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Wellington Regional Council

Final Report

Regional Land Transport Strategy

Economic Impact & Affordability

September 2006

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1. Executive Summary

This reports focuses on evaluating whether the proposed Wellington RLTS will:

- » Assist economic and regional development – RLTS Objective 1
- » Ensure that the Regional Transport Programme is affordable for the regional community – RLTS Objective 6.

Transport & Economic Development

Transport has a significant effect on economic growth and on the Region's standard of living. A recent report "Benefits of Investing in NZ's Road Infrastructure" by the Allen Consulting Group and Infometrics, commissioned by the NZ Automobile Association and others, including the Regional Council, is directly relevant to this report. The Report has a succinct summary of the key characteristics of the Region's Transport Infrastructure; this is repeated in Appendix A. The Allen Report concludes:

- » There was significant under investment in the NZ road network over the past decade, it was below the OECD average. The transport infrastructure is inadequate
- » There has been significantly less investment than major urban areas in Australia (those that are in competition with, for example, the Wellington Region)
- » The degree of urban connectedness is lower than major urban centres in comparable countries such as Sydney & Melbourne. It is argued that this is a direct cause of NZ's high fatality rate compared to other OECD countries

While the package evaluated was not the same as the RLTS proposals the benefits were as follows:

- » Direct benefits to road users were 1.4 times the cost
- » Economy wide benefits were 1.2 times the cost
- » The total benefits to NZ were around \$150 million annually for \$415 million of capital projects.

The Region

The Wellington Region is relatively immune to the larger internationally driven economic changes affecting the rest of NZ's economy. The Region has no real manufacturing base, and there is no significant pastoral hinterland in comparison to other parts of New Zealand. The main business of Wellington is the public sector, as the seat of government and the associated supporting services and businesses. These have continued to do extremely well. Over the next few years, the Wellington economy will slow (as government expenditure can not continue to grow indefinitely) but not to the extent of the rest of New Zealand.

The region's population is expected to grow slowly (especially in comparison with the Auckland, Waikato and Tauranga Regions). The growth is fastest in Kapiti and slower in Wellington, while the Hutt Valley and Wairarapa continue their decline. Porirua is effectively a dormitory suburb of Wellington.

Employment is concentrated in Wellington but the Wairarapa and Kapiti Coast are self-contained, having little connection with Wellington. Thus there are effectively 3 areas in the region: the metropolitan area - four cities of Wellington, Hutt Upper Hutt and Porirua; the Wairarapa; and the Kapiti Coast. Aside from the government and companies supplying services to it - all located in Wellington - the main economic

centres are Grenada North (Wellington); Gracefield and Seaview (Hutt) with small areas located near the Ngauranga interchange and near the airport (Wellington).

Economic development on the Kapiti Coast is not hampered by transport but the lack of any arterial roads connecting Paraparaumu and Waikanae in the Kapiti Coast road network means that SH 1 is also the local arterial road and the congestion discourages traffic from outside the region destined for metropolitan Wellington especially the port. The Western Link road should address this problem.

Economic development in the Wairarapa is also not hampered by transport. There is concern that log trucks destined for the port could lead to issues for tourist traffic especially on the Rimutaka Hill road. The freight volumes are not expected to be significant for some time and the Wairarapa log freight project is intended to ease this issue.

Congestion in metropolitan Wellington and uncertain travel times along SH 1 are a significant barrier to economic development in the Region. The Region is in competition with Auckland and Palmerston North and offers neither the access nor the population to drive growth. The risk is that unless these congestion issues are addressed then more business will leave.

Accordingly, GHD agrees with the projects put forward in the draft RLTS but is concerned as to whether it is enough. There is a 15-year backlog to address. The area most at risk is the Hutt Valley and we suggest that the Cross Valley link and the Grenada to Petone link are the highest priority followed by all the works along SH 2. The next in the priority list are the Western Link Road along the Kapiti Coast. Then we suggest the completion of the Basin Reserve Interchange, Inner City Bypass, Waterloo Quay grade separation and finally the Transmission Gully Motorway.

We consider all the public transport projects as necessary to give the Region a good standard of service and moreover for the region to be seen as getting a good standard of service. The PT system should be an attraction for business to move to Wellington and these projects would achieve that end.

Affordability is the major question. The road projects total \$1.735 billion over the next ten years and we suggest that this should be increased to \$1.865 billion. The PT project total \$1.33 billion. This is a total cost of \$3.2 billion. Funding is expected to be as follows:

Table 1: Public Transport Funding

Public Transport Funding Sources	\$ M
N Passenger Transport - Services	617
R	70
C1 TDM Travel Plans	1
C1 Retain Mode Share & PT Enhancement	83
C2 Western Corridor Rail	47
Additional funding for HRC accessibility	90
Crown Loan	11
GW Base Rates	298
GW New Rates	113
Total 10 Year Funding per RLTS	1,330

Source GHD calculations based on GWRC information

Table 2: Road Transport Funding

Road Transport Funding Sources	\$ M
N	228
R	165
C1	134
C2	170
C3	405
C4	80
Local Share	112
TGM Loan repaid by Tolls	115
TGM Crown Loan	300
GW Base Rates	0
GW New Rates	26
Total 10 Year Funding per RLTS	1,735
CVL+Melling; local \$21 m; N \$34 m; R \$13 m; total	68
Gross Total 10 Year Funding	1,803

Source GHD calculations based on GWRC information

We have assumed Councils will borrow for all new capital expenditure and that all new loans will be for 35 years, at an 8% interest rate.

Table 3: Road Transport Funding

All \$ M	Transmission Gully Motorway	Cross Valley Link & Melling Bridge	Grenada SH 2 & Waterloo Quay	Western Link Road
Amount borrowed	300.0	21.0	52.8	16.9
Annual repayment	-\$25.6	-\$1.8	-\$4.5	-\$1.4
Annual + GST	-\$28.8	-\$2.0	-\$5.1	-\$1.6

Source GHD calculations based on GWRC information

The table above shows the amount borrowed for each project or group of projects and the annual repayments required. Note GST has to be applied.

The following tables show the distribution of loan repayments, based on the region's rateable capital values, in order to illustrate the magnitude of rating increases that would be necessary if the funding gap was to be addressed by increasing regional transport rates. The table also includes the increase in PT that is already approved through the LTCCCP process. The RLTS load is the amount needing to be sourced from rates for new projects (loan repayments) or operational expenditure. It includes the amount for public transport as well as the monies for road projects.

The percent increase is based on the sum of the Regional plus TA rate. The impact on the Regional rate is significantly more for instance the GW LTCCP shows the transport rate to increase by 38.5% over the next 10 years to meet the cost of the planned PT improvements.

Table 4: Expected Annual Rates in 2006/07 (\$000)

Council	2006/7 Rates	RLTS Load	% Increase
Wellington Regional Council	61,950		
Wellington City	181,357	24,367	12%
Hutt City	71,094	8,459	10%
Upper Hutt City	22,106	3,037	12%
Porirua City	34,321	3,691	9%
Kapiti District	31,928	5,046	13%
Total Annual Rates	402,756		

Source GWRC for rates, calculations by GHD

The key points to make from the information to hand is:

- » The funding gap of \$390.6 million is estimated to cost \$37.5 million per year to repay. Taken across the \$402.7 million in rates collected these repayments represent an increase of 9.3%
- » The funding gap represents a 61% increase in GWRC rates
- » The PT additional rates of 11.3 million per year have already been approved through the LTCCP process and they add another 2.8% to the total annual rates
- » All up the RLTS proposals plus the Cross Valley Link would add 12.3% to an annual rate bill (Local Council plus GWRC combined).

Please note that no rate has been set and the final rate may well be different from that shown.

Affordability and the dead weight cost of the taxes to support the RLTS are the key issues. Judging whether the amounts are unacceptable is a political decision. However, we note that the deadweight costs will be a drag on the economy. Moreover, while people vote at elections, business can only vote with their feet – they relocate. The rating load on business warrants serious consideration.

There are a few options that the Council can consider. Firstly, the R funding is applied as follows:

Table 5: R Funded Projects

Project	Total Cost \$ M	% R Funded	R Funding \$ M
Western Corridor Rolling Stock	40	60%	24
Mackay's to Raumati Double Track	62	60%	37
Kapiti Rail Stations	15	60%	9
Waterloo Quay Rail Grade Separation	22	53%	12
Terrace Tunnel Tidal Flow	20	100%	20
Ngauranga – Aotea Capacity Improvement	20	100%	20
Basin Reserve Interchange	27	100%	20
Petone - Ngauranga	60	100%	60
Pukerua Bay Safety Improvements	1	100%	1
Paekakariki Traffic Signals	2	100%	2
Rimutaka Corner Easing (Muldoons)	10	100%	10
Total	279		222

Source GHD calculations based on GWRC information

Thus 33% of the R funding is spent on improvements in the Western Corridor and \$47 million of that on the Kapiti Coast. The figures clearly show that Kapiti has little relationship with metropolitan Wellington in terms of employment or growth. Moreover, there are none of the lower socio economic group arguments that apply in the case of Porirua and The Hutt Valley. These arguments are that lower socio-economic groups are forced to live in those areas because that is where state housing is available in quantity. Those Kapiti projects do not aid or abet any economic development in the wider Region. We suggest that this money would have far more economic impact on economic growth and assistance to the lower socio economic groups if it were invested in improving the connections between Wellington, Hutt Valley and Porirua.

