

# Regional Transport Programme

2006/07 – 2016



## Regional Transport Programme 2006/07 - 2016

### Introduction

The Regional Transport Programme (RTP) sets out the region's expectations for new capital expenditure on strategic roading and funding for passenger transport, active modes travel and demand management over a 10 year period. Proposed projects originate in the implementation and corridor plans in response to an identified need. The RTP knits together those interventions requiring additional financial input into one region wide document to provide a reference for strategic prioritising, sequencing and funding allocation decisions. The RTP is reviewed and confirmed on an annual basis using an agreed prioritisation methodology.

The Regional Transport Programme is a subset of the total transport expenditure and is comprised of two parts: the 10-Year Passenger Transport (PT) Programme (includes non-roading projects) and the 10-Year Strategic Roding Programme.

Road maintenance and renewal (e.g., resealing) are not included in the Strategic Roding Programme as it is expected that these activities will continue to have a status of first call on national funding and therefore have no need to rely on regional or Crown funding sources.

### Rail carriage capacity

The Wellington Commuter Rail Network Business Case provides for 164 carriages to be in operation by 2016 assuming an annual growth rate of 1.7%. GW is currently working on the purchase of 70 new electric multiple units (EMUs), which will allow for patronage growth, retirement of the English Electrics, and provide capacity for the cycling of the Ganz-Mavags through a refurbishment programme.

Patronage growth will be monitored and forecast throughout and beyond the new vehicle procurement and service introduction time period. The significance of any sustained patronage growth above the 1.7% may require interim measures to provide additional capacity by bringing forward future, or extending current, orders of rolling stock. This is to be reviewed as part of development of a Regional Rail Plan.

### Upgrading State Highway 58

The Strategic Roding Programme includes three projects to improve State Highway 58 over the next 20 years. These are:

- State Highway 2/State Highway 58 grade separation [project 11 in the programme]
- State Highway 58 (SH2 – summit) 4 laning [project 15 in the programme]
- State Highway 58 upgrade (TGM – SH2) [project 31 in the programme].

These projects provide a total investment in State Highway 58 of \$180 million over the next 20 years. The scope of these projects is to be reviewed as part of the development of the Transmission Gully Motorway (TGM) project.

## Programme prioritisation

A review of the RTP is undertaken by the Regional Land Transport Committee (RLTC) in the first quarter of each year in the annual prioritisation process. Relevant feedback from the RLTS consultation process will be referred to the prioritisation process. The annual review of project priorities requires both technical and political assessment. Priorities should remain relatively constant from year to year, though new projects may be introduced as a result of implementation and corridor plan reviews. However, cost, timing and funding availability estimates are variable from year to year.

The RLTS includes a set of prioritisation policies which guide this process and the matters to be taken into account in the prioritisation methodology. These cover ensuring projects which contribute towards key outcomes are given top priority, ensuring priority decisions reflect seriousness, urgency, economic efficiency, effectiveness, volumes, affordability, and perceived safety benefits, ensuring western corridor rail improvements in place prior to opening TGM, guidance on the allocation of Crown funds and funding for committed projects/packages.

The order of projects in the 10-Year Passenger Transport Programme and 10-Year Strategic Rooding Programme (Tables 3 and 4) does not reflect their significance or priority. To accelerate any project included in the programme would mean shifting the funding allocation for that project so that it sits earlier in the 10-Year programme.

Some projects are listed but have funding unconfirmed or “beyond 10 years”. These are unfunded elements as far as the 10-year programme is concerned, but the RLTC sees such projects as sufficiently significant to be listed and viable enough for preparatory work to continue so they are not unnecessarily delayed. They are candidates for any accelerated or supplementary funding that may become available within 10 years, and their inclusion indicates RLTC will be advocating for them to be brought forward. Often they cannot be included in the fundable portion of the programme now because they are not ready (options not tested, designation not achieved, design not started) but the RLTC expects them to become ready and fundable within 10 years, so in the interests of transparency and completeness they are listed.

The available funding that generates the restraining totals at the bottom of each column, and its affordability consequences, are discussed in the RLTS. The completeness of the lists and the relative balance between the lists are issues for public scrutiny.

## Analysis of the programme

Implementation of the RTP is subject to available funding and as a result it can not include every transport project the region may desire. Developing the RTP involves making a number of compromises to find the appropriate balance of projects across all of the RLTS objectives and within available funding. It requires consideration of both current and forecast trends in travel behaviour, acknowledging that there are many uncertainties and external influences are likely to affect our transport network and the way we achieve access in the future. Table 1 provides an analysis of the RTP 2006/07 -2016 against the objectives of the RLTS<sup>9</sup>.

