

## Transit celebrates Waikato's Mercer to Longswamp opening

**Minister of Transport Hon. Annette King recently opened the \$83M Mercer to Longswamp expressway project on State Highway 1, marking the completion of a major road safety upgrade project.**

Joining the Minister at the official road opening on 28 July were Transit Chairman David Stubbs, Waikato District Mayor Peter Harris and Franklin District Mayor Mark Ball.

The improved route follows the Waikato River, from Mercer to Longswamp north of Huntly, providing key southern road access between Auckland and Hamilton for the 17,500 cars using it daily.

Transit Regional Manager Chris Allen said the wider safety impacts of the project are especially significant. "This 12km section of SH1 was once notorious for serious head-on crashes, often involving multiple fatalities. Now, barriers or wide grass medians separate traffic flows and the chances of head-on crashes are reduced significantly," he said.

Mr Allen said road users, and especially the local community, deserved a special word of thanks for enduring considerable inconvenience during the six-year construction period.

"The cooperation and support of key landowners and community leaders in Mercer, Meremere and the farming community has been critical in completing this project," he said.

"The project was a significant geotechnical challenge with much of the route built on soft swamps" Mr Allen said.

Waikato Expressway engineers faced a massive challenge after finding "global" instability at 13 slip sites in the underlying rock formation through the Mercer hills and 10 swampy zones further south. They were up to 20m deep and causing as much as 3m of ground settlement.



Minister of Transport Hon. Annette King and Dallas Williams (left), Year 8 and Callum Maclean, Year 1 from Mercer School join in the celebrations at the Mercer to Longswamp expressway opening ceremony.

That meant 5m of fill had to be laid to build up carriageways by 2m, from total project excavations of about 1.5 million cubic metres of earth and rock.

Engineers are confident of having forced out most underlying moisture by laying tonnes of preload rock and earth above vertical fabric "wick" drains.

These are in addition to tens of kilometres of drains bored through the Mercer hills to lower the water table.

Transit's initial plan in the 1990s was to try to fit a four-lane highway between the hills and river at Mercer, but early investigations revealed a risk of triggering massive landslides, so the inland route was chosen for the southbound lanes.

Transit is relieved to have the challenging Mercer to Longswamp section behind

them, after over five and-a-half years of construction, complicated by financial, geotechnical, environmental and climactic challenges.

The project is one link in the \$1 billion-plus Waikato Expressway.

It is the third part of the four-lane expressway to be completed by the Hamilton Transit office, after an 8km stretch between the Bombay Hills and Mercer, and 10km between Rangiriri and just north of Huntly.

The next step is a 3km upgrade around Rangiriri. Investigation of this starts this year and construction is planned to begin within five years.

Transit also expects to build bypasses around, Huntly, Ngaruawahia, Hamilton and Cambridge as funding becomes available. ■

## Congestion reducing technology to be set up in Auckland - a first for New Zealand

**Transit New Zealand is implementing ramp signalling at 31 on-ramps on Auckland's Southern Motorway, making Auckland New Zealand's first city to benefit from technology designed to help manage traffic flows.**

Ramp signals are traffic lights at the top of a motorway on-ramp which operate during peak periods, by managing the rate at which vehicles merge from an on-ramp onto the motorway. The result will be more predictable and reliable journey times and safer merging.

Transit is introducing ramp signals on the Southern Motorway as part of its comprehensive traffic management system in Auckland. The project follows an earlier trial on the SH20 Southwestern Motorway on-ramp at Rimu Road.

The signalling system, to be installed by Transfield Services Ltd, is scheduled to start operation at Papakura in October and will be progressively commissioned through the Central Motorway Junction (CMJ) by January 2007.

"The work at the Central Motorway Junction will improve a number of capacity and safety issues affecting this part of the Southern Motorway," says Auckland regional manager Peter Spies.

Work on the Southern Motorway includes placement of traffic lights on all on-ramps, installation of electronic sensors in the road, and in some cases widening the ramp - together with technical work to integrate the ramp signalling with the existing traffic management systems operated by the Auckland Traffic Management Unit.

