

EXECUTIVE SUMMARY

Transit's forecasts of expenditure in Auckland for the next 10 years are set out in Table A1. Transit anticipates it will have further expenditure from regional distribution funding, but this is yet to be determined.

These forecasts of expenditure are based on a 10-year plan of maintenance and improvements, including commitments. The timeframe for the development and construction of the improvements proposed in the 10-year plan is indicative only, and is likely to change depending on the use of regional distribution funding to advance projects.

The Auckland state highway 10-year plan seeks to protect and preserve the existing asset, assist with addressing the problem of severe congestion in conjunction with passenger transport and travel demand management initiatives, and improve road safety.

Major features of the plan are:

Western Ring Route

- › SH18: Greenhithe Deviation, currently under construction
- › SH18: Upper Harbour Bridge Duplication, currently under construction
- › SH18: Hobsonville Deviation, for a construction start in 2004/05
- › SH20: Avondale Extension, for a construction start in 2010/11
- › SH20: Mt Roskill Extension, for a construction start in 2004/05
- › SH20: Manukau Harbour Crossing, for a construction start in 2009/10
- › SH20: Manukau Extension, for a construction start in 2004/05

Central Motorway Improvements

- › SH1: Central Motorway Junction (Stage 1), currently under construction
- › SH1: Central Motorway Junction (Stage 2), currently under construction
- › SH1: Harbour Bridge to City, for a construction start in 2009/10
- › SH1: Newmarket Viaduct Upgrade, for a construction start in 2007/08
- › SH1: Newmarket Viaduct to Green Lane Auxiliary Lane, for a construction start in 2008/09
- › SH16: Newton Road to Western Springs Auxiliary Lane, for a construction start in 2004/05

Northern (North Shore) Busway

- › SH1: Northern Busway, for a construction start in 2004/05
- › SH1: Esmonde Road Interchange Upgrade, currently under construction

Northern Motorway Extension

- › SH1: ALPURT Sector B2, for a construction start in 2004/05 (as a toll road, subject to consultation)

SH1: Southern Motorway

- › Waiouru Interchange, for a construction start in 2004/05

Other motorway improvements in the 10-year plan are:

- › Advanced Traffic Management System, Stage 4, for a construction start in 2006/07
- › SH1: Auckland Harbour Bridge Stormwater Upgrade, for a construction start in 2011/12
- › SH1: Northcote to Sunnynook Auxiliary Lane, for a construction start in 2008/09
- › SH1: Green Lane Interchange, for a construction start in conjunction with Auckland City works
- › SH1: Ellerslie to Main Highway Auxiliary Lane Extension, for development in the next three years
- › SH1: Takanini Northbound On-ramp Auxiliary Lane (for investigation and design in the next three years)
- › SH16: Te Atatu to Royal Road 6-Laning, for a construction start in 2011/12
- › SH16: Te Atatu Interchange Upgrade, for a construction start in 2009/10
- › SH16: Lincoln Road Interchange Upgrade, for a construction start in 2005/06
- › SH16: Waterview to Rosebank Eastbound Bus Lane, for construction in 2004/05

Other state highway improvements in the 10-year plan are:

- › a number of seismic retrofitting projects on key structures
- › three new passing lanes on both SH16 north of Kumeu and SH1 north of Puhoi, together with one passing lane extension north of Puhoi, for construction in the next three years
- › two safety improvements, for development and construction in the next three years
- › SH20A: George Bolt Drive Median Barrier.

KEY REGIONAL TRANSPORT ISSUES

The key regional transport issues in Auckland include:

- › Congestion – traffic growth in Auckland is continuing at around 2-4% per year driven by population growth and the relatively cheap cost of travel, causing increased congestion, particularly for peak period commuter trips and freight. Key ‘hot points’ are on the motorway system, around the Central Motorway Junction, and major arterials. Trips from the North Shore, Manukau City, or Henderson into central Auckland in the peak periods are regularly taking 30-40 minutes longer than off-peak periods. The cost of this congestion has been estimated at around \$1 billion per year
- › Road safety.

TRANSIT’S CONTRIBUTION TO TRANSPORT ISSUES

The motorway network in Auckland needs to be upgraded and extended to relieve congestion and support the Auckland Growth Strategy. Much of the network experiences severe congestion, which will only ease with a combination of the completion of critical motorway links, including the Western Ring Route and the Northern Busway, passenger transport improvements and travel demand management. Improved traffic management is also critically important to efficiently and effectively utilise the existing network.

The motorway network must serve public transport as well as commercial and private vehicles. Congestion on the motorway network is already compromising the effectiveness of public transport services, the efficiency of commercial vehicle operations, and access and mobility for private motor vehicles.