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<sup>9</sup> See background document for further details – Regional Transport Programme – Modelling and analysis, May 2006.

RLTS objective	Objective indicator 2016 AM peak compared to 2001	Regional Transport Programme
Assist economic and regional development	<ul style="list-style-type: none"> <li>• Reduced congestion</li> <li>• Reduced HCV costs</li> <li>• Reduced PT passenger trip time</li> </ul>	<ul style="list-style-type: none"> <li>✓✓</li> <li>–</li> <li>–</li> </ul>
Assist safety and personal security	<ul style="list-style-type: none"> <li>• Reduced road traffic injuries</li> <li>• Improved personal security</li> </ul>	<ul style="list-style-type: none"> <li>✓</li> <li>✓</li> </ul>
Improve access, mobility and reliability	<ul style="list-style-type: none"> <li>• Increased PT network coverage</li> <li>• Improved PT services</li> <li>• Increased road network coverage</li> <li>• Reduced congestion</li> <li>• Increased car ownership</li> <li>• Improved active mode facilities</li> </ul>	<ul style="list-style-type: none"> <li>✓</li> <li>✓</li> <li>✓✓</li> <li>✓✓</li> <li>✓</li> <li>✓</li> </ul>
Protect and promote public health	<ul style="list-style-type: none"> <li>• Increased opportunities for physical activity</li> <li>• Reduced road traffic injuries</li> <li>• Reduced air pollution</li> <li>• Reduced traffic noise</li> <li>• Enhanced social cohesion</li> <li>• Reduced severance</li> <li>• Decreased CO<sub>2</sub> emissions</li> </ul>	<ul style="list-style-type: none"> <li>✓✓</li> <li>✓</li> <li>✓</li> <li>–</li> <li>✓</li> <li>✓</li> <li>xx</li> </ul>
Ensure environmental sustainability	<ul style="list-style-type: none"> <li>• Decreased CO<sub>2</sub> emissions</li> <li>• Reduced air pollution</li> <li>• Reduced traffic noise</li> <li>• Reduced contaminants in surface water runoff</li> <li>• Reduced fuel consumption</li> <li>• Supports efficient land use</li> </ul>	<ul style="list-style-type: none"> <li>xx</li> <li>✓</li> <li>–</li> <li>x</li> <li>xx</li> <li>✓</li> </ul>
Ensure the Regional Transport Programme is affordable for the regional community	<ul style="list-style-type: none"> <li>• Package BCR &gt;1</li> <li>• Package cost in line with affordability envelope</li> </ul>	<ul style="list-style-type: none"> <li>–</li> <li>xx</li> </ul>

✓✓ strongly positive    ✓ positive    – neutral    x negative    xx strongly negative

Table 1: Analysis of Draft Regional Transport Programme (RTP) against RLTS objectives.

The RTP makes good progress against many indicators, however a number of trade-offs need to be acknowledged. Addressing road network reliability, congestion and unsafe roads will have positive outcomes in terms of access, reliability, safety, economic and regional development. Investment in improved passenger transport services and travel demand management will also contribute to these outcomes, in addition to having positive benefits in relation to reduced greenhouse gas emissions, and improved public health and safety. However, a major shift towards passenger transport investment to the detriment of roading investment is likely to result in significantly worse congestion given that underlying trends mean traffic volumes are likely continue to increase during peak periods and are unabated outside peak times. This affects not only private car users but many of our region’s freight and bus services which depend on the road network.

It is unlikely that any combination of investment in the regional transport network within the current funding and legislative environment will enable the region to achieve a significant reduction in CO<sub>2</sub> levels compared with the 2001 base level on its own. A strong lead from central government is needed in relation to funding and legislative issues, and support for measures such as fuel efficiencies/technologies or fleet emission standards, if local and regional authorities are to have any real impact in relation to this indicator. Advocating for increased Crown funding and legislation

which enables tools such as road pricing to be used on existing roads is therefore important, as is continued support and development of the region's electric powered bus and rail systems.

### 3.1 Programme balance

The total RTP 2006/07-2016 proposes a considerable increase in transport investment in this region over historical levels. The draft programme for 2006/7-16 proposes \$3.1 billion or an average \$301 million a year. While there has been a huge increase in identified funding available, a further \$1.5 billion is needed to fund projects beyond 2016.