Then there is the option of full introduction of road pricing based on network pricing model similar to that used in the telecommunications area. This would see time of day and day of week charges for the use of all state highways within the region. The charge would be per kilometre on all sections. The Region lends itself to such an application and the secondary spin off would be that rates to support public transport would no longer be necessary (the economic argument for public support is that as roads are not treated as an economic good with use charged then people do not have the information to make a correct decision about using public transport, walking, cycling or private vehicle).

Moreover, such a system would avoid the socio-economic impacts of the rating implied above. The retired and those on fixed incomes, especially the asset rich but income poor, will be significantly adversely affected. Living in the region may well become unaffordable for them – the cost of the rate

increase is about 2 weeks of income for a single person living alone. While affordability is in the end a political judgement we anticipate that they may consider the level of the rate increase as unacceptable.

Road pricing gets those who travel to pay. Those that don't travel don't pay.

In addition, there is the option of public private partnerships. Another project well worth considering is the road from the Basin Reserve to the Airport. Considering that the population the size of Palmerston North lives to the south and east of the Wellington CBD the access is very poor. GHD understands that the route to the airport carries 80,000 vehicles per day. This may well be sufficient volume to make the private sector interested. We suggest that this option be explored.

Recommendations

- » Public Transport:
 - Consider all the public transport projects as necessary to give the Region a good standard of service and moreover for the region to be seen as getting a good standard of service. The PT system should be an attraction for business to move to Wellington and these projects would achieve that end.
- » Roothing: -
 - The area most at risk is the Hutt Valley and we suggest that the Cross Valley link and the Grenada to Petone link are the highest priority followed by all the works along SH 2
 - The next in the priority list are the Western Link Road along the Kapiti Coast.
 - Then we suggest the completion of the Basin Reserve Interchange, Inner City Bypass, Waterloo Quay grade separation and finally the Transmission Gully Motorway.

2. Introduction

2.1 Scope

This report is the culmination of a two-phase study into the economic and socio-economic impact of the changes proposed in the Wellington Regional Land Transport Strategy (RLTS). This report focuses on evaluating whether the proposed Wellington RLTS will:

- » Assist economic and regional development – RLTS Objective 1
- » Ensure that the Regional Transport Programme is affordable for the regional community – RLTS Objective 6

The scopes of the two phases of this project are:

1. Background and scoping report. This sets out the current economic situation, outlines the expected demographic changes in the region and where and how the regional economy is expected to move over the next 10 and 20 years;
2. Economic impact and Affordability of the proposed Wellington RLTS. This final report will be in two parts. Firstly, it will evaluate the RLTS in terms of its impact on and encouragement for the regional economy both over all and for each of the five areas that make up the region: Wellington; Hutt Valley; Porirua; Kapiti Coast; and the Wairarapa. Second, it will consider the economic efficiency and the affordability for the region of specific proposals or measures in the proposed RLTS.

2.2 Objective

The overall objective of this project is to comment on the draft RLTS in a timely manner so that the comments can be taken into account as the RLTS is developed. The objective of the first phase is to provide background information on the national and regional economy.

2.3 Transport and the Economy

Transport can be likened to rivers of trade. Without those rivers there can be no gains from trade and specialisation and as a consequence the local economy suffers. Transport is thus an integral component of the supply chain. Moreover, there is some speculation that if NZ were to achieve its target of moving its standard of living into the top half of the OECD over the next 20 years then the volume of freight to be moved in New Zealand would double¹. However, transport is more than just an exchange of goods and services, it is about leisure and recreation as well as commuting to work or educational opportunities. This means that there is a significant social aspect to transport, especially for those people who work in areas or in jobs where public transport is not a viable alternative.

¹ Implied by the government's objective of returning to the top half of the OECD, as reported in the July 2005 OECD Economic Survey of New Zealand. GHD notes that the implied 4% growth rate would see freight volumes more than double over 20 years.

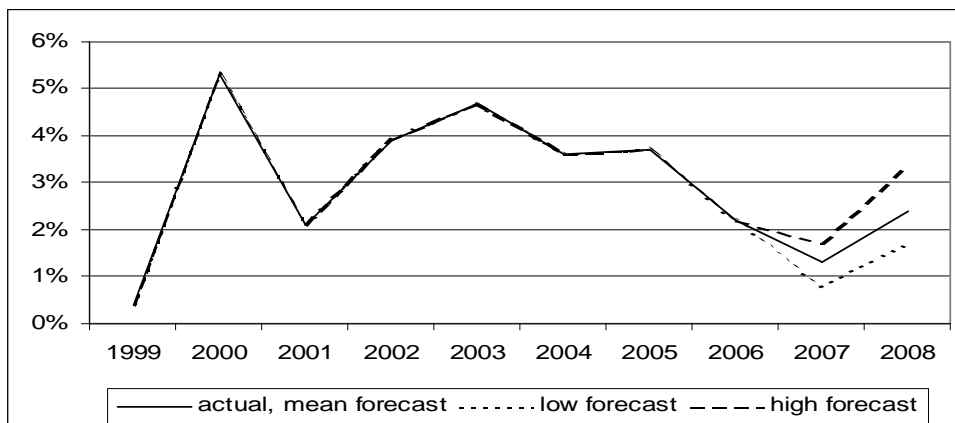
3. Current Situation

This section is a synopsis of economic information from the ANZ National Bank, Hong Kong and Shanghai Bank, BERL and the NZ Institute of Economic Research. The interpretation of that information is ours. We note that those agencies have differing views as to the future path of the various economies. A good discussion is contained in the Consensus Forecasts on the NZIER website: http://www.nzier.org.nz/SITE_Default/SITE_Publications/consensus_forecasts/default.asp.

The global economy is in excellent form. Worldwide the economy is growing at a steady pace that is delivering jobs in a low inflation environment. Some parts (east Asia especially China) are thought to be growing too fast. Moreover, this growth is being achieved in an era of rising oil prices. Governments are raising interest rates to hold back any inflationary pressures and while this is expected to moderate growth in 2007 this is not expected to have a large impact on future economic growth or employment.

New Zealand is not immune from these influences. However, there are other influences on the New Zealand economy that will see it slow down significantly more and stay down for longer. Indeed, it may not be until 2008 that growth picks up in New Zealand.

Figure 1: Forecast NZ Growth

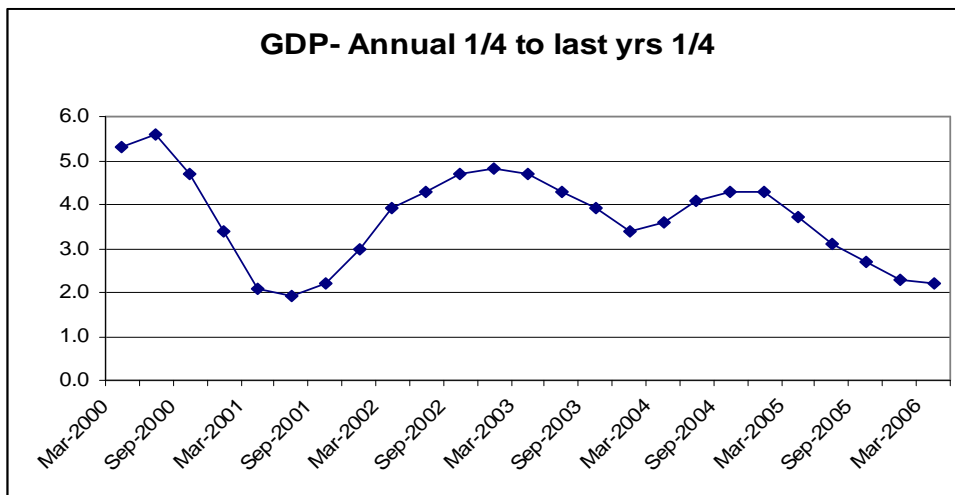


All March year annual average percent change

Source: to 2006: Hot off the Press; extract from Table 2.1; Gross Domestic Product March 2006; Statistics NZ; released 23 June 2006
 March 2007 & 2008 from NZIER Consensus Forecasts; issued 20 June 2006

In recent years the NZ economy has been boosted by good prices for agricultural exports (especially Dairy), migration and Government expenditure. In terms of the volume of products and services demanded, a sharp growth in education services to foreign students played a role but this has diminished in the last few years and to a lesser extent tourism has also contributed to demand. The significant decline in growth comes from a large fall off in migration (leading to amongst other things a slow down in house construction); a levelling off of dairy prices in US dollar terms; a decline in business investment; and sluggish non-agricultural exports (a response to the sustained high exchange rates driven by high interest rates for policy reasons). While the exchange rate has fallen, it will take some time for those exports to recover. On the plus side, a buoyant labour market and associated taxes mean even a fiscally prudent Government can increase expenditure to support the economy.

