indicator will next be updated in 2012.

Passenger transport outcomes

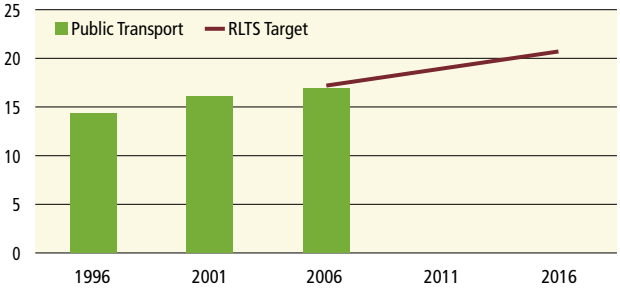

Figure 5: Public transport mode share of journey to work (%). Source: Statistics New Zealand

Interpretation: The public transport mode share of journey to work was 17% in 2006. An increase in mode share of approximately 16% was shown for public transport in both 2001 and 2006. This equated to just over 4,000 more trips by either public bus or train on census days.

Comments: A moderate increase in the journey to work commute by public transport has taken place over the past two census periods. Public transport as mode of choice will be required to increase by 4% to reach the 2016 RLTS target of 21% of all region wide journey to work trips.

Wellington CBD cordon mode share

Definition: The graph shows selected results from surveys of public transport, active modes and motor vehicles across the Wellington City CBD cordon and screenline locations during the two-hour AM peak period. Wellington City Council and GWRC undertake the surveys annually in March. Information is not available for 2005.

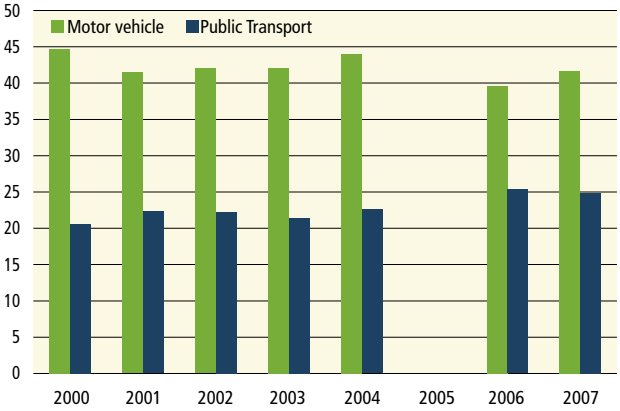

Figure 6: Number of people travelling into Wellington CBD (000) by motor vehicle and public transport, AM peak. Sources: Wellington City Council; GWRC

Interpretation: Passenger transport accounts for over 23% of total mode share (all modes) for those people travelling into the Wellington CBD during the AM peak. The results show a variation in motor vehicle and public transport mode share over time. The public transport mode share fell slightly (by 1.7%) between 2006 and 2007 while vehicle mode share rose by 5% over the same period.

Comment: The public transport network continues its significant role transporting the region's commuters into the Wellington CBD during the morning peak period.

Related outcomes

1.2 Increased off-peak passenger transport use and community connectedness

Target: Passenger transport accounts for at least 25 million off-peak period trips per annum

Off-peak trips by public transport

Definition: The graph presents the number of passenger trips taken by train, bus and ferry during the off-peak period. The RLTS target of 25 million trips per annum by 2016 is also shown.

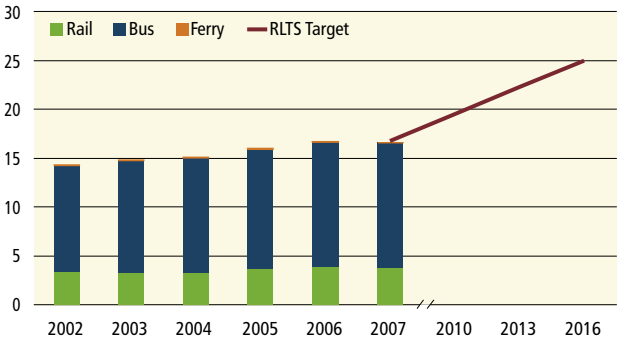

Figure 7: Public transport patronage: number of passenger trips (M), by mode, off-peak period. Source: GWRC

Note: 2007 ferry patronage data excludes the Harbour Explorer Excursion service.

Interpretation: Total off-peak passenger trips decreased by 0.5% (78,000) in 2007 led mainly by a drop of almost 2% in train trips at 73,000. Bus passenger trips remained static in number while off-peak passenger trips by ferry decreased by approximately 6,000 (8%). The slight fall in overall off-peak passenger trips follows an increase in 2006 of 4.6% (740,000 trips).

Comments: The number of off-peak passenger trips has remained relatively stable in 2007 when compared with the year previous. At 16.6 million off-peak period passenger trips in 2007, a considerable increase is required to meet the target of 25 million passenger trips per annum by 2016.

Off-peak passenger kilometres by public transport

Definition: The graph shows the total distance passengers travelled by train, bus and ferry during the off-peak period.

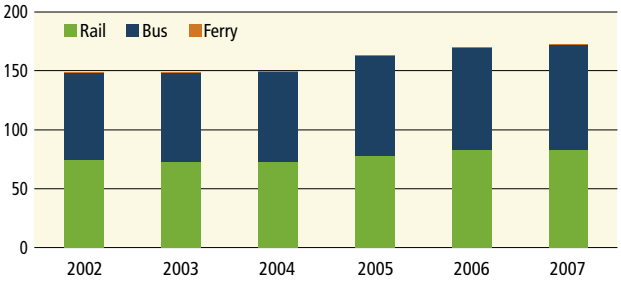

Figure 8: Passenger km (M) by public transport mode, off-peak period. Source: GWRC

Note: 2007 ferry patronage data excludes the Harbour Explorer Excursion service. Passenger kilometre data for major bus operators has been recalculated in 2007 based on the same methodology now used to provide annual performance measure data to Land Transport New Zealand. Data is based on a region-wide passenger trip length survey ensuring a consistent methodology is used across all main bus operators.

Interpretation: Off-peak passenger kilometres travelled by bus increased by three million (3.5%) in 2007, while rail kilometres dropped by 1%, or just less than one million in total. Ferry travel decreased by over 70,000 kilometres during the off-peak period. The overall result was an increase of two million kilometres (1.2%) travelled by off-peak passengers.

Comments: The increase in passenger kilometres by bus in 2007 is due to the recalculation described above. The drop in passenger kilometres by ferry is due to exclusion of the Harbour Explorer Excursion, which is an off-peak service.

Off-peak average trip length by public transport

Definition: The graph shows the average length of trip taken by passengers travelling by train, bus and ferry during the off-peak period.

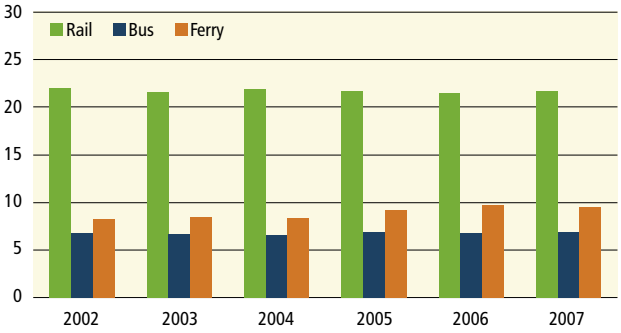

Figure 9: Average trip length (km) by public transport mode, off-peak period. Source: GWRC

Note: 2007 ferry patronage data excludes the Harbour Explorer Excursion service. Passenger kilometre data for major bus operators has been recalculated in 2007 based on the same methodology now used to provide annual performance measure data to Land Transport New Zealand. Data is based on a region-wide passenger trip length survey ensuring a consistent methodology is used across all main bus operators.

Interpretation: Overall average trip length across all modes increased slightly by 1.7% (0.2 kilometres) in 2007.

Comments: As with the peak period, the average length of passenger trip by train during the off-peak is approximately three times the length of trips by bus. Off-peak average trip length by each mode has been relatively static over recent years.

1.3 Improved passenger transport accessibility for all, including disabled people or from low income groups

Target: 80% of passenger transport services are guaranteed to be wheelchair accessible

Wheelchair accessible public transport services

Definition: The graph shows the total percentage of public transport services across the region that are accessible by wheelchair. The 2016 target of 80% of passenger transport services being accessible by wheelchair is also shown.

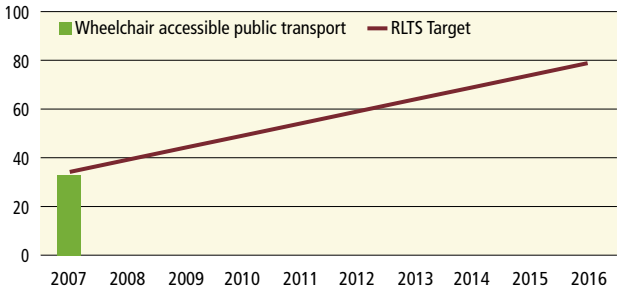

Figure 10: Accessibility of public transport services by wheelchair (%). Source: GWRC

Interpretation: There is considerable variation in wheelchair accessibility between public transport modes. The Wellington Cable Car is 100% wheelchair accessible (both cable cars). Approximately 30% of buses currently operating within the region are wheelchair accessible while one of the two Eastbourne ferries can accommodate wheelchairs.

On the regional commuter rail network, all of the Ganz Mavag units are wheelchair accessible. One of the two Wairarapa trains is accessible by wheelchair while none of the older Electric Multiple Units (EMU) are accessible. This results in approximately 33% of the region's public transport vehicles being wheelchair accessible.

Comments: While the 2007 total is relatively low, much work is currently underway to address the accessibility of the Metlink public transport network. This includes new wheelchair accessible rail units on the Wairarapa line scheduled to be in operation by December 2007.

Replacement of the regional bus fleet with fully accessible vehicles is ongoing and the procurement of new passenger trains is proceeding with delivery due to commence in 2010.

Target: Most of the region's residents live within 400 metres (5 minutes walk) of a bus stop or train station with a service frequency of at least 30 minutes

Household proximity to public transport

This performance indicator is currently under development. A comprehensive methodology using Geographic Information Systems (GIS) and New Zealand Census data is required. This indicator will be included in the 2007/08 AMR.

Target: Passenger transport services in the highest deprivation areas are more affordable

Affordability of passenger transport services

This performance indicator is currently under development. It involves the establishment of an affordability index utilising GIS, the Social Deprivation Index (SDI) which uses 2006 census data, and public transport routes and fare zone information. This indicator will be included in the 2007/08 AMR.

Public transport user costs

Definition: The graph shows single adult fares (as at March) in the morning commuter peak period, by the modes shown and on the following key routes:

- Wellington – Paraparaumu (rail)
- Wellington – Upper Hutt (rail)
- Wellington – Johnsonville (rail)
- Courtenay Place – Johnsonville (bus)
- Wellington Railway Station – Wellington Airport (bus)
- Wellington Railway Station – Victoria University, Kelburn (bus)
- Wellington Railway Station – Island Bay (bus).

Passenger transport outcomes

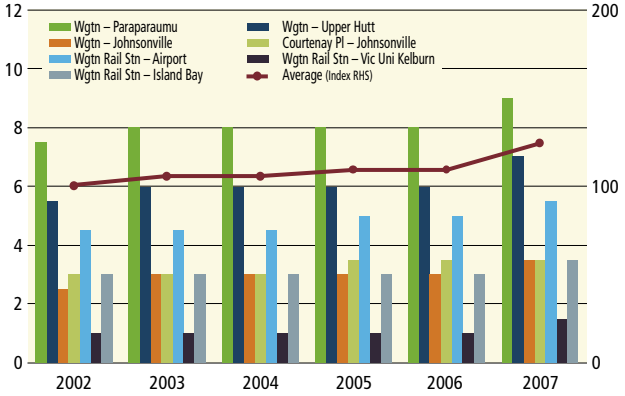

Figure 11: Public transport user costs ($), March. Index: 2002 = 100. Sources: Metlink; bus/rail operators

Interpretation: After only minor increases in fares on a few of the routes shown during the period 2002 to 2005, new Metlink fares and zones took effect in September 2006. Fares on all but one of the routes featured have risen. The public transport fare index has increased accordingly, by almost 14%.

Comments: The effect of new Metlink zones and fares did cause the cost of travel on some routes (not shown here) to decrease but the overall result was an increase in fares for the region.

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.

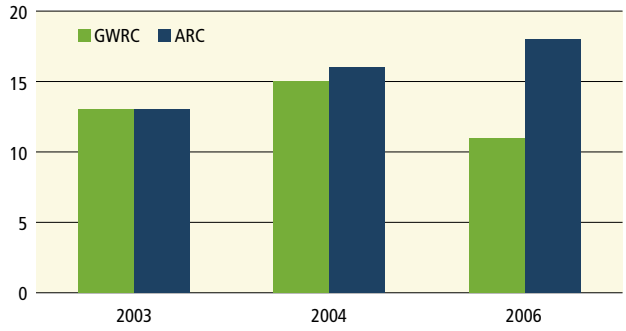

Figure 12: Public transport costs as a barrier to use (%), Wellington and Auckland regions. Source: GWRC and ARC transport perceptions surveys

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]

Perceptions of public transport safety

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

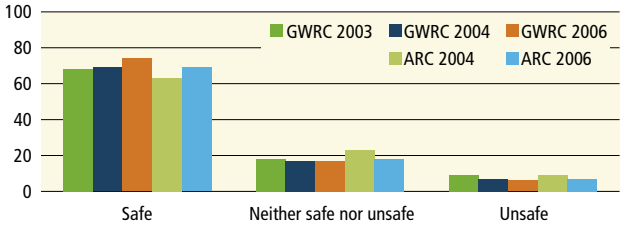

Figure 13: How safe do you feel when using public transport? (%) Sources: GWRC and ARC perception surveys

Interpretation: In the Wellington region 74% of respondents said they felt 'safe' when using public transport in 2006 (c.f. 69% in 2004) and 6% 'unsafe' (c.f. 7% in 2004). When compared with Auckland, 5% more people felt 'safe' in Wellington (2006).

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

Total Mobility Scheme patronage

Definition: The graph shows annual Total Mobility Scheme passenger numbers. 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 (endorsed by the Ministry of Transport).

[1] National Research Bureau (2006). *Greater Wellington Regional Council Transport Perceptions Survey: June 2006.*

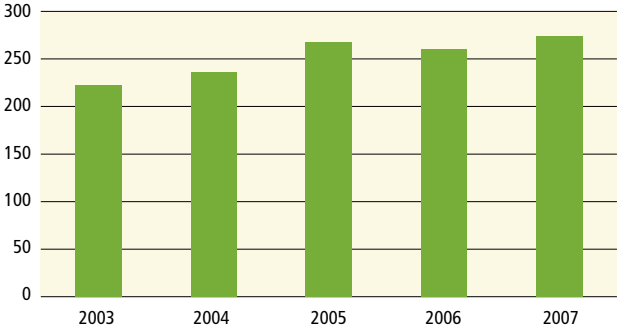

Figure 14: Total Mobility Scheme patronage (000). Source: GWRC

Interpretation: Total Mobility passengers increased by 5.4% in 2006/07 following a decline of almost 3% the previous year. Since 2002/03 the overall increase in passenger numbers is 23%.

Comments: Total mobility patronage is expected to continue to grow with increased demand as knowledge of the scheme increases and the population ages.

1.4 Reduced passenger transport journey times compared to travel by private car

Target: Peak period passenger transport journey times are equal to or better than a similar journey undertaken by a private car for key selected corridors

Journey time comparison

Definition: This is a comparison of the car travel times from the Transit New Zealand travel time surveys and public transport journey times from timetables. The two key regional routes that have been compared are shown in Figure 42 (see Road network efficiency outcomes, 4.1: *Reduced severe road congestion*) and are described below:

Route 1 SB: Paraparaumu – Wellington Airport

Route 1 NB: Wellington Airport - Paraparaumu

Route 2 SB: Upper Hutt – Wellington Airport

Route 2 NB: Wellington Airport - Upper Hutt

The values given are the difference in minutes between using public transport and travelling by private car; the larger the value, the longer it takes to travel by public transport in comparison with private car. Both AM and PM peak period comparisons are shown along with the inter-peak period. The RLTS target is shown on the AM and PM peak comparison graphs: there is no difference in journey times between public transport and the private car by 2016

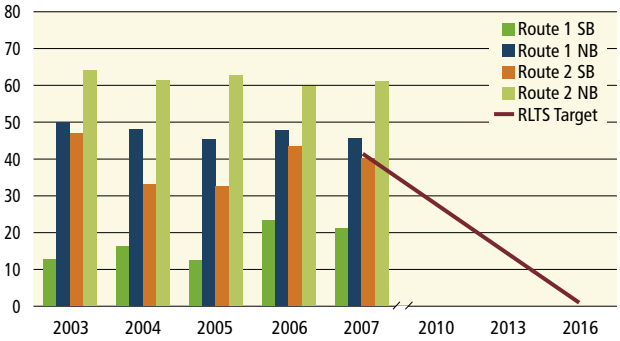

Figure 15: Comparison of AM peak travel times (minutes) by public transport and by car on key routes. Sources: Transit New Zealand; GWRC

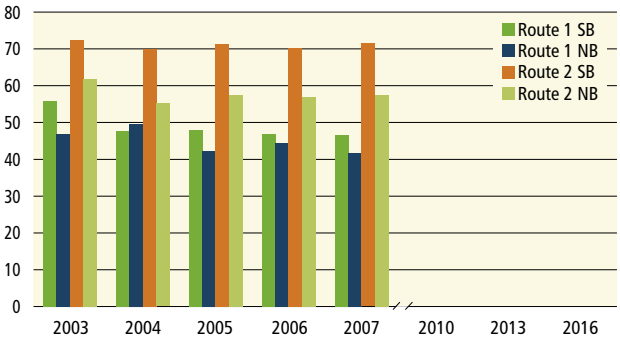

Figure 16: Comparison of inter-peak travel times (minutes) by public transport and by car on key routes. Sources: Transit New Zealand; GWRC

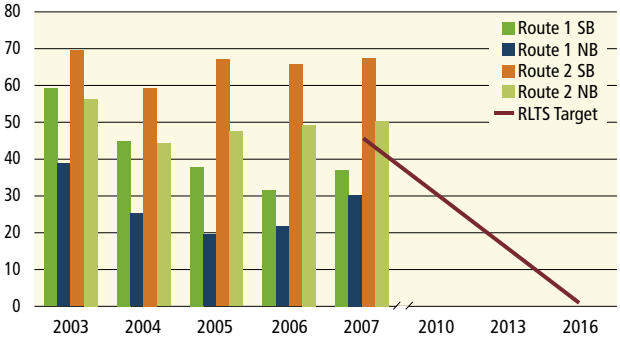

Figure 17: Comparison of PM peak travel times (minutes) by public transport and by car on key routes. Sources: Transit New Zealand; GWRC

Interpretation: As public transport travel times have been stable, the difference between 2006 and 2007 is mainly due to changes in travel times by private car. In the AM peak, the long term trend is a reduced difference between public transport and car travel

times, except for Paraparaumu to Wellington Airport which has seen the difference increase. In the inter-peak, the difference between car and public transport travel has gradually reduced reflecting an increase in delays due to road works which has increased travel times by car. The PM peak in 2007 has seen the trend reversed with car times improving on 2006 and so increasing the relative attractiveness of private car travel.

Comments: Localised problems in the road network are averaged in the car travel time surveys and so whilst the car travel times are in most cases significantly faster than public transport, the reliability of travel times is not shown.

With an average of over 40 minutes difference between journey times by public transport and the private car in both the AM and PM peaks, major investment in public transport infrastructure and services will be required to approach the RLTS target.

Journey time by public transport

Definition: The graphs show the time taken to travel by public transport (bus and train) on the same key routes which feature in the *Journey time comparison* indicator above, with the addition of the 'Golden Mile'. Travel times derive from timetables for routes 1 and 2. Traffic congestion on route 3, the Golden Mile (between Lambton Interchange and Courtenay Place) renders timetables to be unreliable. Information on this route is collected by a GWRC survey with times averaged over the two-hour periods. The routes covered and public transport modes for each are:

Route 1 SB: Paraparaumu – Wellington Airport (rail/bus)

Route 1 NB: Wellington Airport – Paraparaumu (bus/rail)

Route 2 SB: Upper Hutt – Wellington Airport (rail/bus)

Route 2 NB: Wellington Airport - Upper Hutt (bus/rail)

Route 3 SB: Lambton Interchange – Courtenay Place (bus)

Route 3 NB: Courtenay Place – Lambton Interchange (bus).

Travel times during the AM peak, inter-peak, PM peak and on Saturday are given.