Several locations will include bypass lanes to give priority to trucks, and will eventually



SH20 Southwestern Motorway on-ramp at Rimu Road where ramp signals have undergone an earlier trial.

give bus and high occupancy vehicles priority as the project progresses.

Transfield's contract provides for the \$27 million installation of ramp signals at all 31 on-ramps on the Southern Motorway, from Curran St in the north to Papakura in the south.

"The introduction of ramp signals on Auckland's motorways is one of a number of traffic management and traveller information tools aimed at reducing traffic congestion and helping deliver

more consistent overall journey times for motorists," says Mr Spies.

"This project supports Transit's commitment to demand management - the idea that in addition to building new roads we also need to look at ways to improve the operation and efficiency of the existing road network," he says.

Transit plans to progressively extend ramp signalling across the Auckland motorway network subject to confirmation of funding. ■

## Meeanee construction set to begin

**Construction of Stage 2 of the Hawke's Bay SH50 Meeanee Interchange is set to begin in September.**

Earthworks for Stage 1 will also resume after the winter break and continue in tandem with construction of the interchange, to ensure the project is delivered within timeframes.

"The project is the region's largest currently under construction, and is designed to reduce traffic delays and congestion at the existing intersection as well as the number of crashes," regional manager Hilton Netterville says. The project also includes facilities for pedestrians and cyclists.

Opus International Consultants Ltd has completed design work for upgrading the intersection, and will manage the project through the construction phase.

The first stage of the earthworks was partially completed in April 2006 and will be resumed in September in more favourable road building conditions. Up to 120,000M<sup>2</sup> of fill for the embankments will be provided by Napier City Council,



Artist's impression of the design motif for the over-bridge concrete panels for Meeanee Interchange. The motif was decided by public vote and Transit would like to acknowledge Taradale High School students and the Taradale and District Community Association for their input.

of which 80,000M<sup>2</sup> has been obtained from their Cross Country Drain excavation project.

The interchange involves an over-bridge to carry expressway traffic over Meeanee Rd, with an hourglass configuration roundabout beneath to slow traffic along Meeanee Rd and provide full access onto the expressway in both north and south directions.

The project is due for completion in December 2007. ■

### How they work

#### Ramp signals

- consist of electronic sensors in the roads and traffic signals which allow two vehicles at a time to enter the motorway
- operate during peak traffic times only
- information gathered from cameras and electronic sensors is processed at the Northcote traffic management centre

## Two major harbour projects move forward

### Manukau Harbour Crossing Project SH20

Transit has lodged the notice of requirement and resource consents for the upgrading of the Southwestern Motorway (SH20) between Walmsley Road and Queenstown Road. This includes the new bridge over the Manukau Harbour. It is anticipated that a joint hearing will be heard by the Auckland Regional Council, Auckland City Council and Manukau City Council by the end of this year.

The project received high priority in Transit's State Highway Forecast 2006/07, as it forms a key part of the strategic Western Ring Route that will improve access to Manukau City, Auckland City, Waitakere City and North Shore City.

Transit intends to have the Manukau Crossing project ready for construction in 2008.

It includes plans for a duplicate motorway bridge over the Manukau Harbour, alongside the existing bridge. This will

create four lanes in each direction across the harbour, including an auxiliary lane for local traffic as well as dedicated bus shoulder lanes. The Onehunga (Gloucester Park) interchange is proposed to be upgraded and the old Mangere pedestrian footbridge will be replaced with a new pedestrian and cycle crossing in the same location.

The motorway will be widened by an extra lane in each direction either side of the bridge. The project also aims to provide better access and increased safety for pedestrians and cyclists travelling between Onehunga and Mangere Bridge. ■

### Transit lets Bay of Plenty Harbour Link Stage 1 SH29 contract

Transit New Zealand has let the \$12.3 million contract for the construction of Stage 1 of the Bay of Plenty Harbour Link project.

Construction of the first stage includes

the four-laning of Hewletts Road from Jean Batten Drive to the old toll plaza on the Harbour Bridge causeway and will be undertaken by Fulton Hogan. Work will begin in September and is expected to take a year. Tenders have also been called for the design and construction of Stage 2, which will commence once Stage 1 is completed. Construction is expected to take three years.