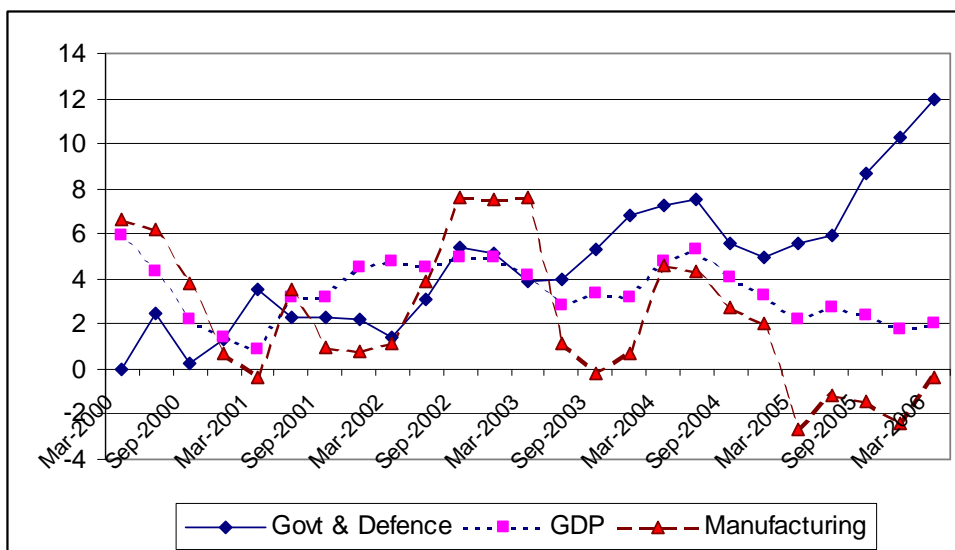
Figure 2: Past NZ GDP Growth



Source Graphics GHD; base data from Hot off the Press; extract from Table 2.1; Gross Domestic Product March 2006; Statistics NZ; released 23 June 2006

The Wellington Region is relatively immune to these larger internationally driven economic changes. There is no real manufacturing base, and there is no significant pastoral hinterland in comparison to other parts of New Zealand. The main business of Wellington is the public sector, as the seat of government and the associated supporting services and businesses. These have continued to do extremely well. Over the next few years, the Wellington economy will slow (as government expenditure can not continue to grow indefinitely) but not to the extent of the rest of New Zealand.

Figure 3: Past NZ GDP Growth, Key Components



Source Graphics GHD; Base data from Statistics NZ

Note the very high growth of the Government (benefiting Wellington) and Defence Sector and the significant recent declines in manufacturing.

4. Outlook for the Wellington Region

4.1 Introduction – Agglomeration

Agglomeration effects drive the big picture in New Zealand (as they do throughout the world). People and business tend to accrue to larger cities and the larger they are the more attractive they are. Agglomeration effects explain why some cities grow and others decline and why similar firms tend to cluster together. Thus, business will continue to accumulate in Auckland, because it has ready access to a very large pool of staff, the biggest market for products and services and ready access to suppliers, supplies and ports.

The move to a services economy where firms sell to end consumers and to each other, will require more face-to-face contact and this will see these clustering effects accentuated². While congestion and reliability of power may be issues for Auckland, businesses seeking to relocate from there would more likely be to move to Australia, to another agglomeration, than to the Wellington Region. Indeed, in the Wellington Region the agglomeration is the collection of Hutt, Upper Hutt, Porirua, and Wellington cities.

4.2 The Region

As noted above the Wellington Region is relatively immune to the changes affecting the New Zealand economy. The plus side for the region is that it does not suffer the lows but the down side is that it does not benefit from the highs. However, within the region there are significant differences as set out below.

4.3 Wellington

Wellington City will continue as a government sector city and experience steady growth. We would expect that this would be at a slower rate than that for New Zealand. However, it will most likely be at a faster rate than for the rest of the region, except for Kapiti. This is because there is a worldwide trend for people to move closer to the CBD. These people tend to be more affluent.

4.4 Hutt Valley

GHD sees Hutt City and Upper Hutt City as one entity for this initial study. Lessening employment potential, an aging population (empty nesters relocating to Kapiti or Wellington) and the worst highway congestion by far in the Region (State Highway 2 from Ngauranga to Petone) all compound the outlook for the Hutt Valley. This congestion analysis comes from an unpublished study comparing Road and Rail for the Regional Council and other studies completed for the previous RLTS. The employment forecasts (see later) show an increase over the next ten years and then an over-all decline over 20 years. The population forecast shows a steady decline. If anything we judge that the risks are that the population will decline faster.

4.5 Porirua

Porirua's future is closely tied to that of Wellington. We see steady growth but at a slower rate than for Wellington.

² For example: Economics of Agglomeration; Fujita, Masahisa & Thisse, Jacques-François; ISBN-10: 0521805244; 2002.

4.6 Kapiti Coast

The Kapiti Coast is developing as a rural service centre and continuing as a retirement area for the Region. Given the aging of the population, GHD sees both the population and employment growth as being much higher than that of Wellington. This is borne out by the Wellington Regional Council forecasts.

4.7 Wairarapa

The Wairarapa's economic fortunes are tied in part to that of the Wellington metropolitan area, as it is an important holiday and leisure area for people from the Hutt Valley and Wellington. Accordingly, GHD agrees with the Regional Council's forecasts, the population and the employment are in slow, steady decline.

4.8 Wellington Regional Strategy

The Wellington Regional Strategy (WRS) is a project of Greater Wellington Regional Council, Upper Hutt City Council, Kapiti Coast District Council, Porirua City Council, Hutt City Council, Wellington City Council and Positively Wellington Business. They are working to develop and implement a vision and an integrated framework to achieve sustainable growth in the Wellington Region.

The project has a long-term view, out to 2050. There will be a more detailed focus of action and priority for the next ten to twenty years. The web site for the project is <http://www.wrs.govt.nz/>.

There is quite a range of background information available on the site. One of the key papers is "Wellington Regional Strategy, Economic Futures", Working paper 6, dated 26 November 2004 and prepared by Infometrics Limited. In addition, the paper by SGS "Wellington Regional Strategy, Key policy levers – Urban Form and Economic Development" for the Regional Strategy Project Executive Group in May 2005 is also very informative. The SGS report notes:

"Based on SGS's review of the WRS Working Papers, Wellington's key (inter-regional) exports appear to be in:

- » Government services;
- » Domestic and international cultural tourism;
- » Some business services; and
- » Education.

It appears that the first of these overshadows the rest. Government service exports to the rest of the country represent a high value added activity. But it is labour intensive and it is a moderate to slow growing market. Basically, this market grows in line with GDP growth or a little below".

GHD has reviewed both the Infometrics and SGS findings and logic and we agree with their reports and see them as a good base for future decision-making.

5. Demographics

5.1 Population

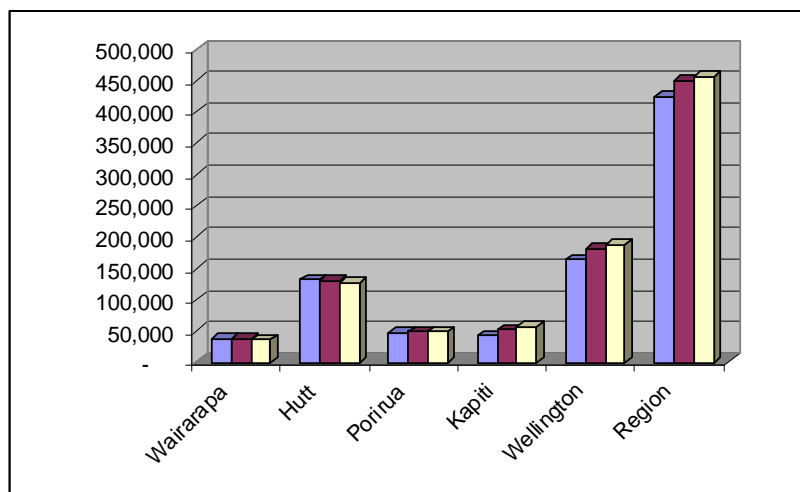
The population forecasts from the Wellington Regional Council are as follows:

