

EXECUTIVE SUMMARY

Transit's forecasts of expenditure in Auckland for the next 10 years are set out in Table A1.

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 are indicative only, and might change, for example, as a result of changes in funding availability and delays in project development.

Major features of the Auckland 10-year plan are:

Western Ring Route

- › SH18: Greenhithe Deviation, funding approved for a construction start in 2003/04
- › SH18: Upper Harbour Bridge Duplication, currently under construction
- › SH18: Hobsonville Deviation, for a construction start in 2005/06
- › SH20: Avondale Extension, for a construction start in 2010/11
- › SH20: Mt Roskill Extension, for a construction start in 2003/04
- › SH20: Manukau Harbour Crossing, for a construction start in 2009/10
- › SH20: Puhinui Interchange, currently under construction
- › SH20: Manukau Extension, for a construction start in 2006/07

Central Motorway Improvements

- › SH1: Central Motorway Junction (Stage 1), currently under construction
- › SH1: Central Motorway Junction (Stage 2), funding approved and for a construction start in 2003/04
- › SH1: Harbour Bridge to City, for a construction start in 2009/10
- › SH16: Grafton Gully (Stages 1 and 2), currently under construction
- › SH1: Newmarket Viaduct Upgrade, for a construction start in 2007/08
- › SH1: Market Road 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 2007/08

North Shore Busway

- › SH1: North Shore Busway, for a construction start in 2003/04
- › SH1: Esmonde Road Interchange Upgrade, for a construction start in 2003/04

Northern Motorway Extension

- › SH1: ALPURT Sector B2, for a construction start in 2006/07 (as a toll road subject to funding arrangements)

AUCKLAND STATE HIGHWAY PLAN

EXECUTIVE SUMMARY - continued

SH1: Southern Motorway

- › Waiouru Interchange, for a construction start in 2006/07

Other motorway improvements in the 10-year plan are:

- › Active Traffic Management System, Stage 3, 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 2010/11
- › SH1: Green Lane Interchange, for a construction start in 2010/11
- › SH1: Ellerslie to Main Highway Auxiliary Lane Extension, for development in the next three years
- › SH1: Hill Road Southbound Merge Improvement, for a construction start in 2004/05
- › 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: Patiki to Rosebank Eastbound Bus Lane (under construction)
- › SH16: Waterview to Rosebank Eastbound Bus Lane, for construction in 2003/04

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

- › a number of seismic retrofitting projects on key structures
- › one new passing lane and 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.

BACKGROUND

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 the completion of critical motorway links, including the Western Ring Route and the North Shore Busway. 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.

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 North Shore Busway and bus shoulder lanes on congested sections of motorway
- › extend the Northern Motorway to Puhoi (ALPUR)
- › 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

Current Improvements

Major projects currently under construction in Auckland include:

- › SH1: Central Motorway Junction Upgrade (Stage 1)
- › SH16: Grafton Gully (Stages 1 and 2)
- › SH18: Upper Harbour Bridge Duplication
- › SH20: Puhinui Interchange

Funding for SH18: Greenhithe Deviation has been committed with construction about to start.

PROPOSED IMPROVEMENTS

The locations of Auckland projects in the 10-year plan are shown on Figure A and the expected cost and timeframe for the development and construction of these projects are indicated in Table A2.

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 3 years.

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

Funding has been allocated for construction of the Greenhithe Deviation in anticipation of a start next construction season while work has already commenced on duplication of the Upper Harbour Bridge. A designation has been confirmed and property purchase is well advanced for the Hobsonville Deviation although resource consents are still subject to appeal. A designation and resource consents have been obtained for the Mt Roskill Extension and property purchase is well advanced in preparation for a start next construction season (although the possible need for additional approvals to undertake earthworks and excavations near the Mt Roskill volcanic cone might cause some delay).

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, subject to funding availability.

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.

A designation and resource consents have been obtained for the Manukau Extension of the Southwestern Motorway to connect to the Southern Motorway, south of Manukau City Centre. Property purchase is well advanced in anticipation for a construction start in 2006/07 or sooner if funding becomes available.

Central Motorway Improvements

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

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

Grafton Gully Stage 1 & 2 will be completed next year and will provide 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 currently under construction. Funding has also been approved for Stage 2 of the Central Motorway Junction upgrade and this work is currently being tendered for a construction start very shortly. 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). Options for Victoria Park are to widen the existing viaduct, or to fully or partially cut and cover through the park. While tunnelling would be desirable to reduce the social and environmental effects of the viaduct, the additional costs are significant and will require regional funding. Unless regional funding is available, Transit proposes to proceed with widening the existing viaduct. This issue requires resolution to realise the full benefits of the central motorway network improvements.

North Shore Busway

The North Shore Busway 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. The North Shore Busway is currently under design.