<b>Passenger Transport (\$M)</b>	
Corridor	Years 1 - 10
Region wide	1094
Wairarapa	27
Hutt	0
Wellington	91
Western	117
Sub total	1330
<b>Roading (\$M)</b>	
Corridor	Years 1 - 10
Region wide	38
Wairarapa	10
Hutt	360
Wellington	103
Western	1198
TGM loan repayment	26
Sub total	1735
<b>Total</b>	<b>3065</b>

Table 2: Regional Transport Programme - funding summary (July 2006).

The Passenger Transport Programme primarily covers rail and bus operations, but also includes allowances for walking, cycling and road safety promotion, travel planning and regional transport planning. Many of the activities in the Passenger Transport Programme are designed to provide an alternative to car travel during peak periods, as well as off peak accessibility improvements for people who can't or choose not to use a car. It also addresses long-standing under investment issues to improve service reliability. In addition, the RLTS's proposed travel planning activity is aimed at proactively promoting uptake of public transport and active modes, and exploring opportunities to time trips outside peak periods and to reduce unnecessary trips.

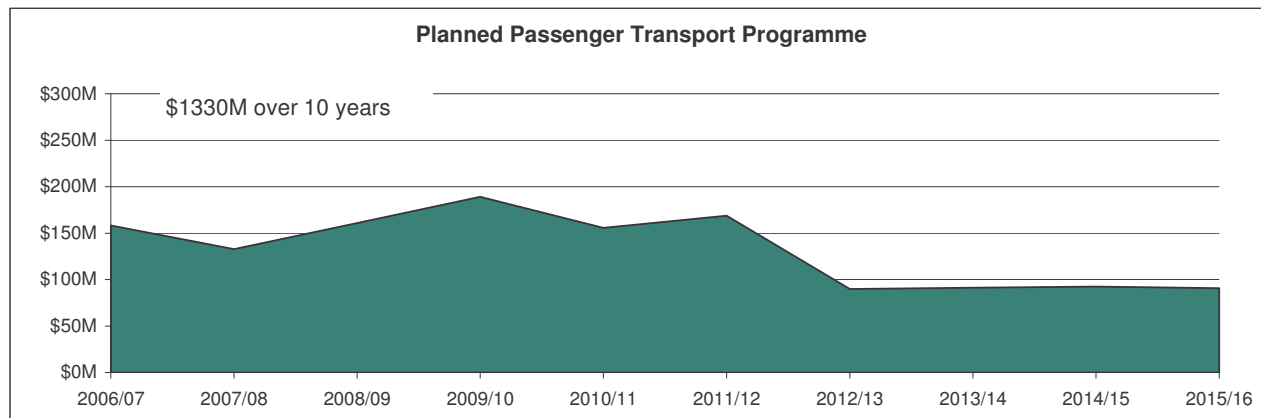
The programme proposes a substantial increase in passenger transport investment. Over the last five years the equivalent PT investment has been around \$50 million per annum. This programme proposes an average \$130 million investment in PT each year, an increase of around 160%.

While many of the projects in the Strategic Roding Programme focus on addressing bottlenecks, thereby improving efficiency by unlocking capacity in the road network, a number of projects provide more efficient connections (e.g., Western Link Road, Grenada – Gracefield) and others primarily improve safety (e.g., Otaihanga Interchange, Muldoon's Corner easing). The proposed Transmission Gully Motorway provides improved national and regional connectivity and reliability while relieving community severance and safety issues. It is the costliest single project, accounting for over half the 10-year roading investment. A cost of this order is one the nation has to address sometime if it is to protect national accessibility through this region's Western Corridor. This

programme proposes to address that cost sooner rather than later, using as first call the specific funding made available for this project.

The RTP is based on the best information available at the time of writing. By necessity, it is founded on a number of assumptions. These are set out in the funding chapter of the RLTS. As activities and projects are developed the scope, cost and timing of programme elements will change to reflect newer information.

