

Noise mitigation

The project team have been using the latest road noise standard to assess traffic noise and develop a range of noise mitigation options. The route has been divided into a number of sections to evaluate what the best form of noise mitigation is for each section. Four different options were investigated:

- road surface material
- barriers
- road surface material plus barrier
- high barriers.

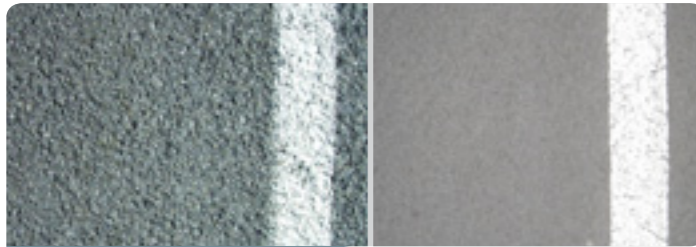
As a result of feedback at the open day, we have discounted the use of high barriers because of visual impacts and potential shading.

The proposed mitigation is:

Road surface material – Different road surfaces have different noise characteristics associated with tyre-road interaction. The level of tyre/road noise generated depends on the surfacing and the speed of the vehicles.

The most common low noise surface in use is 'open graded porous asphalt' (OGPA). The use of OGPA can provide significant noise reduction in contrast to chipseal road surfaces.

OGPA (or an equivalent asphalt surface) is proposed for each of the sections where noise mitigation is needed.



Left: Chipseal. Right: OGPA.

Barriers – The solution will be an earth bund (embankment) with a timber fence on top. The effectiveness of a barrier depends upon its density, height, length and location. This type of barrier can reduce noise by between 5 and 10 decibels.

Concrete barrier – A solid concrete safety barrier is required on both sides of the three proposed flyovers: these being the QEII Drive flyover and the flyovers over the Main North Railway line and Main North Road. Concrete barriers can address both road safety and noise issues as a single cost-effective solution.



Left: An example of an earth bund with timber acoustic fence on top. Right: An example of a concrete barrier.

Section 1 from Winters Road/QEII Drive to Owen Mitchell Park

- OGPA road surfacing.
- A 1.1m high concrete barrier along the length of the flyover and then a 3.5m high barrier (1.8m fence on a 1.7m earth bund).

Section 2 from Owen Mitchell Park to Willowview Drive

- OGPA road surfacing.
- A 3.5m high barrier (1.8m fence on a 1.7m earth bund) along the western side of the motorway for approximately 1.5km.
- A 3.5m high barrier (1.8m fence on a 1.7m earth bund) on the eastern side of the motorway at Prestons Road for a distance of 150m.

Section 3 from Belfast Road to Main North Road

- OGPA road surfacing.
- A 4m high barrier (1.8m fence on a 2.2m earth bund) between the motorway and the realigned Guthries Road for a distance of approximately 200m.

Section 4 & 5 – QEII Drive

- OGPA road surfacing.
- Existing fencing.