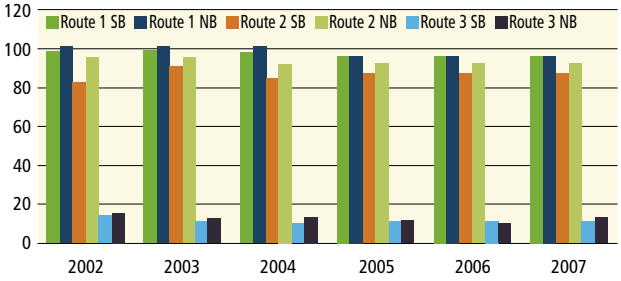

Figure 18: Public transport travel time (mins), AM peak. Sources: Metlink bus/rail timetables; GWRC survey

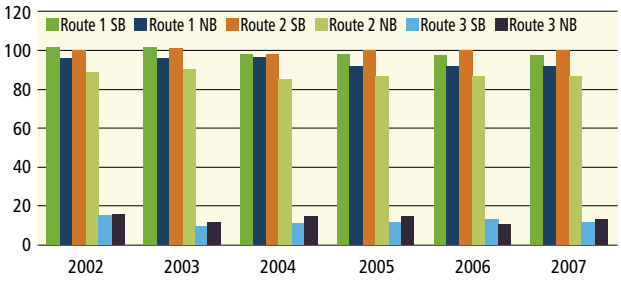

Figure 19: Public transport travel time (mins), inter-peak. Sources: Metlink bus/rail timetables; GWRC survey

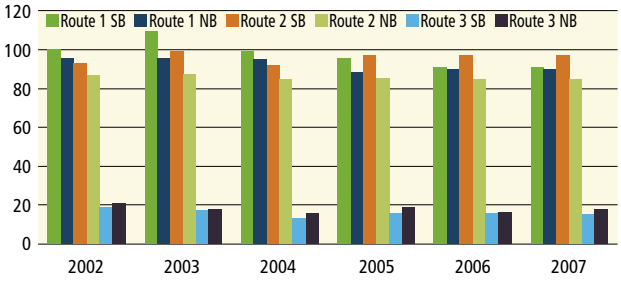

Figure 20: Public transport travel time (mins), PM peak. Sources: Metlink bus/rail timetables; GWRC survey

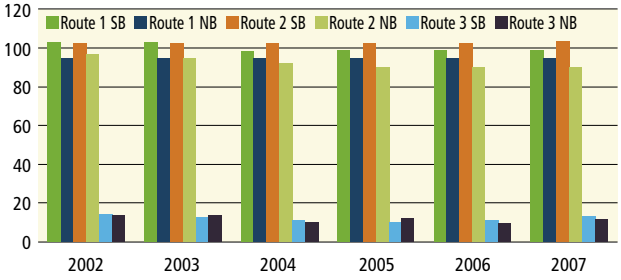

Figure 21: Public transport travel time (mins), Saturday. Sources: Metlink bus/rail timetables; GWRC survey

Interpretation: The only change to timetabled travel times on routes 1 and 2 in 2007 was a slight increase on the Saturday Upper Hutt to Wellington airport journey (southbound route 2). The northbound Golden Mile (route 3) travel time increased during all periods surveyed in 2007 by around two minutes.

Conversely, weekday travel times decreased slightly on route 3 southbound (Lambton Interchange to Courtenay Place) while an increase on Saturday was noted.

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 and Willis Street in mid 2006. It is unclear whether this was the cause of the increase in travel times on the Golden Mile during some periods or if it was the result of congestion.

1.5 Increased passenger transport reliability

Target: Nearly all bus and train services run on time

A performance indicator measuring progress against this RLTS target is currently under development and may be included in the 2007/08 AMR.

Conclusion

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.

A superior 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 and train travel time variations (such as dedicated bus lanes) and further integration between bus and rail services to minimise the 'cost' of transfer to passengers.

The introduction and regional implementation of 'txtBUS', 'txtTRAIN' and real time information along with integrated ticketing will significantly improve public transport level of service.

Active mode outcomes

Introduction

This section discusses items relating to the RLTS active mode outcomes.

The following key outcome for active modes is sought for the region's land transport network:

- **Increased mode share for pedestrians and cyclists**

The performance indicators associated with this key outcome are:

  - Mode of journey to work: active modes
  - Wellington CBD cordon cycle and pedestrian counts
  - Active modes for short trips

The related outcomes and associated performance indicators for active modes are:

- **Improved level of service for pedestrians and cyclists**
  - Cycle network level of service
  - Perceptions about the ease of cycling
  - Urban road frontages served by footpaths
  - Perceptions about the ease of walking
- **Increased safety for pedestrians and cyclists**
  - Pedestrian casualties
  - Perceptions of pedestrian safety
  - Perceptions of child pedestrian safety
  - Cycle casualties
  - Perceptions of cyclist safety
  - Perceptions of child cyclist safety

Key outcome

2.1 Increased mode share for pedestrians and cyclists

Target: Active modes account for at least 15% of region wide journey to work trips

Mode of journey to work: active modes

Definition: The graph uses New Zealand Census data to show active mode share for the region's 'main means of travel to work'. The RLTS target of 15% of all region wide trips by 2016 is also shown.

Active mode was defined as: 'walked or jogged, bicycle'. As the census is conducted five-yearly this indicator will next be updated in 2012.

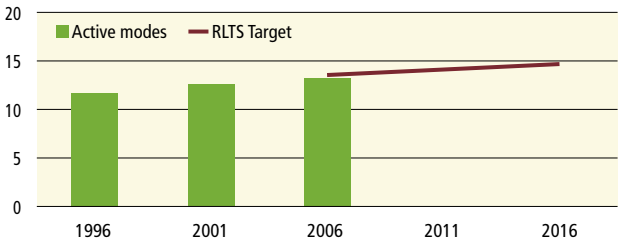

Figure 22: Active mode share of journey to work (%). Source: Statistics New Zealand

Interpretation: Active mode share of journey to work was over 13% in 2006. This represents an increase of almost 17% (3,500 more active mode trips) from the 2001 census.

Comments: Main means of travel to work by active modes is 2% short of the 2016 RLTS target of 15% of all region wide journey to work trips.

Wellington CBD cordon cycle and pedestrian counts

Definition: The graph shows results from the cordon and screenline location surveys that Wellington City Council undertakes in March each year. No information is available for other local authority areas. Data is averaged over the weekday, two-hour periods described as follows:

- Pedestrians in- and outbound to/from the central city during the morning peak period (AM cordon)
- Cyclists in- and outbound to/from the central city during the morning peak period (AM cordon)
- Cyclists at suburban locations during the morning peak period: Newtown, Kilbirnie, Kelburn, Thorndon, Ngauranga (AM commuter)
- Pedestrians along the Golden Mile during lunchtime (Golden Mile midday)
- Pedestrians between the CBD and waterfront during lunchtime (across waterfront midday).

Active mode outcomes

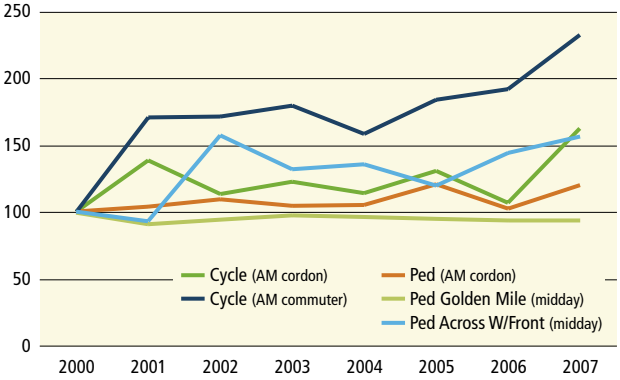

Figure 23: Wellington CBD corrdon pedestrian and cycle counts, average weekday two-hour period, March. Index: 2000 = 100. Source: Wellington City Council

Interpretation: Cycle and pedestrian counts vary widely according to weather conditions at the time of the survey. The 2007 surveys were conducted in fine conditions.

Cyclists crossing the CBD cordon in the 2007 morning peak increased by over 50% or 519 cyclists, following a decrease of approximately 200 cyclists the previous year. Pedestrian numbers at the same locations rose by more than 2,000 or 17% in 2007, to a similar level as the 2005 result.

The number of commuter cyclists travelling across Wellington suburban screenlines in 2007 increased by 180 (over 20%). Lunchtime pedestrian numbers between the CBD and waterfront showed an 8% increase (at 470) in 2007 and, although very high in number (approximately 75,000) pedestrians on the Golden Mile continue to be fairly static.

Comments: A significant gain in the volume of Wellington CBD cyclists (both inbound and outbound) was evident in 2007. Cycling is becoming a more popular means of travelling to work. Demands for active transport need to be accommodated and encouraged by the provision of safe and convenient networks for pedestrians and cyclists.

Active modes for short trips

These indicators measure progress against the GWRC LTCCP 2006-2016 target for active modes:

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

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 1 km and between 1 and 2 km in length. The 'Short Trip Active Modes' survey on which this indicator is based, was undertaken in 2004 and 2006. In future the survey will take place three-yearly so the next update will be in 2009.

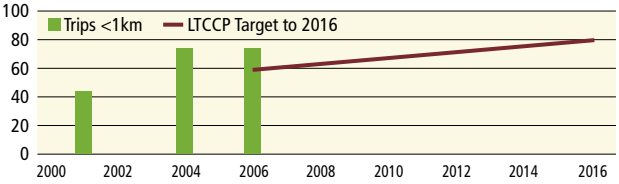

Figure 24: Trips of less than 1 km made by pedestrian or cycling modes (%), Wellington region. Source: GWRC Household Travel Survey 2001; GWRC Short Trip Active Mode surveys 2004, 2006

Interpretation: Seventy-four percent of trips less than 1 km made by respondents were cycled or walked in 2006, exactly the same result as in 2004.

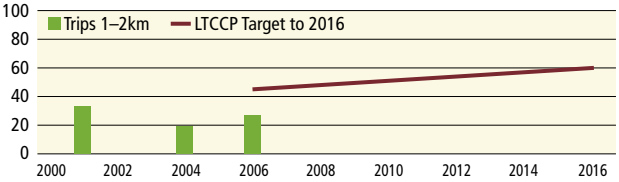

Figure 25: Trips between 1 and 2 km made by pedestrian or cycling modes (%), Wellington region. Source: GWRC Household Travel Survey 2001; GWRC Short Trip Active Mode surveys 2004, 2006

Interpretation: In 2006, 27% of respondents made trips of 1 – 2 km in length by the active modes of cycling or walking (c.f. 19% in 2004).

Comments: As the methodology of the 2004 and 2006 active mode surveys is not identical to that of the 2001 survey, data over further years is required before an accurate trend will emerge. While a pleasing three-quarters of all trips of less than 1 km in length were made by active modes in 2006 (on the way towards the target of 80% by 2016) this result has not increased from 2004. A focused effort to increase the level of walking and cycling as the modes of choice especially for trips of 1 - 2 km in length, is warranted. Ongoing TDM, pedestrian and cycling plan implementation aims to achieve increased uptake of these modes.

Related Outcomes

2.2 Improved level of service for pedestrians and cyclists

Target: All of the strategic cycle network provides an acceptable level of service

Cycle network level of service

Investigation of a suitable performance indicator is currently underway. Subject to feasibility it may be included in the 2007/08 AMR.

Perceptions about the ease of cycling

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

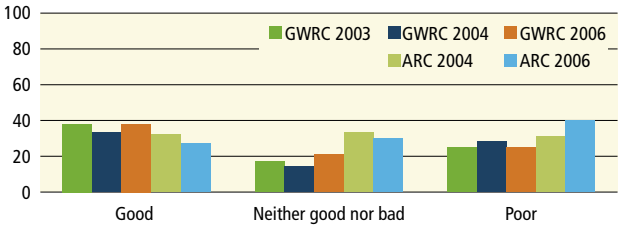

Figure 26: How 'hassle free' is it to get around the region by cycling? (%). Sources: GWRC and ARC transport perceptions surveys

Interpretation: Thirty-eight percent of Wellingtonians in 2006 believed that getting around the region by cycle was '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 believed that getting around their region by cycle was 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.

Comment: 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 was relatively difficult. The need for improved cycling facilities throughout the region is indicated. Providing greater ease of cycle use will maintain current levels and increase uptake of cycling in the region. GWRC advocates for improved cycling infrastructure throughout the region.

Target: Nearly all urban road frontages are served by a footpath

Urban road frontages served by footpaths

Investigation of a suitable performance indicator is currently underway. Subject to feasibility it may be included in the 2007/08 AMR.

Perceptions about the ease of walking

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

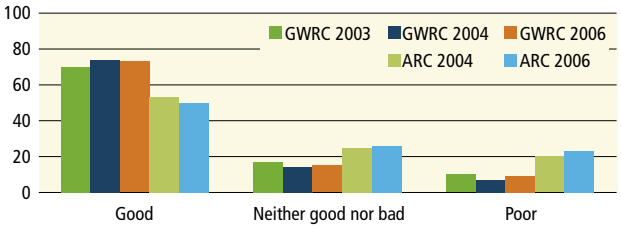

Figure 27: How 'hassle free' is getting around the region by walking? (%). Sources: GWRC and ARC transport perceptions surveys

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 believed that getting around their region by walking was difficult, 14% more than Wellington region respondents.

Comment: Most Wellingtonians believed that walking around their region was 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 public transport, which has an associated walking trip component. Through measures included in the pedestrian and TDM plans, GWRC aims to encourage increased use of walking as a travel mode of choice.

2.3 Increased safety for pedestrians and cyclists

Target: Fewer than 100 pedestrians injured in the region per annum

Pedestrian casualties

Definition: The graph shows pedestrian casualties for the region. The RLTS target to 2016, of fewer than 100 pedestrians injured per annum is also shown.

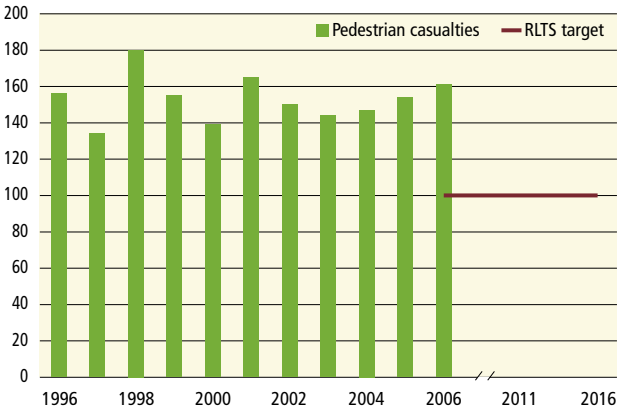

Figure 28: Pedestrian casualties, Wellington region. Calendar year.
Source: Land Transport New Zealand

Interpretation: The region's total pedestrian casualty figures increased by 4.5%, continuing an upward trend since 2003. At 161 in total in 2006, the region has well exceeded the RLTS target of fewer than 100 pedestrians injured per annum.

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 over 50% of casualties occur. This is likely to be explained by the high proportion of pedestrian trips undertaken in the city.

In 2006 Wellington City's pedestrian casualty numbers and those in Porirua remained the same as the previous year. Hutt City experienced an increase of 15 casualties in 2006 to 37 in total. Wairarapa also showed a significant rise of over 50% to 11 casualties, 10 of which occurred in Masterton. Five fewer pedestrian casualties resulted in Kapiti in 2006 and Upper Hutt declined by six casualties.

Comments: The Regional Pedestrian Plan 2004 aims to address safety issues associated with pedestrians. Ministry of Transport data shows that the risk of a pedestrian experiencing a casualty is roughly half that of vehicle occupants and approximately one-sixth that of cyclists.[1] 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 2002-2006.[2]

Perceptions of pedestrian safety

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

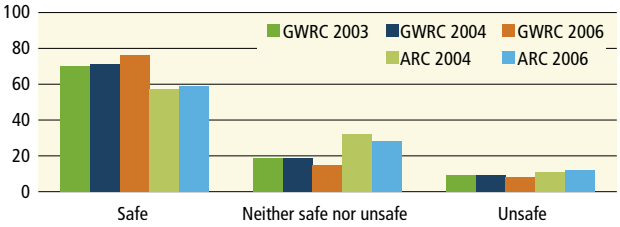

Figure 29: How safe do you think people are when walking? (%)
Sources: GWRC and ARC perception surveys

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 compared 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.

Perceptions of child pedestrian safety

Definition: The graph shows the percentage of people in the Wellington region who would or do allow a child (under 12 years) to walk unsupervised in the vicinity of their home and to or from school.

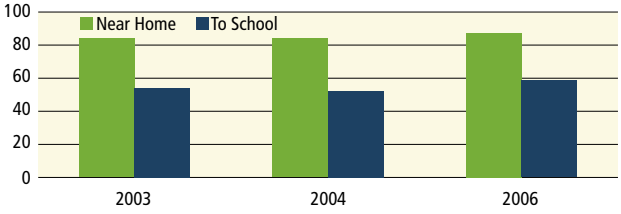

Figure 30: Allowing a child to walk unsupervised (%), Wellington region. Source: GWRC perception surveys

[1] Ministry of Transport, NZ Household Travel Survey and reported crashes, 2003-2006.
[2] Land Transport New Zealand (2007). *Greater Wellington Region Road Safety Report 2002 to 2006.* p. 43.

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 related to 'stranger danger' issues (35% of respondents). This was 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 was 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 will benefit the community as a whole.

Target: Fewer than 75 cyclists injured in the region per annum

Cyclist casualties

Definition: The graph shows cyclist casualties for the region. The RLTS target to 2016, of fewer than 75 cyclists injured per annum is also shown.

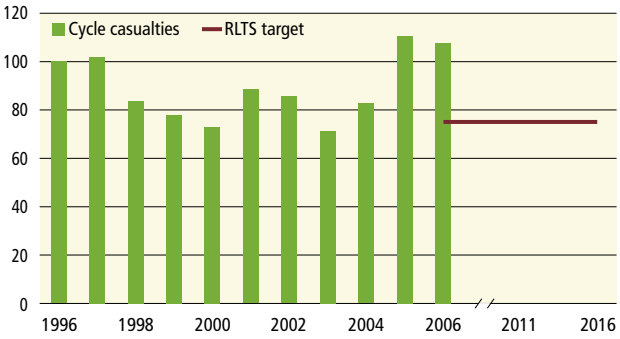

Figure 31: Cyclist casualties, Wellington region. Calendar year.
Source: Land Transport New Zealand

Interpretation: Cyclist casualties decreased slightly in 2006 by just under 3% to 112. This is clearly in excess of the RLTS target of fewer than 75 cyclists injured per annum. In 2005 cyclist casualty numbers across the region were the highest for a decade increasing from 2004 by over 30% to 115 in total.

Numbers of cyclist casualties remain high in Wellington City at 68 and have risen by 84% since 2002. Porirua cycle casualties doubled to eight and in Upper Hutt there was also an increase from six in 2005 to 11 casualties in 2006.

The lowest number since 1996 was experienced in Wairarapa with four cyclist casualties in total (all occurring in Masterton), down from 12 in 2005. Hutt City was the only other district with a drop in casualties of 35% or 6 cyclists (besides Kapiti also declining by one).

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 Regional Cycling Plan (2004) supports and promotes a culture of safe cycling in the region.

Perceptions of cyclist safety

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

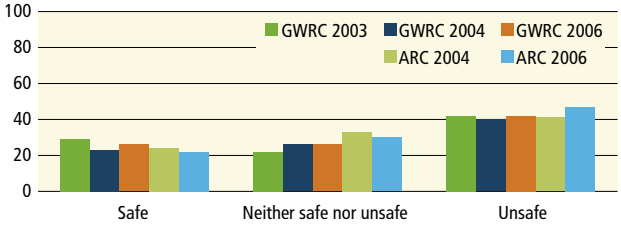

Figure 32: How safe do you think people are when cycling? (%).
Sources: GWRC and ARC perception surveys

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 regional 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.

Active mode outcomes

Perceptions of child cyclist safety

Definition: The graph shows the percentage of people in the Wellington region who would or do allow a child (under 12 years) to cycle unsupervised in the vicinity of their home and to or from school.

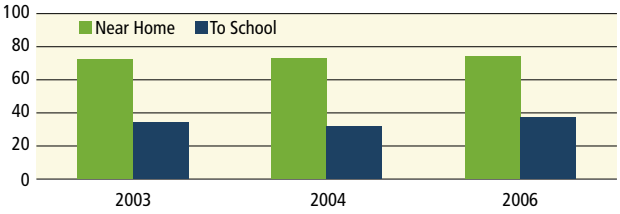

Figure 33: Allowing a child to ride their bicycle unsupervised (%), Wellington region. Source: GWRC perception surveys

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.

Conclusion

Continued progress on the three road safety interventions of engineering, education and enforcement could result in improvements in pedestrian and cyclist casualties which is an ongoing issue for the region.

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.

Active mode share will remain variable day to day, but this mode use is expected to increase with a growing awareness of the potential health benefits and improvements in cycle and pedestrian networks.

Environmental outcomes

Introduction

This section discusses items relating to the RLTS outcomes with an environmental focus.

The following key outcome is sought for the region's land transport network:

- **Reduced greenhouse gas emissions**

The performance indicator associated with this key outcome is:

  - Carbon dioxide emissions

The related outcomes and associated performance indicators are:

- **Reduced private car mode share**
  - Mode of journey to work: motor vehicle
  - Wellington CBD cordon vehicle counts
- **Reduced fuel consumption**
  - Fuel consumption
  - Fuel consumption by region
  - Fuel price index
- **Increased private vehicle occupancy**
  - Vehicle occupancy

Key outcome

3.1 Reduced greenhouse gas emissions

Target: Transport generated CO_2 emissions will remain below 1,065 kilotonnes per annum

Carbon dioxide emissions

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. The RLTS target of less than 1,065 kilotonnes of CO_2 emissions per annum attributable to land transport also features on the graph.

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 2.6 kg/litre for diesel.

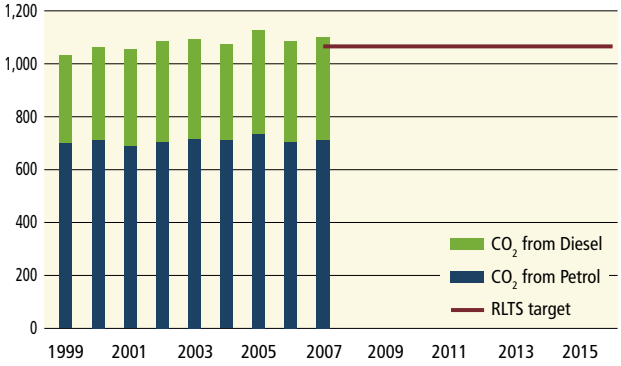

Figure 34: Transport-generated CO_2 (kilotonnes), Wellington region. Sources: local authorities; Ministry of Transport VFEM 2005.

