

Memorandum

To: Coatesville Transport Forum
From: Parag Gupta, Project Manager
Contact Information parag.gupta@at.govt.nz
Date: 1 November 2023
Subject: **Inform on Mill Flat Road Bridge Project**

Purpose

This memo informs the Coatesville Transport Forum on the Mill Flat Road Bridge project, being delivered as part of Auckland Transport's (AT) Flood Recovery Programme.

Summary

- On 27 January 2023, the bridge was washed away during a severe flooding event, cutting off the community from the road network;
- As an emergency response, AT commissioned a Bailey Bridge to be constructed at the same location, which was opened to the public on 06 February 2023;
- While there is confirmed funding for a like-for-like bridge design option, AT is investigating other options that will provide betterment (in terms of access and safety of all road users on the bridge)
- Four options have been assessed, comprising the Do-minimum scenario, and the remaining three options considering one- or two-lane bridge, with the provision of a footpath;
- One of the key criteria in developing these options was to maintain continued public access throughout construction;
- The community will be notified regarding the preferred bridge design option and the associated intersection improvements via a letter drop-off that will commence towards the end of November.

Context

Mill Flat No 1 Bridge, located on Mill Flat Road in Riverhead and approximately 20m west of the Coatesville-Riverhead Highway/Mill Flat Road intersection, was a single lane bridge built in 1958. It provided the only permanent vehicular access to the rural community within Mill Flat Road (approximately 80 residential properties and 5 businesses) and several tributary roads. Given the rural nature of the surroundings, the bridge did not have dedicated walking or cycling facilities.

The figures below show the location of the site in the context of the wider area and the immediate roading environment.



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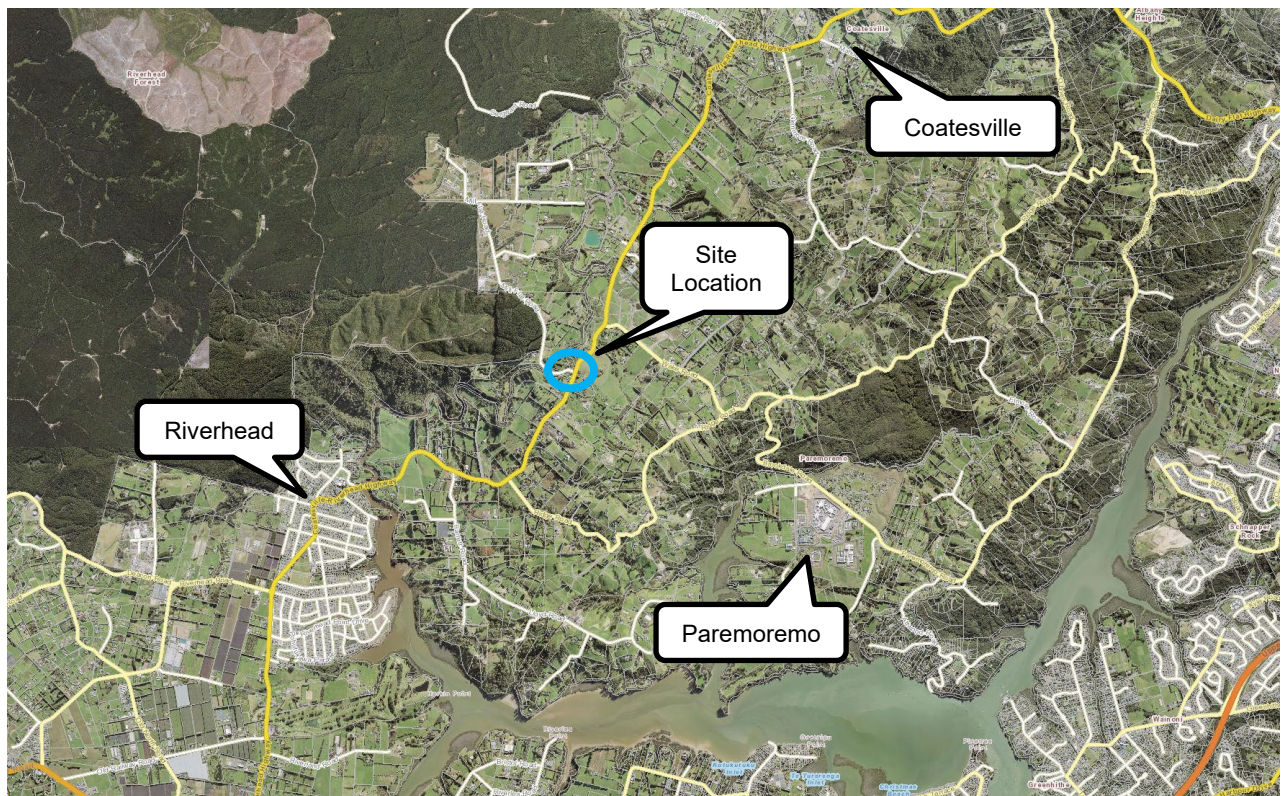


