

Wēiti river crossing

Our refined bridge design

After exploring many potential design improvements to the original reference design, the O Mahurangi Penlink alliance team settled on a revised design that will deliver more benefits for the environment and the local community.

In engineering terms, it's what's called an extradosed bridge - effectively a hybrid between the more traditional box girder and cable-stayed bridge designs. It will be the first of its kind built in New Zealand.

The box girder element means it can still carry a range of services and utilities, such as power and water, to the Whangaparāoa Peninsula - and there's even space for a future sewer main. Meanwhile, the cables allow for a significantly longer bridge span, reducing the number of piers needed to support the bridge and therefore reducing the impact on the marine environment below.

Key benefits of the revised bridge design

- Reducing the number of piers from three to two and removing the centre pier allows clearer views and passage through the navigation channel
- Removes the need for a pier on the eastern bank of the Wēiti River and the northern-most pier can be moved to avoid excavation into the cliff face
- Improved construction methodologies, including a reduction in temporary staging, helps to minimise greenhouse gas emissions
- A lowered entrance to the crossing fits better with the landscape, enabling 235 metres to be trimmed off the overall crossing and reducing the amount of steel and concrete required
- A reduction in the amount of concrete required significantly reduces construction emissions.

Bridge stats

Total length - 535 metres
(including approaches)

Bridge span - 171 metres
(the clear space between piers)

Bridge deck - 45 metres above water level (about the same as Auckland's Harbour Bridge)



Looking out towards Stillwater from the Wēiti Bridge

Indicative view of the Wēiti River Crossing