



KEY TRANSPORT ISSUES

Transit, along with local and central government are working together to achieve a sustainable land transport system in new ways.

Transit will work closely with regional and district councils to ensure that any substantial upgrading in the next 10 to 20 years is properly considered and planned, in order to relieve congestion and support regional growth strategies. This requires agreement on amendments to road and public transport plans and shared funding responsibilities for both local and national infrastructure and services.

Planning activities such as Nelson/Marlborough/Tasman Regional Land Transport Strategies, Long-Term Council Community Plans, and Transit's State Highway Forecast all help in this process.

In meeting the objectives of the NZTS and LTMA the key regional transport issues for the Nelson/Marlborough/Tasman region include:

- › Road safety
- › Delays at some key intersections during peak periods
- › Poor air quality in some parts of Nelson
- › Traffic growth within and beyond Blenheim.
Traffic growth is continuing on arterial roads in the Blenheim/Wairau Plains environs. Ferry traffic is a relatively unique issue with "tidal" flows throughout the day
- › Route security and efficiency to the east, including the Awatere Bridge, and south of Nelson, including SH6 Hope Saddle
- › Forestry traffic: Marlborough is anticipating a significant increase in forestry to around one million tonnes per year, of which two-thirds is expected to be exported through Port Shakespeare at Picton. Nelson and Tasman are similarly expecting a significant growth to two million tonnes, much of which will be exported through the Port of Nelson
- › Tourist traffic: particularly to Nelson Lakes National Park, Marlborough Sounds, Abel Tasman Park and Kahurangi National Park.

How we plan to address these key issues

While there is a significant emphasis for Transit in Marlborough, Nelson and Tasman on maintaining the existing state highway network, there are a number of activities in the 10-year State Highway Forecast to improve road safety as well as route security and efficiency in the Nelson/Marlborough/Tasman region. In addition, a strategic study is in progress to determine the future transport needs for the Nelson to Brightwater Corridor. The outcomes of this study will be considered in future forecasts.

A further priority is managing the connections between state highways and local roads, as well as access to state highways from adjacent land, to support the medium to long distance travel function of key arterial roads.

Substantial improvements have been made to the state highway network recently, especially in Nelson City, the Tasman District and Blenheim. State highways in Marlborough, Nelson and Tasman are now generally of a high standard. To ensure this standard is maintained, the Awatere Bridge Replacement project on SH1, south of Blenheim, was funded for construction in 2005/2006 and is underway. Additionally, the SH6 Whangamoia South and SH60 Ruby Bay projects are included for construction, subject to confirmation of project scope.

Large improvement projects, with construction costs of more than \$3.4M have been indicated for 10 years while projects with construction costs of less than \$3.4M are proposed over the next three years and are shown in the table. The locations of Nelson/Marlborough/Tasman projects in the 10-year forecast are shown on the map.

Road Safety

Transit has identified a number of small and medium sized projects to improve the safety and efficiency of sections of state highway and to improve safety at intersections, for progress in the next three years. Projects include: SH60 Flush Median and Research Orchard Corner Realignment in Appleby and SH62 seal widening of Rapaura Road from Jefferies to Wratts, and Wratts to SH1. Further work on the management or removal of roadside hazards will continue.

Secure and Efficient Transport Corridors

The following intersection improvements are aimed at reducing congestion and contributing to more efficient transport corridors: constructing the Tahunanui traffic signals in Nelson and the McGlashen Avenue intersection in Richmond, both on SH6.

Passing Opportunities

Limited passing opportunities in some parts of the region's road network lead to driver frustration and accidents. Two passing lane projects have been identified for progress in the next three years on SH1 at Para and Grovetown, both north of Blenheim.

Walking and Cycling

Three projects that are part of Nelson City's Atawhai Walking and Cycling project, have been identified for construction on SH6 to the north of Nelson: Bayview Road to Atawhai Drive, Marybank to Tui Glen Road, and Tui Glen Road to Bayview Road.

Stock Effluent Disposal Facilities

As part of a national programme to provide a safe and convenient network of stock effluent disposal facilities Transit proposes to progress a facility at Murchison and at one other location on SH6 yet to be determined.

Strategic Studies

The Nelson to Brightwater Corridor Study is a joint study being carried out by Transit, Nelson City Council and Tasman District Council. The purpose of the study is to develop a long-term transport strategy for the greater Nelson and Richmond areas, including the SH6 corridor from Hira to Brightwater and the SH60 corridor from SH6 to Pea Viner Corner. In early 2005 the first stage of public consultation was undertaken and a strategic transport model was built to assess a range of transportation packages. The second stage of public consultation was completed in November 2005. Feedback was received on four different transportation improvement packages. That feedback is now being used to develop a long-term transportation strategy for the region. Completion of the study is expected in mid 2006 and the outcomes will be considered in future State Highway Forecasts.

Strategic studies for the Tasman region include the Tasman Passing Lane Investigation Study and the Richmond Development and Transportation Study, in partnership with Tasman District Council.

A study of the Blenheim and Wairau Plains is also proposed in conjunction with Marlborough District Council.

Maintenance and Operations

The safe operation of the state highway network is a key function for Transit. Processes are in place to manage traffic efficiently, provide consistent and reliable information for road users, undertake maintenance work on the highway in the safest and least disruptive way, monitor locations where crashes occur and, where appropriate, take corrective action.

The state highway network is a \$15 billion transport infrastructure asset that demands sophisticated and effective management. Transit has systems in place to do this, ranging from infrastructure and traffic databases to natural features inventories, long-term deterioration modelling tools, and annual condition data collection supported by advanced contract delivery methods and regular performance reporting.

Further, improvements to the way traffic is managed at incidents and in congested urban areas are being investigated and implemented.

Maintenance and operations activities make up the majority of the forecast expenditure in the Marlborough/Nelson/Tasman region. In addition to preserving the highway network and undertaking maintenance and improvements to meet future levels of service, we propose to:

- › Resurface 105 kilometres of highway, including 6 kilometres with low noise surfacing
- › Strengthen 7 kilometres of highway
- › Continue to improve the prediction of winter road conditions in order to improve emergency responses to snow and ice, and continue to trial the use of the anti-icer calcium magnesium acetate
- › Continue to manage local roads in Marlborough (under contract to Marlborough District Council).

Nelson/Marlborough/Tasman State Highway Plan and Forecast for 2006/07 to 2015/16

Legend: Nature of work

	Committed Investigation		Committed Design		Committed Construction
	Investigation		Design		Construction

SH	Project	Primary LTMA Objective	Estimated Total Cost (\$M)
			\$ < 5M \$\$ 5-20M \$\$\$ 20-100M \$\$\$\$ 100+M

Large Projects (Committed)

1 Awatere Bridge | 1.84

Large Projects (Priority Order)

60 Ruby Bay Bypass @ \$\$\$

6 Whangamao South Realignment @ \$\$\$

6 Hope Saddle Realignment @ \$\$\$

Small and Medium Projects (Priority Order)

60 Research Orchard Corner Realignment \$

6 McGlashen Avenue Intersection \$

62 SH62 Rapaura-Jefferies to Wratts \$

62 SH62 Rapaura-Wratts to SH1 \$

6 Tahunanui Intersection \$

60 SH60 Flush Median @ § \$

Passing Lanes (Priority Order)









1 Para Nth Bd PL @ \$

1 Grovetown Nth Bd PL \$

@ denotes regionally distributed funds

§ in conjunction with third party contributions outside NLTP funding

The grey symbols show indicative timings given that the investigation or design phase has not been completed.

	Land Transport Programme 06/07	2-5 Year Plan	6-10 Year Forecast
			
			
			
			

Nelson/Marlborough/Tasman State Highway Plan and Forecast for 2006/07 to 2015/16

Legend: Nature of work

		
Committed Investigation	Committed Design	Committed Construction
		
Investigation	Design	Construction

The grey symbols show indicative timings given that the investigation or design phase has not been completed.

SH	Project	Primary LTMA Objective	Estimated Total Cost (\$M)	Land Transport Programme 06/07	2-5 Year Plan	6-10 Year Forecast
	Stock Effluent Disposal Facility					
6	Murchison	Environmental	\$			
	Walking & Cycling					
6	Atawhai W/C Project – Bayview Rd to Atawhai Dr	Access	\$			
6	Atawhai W/C Project – Marybank to Tui Glen Rd	Access	\$			
6	Atawhai W/C Project – Tui Glen Rd to Bayview Rd	Access	\$			