Figure 1 – Bridge location in context with wider area



Figure 2 – Project study area

On Friday 27 January 2023, the bridge was washed away due to flooding of Rangitopuni Stream, during a significant rainfall event. The community was cut off from the road network,

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with a 4WD forestry track providing the only access. This made it difficult for residents to access essential services.



Figure 3 – Impact of flooding on the bridge

As an emergency work, AT commissioned a Bailey Bridge to be constructed in the same location, to provide temporary access to the Mill Flat Road community, while a permanent solution is investigated. The Bailey Bridge was opened to the public on Monday 06 February 2023.

Shortly after the Bailey Bridge was constructed, AT investigated a short-list of options at a high level, including building a new access elsewhere for the community. The option to build a new access elsewhere was discarded due to the exponentially larger costs, mostly associated with property acquisitions, and the time it would have taken to provide a permanent solution.

While the Bailey Bridge has been able to restore access to the community at a short notice, it is considered to be a less than ideal solution as it comes with ongoing financial costs in addition to the usual maintenance cost. There is confirmed funding for a like-for-like bridge design option, via the Waka Kotahi's Emergency Works category, however, AT is investigating options that will be able to provide betterment (in terms of access and safety of all road users using the bridge) and accordingly will prepare a funding application to Waka Kotahi.

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A new bridge would:

- Reinststate connectivity and accessibility for the Mill Flat Road community.
- Eliminate the weight, load and speed restrictions that applied to the 'old' bridge.
- Provide a reliable crossing location for utility services, ensuring that the necessary infrastructure can be maintained without interruption.
- Increase the resilience and safety of the crossing, allowing it to withstand extreme weather events and minimize the risk of future disruptions.

Safety improvements to the Coatesville-Riverhead Highway / Mill Flat Road intersection are also being considered as part of this project. However, the form or scale of the total improvements is being investigated and will be advised via the engagement letter, that will commence towards the end of November.

Options Assessed

Long-list Options

The table below shows the long list of options that were assessed to identify the shortlist of options, that will then require further assessment.

Option	Description	Evaluation	Evaluation Criteria
Do-nothing / Option 0	Retain Bailey Bridge	Discarded	High ongoing maintenance and operational costs. Speed and weight restrictions still applies.
Do-minimum / Option 1	Like-for-like replacement as the 'old' bridge	Progressed	Low cost, satisfies WK's funding criteria, quicker delivery
Option 2	Option 1 plus footpath	Progressed	As Option 1 above, plus improves pedestrian safety
Option 3	'Narrow' two-lane bridge with footpath	Progressed	Accommodates two standard vehicles on the bridge at the same time, cost efficient option, but narrow footpath
Option 4	Two-lane bridge with a barrier protected footpath	Progressed	As Option 3 above, slightly wider to provide more space for larger vehicles and wider footpath
Option 5	Two standard lanes	Discarded	No separate provision for pedestrians, higher cost associated with wider lanes

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Option 6	Two standard lanes plus barrier protected footpath	Discarded	Higher cost associated with wider lanes, plus wider lanes enable vehicles to travel at speed
Option 7	Two standard lanes plus barrier protected shared user path	Discarded	Very costly, unlikely to be funded by Waka Kotahi, surrounding environment doesn't support the provision
Alternate Option A	New bridge in a different location	Discarded	Economically unfeasible and the time required to deliver one of these options would be very long
Alternate Option B	Upgrading forestry roads	Discarded	