Harbour Link will provide a continuous four-lane state highway linking Tauranga with Hewletts Road and Mount Maunganui. The project route is approximately 4.9km long and includes:

- four laning of Hewlett's Road from Jean Batten Drive to Totara Street
- a four-lane flyover from Takitimu Drive (State Highway 2) to the existing Harbour Bridge
- a duplicate Harbour Bridge constructed alongside the existing bridge
- four-laning of the bridge causeway. ■

## Campaign targets crashes on State Highway 27

**Agencies involved in road safety on the SH27 Mangatarata to Patetonga corridor recently announced a progressive action plan to reduce the rate of serious crashes on this Hauraki district highway.**

All the major agencies with a stake in road safety will contribute - Transit New Zealand, the Police, Land Transport New Zealand, Hauraki District Council, Environment Waikato and ACC.

### The full campaign will include:

- a major safety upgrade involving road signs, road markings and road surfacing, by Transit New Zealand
- an increased enforcement campaign by the New Zealand Police
- a driver education campaign, with contributions from all agencies.

The agencies involved have developed the initiative to reduce the rate of fatal and injury crashes on SH27 in the Hauraki District.

"The approach we have taken in combining engineering, enforcement and education initiatives (the three Es) has been proven to reduce crash numbers in New Zealand and overseas," Transit New Zealand Regional Manager, Chris Allen said.

"It is the ability to call on all of the multi-agency expertise we have available

that makes these safety initiatives so successful."

"We have put a lot of effort into analysing crashes on this section of SH27 and developing specific solutions. Analysis shows that driving too fast for the conditions, especially when the road is wet and at night causes the majority of crashes. There is also an over representation of crashes involving trucks," he said.

The following crash reduction measures will be implemented progressively in coming months:

### Installation in August including:

- large warning signs on each side of the highway alerting motorists to the crash risk
- intensive, targeted enforcement by Police
- upgrading chevrons around curves to new high visibility orange/black chevrons
- additional and extra-large curve warning signs
- radio advertising and road safety bulletins.

### Installation by the end of November including:

- increased lengths of double yellow 'no overtaking' markings



SH27 large warning signs alert motorists to the crash risk

- extra-wide painted edgelines and shoulder stripes for increased visibility
- removal of trees and relocation of poles to create, where possible, a 'clear zone' at least 3 metres wide and up to 9m wide, on each side of the highway
- a series of billboards and variable message signage with targeted safety message.

### Installation early in 2007 including:

- shoulder widening at some locations
- excavation of banks on curves to improve driver sight distances.

A road resurfacing strategy will be implemented by 2008.

This campaign is one of ten crash reduction initiatives planned in the Waikato and Bay of Plenty regions this year. ■

## Transit goes on a skink hunt

**Two species of lizard recently found on Transit-owned land in Hamilton sparked a rescue and relocation operation to save the protected reptiles.**

The native Copper Skink (*Cyclodina aenea*) and the Rainbow Skink (*Lampropholis delicata*), an introduced species from Australia, have both been found at the leased site which was due to be cleared of rubbish.

Transit staff worked with volunteers, Envirologic Environmental consultants and DOC using fast foot work to capture and relocate the native lizards to a suitable habitat nearby, early in August.

"We are very pleased to be able to preserve local wildlife and facilitate the lizards' relocation. A large group of volunteers have put in many hours working with DOC, Transit and Environmental consultants Envirologic to catch the skinks. The effort has captured 110 copper skinks, which is double the number required to start a new population," regional manager Chris Allen says.

The large quantity of rubbish at the site created a refuge for the copper skink from cats, one of their main predators.



From left: Simon Chapman from Envirologic, Jason Schirnack Transit project engineer and Jack Magill Transit property contract manager. They had to be sharp to catch protected lizards for re-location.

"Introduced predators including mice, rats and cats have drastically reduced lizard numbers in the North Island, so they are rarely seen," Department of Conservation biodiversity ranger Carla Innes says.