## 10-Year Passenger Transport Programme [includes all non-roading activities]



Planned Expenditure		Short Term			Medium Term						
	Total Cost	1	2	3	4	5	6	7	8	9	10
Passenger Transport Activities	\$M	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
1 Rail Operating Contract	137.9	17.7	18.0	18.2	14.8	14.7	11.4	11.3	11.3	11.3	9.1
2 Wairarapa Rolling Stock	26.5	26.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 Rail Rolling Stock	356.9	57.3	44.8	64.9	91.4	30.6	30.6	9.3	9.3	9.3	9.3
4 Western Corridor Rolling Stock	40.0	0.0	0.0	0.0	0.0	24.0	16.0	0.0	0.0	0.0	0.0
5 Mackay's to Raumati Double Track	62.0	0.5	0.5	0.5	1.5	17.0	42.0	0.0	0.0	0.0	0.0
6 Kapiti Rail Stations	15.0	0.2	0.5	5.3	9.0	0.0	0.0	0.0	0.0	0.0	0.0
7 Rail Station Maintenance and Upgrades	28.6	5.9	4.0	4.0	2.8	1.8	2.0	2.0	2.0	2.0	2.0
8 Park & Ride Carparks	10.1	0.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
9 Bus & Ferry Operating Contracts	243.5	24.3	24.3	24.3	24.3	24.3	24.4	24.4	24.4	24.4	24.4
10 Trolley Bus Contracts	69.8	6.5	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.1
11 Bus Stop & Shelter Maintenance	9.6	1.1	1.6	1.0	1.1	0.8	0.8	0.8	0.8	0.8	0.8
12 Transport Information Systems	2.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
13 Bus Priority Measures	21.3	1.0	1.6	1.6	1.6	2.1	2.1	2.1	2.6	3.1	3.1
14 Real Time Information	21.8	0.0	0.3	3.2	6.8	3.3	1.6	1.6	1.7	1.7	1.7
15 Integrated Ticketing	13.3	0.6	4.0	3.6	0.9	0.8	0.7	0.6	0.6	0.6	0.6
16 Service Improvements	44.5	1.9	2.5	3.1	3.7	4.2	4.8	5.3	5.8	6.3	6.8
17 Total Mobility	42.6	3.3	3.5	3.7	3.9	4.2	4.4	4.6	4.8	5.0	5.2
18 Rail Administration	21.3	2.0	1.8	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
19 Bus & Ferry Administration	33.0	3.9	3.4	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
20 Transport Planning	27.8	3.0	2.3	2.4	2.3	2.9	3.0	2.9	3.1	3.0	2.9
21 Cycle Promotion	0.5	0.07	0.04	0.05	0.07	0.04	0.05	0.07	0.04	0.05	0.07
22 Travel Plan Programme	9.6	0.6	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
23 Road Safety Promotion	0.8	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
24 Wairarapa Log Freight	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 Additional Cost of Access HRC Review	90.0	0.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
26 Porirua Interchange	10.0										To be confirmed
27 Electrification to Waikanae	40.0										To be confirmed
28 Pukerua Bay - Paekakariki Double Track	272.0										To be confirmed
29 Kaiwharawhara Throat Improvement				To be confirmed							
30 Hutt Corridor Rail Improvements	173.0										Beyond 10 years
<b>Total Identified Costs</b>	<b>1825</b>	<b>158</b>	<b>133</b>	<b>161</b>	<b>189</b>	<b>156</b>	<b>169</b>	<b>90</b>	<b>91</b>	<b>92</b>	<b>91</b>
Less Costs Beyond 10 Years	495										
<b>Total 10 Year Costs</b>	<b>1330</b>										

Table 3: 10-Year Passenger Transport Programme 2006/07 - 2016.



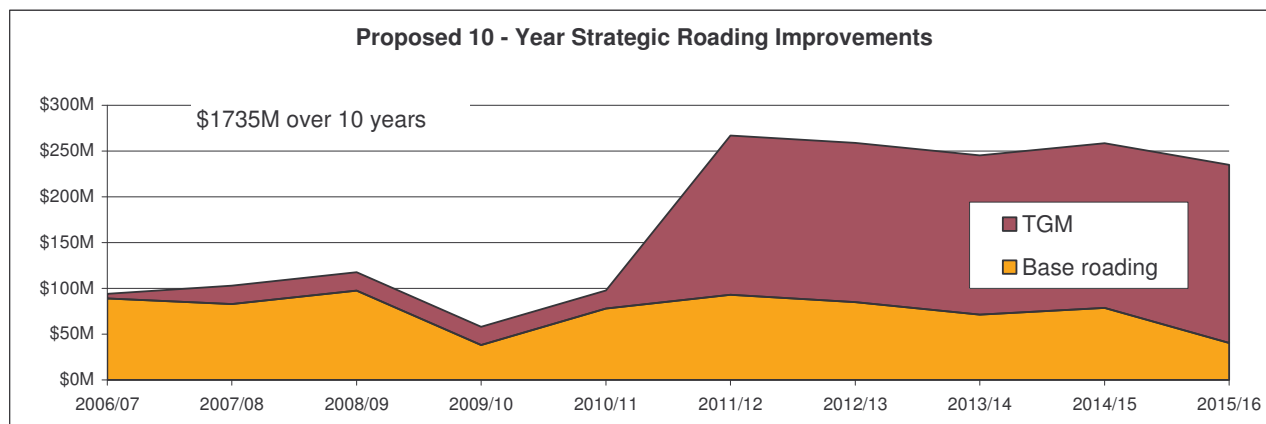
### Passenger Transport Programme - activity descriptions