Note: This information has previously been reported per calendar year but now relates to financial year (ended June).

Interpretation: As CO_2 emission levels have been calculated from fuel used, the same pattern seen in Figure 37 is evident here.

In 2007 land transport fuel combustion produced 1,099 kilotonnes of CO_2 in the Wellington region. This represents an increase of 13 kilotonnes from 2006, following a decline in CO_2 emissions of 42 kilotonnes from 2005.

For the past three years the proportions of diesel and petrol have remained the same.

Comments: The target of no more than 1,065 kilotonnes of CO_2 per annum generated from transport has been exceeded by 34 kilotonnes in 2007.

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.

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

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

Related outcomes

3.2 Reduced private car mode share

Target: Private vehicles account for no more than 62% of region wide journey to work trips

Mode of journey to work: motor vehicle

Definition: The graph uses New Zealand Census data to show motor vehicle mode share for the region's 'main means of travel to work'. The RLTS target of less than 62% of all region wide trips by private vehicle by 2016 is also shown.

Motor vehicle was defined as: 'drove private car, truck or van; drove company car, truck or van; passenger in car, truck or van or company bus; motorcycle or powercycle'. As the census is conducted five-yearly this indicator will next be updated in 2012.

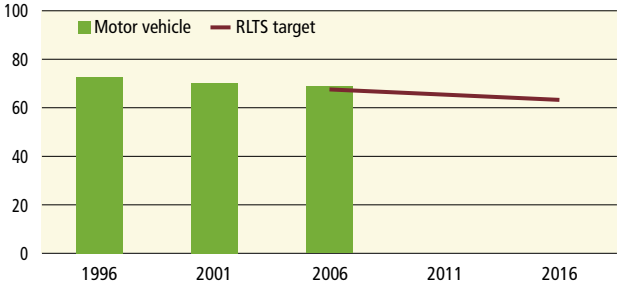

Figure 35: Motor vehicle mode share of journey to work (%). Source: Statistics New Zealand

Interpretation: Motor vehicle mode share of journey to work was 69% in 2006. Although the motor vehicle share of all trips has decreased slightly, 10,300 more motor vehicle trips were made than in 2001.

Comments: Across the three census periods shown, mode share of journey to work by motor vehicle has declined. To continue this trend and achieve the RLTS target by 2016, provision of alternative modes and encouragement of their uptake must occur.

Wellington CBD cordon vehicle counts

Definition: Wellington City Council commissions classified vehicle counts in March each year. The resulting numbers of vehicles entering the Wellington CBD cordon during the two-hour morning commuter peak are shown in the graph. Buses are not counted.

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.

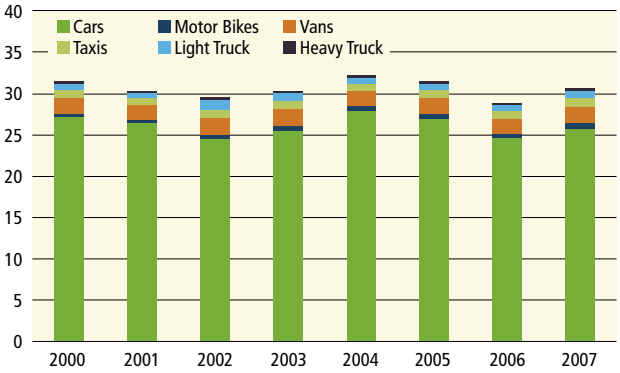

Figure 36: Wellington CBD cordon inbound traffic volumes (000), weekday AM two-hour peak, March. Source: Wellington City Council

Interpretation: After a decrease of 8% in 2006, total inbound road traffic volumes increased by 6.5% again in 2007. The number of cars increased by 4.5% or over 1,000 after declining for two years. Just over 200 more motorbikes entered the CBD in 2007 representing an increase of 44%, to almost 670. Heavy trucks increased by 19% (57) while taxi numbers remained stable at 1,000. The van remains the most common vehicle after the car and rose by 16% or nearly 270 to reach almost 2,000. The most marked increase in number shown by any vehicle in 2007 was for light trucks with an increase of 300 (43%) to 1,000.

Comments: Following the 2006 result of the lowest total vehicle volume counted since 2000, an increase in all vehicle types and overall traffic entering the Wellington CBD is shown.

The lesser total number of inbound vehicles in 2006 may have been due to fuel price impacts and/or in response to Inner City Bypass construction works which encompassed some areas of the CBD cordon.

The increase in numbers of motorcycles entering the CBD is consistent with the rising number of registrations with Land Transport New Zealand (see indicator *Motorcycle registrations in Appendix 1 – Regional Demographics*).

3.3 Reduced fuel consumption

Target: No more than 442 mega litres of petrol and diesel per annum will be used for transport purposes

Fuel consumption

Definition: The graph shows total petrol and diesel sales for the region as collected monthly for the local body fuel tax. The RLTS and GWRC LTCCP target of no more than 442 mega litres of fuel per annum used for transport is also shown.

Although some non-retail sales occur, and some fuel is purchased outside the region but used in it (and vice versa), this is the best measure of total regional fuel consumption available. Sub-regional data would add little value as fuel is not necessarily used in the area in which it is purchased.

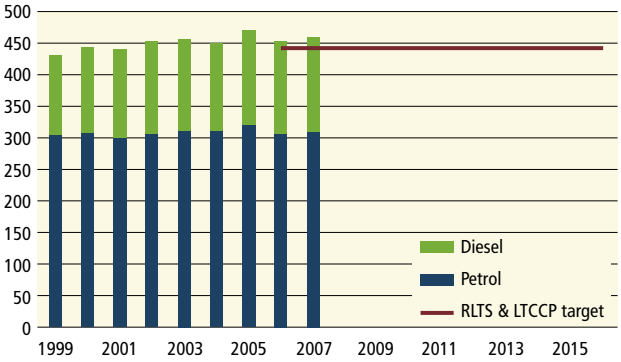

Figure 37: Fuel (diesel and petrol) consumption (M litres), Wellington region. Sources: local authorities

Note: This information has previously been reported per calendar year but now relates to financial year (ended June).

Interpretation: Regional petrol and diesel sales grew by 1.2% to 458 million litres in total in 2007 following a decrease of 3.8% the year previous. Diesel sales increased at the slightly higher rate of 1.5% than did petrol at 1.1%. In 2006, both fuels decreased by 2.3% and 4.5% respectively.

Fuel sales in the western part of the region (where 86% of regional fuel is sold annually) experienced growth of less than 1% in 2007 while in Wairarapa overall fuel sales increased by 5.3%.

Comments: The RLTS target of less than 442 million litres of fuel consumed per annum is based on 2001 petrol and diesel sales and has been exceeded in all subsequent years. In 2007 total fuel consumed in the Wellington region was 16 million litres above this level.

Although fluctuating, total fuel sales for the region continue to demonstrate slow growth over the period shown at less than 1%.

The Travel Demand Management Plan (2005) outlines measures to address this issue. The regional travel behaviour change programme includes the implementation of travel plans for schools, workplaces and communities. Via travel plans a range of travel choices and initiatives are actively supported and promoted to reduce dependency on vehicle use.

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.

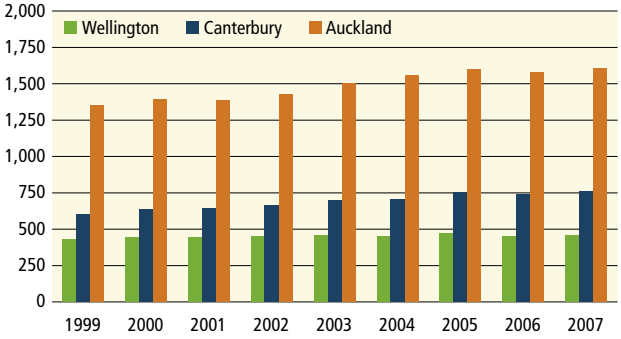

Figure 38: Total fuel consumption (M litres), by region. Sources: GWRC; ARC; ECan (Environment Canterbury)

Interpretation: Auckland fuel sales increased by 1.4 % overall in 2007 with comparable growth in consumption of both fuels. Overall fuel use in the Canterbury region increased by almost 3% in 2007, led by a 4.2% rise in diesel sales. Growth in fuel consumption in Wellington was the lowest at 1.2%.

Diesel sales have made pronounced increases in all three regions since 1999. Canterbury shows the highest growth rate in diesel consumption at almost 50% between 1999 and 2007 with Auckland at 32%, although the increase in actual volume is very similar at around 127 million litres. By comparison Wellington region's diesel use grew by 18% 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: Fuel sales rose in all three regions shown, following a decrease across the board in 2006.

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.

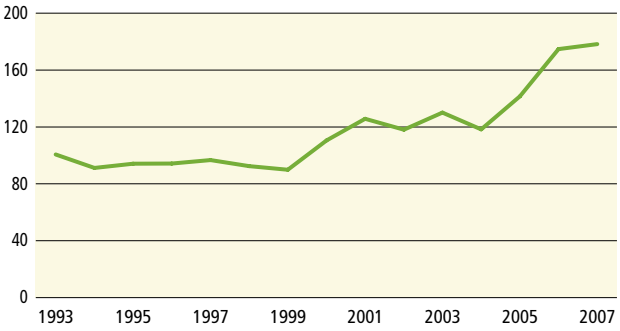

Figure 39: Fuel component of national Farm Expenses Price Index. March quarter. 1993 = 100. Source: Statistics New Zealand

Interpretation: After the sharp increase of 50% shown from 2004 to 2006, the fuel price index steadied in 2007 with 2% growth. Since 2001, an overall increase of 44% is shown and over the past 10 years the index has almost doubled.

Comment: The steep increase in the price of fuel in recent years has levelled off in 2007.

3.4 Increased private vehicle occupancy

Target: Vehicles entering the Wellington CBD during the 2 hour AM peak contain on average at least 1.5 people per vehicle

Vehicle occupancy

Definition: The graph shows the average occupancy of vehicles entering the Wellington CBD. Data is generated from the same survey described in the indicator *Wellington CBD cordon vehicle counts* featured earlier in this section. Only traffic heading into the city is counted during the two-hour morning commuter peak. Buses are not included.

The RLTS target of 1.5 people on average per vehicle entering the Wellington CBD is also shown.

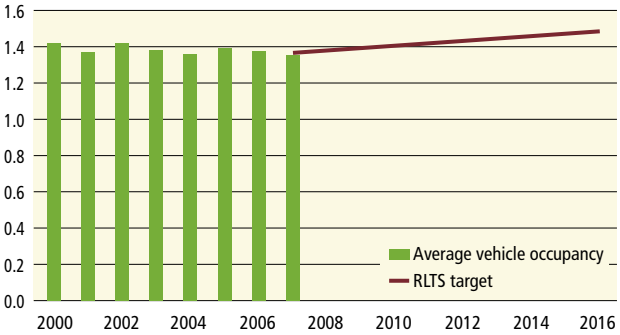

Figure 40: Wellington CBD cordon inbound vehicle occupancy, Weekday AM two-hour peak, March. Source: Wellington City Council

Interpretation: Average occupancy of vehicles into the Wellington CBD decreased again to 1.35 in 2007. The overall trend in vehicle occupancy is downwards.

The highest occupancy level of 1.42 was recorded in both 2000 and 2002.

Comments: At an average of only 1.35 occupants per vehicle entering the Wellington CBD and a decreasing trend shown in recent years, more emphasis is required to encourage carpooling or ridesharing to reach the RLTS target of 1.5 people by 2016.

The high proportion of single-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, school and community travel plans for the region. These are both initiatives of the Travel Demand Management Plan which seek to increase car occupancy in the region.

Conclusion

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.

Approximately 40% of New Zealand's CO_2 emissions are attributed to the transport sector.[3] Transport emissions make up approximately 18% of total greenhouse gas emissions in New Zealand and are increasing at around 4% per annum.[4]

A reduction in transport sector emissions will therefore significantly impact overall greenhouse gas levels.[5]

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

[3] 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.
[4] *Climate Change Solutions: Whole of Government Climate Change Work Programmes* (2006) in Hyder Consulting (2006), *Regional Land Transport Strategy Policy Positions,* p. 14.
[5] Hyder Consulting (2006), *Regional Land Transport Strategy Policy Positions,* p. 14.

Road network efficiency outcomes

Introduction

This section discusses items relating to the RLTS road network efficiency outcomes.

The following key outcome for road network efficiency is sought for the region's land transport network:

- **Reduced severe road congestion**

The performance indicators associated with this key outcome are:

  - Road congestion: all day average
  - Road congestion: time of day comparison
  - Perceptions about the state of congestion

The following related outcomes and associated performance indicators for road network efficiency are:

- **Maintained vehicle travel times between communities and regional destinations**
  - Key route travel speed by road
  - Variability in travel time by road
- **Improved reliability of the strategic roading network**
  - Key route road closure
  - Perceptions of network reliability

Key outcome

4.1 Reduced severe road congestion

Target: Average congestion on selected roads will remain below 20 seconds delay per km travelled despite traffic growth

Road congestion: all day average

Definition: The graph shows all day average congestion on a selection of the region's roads. Information is from Transit New Zealand's March travel time surveys (see *Road congestion: time of day comparison* below). The RLTS and GWRC LTCCP target to 2016 is shown (congestion to remain below 20 seconds delay per km travelled).

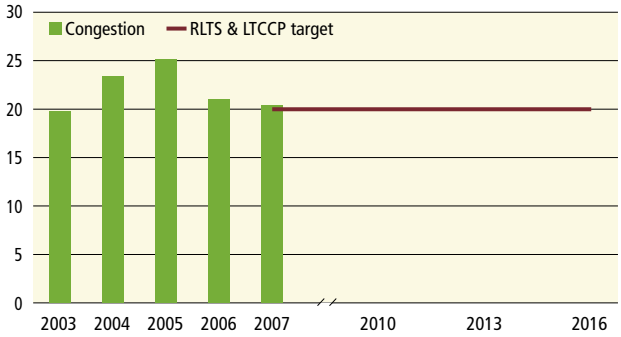

Figure 41: All day average congestion (seconds delay/km travelled). Source: Transit New Zealand

Interpretation: All day average congestion on the region's roads was 20.4 seconds delay per km travelled in 2007. This represents a 3% decrease from 2006 and follows the significant 17% drop in congestion experienced that year.

Comments: The all day average congestion level has shown a decreasing trend since 2005, towards the target.

Road congestion: time of day comparison

Travel time performance is monitored by Transit New Zealand in March and November each year on the following Wellington region strategic 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 can be seen on the map. This information yields a measure of congestion as minutes of delay per kilometre travelled for the morning peak period (AM), inter-peak period (IP) and afternoon peak period (PM).

Road network efficiency outcomes

Figure 42: Greater Wellington region travel time performance monitoring network. Source: Transit New Zealand

Data is susceptible to day-to-day aberrations in network performance such as crashes, breakdowns and road works. The March 2007 surveys were undertaken within the period when the effects of the opening of the Inner City Bypass had not completely settled down.

Definition: The graph shows results from the Wellington region travel time surveys conducted by Transit New Zealand in March each year. Congestion is shown across three periods of the day along with the all day average (featured in *Road congestion: all day average* above).

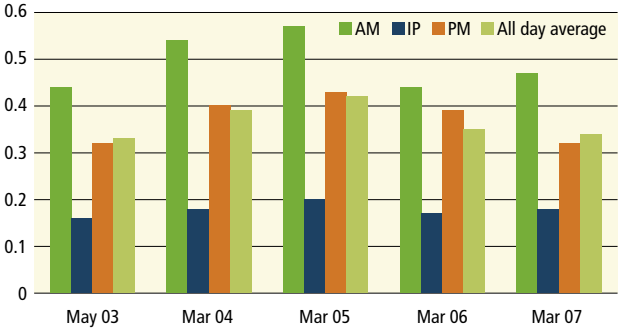

Figure 43: Congestion (mins delay/km travelled), Wellington region. Source: Transit New Zealand

Interpretation: The AM peak congestion indicator increased by two seconds delay per kilometre travelled to 28 seconds in March 2007. Congestion also increased slightly during the inter-peak period but decreased in the PM peak to 19 seconds delay per km travelled (23 seconds in 2006). A reduced delay during the PM peak is evident since 2005. The resulting all day average (as discussed in *Road congestion: all day average* above) shows a similar downward trend.

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 generally compare favourably with other New Zealand centres and overall have improved over the past year. The pattern of congestion in the Wellington region appears to be focused during the peak periods on a number of pinch points over the network such as the merge of SH1 and SH2.

Perceptions about the state of congestion

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

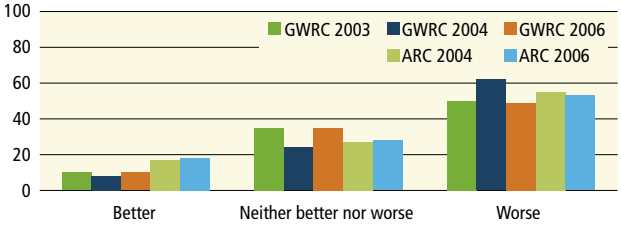

Figure 44: Do you think traffic congestion is better than it was two years ago? (%). Sources: GWRC and ARC transport perceptions surveys

Interpretation: In 2006, 49% of Wellingtonians considered congestion had worsened over the previous two years (c.f. 62% in 2004). 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 reduction in the perception of worsened congestion in the Wellington region was shown in 2006. However, the increase in Wellington respondents who felt that congestion had improved in 2006 was very small. More people in Auckland than in Wellington perceive that congestion is worsening.

Related outcomes

4.2 Maintained vehicle travel times between communities and regional destinations

Target: No decrease in average vehicle journey "speeds" shown in travel time surveys for selected key routes

Key route travel speed by road

Definition: This indicator shows results from the Wellington region travel time surveys conducted by Transit New Zealand in March each year (see the indicator *Road congestion: time of day comparison* in this section for a description of the surveyed routes).

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. Speed of travel is given across three periods of the day along with the all day average.

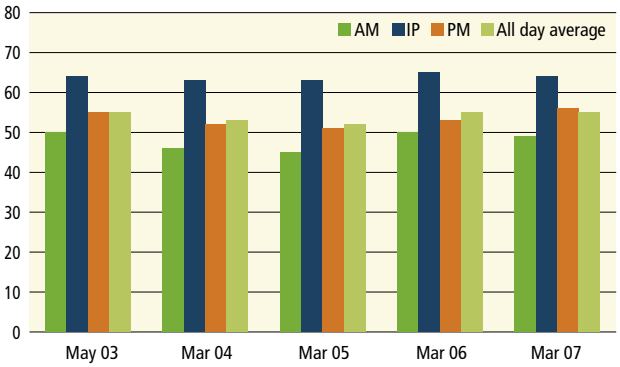

Figure 45: Network average vehicle speeds (km/h), Wellington region. Source: Transit New Zealand

Interpretation: Average travel speeds increased during the PM peak period in 2006 to 56 km/h (53 km/h in 2005). Average speed remained relatively static across other periods of the day at 49 km/h for the AM peak and 64 km/h during the inter-peak. The 2006 all day average travel speed equalled the 2005 result of 55 km/h.

Comments: There was a 7 km/h difference between AM and PM period average travel speed with PM travel speeds increasing in 2007. The all day average travel speed was unchanged.

Increases in travel speed should lead to a general reduction in travel time on the region's roads and reflect an improved overall level of service on the road network. Localised problem areas on the surveyed routes where congestion occurs are masked by the average results.

Variability of travel time by road

Definition: This indicator shows results from the Wellington region travel time surveys conducted by Transit New Zealand in March each year (see the indicator *Road congestion: time of day comparison* in this section for a description of the surveyed routes).

The graph shows a percentage of the average travel time as a measure of the reliability or certainty of travel times. Variability of travel time is given across three periods of the day along with the all day average.

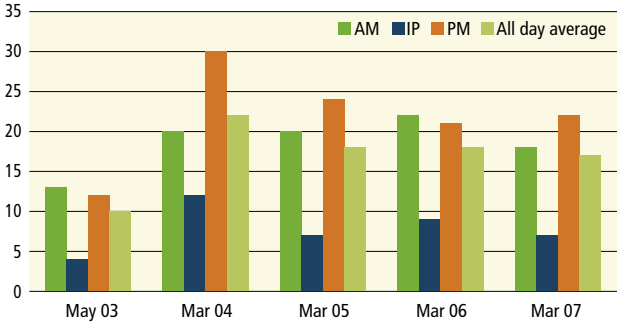

Figure 46: Travel time variability (%), Wellington region. Source: Transit New Zealand

Interpretation: Variability of travel time improved in the AM peak by 3% in 2007 to 18% and also decreased during the inter-peak by a similar amount. In contrast to 2006, the period of the day exhibiting the most variability in travel time for the Wellington region is now the PM peak at 22 %. The all day average percentage uncertainty in travel time remained at the similar level of 17% when compared to 2006.

Comment: A general improvement in travel time variability is shown over time with no significant change in the all day average variability of travel time from March 2005.

4.3 Improved reliability of the strategic roading network

Target: Key routes are very rarely affected by closure

Key route road closure

Definition: The graph shows an estimate of the duration of incidents and number of vehicles delayed per annum on the region's strategic roading network.

Police data on traffic incidents on the strategic network has been combined with traffic flow information from the Wellington Transport Strategic Model (WTSM). The duration of the incident combined with the average number of vehicles that would pass through that part of the network gives the number of vehicles delayed.