Table 6: Regional Population Projections

	2001 Actual	2006 Provisional	2011 Medium	2016 Medium	2021 Medium	2026 Medium
Wairarapa	38,577	39,130	37,895	37,317	36,544	35,518
Hutt	131,805	135,000	131,360	130,000	128,450	126,320
Porirua	47,292	47,700	49,425	49,299	48,989	48,445
Kapiti	38,688	42,543	49,455	52,189	54,928	57,475
Wellington	167,187	183,500	176,494	180,727	184,745	188,533
Region	423,549	447,873	444,629	449,532	453,656	456,291

Source: Statistics NZ 2001 & 2006; Wellington Regional Council 2011,2016, 2021, 2026

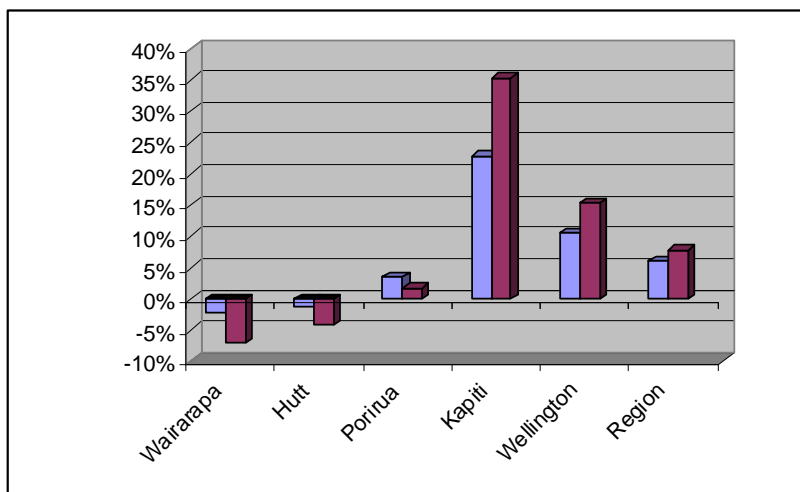
Figure 4: Regional Population Projections - Numbers



Source: Wellington Regional Council; columns are for years 2001 (actual); 2016; & 2026.

Note that the prediction is for population declines in the Wairarapa, and the Hutt Valley; flat or zero growth in Porirua and growth in Wellington and Kapiti.

Figure 5: Regional Population Projections - Growth



Source: Wellington Regional Council; columns are 2016; & 2026 compared to 2001.

Overall, the region’s population grows with significant growth in Kapiti and to a lesser extent in Wellington. The Hutt Valley and Wairarapa continue their decline.

Not shown in the above figures is the change in the age distribution of the regions population. In common with the lower half of the North Island, the Wellington Region’s population is rapidly aging. As part of this aging process people are either moving into Wellington City (with a preference for the CBD or close proximity) or moving to the Kapiti Coast.

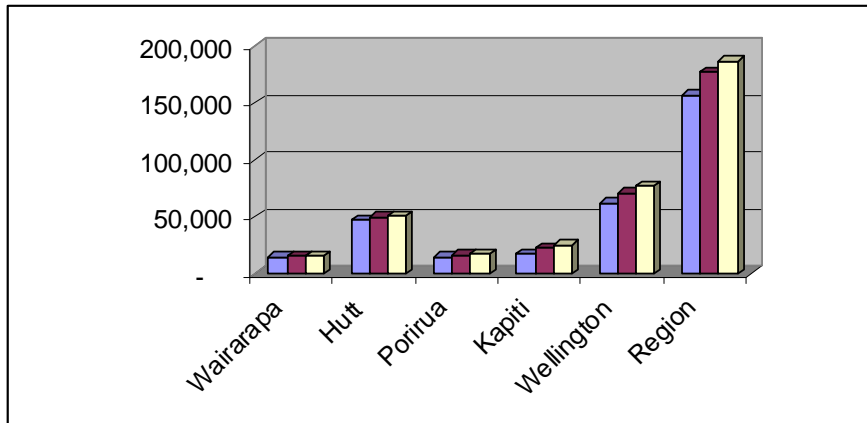
The implications for transport are:

- » Lessening traffic issues in the Hutt and Wairarapa. Note, GHD understands that the road network between Petone and Ngauranga Interchange is the most congested part of the regions network
- » Growing traffic issues in Kapiti and Wellington.

5.2 Households

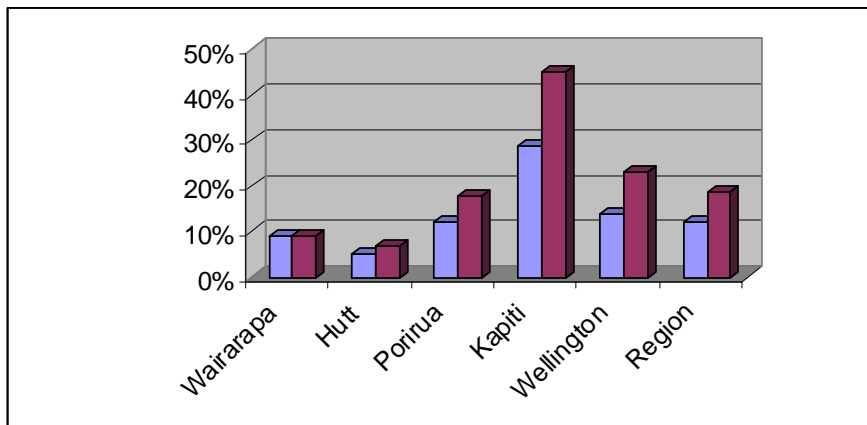
Household numbers are important as they, together with relative affluence, determine vehicle ownership and use of that vehicle. The expected number of households is as follows.

Figure 6: Regional Household Projections - Number



Source: Wellington Regional Council; columns are 2001; 2016; & 2026.

Figure 7: Regional Household Projections – Percentage Growth



Source: Wellington Regional Council; columns are 2016; & 2026.

Household numbers grow very differently from population. There are two effects: changing family structures; and the aging population. The growth in the number of households is evident even in the Wairarapa despite the fall in population.

The number of households is important because of the impact of households on traffic and on trade. GHD expects:

- » the regions traffic to grow by around 10% to 2016 and near to 20% by 2026 (given the expected growth in the number of households and the expected steady growth in the local economy)
- » this traffic growth will be stronger in Kapiti and Wellington and to a lesser extent Porirua (because that is where the growth in household numbers is most apparent).

6. Economic Activity

The employment in the Region in 2006 is estimated below.

Table 7: Employment in the Region 2006

Area	Percent of Total Employment	Percent of Employment in that Area
Wairarapa	8%	94%
Hutt	24%	82%
Porirua	6%	70%
Kapiti	7%	89%
Wellington	56%	77%
Region	100%	100%

Source: Wellington Regional Council; "Percent of Employment in that Area" column estimated by GHD.

As expected, Wellington City is the largest source of employment in the Region with 56% of total employment. Hutt Valley comes next with 24% of the employment in the Region. Employment in the other areas is minor by comparison.

Also of interest is the number of people who live in an area and work in the same area. This is set out in the "Percent of Employment in that Area" column. The Wairarapa (94% of people employed are employed locally) and Kapiti (89%) are more or less stand alone, while Porirua (70%) and to a lesser extent Hutt Valley (82%) are more dependant on employment in Wellington (77%; 13% to Hutt Valley; 7% to Porirua).

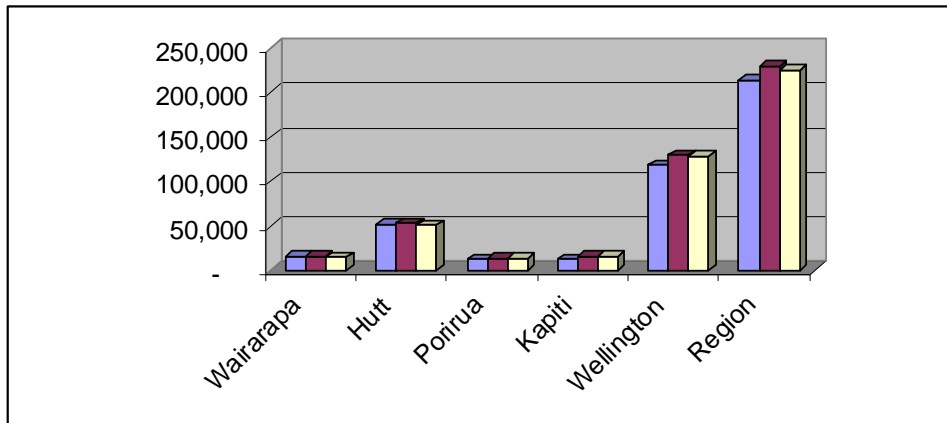
The Council has forecasts of employment in the region. These figures are set out below.