Corridor	Ref.	Activity	Total 10 Year Cost	Description
Regional	1	Rail operating contract	\$137.9M	The net cost (after fare revenues are deducted) of the TranzMetro contract which supplies all contracted passenger rail services for the region.
Wairarapa	2	Wairarapa rolling stock	\$26.5M	Purchase of 18 new passenger rail carriages for the Wairarapa line to replace existing rolling stock which has reached the end of its useful service life.
Regional	3	Rail rolling stock	\$356.9M	Purchase of 58 new electric multiple units (EMU) and refurbishment of 88 existing Ganz Mavag units. This will increase rail capacity in line with a forecast demand growth of 1.7% pa.  Maintenance of rolling stock necessary to ensure the reliable operation of the urban passenger rail system.  Signal and power system upgrades to accommodate new EMUs.  Improvements to the Johnsonville line (subject to the outcome of the current Northern Suburbs Passenger Transport Study).
Western	4	Western Corridor rolling stock	\$40M	Purchase of 12 new electric multiple units to increase rail capacity on the Western Corridor.
Western	5	MacKay's to Lindale double track	\$62M	Provision of double tracking between MacKay's and Lindale to enable reduction of the timetable frequency from 20 minutes to 15 minutes in the peak periods.
Western	6	Kapiti rail stations	\$15M	Provision of new rail stations at Raumati and Lindale including pedestrian access, security, bus interchange and park and ride facilities.
Regional	7	Rail station maintenance and upgrades	\$28.6M	Allowance to undertake cyclic replacement, refurbishment and minor upgrading of rail stations including security improvements.
Regional	8	Park and ride carparks	\$10.1M	Includes park and ride leases, maintenance and extensions and cycle lockers.
Regional	9	Bus and ferry operations contracts	\$243.5M	Contracted baseline bus and ferry services, including school bus services and Days Bay Ferry.
CBD	10	Trolley bus contracts	\$69.8M	Operation of contracted trolley bus services and maintenance of the overhead wires.
Regional	11	Bus stop and shelter maintenance	\$9.6M	Provision for the ongoing maintenance of bus stops and shelters. Provision of new Metlink signage and its maintenance. New shelters.
Regional	12	Transport information systems	\$2.3M	Ongoing maintenance of Metlink website, call centre information system and text messaging services.
Regional	13	Bus priority measures	\$21.3M	Provision of bus lanes and priority measures, particularly in Wellington CBD.
Regional	14	Real time information	\$21.8M	Establishment and maintenance of bus and rail real time information systems.
Regional	15	Integrated ticketing	\$13.3M	Establishment and maintenance of the bus and rail integrated ticketing system.

Corridor	Ref.	Activity	Total 10 Year Cost	Description
Regional	16	Service improvements	\$44.5M	Allowance for the provision of additional bus services to meet patronage growth.  Potential enhancements to rail services resulting from the Wairarapa service review.
Regional	17	Total Mobility	\$42.6M	Provision of a half priced taxi scheme, available to people with a permanent disability who, because of that disability, cannot access normal PT services - users currently number around 8000. Includes additional funding to provide for improved information and management system and for increasing use of this scheme by eligible persons.  Maintenance of the 29 strong hoist fleet as part of the Total Mobility scheme.
Regional	18	Rail administration	\$21.3M	Timetables, call centre, website, signage, administrative support, customer satisfaction monitoring for passenger rail services.
Regional	19	Bus and ferry administration	\$33.0M	Timetables, call centre, website, signage, administrative support, customer satisfaction monitoring for contracted bus services.
Regional	20	Transport planning	\$27.8M	Development, monitoring, review and reporting of the Regional Land Transport Strategy and RLTS Plans.
Regional	21	Cycle promotion	\$0.5M	Implementation of regional council cycling responsibilities.
Regional	22	Travel plan programme	\$9.6M	Development and implementation of a travel plan programme to encourage the uptake of business, school, community and individual travel plans, consistent with the TDM Strategy action plan.
Regional	23	Road safety promotion	\$0.8M	Implementation of regional council road safety responsibilities.
Wairarapa	24	Wairarapa log freight	\$1M	An Alternative To Road (ATR) project in which GWRC is the applicant for a commercial joint venture between a forestry company & CentrePort to move logs from Masterton to the port using rail thereby removing log truck traffic from Rimutaka Hill Rd.
Regional	25	Additional cost of access HRC Review	\$90M	Allowance for access improvements to PT infrastructure, to be separately funded by a Crown agent.
Western	26	Porirua interchange	To be confirmed	Allowance for a comprehensive upgrading rail station facilities at Porirua, including pedestrian access, bus interchange, security and park and ride facilities.
Western	27	Electrification to Waikanae	To be confirmed	Allowance for extension of urban passenger rail services from Lindale to Waikanae.
Western	28	Pukerua Bay - Paekakariki double track	To be confirmed	Allowance for double rail track between Pukerua Bay and Paekakariki to assist freight movement during commuter peaks thereby increasing service reliability for both freight and passenger services.
Ngauranga to Wellington Airport	29	Kaiwharawhara Throat	To be confirmed	Capacity and reliability improvements at Kaiwharawhara Throat (Wairarapa and North Island Main Trunk railway line merge).