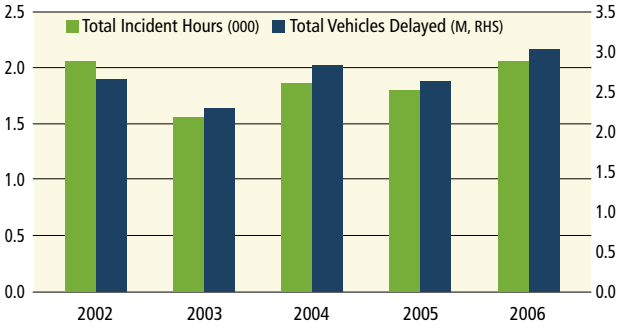

Figure 47: Total incident minutes (000) and total vehicles delayed (M) on the strategic roading network, Wellington region. Source: NZ Police; GWRC WTSM

Note: NZ Police data is susceptible to variable reporting rates.

Interpretation: In 2006 over three million vehicles were delayed by a total of 2,050 incident hours.

There are an increasing number of incidents on the strategic network. Volumes of traffic on the strategic network have also increased.

2002 showed the greatest total of incident hours, but the number of vehicles affected was lower than in 2006 (which saw a similar level of incident hours). This shows that as well as higher traffic volumes, the incidents in 2006 on average occurred during times when network flows were higher (e.g. AM peak periods) or on areas of the network where traffic flows were higher.

Comment: There are an increasing number of vehicles affected by incidents on the strategic roading network. The overall trend is for an increasing number of vehicles to be affected by an increasing number of incidents.

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'.

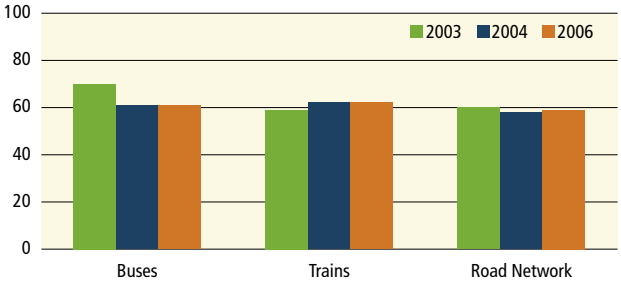

Figure 48: Reliability rating of regional transport networks (%). Source: GWRC transport perceptions surveys

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 is 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.

Comment: 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.

Road network efficiency outcomes

Conclusion

The regional Travel Demand Management Plan identifies measures to further improve the level of congestion on the roads by promoting alternatives to car travel. As the Plan undergoes implementation school, workplace and community travel plans are under way throughout the region.

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.

Road safety outcomes

Introduction

This section discusses items relating to the RLTS road safety outcome.

The following key outcome for road safety is sought for the region's land transport network:

- **Improved regional road safety**

The associated performance indicators included in this section are:

  - Road crash fatalities attributable to road network deficiencies
  - Injury crashes by district
  - Casualties by severity type
  - Casualties by region
  - Fatalities and hospitalisations
  - Relative risk by transport mode
  - Motorcycle casualties
  - Perceptions of road network safety

There are no related outcomes for road safety.

Key outcome

5.1 Improved regional road safety

Target: There are no road crash fatalities attributable to roading network deficiencies

Road crash fatalities attributable to road network deficiencies

This performance indicator is currently under development. Transit New Zealand is to begin reporting all road fatalities occurring on state highways that were caused by engineering deficiencies. This indicator will be included in the 2007/08 AMR.

Injury crashes by district

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

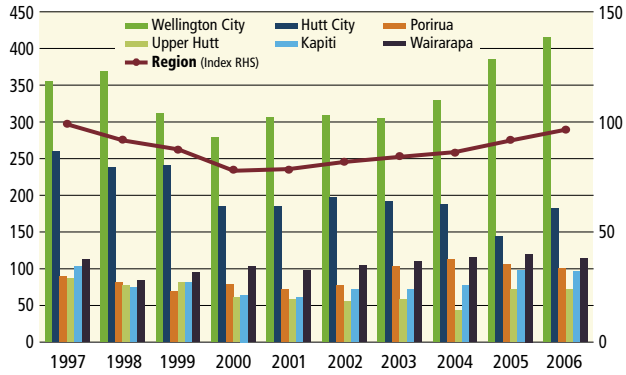

Figure 49: Total injury crashes (including fatalities) by district. Calendar year. Index: 1997 = 100. Source: Land Transport New Zealand

Interpretation: There were 978 injury crashes recorded in 2006, the highest overall number in nine years. A general downward trend is shown in most districts and across the region as a whole until 2000. Since 2001 total regional injury crashes have continued to increase particularly in Wellington City, Porirua and Kapiti.

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 indicating that much more attention is required if road safety is to be improved.

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]

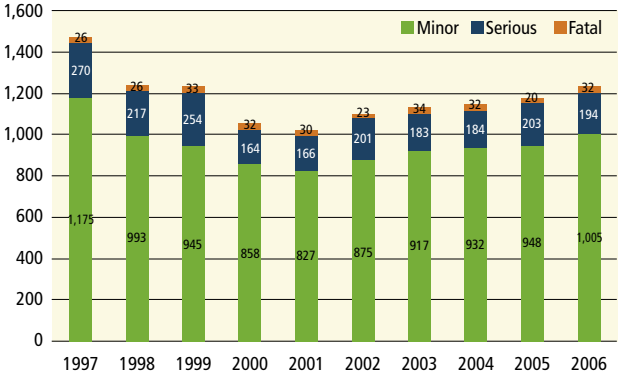

Figure 50: Total casualties, by type, Wellington region. Calendar year. Source: Land Transport New Zealand

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

Road safety outcomes

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: In 2006, fatalities increased by 12 in number to a total of 32 having fallen by the same in 2005 (at 20, this was the lowest number of fatalities recorded since 1997). Serious casualty numbers decreased by 9 in total and minor casualties were up by 6% (57) in 2006.

Comments: Improved vehicle safety, driver education and proactive road safety engineering all contributed to an overall 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 the Wellington, Auckland and Canterbury regions.

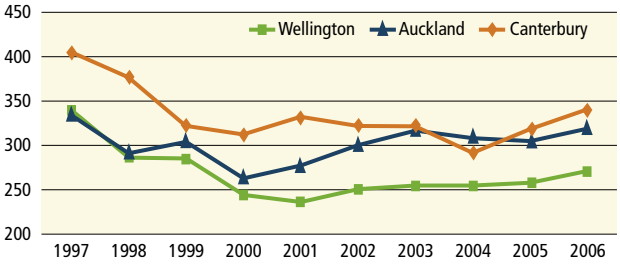

Figure 51: Casualties per 100,000 population, by region. Calendar year. Sources: Land Transport New Zealand, Statistics New Zealand

Interpretation: Wellington retains the lowest casualty rate of the three regions measured despite a 5.6% increase in 2006 to 270 casualties per 100,000 population. Auckland experienced an increase of 5% from 2005 to 221 casualties per 100,000 population after a slight reduction the year previous. Canterbury's casualty rate has risen sharply since 2004 (by 50, or over 16%) to reach the highest rate since 1999 and of the three regions.

The Wellington region has also shown the greatest reduction in casualties per 100,000 population between 1997 and 2006 at 21% followed by Canterbury with 17%, while Auckland has achieved a decrease of 5% over the previous decade. All regions are experiencing an overall rise in casualties.

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 and hospitalisations

This indicator specifically measures progress against the regional targets for road casualties as set out in the Wellington Regional Road Safety Plan (2004) and in line with the national Road Safety to 2010 strategy.

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.

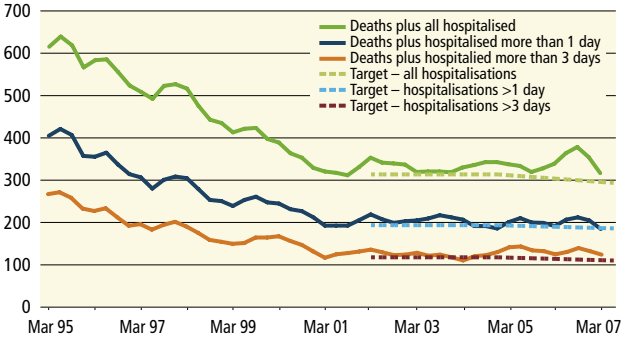

Figure 52: Number of deaths plus hospitalisations (12-month totals) resulting from road crashes, Wellington region. Source: Land Transport New Zealand

Note: Hospitalisations are the number of hospital admissions reported by the New Zealand Health Information Service. Along with deaths, the numbers of people hospitalised for more than one day and more than three days have been included as measures of more serious injuries.[3]

Interpretation: After a strong decline from 1995 to 2001, the trend in each category has generally plateaued. Wellington region's targets have been adjusted down proportionally from 2004 towards 2010 in line with national targets.

Comment: The number of deaths plus hospitalisations in the Wellington region has fluctuated around the targets since 2002, and has generally exceeded the targets across all categories since approximately 2004. If trends continue it will be unlikely that the 2010 targets will be achieved unless proven road safety interventions are rejuvenated by all agencies involved in regional road safety.

[2] Land Transport New Zealand (2006). *Wellington Region Road Safety Report 2001 to 2005*, p. 3.
[3] Land Transport Safety Authority (2003). *Road Safety to 2010*, p. 12.

Road safety outcomes

Relative risk by transport mode

Definition: The graph shows the number of people killed and injured nationally per million hours spent travelling, by mode, from 2003 to 2006. Travel data is sourced from the New Zealand Household Travel Survey and casualties are reported by New Zealand Police to Land Transport New Zealand via the Crash Analysis System (CAS). A regional breakdown will be available in 2008.

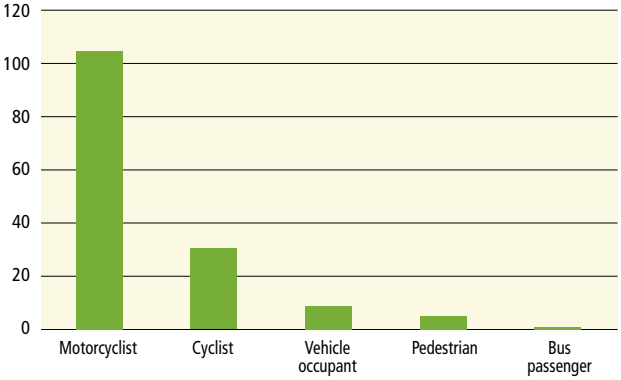

Figure 53: National casualties per million hours travelled, by transport mode, 2003-2006. Sources: Ministry of Transport; Land Transport New Zealand

Note: *Vehicle occupants* refer to trips made in light, four-wheeled vehicles i.e. cars, vans, utilities and sports utility vehicles (SUV). *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.

Interpretation: The relative risk of each mode is determined using an 'exposure-to-risk' indicator of casualties per million hours travelled. The data shows that per million hours travelled, a cyclist is 3.3 times as likely as a vehicle occupant to become a casualty and 6 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.

Comment: Reducing cyclist risk is a priority for road safety initiatives. Cycling is 'less safe' than other modes of transport but cycling in itself is not 'unsafe'. There is only one chance per 33,000 hours cycled of experiencing a casualty.[4] This risk has deteriorated from a survey conducted 10 years ago however, in which the risk was one chance per 40,000 hours.[5]

Pedestrian travel remains safe with only one chance of casualty per 200,000 hours spent travelling 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.

Motorcycle casualties

Definition: The graph shows the total number of motorcycle casualties for the region. Motorcycle registration numbers are given as a comparison.

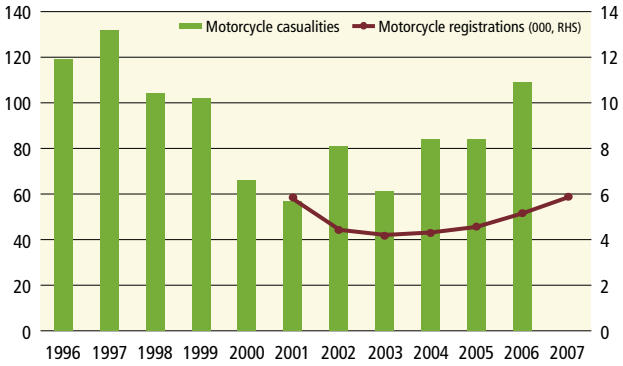

Figure 54: Motorcycle casualties and registrations, Wellington region. Calendar year. Source: Land Transport New Zealand

Interpretation: Motorcycle casualties in 2006 totalled 109 for the region, resulting in the highest number for nine years. Until 2001, a clear downward trend in casualties is shown. In the years following, casualty numbers have fluctuated with an increase overall, and then soared by 30% from 2005 to 2006. The substantial rise in 2006 was due principally to an increase in casualties in Wellington City (of almost 60%), but also in Hutt City (67%) and Wairarapa by 50% (the number of casualties in Masterton rose by 6). Each of these districts had experienced a decrease the previous year. Upper Hutt and Kapiti maintained a relatively high number of casualties at 12. Porirua and Carterton were the only districts with a notable decline in motorcycle casualties of four and three respectively, in 2006.

The number of motorcycles registered in the region increased by almost 2,000 during the period 2003 to 2007. Registrations have risen by around 15% in both 2006 and 2007.

Comments: The strong downward trend in motorcyclist casualty figures has reversed. The overall number of casualties is increasing at a much faster rate than that of motorcycle registrations (79% c.f. 26% between 2003 and 2006).

[4] Ministry of Transport, NZ Household Travel Survey and reported crashes, 2003-2006.
[5] Land Transport Safety Authority (2000). *The New Zealand Travel Survey 1997-1998.*

Road safety outcomes

Perceptions of road network safety

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

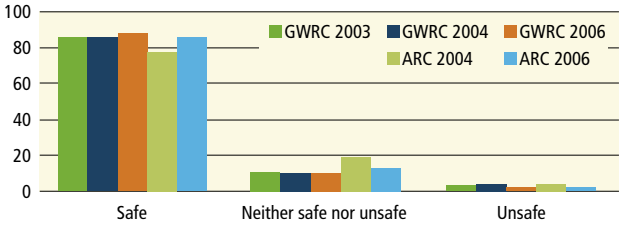

Figure 55: How safe do you feel when using a car? (%) Sources: GWRC and ARC perception surveys

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.

Conclusion

An increased focus on road safety issues throughout the region is required to improve overall regional safety.

The graph shows an extended time-series of total injury crashes for the region based on the Land Transport New Zealand data also analysed in the indicator *Injury crashes by district* earlier in this section. A strong downward trend is evident from the very high number of injury crashes in the mid-1980's through to the end of the 1990's. Since 2000 however road injury crash numbers have increased convincingly. Six years of data is now available and the upward trend is continuing.

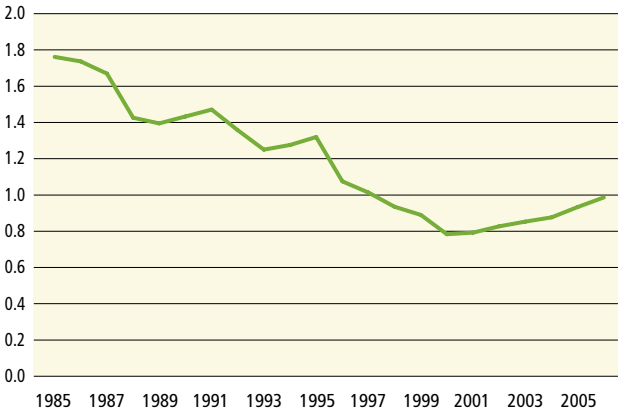

Figure 56: Total injury crashes (000), including fatalities, Wellington region. Calendar year. Source: Land Transport New Zealand

Note: Under-reporting is possible prior to 1990. 1990 data is estimated.

To address this issue, continued cross-agency efforts are required through engineering, enforcement and education programmes. The 2004 Regional Road Safety Plan aims to address road safety issues via a range of performance measures. Continued improvement in vehicle safety standards will also help achieve this aim.

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.

Land use and transport integration outcomes

Introduction

This section discusses items relating to the RLTS land use and transport integration outcomes.

The following key outcome for land use and transport integration is sought for the region's land transport network:

- **Improved land use and transport integration (in line with the WRS and local authority urban development strategies)**

The performance indicators associated with this key outcome are:

  - Urban development integrated with active modes and public transport
  - Density of new subdivisions
  - New lots by district

The following related outcomes and associated performance indicators for land use and transport integration are:

- **Improved integration between transport modes**
  - Public transport services with integrated ticketing
  - Cycle storage and park and ride facilities
- **Sustainable economic development supported (in line with the WRS)**
  - State highway vehicle kilometres travelled per GDP
- **Improved transport efficiency**
  - Public transport expenditure per passenger
  - Public transport expenditure per GDP
  - Roading expenditure per GDP

Key outcome

6.1 Improved land use and transport integration (in line with the WRS and local authority urban development strategies)

Target: All large subdivisions and developments include appropriate provision for walking, cycling and public transport

Urban development integrated with active modes and public transport

This performance indicator is currently under development. It involves collating planning information from local authorities in the region and establishing the level of provision for walking, cycling and passenger transport. This indicator will be included in the 2007/08 AMR.

Density of new subdivisions

Definition: The following maps show the density and location of new subdivisions less than eight hectares in size in the western and eastern (Wairarapa) parts of the region, from July 1998 – June 2007.

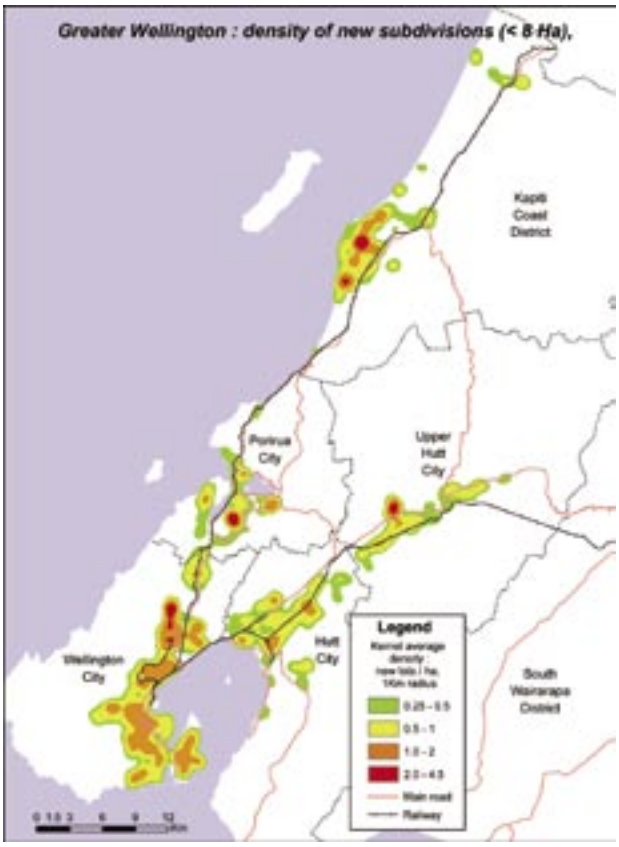

Figure 57: Density of new subdivisions < 8 Ha in area, western Wellington region, 1999-2007. Source: GWRC

Land use and transport integration outcomes

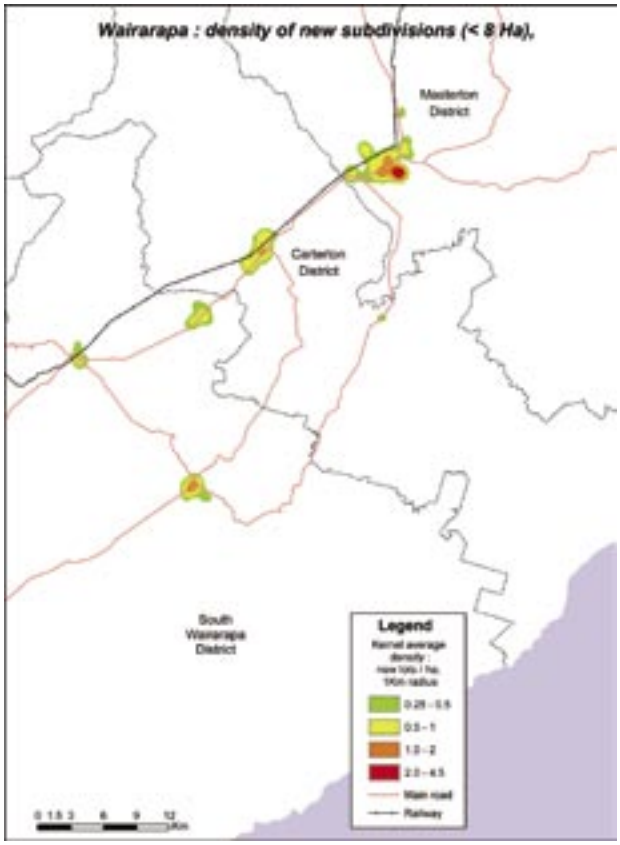

Figure 58: Density of new subdivisions < 8 Ha in area, Wairarapa, 1999-2007. Source: GWRC

Interpretation: In the western part of the region there is evidence of a higher density of new subdivisions in the Kapiti Coast District is apparent in Paraparaumu and an increase in density can be seen to the north of the town centre. Raumati South also shows higher density. These areas are neither adjacent to the railway line or SH 1.

Aotea Block in Porirua City shows an increased area of higher density over the period depicted on the western region map. To the north and east the large new subdivisions of 'James Cook Drive', 'Staithes Drive' and 'Silverwood' on the eastern edge of Whitby are increasing in density as is Titahi Bay.

'Riverstone Terraces' in the western Upper Hutt hills continues to develop. The density of new subdivisions in Churton Park has spread on the southern edge closing the gap with Johnsonville. Infill is apparent in the Johnsonville CBD at the rail terminal.