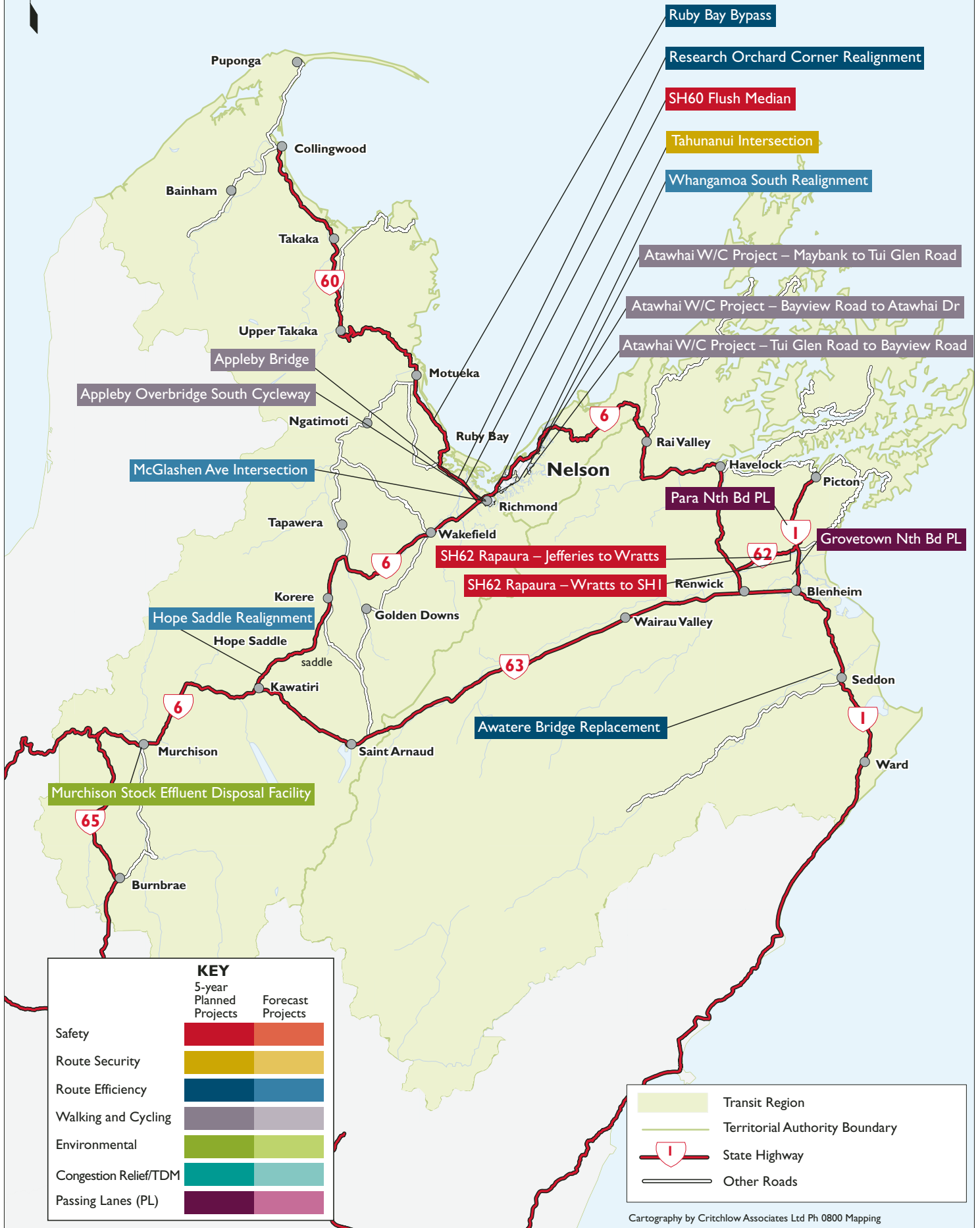
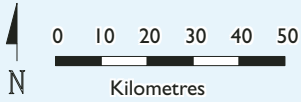
Strategic Studies

- North Nelson to Brightwater (committed)
- Richmond Development and Transportation Study (joint study with Tasman District)
- Blenheim/Wairau Plains Study

Fig NM

NELSON/MARLBOROUGH/TASMAN REGIONS

State Highway Network at 01 July 2006



	5-year Planned Projects	Forecast Projects
Safety		
Route Security		
Route Efficiency		
Walking and Cycling		
Environmental		
Congestion Relief/TDM		
Passing Lanes (PL)		

	Transit Region
	Territorial Authority Boundary
	State Highway
	Other Roads

Cartography by Critchlow Associates Ltd Ph 0800 Mapping



KEY TRANSPORT ISSUES

Transit, along with local and central government are working together to achieve a sustainable land transport system in new ways.

Transit will work closely with regional and district councils to ensure that any substantial upgrading in the next 10 to 20 years is properly considered and planned, in order to relieve congestion and support regional growth strategies. This requires agreement on amendments to road and public transport plans and shared funding responsibilities for both local and national infrastructure and services.

Planning activities such as Canterbury's Regional Land Transport Strategy, Long-Term Council Community Plans, and Transit's State Highway Forecast all help in this process.

In meeting the objectives of the NZTS and LTMA the key regional transport issues for the Canterbury region include:

- › Road safety
- › Congestion: traffic on the main arterial routes within Christchurch City is increasing by 4 percent each year. Journeys during peak periods are regularly taking 15-20 minutes longer than during off-peak periods
- › Ongoing residential development on the outskirts of Christchurch. The Greater Christchurch Urban Development Strategy has implications for transport and for the social, economic and cultural wellbeing of the Christchurch community, including integrating other forms of transport with the road network
- › Ongoing commercial development to the west of Christchurch, around SH1 and SH73
- › Dairy activity in south Canterbury centered on the Clandeboye Dairy Factory
- › Access to the Ports of Lyttleton and Timaru
- › Continuing tourism development around Kaikoura, south Canterbury and the Mackenzie Country

- › Provision of passing opportunities on SH1, north of Kaikoura and south of Ashburton
- › Significant heavy vehicle growth on SH1
- › High car ownership and use in Christchurch and Canterbury.

How we plan to address these key issues

While there is a significant emphasis for Transit in Canterbury on maintaining the existing state highway network, there are a number of activities prioritised in the 10-year State Highway Forecast to reduce congestion, improve road safety, and improve the route security and efficiency of routes into and out of Canterbury.

A further priority is managing the connections between state highways and local roads, as well as access to state highways from adjacent land, to support the strategic long distance travel function of key arterial roads.

Large improvement projects (with construction costs of more than \$3.4M) have been indicated for 10 years while projects with construction costs of less than \$3.4M are proposed over the next three years and are shown in the table. The locations of Canterbury projects in the 10-year forecast are shown on the map.

Travel Demand Management

The highest priority for the Canterbury region is the implementation of measures to support a Travel Demand Strategy outlined in the Regional Land Transport Strategy. Travel Demand Management (TDM) is a combination of activities that together seek to reduce the rate of traffic growth by measures such as encouraging the use of alternative modes.

Transit intends to implement TDM through infrastructure improvements for public transport on state highways that coincide with core public transport routes, such as Main North Rd. Transit will continue to work with Environment Canterbury and Christchurch City Council to further the development of the Christchurch Travel Demand Management Strategy.

Access to the North

Further project investigation and scoping will be undertaken on improving access on northern approaches to Christchurch. Specific activities include a four-lane arterial to link the Northern Motorway with QE2 Drive, QE2 four-laning and the Western Bypass of Belfast, (Christchurch Northern Links Study).

Access and Mobility around Christchurch

The duplication and extension of the Christchurch Southern Motorway (SH73) south of the city and the four-laning of the Western Corridor (SH1) between Sawyers Arms and Waterloo Road will ensure efficient travel along these key routes.

Road Safety – Secure and Efficient Transport Corridors

Transit has identified a number of activities to improve the safety and efficiency of sections of state highway, including intersections. Proposed improvements are aimed at reducing congestion and contributing towards more efficient transport corridors. Further work on the management or removal of roadside hazards will continue.

Passing Opportunities

Limited passing opportunities in some parts of the region's road network lead to driver frustration and crashes. Transit plans to progress further passing lanes on SH1 between north of Kaikoura and south of Ashburton.

Walking and Cycling

Walking and cycling activities identified for Canterbury include Christchurch City Cycle Lane Safety Improvements and investigations into options for improving cycle safety at “pinch points” around Canterbury.

Stock Effluent Disposal Facilities

As part of a national programme to provide a safe and convenient network of stock effluent disposal facilities we propose to progress the Pareora Stock Effluent Disposal Facility, south of Timaru, and the Kaikoura Stock Effluent Disposal Facility, both on SH1.

Strategic Studies

We are proposing to undertake a number of strategic studies for the Canterbury region, to improve our long-term planning and assist good decision-making.

The lack of alternative access to and through the West Coast means that SH73 is of great strategic importance to the West Coast economy. A strategic study looking at route security is to be undertaken. A strategic study for Mingha Bluff to Rough Creek on SH73 will also be undertaken to identify state highway improvements at reasonable cost.

Maintenance and Operations

The safe operation of the state highway network is a key function for Transit. Processes are in place to manage traffic efficiently, provide consistent and reliable information for road users, undertake maintenance work on the highway in the safest and least disruptive way, monitor locations where crashes occur and, where appropriate, take corrective action.

The state highway network is a \$15 billion transport infrastructure asset that demands sophisticated and effective management. Transit has systems in place to do this, ranging from infrastructure and traffic databases to natural features inventories, long-term deterioration modelling tools, and annual condition data collection supported by advanced contract delivery methods and regular performance reporting.

Further, improvements to the way traffic is managed at incidents and in congested urban areas are being investigated and implemented.
















Maintenance activities make up the majority of the forecast expenditure in the Canterbury. In addition to preserving the highway network and undertaking maintenance and improvements to meet future levels of service, we propose to:

- › Undertake 32km of resurfacing, including 1km with low noise surfacing
- › Strengthen 5km of state highway
- › Improve the availability of road condition information to road users at critical points on the network using electronic variable message signs, as already in place on SH7 (Lewis Pass and Rahu Saddle)
- › Introduce thermal mapping of the inland network to better predict where ice will occur
- › Introduce more road weather stations to improve road condition predictions and maintenance team responses to ice and snow, and continue to trial the use of the de-icer calcium magnesium acetate
- › Continue risk analysis of rock falls and river erosion and prioritise work accordingly
- › Strengthen a number of bridges on the network to reduce their vulnerability in the event of a severe earthquake
- › Continue to maintain and improve the coastal defences of SH1, north and south of Kaikoura
- › Work with the Department of Conservation to ensure that maintenance work within New Zealand's national parks represents world best practice
- › Continue with a programme of improvements to tunnels to more closely meet international standards.

Canterbury State Highway Plan and Forecast for 2006/07 to 2015/16

Legend: Nature of work

	Committed Investigation		Committed Design		Committed Construction
	Investigation		Design		Construction




SH	Project	Primary LTMA Objective	Estimated Total Cost (\$M)	Land Transport Programme 06/07	2-5 Year Plan	6-10 Year Forecast
			\$ < 5M \$\$\$ 20-100M \$\$\$\$ 100+M			
	Large Projects (Committed)					
74	Main North Road 4L Stage 2	Route Efficiency	1.5			
	Large Projects (Priority Order)					
73	Christchurch TDM Implementation	Congestion Relief/TDM	\$			
I	Christchurch Southern Motorway Extension @ \$	Route Efficiency	\$\$\$			
I	Christchurch Northern Arterial Rural @	Route Efficiency	\$\$\$			
I	Memorial Ave Intersection @	Congestion Relief/TDM	\$\$			
I	Memorial Ave to Yaldhurst Rd 4L	Route Efficiency	\$			
I	Sawyers Arms to Memorial Ave 4L	Route Efficiency	\$			

The grey symbols show indicative timings given that the investigation or design phase has not been completed.

