

NCI DESIGN ENHANCEMENTS

Since getting approval for the project's resource consents last year following a Board of Inquiry process, the NCI Alliance team has developed the design further. These enhancements will help reduce disruption to customers and keep traffic moving.

Redesign the Albany Busway Station bridge

WHAT'S DIFFERENT?

The lodged design had a bridge that turned into the bus station site and crossed over top of the car-parking area, removing around 10 car-parks during construction. The new design turns the bridge more tightly into the station, removing the need to cross over the top of the car-parking area.

BENEFITS:

- Removes the need to take away car-parks during construction.
- No restrictions if future changes are needed to the layout of the car-park or platforms.
- Provides the ability to cater for light rail. Construction of the bridge will include increased reinforcing, to ensure the bridge is strong enough to carry rail.

Encourage other travel choices with great urban design

WHAT'S DIFFERENT?

The lodged design proposed that all the different transport modes (motorway vehicles, buses, cyclists and walkers) run beside each other at approximately the same level. As a result, in some places there would have been large retaining walls up to 7m high with the Shared Use Path running along the bottom. Double decker buses on the Busway would have been right next to pedestrians and cyclists, potentially making users feel boxed in.

The new design separates each travel choice with a stepped retaining wall design. The two levels on the new stepped wall will lift buses away from the motorway and lift pedestrians and cyclists away from the buses. Planting and landscaping will soften the environment of the pedestrian and cyclist's shared path to increase enjoyment and encourage use.

BENEFITS:

- Significantly improves the look and feel for all customers and creates interest, as well as contributing to a greater feeling of safety by separating people and vehicle types.
- Increases the amount of planting on the project.
- Lessens the height difference and steepness of connection points to the shared walking and cycling path, making the path more accessible for local community members of all ages and abilities.
- A consistent look for the retaining walls can be used throughout the area. As a result, construction will be faster than originally proposed, reducing construction impacts on neighbours.

Installing new traffic-analysing technologies

WHAT'S DIFFERENT?

The lodged design included standard technology (hard-wired 'loops') to count traffic numbers during construction so that AT and the Transport Agency's traffic operations centres can monitor traffic volumes and report on incidents on customer-facing apps.

The new plan is to upgrade to the latest technology systems being adopted internationally, and take advantage of new 'wireless' technologies called 'pucks'. These small devices can be easily moved by the project team when works change the motorway layout or its lane markings, and be instantly re-installed in a new location, while continuing to send data to the operation centre.

BENEFITS:

- No loss in data being transmitted to the operations centre during construction. Usually, hard-wired in systems must be 'cut' on site, and then replaced and re-connected by a specialist team (sometimes this could take a few weeks).
- This new low-cost, easy to install technology can be added to the new structures for the other travel modes, therefore counting buses, pedestrians and cyclists too.

Reduced footprint in the Rosedale Landfill

WHAT'S DIFFERENT?

The lodged design acknowledged the health and safety risks of encroaching too far into the landfill, which is a restricted area with potential contamination risks. However, the design still required part of the works to run along the site, and the relocation of some of the landfill's gas monitoring equipment.

The new design reduces the footprint of the project even further, by realigning the Greville Road southbound on-ramp further west.

BENEFITS:

- Less risk of contamination and other health and safety risks for both the public and construction workers.
- Less interruption to the current monitoring operations of the site.
- Less land requirement in this council-owned property, which long term is expected to be unrestricted and become a reserve.

Minimise traffic disruption at Rosedale Road

WHAT'S DIFFERENT?

The lodged design required one-way temporary traffic restrictions for around 3-4 months throughout construction on this busy industrial route, while the road was lowered and utility service lines were relocated. The road must be lowered to provide greater 'headroom' for vehicles travelling under the widened motorway and new Busway bridge above (bridge 'strikes' are currently common).

Using a new approach to traffic management, we are looking at lowering Rosedale Road over a series of weekend closures or closures during the holiday period or over a long weekend, when traffic volumes are lighter. We do need to fully close Rosedale Road to complete this work (Tawa to Triton), however the full closure would take significantly less time to complete than a longer term, one-way closure.

BENEFITS:

- Less travel disruption for many commuters, freight and heavy-load users using Rosedale Road during construction.
- Ability to keep pedestrian and cyclist paths open through construction.
- Greater flexibility to absorb any additional construction works required for Auckland Transport's Rosedale Busway Station in the future to save time, money and disruption.

* The Rosedale Busway Station is yet to be consented and added to the construction programme. It is proposed that the station will span Rosedale Road on the Busway bridge, with new local bus bays below. Construction timeframes for the station project are not yet confirmed.

Underpass to connect SH1 heading westbound and removing large retaining walls

WHAT'S DIFFERENT?

The lodged design had an overpass to connect SH1 southbound to SH18 heading westbound, which gradually lowered to the Caribbean Drive/SH18 intersection and sat on top of earth-filled embankments or high retaining walls.

The new design runs this westbound connection under SH1, creating an underpass at a much lower height, that now only requires viaduct bridge structures near Caribbean Drive.

BENEFITS:

- Noise from traffic on the new connection won't carry as far as the height has been reduced.
- Visual impacts for the Unsworth Heights community who overlook the area are reduced.
- The volume of earthworks is reduced, with plenty of opportunities for new planting in the spaces created.
- Reduces the steep grade of the road connection to provide benefits for freight, emergency services and other heavy-load vehicles.

Minimise traffic disruption at Upper Harbour Highway/Paul Matthews Road

WHAT'S DIFFERENT?

The lodged design included a bridge crossing the motorway into Paul Matthews Drive. This required a six-month restriction on right-hand turning traffic in and out of Paul Matthews Road and required a huge amount of excavation and temporary sheet piling on Upper Harbour Highway to lower it by up to 4m. This lowering was needed to provide clearance for vehicles under the new Paul Matthews Road bridge.

The new design eliminates the need for a bridge as Paul Matthews Road will now be built offline and realigned to run alongside SH18, connecting directly into a new intersection at Caribbean Drive.

The roundabout at the Paul Matthews Road / Caribbean Drive intersection will now be traffic signals to increase the capacity of the intersection.

BENEFITS:

- No need for right-hand turn restrictions on Upper Harbour Highway/Paul Matthews Road in this busy industrial area as much of the construction will be carried out off-line. This will also reduce the impact on bus routes.
- Earthworks are significantly reduced, eliminating the need for temporary sheet piling work, which will significantly reduce noise and vibration levels during construction.
- Removes the need for a steep bridge on Paul Matthews Road, which will improve sight lines and help to maintain safe speeds.

Reduced impact on utilities

WHAT'S DIFFERENT?

The lodged design acknowledged that many service lines (power, water, wastewater) would need to be covered over or relocated before the new road works could be constructed. This causes inconvenience for the other providers, and adds time and cost to the construction programme, however is always a necessary part of major motorway works. It is standard practice for utility service lines to run alongside motorways/roads, outside of private properties.

The new design has looked at more efficient ways to relocate these assets, or work around them. For example, removing large retaining walls and placing the footings of the viaduct structures near the Caribbean Drive intersection reduces the need to relocate whole lengths of service lines. Working together to shift other lines out of the road carriageway helps with maintenance later.

BENEFITS:

- Helps with a 'dig once' philosophy. By having service lines in well-considered locations, it is less likely that utility maintenance needs in the future will require temporary traffic management, reducing the impact on all customers long term.
- Less overall inconvenience, time and cost to all parties.