Maintenance is becoming increasingly difficult to undertake because of congestion on the motorway network and the need to maintain the capacity of motorway links throughout the day.

To complement improvements to the motorway network, improvements are also required to the local road arterial network, in accordance with the Auckland Regional Land Transport Strategy, to provide a comprehensive road network as part of an efficient land transport system in Auckland.

The locations of possible Auckland projects in the 10-year plan are shown in Figure A. The expected cost and possible timeframe for the development and construction of these projects is indicated in Table A2. The timing of projects could be advanced depending on the allocation of regional funding. A final policy has yet to be determined by Transfund New Zealand (as at June 2004).

Large improvement projects (with construction costs more than \$3M) have been planned for 10 years and small and medium-sized projects (with construction costs of less than \$3M) have been planned for three years.

Auckland State Highway Strategy

Transit’s strategy for Auckland, in accordance with the Auckland Regional Land Transport Strategy (RLTS), is to:

- › complete the Western Ring Route
- › upgrade the central motorway network including Central Motorway Junction
- › construct a Northern Busway and bus shoulder lanes on congested sections of motorway
- › extend the Northern Motorway to Puhoi (ALPURT B2)
- › improve traffic management by means of active and integrated traffic management systems
- › participate in the investigation of travel demand management in Auckland
- › participate in the investigation of the Eastern Transport Corridor
- › investigate and possibly protect the alignment for an additional Waitemata Harbour Crossing.

Western Ring Route

The Western Ring Route is proposed as an alternative motorway route to the Northern and Southern motorways through the Auckland Isthmus.

New sections of motorway required to complete the Western Ring Route include:

- › SH18: Upper Harbour Motorway comprising

- » Greenhithe Deviation
- » Upper Harbour Bridge Duplication
- » Hobsonville Deviation
- › SH20: Mt Roskill and Avondale Extensions of the Southwestern Motorway
- › SH20: Manukau Harbour Bridge Duplication
- › SH20: Manukau Extension of the Southwestern Motorway, including the Puhinui Interchange, to provide a connection to the Southern Motorway.

The Puhinui Interchange has recently been completed and construction is progressing on the Greenhithe Deviation and Upper Harbour Bridge Duplication. Funding has been allocated for construction of the Mt Roskill and Manukau extensions in anticipation of construction starts in 2004/05. A designation has been confirmed and property purchase is well advanced for the Hobsonville Deviation although resource consents are still subject to appeal.

In the case of the Avondale Extension, two options are currently being evaluated to determine a preferred alignment. At present, there is no designation for this section and any route will have significant environmental and social effects. The options under consideration include connections to either Waterview or Rosebank Peninsula. Consideration is also being given to alternative construction techniques, including some sections of 'cut and cover'.

A scheme to duplicate the Manukau Harbour Bridge on the Southwestern Motorway is currently under investigation. It is envisaged that the existing bridge will need to be duplicated to provide eight lanes and that the approaches will need to be widened to six lanes to avoid a bottleneck on this critical section of the proposed Western Ring Route. As part of this scheme, it is proposed to construct a new interchange at Gloucester Park, connecting to Neilson Street, Onehunga.

Central Motorway Improvements

Several improvements are proposed to the central motorway network. These include:

- › SH1: Central Motorway Junction Upgrade (Stages 1 and 2)
- › SH1: Harbour Bridge to City (St Mary's Bay and Victoria Park) Widening
- › SH1: Newmarket Viaduct Widening and Upgrade
- › SH1: Newmarket Viaduct to Greenlane Auxiliary Lane
- › SH16: Grafton Gully (Stages 1 and 2)
- › SH16: Newton Road to Western Springs Auxiliary Lane.

Grafton Gully Stage 1 and 2 has recently been completed and the route now provides improved access to the central business district and the Port of Auckland.

Stage 1 of the Central Motorway Junction upgrade, comprising an auxiliary lane from the Symonds Street on-ramp to the Gillies Avenue off-ramp, is progressing well and construction has started on Stage 2.

Stage 2 comprises:

- › extending the southbound auxiliary lane back from Symonds Street to Hobson Street
- › adding ramp connections between the Northern and Northwestern motorways, and between the Northern Motorway and Grafton Gully (to the port)
- › relocating the Nelson Street off-ramp from a right-hand diverge to a standard left-hand diverge.