Corridor	Ref.	Activity	Total 10 Year Cost	Description
Hutt	30	Hutt Corridor rail improvements	Beyond 10 years	<p>Allowance for increasing Upper Hutt - Wellington rail frequency at peak from 20 mins to 10 mins and interpeak frequency from 30 min to 15 mins.</p> <p>Increasing Upper Hutt to Wellington rail operating speed.</p> <p>Design and implementation of electrification and services northward beyond Upper Hutt, including new stations at Timberlea and Cruickshank Rd.</p>

## 10 -Year Strategic Roding Programme



Planned Expenditure		Short Term			Medium Term						
		1	2	3	4	5	6	7	8	9	10
		2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
Road Activities	20 year cost \$M										
1 SH Block Programme	60	3	3	3	3	3	3	3	3	3	3
2 TDM Walking & Cycling	10	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
3 TDM Traffic Management	5	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
4 Inner City Bypass	14	14									
5 Waterloo Quay Rail Grade Separation	22				0.3	11	11				
6 Terrace Tunnel Tidal Flow	20			20							
7 Ngauranga – Aotea Capacity Improvement	20			20							
8 Basin Reserve Interchange	27								6	8	13
9 Basin - Airport Capacity	250									Beyond 10 years	
10 Dowse to Petone	73	33	31	9							
11 SH2/58 Grade Separation	37		1	1	5	15	15				
12 Grenada - Gracefield Stage 1 to Petone	180	3	2	1	1	15	20	40	50	48	
13 Grenada - Gracefield Stage 2 CVL	60									Beyond 10 years	
14 Melling Interchange	68									Beyond 10 years	
15 SH58 SH2 to Summit 4 Laning	99										1
16 Petone - Ngauranga incl. cyclelane	60					20	20	20			
17 SH2/Kennedy Good Interchange	21									Beyond 10 years	
18 SH2 Hutt Intersection Safety Improvements	10		2	2	2	2	2				
19 Akatarawa Upgrade	20									Beyond 10 years	
20 MacKays Overbridge	3	2	1								
21 TDM, Western Corridor ATMS+HOV	5	0.5	0.5	4							
22 Centennial Highway Median Barrier	17	12	5								
23 Western Link Road – Stage 1	107	19	27	26	17	9	8				
24 Western Link Road – Stage 3	19		4	6	8						
25 Western Link Road – Stage 2	42				0.1	2	12	19	10		
26 Pukerua Bay Safety Improvements	2	1	1								
27 Paekakariki Traffic Signals	1	1									
28 TGM Preparation	85	5	20	20	20	20					
29 Transmission Gully Motorway Construction	870						174	174	174	174	174
30 TGM Debt Servicing	382									6	21
31 SH58 Upgrade TGM to SH2	44									Beyond 10 years	
32 Otaihanga Interchange (2 lane)	35							1	1	18	15
33 Waikanae Upgrade	60						1	1	1	1	8
34 Tawa Interchange	15									Beyond 10 years	
35 Rimutaka Corner Easing (Muldoon's)	10	0.2	5	5							
<b>Total Identified Costs</b>	<b>2753</b>	<b>94</b>	<b>103</b>	<b>118</b>	<b>58</b>	<b>98</b>	<b>267</b>	<b>259</b>	<b>245</b>	<b>258</b>	<b>235</b>
Less Costs Beyond 10 Years	1018										
<b>Total 10 Year Costs</b>	<b>1735</b>										

Table 4: 10-Year Strategic Roding Programme 2006/07 - 2016.