Other Motorway Improvements

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

- › SH1: Northern Motorway
 - › Esmonde Road Interchange
 - › Northcote to Sunnynook Auxiliary Lane
 - › Auckland Harbour Bridge Stormwater Upgrade
- › SH16: Northwestern Motorway
 - › Rosebank to Waterview Eastbound Bus Shoulder Lane
 - › Te Atatu to Royal Road Six-Laning

- › Te Atatu Road Interchange Off-ramp Upgrade
- › Lincoln Road Interchange Off-ramp Upgrade
- › SH1: Southern Motorway
 - › Green Lane Interchange Upgrade
 - › Ellerslie/Panmure to Main Highway Auxiliary Lane Extension
 - › Waiouru Interchange
 - › Hill Road Southbound Merge Improvement
 - › Takanini Northbound On-ramp Auxiliary Lane
- › SH20: Southwestern Motorway
 - › Rimu Road Ramp Metering
- › SH20A: George Bolt Memorial Drive
 - › Median Barrier

The scheme for upgrading the Esmonde Road Interchange, which is currently being designed in conjunction with the North Shore Busway, 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.

An auxiliary lane from Northcote to Sunnynook to relieve afternoon peak congestion on the Northern Motorway will be investigated and designed over the next two years.

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 and Lincoln Road interchange off-ramps and the associated local road networks to relieve congestion on these ramps.

It is proposed 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. No provision has been made for these projects in the 10-year plan.

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. It is proposed 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. A major upgrade of the Otahuhu Interchange with auxiliary lanes between the Otahuhu and Waiouru interchanges will be undertaken as a subsequent stage of development. An option for including auxiliary lanes in the first stage of the project is to be reconsidered during detailed design.

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 investigating developing this extension as a toll road under the provisions of the Land Transport Management Bill.

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 Stage 1 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 and Management

The Auckland RLTS signals the need for travel demand management as an integral component of a sustainable approach to land transport in Auckland. Transit endorses this principle and proposes to actively participate in an investigation of opportunities for travel demand management.

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 is undertaking some preliminary investigations of a new Waitemata Harbour Crossing in the vicinity of the existing Auckland Harbour Bridge. It is envisaged that any new crossing will have a connection to the Northwestern Motorway and thereafter to the Western Ring Route. At this stage, it is not proposed to connect any new crossing of the Waitemata Crossing to the Southern Motorway but it is possible that there could be connections to the central city street network and Grafton Gully as well as the Northwestern Motorway.

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 between Wellsford and Puhoi which have been included in the 10-year plan are:

- › SH1: Hoteo Bridge Approaches Realignment, north of Warkworth
- › SH1: Dome Hill Realignment, north of Warkworth
- › SH1: Windy Ridge Northbound Passing Lane Extension, north of Puhoi
- › SH1: Hungry Creek Southbound Passing Lane, north of Puhoi

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. No provision has been made for these improvements in the 10-year plan.

SH22 will eventually need to be four-laned between Dury and the turnoff 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, Northern Motorway

Walking and Cycling

Cycleway projects have been included in the 3-year plan at:

- › SH1: Te Hana Township, north of Wellsford
- › SH1: Hadfields Beach to Gruts Bridge, north of Orewa
- › SH1: Whangaparoa to Wainui Road, Silverdale

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.

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

	03/04 (\$M)	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)	Total (\$M)
Maintenance											
Structural	29.2	29.9	30.5	31.1	31.7	32.4	33.0	33.7	34.3	35.0	320.9
Corridor	13.2	14.2	14.8	15.4	16.1	16.8	17.5	18.3	19.1	20.0	165.4
Professional Services	8.0	8.2	8.4	8.5	8.7	8.9	9.0	9.2	9.4	9.6	87.9
Property Management	3.2	4.2	4.3	4.4	4.5	4.5	4.6	4.7	4.8	4.9	44.2
Preventive Maintenance	1.0	1.2	1.2	1.2	1.2	1.3	1.3	1.3	1.3	1.4	12.4
Emergency Works	3.2	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.3	37.3
Sub-total	57.9	61.0	62.6	64.2	65.9	67.6	69.4	71.3	73.2	75.2	668.1
Improvements											
Minor Safety Projects	2.0	2.1	2.1	2.2	2.3	2.3	2.4	2.4	2.5	2.6	23.0
Committed Projects	103.4	107.4	85.0	26.9	-	-	-	-	-	-	322.7
New Projects	23.0	70.1	78.3	98.7	140.9	160.1	176.9	180.4	168.6	181.4	1278.4
Property Purchase	35.3	22.4	23.0	26.7	27.5	28.3	29.2	30.0	31.0	31.9	285.3
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	163.8	202.0	188.6	154.6	170.7	190.9	208.5	213.0	202.2	216.0	1910.3
Total	221.7	263.0	251.1	218.8	236.6	258.5	278.0	284.3	275.4	291.1	2578.5