



Newmarket Connection Viaduct Replacement Project

What's inside

Page 2 Project overview & update

Page 3 Construction programme

Page 4 Slow down over Newmarket



An innovative, sustainable, urban design-integrated transport solution for Auckland

The new Newmarket Viaduct will not only enhance motorway traffic flow, but help breathe life back into a neglected part of Newmarket.

Innovative in its design, construction and delivery, the Newmarket Connection project will see the existing viaduct replaced in stages by a wider, stronger, safer structure. Importantly this staged approach will allow us to increase southbound capacity across this vital motorway link by early 2011.

Built to withstand a 1:2500 year earthquake, and featuring markedly superior safety and acoustic barrier

protection, the new viaduct is being built with the local community in mind. The Newmarket Connection project will also provide an enhanced pedestrian experience, incorporating a volcanic-themed walkway from Gillies Ave to Broadway. These pedestrian improvements form part of an urban design framework which will ensure this vital piece of Auckland's infrastructure connects more appropriately with its surrounding environment.

Stay informed

There are a variety of ways you can keep up to date with progress - the easiest being to register for weekly updates at: www.nzta.govt.nz/newmarketconnection.

You can also watch construction footage at www.youtube.com - search 'Newmarket Connection' or follow us on Twitter: www.twitter.com/Nmkt_Connection.



Design of the times

Considered ahead of its time when built, the Newmarket Viaduct now struggles to cope with the demands of 21st century traffic

When the Newmarket Viaduct was completed in 1965, it was rightly seen as a pioneering development. The first bridge ever to be designed by computer in the Southern Hemisphere, and constructed using groundbreaking techniques, lessons learned from its construction have influenced the evolution of bridge design around the world.

However, at a local level, for all the benefits the viaduct has provided for the wider Auckland region, it has limited Newmarket's growth. Therefore when the NZTA began to consider how to upgrade it, enhancing traffic flow was only part of the conundrum. The decision to replace, rather than retrofit the existing viaduct, takes into account the contribution a stronger, more urban design-integrated structure can make to the development of one of Auckland's most dynamic suburbs.

The innovative staged approach to delivery will not only minimise impact on the community through the project, but realise one of the project's key aims - improving southbound capacity as early as possible. The new bridge will have a design life of 100 years, and has been future-proofed to increase northbound capacity if further improvements through the Central Motorway Junction allow for this.



Newmarket Connection: the key benefits

Fourth southbound lane early

The extra southbound lane, which will run as far as Greenlane, will release the benefits of previous enhancements to the Central Motorway Junction (CMJ), easing peak hour bottlenecks exiting the city. The staged approach to construction / deconstruction will ensure this key benefit is realised as early as possible, importantly in time for the Rugby World Cup 2011

Improved seismic performance

Providing the main access route south of Auckland, the bridge is a vital link in the country's infrastructure, therefore seismic capacity is a key consideration. The new structure will be built to withstand a 1:2500 year event.

Stronger, safer

Traffic patterns have changed markedly since the viaduct was completed in 1965 – even in the last 30 years the number of vehicles passing across the structure has more than trebled – putting extra pressure on the existing structure. This increase in volume has led to overweight vehicles being prohibited from driving across it. The new bridge will be able to accommodate all road vehicles, alleviating this extra pressure from the surrounding arterial routes.

Solid edge barriers with slimline steel rails will help to contain debris, reduce noise and provide greater safety protection for drivers, while still preserving view shafts for all vehicles. Further safety, acoustic

and maintenance benefits will be derived from a reduction in deck joints across the bridge.

... and smoother

The road across the new bridge will be surfaced with OGPA (Open Graded Porous Asphalt), which is noted for its skid resistance and noise attenuation qualities.