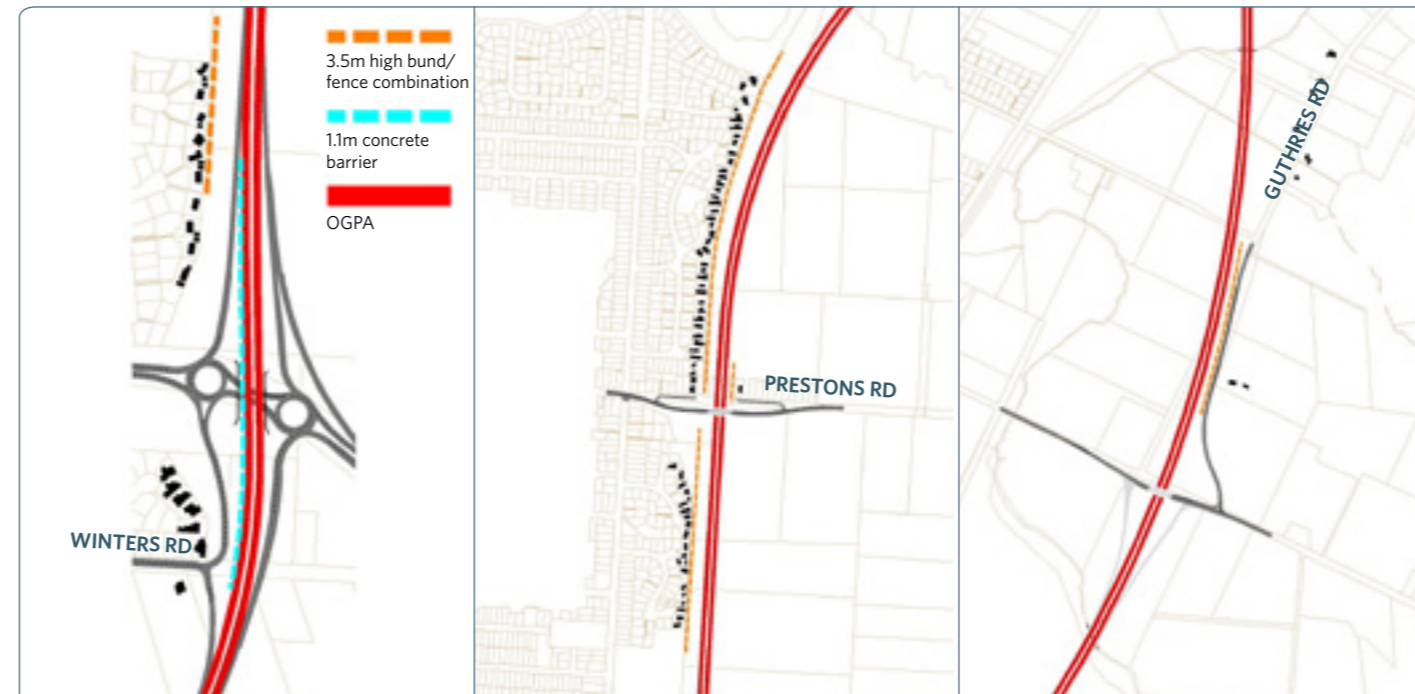
Section 6 & 7

- OGPA road surfacing.



Noise mitigation sections

Noise mitigation continued



Noise mitigation sections 1, 2 and 3

Next steps

At this stage, we are sharing information on where we got to before the earthquake, what has changed as a result of the earthquake and where to next. We are not actively seeking feedback. However, if you have any questions feel free to contact us using the contact details below.

Until wider Christchurch transport priorities have been confirmed there is some uncertainty around the timing of this project. However, having identified the preferred solution there is still a need to protect this future transport corridor and this will be pursued through the usual planning processes.

Further information is available on the project website at:

www.nzta.govt.nz/northernarterial

Our contact details

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Christchurch Motorways

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Northern Arterial & Queen Elizabeth II Drive four-laning

Update
September 2011

Project update

Progress on the planning phase of this project has slowed as a result of the 22 February 2011 earthquake. This update is to advise where we got to before the earthquake, what has changed as a result of the earthquake and where to next.

Our last project newsletter was in August 2010, an open day was held in November 2010 and a public meeting was held in February 2011 for the Winters/Grimseys Road area. The project team has narrowed down the options and considered the feedback received from the newsletter, the open day and the public meeting to come up with a preferred solution.

Some decisions on the preferred solution had already been made as follows:

- It will be a four-lane motorway.
- Access onto the motorway will be limited.
- QEII Drive widening will be on the northern side.
- A pedestrian/cycleway will be provided along the general line of the route.
- The end sections of Ford and Factory Roads will be closed.
- Prestons Road will be realigned and will go over the motorway on a bridge.
- Belfast Road and Radcliffe Road will go over the motorway on bridges.

The motorway's southern connection with QEII Drive will go over QEII Drive as a flyover with a north-south priority.

The feedback received altered some aspects of the design:

- Guthries Road will remain open but it will be realigned.
- At Belfast Road provision has been made for the future possibility of access in a southerly direction on and off the motorway from Belfast Road.
- The preferred solution for Winters Road is to provide a link between the southern interchange and Winters Road west of the Northern Arterial Extension which will make it possible to access Winters Road from all directions via the southern interchange.

The February earthquake has altered the project's progress. However, the planning process for the project will continue although there will be a need to maintain flexibility around timing based on land use decisions.

This update includes information on:

- where we are now as a result of the February earthquake
- the preferred solution
- the northern connection to the existing motorway
- the proposed noise mitigation measures
- QEII Drive access for residents who live in the Grimseys Road, Winters Road and Autumn Place area
- improvements to the walking and cycling pathway and connections
- the next steps for the project.