Table 8: Regional Employment Forecasts

	2001 Actual	2006 Medium	2011 Medium	2016 Medium	2021 Medium	2026 Medium
Wairarapa	16,541	16,934	16,908	16,622	16,127	15,393
Hutt	52,331	53,585	53,954	53,465	52,457	50,665
Porirua	13,306	13,926	14,103	14,033	13,823	13,391
Kapiti	13,306	14,691	15,511	16,121	16,589	16,815
Wellington	118,036	124,541	127,979	129,669	129,877	128,064
Region	213,520	223,677	228,455	229,910	228,873	224,328

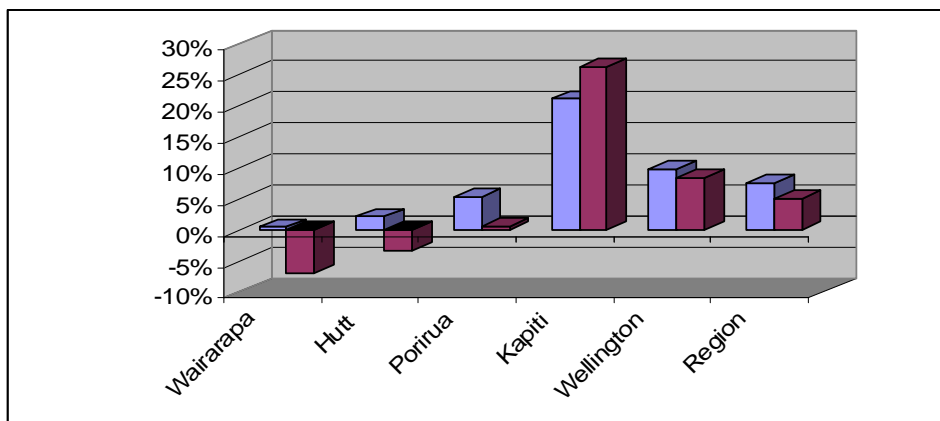
Source: Wellington Regional Council

Figure 8: Regional Employment Forecasts



Source: Wellington Regional Council; columns are 2001 (actual); 2016; & 2026.

Figure 9: Regional Employment Growth Forecasts



Source: Wellington Regional Council; columns are 2016; & 2026 compared to 2001.

The growth over the next ten years is minimal in Wairarapa, Hutt Valley and Porirua. The forecast for the ten years beyond that (20 years out) is for a decline. This is a continuance of a picture of growth in those areas that has been evolving for sometime. The forecasts show that the Wellington Region is not growing fast enough to generate the jobs (expect around 650 additional jobs in 2026 over 2006) to provide employment for new entrants to the workforce (expect around 8,500 additional residents in 2026 over 2006).

The implications for transport flow from the observation that significant employment is only provided in the Hutt Valley and Wellington and the Hutt Valley is diminishing in importance. The type of employment is different however as the Hutt Valley is the main source for freight related trips.

7. The RLTS Proposals

7.1 Background

This RLTS is written against a background of slow economic and population growth, congestion on the key highways and some arterial roads and a rail system that in many ways is well beyond its use by date. Accordingly, considerable money needs to be spent to bring the rail public transport system (carriages, track, signalling system, and electrification) up to scratch. Moreover, key freight roads are congested, reliability is an issue and the network is not resilient.

Moreover, it is important to reflect on what are people and firms consider when looking at what Wellington has to offer in terms of whether they should relocate here. GHD suggest that some of the questions as regards the basic essential services are:

- » Is the region clean, neat and tidy?
- » Is the water readily available and drinkable?
- » How bad is the congestion on the roads and are black spots identified and being addressed and are the main freight routes readily accessible and are alternatives available in case of problems?
- » Is the public transport system safe and secure, clean and neat, readily available and accessible and are problems identified and being addressed?
- » Are the local funding contributions fairly allocated?

All the groups of options tested contained the same group of categories:

- » Land use integration
- » Travel demand management
- » Road projects
- » Passenger transport
- » Walking and cycling

GHD does not propose to comment further on:

- » Land use integration – is an important part of the RLTS and supports and complements the measures in the road projects and passenger transport categories
- » Travel demand management – is also an important component of the proposals and can make the current investment in both passenger transport and road use much more efficient and effective. This is probably the cheapest and easiest way of getting greater performance and capacity out of the land transport network.
- » Walking and cycling – while the region is ideal for off road cycling, on road cycling is difficult because of narrow windy streets and steep hills in some parts of the region. We see this as being satisfactorily addressed in the draft RLTS. In the big picture, walking and cycling are not relevant; the amounts involved are too small.

7.2 The Proposals

See later for a discussion of the sources of funding of the proposed works. GHD has taken for granted that all the projects have a positive net present value in terms of their Project Evaluation.

Table 9: Passenger Transport Proposals

Passenger Transport Activities		\$ M	
1	Rail Operating Contract	138	
2	Wairarapa Rolling Stock	26	
3	Rail Rolling Stock	357	
4	Western Corridor Rolling Stock	40	
5	Mackay's to Raumati Double Track	62	
6	Kapiti Rail Stations	15	
7	Rail Station Maintenance and Upgrades	29	
8	Park & Ride Carparks	10	
9	Bus & Ferry Operating Contracts	243	
10	Trolley Bus Contracts	70	
11	Bus Stop & Shelter Maintenance	10	
12	Transport Information Systems	2	
13	Bus Priority Measures	21	
14	Real Time Information	22	
15	Integrated Ticketing	13	
16	Service Improvements	45	
17	Total Mobility	43	
18	Rail Administration	21	
19	Bus & Ferry Administration	33	
20	Transport Planning	28	
21	Cycle Promotion	1	
22	Travel Plan Programme	10	
23	Road Safety Promotion	1	
24	Wairarapa Log Freight	1	
25	Additional Cost of Access HRC Review	90	
26	Porirua Interchange	10	Year 11-20
27	Electrification to Waikanae	40	Year 11-20
28	Pukerua Bay - Paekakariki Double Track	272	Year 11-20
29	Hutt Corridor Rail Improvements	173	Year 11-20
Total Identified Costs		1,825	
Less Costs Beyond 10 Years		495	
Total 10 Year Costs		1,330	

Source Draft RLTS

GHD estimates that \$625 million of the Total 10 Year Costs is operational expenditure.

Table 10: Road Network Proposals

	Road Activities	20 year cost \$m	
1	SH Block Programme	60	
2	TDM Walking & Cycling	10	
3	TDM Traffic Management	5	
4	Inner City Bypass	14	
5	Waterloo Quay Rail Grade Separation	22	
6	Terrace Tunnel Tidal Flow	20	
7	Ngauranga – Aotea Capacity Improvement	20	
8	Basin Reserve Interchange	27	
9	Basin - Airport Capacity	250	Year 11-20
10	Dowse to Petone	73	
11	SH2/58 Grade Separation	37	
12	Grenada - Gracefield Stage 1 to Petone	180	
13	Grenada - Gracefield Stage 2 CVL	60	Year 11-20
14	Melling Interchange	68	Year 11-20
15	SH58 SH2 to Summit 4 Laning	99	Year 11-20
16	Petone - Ngauranga incl. cycle lane	60	
17	SH2/Kennedy Good Interchange	21	Year 11-20
18	SH2 Hutt Intersection Safety Improvements	10	
19	Akatarawa Upgrade	20	Year 11-20
20	MacKays Overbridge	3	
21	TDM, Western Corridor ATMS+HOV	5	
22	Centennial Highway Median Barrier	17	
23	Western Link Road – Stage 1	107	
24	Western Link Road – Stage 3	19	
25	Western Link Road – Stage 2	42	
26	Pukerua Bay Safety Improvements	2	
27	Paekakariki Traffic Signals	1	
28	TGM Preparation	85	
29	Transmission Gully Motorway Construction	870	
30	TGM Debt Servicing	382	26 yr 1 -10
31	SH58 Upgrade TGM to SH2	44	Year 11-20
32	Otaihanga Interchange (2 lane)	35	
33	Waikanae Upgrade	60	
34	Tawa Interchange	15	Year 11-20
35	Rimutaka Corner Easing (Muldoon's)	10	
	Total Identified Costs	2,753	
	Less Costs Beyond 10 Years	1,018	
	Total 10 Year Costs	1,735	

Source Draft RLTS

7.3 Economic Development

GHD agrees with the statements in the Draft RLTS under “the Role of Freight”. We expect most freight trips would be too short to justify use of rail, as the double handling would be far too expensive.

As regards log transport, a recent forecast of pine log prices as reported on the Stuff website on 2 August 2006, citing a report by MAF, forecast a 6% price fall up to 2010 with volumes up: (<http://www.stuff.co.nz/stuff/0,2106,3751080a13.00.html>). This may mean that it is not worthwhile logging the forests in the Wairarapa. It may be more profitable, if the carbon credits were returned to forest owners, for them to keep the trees in the ground.