The Copper Skink is sleek, glossy and coppery in colour and grows to about 10cm in length, with a very long tail. Being nocturnal, they are active mainly at night and eat small insects, spiders and similar invertebrates.

Native lizard species are protected by the Wildlife Act, and may not be captured, collected or deliberately disturbed without a permit issued by DOC. ■

## Centennial Highway median barrier construction starts

Following the success of the existing 700-metres of wire-rope barrier on SH1 Centennial Highway, Transit New Zealand started construction in August on extending the barrier by 3.5km, from the Fisherman's Table Restaurant to Pukerua Bay.

The project is expected to be completed in October 2007. Works will be carried out at night between 7pm and 6am, Sunday to Thursday inclusive, under a stop/go traffic control system.

The current award-winning barrier on Centennial Highway was installed in December 2004. There have been no reported injury crashes since then. Monitoring cameras have captured 10 instances where the barrier was hit, with four of these potentially resulting in serious injuries, had the barrier not been there. ■

## Waiohine Bridge SH2 grows legs

Construction of the bridge columns for the Wairarapa's Waiohine Bridge is well underway with seven of the eight columns completed.

Waiohine River was in continual flood recently, preventing work being undertaken in early July. However, project completion remains on target for January 2007.

Transit New Zealand project manager Jonnette Adams said that the bridge columns were being made on site and constructed to sit on top of the steel casings that have already been drilled into the riverbed.

"We're looking forward to getting the 55 beams of the bridge completed and getting the bridge beams on site ready for construction of the bridge deck which is due to start in September," she said.

The present Waiohine Bridge is situated between Carterton and Greytown on State Highway 2. The new bridge, 93metres long and 10.6 metres wide, is 10 metres downstream from the current bridge. There will be additional width for cyclists on each side. ■

## Board Meetings

The next Board meeting is in Transit New Zealand national office at 9.30am on Wednesday 6 September 2006 (open agenda from 2.30pm).

InTransit editor: Marie Watson, tel: (04) 496 6639, PO Box 5084, Wellington. Email: marie.watson@transit.govt.nz

## what's on – August 2006

For information contact Transit training and education manager Stuart Fraser unless otherwise specified. Tel (04) 496 6698, email: stuart.fraser@transit.govt.nz

### Train the Trainers - Refresher Courses for Level 1 Roads

For Level 1 trainers to conduct refresher training they must attend either a trainers' refresher course or the full course where they will receive updated information. Contact Kim Ph 04 496 6688, email: copttm.quals@transit.govt.nz

**Level 1 STMS Trainers Refresher** - also a refresher for Level 1 TC Trainers, Taupo 24 November

**Level 1 - STMS Train the Trainer Course**, restricted entry, applicants must be qualified STMS, Taupo 27 to 29 November.

**Road Safety Barrier Systems Workshop** - Auckland 27-28 September 2006.

This two-day workshop is essential. Consultants and contractors responsible for design, installation, checking, and audit of Transit's road safety barriers should attend.

An application has been made to IPENZ for this course to be recognized for CPD.

**Transit New Zealand/NZIHT 8<sup>th</sup> Annual Conference** - Auckland 15-17 October 2006.

Keep this date free for the annual conference, to register your interest please contact: Jo Hoskins Ph: (06) 759 7065, email: jo@nzihit.co.nz.

### Basic Geometric Design

Christchurch - 8 - 10 Nov      Wellington - 22 - 24 Nov      Auckland - 4 - 6 Dec  
Dunedin - 13 - 15 Nov      Hamilton - 27 - 29 Nov

This is a three-day workshop designed and conducted by ARRB staff and experienced New Zealand Consultants, to enable geometric design practitioners to understand the fundamentals behind the various computer design packages such as Moss and MX. Those attending will be shown basic skills such as:

- Determination of radius curves and superelevation values
- Determination of superelevation development and transition curves

These skills will then be used while carrying out a series of design exercises i.e.:

- Determine horizontal curves values
- Determination of sight distance values

An application has been made to IPENZ for this course to be recognized for CPD. For a full copy of the programme, and to register your interest, contact: Stuart Fraser. Tel (04) 496 6698, email: stuart.fraser@transit.govt.nz