### Strategic Rooding Programme - project descriptions

Corridor	Ref.	Project	Total 10 Year Cost	Description
Regional	1	SH block programme	\$30M	Funding allowance for small projects generally costing less than \$3M each, usually with a significant safety component.
Regional	2	TDM, walking and cycling	\$5M	Funding allowance for walking and cycling projects which implement the regional pedestrian and cycling strategies.
Regional	3	TDM, traffic management	\$2.5M	Funding allowance for TDM roading related projects including ATMS, HOV lanes, and traffic management improvements, consistent with the TDM Strategy action plan.
CBD	4	Inner City Bypass	\$14M	Completion of a new route between Willis St and Kent Tce. State highway traffic will be removed from Ghuznee St allowing it to return to a local access road. Vivian St will flow eastbound and a new route, being an extension of Buckle St, will flow west bound. The route is fully connected to the local road network via traffic signal controlled intersections. Footpaths and cycle lanes are being provided.
CBD	5	Waterloo Quay rail grade separation	\$22M	Rail over bridge on Waterloo Quay to facilitate more frequent rail freight movement to CentrePort.
CBD	6	Terrace Tunnel traffic flow	\$20M	Allowance for the development of a traffic flow system for the Terrace Tunnel to accommodate the direction of peak flows. Links to Wellington Inner City Bypass and motorway improvements. The need for and scope of this project will be considered in more detail in the current Ngauranga to Airport Study.
CBD	7	Ngauranga – Aotea capacity improvement	\$20M	Allowance for the provision of an additional lane in each direction to enable existing feeder road capacity to be more efficiently utilised. Prerequisite to Petone – Ngauranga HOT lane and Transmission Gully Motorway. Also related to City Gateway project, Terrace Tidal Flow and Basin to Airport capacity projects. The need for and scope of this project will be considered in more detail in the current Ngauranga to Airport Study.
CBD	8	Basin Reserve interchange	\$27M	Allowance for a flyover out of Kent Terrace and over the top of the Basin Reserve (Meritec, 2000, option H). Adds to the benefits of the inner city bypass. The need for and scope of this project will be considered in more detail in the current Ngauranga to Airport Study.
CBD	9	Basin - Airport capacity	Beyond 10 years	Allowance for four laning between the Basin Reserve and Evans Bay, including Mount Victoria Tunnel duplication. The need for and scope of this project will be considered in more detail in the current Ngauranga to Airport Study.

Corridor	Ref.	Project	Total 10 Year Cost	Description
Hutt	10	Dowse to Petone upgrade	\$73M	The Dowse to Petone upgrade is aimed at reducing delays and improving safety along this section of SH2. The proposed improvements include building an overbridge at the Korokoro Intersection (connecting the Western Hills with Hutt Road) and an interchange at the Dowse Drive intersection (connecting Dowse Drive and Hutt Road via a roundabout raised over the highway). It also includes safety improvements between the existing Korokoro and Petone intersections. All appeals have now been resolved. Design work is complete. All required properties have now been acquired. Dowse interchange provides access to SH2 for the proposed Grenada – Gracefield Stage 2, Cross Valley Link.
Hutt	11	SH2/58 grade separation	\$37M	To improve safety at the intersection of SH 2 with SH 58, Transit is proposing to build a grade-separated interchange (similar in layout to the Porirua Mungavin interchange). Complements SH58 (SH2 - summit) four laning.
Hutt	12	Grenada - Gracefield Stage 1, SH1 – Petone link road	\$180M	The investigation of a new link road between Petone and Grenada was identified as a high priority in the Hutt Corridor Plan adopted in November 2003. If established, it will provide a more efficient link between the Hutt Valley and Porirua and shift traffic from the already congested Ngauranga – Petone and Ngauranga Gorge routes. The project will also need to include a major upgrade to the SH2/Horokiwi intersection. Links to Wellington Regional Strategy and Western Corridor Study. Also needs to be considered with Petone-Ngauranga HOT lane and Cross Valley Link proposals.
Hutt	13	Grenada - Gracefield Stage 2 CVL	Beyond 10 years	Establishment of a new Cross Valley Link (CVL) road between the (yet to be built) Dowse interchange and Randwick Rd/Whites Line. Also involves traffic calming the Petone Esplanade to discourage traffic. Links to Dowse to Petone upgrade. CVL has synergies with the Grenada to Gracefield stage 1 and the Petone-Ngauranga HOT lane proposals.
Hutt	14	Melling interchange	Beyond 10 years	This project involves the construction of a new grade separated interchange to replace the traffic signals at the Melling intersection on SH2.
Hutt	15	SH58 (SH2-summit) 4 laning	\$1M	To improve safety along the 5 km length of SH 58 from SH 2 to Harris Road, Transit is proposing to realign the road and upgrade it to four lanes with a median barrier. Appeals have been lodged against the resource consents and Notice of Requirement. Transit is working to resolve these. There is also some property yet to be acquired. Links to SH2/58 interchange and SH58 upgrade TGM to SH2.
Hutt	16	Petone - Ngauranga HOT lane and cycleway	\$60M	Establishment of a new fifth lane between Petone and Ngauranga, to be managed as a tidal flow, possibly with a toll for low occupancy vehicles.
Hutt	17	SH2/Kennedy Good Interchange	Beyond 10 years	The replacement of traffic signals with an interchange at the Kelson / Kennedy Good Bridge intersection to reduce delays, improve safety and increase accessibility.
Hutt	18	SH2 Hutt intersection safety improvements	\$10M	Allowance to undertake safety upgrades at minor road intersections along SH2 between Melling and SH58.