Within the region we see the freight sources and destinations as:

- » Hutt Valley – 24% of employment and the main source of freight from distribution and manufacturing. This is in our opinion the part of the transport network that places the regional economy most at risk.
 - Gracefield / Seaview - distribution
 - Stokes Valley & Upper Hutt - manufacturing
- » Wellington – 56% of employment mainly in Government and allied industries; port, distribution, CBD for retail and major shopping areas
 - Aotea Quay – port
 - CBD – retail
 - Johnsonville medium retail; Kilbirnie, Karori, Tawa minor retail
 - Grenada North and to a lesser extent Ngauranga - distribution
- » Porirua - 6% of employment mainly in retail with some manufacturing and distribution
 - CBD for retail and close by for some manufacturing and distribution
- » Kapiti - 7% of employment mainly in light manufacturing with some retail
 - Some retail, manufacturing and rural servicing
- » Wairarapa - 8 % of employment mainly in retail and tourism with some manufacturing
 - Forestry is the only significant freight source

Within the region we see the key freight routes as:

- » Hutt Valley - note the Hutt Valley internal network is dysfunctionally connected to SH 2.
 - Gracefield / Seaview to SH2 (the Cross Valley Link)
 - Stokes Valley to SH2 then Ngauranga
 - Petone to Ngauranga then Ngauranga north via SH1 [note if vehicles exit via Petone it is only possible to go to the south]
 - SH 58 (would become important if it connected to the Transmission Gully Motorway)
- » Wellington - where access to the port and major shopping areas is important
 - Aotea Quay to SH1
 - CBD to Airport is important for business people and Government, there are industrial areas in Miramar
 - Ngauranga to Grenada North
- » Western Corridor

- SH1 important for freight, tourism, commuters and general traffic.

7.4 Economic Development Discussion

Public Transport Network

The current run down state of the rail passenger transport network does affect impressions of Wellington as a place to live and work and as such does affect economic development. Therefore we are in no doubt that something has to and should be done. There is also the issue of running passenger transport services and freight rail on the same line. Generally, passenger rail takes priority and the freight rail level of service suffers and freight moves to road because of the lack of service. The extra services proposed may well have this effect. This means that double or triple tracking may be necessary. Finally, we regard the operational expenditure as a committed cost and thus have no comment on Opex.

However, based on the employment data and forecasts, the PT improvements in the Wairarapa and Kapiti do not contribute to the economy in the same way as those in Wellington, Porirua and the Hutt. Moreover, it could be argued that Porirua and, to a lesser extent, the Hutt cities, are dependant on Wellington. However, Kapiti and Wairarapa are only loosely tied into the economy of the four cities. If there were a need for projects to cut, then cutting projects in Kapiti and Wairarapa would make little difference to the regional economy.

Road Network

While a lot of focus is given to the Transmission Gully Motorway, the part of the region most at economic development risk is the Hutt Valley. Population and employment are expected to continue to fall and in part this is due to the very congested nature of SH 2 and the dysfunctional linkages between SH 2 and the internal road network. The link between Dowse to Ngauranga is the most congested part of the road network. Moreover, for traffic from Gracefield or Seaview the exit is via the Petone Esplanade, which means all traffic must turn south along SH 2 even if it wants to go north, adding to the congestion.

Overall the proposed projects will all improve access and ability to get around the region. They will be of great benefit to the economy of the region. Another positive sign for business is that many of these issues have been around for some years with no attempt at resolution. We consider business would be please that things are now being done. Comments on the improvements are set out below:

- » Traffic Management (RLTS project number identified as PNxx)
 - PN3 & PN21 traffic management hold the potential to deliver significant improvements for both PT and private road user in a return per \$ spent that far exceeds the return on any other project in the list.
- » Wellington
 - Aotea Quay to SH1
 - PN7, PN5 While there is a need for the Ngauranga to Aotea capacity improvements we are not convinced of the Waterloo Quay rail grade separation and we understand that this is part of the Ngauranga to Airport study
 - CBD to Airport is important for business people and Government and adds to the perception that Wellington is a difficult city to get around.
 - PN4, PN6, PN8 are a set of projects that get the road user to the basin reserve with the extensions to the airport scheduled for the next ten year period. Access to the airport

and areas south and east of the CBD is poor. There is a population greater than that of Palmerston North living in that area with poor quality arterial roads shared with public transport. Given that the regional hospital is located in that area, the congestion is a source of concern to all the regions residents.

- Ngauranga to Grenada North
 - Not seen as a problem area especially if Grenada to Petone is built
- » Hutt Valley
 - Gracefield / Seaview to SH 2 & SH 1
 - PN12, Stage 1: The Grenada to Petone link will definitely assist the regional economy but may be delivered too late to save the Hutt economy. We would also expect it to significantly ease congestion on SH 2
 - PN13, Stage 2: (for delivery in the second 10 year period) For the Grenada to Petone link to fulfil its potential it needs to be allied with the cross-valley link, which is stage 2. Gracefield Seaview is one of the larger flat industrial areas left in the four cities, access is very poor and this link solves that issue. We would suggest you consider promoting it in the priority and including it in the first 10 years
 - Stokes Valley to SH2
 - PN11, We do not see any significant benefits in the SH 2 SH 58 grade separation until the Transmission Gully Motorway is built. We recommend defer PN11 until the second 10 years.
 - Petone to Ngauranga is the highest congested road link in the region
 - PN10, the Dowse to Petone link addresses this issue and PN16 Petone to Ngauranga HOT lane will address this issue
- » Western corridor
 - SH1 important for freight, tourism, commuters and general traffic.
 - PN23, PN24, PN25, the three stages in the Western Link Road in Kapiti address a significant issue in that SH1 is effectively the local arterial road connecting Waikanae, Paraparaumu and Raumati. Thus implementing the Western Link Road is the same as adding capacity on SH1 and taking it back to being a highway rather than a local road. This will aid the economy and boost the port. PN 33 addresses similar issues in Waikanae.
 - PN28, PN29 are the Transmission Gully Motorway will be a significant boost to domestic tourism and the economy in Kapiti and the port.

Note no cost benefit analysis material has been sighted by GHD.

7.5 Funding

While the projects above are generally all identified, as having a significant economic impact what is not clear is the question of affordability. Lack of action in the past has lead to circumstances where there is a range of issues that all need immediate and expensive attention.

The tables below set out the funding required for the projects and the sources of that funding. There are four types of funding:

- N - National funds from the National Land Transport Fund issued by Land Transport NZ on a national priority basis
- R – Regional funds for projects that do not qualify for N funding
- C1 – Crown funds announced on 27 Jan 2005, as follows: \$65 M for PT service maintenance; \$30 M for TDM; \$30 M for PT service enhancement and \$100 M for strategic road projects
- C2 – Crown funds announced on 5 Jul 2005, as follows: \$255 M for the western corridor transport improvements
- C3 – Crown funds announced on 5 Jul 2005, as follows: \$405 M for the western corridor – either Transmission Gully Motorway or the coastal route whichever got regional agreement
- LTA – local funds from the TA
- LGW – local funds from the Regional Council

The tables below set out the key areas and their funding.

Public Transport

Forecast 10 year cost to GWRC:

Total cost over ten years	411 M	
Basic rates (status quo continued)	298 M	
New Rates	113 M	11.3 M per year
New loans for capital	79.4 M	
Crown loan (Wairarapa Rolling Stock)	10.6 M	

Road Network Programme (Excluding Transmission Gully Motorway)

Total cost over ten years to GWRC	0 M
Amount for TA RCAs to fund	70 M
Kapiti	17 M over 8 years; 2 M per year
Wellington Hutt shared	42 M over 9 years 4.5 M per year
Wellington	10 M over 2 years 5 M per year

Transmission Gully Motorway total project cost = \$955 M

Loan funded by tolls	115 M
Loan from the Crown	300 M
New funding to service the Crown loan	\$6 M 2014/15
	\$21 M 2015/16
then	\$26 M per year
Assumed level of revenue from tolls	10 M

Table 11: Passenger Transport Expenditure - 1st Ten Years

Passenger Transport Activities	\$ M	N	R	C1	C2	New	Crown Loan	C1	C2	Base LGW	New LGW
1 Rail Operating Contract	138	83								55	
2 Wairarapa Rolling Stock	26	16					11				
3 Rail Rolling Stock	357	214						65			78
4.0 Western Corridor Rolling Stock	40		24						16		
5 Mackay's to Raumati Double Track	62		37						25		
6 Kapiti Rail Stations	15		9						6		
7 Rail Station Maintenance and Upgrades	29	17						4		8	
8 Park & Ride Carparks	10	6								4	
9 Bus & Ferry Operating Contracts	243	122								122	
10 Trolley Bus Contracts	70	35								35	
11 Bus Stop & Shelter Maintenance	10	5						1		4	
12 Transport Information Systems	2	1						0		1	
13 Bus Priority Measures	21	11						5		1	5
14 Real Time Information	22	11						5			6
15 Integrated Ticketing	13	7						3			3
16 Service Improvements	45	22									22
17 Total Mobility	43	26								17	
18 Rail Administration	21	11								11	
19 Bus & Ferry Administration	33	17								17	
20 Transport Planning	28	7								21	
21 Cycle Promotion	1	0								0	
22 Travel Plan Programme	10	5						1		3	
23 Road Safety Promotion	1	0								0	
24 Wairarapa Log Freight	1	1									
25 Additional Cost of Access HRC Review	90					90					
26 Porirua Interchange	10										
27 Electrification to Waikanae	40										
28 Pukerua Bay - Paekakariki Double Track	272										
29 Hutt Corridor Rail Improvements	173										
Total Identified Costs	1,825										
Less Costs Beyond 10 Years	495										
Total 10 Year Costs	1,330	617	70	0	0	90	11	84	47	298	113