Setting of project area

NORTHERN CONNECTION

In order to connect the Northern Arterial to the existing Northern Motorway some changes are required:

- The existing Chaney's on-ramp will be removed, meaning there will be no access at this point onto the Northern Arterial. Access will be provided further west by a connection from Main North Road to the Western Belfast Bypass.
- The intersection of Old Main North Road, Main North Road and Dickeys Road is likely to become a roundabout with a link to the proposed Western Belfast Bypass and Northern Motorway.
- The Northern Motorway will connect with the proposed Western Belfast Bypass so an exit onto Main North Road will be provided.
- An additional northbound lane is required on the existing Waimakariri River Bridge to provide for safe and efficient traffic merging from the proposed Western Belfast Bypass and the motorway.

FACTORY AND FORDS ROAD

Roads to be stopped at the boundary of the motorway.

BELFAST ROAD

Two options were looked at – providing access onto the motorway on the southern side (ramps) or no access. In both options Belfast Road would pass over the top of the motorway. The preferred solution is to make provision for possible future access to and from the south. The footprint is to recognise the proposed future industrial development and the need for access to and from the port.

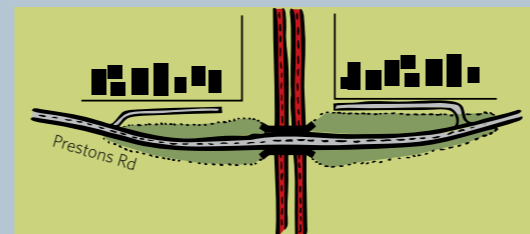
The timing of the building of the ramps will be dependent on the rate of the industrial development.

RADCLIFFE ROAD

Radcliffe Road will pass over the top of the motorway. There will be no access to the motorway from Radcliffe Road.

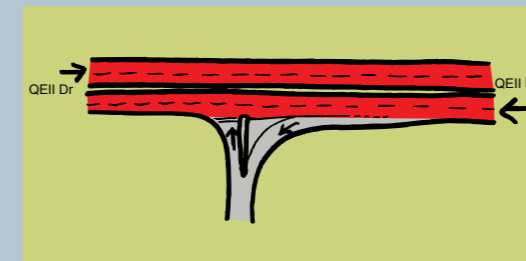
PRESTONS ROAD

Prestons Road will pass over the top of the motorway but will be realigned to the south onto rural land to reduce the impact on properties to the north of Prestons Road. Parts of the existing Prestons Road will remain as service lanes for residents on the north side of Prestons Road. There will be no access to the motorway from Prestons Road.



PHILPOTTS ROAD

QEII Drive will be four-laned through the Philpotts Road intersection with a raised median preventing right turns into or out of Philpotts Road. A left turn lane is proposed to facilitate left turns into Philpotts Road.



SOUTHERN INTERCHANGE

A number of grade separated (flyover) and at grade (signals, roundabout) options were considered.

The preferred solution is a north-south flyover interchange. It is a less complicated layout for users as it provides the best traffic performance, does not require as much land, uses the existing alignment of QEII Drive and it keeps the motorway further away from adjacent housing than other options.