Corridor	Ref.	Project	Total 10 Year Cost	Description
Hutt	19	Akatarawa upgrade	Beyond 10 years	Existing 35 km route (21 km in UHCC & 14 km in KCDC) is windy and narrow with poor sight distance. It is proposed to widen the route to 2 lanes between SH1 and SH2 suitable for vehicles up to 12 m in length including 45 to 50 seater buses and non-articulated trucks providing an alternative regular and emergency route between the two corridors.
Western	20	MacKays Overbridge	\$3M	Completion of the bridge over the North Island Main Trunk Rail Line on SH1 south of Paraparamu.
Western	21	Travel Demand Management, Western Corridor ATMS+HOV	\$5M	Allowance for implementation of advanced traffic management measures and high occupancy vehicle lanes on the Western Corridor strategic roading network. Details have yet to be determined.
Western	22	Centennial Highway median barrier	\$17M	Continuation of the existing trial wire rope barrier to cover the whole length of the coastal section of SH1 between Paekakariki and Pukerua Bay.
Western	23	Western Link Road – Stage 1	\$107	The proposed Western Link Road is a joint project between Kapiti Coast District Council and Transit to build a parallel route to SH1 between Peka Peka (north of Waikanae) and Poplar Avenue (in Raumati). This parallel route would assist in relieving congestion on both the highway and local roads and is planned to be built in three stages. Stage 1 establishes the central section between Waikanae and Raumati. Links to Western Corridor projects and Western Link Road Stages 2 and 3.
Western	24	Western Link Road – Stage 3	\$19M	Completion of Stage 3, the southern section of the project.
Western	25	Western Link Road – Stage 2	\$42M	Stage 2 completes the route between Waikanae and Peka Peka. Links to Western Corridor projects and Western Link Road Stages 1 and 3.
Western	26	Pukerua Bay safety improvements	\$2M	Allowance for safety improvements, largely directed at addressing pedestrian conflicts, in the urban section of Pukerua Bay.
Western	27	Paekakariki traffic signals	\$1M	Allowance for safety improvements at the intersection of SH1/Paekakariki, but at a scale consistent with the long term down grading of the highway level of service through this section once the new Transmission Gully Motorway is open.
Western	28	Transmission Gully Motorway preparation	\$85M	Allowance for preparatory works to enable construction of Transmission Gully Motorway to commence in five years.
Western	29	Transmission Gully Motorway construction	\$870M	Construction of a new inland highway between MacKays and Linden.
Western	30	Transmission Gully Motorway debt servicing	\$26M	Allowance for debt servicing to address the current funding gap resulting from the construction expenditure on Transmission Gully Motorway.
Western	31	SH58 upgrade TGM to SH2	Beyond 10 years	Allowance to upgrade SH58 between TGM and SH2. Links to project 15 (SH58, SH2 – summit 4 laning).
Western	32	Otaihanga interchange (2 lane)	\$35M	Grade separated interchange on SH1 at the intersection to Otaihanga township.

Corridor	Ref.	Project	Total 10 Year Cost	Description
Western	33	Waikanae upgrade	\$12M	Allowance to commence upgrading of SH1 through the Waikanae urban area to address capacity and safety issues. The timing of this project has been delayed assuming some relief will be provided by the Western Link Road project. (projects 23-25).
Western	34	Tawa interchange	Beyond 10 years	Upgrading the Tawa interchange entry and exit ramps to address substandard areas and improve safety.
Wairarapa	35	Rimutaka Corner Easing (Muldoon's)	\$10M	This project includes straightening several tight bends in the highway about 500 metres south of Rimutaka Hill summit. Heavy vehicles regularly cross the centre line at this site. The Transit Board has approved a scheme to provide a 60km/h speed environment along this section of the highway. The project is consistent with the aim to continually improve access to Wairarapa by upgrading the hill road.