Central Wellington City and surrounding inner suburbs continue to show intensification. New development in Brooklyn and on the ridge between Owhiro Bay and Island Bay is evident.

In Wairarapa an area of higher density can be seen to the east of the Masterton town centre. Carterton also shows some increase in density.

Comments: Land use densification and infilling is occurring around the rail corridor in some parts of the region. However, areas of development such as those described in Masterton, Kapiti, eastern Aotea and Whitby in Porirua, Riverstone Terraces in Upper Hutt and Churton Park (especially its northern extent) are all somewhat removed from the rail corridors.

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.

New lots by district

Definition: The graph shows the location and number of new lots created in the Wellington region between 1998 and 2007.

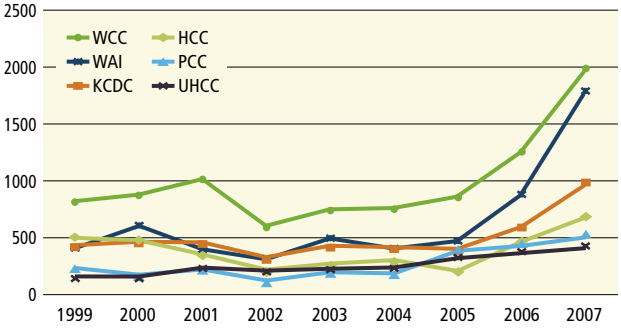

Figure 59: New lots created < 8 Ha in area, by district, 1997-2007. Source: GWRC

Interpretation: All districts in the region experienced increases in new lots. New lots in Wairarapa more than doubled in number (at 1,800) over half of which where in Masterton. This followed an increase of just less than 100% for these combined districts in 2006. Wellington City had the largest increase in number of new lots in 2007 with just less than 2,000, a climb of 60%.

New lots in Kapiti Coast increased by 67% or 980 in 2007. Hutt City again experienced strong growth with a 50% increase. This follows a decrease in 2005 followed by the major increase in 2006 of over 150%. Porirua and Upper Hutt cities exhibited moderate growth in new lots at 19% and 14% respectively in 2007.

Comments: An increase in new lots was experienced right across the region in 2007, with major increases in some districts. Wellington City has seen the most residential intensification through redevelopment and refurbishment of central city buildings. Development in Wairarapa has soared over the past two years.

Establishing higher density housing in areas which are already built up, e.g. new residential development in existing buildings is an environmentally sustainable practice.

Related outcome

6.2 Improved integration between transport modes

Target: The majority of passenger transport services covered by integrated ticketing

Public transport services with integrated ticketing

Definition: As many journeys are multi-modal a good level of integration between the different transport modes is sought by the RLTS. Integrating the ticketing systems used on public transport throughout the region is a vital step in this process.

Interpretation: Currently no region wide integrated ticketing is operating in the Wellington region. Some ad hoc integrated ticketing is available within the region including 'Hutt Plus' which is one ticket for use on Cityline bus services and the Tranz Metro train network in the Hutt Valley. The 'Metlink Explorer' ticket is available for travel on the region's bus and rail network during off-peak periods and the 'Platinum Pass' allows transfer between Stagecoach and Mana/Newlands bus services.

Comment: A system of integrated ticketing for the region is under development but it may be several years before such a system is in place.

Cycle storage and park and ride facilities

Definition: A stock take of the regional railway station 'park and ride' car parks and cycle locker facilities available in 2007 was conducted with the results shown in the graph.

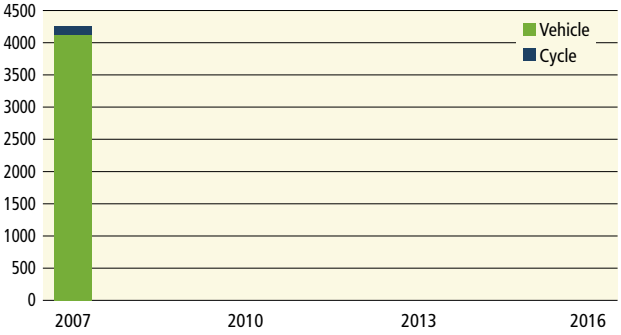

Figure 60: Number of vehicle car parks and cycle lockers at railway stations, Wellington region. Source: GWRC

Interpretation: In 2007 there were a total of 4,122 car parks and 130 cycle storage spaces available to commuters at railway stations across the region.

Comments: There are limited facilities for the carriage of bicycles on trains. Park and ride plans need to be developed as Greater Wellington enhances the Regional Passenger Transport Operational Plan.

6.3 Sustainable economic development supported (in line with the WRS)

Target: Reduced vehicle kilometres travelled per GDP

State highway vehicle kilometres travelled per GDP

Definition: The graph shows the ratio of VKT (vehicle kilometres travelled) on the state highway network to GDP for the region.

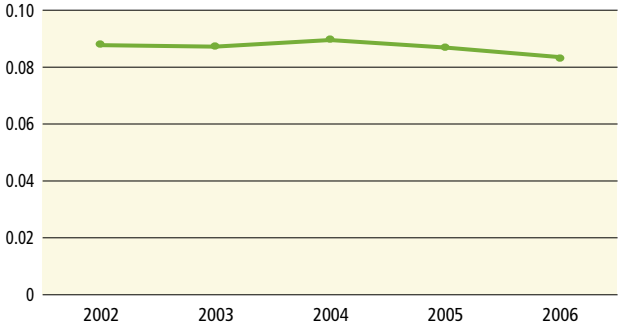

Figure 61: State highway VKT per GDP. Sources: Transit New Zealand; Business and Economic Research Limited (BERL)

Note: GDP = real value added GDP (2006$) for the Wellington region

Interpretation: Between 2002 and 2006 an overall decline in VKT per GDP of 6% was shown.

Comments: The slight downward trend shown indicates an improvement in overall roading efficiency on the region's state highway network. Other than the increase between 2003 and 2004 some progress towards the target of reduced VKT per GDP is evident.

6.4 Improved transport efficiency

Target: Reduced passenger transport expenditure per passenger

Public transport expenditure per passenger

Definition: The graph shows the ratio of expenditure on public transport services and the number of passengers using train, bus and ferry services.

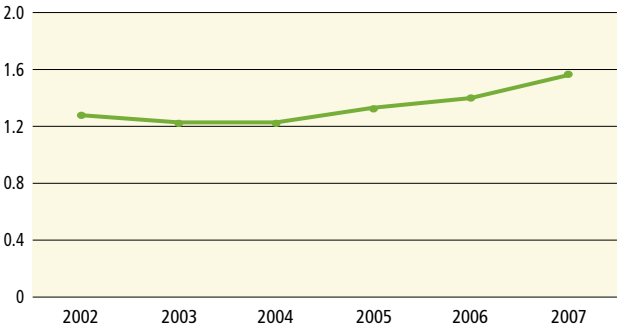

Figure 62: Public transport expenditure ($) per passenger. Sources: GWRC; BERL

Note: GDP = real value added GDP (2006$) for the Wellington region

Interpretation: An overall increase in public transport expenditure per GDP of 26% was shown between 2002 and 2007. After an initial decrease in 2003, followed by no growth for a year, a steady increase since 2004 occurred. In 2007 an increase of 13% was shown.

Comments: Between 2002 and 2003 the relationship between expenditure on regional passenger transport services versus patronage improved, i.e. the region was spending a relatively lesser amount for increasing patronage. Since 2003 however, this trend has reversed, meaning the region is paying increasingly more each person moved by the public transport system. This largely reflects an increase of almost 70% in bus contract costs since 2004.

The target of reduced passenger transport per passenger is not being met.

Public transport expenditure per GDP

Definition: The graph shows the relationship between expenditure on public transport services and GDP for the region.

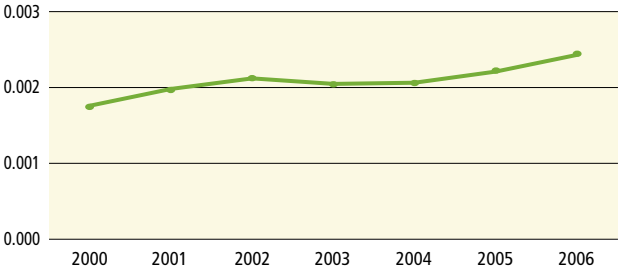

Figure 63: Public transport expenditure ($) per GDP. Sources: GWRC; BERL

Note: GDP = real value added GDP (2006$) for the Wellington region

Interpretation: The overall change between 2000 and 2006 was an increase of 44%. A decline of 4% was shown between 2002 and 2003 and a 20% increase occurred from 2004 to 2006.

Comments: Since 2000 (except for a dip between 2002 and 2003) the region has continued to pay increasingly more for passenger transport improvements as a proportion of total regional GDP. Like the previous indicator (*Public transport expenditure per passenger*) the increase shown from 2004 to 2006 largely reflects the increase of almost 50% in bus contract costs.

Expenditure will need to increase over the short term in order to address the most pressing public transport needs.

Target: Reduced roading expenditure per GDP

Roading expenditure per GDP

Definition: The graph shows the relationship between expenditure on roading and GDP for the region.

Land use and transport integration outcomes

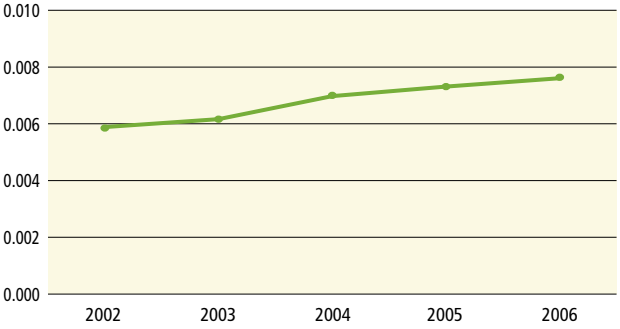

Figure 64: Roading expenditure ($) per GDP. Road Controlling Authorities (RCA); Business and Economic Research Limited (BERL)

Note: GDP = real value added GDP (2006$) for the Wellington region

Interpretation: A 33% increase in roading expenditure per GDP overall was shown between 2002 and 2006. During 2004 an increase of almost 15% occurred, driven by a 27% increase in capital expenditure on the region's roads. A steady rise in expenditure has continued.

Comments: Since 2002 the region has continued to pay increasingly more for roading improvements as a proportion of total regional GDP. The target of reduced expenditure on the region's roads per GDP is therefore not being met.

Conclusion

The RLTS has targets of reduced expenditure on passenger transport services per passenger and roading expenditure per GDP. Unfortunately the current trend shown in both cases is the opposite of this.

The region is spending more on both roading improvements and passenger transport operations as a proportion of GDP. Therefore further work is required to investigate how greater efficiencies can be made.

While it is desirable to seek an improvement in financial efficiency for the operation of the region's transport system, there is a backlog of works that has built up as a result of significant under investment for much of the last 20 years.

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.

Freight outcomes

Introduction

This section discusses items relating to the RLTS freight outcomes.

The following key outcome for freight is sought for the region's land transport network:

- **Improved regional freight efficiency**

The performance indicators associated with this key outcome are:

  - Journey times for road freight between key destinations
  - Heavy vehicles on key routes

The following related outcomes and associated performance indicators for freight are:

- **Improved inter-regional freight efficiency**
  - Removal of rail freight infrastructure constraints
  - Inter-regional freight movements

Key outcome

7.1 Improved regional freight efficiency

Target: Improved road journey times for freight traffic between key destinations

Journey times for road freight between key destinations

Representative routes for heavy goods movement were selected as follows:

- Seaview - Porirua via SH58
- Seaview - Porirua via SH1 and SH2
- Seaview - CentrePort

Transit New Zealand travel time survey data was used to create route travel times by combining sections of the regional routes used in *Road Network Efficiency Outcomes*.

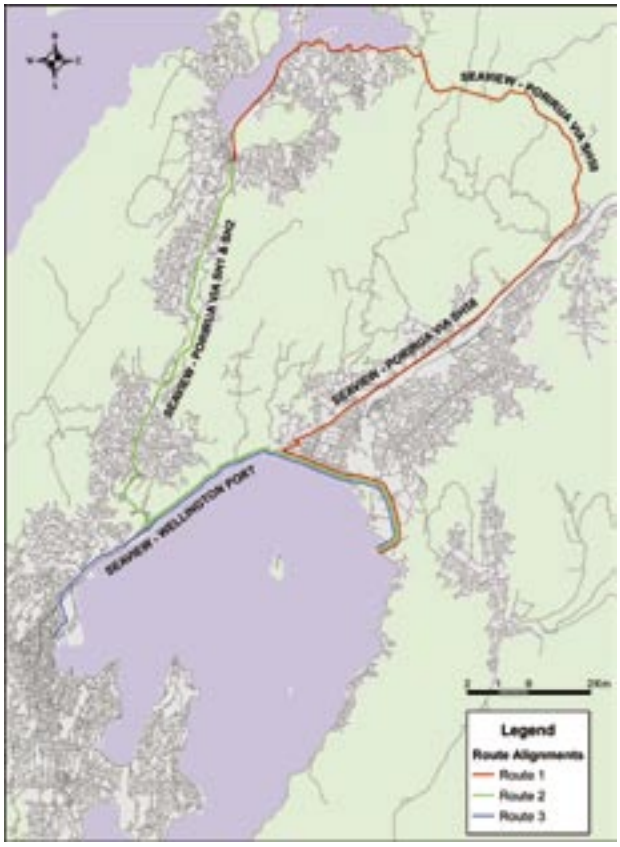

Figure 65: Representative regional freight routes. Sources: Transit New Zealand; GWRC

Definition: The graphs show all day average travel time in minutes for the routes listed and shown on the map. These routes are representative of typical freight movements across the region.

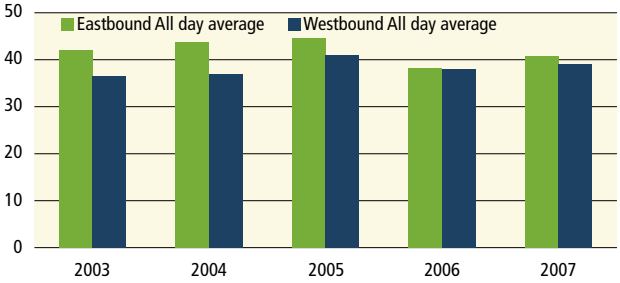

Figure 66: All day average travel time (mins) on regional freight route: Seaview - Porirua via SH58, (March). Sources: Transit New Zealand; GWRC

Interpretation: The all day average time taken to travel between Porirua and Seaview (eastbound) via State Highway 58 has decreased slightly since 2003 while the westbound route travel time has generally increased over the same period. This has had the effect of lessening the directional difference in all day average travel time on this route. In 2007 the eastbound route all day average was 41 minutes and the eastbound route average was 39 minutes.

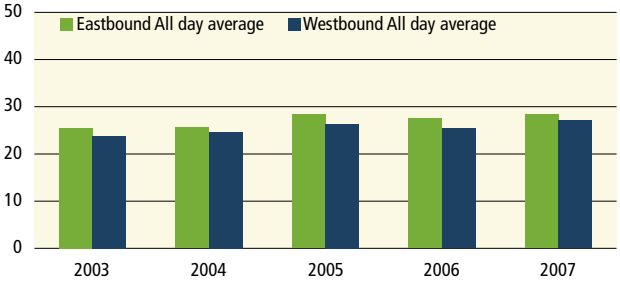

Figure 67: All day average travel time (mins) on regional freight route: Seaview - Porirua via SH1 and SH2, (March). Sources: Transit New Zealand; GWRC

Interpretation: Travel between the same locations (Seaview and Porirua) via State Highways 1 and 2 presents a lower all day average travel time by approximately 12 minutes. A slight increase in all day average travel time is shown over the four year period with the pattern remaining unchanged, the eastbound route being a little less at 28 minutes than the westbound route (27 minutes).

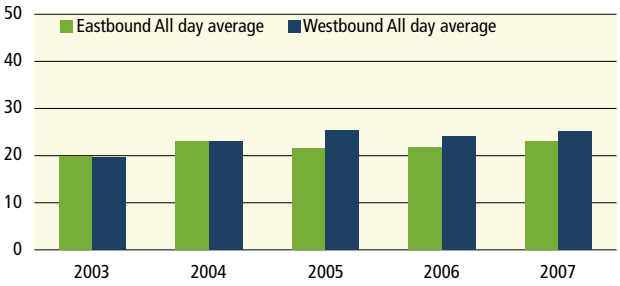

Figure 68: All day average travel time (mins) on regional freight routes: Seaview – CentrePort, (March). Sources: Transit New Zealand; GWRC

Interpretation: At 23 minutes (eastbound) and 25 minutes (westbound) all day average travel time between Seaview and CentrePort is the lowest of the three representative freight routes monitored.

Comment: Localised problem areas on the surveyed routes where congestion occurs are masked by the average results.

With the exception of the eastbound route from Porirua to Seaview via State Highway 58, the all day average travel time has increased on all routes monitored. This suggests gradually worsening levels of congestion on these routes which will impact upon the efficiency of freight movements through the road network. Consequently, this will have a negative effect on the regional economy.

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. Telemetry data from the State Highway 1 site at Pukerua Bay is no longer available.

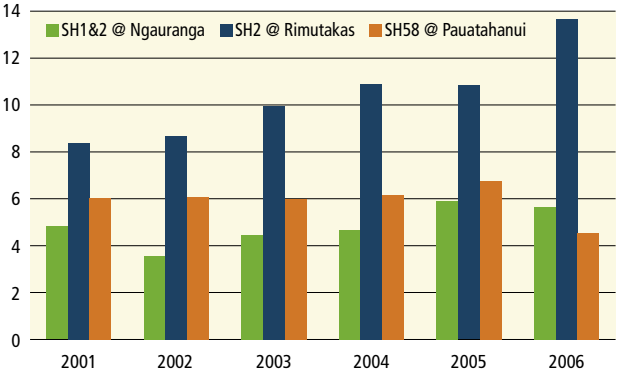

Figure 69: Percentage of heavy vehicles on major routes (weekdays). Sources: GWRC; Transit New Zealand

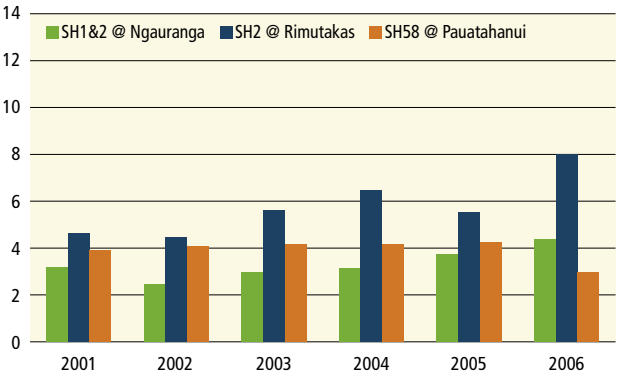

Figure 70: Percentage of heavy vehicles on major routes (weekends). Sources: GWRC; Transit New Zealand

Interpretation: Heavy vehicles increased on State Highway 2 at Rimutaka during both weekdays (by 3%) and on weekends (by 2.5%). At 14% of all traffic at this site on weekdays and 8% on weekends, heavy vehicles are more prolific at Rimutaka than at the other two sites shown. The volume of heavy vehicles passing this site however, is small when compared with that on the overall network. The proportion of heavy vehicles on State Highway 2 has steadily increased since 2001.

Heavy vehicles as a percentage of total weekday (4.5%) and weekend (3%) traffic decreased on State Highway 58 at Pauatahanui to the lowest proportion of total traffic since 2001. Heavy vehicle counts at Ngauranga decreased slightly on weekdays but increased by 17% on weekends in 2006.

Comments: Heavy vehicles make up a greater proportion of total traffic at sites further removed from the urban areas, e.g. Rimutaka. 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. For the region's continued economic wellbeing it is important to allow for this growth while not compromising the needs of other road users.

Related outcomes

7.2 Improved inter-regional freight efficiency

Target: All infrastructure constraints to rail freight movements are removed

Removal of rail freight infrastructure constraints

Definition: Infrastructure constraints which are limiting the movement of rail freight through the region are listed. This information was provided by Toll NZ and ONTRACK.

Interpretation: Three key restrictions to rail freight movement were identified on the network as follows:

Kaiwharawhara throat

This area of constraint on the rail network is located just north of Wellington station where the Wairarapa and the North Island Main Trunk lines (NIMT) meet. Addressing the merging and capacity issues and alleviating this bottleneck will lead to less conflict between freight and commuter services especially during peak times.

North-South junction

The section of railway line between Pukerua Bay and Paekakariki is known as North-South junction and is currently single tracked.

Freight trains experience much difficulty restarting if they are forced to stop on uphill sections of the track to wait for other trains to pass. This occurs particularly during the peak commuter period due to conflict between commuter and freight services. Double tracking through this section would address this constraint.

Paekakariki to Waikanae

Freight trains are sometimes forced to queue from Paraparaumu to Waikanae due to single track restrictions between Paekakariki and Paraparaumu. A delay of over 30 minutes for a freight service can occur while a commuter unit travels from Paekakariki north to Paraparaumu, offloads passengers then reloads and travels south again. Double tracking the section of railway line between Paekakariki and Waikanae would significantly alleviate this issue.

Comment: While the North-South junction and double tracking issues will be addressed by the Regional Rail Plan (currently under development and due to report back in June 2008), the Kaiwharawhara throat issue requires further investigation.

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.