To gain the full benefits of the Central Motorway Junction upgrades, improvements are also required to the adjacent sections of motorway. On the Southern and Northwestern motorways, auxiliary lanes are required from the Central Motorway Junction to the Green Lane and Western Springs interchanges to ensure that traffic can discharge freely from the Central Motorway Junction without creating bottlenecks. The extension of the auxiliary lane to the Green Lane Interchange requires widening of the Newmarket Viaduct southbound, including seismic upgrading.

It is also necessary to widen the Southern Motorway through Victoria Park to six lanes and through

St Mary's Bay to 10 lanes (incorporating utilisation of the northbound shoulder lane in the afternoon peak period). Several options have been investigated and consulted on. Transit is currently in discussions with the Auckland City Council and Auckland Regional Council to determine a preferred option. This issue requires resolution to realise the full benefits of the central motorway network improvements.

Northern Busway & Esmonde Road Interchange

Construction funding for the Northern Busway has recently been approved with physical works due to start by the end of 2004. This project is a critical component of the Auckland RLTS to improve passenger transport services between North Shore and the Auckland isthmus, and to fully utilise the existing capacity of the Auckland Harbour Bridge. The busway comprises a separate two-way carriageway for buses and high-occupancy vehicles (HOVs) between the Constellation Drive and Esmonde Road interchanges, and a one-way southbound carriageway from the Esmonde Road to the Onewa Road interchange, with a series of bus stations along the busway and at Albany.

In conjunction with the busway, the Esmonde Road Interchange is being upgraded. The scheme makes provision for north-facing ramps and an east-to-west connection between Takapuna and Northcote. These movements are not accommodated by the existing interchange. Construction on this project began in early 2004 and is progressing well.

Other Motorway Improvements

Other improvements that are proposed for the Auckland motorway network, including George Bolt Memorial Drive, are:

- › SH1: Northern Motorway
 - › Wainui Interchange
 - › Greville Northbound Off-ramp Left-turn Slip Lane
 - › Northcote to Sunnynook Auxiliary Lane
 - › Esmonde to Tristram Bus Priority Lane
 - › Auckland Harbour Bridge Stormwater Upgrade
 - › Harbour Bridge to City Lane Light Trial
- › SH16: Northwestern Motorway
 - › Waterview to Rosebank Westbound Bus Priority Lane
 - › Rosebank to Waterview Eastbound Bus Priority Lane
 - › Whau Bridge to Patiki Rd Off-ramp Citybound Bus Priority Lane
 - › Te Atatu North On-ramp to Whau Bridge Citybound Bus Priority Lane
 - › Te Atatu Road Interchange Off-ramp Upgrade
 - › Te Atatu to Royal Road 6-Laning
- › SH1: Southern Motorway
 - › Green Lane Interchange Upgrade
 - › Ellerslie/Panmure to Main Highway Auxiliary Lane Extension
 - › Ellerslie Southbound Off-ramp Left Turn Slip Lane
 - › Mt Wellington Northbound Off-ramp Left-turn Slip Lane
 - › Waiouru Interchange
 - › Papakura Southbound Off-ramp Intersection Safety Improvement
- › SH20:
 - › Roscommon Rd/Wiri Station Rd Intersection Upgrade
 - › Queenstown Roundabout
- › SH20A: George Bolt Memorial Drive
 - › Median Barrier.

A number of other improvements may be possible depending on regional distribution funding. These include the development and construction of further bus priority lanes, particularly on the Northwestern Motorway, to enable buses to bypass motorway congestion.

The Northwestern Motorway needs widening to six lanes from Te Atatu Road to Royal Road and,

ultimately, to Hobsonville Road. In addition, improvements are required to the Te Atatu Road interchange off-ramps and the associated local road networks to relieve congestion on these ramps.

Transit proposes to extend the Northwestern Motorway from Hobsonville Road to Brigham Creek Road. Ultimately, the Northwestern Motorway will also need to be extended beyond Brigham Creek Road including a bypass of Kumeu.

It is proposed to upgrade the Green Lane Interchange to improve the flow of traffic on Green Lane East by adding a westbound lane to the south and west sides of the rotary to enable westbound traffic from Green Lane East going to the motorway to queue without disrupting the flow of through traffic on Green Lane East. The scheme also includes an additional eastbound lane on Green Lane East between Great South Road and the interchange.

It is proposed to extend the existing northbound auxiliary lane south of the Green Lane Interchange back to the Ellerslie/Panmure Interchange northbound on-ramp to ease peak period congestion on this section of motorway.

A new interchange is required at Waiouru to serve the East Tamaki industrial area. Transit, in conjunction with the Manukau City Council, proposes to build this project in two stages by initially constructing a new Waiouru Interchange south of the Tamaki River to serve East Tamaki, with minor modifications to the Otahuhu Interchange. Connecting auxiliary lanes between Otahuhu and Waiouru interchanges will be provided at the same time. A major upgrade of the Otahuhu Interchange will be undertaken as a subsequent stage of development.