Table 12: Road Project Expenditure - 1st Ten Years

0	Road Activities	20 yr \$m	N	R	C1	C2	C3	C4	Loan (Tolls)	Crown Loan	New	Crown Loan	C1	C2	RCA LTCCP
1	SH Block Programme	60	10	20											
2	TDM Walking & Cycling	10	5												
3	TDM Traffic Management	5	3												
4	Inner City Bypass	14	14												
5	Waterloo Quay Rail Grade Separation	22		12											10
6	Terrace Tunnel Tidal Flow	20		20											
7	Ngauranga – Aotea Capacity Improvement	20		20											
8	Basin Reserve Interchange	27		20	7										
9	Basin - Airport Capacity	250													
10	Dowse to Petone	73	73												
11	SH2/58 Grade Separation	37			37										
12	Grenada - Gracefield Stage 1 to Petone	180				95								42	42
13	Grenada - Gracefield Stage 2 CVL	60													
14	Melling Interchange	68													
15	SH58 SH2 to Summit 4 Laning	99			1										
16	Petone - Ngauranga incl. cycle lane	60		60											
17	SH2/Kennedy Good Interchange	21													
18	SH2 Hutt Intersection Safety Improvements	10	10												
19	Akatarawa Upgrade	20													
20	MacKays Overbridge	3	3												
21	TDM, Western Corridor ATMS+HOV	5	5												
22	Centennial Highway Median Barrier	17	17												
23	Western Link Road – Stage 1	107	57			40									11
24	Western Link Road – Stage 3	19	10			7									2
25	Western Link Road – Stage 2	42	22			16									4
26	Pukerua Bay Safety Improvements	2		2											
27	Paekakariki Traffic Signals	1		1											

		20 yr													RCA
	Road Activities	\$m	N	R	C1	C2	C3	C4	Loan (Tolls)	Crown Loan	New	Crown Loan	C1	C2	LTCCP
0															
28	TGM Preparation	85					5	80							
29	Transmission Gully Motorway Construction	870			55		400		115	300					
30	TGM Debt Servicing	382									26				
31	SH58 Upgrade TGM to SH2	44													
32	Otaihanga Interchange (2 lane)	35			35										
33	Waikanae Upgrade	60				12									
34	Tawa Interchange	15													
35	Rimutaka Corner Easing (Muldoon's)	10		10											
0	Total Identified Costs	2753	228	165	134	170	405	80	115	300	26	0	0	42	70
0	Less Costs Beyond 10 Years	1018													
0	Total 10 Year Costs	1735													

7.6 Affordability

Affordability is the major issue. The road projects total \$1.735 billion over the next ten years and we suggest that this should be increased to \$1.865 billion. The PT project total \$1.33 billion. This is a total cost of \$3.2 billion. Funding is expected to be as follows:

Table 13: Public Transport Funding

Public Transport Funding Sources	\$m
N Passenger Transport - Services	617
R	70
C1 TDM Travel Plans	1
C1 Retain Mode Share & PT Enhancement	83
C2 Western Corridor Rail	47
Additional funding for HRC accessibility	90
Crown Loan	11
GW Base Rates	298
GW New Rates	113
Total 10 Year Funding per RLTS	1,330

Source GHD calculations based on GWRC information

Table 14: Road Transport Funding

Road Transport Funding Sources	\$m
N	228
R	165
C1	134
C2	170
C3	405
C4	80
Local Share	112
TGM Loan repaid by Tolls	115
TGM Crown Loan	300
GW Base Rates	0
GW New Rates	26
Total 10 Year Funding per RLTS	1,735
CVL+Melling; local \$21 m; N \$34 m; R \$13 m; total	68
Gross Total 10 Year Funding	1,803

Source GHD calculations based on GWRC information

We have assumed Councils will borrow for all new capital expenditure and that all new loans will be for 35 years, at an 8% interest rate.

Table 15: Road Transport Funding

All \$ M	Transmission Gully Motorway	Cross Valley Link & Melling Bridge	Grenada SH 2 & Waterloo Quay	Western Link Road
Amount borrowed	300.0	21.0	52.8	16.9
Annual repayment	-\$25.6	-\$1.8	-\$4.5	-\$1.4
Annual + GST	-\$28.8	-\$2.0	-\$5.1	-\$1.6

Source GHD calculations based on GWRC information

The table above shows the amount borrowed for each project or group of projects and the annual repayments required. Note GST has to be applied to the rate levy.

The following table shows the expected movement in annual rates based on the anticipated rates in 2006/07. These are indicative numbers based on the expected long-term impact of the RLTS proposals. The 2006/07 rates are the anticipated rates levied in that year. The RLTS load is the amount needing to be sourced from rates for new projects (loan repayments) or operational expenditure. It includes the amount for public transport as well as the monies for road projects.

Table 16: Expected Annual Rates in 2006/07 (\$000)

Council	2006/07 Rates	RLTS Load	% Increase
Wellington Regional Council	61,950		
Wellington City	181,357	24,367	12%
Hutt City	71,094	8,459	10%
Upper Hutt City	22,106	3,037	12%
Porirua City	34,321	3,691	9%
Kapiti District	31,928	5,046	13%
Total Annual Rates	402,756	44,600	

Source GWRC for rates, calculations by GHD, all figures in \$ thousands.

The following tables show the distribution of loan repayments, based on the region's rateable capital values, in order to illustrate the magnitude of rating increases that would be necessary if the funding gap was to be addressed by increasing regional transport rates.

Table 17: Rates to be collected by Road Project by TA

	Transmission Gully Motorway		Cross Valley Link & Melling Bridge		Grenada SH 2 & Waterloo Quay		Western Link Road	
	Total \$M	\$/100K	Total \$M	\$/100K	Total \$M	\$/100K	Total \$M	\$/100K
Wellington City	14	39.51	-	-	1	2.24	-	-
Hutt City	5	43.87	2	18.17	0	3.43	-	-
Upper Hutt City	2	44.16	-	-	4	97.00	-	-
Porirua City	2	42.83	-	-	0	1.02	-	-
Kapiti District	3	38.29	-	-	-	-	2	21.35
Masterton District	1	38.30	-	-	-	-	-	-
Carterton District	1	48.68	-	-	-	-	-	-
Sth Wairarapa District	1	53.28	-	-	-	-	-	-
Tararua District	0	35.22	-	-	-	-	-	-
	29		2		5		2	

Source GHD calculations based on GWRC information

The above table shows the amount to be collected in total for each local authority area if the rate is payable equally across all eligible ratepayers. The columns labelled \$/100K show the amount of rate payable per \$100,000 of rateable capital value. Thus for a residential property worth say \$400,000, the rate for the Transmission Gully Motorway in Wellington will be an additional \$158 per annum. Please note that no rate has been set and the final rate may well be different from that shown.

The amounts shown are different per \$100 K because first the rate is calculated for each TA on the basis of equalised values for the TA as a whole. Then the rate for that TA is distributed within the TA on the basis of the rateable capital values in the TA.

Table 18: Rating Impact for Road Projects by Average Capital Value

	Average Property Value	Transmission Gully Motorway	Cross Valley Link & Melling Bridge	Grenada SH 2 & Waterloo Quay	Western Link Road	Total Rate for that Ave' Value
Wellington City						
CBD Business	2,127,223	840	-	304	-	1,144
Business	1,396,671	552	-	199	-	751
Residential	421,398	166	-	60	-	227
Rural	581,906	230	-	83	-	313
Hutt City						
Business	963,499	423	175	-	-	598
Residential	251,702	110	46	-	-	156
Rural	380,751	167	69	-	-	236
Upper Hutt City						
Business	994,869	439	-	-	-	439
Residential	216,703	96	-	-	-	96
Rural	394,602	174	-	-	-	174
Porirua City						
Business	944,638	405	-	-	-	405
Residential	255,032	109	-	-	-	109
Rural	685,950	294	-	-	-	294
Kapiti Coast District						
Urban	308,612	118	-	-	66	184
Rural	491,129	188	-	-	105	293
Masterton District						
Urban Ward	467,054	179	-	-	-	179
Urban - Residential	186,216	71	-	-	-	71
Rural Ward	620,029	237	-	-	-	237
Carterton District						
Urban Ward	144,958	71	-	-	-	71
Urban - Residential	147,236	72	-	-	-	72
Rural Ward	520,137	253	-	-	-	253
South Wairarapa District						
Urban Ward	220,975	118	-	-	-	118
Urban - Residential	165,940	88	-	-	-	88
Rural Ward	594,085	317	-	-	-	317
Tararua District						
	822,459	290	-	-	-	290

Source GHD calculations based on GWRC information

Numbers shown are indicative only and are based on the assumptions set out earlier. They show the rate levied for the average value of a property in that classification.