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 \$ in conjunction with third party contributions outside NLTP funding

Canterbury State Highway Plan and Forecast for 2006/07 to 2015/16

Legend: Nature of work

	Committed Investigation		Committed Design		Committed Construction
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SH	Project	Primary LTMA Objective	Estimated Total Cost (\$M)	Land Transport Programme 06/07	2-5 Year Plan	6-10 Year Forecast
			\$ < 5M \$\$ 5-20M \$\$\$ 20-100M \$\$\$\$ 100+M			
Projects inside 6-10 year Forecast						
I	Yaldhurst Rd to Waterloo Rd 4L	Route Efficiency	\$			
I	Okarahia North Realignment ®	Safety	\$			
Small and Medium Projects (Priority Order)						
74	Marshland Rd / QEII Dr- Intersection Upgrade	Congestion Relief/TDM	\$			
73	Yaldhurst Rd/Curletts Rd Intersection	Route Efficiency	\$			
I	East-West Street Int (North)	Safety	\$			
I	Halswell JR/MSR Intersection Signals TS	Route Efficiency	\$			
73	Pound Road Intersection ®	Route Efficiency	\$			
I	Rolleston Intersection Improvements ® §	Route Efficiency	\$			
I/8	SH1 & SH8 Intersection Improvements I/S ®	Route Efficiency	\$			
8	Burkes Pass West Curve Realignment ®	Safety	\$			
75	Dunbars Road Intersection ®	Route Efficiency	\$			

® denotes regionally distributed funds

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Canterbury State Highway Plan and Forecast for 2006/07 to 2015/16

Legend: Nature of work

	Committed Investigation		Committed Design		Committed Construction
	Investigation		Design		Construction

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SH	Project	Primary LTMA Objective	Estimated Total Cost (\$M)	Land Transport Programme 06/07	2-5 Year Plan	6-10 Year Forecast
			\$ < 5M \$\$ 5-20M \$\$\$ 20-100M \$\$\$\$ 100+M			

Passing Lanes (Priority Order)

I	Hinds Passing Lane PL	Safety	\$			
I	Limestone Creek Slow Vehicle Bay	Safety	\$			
I	St Andrews North PL ®	Safety	\$			
I	Ealing PL ®	Safety	\$			
I	Orari North PL ®	Safety	\$			

Stock Effluent Disposal Facility

I	Pareora	Environmental	\$			
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Walking & Cycling

	Cycle Pinch Point options investigations	Access	\$			
	Christchurch City Cycle Lanes	Access	\$			

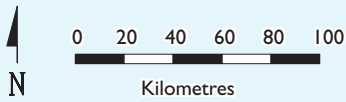
Strategic Studies

- Christchurch Urban Development Strategy (committed)
- SH1 Christchurch Northern Links
- SH1 Woodend Bypass
- SH73 Route Security

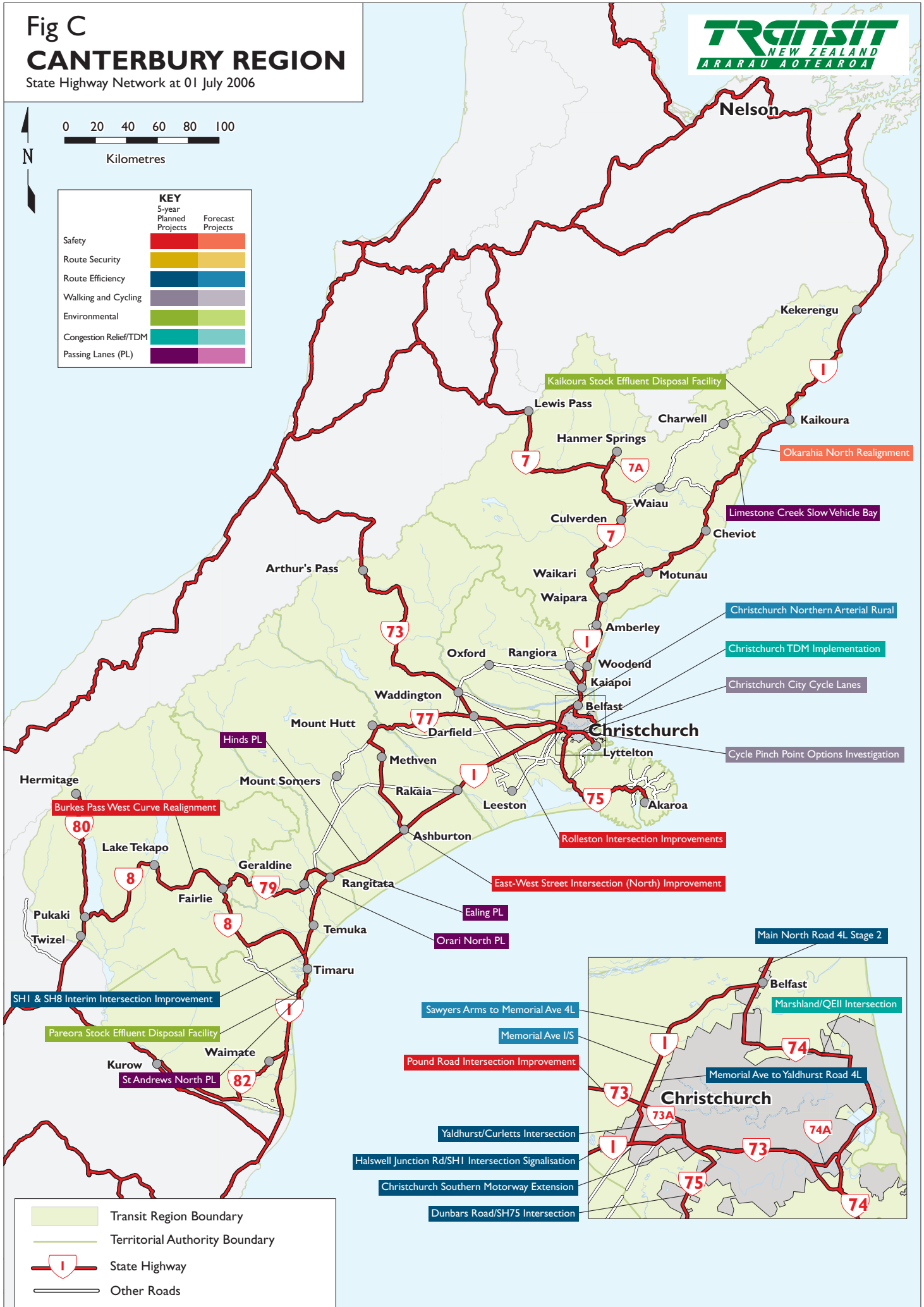
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Fig C CANTERBURY REGION

State Highway Network at 01 July 2006



	5-year Planned Projects	Forecast Projects
Safety		
Route Security		
Route Efficiency		
Walking and Cycling		
Environmental		
Congestion Relief/TDM		
Passing Lanes (PL)		





KEY TRANSPORT ISSUES

Transit, along with local and central government are working together to achieve a sustainable land transport system in new ways.

Transit will work closely with regional and district councils to ensure that any substantial upgrading in the next 10 to 20 years is properly considered and planned, in order to relieve congestion and support regional growth strategies. This requires agreement on amendments to road and public transport plans and shared funding responsibilities for both local and national infrastructure and services.

Planning activities such as the West Coast's Regional Land Transport Strategy, Long-Term Council Community Plans, and Transit's State Highway Forecast all help in this process.

In meeting the objectives of the NZTS and LTMA the key regional transport issues for the West Coast region include:

- › Road safety: a key concern is the potential conflict between heavy and light vehicle traffic, particularly on single-lane bridges on SH6
- › Ensuring secure and efficient transport corridors to the east via SH73 and Arthur's Pass, and via SH7 and Lewis Pass, to the north via SH6 and Hope Saddle, and to the south via SH6 and the Haast Pass
- › Increasing traffic due to the coal mining, dairy and tourist industries
- › Lack of passing opportunities.

How we plan to address these key issues

State highway 6 forms the essential spine for land transport on the West Coast. Significant improvements to SH73 over recent years have greatly improved the security of this strategic link. The latest improvement to be completed is the construction of a new rail bridge at the Otira Underpass, which has allowed the vertical clearance to be increased for road traffic. Vehicles of all legal dimensions can now use this route to access the West Coast.

Traffic volumes on the West Coast are generally quite low and the state highway network is maintained to a high standard for low-volume highways. In maintaining this standard, Transit acknowledges the large tourist content of the traffic in this region. While the emphasis for Transit in the West Coast region is on maintaining the existing state highway network, there are a number of activities prioritised in the 10-year State Highway Forecast to improve road safety as well as route security and efficiency in the West Coast region.

A further priority is managing the connections between state highways and local roads, as well as access to state highways from adjacent land, to support the strategic long distance travel function of key arterial roads.

The Arahura River Bridge is in urgent need of replacement given its age and condition. There would be significant negative impacts on the West Coast network if the bridge was to become unserviceable. We are working closely with ONTRACK with a view to constructing a new bridge within the next 5 years.

The lack of alternative access to and through the West Coast means that both SH73 and SH6 are of great strategic importance to the West Coast economy. The scoping study on the Gates of Haast Realignment will be completed on SH6 and a strategic study for Mingha Bluff to Rough Creek on SH73 will be undertaken to identify state highway improvements at reasonable cost.

Large improvement projects (with construction costs of more than \$3.4M) have been indicated for 10 years while projects with construction costs of less than \$3.4M are proposed over the next three years and are shown in the table. The locations of West Coast projects in the 10-year State Highway Forecast are shown on the map.

Road Safety – Secure and Efficient Transport Corridors

Transit has identified a number of small to medium activities to improve the safety and efficiency of sections of state highway, including the Goat Creek Bridge Replacement on SH73.