Urban design

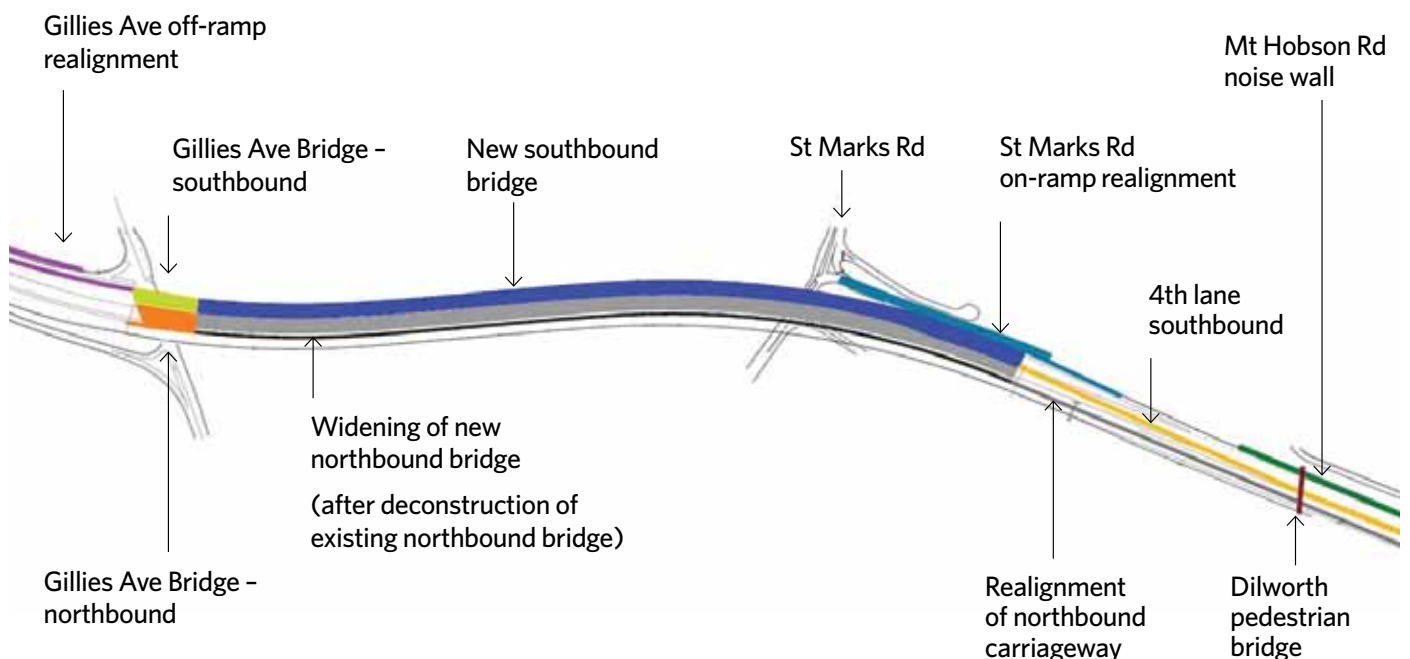
Limitations associated with the existing structure have prevented significant development beneath it. Through urban design and landscaping considerations, the new bridge has been designed to connect better with the surrounding environment, and encourage investment to create a more community-friendly space around it.

Sustainability

From the provision for a fourth northbound lane, to the planting of flora chosen to encourage the return of birdlife to the area, the bridge has been designed with long term benefits in mind. Sustainability also underpins the approach to the deconstruction process, as we have identified opportunities to recycle many components of the demolished viaduct. It is also envisaged that knowledge gained from this process will allow us to support our commitment to reducing carbon emissions through our wider construction portfolio throughout NZ.

Newmarket Connection Viaduct Replacement Project construction programme

Due to ongoing construction work, please drive with caution when travelling across the Newmarket Viaduct



Note: This is an indicative programme and is subject to change

To keep Auckland moving during the Newmarket Connection project, all drivers have a role to play

A quick message from Auckland's Regional State Highways Manager, Tommy Parker

To mitigate the visual distractions and changed road conditions over the viaduct - all mechanisms that allow us to keep the motorway open throughout the project - the speed limits have been reduced in both directions.

So for your own safety, and that of our workers, please **slow down over Newmarket**.

The Newmarket Viaduct is at the heart of the busiest stretch of road in New Zealand, therefore we challenged our project team to find a way of maintaining traffic flow while carrying out an essential upgrade of this important link in the motorway network.

The staged construction approach and use of the 'Big Blue' gantry allows us to keep all three lanes of the existing southbound viaduct open as we build its four-lane replacement. This does however, see us working in direct proximity to live motorway traffic, in places more than 20 metres above Newmarket. To manage the risks this creates for drivers and our workers, we have implemented a series of temporary traffic measures. These include narrowing the motorway lanes and reducing the speed limits - to 70km/h southbound and 80 km/h northbound.

While the sheer volume of traffic serves to limit speed across the viaduct by day, our primary safety concern relates to off-peak times. As our construction activity increases, so does the need to respect these new speed limits as they are a key mechanism in allowing us to keep all three lanes open safely in both directions through what is very much a live construction zone.

Above and beyond the economic benefits of an improved Newmarket Viaduct, our primary objective for the Newmarket Connection project is to complete it with 'zero harm'. By slowing down over Newmarket, you can help us achieve this.



Stay informed.

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