Table 19: Rating Impact for Public Transport by Average Capital Value

	New PT Rate given average property values	Increase from Previous Rate
Wellington City		
CBD Business	1,479	493
Business	971	324
Residential	293	98
Rural	405	135
Hutt City		
Business	744	248
Residential	194	65
Rural	294	98
Upper Hutt City		
Business	773	258
Residential	168	56
Rural	307	102
Porirua City		
Business	712	237
Residential	192	64
Rural	517	172
Kapiti Coast District		
Urban	208	69
Rural	331	110
Masterton District		
Urban Ward	315	105
Urban - Residential	126	42
Rural Ward	418	139
Carterton District		
Urban Ward	124	41
Urban - Residential	126	42
Rural Ward	446	149
South Wairarapa District		
Urban Ward	207	69
Urban - Residential	156	52
Rural Ward	557	186
Tararua District	510	170

Source GHD calculations based on GWRC information

Numbers shown are indicative only and are based on the assumptions set out earlier. On average the increase is between 40% to 50%. This sum has to be added on to the earlier rate estimates for road projects.

Affordability and the dead weight cost of the taxes to support the RLTS is the key issue. Unfortunately we judge the resulting rating load as potentially unacceptable as the deadweight costs may be a drag on the economy than the benefit of the projects.

R Funding

However there are a few options that the Council can consider. Firstly, the R funding is applied as follows:

Table 20: R Funded Projects

Project	Total Cost \$ M	% R Funded	R Funding \$ M
Western Corridor Rolling Stock	40	60%	24
Mackay's to Raumati Double Track	62	60%	37
Kapiti Rail Stations	15	60%	9
Waterloo Quay Rail Grade Separation	22	53%	12
Terrace Tunnel Tidal Flow	20	100%	20
Ngauranga – Aotea Capacity Improvement	20	100%	20
Basin Reserve Interchange	27	100%	20
Petone - Ngauranga	60	100%	60
Pukerua Bay Safety Improvements	1	100%	1
Paekakariki Traffic Signals	2	100%	2
Rimutaka Corner Easing (Muldoon's)	10	100%	10
Total	279		222

Source GHD calculations based on GWRC information

Thus 33% of the R funding is spent on improvements in the Western Corridor and \$47 million of that on the Kapiti Coast. The figures clearly show that Kapiti has little relationship with metropolitan Wellington in terms of employment or growth. Moreover, there are none of the lower socio economic group arguments that apply in the case of Porirua and The Hutt Valley. These arguments are that lower socio-economic groups are forced to live in those areas because that is where state housing is available in quantity. Those Kapiti projects do not aid or abet any economic development in the wider Region. We suggest that this money would have far more economic impact on economic growth and assistance to the lower socio economic groups if it were invested in improving the connections between Wellington, Hutt Valley and Porirua.

Road Pricing

Then there is the option of full introduction of road pricing based on network pricing model similar to that used. This would see time of day and day of week charges for the use of all state highways within the region. The charge would be per kilometre on all sections. The Region lends itself to such an application and the secondary spin off would be that rates to support public transport would no longer be necessary (the economic argument for public support is that as roads are not treated as an economic good with used charged then people do not have the information to make a correct decision about public transport, walking, cycling or private vehicle).

Moreover, such a system would avoid the socio-economic impacts of the rating implied above. The retired and those on fixed incomes, especially the asset rich but income poor, will be significantly adversely affected. Living in the region may well become unaffordable – the cost of the rate increase is about 2 weeks of income for a single person living alone. While affordability is in the end a political judgement we anticipate that they may consider the level of the rate increase as unacceptable.

Road pricing gets those who travel to pay. Those that don't travel don't pay.

Appendix A

Wellington Region's Transport Infrastructure

Key characteristics of Wellington's transport infrastructure are detailed below.

- » Water transport – Wellington is home to the only deep-water port accessible directly from countries west of New Zealand (New Zealand's main sea freight route). It is also the gateway between New Zealand's two main islands and it therefore serves as a hub for inter-island freight and passenger transport services including; water, rail and road.
- » Air transport – While Wellington has an international airport, its runway is relatively short and access can be difficult at times. As a result, in recent years Wellington Airport has been losing significant volumes of freight custom to both Auckland and Christchurch airports.
- » Rail transport – Wellington has inherited a good passenger rail network, but the carriages have been run down.
- » Road transport – Wellington is served by two motorways - State highways 1 (SH1) and State Highway 2 (SH2). Wellington's steep topography has meant that both these motorways, along with the rail network, are channelled into a restricted Y shaped corridors. State highway 1 runs through Kapiti Coast (serving the areas West of Wellington), while SH2 serves the region East of Wellington including the Hutt valley. The two urban motorways (part of SH1 and SH2) join at Ngauranga Gorge and end west of the CBD at the Terrace Tunnel.
- » The ferry terminal, (technically part of SH1), freight ports and railway station are located on the north side of the CBD. As such both the major arterial roads and the rail network serve them. The airport, however, is located on the far side of the CBD meaning that there is no direct access through the CBD.
- » Passenger transport - unlike other New Zealand cities, Wellington retains a high proportion of employment in the CBD. Accordingly a relatively high proportion of commute trips are by public transport (bus and rail).

Despite the fact, that relative to other New Zealand cities, Wellington has a strong public transport system and an extensive rail network it nonetheless faces a number of important challenges in relation to land transport infrastructure. Many of these challenges relate to the road network, including:

Capacity limits on northern arterials.

SH1, after the Terrace Tunnel, is a four-lane motorway providing access in and out of the city. At several sections (i.e. Paremata roundabout and Pukerua Bay) SH1 reduces from four lanes to only two. This represents a significant reduction in the road capacity causing significant traffic congestion and lengthy delays. Moreover, given that these sections of the highway have no road shoulder they have a high incidence of accidents, particularly head on collisions. An uncontrolled intersection at Paekakariki town also has a high incidence of road crashes and fatality rates.

Inner city congestion

Wellington's road network does not include a city bypass or an orbital network. Instead, traffic on all major routes is directed into the city and back out again. This has consequences for both traffic volumes and road safety.

For example, the 100 km/h SH1 terminates at the Terrace Tunnel and connects with a 50 km/h route through the CBD. This route comprises of two separate one-way roads (with car parking on both sides),

seven sets of partially synchronised traffic lights, and passes through a main shopping area (including a pedestrian mall). Not surprisingly, this section of Wellington's inner city road network has one of the worst records in the country for accidents.

Lack of network connectedness

Wellington and its main industrial area, the Hutt valley, are linked by the SH 2. There is a direct link (SH 58) between the Hutt valley and SH 1 for Hutt valley traffic heading north of Wellington (and vice versa), but SH 58 is not a motorway. Consequently, northbound heavy traffic from the Hutt valley uses SH 2 to access SH 1. This puts additional traffic in the busiest commuting parts of SH1 and SH 2. Furthermore there is no arterial road network connecting the central Hutt Valley to the SH 2. This results in significant congestion at various points in the Hutt valley such as along the Petone Foreshore.

Currently there is no arterial road network connecting Wellington Region's main industrial area, the Hutt Valley, to SH1 and provides a route to the major population centres north of Wellington. Heavy vehicle traffic has no alternative, but to travel down the SH 58 in order to travel up the SH1. This brings heavy vehicle traffic into the city area adding to local traffic volumes and congestion.

Furthermore there is no arterial road network connecting the Hutt Valley to SH 2. This results in significant congestion along the Petone foreshore.

Limited capacity on SH2

The SH2 is the main route east of Wellington. Significant sections of this road crosses steep mountain divide and are very narrow and windy. Also there are limited overtaking opportunities and few roadside barriers. The condition of this road means that:

- there is a high incidence of road crashes; and
- it is unsuitable for heavy vehicles forcing additional traffic onto SH1. Furthermore, it is claimed that two trucks can't pass safely on some corners.

Traffic congestion

In addition to traffic congestion on SH 1 and on local roads within the city area the major route between Petone and Ngauranga suffers from capacity restrictions resulting in significant delays and congestion. This is despite the fact that this road is a motorway standard road.

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