In addition, traffic signals will be installed on SH6 through the Buller Gorge, to improve the safety of passing vehicles in some of the narrower locations.

Stock Effluent Disposal Facilities

In accordance with the plan agreed with local authorities the stock effluent disposal facility on SH6 in Hokitika has been completed and a new stock effluent disposal facility is proposed for SH7 at either Reefton or Springs Junction, depending on stock movements. A facility at Jacksons on SH73 is also under development.

Walking and Cycling

We are proposing to undertake the West Coast Cycle Strategy, in association with local authorities, to improve our long term planning and ensure good decisions that lead to safer and more efficient transport.

Passing Lanes

Limited passing opportunities in some parts of the region's road network lead to driver frustration and accidents. Transit proposes to develop a strategy to identify possible locations for passing opportunities, using a mix of slow vehicle bays, seal widening and passing lanes.

Maintenance and Operations

The safe operation of the state highway network is a key function for Transit. Processes are in place to manage traffic efficiently, provide consistent and reliable information for road users, undertake maintenance work on the highway in the safest and least disruptive way, monitor locations where crashes occur and, where appropriate, take corrective action.

The state highway network is a \$15 billion transport infrastructure asset that demands sophisticated and effective management. Transit has systems in place to do this, ranging from infrastructure and traffic databases to natural features inventories, long-term deterioration modelling tools, and annual condition data collection supported by advanced contract delivery methods and regular performance reporting.









Further, improvements to the way traffic is managed at incidents and in congested urban areas are being investigated and implemented.

Maintenance activities make up the majority of the forecast expenditure in the West Coast region. In addition to preserving the highway network and undertaking maintenance and improvements to meet future levels of service, we propose to:


- › Undertake 91km of resurfacing, including 1km with low noise surfacing
- › Strengthen 8km of highway
- › Improve the availability of road condition information to road users at critical points on the network using electronic variable message signs, as erected on SH7 (at Lewis Pass and Rahu Saddle). Signs for SH73, at Arthur's and Porters Pass, are expected to be commissioned this year
- › Introduce thermal mapping of the inland network to predict where ice may occur
- › Introduce more road weather stations to improve emergency responses to ice and snow on roads, and continue to trial the use of the de-icer calcium magnesium acetate
- › Continue to monitor Waiho River erosion at Franz Josef and take appropriate action to ensure SH6 remains safe and open
- › Continue risk analysis of rock falls and river erosion and prioritise works accordingly, to avoid road closures
- › Strengthen a number of bridges on the network to reduce their vulnerability in the event of a severe earthquake
- › Work with the Department of Conservation to ensure maintenance works within national parks represent best practice
- › Complete the strengthening of the three suspension bridges (Fox, Cook, and Karangarua) on SH6 in south Westland to remove the current weight restriction, which is a significant impediment to heavy goods movement in this area
- › Continue with improvements in traffic management at incidents on the network.

West Coast State Highway Plan and Forecast for 2006/07 to 2015/16

Legend: Nature of work

			
Committed Investigation	Committed Design	Committed Construction	Committed Construction
			
Investigation	Design	Construction	Construction

The grey symbols show indicative timings given that the investigation or design phase has not been completed.

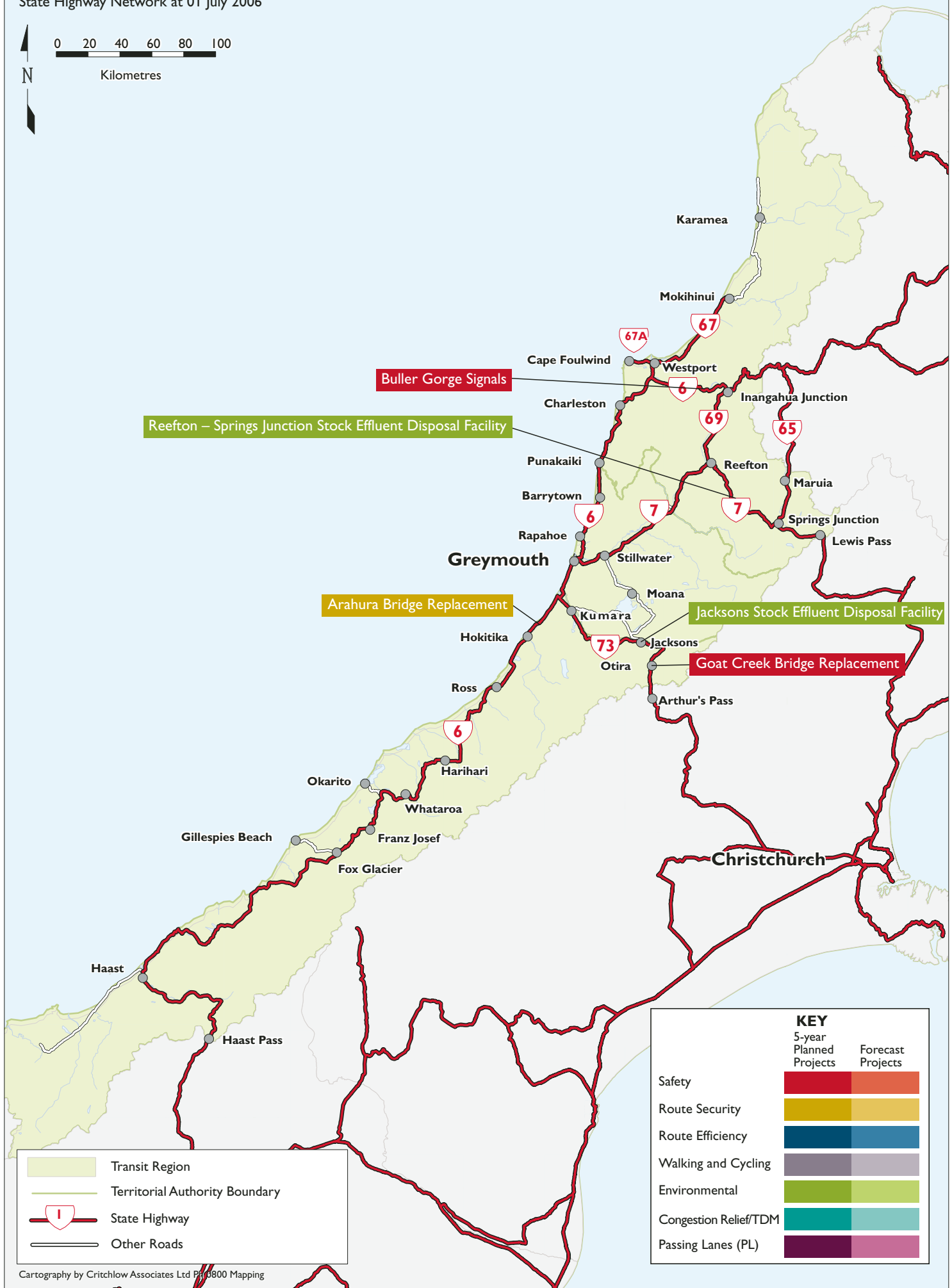
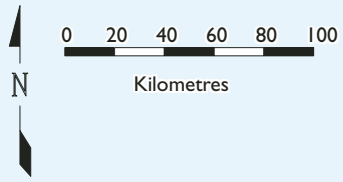
SH	Project	Primary LTMA Objective	Estimated Total Cost (\$M)	Land Transport Programme 06/07	2-5 Year Plan	6-10 Year Forecast
			\$ < 5M \$\$ 5-20M \$\$\$ 20-100M \$\$\$\$ 100+M			
Large Projects (Priority Order)						
6	Aradura Bridge Replacement	Route Security	\$\$			
Small and Medium Projects (Priority Order)						
6	Buller Gorge Signals	Safety	\$			
73	Goat Creek Bridge Replacement ®	Safety	\$			
Stock Effluent Disposal Facility						
73	Jacksons	Environmental	\$			
6	Reefon-Springs Junction	Environmental	\$			
Strategic Studies						
	SH6 Gates of Haast					

® denotes regionally distributed funds

Fig WC

WEST COAST REGION

State Highway Network at 01 July 2006



Buller Gorge Signals

Reefton – Springs Junction Stock Effluent Disposal Facility

Arahura Bridge Replacement

Jacksons Stock Effluent Disposal Facility

Goat Creek Bridge Replacement

	Transit Region
	Territorial Authority Boundary
	State Highway
	Other Roads

	5-year Planned Projects	Forecast Projects
Safety		
Route Security		
Route Efficiency		
Walking and Cycling		
Environmental		
Congestion Relief/TDM		
Passing Lanes (PL)		



KEY TRANSPORT ISSUES

Transit, along with local and central government are working together to achieve a sustainable land transport system in new ways.

Transit will work closely with regional and district councils to ensure that any substantial upgrading in the next 10 to 20 years is properly considered and planned, in order to relieve congestion and support regional growth strategies. This requires agreement on amendments to road and public transport plans and shared funding responsibilities for both local and national infrastructure and services.

Planning activities such as Otago's Regional Land Transport Strategy, Long-Term Council Community Plans, and Transit's State Highway Forecast all help in this process.

In meeting the objectives of the NZTS and LTMA the key regional transport issues for the Otago region include:

- › Road safety
- › Forestry traffic: over the next 5 to 10 years the region is anticipating a significant increase in forest harvesting to two million tonnes per year, much of which will be exported through Port Chalmers
- › Tourist traffic: increasing particularly around Queenstown and Wanaka
- › Areas of significant and rapid growth in Central Otago and the associated impact on the transport network.

How we plan to address these key issues

While there is a significant emphasis for Transit in Otago on maintaining the existing state highway network, there are a number of activities prioritised in the State Highway Forecast to improve road safety, route security and route efficiency in the Otago region.

A key priority is managing the connections between state highways and local roads, as well as access to state highways from adjacent land, to support the medium to long distance travel function of key arterial roads.

The highest priority for the Otago region is the investigation into the Caversham Bypass Four-laning project. This is an important project for achieving a safe and efficient corridor between Dunedin and the south, but will only be progressed with a contribution from the regionally distributed funding allocation for Otago. The East Taieri Bypass on SH1 (near Mosgiel) is proposed in the long-term and will improve traffic flow between Dunedin and the south, particularly Dunedin Airport. Further investigation will be undertaken on the East Taieri Bypass to maintain the designation.

A new bridge is proposed at Kawarau Falls on SH6 to the south of Queenstown, to improve both safety and driver comfort in an area that is experiencing rapid population growth. Further projects are likely to be identified for the Queenstown area from the Wakatipu Transportation Study currently underway and some provision has been made for funding their development.

Large improvement projects (with construction costs of more than \$3.4M) have been indicated for 10 years while projects with construction costs of less than \$3.4M are proposed over the next three years and are shown in the table. The locations of Otago projects in the 10-year State Highway Forecast are shown on the map.

Road Safety – Secure and Efficient Transport Corridors

Transit has identified a number of activities to improve the safety and efficiency of sections of state highway, including intersection improvements and realignments, for progress in the next five years subject to regional distribution funding. Safety improvements will be carried out at Lookout Point in Dunedin and One Way Pair Pedestrian safety improvements throughout the Otago University Campus. Intersection improvements will be carried out on Anderson Road on SH84 in Wanaka and safety improvements on Orwell to Coquet Street in Oamaru.

Realignments will be carried out on Tunnel Hill, south of Raes Junction on SH8, and Jefferis Road, south of Palmerston on SH1. The Gentle Annie West realignment, west of Cromwell on SH6, will also be

completed. Bridge improvements are planned for Roaring Meg, west of Cromwell on SH6. Another project on SH6 is to remove rock features that might result in rock falls at Nevis Bluff. Further work on the management or removal of roadside hazards will continue.

Passing Opportunities

Limited passing opportunities in some parts of the region's road network lead to driver frustration and accidents. Two passing lanes will be progressed on SH1, at Brydone Memorial, south of Oamaru and at Waihola, south of Dunedin. Progress on these is dependent on regional distribution funding.

Walking and Cycling

It is planned to widen SH88 in Dunedin at key pinch points between Adderly Terrace to De Lacy Street as well as between Maia Street and Burkes Drive, to make these sections of highway safer for cyclists and pedestrians. This is part of an integrated walking and cycling network being developed in association with Dunedin City Council and Otago Regional Council.

Strategic Studies

We are undertaking, or propose to undertake, three strategic studies for the Otago region, to improve our long term planning and assist good decision-making. The studies are the Wakatipu Transportation Study (Queenstown), a study of Oamaru and the Waitiki River to Waipahi Study.

Maintenance and Operations

The safe operation of the state highway network is a key function for Transit. Processes are in place to manage traffic efficiently, provide consistent and reliable information for road users, undertake maintenance work on the highway in the safest and least disruptive way, monitor locations where crashes occur and, where appropriate, take corrective action.

The state highway network is a \$15 billion transport infrastructure asset that demands sophisticated and effective management. Transit has systems in place to do this, ranging from infrastructure and traffic databases to natural features inventories, long-term

deterioration modelling tools, and annual condition data collection supported by advanced contract delivery methods and regular performance reporting.

Further, improvements to the way traffic is managed at incidents and in congested urban areas are being investigated and implemented.

Maintenance activities make up a large proportion of the forecast expenditure in the Otago region. In addition to preserving the highway network and undertaking maintenance and improvements to meet future levels of service, we propose to:










- › Undertake some 148km of re-surfacing, including 9km of thin asphaltic surfacing, which, while more expensive, is more durable and quieter
- › Undertake 8.6km of road reconstruction
- › Manage risks from snow and ice on the network by using the anti-icer calcium magnesium acetate and implement more cost effective and safer methods as they become available
- › Follow up the first stage of thermal mapping that has been carried out throughout Otago
- › Continue to develop procedures for managing rock falls and major slips to ensure route security and safety
- › Continue managing wet road crashes by maintaining high skid resistant surfacing
- › Plant on sensitive areas along SH1 at Katiki Beach, Kilmog and the Northern Motorway, to enhance the environment
- › Reduce the likelihood of "heavy metals" draining from the Fairfield Motorway into Kaikoari Stream estuary by constructing "catch pits" (chambers that allow heavy metals to be separated out)
- › Enhance the landscaped areas on the Fairfield Motorway and plant low growth grass on selected road verges
- › Install variable message signs on Lindis Pass (SH8) and the Northern Motorway, to give motorists up to date information on road conditions
- › Develop a strategy, including an in-depth crash analysis, in an effort to reach the Government's 2010 safety targets.

Otago State Highway Plan and Forecast for 2006/07 to 2015/16

Legend: Nature of work

	Committed Investigation		Committed Design		Committed Construction
	Investigation		Design		Construction

The grey symbols show indicative timings given that the investigation or design phase has not been completed.

SH	Project	Primary LTMA Objective	Estimated Total Cost (\$M)	Land Transport Programme 06/07	2-5 Year Plan	6-10 Year Forecast
			\$ < 5M \$\$ 5-20M \$\$\$ 20-100M \$\$\$\$ 100+M			
Large Projects (Committed)						
I	Tumai – Waikouaiti Realignment	Safety	4.6			
Large Projects (Priority Order)						
I	Caversham 4L ^{Part} [®]	Route Efficiency	\$\$\$		  	
6	Kawarau Falls Bridge Widening [®]	Route Efficiency	\$\$			
I	East Taieri Bypass [®]	Route Efficiency	\$\$			
Small and Medium Projects (Priority Order)						
6	Gentle Annie West Realignment	Safety	0.38			
6	Nevis Bluff	Safety	\$			
8	Tunnel Hill Realignment	Safety	\$			
84	Anderson Road Intersection Improvements	Route Efficiency	\$			
I	Lookout Point Safety Improvements - Stage I	Safety	\$			
I	Orwell to Coquet Street Safety Improvement	Safety	\$			
6	Roaring Meg Bridge Widening	Safety	\$			
I	Jefferis Road Realignment [®]	Safety	\$			
I	One Way Pair Pedestrian Safety Improvements [®]	Safety	\$			

[®] denotes regionally distributed funds

Otago State Highway Plan and Forecast for 2006/07 to 2015/16

Legend: Nature of work

 Committed Investigation	 Committed Design	 Committed Construction
 Investigation	 Design	 Construction

The grey symbols show indicative timings given that the investigation or design phase has not been completed.

SH	Project	Primary LTMA Objective	Estimated Total Cost (\$M)	Land Transport Programme 06/07	2-5 Year Plan	6-10 Year Forecast
			\$ < 5M \$\$ 5-20M \$\$\$ 20-100M \$\$\$\$ 100+M			

Passing Lanes (Priority Order)

- I Brydone Memorial PL ® \$
- I Waihola Nth Bd PL ® \$

Walking & Cycling

- 88 Adderly Tce to De Lacy St Cycling Improvement \$
- 88 Maia to Burkes Drive Cycling Improvement \$

Strategic Studies

- Wakatipu Transport Study (committed)
- Oamaru Study
- Waitiki River to Waipahi Study
- Otago Regional Walking and Cycling Strategy

® denotes regionally distributed funds



KEY TRANSPORT ISSUES

Transit, along with local and central government are working together to achieve a sustainable land transport system in new ways.

Transit will work closely with regional and district councils to ensure that any substantial upgrading in the next 10 to 20 years is properly considered and planned, in order to relieve congestion and support regional growth strategies. This requires agreement on amendments to road and public transport plans and shared funding responsibilities for both local and national infrastructure and services.

Planning activities such as Southland's Regional Land Transport Strategy, Long-Term Council Community Plans, and Transit's State Highway Forecast all help in this process.

In meeting the objectives of the NZTS and LTMA the key regional transport issues for the Southland region include:

- › Road safety
- › Forestry traffic
- › Dairying traffic: the increase in the number of dairy farms is seeing increasing heavy vehicle movements, particularly around the processing plant at Edendale
- › Tourist traffic: particularly increases on the southern scenic route and to Fiordland National Park and between Queenstown and Milford Sound (SH94)
- › Lack of passing opportunities, particularly on SH1 between Edendale and Dacre.

How we plan to address these key issues

Most state highways in Southland carry relatively low traffic volumes and few improvements are currently required apart from minor safety improvements, improvements to Homer Tunnel on SH94, and a realignment of SH1 at Edendale. Southland's economic growth and conversion of pasture farming activity to dairying is actively monitored to ensure that the current high levels of service on Southland highways are maintained.

While the emphasis for Transit in Southland is on maintaining the existing state highway network, there are a number of activities prioritised in the State Highway Forecast to improve road safety as well as route security and route efficiency.

A key priority is managing the connections between state highways and local roads, as well as access to state highways from adjacent land, to support the medium to long distance travel function of key arterial roads.

There is a continuing need for active management of SH94 between Te Anau and Milford Sound to provide an appropriate level of avalanche protection and traffic management. Transit is continuing investigations into replacing the eastern portal to the Homer Tunnel that was damaged some years ago and needs to be replaced and possibly extended. This tunnel provides the only road access to the key tourist destination of Milford Sound.

In addition, the Edendale Realignment is proposed to improve the safety of that section of SH1.

Large improvement projects (with construction costs of more than \$3.4M) have been indicated for 10 years while projects with construction costs of less than \$3.4M are proposed over the next three years and are shown in the table. The locations of Southland projects in the 10-year State Highway Forecast are shown on the map.

Road Safety – Secure and Efficient Transport Corridors

Transit has identified a number of activities to improve the safety and efficiency of sections of state highway in Southland, including realignments, bridge widening and intersection improvements, for progress in the next five years. A pullover or stopping area with a kiosk will be provided on SH94 near Te Anau, to make road condition information available to motorists. Further work on the management or removal of roadside hazards will continue.

Stock Effluent Disposal Facilities

As part of a national programme to provide a safe and convenient network of stock effluent disposal facilities Transit is proposing a new stock effluent disposal facility on SH1, between Gore and Mataura. A new facility is also planned on SH6 near Lumsden.

Strategic Studies

We are proposing to undertake three strategic studies for the Southland region, to improve our long term planning and assist good decision-making. These are studies of SH94/95 The Key to Milford (Te Anau), Invercargill to Winton and Lorneville to Wallacetown.

Maintenance and Operations

The safe operation of the state highway network is a key function for Transit. Processes are in place to manage traffic efficiently, provide consistent and reliable information for road users, undertake maintenance work on the highway in the safest and least disruptive way, monitor locations where crashes occur, and, where appropriate, take corrective action.

The state highway network is a \$15 billion transport infrastructure asset that demands sophisticated and effective management. Transit has systems in place to do this, ranging from infrastructure and traffic databases to natural features inventories, long-term deterioration modelling tools, and annual condition data collection supported by advanced contract delivery methods and regular performance reporting.

Further, improvements to the way traffic is managed at incidents and in congested urban areas are being investigated and implemented.

Maintenance activities make up the majority of the forecast expenditure in the Southland region. In addition to preserving the highway network and undertaking maintenance and improvements to meet future levels of service, we propose to:



- › Undertake 74km of resurfacing, including 7km of thin asphaltic surfacing, which, although more expensive, is more durable and quieter
- › Undertake 10km of road pavement reconstruction
- › Continue to install the latest hazard management systems at Homer Tunnel on SH94. The current avalanche hazard management system is recognised as being world-class. We intend to ensure that the programme remains adequately funded and the latest techniques are used to maximise access to Milford Sound and minimise risks to road users
- › Maintaining high skid resistance surfacing to help prevent wet road crashes
- › Develop a strategy, including in-depth crash analysis, in an effort to meet the Government's 2010 safety targets
- › Continue with improvements in traffic management at incidents on the network.

Southland State Highway Plan and Forecast for 2006/07 to 2015/16

Legend: Nature of work

	Committed Investigation		Committed Design		Committed Construction
	Investigation		Design		Construction

The grey symbols show indicative timings given that the investigation or design phase has not been completed.

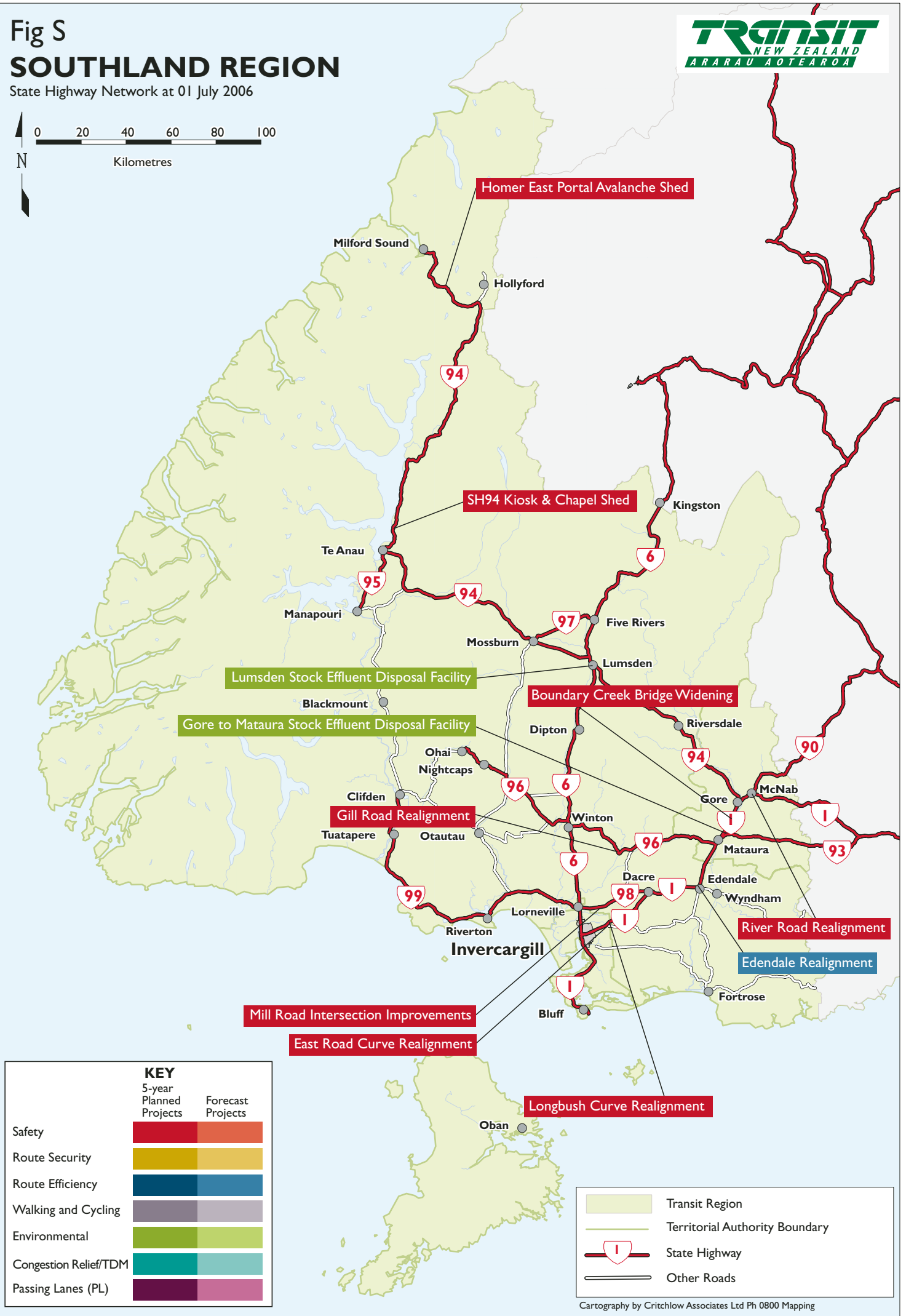
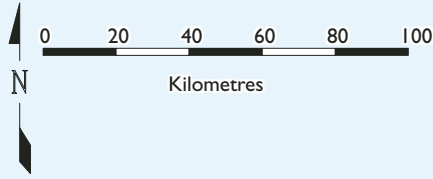
SH	Project	Primary LTMA Objective	Estimated Total Cost (\$M)	Land Transport Programme 06/07	2-5 Year Plan	6-10 Year Forecast
			\$ < 5M \$\$ 5-20M \$\$\$ 20-100M \$\$\$\$ 100+M			
Large Projects (Priority Order)						
94	Homer East Portal Avalanche Shed (SI)	Safety	\$\$\$			
Projects inside 6-10 year Forecast						
I	Edendale Realignment ⑥	Route Efficiency	\$			
Small and Medium Projects (Priority Order)						
93	River Road Realignment	Safety	0.45			
94	SH94 Kiosk and Chapel Shed	Safety	\$			
I	Longbush Curve Realignment	Safety	\$			
96	Gill Road Realignment	Safety	\$			
I	Boundary Creek Bridge Widening	Safety	\$			
I	East Road Curve Realignment	Safety	\$			
98	Mill Rd Intersection Improvements ⑥	Safety	\$			
Stock Effluent Disposal Facility						
I	Gore to Mataura	Environmental	\$			
6	Lumsden	Environmental	\$			
Strategic Studies						
	SH94/95 The Key to Milford (Te-Anau)					
	Invercargill to Winton & Lorneville to Wallacetown					

⑥ denotes regionally distributed funds

Fig S

SOUTHLAND REGION

State Highway Network at 01 July 2006



	KEY	
	5-year Planned Projects	Forecast Projects
Safety		
Route Security		
Route Efficiency		
Walking and Cycling		
Environmental		
Congestion Relief/TDM		
Passing Lanes (PL)		