Shortlisted Options

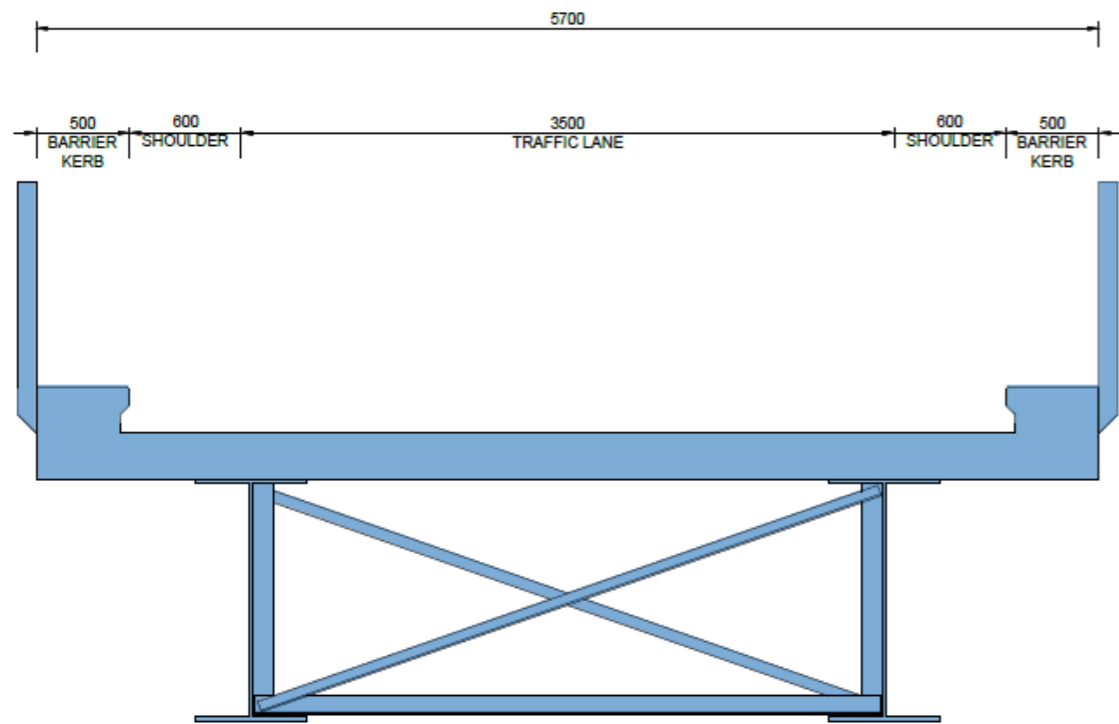
The shortlisted options are:

1. Option 1 – Do-minimum, like-for-like replacement, as the 'old' bridge
2. Option 2 – 'like-to-current-standards' – single lane bridge with a 1.5m wide footpath
3. Option 3 – two-lane bridge with narrow 2.75m wide lanes and narrow 1m wide footpath
4. Option 4 – two-lane bridge with standard 3m wide lanes and 1.5m wide footpath

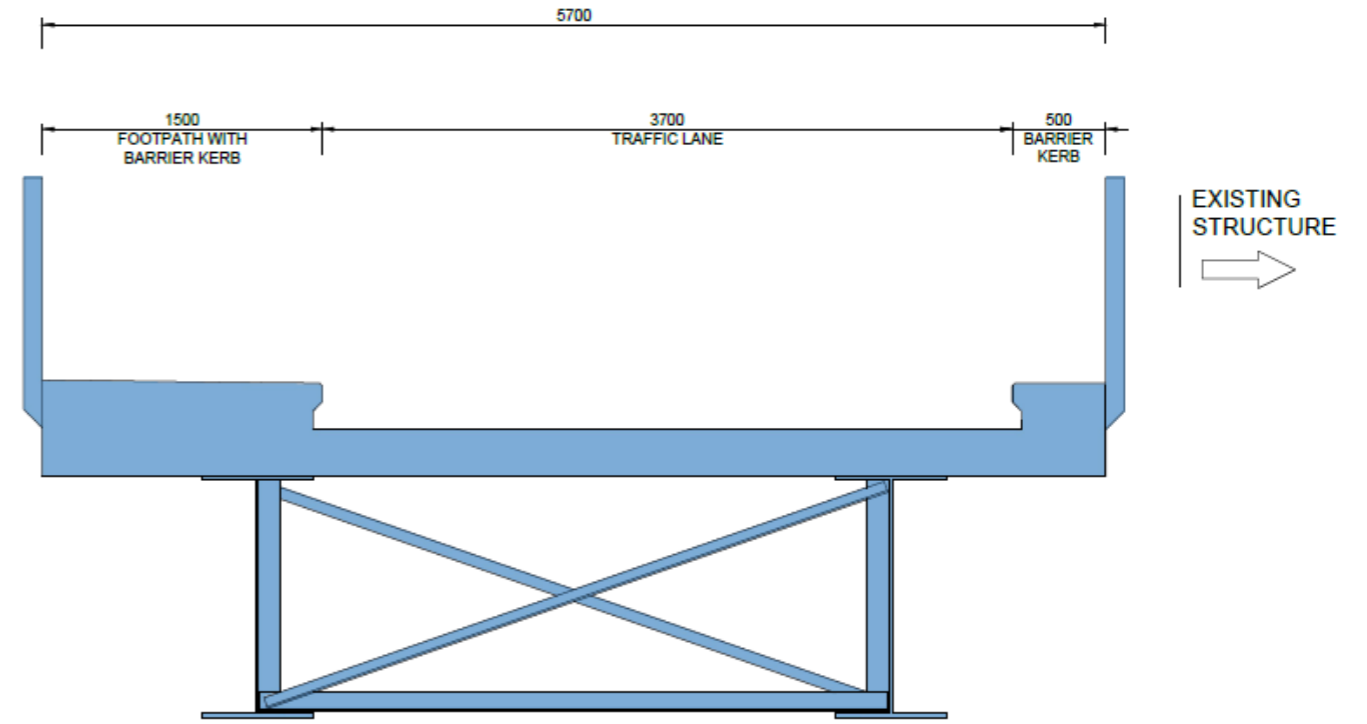
These shortlisted options are undergoing a comprehensive assessment process, such as Multi-criteria Analysis, Benefit / Cost Ratio, Safe System Assessment and such, to help identify the preferred option for the bridge design. The preferred option will then be notified to the community via a letter drop-off towards the end of November.