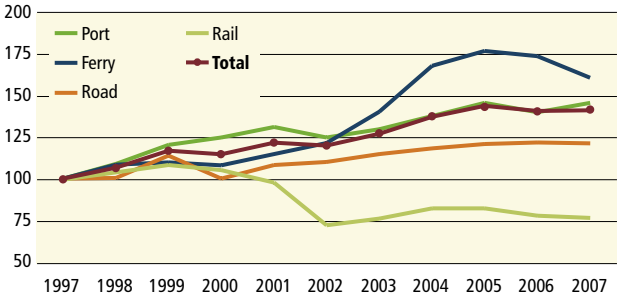

Figure 71: Inter-regional freight movements. 1997 = 100. Sources: CentrePort; Strait Shipping; Transit New Zealand; Toll NZ

Note: Road freight refers to the previous calendar year.

Freight outcomes

Interpretation: Inter-regional freight movement by ferry showed a steady increase from 2000 followed by a period of significant growth at a rate totalling 46% between 2002 and 2005. Some of this growth may be attributed to the addition of the Strait Shipping Bluebridge service in 2002. Since 2005 ferry freight has declined by 9%. Over the decade depicted to 2007, the total growth rate of ferry freight is 61%.

Conversely, rail freight has shown an overall decline of 23% 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 46% and 23% respectively.

Overall there is a positive trend with the aggregate measure indicating growth of 4.2% per annum over the measured period.

Comments: In 2007 the only freight mode index to increase was the port. The overall freight movement index has remained relatively flat for a second year.

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.

Conclusion

Easing congestion has a positive effect on regional economy as freight by road is able to move more freely. 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.

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 by sea.

Inter-regional rail freight movements are expected to continue to decline in the face of competition from a deregulated road freight environment.

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 Wellington Regional Strategy and Ngauranga to Airport Study.

Environmental quality

This section sets out and discusses items relating to environmental quality which in addition to other sustainability indicators elsewhere in the report, contribute to Objective 5 of the RLTS:

Ensure environmental sustainability.

Improve the environmental performance of the transport network, and avoid to the extent reasonable in the circumstances, adverse effects of transport on the environment (in line with the RPS) and communities. This includes, but is not limited to: increased use of passenger transport, cycling and walking; reduced use of private and company cars; increased energy efficiency of the vehicle fleet; reduced greenhouse gas emissions; and a high standard of environmental design of transport infrastructure.

The following performance indicators are considered:

- Air quality
  - Particulate matter (PM_{10})
  - Carbon monoxide (CO)
  - Nitrogen dioxide (NO_2)
- Noise adjacent to arterial routes
- Surface water quality

Associated indicators with an environmental focus can be found in each of the RLTS outcomes sections of this report (see especially the *Environmental outcomes* section).

Performance indicators

Air quality

GWRC operates a transport ambient air quality monitoring programme. The programme collects air quality information from urban locations likely to be affected by emissions from transport. Data is reported in a way that allows comparison with national guidelines and standards as well as objectives and targets concerning air quality in the Regional Land Transport Strategy 2007-2016 and the GWRC LTCCP 2006-2016.

Three transport air quality monitoring stations are operational at the sites specified below. Meteorological monitoring instruments are co-located at each monitoring site to assist with the interpretation of air quality data.

Site	Station	Location	Status
Wellington central	Corner V	Corner of Vivian & Victoria Streets, Te Aro	Permanent
Melling	Melling	SH2, Melling intersection	Mobile
Ngauranga	Ngauranga	Centennial Highway, Ngauranga Gorge	Mobile

Table 2: Wellington region transport air quality monitoring programme sites. Source: GWRC

The contaminants monitored are particulate matter (PM_{10}), carbon monoxide (CO) and nitrogen oxides (NOx). These contaminants are by-products of combustion and all have known adverse human health effects when concentrations in air are elevated.

Definition: Ambient air quality associated with land transport is monitored in the Wellington region at the three sites described above. Air quality measured at these sites is compared against national standards and guidelines. The GWRC LTCCP has set a long-term target to 2016 of:

No recorded instances when air pollution reaches the 'alert' level of the national ambient air quality guidelines or 66% or greater of the national ambient air quality standards.

2006/07 results for the three pollutants described are shown in the following tables and graphs.

Particulate matter (PM_{10})

The ambient air quality monitoring results for PM_{10} have been assessed against the national standard of 50 $\mu g/m^3$ (24-hour average).

Site	Max	99.9th %tile	99.5th %tile	75th %tile	Mean (annual)	Median	25th %tile	Data completeness[1]
Wellington central	37	36	32	16	14	14	11	97.3%
Melling	32	32	29	18	15	14	12	95.4%
Ngauranga	44	43	38	21	18	18	14	97.0%

Table 3: Descriptive statistics PM_{10} $\mu g/m^3$ (24-hour average) 2006/07. Source: GWRC

[1] Percentage of valid averaging periods included in 2006/07 dataset (maximum of 25% missing record allowed per averaging period).

None of the transport monitoring sites exceeded the national standard during the reporting period.

The ambient air quality monitoring results for PM_{10} have been assessed against the national guideline of 20 $\mu g/m^3$ (annual average). Annual means range from 14 to 18 $\mu g/m^3$ and are therefore within the national guidelines.

The graph below shows ambient PM_{10} daily average concentrations by percentage of days per year, in each air quality category.

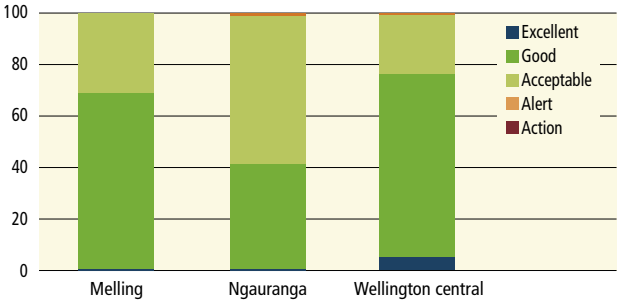

Figure 72: PM10 (24-hour average) by air quality category, % of days per year, 2006/07. Source: GWRC

There were two days in 2006/07 in Wellington and six days at Ngauranga where the 'alert' level air quality category was reached.

Carbon monoxide (CO)

Carbon monoxide monitoring results have been assessed against the national standard of 10 mg/m^3 (8-hour moving average calculated on the hour).

Site	Max	99.9th %tile	99.5th %tile	75th %tile	Mean (annual)	Median	25th %tile	Data capture[2]
Wellington central	3.7	3.3	2.6	0.8	0.5	0.4	0.1	94.4%
Melling	3.5	2.9	2.5	0.7	0.4	0.3	0.1	98.0%
Ngauranga	4.5	4.3	3.4	0.7	0.4	0.3	0	84.8%

Table 4: Descriptive statistics CO mg/m^3 (8-hour moving mean) 2006/07. Source: GWRC

None of the transport monitoring sites exceeded the national standard for carbon monoxide during the reporting period.

The graph below shows concentrations of carbon monoxide in air by percentage of hours per year, by air quality category.

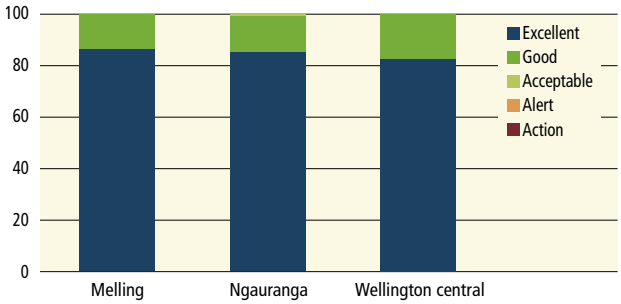

Figure 73: CO (8-hour moving average) by air quality category, % of hours per year, 2006/07. Source: GWRC

Across all transport monitoring sites levels of carbon monoxide were at least 'acceptable' or better.

Nitrogen dioxide (NO_2)

The ambient air quality monitoring results for nitrogen dioxide have been assessed against the national standard of 200 $\mu g/m^3$ (1-hour average).

Site	Max	99.9th %tile	99.5th %tile	75th %tile	Mean (annual)	Median	25th %tile	Data completeness[3]
Wellington central	99	95	90	48	35	32	20	96.4%
Melling	75	67	60	26	19	16	10	64.0%
Ngauranga	71	61	54	29	22	21	15	97.4%

Table 5: Descriptive statistics NO_2 µg/m^3 (1-hour average), 2006/07. Source: GWRC

None of the transport monitoring sites exceeded the national standard for nitrogen dioxide during the reporting period.

The graph below shows ambient air quality monitoring results for nitrogen dioxide by percentage of the number of hours in per year, in each air quality category.

[2] Percentage of averaging periods included in 2006/07 data set
[3] Percentage of valid averaging periods included in 2006/07 dataset (maximum of 25% missing record allowed per averaging period).

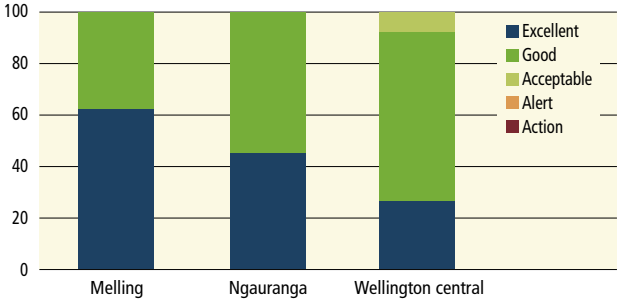

Figure 74: NO_2 (1-hour average) by air quality category, % of hours per year, 2006/07. Source: GWRC

Across all monitoring sites levels of nitrogen dioxide were at least 'acceptable' or better.

Comment: None of the transport monitoring rates exceeded any of the national environmental standards or guidelines during the reporting period. All contaminant concentrations were at least acceptable, apart for PM10 when the 'alert' level was reached for two days and six days at Wellington central and Ngauranga respectively.

Overall, the concentrations of PM10, carbon monoxide and nitrogen dioxide measured during the reporting period were not at concentrations that could be considered of concern to human health.

Concentrations of nitrogen dioxide were generally higher at the Wellington central site than measured elsewhere in the region. The concentrations of carbon monoxide and PM10 were similar across all sites, with the highest peaks recorded at Ngauranga.

The higher concentrations of PM10 recorded at Ngauranga, compared to the other transport sites, could be due to other local sources of particulate, such as quarrying activity and perhaps higher road dust emissions arising from tyre wear due to higher frequency of braking associated with the steep road gradient adjacent to the monitoring site. Higher incidence of diesel truck traffic could also be a contributing factor and the contribution of sea salt during light southerly events needs to be considered.

The higher concentrations of carbon monoxide recorded at Ngauranga, compared to the other transport sites may also be related to the steep road grade leading to more frequent vehicle acceleration. An analysis of Ngauranga traffic flows and vehicle types and investigation of meteorological factors is required before any firm conclusions can be reached.

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.

This indicator will be measured every five years and will next be updated in 2008.

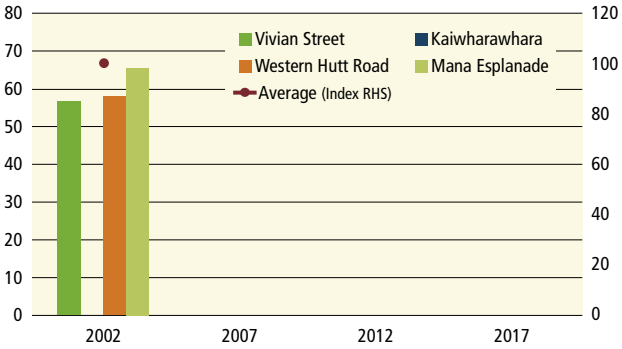

Figure 75: Noise adjacent to arterial routes (noise level 24hr L_{eq}, dBa, one-week average). Source: GWRC survey, 2002

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.

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.

[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.

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 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]

Transit New Zealand is piloting catchpit filter systems near the western end of Pauatahanui Inlet, Porirua Harbour adjacent to SH58.

A one-off investigation of Porirua Harbour was undertaken by GWRC in 2004. Seventeen sites around the harbour periphery and the sub-tidal zone were sampled. Porirua stream has also been monitored.

GWRC has undertaken storm water investigations in Wellington Harbour. Marine sediments at four sites in the harbour, some close to SH2 and the Petone foreshore are undergoing analysis for heavy metals. A report will be available in 2008.

The Surface Water Quality Programme operated by GWRC monitors rivers and streams at 56 sites region-wide. So far heavy metals are not part of this programme and urban sites are yet to be introduced.

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.

Conclusion

Levels of transport-generated air contaminants are relatively low in the Wellington region. Further investigation and development is required to monitor both noise levels and surface water quality attributable to the region's road network.

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.

[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.

Affordability

This section sets out and discusses items relating to Objective 6 of the RLTS:

Ensure that the Regional Transport Programme is affordable for the regional community.

Take account of funding likely to be available, economic efficiency, and the impact of funding options on regional communities when considering transport packages. Consider the affordability of transport options for all members of the community, including low income groups.

The following performance indicators are considered:

- Maintenance expenditure: roading
- Capital expenditure: roading
- Public transport subsidy expenditure
- Total Mobility Scheme expenditure
- Public transport investment
- Household travel expenditure
- Car operating costs
  - Price of petrol
- Perceptions of private transport user costs

Associated economic indicators can be found in other sections of this report as follows:

- Public transport user costs and perceptions of those costs (in Public Transport Outcomes, 1.3: *Improved passenger transport accessibility for all, including disabled people or from low income groups)*
- Fuel price index (in Environmental Outcomes, 3.3: *Reduced fuel consumption)*
- Vehicle kilometres travelled per GDP (in Land Use and Transport Integration Outcomes, 6.3: *Sustainable economic development supported (in line with the WRS)*)
- Public transport expenditure per passenger and per GDP; Roading expenditure per GDP (in Land Use and Transport Integration Outcomes, 6.4: *Improved transport efficiency)*

Performance indicators

Maintenance expenditure: roading

Definition: The graph shows total annual expenditure on maintenance works associated with the road network, by road-controlling authority (RCA).

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

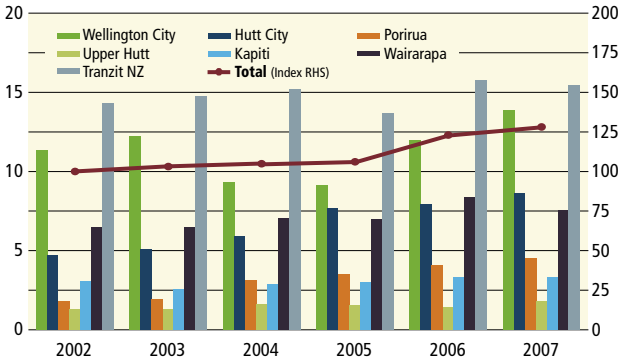

Figure 76: Maintenance expenditure ($M) by RCA, by year. Index: 2002 = 100. Sources: local authorities, Transit New Zealand

Interpretation: Total expenditure increased by 4% in 2007.

Comments: Maintenance expenditure on roading throughout the region remained relatively stable during the period 2002 to 2005 and after a significant rise in 2006, has shown a more moderate increase over the past year.

Capital expenditure: roading

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.

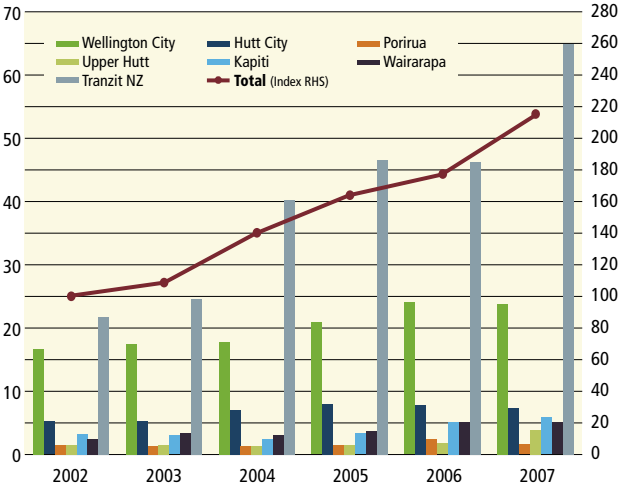

Figure 77: Capital expenditure ($M) by RCA, by year. Index: 2002 = 100. Sources: local authorities, Transit New Zealand

Interpretation: Overall expenditure increased by 21% in 2007. This increase is consistent with the trend over the last five years. A 40% increase in capital expenditure by Transit New Zealand from 2006 is shown.

Comments: The main source of increased investment in capital works is expenditure by Transit New Zealand on the region's state highway network. This includes expenditure on completion of the Inner City Bypass and significant progress on the Centennial Highway Median Barrier.

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.

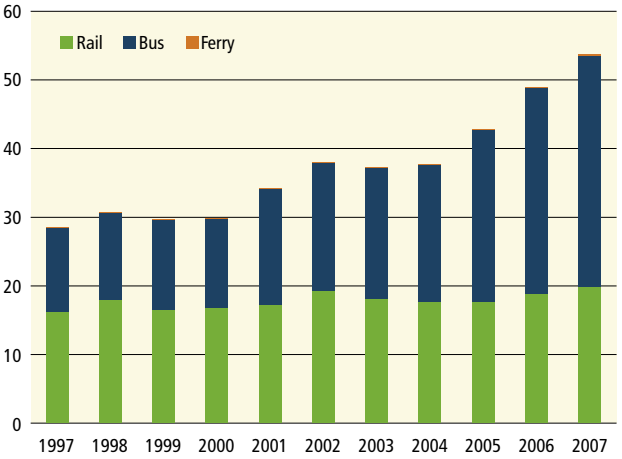

Figure 78: Public transport operating expenditure on contracted services ($M). Source: GWRC

Interpretation: The total public transport subsidy has increased by 10% in 2007 to nearly $54 million. The subsidy for bus services grew by almost 12% and for rail by 6% from 2006. A significant increase in subsidy of harbour ferry services also occurred in 2007.

Comment: The overall increase in contracted services subsidy in 2007 is primarily due to bus contract inflation costs. Peak time harbour ferry services have doubled due to the availability of a second vessel. The cost contributions of GWRC and Land Transport New Zealand to public transport have increased over time mainly related to increases in 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. These criteria are endorsed by the Ministry of Transport.

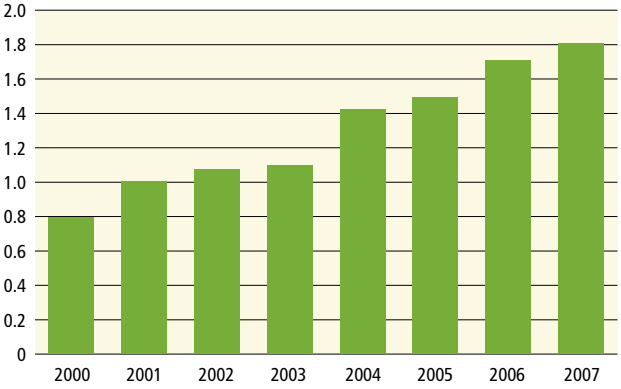

Figure 79: Total Mobility scheme expenditure ($M). Source: GWRC

Interpretation: Expenditure on the Total Mobility Scheme rose by 6% in 2007.

Comment: Increased expenditure is mainly due to increased patronage. 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.

Public transport improvements

Definition: This indicator comprises expenditure on enhancements to public transport infrastructure and rail rolling stock.

Interpretation: In 2006/07 GWRC invested $25 million in improvements to public transport.

Comment: Expenditure was primarily on new Wairarapa carriages and associated station upgrades.

Household travel expenditure

Definition: The graph shows national average weekly household expenditure and highlights the proportion spent on transportation. This data is not available by individual region. The Household Economic Survey collects this information three-yearly so the next update will be in the 2007/08 AMR.

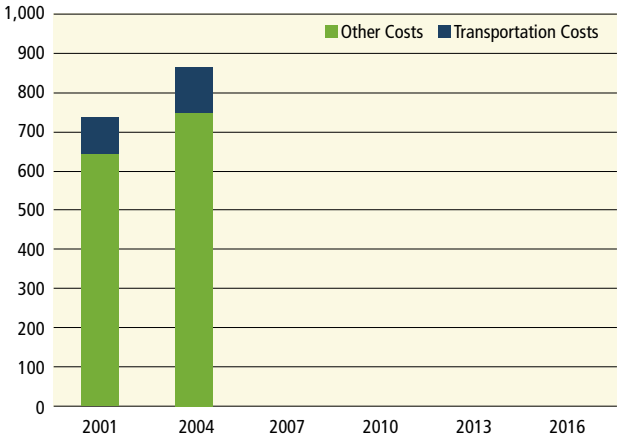

Figure 80: National average weekly expenditure per household ($). Source: Statistics New Zealand

Note: Transportation costs relate to domestic travel only.

Interpretation: The total average weekly household expenditure in 2004 was $861 of which domestic travel accounted for $115, or 13%. The travel expenditure contribution in 2001 was comparable. 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.

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.

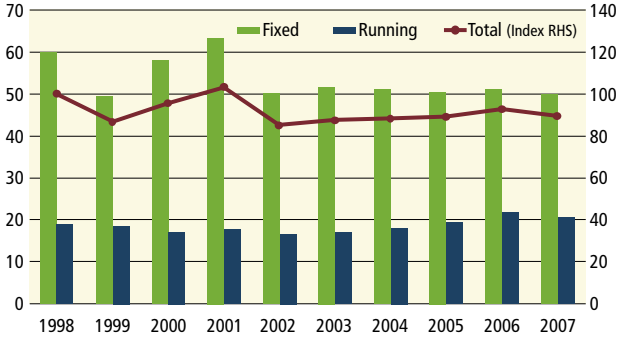

Figure 81: Petrol driven car operating cost per kilometre (cents). Index: 1998 = 100. Source: Automobile Association of New Zealand

Note: For 1601-2000 cc car; 12, 000 km/yr 1998-2001; 14,000 km/yr 2002-present. 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%.