Northern Motorway Extension

Transit completed an extension of the Northern Motorway from Albany to Orewa in 1999 including a temporary link for light vehicles back onto SH1 in Orewa. Heavy vehicles are currently required to use the old SH1 route north of Silverdale to avoid the link road, which passes through a residential area of Orewa.

Transit has obtained a designation and resource consents for a further extension of the Northern

Motorway from Orewa to Puhoi and is consulting on the proposal to develop this extension as a toll road under the provisions of the Land Transport Management Act. Part of the package of works will include the construction of improvements to address amenity issues with access to Orewa's business area, and also access across SH1 into the Silverdale retail and business centres.

Eventually, it will be necessary to extend the Northern Motorway to Warkworth and beyond, possibly in the form of an expressway, with a bypass of Warkworth. No provision has been made for extending the Northern Motorway beyond Puhoi in the 10-year plan.

Traffic Management

Following the successful implementation of earlier stages of an active traffic management system for managing traffic on the northern and central sections of the motorway network, provision has been made in the 10-year plan to extend the system over the whole of the motorway network. This active traffic management system is used to improve normal traffic flows and manage traffic when incidents occur.

Transit is also working with territorial authorities in Auckland on an integrated traffic management system to integrate the management of traffic on state highways and local arterial roads. An integrated traffic management system will improve traffic flows and incident management.

Travel Demand Management

The 2003 Land Transport Management Act signals the need for travel demand management as an integral component of a sustainable approach to land transport. Transit endorses this principle and proposes to actively participate in an investigation of opportunities for travel demand management in Auckland. An initial project, recently completed, has been the Rimu Road Ramp-metering project. This project is already helping the Southwestern Motorway traffic to run more smoothly during peak traffic periods.

Eastern Transport Corridor

Transit is currently working with the Auckland and Manukau city councils on the development of a scheme in the Eastern Transport Corridor between

Tamaki Drive and Mt Wellington/Pakuranga. At this stage, this is a local roading project although it is envisaged that there will be state highway connections to the existing motorway network in Grafton Gully, and Mt Wellington and/or Manukau.

Waitemata Harbour Crossing

In accordance with the Auckland RLTS, Transit has undertaken some preliminary investigations of a new Waitemata Harbour Crossing in the vicinity of the existing Auckland Harbour Bridge and reported back to key stakeholders. Transit has been requested by the Auckland Regional Land Transport Committee to establish a steering group to undertake the next stage.

Road Safety

Transit plans to continue removing 'out of context' sections of state highway, roadside hazards, provide a network of stock truck effluent disposal sites, and improve walking and cycling.

Rural Highways

SH1 will eventually need to be four-laned to Warkworth and then to Wellsford with bypasses of Warkworth and Wellsford. These are long-term projects and, in the meantime, some improvements are required to the alignment of the existing two-lane highway. Rural projects on SH1 from just north of Wellsford to Puhoi that have been included in the 10-year plan or are currently under construction are:

- › SH1: Mangawhai Passing Lane, north of Wellsford
- › SH1: Hoteo Bridge Approaches Realignment, north of Warkworth
- › SH1: Waitaraire Passing Lane, north of Warkworth
- › SH1: Dome Hill Realignment, north of Warkworth
- › SH1: Sheep World Passing Lane, north of Warkworth
- › SH1: Windy Ridge Northbound Passing Lane Extension, north of Puhoi
- › SH1: Schedewys Hill Deviation, north of Puhoi
- › SH1: Hungry Creek Southbound Passing Lane, north of Puhoi.

A number of other safety improvements may be possible depending on regional distribution funding.

In due course, SH16 between Kumeu and Wellsford will need upgrading as traffic volumes increase with the anticipated growth at Huapai, Kumeu, Helensville and Parakai. SH16 also provides an alternative route to SH1, south of Wellsford in congested holiday periods. It is envisaged that improvements to SH16 will comprise seal widening, the provision of passing lanes, intersection upgrades and minor realignments. It is also envisaged that, eventually, there will need to be a bypass of Kumeu. Provision has been made for the following improvements in the 10-year plan:

- › SH16: Wharehine Road Curve Realignment and Passing Lane, west of Wellsford
- › SH16: Woodhill Park Road Southbound Passing Lane, south of Helensville
- › SH16: Joyce Adams – Berry Bridge Southbound Passing Lane, south of Helensville
- › SH16: Taupaki Rd/Old North Rd Intersection Upgrade, south of Kumeu.