WINTERS ROAD AREA

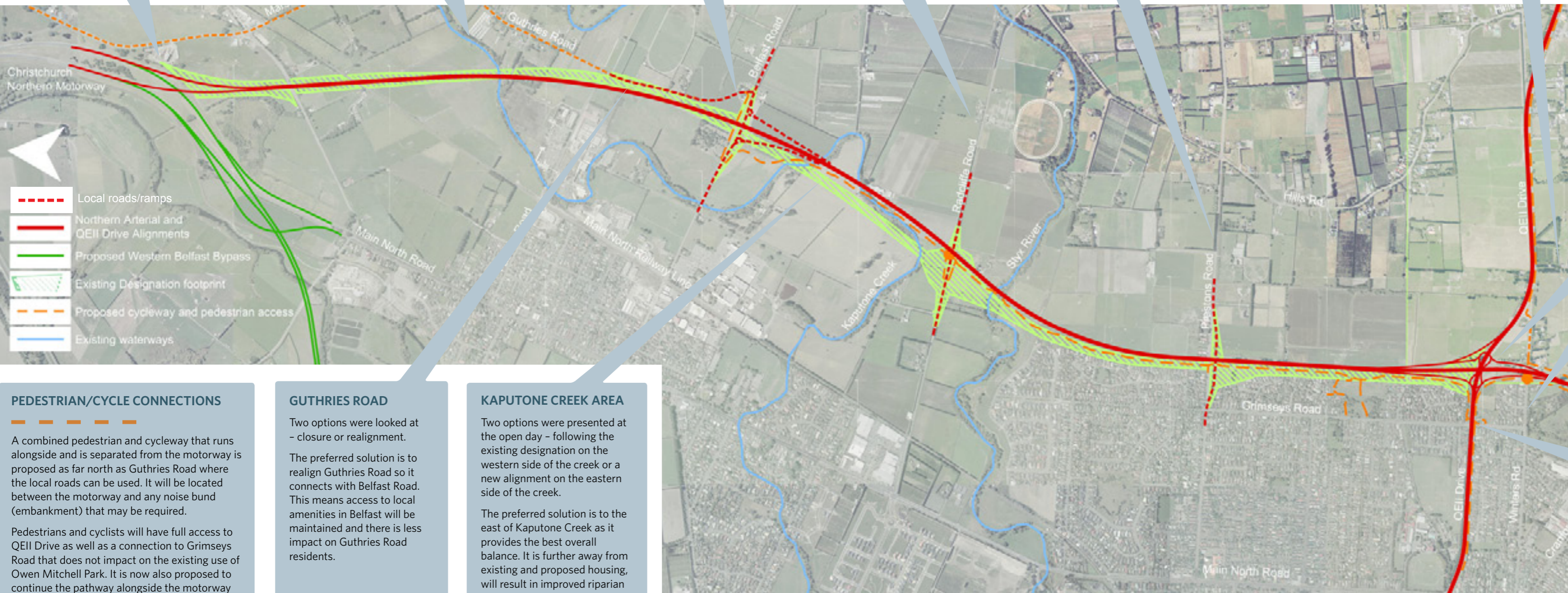
Winters Road will be bisected by the southern interchange flyover and the Northern Arterial Extension which runs from QEII Drive to Cranford St (the CCC part of this project). There will be no vehicle access between the two sections of Winters Road that remain on either side of the new arterial.

A pedestrian and cycle subway will be provided on the line of the existing Winters Road. This retains the existing route to the south of QEII Drive and the links to the Grimseys Road subway and proposed footpath/cycleway on the Northern Arterial Extension.

The eastern section of Winters Road will have left-in and left-out access to QEII Drive from the existing Winters Road/QEII Drive intersection. Following community feedback, it is now proposed to provide a link between the southern interchange and the section of Winters Road located west of the Northern Arterial Extension. The new link will be constructed to the east of Autumn Place and will make it possible to access Winters Road from all directions via the southern interchange.



Southern Interchange



- Local roads/ramps
- Northern Arterial and QEII Drive Alignments
- Proposed Western Belfast Bypass
- Existing Designation footprint
- Proposed cycleway and pedestrian access
- Existing waterways

PEDESTRIAN/CYCLE CONNECTIONS

A combined pedestrian and cycleway that runs alongside and is separated from the motorway is proposed as far north as Guthries Road where the local roads can be used. It will be located between the motorway and any noise bund (embankment) that may be required.

Pedestrians and cyclists will have full access to QEII Drive as well as a connection to Grimseys Road that does not impact on the existing use of Owen Mitchell Park. It is now also proposed to continue the pathway alongside the motorway right down to QEII Drive and connect with the existing Grimseys underpass.

At the Styx River, the pathway is proposed to be attached to the side of the road bridge.

GUTHRIES ROAD

Two options were looked at – closure or realignment.

The preferred solution is to realign Guthries Road so it connects with Belfast Road. This means access to local amenities in Belfast will be maintained and there is less impact on Guthries Road residents.

KAPUTONE CREEK AREA

Two options were presented at the open day – following the existing designation on the western side of the creek or a new alignment on the eastern side of the creek.

The preferred solution is to the east of Kaputone Creek as it provides the best overall balance. It is further away from existing and proposed housing, will result in improved riparian values and avoids an old landfill site.

GRIMSEYS ROAD AND PHILPOTTS ROAD

Following feedback from the last newsletter and the open day, we have looked at further options for local road access along QEII Drive. The focus was on Grimseys and Philpotts Roads.

At Grimseys Road it is still proposed to restrict access on the northern side of QEII Drive to left-in and left-out. However, vehicles travelling westbound on QEII Drive will now be able to access Grimseys Road by performing a u-turn approximately 150m from the Main North Road and QEII Drive intersection. Safety considerations determined the location. Grimseys Road south of QEII Drive will remain a cul-de-sac.

At Philpotts Road, it is still proposed to restrict access to left-in and left-out. Vehicles travelling eastbound on QEII Drive will need to access Philpotts Road via the Innes Road roundabout.

Traffic signals, roundabouts and right-turn bays were investigated at both locations but were discounted due to significant safety and operational concerns.