Interpretation: The total cost of operating a two-litre car fell by 4% in 2007 after increasing by a similar amount the year previous. This represents the first overall decrease in operating cost since 2002. Fixed costs decreased by 2.5% while the combined direct running costs of petrol, oil, tyres, repairs and maintenance declined by 6%. By comparison, a significant increase in running costs of 13% was experienced between 2005 and 2006. The price of petrol in 2007 dropped by 20 cents to $1.52 compared with the peak price experienced in 2006.

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
2007	May	1.52

Table 6: Price of petrol used in the running cost calculation in Figure 81. Source: Automobile Association of New Zealand

Comments: A significant decrease in fuel price in 2007 was the main cause for the fall in running costs from 2006.

Affordability

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.[1] This is demonstrated by the minor increase of car operation cost in 2006 despite a significant increase in petrol price. Fluctuating fuel prices have a minimal effect on overall vehicle ownership. If the price of petrol had remained at $1.73 per litre in 2007, vehicle running costs would have increased by only 0.7% on average[2].

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.

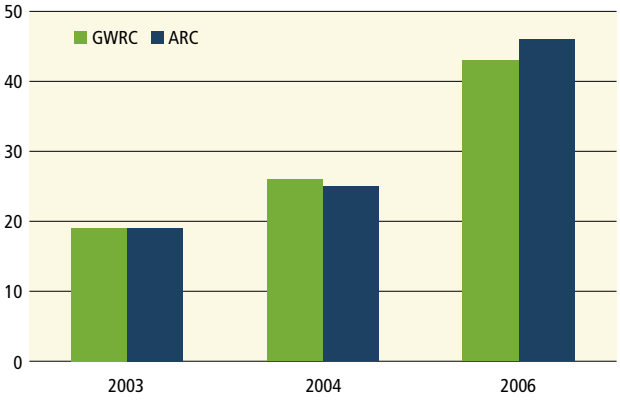

Figure 82: Private transport costs as a barrier to use (%), Wellington and Auckland regions. Source: GWRC and ARC transport perceptions surveys

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 fuel price increases led to this result.

Conclusion

Costs for most indicators have increased at well above the underlying inflation rate.

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, catering for all socio-economic groups.

The outlook for regional expenditure has improved significantly with the Government announcements of additional funding of $945M 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.

[1] Automobile Association of New Zealand (2006). *Car costs: What does it cost to drive for a year?* In *AA Directions (Winter 2006)*, p. 61.

[2] Automobile Association of New Zealand (2007). *Car costs: What does it cost to drive for a year?* http://www.aa.co.nz/motoring/owning/runningcosts, accessed 27 July 2007

RLTS implementation

Overall progress achieved in 2006/07

Highlights of the 2006/07 year include:

- Consultation and adoption of the Wellington RLTS 2007 – 2016
- New Wairarapa rail rolling stock (seven carriages delivered in May/June 2007)
- Rail contract between GWRC and Toll New Zealand signed in November 2006
- Trolley bus contract between GWRC and Go Wellington/ Infratil signed in May 2007
- Introduction of new Metlink bus and train fare structure and new fares in September 2006
- Commencement of new Metlink bus stop signage roll out across the region
- Completion of the Wellington Inner City Bypass (March 2007)
- Completion of MacKays crossing overbridge (March 2007)
- Completion of the Waiohine Bridge replacement (November 2006)
- Completion of the North Wellington Public Transport Study (November 2006)
- Commenced upgrade of the Wellington Transport Strategy Model in conjunction with 2006 census
- Final phase (3) of pedestrian accessibility audits of public transport nodes completed
- Development and launch of the Wellington Region Travel Behaviour Change Travel Plan Programme
  - Appointment of a Sustainable Transport Planner and School Travel Plan Coordinator
  - Expansion of the Regional Cycling Coordinator role to Active Transport and Road Safety Coordinator
- Continuing implementation of the regional pedestrian, cycling and road safety plans
  - Coordination with local authorities on annual Bike the Bays (Miramar Peninsula), Bike the Trail (Hutt River Trail) and Porirua Family Wheels Day cycle events
  - Coordination with local authorities in expansion of "Stop, Look, Live " road safety campaign across the region
- Completion of the 'Getting Around' pilot community travel plan project funded by Ministry for the Environment's Sustainable Management Fund (partnering with the Sustainability Trust and Hutt City Council)

Major 2007/08 actions programmed

Major programmes and projects anticipated to **be completed** in 2007/08 include:

- Adoption of the Regional Passenger Transport Plan
- Delivery of remaining new Wairarapa rail rolling stock (11 passenger carriages and one dedicated luggage carriage)
- Implementation planning for Western Corridor rail projects
- Completion of the Ngauranga to Airport Strategic Transport Study
- Complete construction of the Centennial Highway median barrier
- Completion of a business case for passenger transport Real Time Information (Wellington Region)
- Completion of Metlink bus stop signage throughout the region

Major programmes anticipated to **commence or continue** in 2007/08 include:

- Commencement of construction of Western Corridor rail projects
- Continuation of the new rail rolling stock procurement process
- Commencement of the replacement of Wellington's trolley bus fleet
- Commencement of a business case for electronic ticketing for passenger rail (Wellington Region)
- Commence construction of the Dowse to Petone interchange
- Continue Transmission Gully Motorway preparation activities
- Continue the development of the Western Link Road project
- Continue implementation of the Wellington Region Travel Behaviour Change Travel Plan Programme
- Continue the implementation phase of Capital & Coast District Health Board's Travel Plan.

Project, activity and action programme progress

Detailed reporting of progress for each project, activity and action in the various implementation documents is no longer reported through the AMR. Instead, progress is continually reported through the quarterly Agency Progress Reports to the RLTC which are available on Greater Wellington's website. These include:

- Passenger transport projects
- Passenger transport activities
- Roading projects
- Travel Demand Management actions
- Walking, Cycling, and Road Safety actions.

Obstacles to implementing the RLTS

Funding Impediments

While the Government is committing 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.

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.

Resource impediments

In addition to funding, the provision of adequate resources to deliver on all of the projects identified through the RLTS implementation plans continues to be an issue for the region. One example of such a challenge will be provision of staff resources to carry out the numerous rail projects which need to be completed over the next three years in time for delivery of the new electric multiple units.

Legislative/institutional impediments

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

Appendix 1 - Regional demographics

Introduction

This section discusses trends in regional demographic variables driving transport demand. The following indicators are described:

- Resident population
  - Population growth rates
- Population age distribution
- Occupied dwellings
  - Number of persons per occupied dwelling
- Unemployment
- Economic activity by region
- Building activity
- Vehicle ownership per household
- Car registrations
- Motorcycle registrations

Performance indicators

Resident population

Definition: The graph shows 'usually resident' population by district from the New Zealand Census and the population forecast in 2016 and 2026. As the census is conducted five-yearly this indicator will next be updated in 2012.

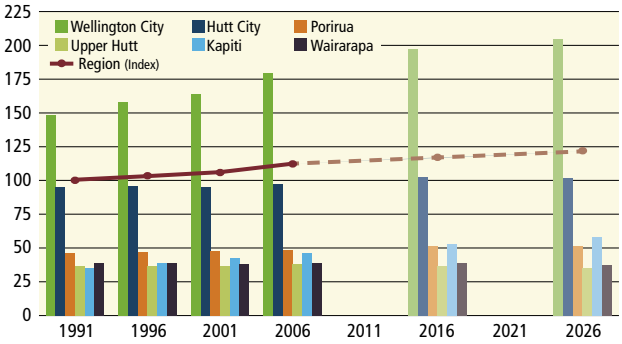

Figure 83: Resident population, actual and projected (000), by district. Index: 1991 = 100. Source: Statistics New Zealand

Note: Projections are based on estimated population at 30 June rather than usually resident census night population. Forecast population data is sourced from the medium series of the Statistics New Zealand subnational population projections, 2001 (base) – 2006 update, released February 2005. The next Statistics New Zealand population forecasts will be available in late 2007.

Interpretation: The total 2006 regional population was 448,941 with 40% living in Wellington City. Thirty percent were resident in the Hutt Valley, 11% in Porirua, 10% in Kapiti and 9% in Wairarapa.

The projected population change for the region to 2016 shows 7% growth from the 2006 population to a total of 480,200. Wellington City and Kapiti populations are forecast to increase by 10% (approximately 18,000) and 15% (7,000) respectively by 2016.

Table 7 shows retrospective growth rates by district over the five year periods between census years. All areas of the region experienced population growth from 2001 to 2006. Kapiti District and Wellington City growth rates were strongest at around 9%. The overall population growth rate for the region was 6% or 25,000, a higher rate than previous census periods. This growth is mainly due to Wellington City's population increase of over 15,000.

District	1991 to 1996		1996 to 2001		2001 to 2006	
	Actual growth	% growth	Actual growth	% growth	Actual growth	% growth
Wellington City	9,279	6.3%	6,105	3.9%	15,642	9.5%
Kapiti District	3,645	10.4%	3,861	10.0%	3,759	8.9%
Upper Hutt City	-168	-0.5%	-345	-0.9%	2,046	5.6%
Porirua City	81	0.2%	744	1.6%	1,167	2.5%
Hutt City	990	1.0%	-393	-0.4%	2,232	2.3%
Wairarapa	-84	-0.2%	-300	-0.8%	402	1.1%
Wellington Region	**13,743**	**3.4%**	**9,672**	**2.3%**	**25,248**	**6.0%**

Table 7: Population growth rates, by district. Source: Statistics New Zealand

Comments: Relatively modest regional population growth is both evident from census data and projected using estimates. Steady population growth in Kapiti has been sustained since 1991. Upper Hutt City, formerly in population decline, experienced a moderate increase in population in the 2006 census period due chiefly to significant development (Riverstone Terraces) and to a lesser extent infill and rural lifestyle subdivision.

Wellington City's population growth from 2001 to 2006 is largely due to markedly increased housing density in the central city supported by steady increases generally across the city. Inner city intensification leads to increased use of sustainable transport modes (public transport, walking and cycling) where supporting infrastructure exists, and less use of the private car.

Appendix 1 - Regional demographics

Population age distribution

Definition: The graph shows the distribution of the population in broad age groups for the Wellington region. Information to 2006 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 2012.

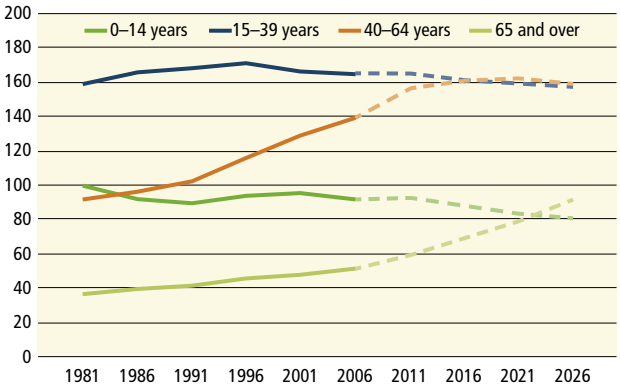

Figure 84: Age distribution by broad age groups, actual and projected (000), Wellington region. Source: Statistics New Zealand

Note: Projections are based on estimated population at 30 June rather than usually resident census night population. Forecast population data is sourced from the medium series of the Statistics New Zealand subnational population projections, 2001 (base) – 2006 update, released February 2005. The next Statistics New Zealand population forecasts will be available in late 2007.

Interpretation: Statistics New Zealand forecasts indicate that by 2016, the population of the 0-39 year age groups will decrease by around 4% from that of the same groups in 2006. Conversely, the 40+ age groups will increase significantly in number by 2016, up by over 20% from 2006.

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 48% of the total population. This proportion is forecast to become almost 52% of the 2026 population. Currently (2006) these groups represent 43% 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 2012.

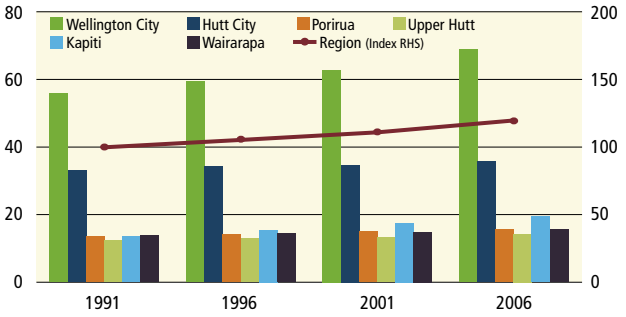

Figure 85: Occupied dwellings (000), by district. Index: 1991 = 100. Source: Statistics New Zealand

Interpretation: The number of occupied dwellings in the region has increased by over 7% in 2006. This follows increases of more than 5% over the previous two census periods (1996 and 2001). Wellington City experienced almost 10% growth in occupied dwellings (over 6,000) between 2001 and 2006. Table 8 shows changes in the average number of people per occupied dwelling over the past four census periods.

District	Number of persons per occupied dwelling			
	1991	1996	2001	2006
Wellington City	2.7	2.7	2.6	2.6
Kapiti District	2.6	2.5	2.4	2.4
Upper Hutt City	3.0	2.9	2.7	2.7
Porirua City	3.4	3.3	3.2	3.1
Hutt City	2.9	2.8	2.8	2.7
Wairarapa	2.8	2.7	2.6	2.5
Wellington Region	**2.8**	**2.8**	**2.7**	**2.7**

Table 8: Average number of persons per occupied dwelling, by district. Source: Statistics New Zealand

Comment: Patterns of absolute and relative growth are closely linked to population. Intensification in central Wellington accounts for the significant growth in the number of dwellings in the city. Household size has generally decreased across the region with the largest households in Porirua and the smallest in Kapiti. The latter reflects the large retirement-aged population living in Kapiti Coast.

Appendix 1 - Regional demographics

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 2012.

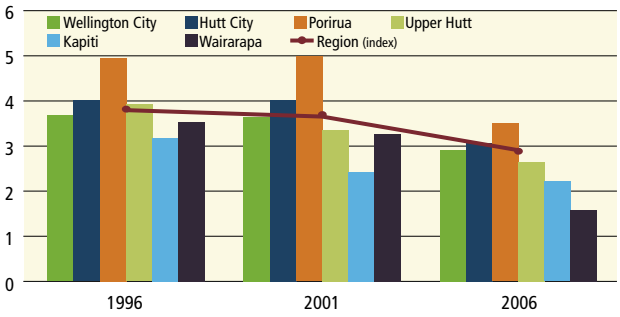

Figure 86: Unemployment (%), by district. Source: Statistics New Zealand

Interpretation: Unemployment rates in 2006 have fallen markedly in all districts across the region, most noticeably in Wairarapa and Porirua. Kapiti unemployment rates remained fairly static in 2006. Porirua unemployment rates remain the highest in the region followed by Hutt and Wellington cities, with Wairarapa now experiencing the lowest rate.

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 by region

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.

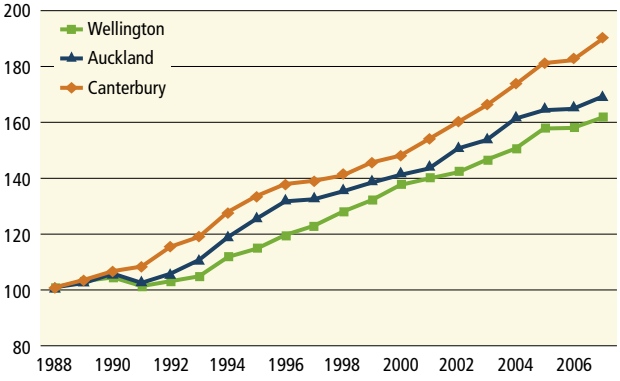

Figure 87: Economic activity by region. March quarter. Index: 1988 = 100. Source: National Bank

Interpretation: The Wellington region experienced 2.3% growth in 2007 (c.f. 0.5% in 2006), Auckland 2.7% (c.f. 0.3% in 2006) with the Canterbury region the strongest at 4.1% (c.f. 0.5% in 2006). The New Zealand average was 3.1% (c.f. 1% in 2005).

Comments: Economic activity has strengthened again after a relatively flat year in 2006. While growth since 1998 has been steady across the regions, the Wellington region has experienced the least overall increase in economic activity. Total growth for New Zealand has almost matched that of Auckland until 2004 when it began to track slightly higher. Canterbury continues to widen the gap with other regions and is well ahead of total New Zealand economic activity.

Economic growth increases the demand for movement of people and freight which in turn, has a greater 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 given as an index. Data is available monthly and relates to the year ended March.

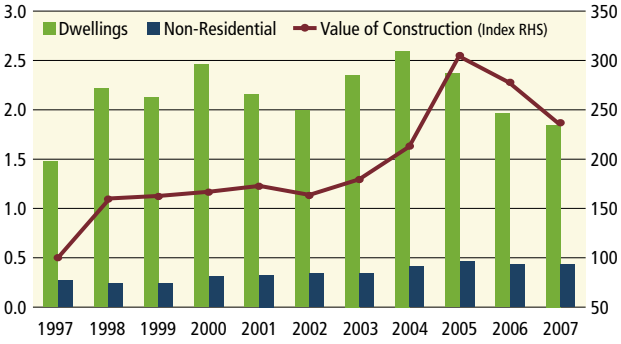

Figure 88: Building activity (000) and construction value, Wellington region. Year ended March. Index: 1997 = 100. Source: Statistics New Zealand

Interpretation: The number of building consents issued in the year ended March 2007 decreased a further 5% across the region following a 15% decrease the year previous. Less than 1% growth in the number of non-residential consents occurred in 2007 while consents for residential properties continued to decline as in the two years previous, by 6%.

A 15% reduction in the 'value of construction' index was influenced mainly by a 43% decline in the value of non-residential consents issued. The value of residential consents increased in 2007 (for the first time since 2004) by over 8%.

Appendix 1 - Regional demographics

Comments: The significant growth in consent numbers shown from 2002-2004 has reversed over the past two years possibly as a result of multi-unit developments covered by single consents.

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 2012.

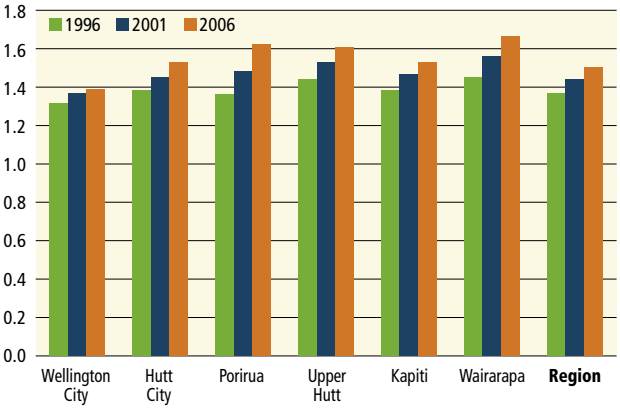

Figure 89: Average car ownership per household, Wellington region. Source: Statistics New Zealand

Interpretation: Over the five years from 2001 to 2006 the average number of cars per household rose from 1.4 to 1.5 or by 4%. Average car ownership per household grew in every district in 2006 with the highest rate of over 9% in Porirua and the lowest in Wellington City (1.5%). The lowest average number of cars per household is in Wellington City and the highest in Wairarapa.

Comments: Levels of car ownership correlate inversely with urban density. The lower rate of vehicle ownership by household in Wellington city reflects a trend for inner-city apartment living and proximity to employment.

Car registrations

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

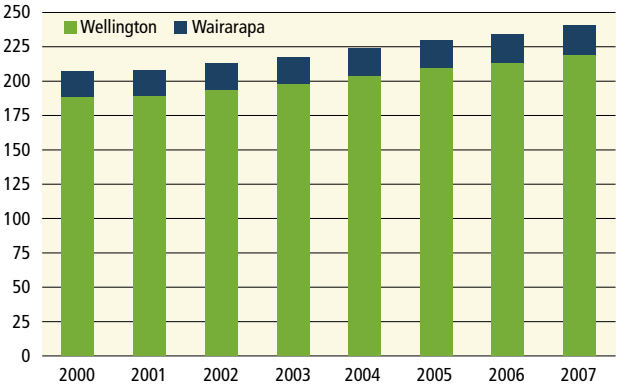

Figure 90: Car registrations (000), Wellington region. Source: Land Transport New Zealand

Interpretation: Since 2000, the total number of cars registered has risen by 16%. Growth in car registrations for the region in 2007 is at approximately 3%, which is consistent with the increase in the Wellington and Wairarapa sub-regions, and a slightly larger increase than in previous years.

Comments: The number of cars registered in the region continues to grow. An increase in the availability of private cars leads to greater car use, more demands on the road network and further pressure on the environment.

Motorcycle registrations

Definition: The graph shows the number of motorcycles registered with Land Transport New Zealand in Wairarapa and the western part of the region ('Wellington').

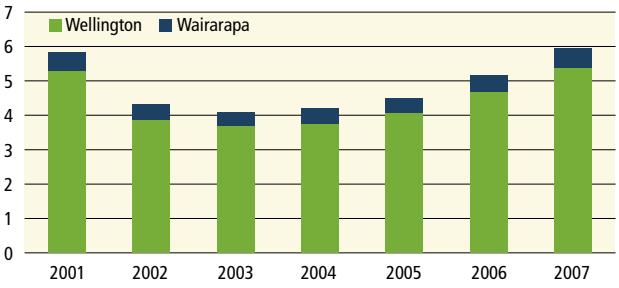

Figure 91: Motorcycle registrations (000), Wellington region. Source: Land Transport New Zealand

Appendix 1 - Regional demographics

Interpretation: After declining in number early in the decade, motorcycle registrations have steadily increased throughout the region since 2003. Registrations have increased in both 2006 and 2007 by approximately 15% in the Wellington area and by over 16% in Wairarapa.