	Transit Region
	Territorial Authority Boundary
	State Highway
	Other Roads

Cartography by Critchlow Associates Ltd Ph 0800 Mapping

APPENDIX I – LIST OF LARGE PROJECTS IN THE LTP. CONTRIBUTION TO NZTS AND LTMA OBJECTIVES

Large Activities (2006/07)		Economic Development	Safety and Personal Security	Access & Mobility	Public Health	Environmental Sustainability	Alternatives Considered	Options Considered		
Northland	Kamo Bypass Stage 2	Bypass	Reduces travel delay between economic nodes. Reduces congestion on heavily-trafficked corridors and at network pinch points. Improved travel time reliability. Vehicle operating costs (fuel) may decrease.	Reduces accidents caused by congestion and sub-standard alignment	Reduces congestion	Reduces noise, vibration and air pollution impacts by shifting through traffic away from existing communities	Provides improved levels of amenity to properties on the existing State highway route. Improved vehicle emission performance from reduced congestion.	Strategies to reduce traffic volumes and growth	Alternative realignment options, carriageway widening, bypass routes and various TDM options	
	Akerama Curves Realignment & 5th Bd PL	Rural Realignment (Safety)	Reducing accidents: Reduces travel delay between economic nodes. Provides greater travel time reliability.	Reduces accidents caused by congestion and sub-standard alignment	No significant contribution	No significant contribution	No significant contribution	Strategies to reduce traffic volumes and growth	Alternative realignment options, carriageway widening and bypass routes	
	Waitiki Landing to Cape Reinga Seal Ext Stage 2	Seal Extension	Reduces long term maintenance costs. Reduced travel time and delays. Reduced roughness reduces vehicle operating cost.	Improves safety from improved grip	Improves access to remote areas	Reduces air pollution impact by reducing dust. Reduces noise impact. Promotes walking and cycling by reducing dust nuisance.	Dust reduction improves local air quality	Strategies to reduce traffic volumes and growth	More extensive realignment and carriageway reconstruction	
Auckland	Warkworth Stage 1	Additional Lanes	Reduces travel delay between economic nodes. Reduces congestion on heavily-trafficked corridors and at network pinch points. Improved travel time reliability. Vehicle operating costs (fuel) may decrease.	Reduces accidents caused by congestion and sub-standard alignment	Reduces congestion	Improved air pollution impacts via reduced congestion and therefore emissions	Improved vehicle emission performance from reduced congestion	Strategies to reduce traffic volumes and growth	Bypass routes, and various TDM options	
	Kopuku Realignment									
	Vic Park Tunnel									
	Newmarket Viaduct									
	Manukau Harbour Crossing	Auckland Western Ring Route	Reduces congestion and delay through central Auckland by providing a real alternative to SH1 between Albany and Manukau City. Improved travel times/access between all four cities and from the west to the airport. Travel time reliability is improved. Vehicle operating costs (fuel) may decrease.	Reduces accidents caused by congestion	Reduces congestion	Improved air pollution impacts via reduced congestion and therefore emissions	Improved vehicle emission performance from reduced congestion	Strategies to reduce traffic volumes and growth	Bypass routes, and various TDM options	
	Te Atatu – Royal 6L									
	Waterview Connection									
	Hobsonville Deviation									
	AHB Moveable Lane Barrier	Barriers	No significant contribution	Reduces head-on accidents	No significant contribution	No significant contribution	No significant contribution	No significant contribution	Strategies to reduce traffic volumes and growth	Alternative engineering options, and carriageway widening
	Punganui Stream Bridge Replacement	Bridge Renewals	Avoids the economic costs of road closures. Preserves valuable public assets. Avoids bridge load restrictions which could impact on freight movements.	Avoids potential structural failure	Preserves current level of access	No significant contribution	No significant contribution	Provision of alternative routes	Alternative engineering options	
	Northwestern Motorway TDM	Travel Demand Management	Reduces travel delay between economic nodes. Provides greater travel time reliability. Reduces congestion on heavily-trafficked corridors.	No significant contribution	Reduces congestion	Improved air pollution impacts via reduced congestion and therefore emissions	Improved vehicle emission performance from reduced congestion	Do nothing	Alternative TDM strategies and options	
	Northern Motorway TDM									
AHB Storm Water Upgrade	Water	No significant contribution	No significant contribution	No significant contribution	Reduces pollutants entering bodies of water that may be used by the public	Reduces pollutant contamination of waterbodies	Do nothing	Alternative stormwater treatment systems		
Waikato	Church to Avalon Drive 4L	Bypass	Reduces travel delay between economic nodes. Reduces congestion on heavily-trafficked corridors and at network pinch points. Improved travel time reliability. Vehicle operating costs (fuel) may decrease.	Reduces accidents caused by congestion and sub-standard alignment	Reduces congestion	Improved air pollution impacts via reduced congestion and therefore emissions	Improved vehicle emission performance from reduced congestion	Strategies to reduce traffic volumes and growth	Bypass routes, and various TDM options	
	Avalon Drive Bypass									
	Hamilton Southern Links									
	Ngaruawahia Bypass									
	East Taupo Arterial									
	Cambridge Bypass 2L									
Rangiriri Bypass										
Bay of Plenty	Harbour Link	New Links	Reduces travel delay between economic nodes. Reduces congestion on heavily-trafficked corridors and at network pinch points. Travel time reliability is generally improved. Vehicle operating costs (fuel) may decrease.	Reduces accidents caused by congestion and sub-standard alignment	Reduces congestion	Improved air pollution impacts via reduced congestion and therefore emissions	Improved vehicle emission performance from reduced congestion	Strategies to reduce traffic volumes and growth	Alternative realignment options, and TDM options	
	Tauranga Eastern Motorway									
	Tauranga Central Corridor TDM	Travel Demand Management	Reduces travel delay between economic nodes. Provides greater travel time reliability. Reduces congestion on heavily-trafficked corridors.	No significant contribution	Reduces congestion	Improved air pollution impacts via reduced congestion and therefore emissions	Improved vehicle emission performance from reduced congestion	Do nothing	Alternative TDM strategies and options	
	Omokoroa Roundabout	Rural Realignment	Reducing accidents: Reduces travel delay between economic nodes. Provides greater travel time reliability.	Reduces accidents caused by congestion and sub-standard alignment	No significant contribution	No significant contribution	No significant contribution	Strategies to reduce traffic volumes and growth	Alternative realignment options, carriageway widening and bypass routes	

APPENDIX I – LIST OF LARGE PROJECTS IN THE LTP. CONTRIBUTION TO NZTS AND LTMA OBJECTIVES

	Large Activities (2006/07)		Economic Development	Safety and Personal Security	Access & Mobility	Public Health	Environmental Sustainability	Alternatives Considered	Options Considered
Hawke's Bay	HB Expressway Southern Extension	Bypass	Reduces travel delay between economic nodes. Reduces congestion on heavily-trafficked corridors and at network pinch points. Improved travel time reliability. Vehicle operating costs (fuel) may decrease.	Reduces accidents caused by congestion and sub-standard alignment	Reduces congestion	Reduces noise, vibration and air pollution impacts by shifting through traffic away from existing communities	Provides improved levels of amenity to properties on the existing State highway route. Improved vehicle emission performance from reduced congestion.	Strategies to reduce traffic volumes and growth	Alternative realignment options, carriageway widening, bypass routes and various TDM options
	Matahuria Gorge Realignment	Rural Realignment (Time)	Reduces travel delay in rural regions. Reduces vehicle operating cost (fuel). Travel time reliability is generally improved.	Reduces accidents caused by congestion and sub-standard alignment	No significant contribution	No significant contribution	No significant contribution	Strategies to reduce traffic volumes and growth	Alternative realignment options, carriageway widening and bypass routes
Taranaki	Bell Block Bypass (including Mangaone 4L)	Additional Lanes & Bypass	Reduces travel delay between economic nodes. Reduces congestion on heavily-trafficked corridors and at network pinch points. Improved travel time reliability. Vehicle operating costs (fuel) may decrease.	Reduces accidents caused by congestion and sub-standard alignment	Reduces congestion	Reduces noise, vibration and air pollution impacts by shifting through traffic away from existing communities	Provides improved levels of amenity to properties on the existing State highway route. Improved vehicle emission performance from reduced congestion.	Strategies to reduce traffic volumes and growth	Bypass routes, and various TDM options
Wellington	Kapiti Western Link Road – Stage I	Bypass	Reduces travel delay between economic nodes. Reduces congestion on heavily-trafficked corridors and at network pinch points. Improved travel time reliability. Vehicle operating costs (fuel) may decrease.	Reduces accidents caused by congestion and sub-standard alignment	Reduces congestion	Reduces noise, vibration and air pollution impacts by shifting through traffic away from existing communities	Provides improved levels of amenity to properties on the existing State highway route. Improved vehicle emission performance from reduced congestion.	Strategies to reduce traffic volumes and growth	Alternative realignment options, carriageway widening, bypass routes and various TDM options
	Transmission Gully								
	Dowse to Petone I/C	Intersection Improvement	Reduces travel delay between economic nodes. Reduces congestion on heavily-trafficked corridors and at network pinch points. Travel time reliability is generally improved.	Potential reduction in intersection crashes	Reduces congestion at key intersections	No significant contribution	No significant contribution	Strategies to reduce traffic volumes and growth	Alternative interchange upgrade options
	Basin Reserve Improvements								
	Rimutaka Corner Easing (Muldoon's)	Rural Realignment (Safety)	Reducing accidents: Reduces travel delay between economic nodes. Provides greater travel time reliability.	Reduces accidents caused by congestion and sub-standard alignment	No significant contribution	No significant contribution	No significant contribution	Strategies to reduce traffic volumes and growth	Alternative realignment options, carriageway widening and bypass routes
Nelson/M/T	Ruby Bay Bypass	Bypass	Reduces travel delay between economic nodes. Reduces congestion on heavily-trafficked corridors and at network pinch points. Improved travel time reliability. Vehicle operating costs (fuel) may decrease.	Reduces accidents caused by congestion and sub-standard alignment	Reduces congestion	Reduces noise, vibration and air pollution impacts by shifting through traffic away from existing communities	Provides improved levels of amenity to properties on the existing State highway route. Improved vehicle emission performance from reduced congestion.	Strategies to reduce traffic volumes and growth	Alternative realignment options, carriageway widening, bypass routes and various TDM options
	Whangamoā South Realignment	Rural Realignment (Time)	Reduces travel delay in rural regions. Reduces vehicle operating cost (fuel). Travel time reliability is generally improved.	Reduces accidents caused by congestion and sub-standard alignment	No significant contribution	No significant contribution	No significant contribution	Strategies to reduce traffic volumes and growth	Alternative realignment options, carriageway widening and bypass routes
	Hope Saddle Realignment								
Canterbury	Christchurch Southern Motorway Extension	New Links	Reduces travel delay between economic nodes. Reduces congestion on heavily-trafficked corridors and at network pinch points. Travel time reliability is generally improved. Vehicle operating costs (fuel) may decrease.	Reduces accidents caused by congestion and sub-standard alignment	Reduces congestion	Improved air pollution impacts via reduced congestion and therefore emissions	Improved vehicle emission performance from reduced congestion	Strategies to reduce traffic volumes and growth	Alternative realignment options, and TDM options
	Christchurch Northern Arterial Rural								
	Christchurch TDM Implementation	Travel Demand Management	Reduces travel delay between economic nodes. Provides greater travel time reliability. Reduces congestion on heavily-trafficked corridors.	No significant contribution	Reduces congestion	Improved air pollution impacts via reduced congestion and therefore emissions	Improved vehicle emission performance from reduced congestion	Do nothing	Alternative TDM strategies and options
West Coast	Arahura Bridge Replacement	Bridge Renewals	Avoids the economic costs of road closures. Preserves valuable public assets. Avoids bridge load restrictions which could impact on freight movements.	Avoids potential structural failure	Preserves current level of access	No significant contribution	No significant contribution	Provision of alternative routes	Alternative engineering options
Otago	Caversham 4L	Additional Lanes	Reduces travel delay between economic nodes. Reduces congestion on heavily-trafficked corridors and at network pinch points. Improved travel time reliability. Vehicle operating costs (fuel) may decrease.	Reduces accidents caused by congestion and sub-standard alignment	Reduces congestion	Improved air pollution impacts via reduced congestion and therefore emissions	Improved vehicle emission performance from reduced congestion	Strategies to reduce traffic volumes and growth	Bypass routes, and various TDM options
	East Taieri Bypass	Bypass	Reduces travel delay between economic nodes. Reduces congestion on heavily-trafficked corridors and at network pinch points. Improved travel time reliability. Vehicle operating costs (fuel) may decrease.	Reduces accidents caused by congestion and sub-standard alignment	Reduces congestion	Reduces noise, vibration and air pollution impacts by shifting through traffic away from existing communities	Provides improved levels of amenity to properties on the existing State highway route. Improved vehicle emission performance from reduced congestion.	Strategies to reduce traffic volumes and growth	Bypass routes, and various TDM options
National	Toll Systems Project Stage I	Travel Demand Management	Reduces travel delay between economic nodes. Provides greater travel time reliability. Reduces congestion on heavily-trafficked corridors.	No significant contribution	Reduces congestion	Improved air pollution impacts via reduced congestion and therefore emissions	Improved vehicle emission performance from reduced congestion	Do nothing	Alternative TDM strategies and options