SH22 will eventually need to be four-laned between Dury and the turn-off to Glenbrook and Waiuku but, at this stage, no provision has been made for this project in the 10-year plan. In the meantime, minor safety improvements will be undertaken on the existing highway.

Route Security

Route security will be improved by strengthening the following bridges to meet current earthquake standards:

- › SH1: Pohuehue Viaduct, south of Warkworth
- › SH1: Market Road Underpass, Southern Motorway
- › SH1: Main Highway Underpass, Southern Motorway
- › SH1: Drury Rail Overbridge, Southern Motorway
- › SH1: Beach Road Underpass, Southern Motorway
- › SH16: Lincoln Road Bridge, Northwestern Motorway.

Walking and Cycling

Cycleway projects have been included in the three-year plan at:

- › SH1: Hatfields Bridge to Gruts Bridge, north of Orewa
- › SH18: SH1 to Upper Harbour Drive, east of Greenhithe
- › SH18: Upper Harbour Drive to Greenhithe Bridge, south of Greenhithe
- › SH18: Greenhithe Bridge, west of Greenhithe.

MAINTENANCE and OPERATIONS

In addition to undertaking maintenance improvements to meet current and future levels of service, Transit proposes to:

- › greatly enhance the camera surveillance and road user information on the motorway network and minimise the disruption from incidents
- › improve safety by the application of high-skid-resistance surfacings at targeted motorway ramps, bends and intersections
- › improve ride quality and route security by remedial work on several slip sites
- › further extend the graffiti removal and protection programme

- › improve the current state of landscaping in Auckland
- › continue to refine maintenance practices and procedures to minimise the amount of maintenance to reduce noise and travel disruption both during the day and night
- › continue trials of more cost-effective and durable noise-reducing surfaces
- › continue to carry out seismic strengthening of bridges.

The TMU (Traffic Management Unit), an integrated traffic management partnership between Auckland's four cities and Transit, proposes to:

- › provide increased technological and operational expertise and advocacy on the arterial and motorway network in Auckland to optimise traffic management
- › enhance the monitoring and management of the strategic network by expansion of ITS equipment across the Auckland area
- › support and apply Travel Demand Management measures
- › enhance the seamless, integrated 24 hours per day, seven days a week coverage from the Traffic Management Centre (ATTOMS)
- › continue to upgrade operational traffic management equipment.

Table A1**Forecasts of Expenditure on Maintenance and Improvements****Auckland Region**

	04/05 (\$M)	05/06 (\$M)	06/07 (\$M)	07/08 (\$M)	08/09 (\$M)	09/10 (\$M)	10/11 (\$M)	11/12 (\$M)	12/13 (\$M)	13/14 (\$M)	Total (\$M)
Maintenance											
Structural	31.7	30.8	32.4	30.5	28.7	30.0	32.1	43.3	47.3	45.3	352.2
Corridor	14.5	18.2	19.8	22.1	24.8	28.5	31.7	36.0	37.7	41.7	275.1
Professional Services	9.1	10.7	11.5	12.2	12.6	13.5	14.3	15.0	15.7	16.9	131.4
Property Management	4.0	2.9	3.0	3.2	3.2	3.4	3.6	3.7	3.9	4.2	35.2
Preventive Maintenance	0.1	0.8	0.9	0.9	0.9	1.0	1.0	1.1	1.1	1.2	8.9
Emergency Works	0.0	3.6	3.7	3.8	3.9	4.2	4.4	5.2	5.5	5.5	39.9
Sub-total	59.5	67.0	71.4	72.6	74.2	80.6	87.2	104.3	111.1	114.8	842.6
Improvements											
Minor Safety Projects	4.4	4.8	5.1	5.2	5.3	5.8	6.2	7.5	8.1	8.3	60.7
Committed Projects	143.3	92.9	60.2	5.8	-	-	-	-	-	-	302.2
New Projects	48.9	129.6	182.8	156.7	184.4	173.9	155.3	151.8	221.2	296.4	1701.0
Property Purchase	26.8	27.7	28.5	29.4	30.3	31.2	32.1	33.1	34.1	35.1	308.1
Walking & Cycling	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.0
Sub-total	223.6	255.1	276.7	197.2	220.1	210.9	193.8	192.5	263.4	339.9	2373.0
Regional Distribution Funding	tbd	tbd	tbd	tbd	tbd	tbd	tbd	tbd	tbd	tbd	
Total	283.1	322.1	348.1	269.7	294.3	291.5	280.9	296.8	374.6	454.7	3215.6

tbd = to be determined