Comments: A spike in the cost of fuel experienced in 2006 and lingering high fuel prices may have resulted in motorcycles as mode of choice (or an alternative) to the private car for some.

Conclusion

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.

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.

Appendix 2 - Regional travel demand

Introduction

This section discusses trends in regional travel demand variables affecting the transport network. The following indicators are described:

- Mode of journey to work (all modes)
- Mode use in previous six months
- Inter-regional passenger movements
  - Number of inter-regional passengers by mode
- State highway traffic volumes
- State highway hourly traffic profiles: Ngauranga
- State highway vehicle kilometres travelled
  - State highway network characteristics
- Work from home
- CBD parking supply: regional centres
- Perceptions of parking supply: Wellington CBD
- Perceptions of parking prices: Wellington CBD

Performance indicators

Mode of journey to work (all modes)

Definition: The graph shows the 'main means of travel to work' across all modes for the regional population on census day. The following definitions of modes have been collated from the New Zealand Census categories:

- Motor vehicle: 'drove private car, truck or van; drove company car, truck or van; passenger in car, truck or van or company bus; motorcycle or powercycle'
- Public transport: 'public bus; train'
- Active modes: 'walked or jogged; bicyle'
- Other: 'e.g. taxi, ferry, plane'

As the census is conducted five-yearly this indicator will next be updated in 2012.

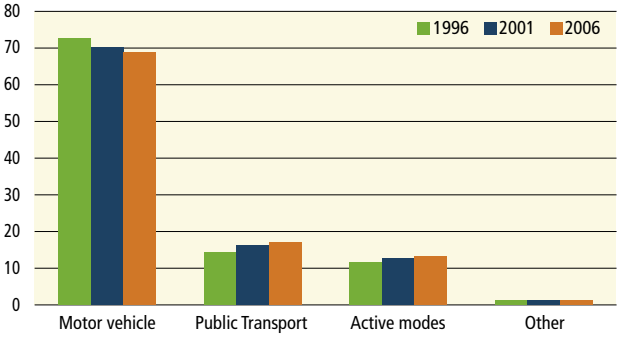

Figure 92: Journey to work mode share (%). Source: Statistics New Zealand

Interpretation: Public transport, walking and cycling mode share increased in 2001 and 2006. Motor vehicle mode share has decreased over the 10 year period but approximately 10,000 more trips were made by vehicles in 2006 compared with 2001.

For analysis of each mode share result see the associated RLTS outcome sections.

Mode of journey to work:

- Motor vehicle – in *Environmental Outcomes, 3.2 Reduced private car mode share*
- Public transport – in *Passenger Transport Outcomes, 1.1 Increased peak period passenger transport mode share*
- Active modes – in *Active Mode Outcomes, 2.1 Increased mode share for pedestrains and cyclists*

Comments: While the share of sustainable transport modes has risen and that of motor vehicles has declined, the number of trips made by motor vehicles has increased over the last census period.

Definition: The following graph gives a detailed breakdown of each mode within the 'main means of travel to work' definitions used above. Results are for the 2006 census only.

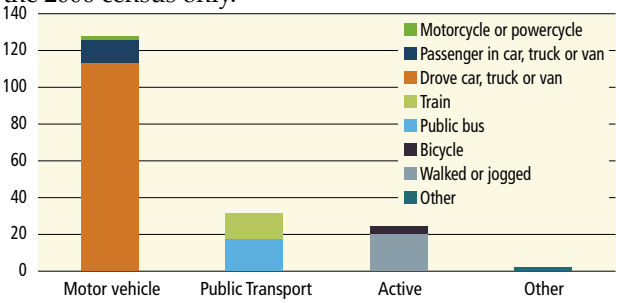

Figure 93: Disaggregated journey to work trips by mode (000s), 2006. Source: Statistics New Zealand

Interpretation: Driving a car, truck or van on census day accounted for approximatetly 90% of all motor vehicles while passengers made up only 9% of the total. The split between bus and train showed bus passengers dominating at 57% over those travelling by train. The active mode split was weighted towards walking and jogging over cycling in 2006 at 84% of the total.

Comments: Travelling to work by driving a car, truck or van is the outstandingly prevalent travel mode of choice in the Wellington region. More people travelled to work by public bus than train on census day in 2006 and walking or jogging are more popular means of getting to work than is cycling.

Appendix 2 - Regional travel demand

Mode use in previous six months

Definition: The graph shows how many people used the four main modes of transport (private and public transport, walking and cycling) for any of their trips in the previous six months to June 2003, 2004 and 2006.

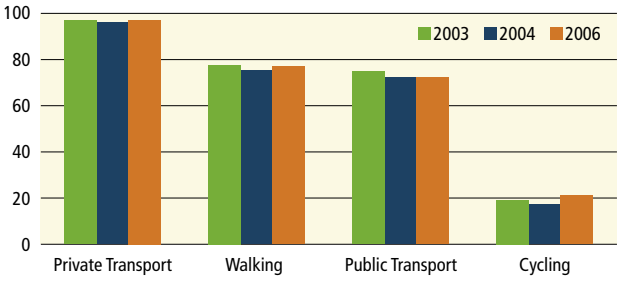

Figure 94: Transport modes used for any trips over the six months to June (%), Wellington region. Source: GWRC transport perceptions surveys

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 of 16% from 2004.

Comment: 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.

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 as 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.

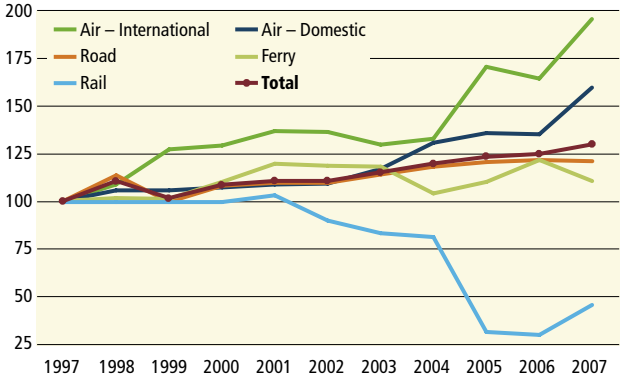

Figure 95: Inter-regional passenger movements. 1997 = 100. Sources: Wellington International Airport; Toll NZ; Strait Shipping; Transit New Zealand

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. Passengers by road refer to the previous calendar year. The Interislander Lynx service terminated in May 2005.

Table 9 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	4.7
Air – international	0.7
Rail	Not available
Ferry	Not available
Road (except buses)	11.0

Table 9: Number of inter-regional passengers by mode. Sources: Wellington International Airport; Transit New Zealand

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

Interpretation: Passenger travel road has continues 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 and international air passenger movements have increased by 18% and 19% respectively in 2007. Since 1997 60% growth in domestic passenger numbers is shown and international passengers have almost doubled.

Appendix 2 - Regional travel demand

Inter-regional rail passenger numbers increased for the first time since 2001, 52% up on 2006. A marked decrease in patronage of 63% was shown between 2004 and 2006, coinciding with the Northerner ceasing operation in 2005.

Ferry patronage dropped 9% in 2007 after increasing steadily over the two previous years. Passenger numbers by road showed a slight decrease of less than one percent from 2006 to 2007, with 21% growth overall since 1997.

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

Road-based travel is vital to the region. Travel both to other New Zealand destinations and overseas via Wellington International Airport is proving to be a growth area with air being the region's second largest passenger mover.

State highway traffic volumes

Definition: The graphs shows annual average daily traffic (AADT) volumes derived from automatic counters operating on each road section over a calendar year. WTSM forecast traffic volumes are also given on the all sites graph. Annual averages for the western and eastern parts of the region are shown separately.

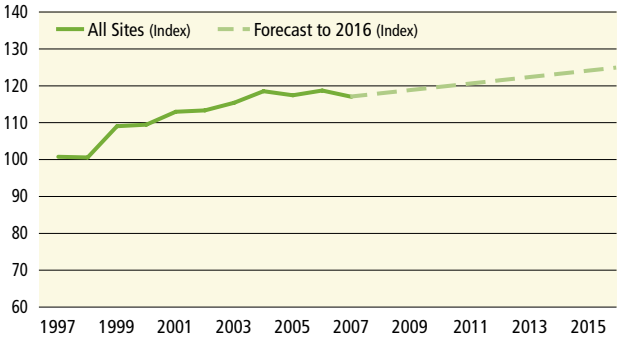

Figure 96: Annual average daily traffic and forecast volumes 2007-2016, all sites. Index: 1997 = 100. Calendar year. Sources: Transit New Zealand; GWRC WTSM

Interpretation: Fairly strong growth in traffic volumes was shown from 1997 to 2004 at 19%. Since that time the annual average has stabilised. Traffic volumes for the state highway network are forecast to increase to 2016 but at a lesser growth rate than that shown prior to 2004.

Comment: The steadier growth in traffic volumes on the state highway network forecast to 2016 may be the result of greater emphasis on passenger transport and travel demand management.

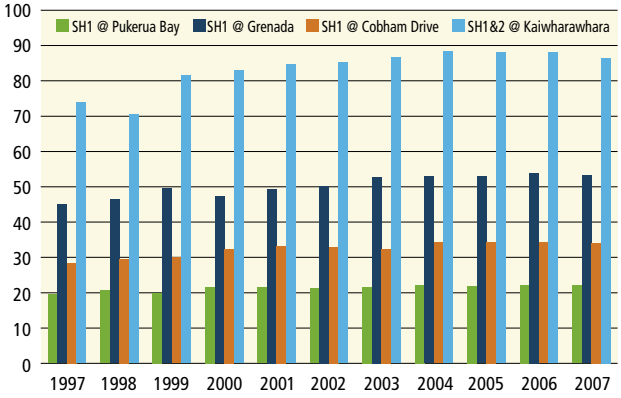

Figure 97: State highway traffic volumes (000), western region. Calendar year. Source: Transit New Zealand

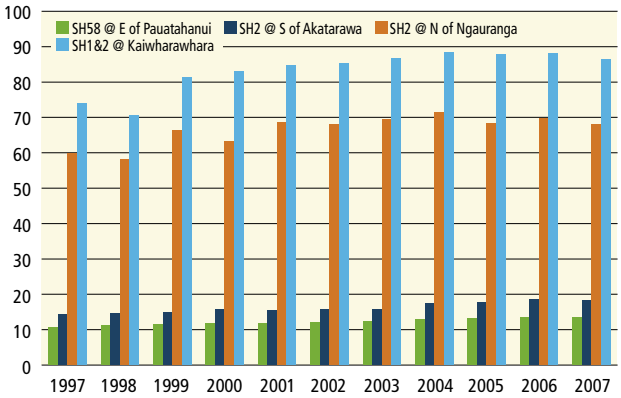

Figure 98: State highway traffic volumes (000), eastern region. Calendar year. Source: Transit New Zealand

Interpretation: The same pattern shown above in the total annual average across all sites monitored can be seen in the graphs depicting the eastern and western parts of the region's state highway network. A general increase in traffic volumes is shown until 2004 afterwhich the average steadies or declines, (see especially SH 1 and 2 at Kaiwharawhara).

Comment: Results should be interpreted with care 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.

Appendix 2 - Regional travel demand

State highway hourly traffic profiles: Ngauranga

Definition: The graph shows hourly traffic flow distribution on SH1 and SH2 at Ngauranga over the course of an average weekday, Saturday and Sunday, in March and October 2006.

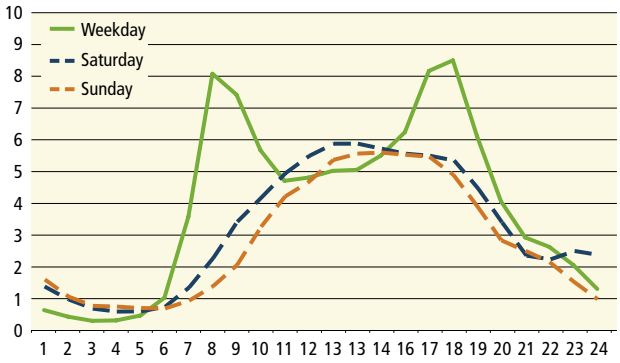

Figure 99: Average hourly traffic volumes at Ngauranga (000), combined directions. Weekday, Saturday and Sunday, 2006. Source: Transit New Zealand

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.

Comment: Comparison with peak weekday hourly volumes shows that capacity is not an issue at Ngauranga on the weekend.

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, 2003 and 2006.

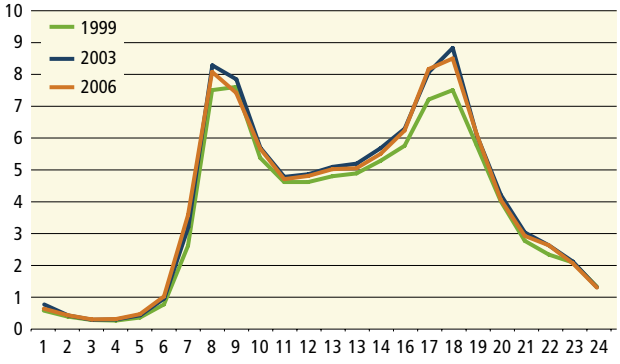

Fig 100: Average weekday hourly traffic volumes at Ngauranga (000), combined directions. 1999, 2003 and 2006. Source: Transit New Zealand

Interpretation: The three profiles have the same overall shape although the 2003 profile is slightly higher than that shown for 2006 and has markedly higher peaks than in 1999. Some improvement in both AM and PM peak traffic volumes can be seen in 2006. The PM peak spread between 1999 and 2003 but remains the same in 2006.

Morning peak traffic at Ngauranga builds up rapidly as is shown by the sharply increasing profile between 6.00am and 8.00am. 2006 volumes dropped off from the peak earlier than occurred in 2003. The lowest volume of traffic during the day at Ngauranga is experienced at 11.00am and the increase shown between 2.00pm and 4.00pm is possibly attributable to the end of the school day and flexible or part time working hours.

The afternoon peak occurs from 4.00pm until 6.00pm after which traffic volumes decrease at a lesser rate than the profile shows at the beginning of the day. This may be due to commuters timing their journey home to avoid high volumes of traffic at Ngauranga.

Comment: The PM peak spread which occurred between 1999 and 2003 has not continued in 2006. Higher fuel prices may be contributing to the slightly lower morning and evening commuter peaks and hence, hourly traffic volumes in 2006 compared with 2003.

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.

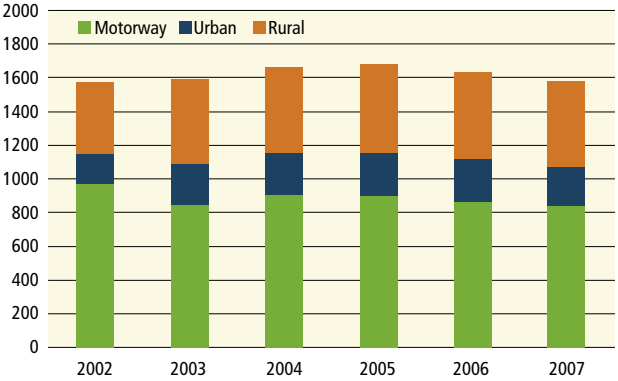

Figure 101: State highway VKT (M). Source: Transit New Zealand

Appendix 2 - Regional travel demand

Interpretation: VKT on the state highway network decreased again in 2007 by over 3% in total and across each classification. Total VKT in 2007 has declined to the 2002 level although the composition per highway class differs with 13% less kilometres travelled on motorways and 20% more on urban and rural highways.

Table 10 shows that over half of state highway VKT is occurring on the motorway system.

District	State highway network 2007	
	Percentage of network length	Percentage of VKT
Motorway	25	53
Urban	16	15
Rural	59	32
Region	**100**	**100**

Table 10: State highway network characteristics, Wellington region, 2007. Source: Transit New Zealand

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

Work from home

Definition: The graph shows the percentage of people in employment who worked from home on census day. A breakdown by district throughout the region is given. Census information is collected five-yearly and this indicator will next be updated in 2012.

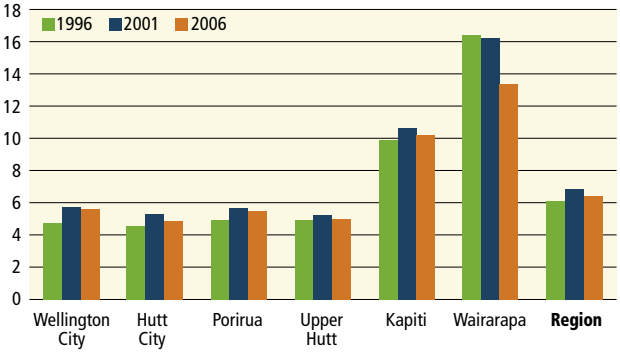

Figure 102: People working, who work at home (%), by district. Source: Statistics New Zealand

Interpretation: The percentage of those working from home showed a decrease in all districts in 2006. This contrasts with the increase from 1996 levels across the region (except Wairarapa) shown by the 2001 census.

Comments: The 2006 result of less people working at home does not correlate with technological advances that should make it easier for people to do so. An increased uptake of technology allowing work from home or teleworking for at least one day each week will reduce peak period traffic demands on the region's transport network.

CBD parking supply: regional centres

Definition: The graph shows parking supply in regional city centres from a March 2003 report commissioned by GWRC. Both public and private carpark numbers are given. The data is only indicative of parking supply in the region.

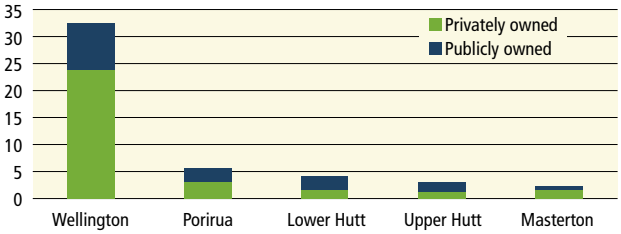

Figure 103: Parking supply by city centre (000), Wellington region. Source: Wellington Regional Parking Study 2003, Booz Allen Hamilton.

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 Porirua is the next most abundant and other city centres have less than 5,000 parking spaces.

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.

Perceptions of parking supply: Wellington CBD

Definition: The graph shows what people thought about the availability of parking in the Wellington CBD in 2003, 2004 and 2006.

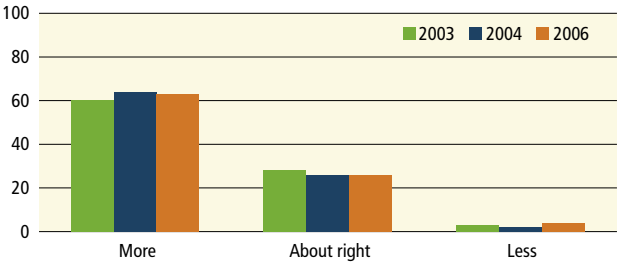

Figure 104: Perceptions of Wellington CBD parking supply (%).
Source: GWRC transport perceptions surveys

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

Perceptions of parking prices: Wellington CBD

Definition: The graph shows what people thought about the cost of car parking in the Wellington CBD in 2003, 2004 and 2006.

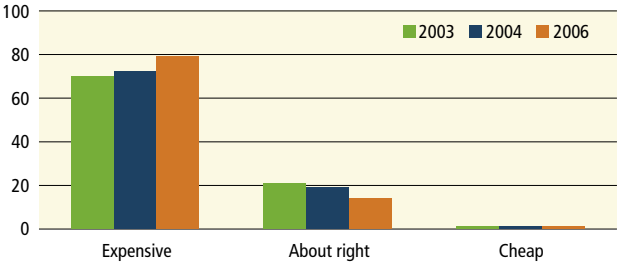

Figure 105: Perceptions of Wellington CBD parking pricing (%).
Source: GWRC transport perceptions surveys

Interpretation: The graph shows that 79% of people in 2006 thought the cost to park in Wellington CBD was too expensive (c.f. 72% in 2004). Fourteen percent thought the cost was about right (c.f. 19% in 2004) and only 1% thought it was as 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 thought parking was expensive and over 60% thought parking supply was inadequate demonstrates a level of parking constraint already operating in the Wellington CBD.

Conclusion

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.

Demand for passenger 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 reduced inter-regional passenger rail service is likely to be causing increased demand on the SH network.

Passenger rail travel plays a small part in inter-regional passenger movements, with the single remaining long-distance service being the daytime Overlander train 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.

Take-up rates of home and teleworking should be increasing (although this was not shown in 2006) as changes in technology and lifestyle allow. Depending on level of uptake, this is likely to have only a marginal effect on regional travel demands.

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
CO	Carbon monoxide
CO_2	Carbon dioxide
ECan	Environment Canterbury
EMU	Electric multiple units
FEPI	Farm Expenses Price Index
Golden Mile	Lambton Interchange to Courtenay Place
GIS	Geographical information system
GWRC	Greater Wellington Regional Council
HCC	Hutt City Council
KCDC	Kapiti Coast District Council
Km/h	Kilometres per hour
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
mins	Minutes
MOT	Ministry of Transport
NES	National Environmental Standard
NIMT	North Island Main Trunk line
NO_2	Nitrogen dioxide
NOx	Nitrogen oxides
PCC	Porirua City Council
PM_{10}	Particulate matter
Police	New Zealand Police
RCA	Road Controlling Authority
RHS	Right hand side
RLTC	Regional Land Transport Committee
RLTS	Regional Land Transport Strategy
SDI	Social deprivation index
SH	State highway
SWDC	South Wairarapa District Council
TDM	Travel demand management
TOD	Transit-Oriented Development/ Design
UHCC	Upper Hutt City Council
VFEM	Vehicle Fleet Emissions Model
VKT	Vehicle kilometres travelled
WAI	Wairarapa
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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