APPENDIX 2 – GENERIC LIST OF PROJECT TYPES. CONTRIBUTION TO NZTS AND LTMA OBJECTIVES

	Economic Development	Safety and Personal Security	Access & Mobility	Public Health	Environmental Sustainability	Alternatives Considered	Options Considered
Additional Lanes	Reduces travel delay between economic nodes. Reduces congestion on heavily-trafficked corridors and at network pinch points. Improved travel time reliability. Vehicle operating costs (fuel) may decrease.	Reduces accidents caused by congestion and sub-standard alignment	Reduces congestion	Improved air pollution impacts via reduced congestion and therefore emissions	Improved vehicle emission performance from reduced congestion	Strategies to reduce traffic volumes and growth	Bypass routes, and various TDM options
Additional Lanes & Bypass	Reduces travel delay between economic nodes. Reduces congestion on heavily-trafficked corridors and at network pinch points. Improved travel time reliability. Vehicle operating costs (fuel) may decrease.	Reduces accidents caused by congestion and sub-standard alignment	Reduces congestion	Reduces noise, vibration and air pollution impacts by shifting through traffic away from existing communities	Provides improved levels of amenity to properties on the existing State highway route. Improved vehicle emission performance from reduced congestion.	Strategies to reduce traffic volumes and growth	Bypass routes, and various TDM options
Auckland Western Ring Route	Reduces congestion and delay through central Auckland by providing a real alternative to SH1 between Albany and Manukau City. Improved travel times/access between all four cities and from the west to the airport. Travel time reliability is improved. Vehicle operating costs (fuel) may decrease.	Reduces accidents caused by congestion	Reduces congestion	Improved air pollution impacts via reduced congestion and therefore emissions	Improved vehicle emission performance from reduced congestion	Strategies to reduce traffic volumes and growth	Bypass routes, and various TDM options
Barriers	<i>No significant contribution</i>	Reduces head-on accidents	<i>No significant contribution</i>	<i>No significant contribution</i>	<i>No significant contribution</i>	Strategies to reduce traffic volumes and growth	Alternative engineering options, and carriageway widening
Biodiversity					Supports biodiversity through planting and/or habitat creation		
Bridge Renewals	Avoids the economic costs of road closures. Preserves valuable public assets. Avoids bridge load restrictions which could impact on freight movements.	Avoids potential structural failure	Preserves current level of access	<i>No significant contribution</i>	<i>No significant contribution</i>	Provision of alternative routes	Alternative engineering options
Bypass	Reduces travel delay between economic nodes. Reduces congestion on heavily-trafficked corridors and at network pinch points. Improved travel time reliability. Vehicle operating costs (fuel) may decrease.	Reduces accidents caused by congestion and sub-standard alignment	Reduces congestion	Reduces noise, vibration and air pollution impacts by shifting through traffic away from existing communities	Provides improved levels of amenity to properties on the existing State highway route. Improved vehicle emission performance from reduced congestion.	Strategies to reduce traffic volumes and growth	Alternative realignment options, carriageway widening, bypass routes and various TDM options
Crash Reduction Studies	Resulting strategies may reduce accidents, which would: Reduce travel delay between economic nodes. Provide greater travel time reliability.	Resulting strategies may reduce accident rates	<i>No significant contribution</i>	<i>No significant contribution</i>	<i>No significant contribution</i>		
Intersection Improvement	Reduces travel delay between economic nodes Reduces congestion on heavily-trafficked corridors and at network pinch points. Travel time reliability is generally improved.	Potential reduction in intersection crashes	Reduces congestion at key intersections	<i>No significant contribution</i>	<i>No significant contribution</i>	Strategies to reduce traffic volumes and growth	Alternative interchange upgrade options
Landscaped					Improved ecological and amenity quality through landscaping		
Minor Safety Projects	<i>No significant contribution</i>	Reduces accidents	<i>No significant contribution</i>	<i>No significant contribution</i>	<i>No significant contribution</i>	Strategies to reduce traffic volumes and growth	Alternative engineering options, and carriageway widening
New Links	Reduces travel delay between economic nodes. Reduces congestion on heavily-trafficked corridors and at network pinch points. Travel time reliability is generally improved. Vehicle operating costs (fuel) may decrease.	Reduces accidents caused by congestion and sub-standard alignment	Reduces congestion	Improved air pollution impacts via reduced congestion and therefore emissions	Improved vehicle emission performance from reduced congestion	Strategies to reduce traffic volumes and growth	Alternative realignment options, and TDM options
Noise				Noise Mitigation provided to protect public			
Noise Seal				Road seal selected for reduced noise impact			
Pedestrian	Marginal reduction in congestion and travel delay by encouraging shorter and medium length trips to be undertaken by non-motorised means. Improved energy efficiency with a move away from the powered modes.	Dedicated and/or purpose-built facilities reduce the accident risk for the non-powered modes. Investments are targeted at vulnerable road users.	Provides alternative options for short trips	Health benefits of walking and cycling. Reduces noise, vibration and air pollution impacts by reducing motor vehicle short trips.	Reduced vehicle pollution from reduced dependency on motor vehicles	Do nothing	Alternative engineering options
Protection	Avoids the economic costs of road closures. Preserves valuable public assets.	Avoids potential risk during and after a seismic event	Preserves current level of access	<i>No significant contribution</i>	<i>No significant contribution</i>	Do nothing	Alternative bypass route and engineering options
Road Reconstruction	Reduces long term maintenance costs. Reduced travel time and delays. Avoids the economic costs of road closures. Preserves valuable public assets. Avoids load restrictions which could impact on freight movements.	Avoids potential structural failure	Preserves current level of access	<i>No significant contribution</i>	<i>No significant contribution</i>	Provision of alternative routes	Alternative engineering options
Rural Realignment (Safety)	Reducing accidents: Reduces travel delay between economic nodes. Provides greater travel time reliability.	Reduces accidents caused by congestion and sub-standard alignment	<i>No significant contribution</i>	<i>No significant contribution</i>	<i>No significant contribution</i>	Strategies to reduce traffic volumes and growth	Alternative realignment options, carriageway widening and bypass routes
Rural Realignment (Time)	Reduces travel delay in rural regions. Reduces vehicle operating cost (fuel). Travel time reliability is generally improved.	Reduces accidents caused by congestion and sub-standard alignment	<i>No significant contribution</i>	<i>No significant contribution</i>	<i>No significant contribution</i>	Strategies to reduce traffic volumes and growth	Alternative realignment options, carriageway widening and bypass routes
Seal Extension	Reduces long term maintenance costs. Reduced travel time and delays. Reduced roughness reduces vehicle operating cost.	Improves safety from improved grip	Improves access to remote areas	Reduces air pollution impact by reducing dust. Reduces noise impact. Promotes walking and cycling by reducing dust nuisance.	Dust reduction improves local air quality	Strategies to reduce traffic volumes and growth	More extensive realignment and carriageway reconstruction
Seal Widening	<i>No significant contribution</i>	Potentially reduces loss of control accidents	<i>No significant contribution</i>	<i>No significant contribution</i>	<i>No significant contribution</i>	Strategies to reduce traffic volumes and growth	More extensive realignment and carriageway reconstruction
Seismic Retrofitting	Protection of a valuable existing asset from seismic risk	Avoids potential risk during and after a seismic event	Preserves access after a seismic event	<i>No significant contribution</i>	<i>No significant contribution</i>	Do nothing	Do nothing
Stormwater				Stormwater treatment device reduces pollutants entering bodies of water that may be used by the public	Stormwater treatment device reduces pollutant contamination of waterbodies		
Strategic Studies	Resulting strategy may reduce congestion and improve safety along a corridor, which would: Reduce travel delay between two nodes. Provide greater travel time reliability. Reduce congestion on the heavily-trafficked corridor.	Resulting strategy may reduce accident rates along corridor	Resulting strategy may reduce congestion along corridor	Resulting strategy may improve air pollution impacts via reduced congestion and therefore emissions	Resulting strategy may improve vehicle emission performance from reduced congestion		
Toll	Contributes to demand management through tolling						
Transportation Studies	Resulting strategies may reduce congestion, which would: Reduce travel delay between economic nodes. Provide greater travel time reliability. Reduce congestion on heavily-trafficked corridors.	<i>No significant contribution</i>	Resulting strategies may reduce congestion	Resulting strategies may improve air pollution impacts via reduced congestion and therefore emissions	Resulting strategies may improve vehicle emission performance from reduced congestion		
Travel Demand Management	Reduces travel delay between economic nodes. Provides greater travel time reliability. Reduces congestion on heavily-trafficked corridors.	<i>No significant contribution</i>	Reduces congestion	Improved air pollution impacts via reduced congestion and therefore emissions	Improved vehicle emission performance from reduced congestion	Do nothing	Alternative TDM strategies and options
Water	<i>No significant contribution</i>	<i>No significant contribution</i>	<i>No significant contribution</i>	Reduces pollutants entering bodies of water that may be used by the public	Reduces pollutant contamination of waterbodies	Do nothing	Alternative stormwater treatment systems

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