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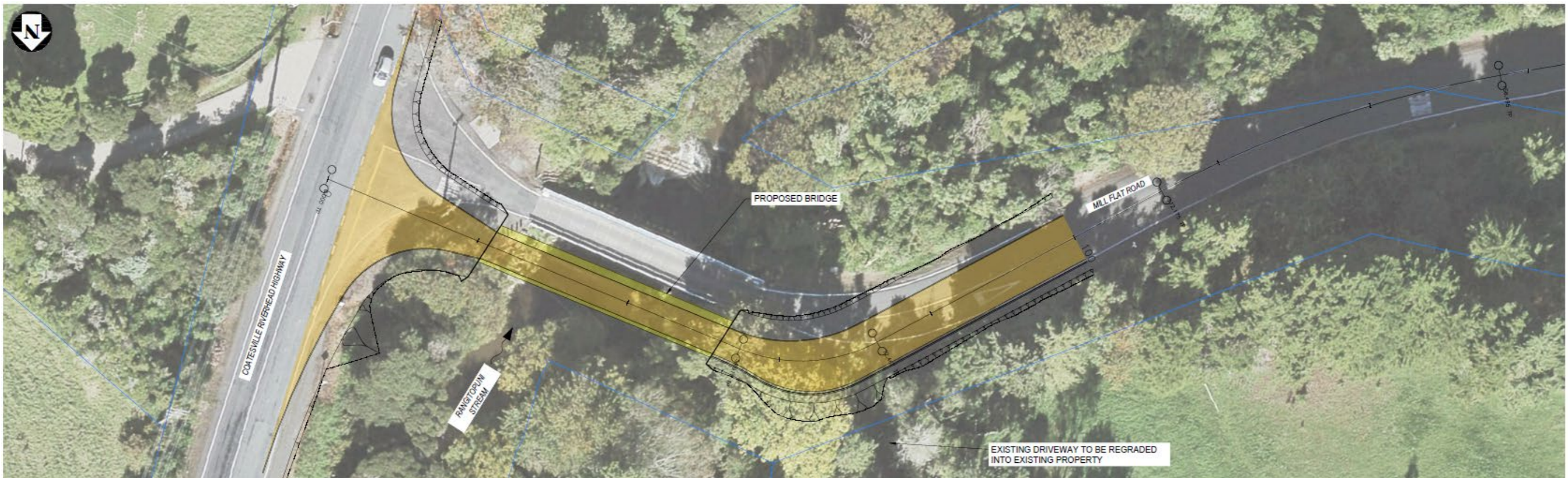
Concept Cross-Section and Horizontal Alignment – Single-lane Bridge:



OPTION 1 - TOTAL DECK WIDTH 5700



OPTION 2 - TOTAL DECK WIDTH 5700



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Concept Cross-Section and Horizontal Alignment – Double-lane Bridge:

