

Before Gisborne District Council

Under the Resource Management Act 1991 (the **RMA**)

In the matter of applications by Gisborne District Council for resource consents to modify a stopbank at Te Karaka

Supplementary statement of evidence of Joss Ruifrok on behalf of Gisborne District Council

29 September 2026

MC.

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Supplementary statement of evidence of Joss Ruifrok on behalf of Gisborne District Council (Rivers and Drainage)

1 Introduction

- 1.1 My qualifications and experience are set out in my statement of evidence in chief (EiC) dated 14 September 2026. I confirm that I have read and will comply with the Code of Conduct for Expert Witnesses in the Environment Court Practice Note 2023.
- 1.2 This supplementary statement addresses several matters in respect of which the independent hearing panel requested further information, or that have arisen out of submitters' presentations:
- Optioneering: preferred option versus raising the stopbank in its existing location
 - Consultation with Wi Pere Trust
 - Multi-criteria analysis and whenua Māori
 - Alternative Alignment for Wi Pere Trust land

2 Optioneering: Preferred option versus raising stopbank in existing location

- 2.1 Several submitters were heard on Day 1 of the hearing expressing a preference for raising the stopbank in its existing location, and the Panel asked the Applicant to articulate the reasons why that option was not favoured.
- 2.2 A very detailed optioneering process was undertaken including extensive consultation with the community, longlist to shortlist staging and a multi criteria analysis to arrive on the Preferred Option for consenting and delivery.
- 2.3 Table 1 below draws on the optioneering work to specifically compare the preferred option with raising the existing stopbank alignment.
- 2.4 **Table 1** – Comparison between the 'Preferred Option' and 'Upgrade the existing alignment'

Aspect	Preferred Option	Upgrade Existing Alignment
Flood management philosophy	Creates more floodplain space and allows the river to convey flood flows more naturally. I.e. <i>'More room for River'</i> .	Continues to confine the river within its current corridor. Flooding impacts are higher upstream, lower downstream. Risks to bridges are higher. Higher flood levels next to Te Karaka (refer Appendix 6 to AEE: Option 1 Modelled Flood Level Difference; Preferred Option Modelled Flood Level Difference)

Aspect	Preferred Option	Upgrade Existing Alignment
Flood resilience	Considered a best-practice approach that reduces flood levels and breach risk. Lower consequence of failure.	Requires substantially higher stopbanks to achieve equivalent protection levels and is less sustainable. Higher consequence of failure.
Stopbank design	Stopbanks are moved further away 'retreated' from the river in key locations. Stopbanks not as high, shorter overall length ~3.4km long.	Stopbanks upgraded on the existing alignment. Stopbanks are higher, and longer ~4.2km long.
River behaviour	Gives the river more room to pass around the township rather than through it during overdesign events.	Maintains a constrained river corridor, increasing dependence on stopbank height and integrity. Flooding is higher upstream due to constrained river width at Te Karaka (refer Appendix 6 to AEE).
Breach risk	Lower breach risk due to reduced hydraulic pressure and greater floodplain capacity. Seepage / threat to life risks are lower.	Higher residual risk because the river remains tightly confined, flood levels higher, both likelihood and consequence of failure and threat to life are higher. Seepage risks / threat to life are lower.
Stopbank height required	Lower stopbank heights are required when retreat stopbanks are used to defend against a 5625 cumec event.	With a confining flood plain, this requires stopbanks to be significantly higher, in order of ~1m higher to defend against a 5625 cumec event.
Property impacts	Requires property acquisition, compensation, and changes in land use for some affected owners. Some horticultural land loses protection (goes from 1:40yr protection to 1:5yr protection).	Minimises property acquisition and land-use impacts. The consequential flooding impacts are higher upstream of the township with a confined floodplain.
Community / iwi support	Strong support from Te Aitanga-a-Māhaki, Council and majority of the community through the co-design process for the 'make room for the river' approach / philosophy.	Upgrading the existing alignment option dropped out early through the optioneering process.
Cost	Higher overall cost due to land acquisition, compensation, road raising and realignment works.	Lower capital cost but provides less resilience, comes with increased risk, and was not generally supported by the community through the consultation process.
Duration	Provides the community with more options and more time to adapt.	Leaves the community with less options in terms of further upgrades and less time to adapt.
Bridges	Less scour at bridges with less water depth.	Increased water depth causing greater scour and risk of bridge failure.

Summary

- 2.5 The preferred retreated alignment adopts a "Making Room for the River" approach by relocating stopbanks away from the river in key locations. While this option requires property acquisition and can have higher capital costs, it provides

significantly greater flood resilience, lower breach risk, reduced stopbank heights, and best overall balance.

- 2.6 In contrast, upgrading the existing stopbanks along the current alignment is materially inferior, although less disruptive and cheaper, it requires substantially higher stopbanks, continues to constrain and confine the river, and is considered a less sustainable response to future climate-driven flood risk. Risks to bridges are greater because of increased flood depths. And consequential flooding impacts are also increased to upstream properties.
- 2.7 Also, upgrading the existing alignment is not on the table for deliberation, that option is seen as '*kicking the can down the road*' requiring managed retreat of the township in the future. Versus the preferred option, the more sustainable option, which doesn't predetermine that outcome.

Multi-Criteria Analysis (MCA)

- 2.8 MCA Workshops were held on the 7th April, 11th June and 26th June 2025 which assessed the shortlisted options against delivery (feasibility/practicality and consentability), sustainability, environmental effects, natural river processes, and flood-risk reduction/flood benefit. Cost and community/mana whenua criteria were considered separately.
- 2.9 The optioneering and Multi-Criteria Analysis (MCA) process progressively assessed nine options, which were refined through successive stages to six, four and ultimately two options for formal consultation. Te Aitanga-a-Māhaki partners have been actively involved throughout this process, contributing to the development, assessment and refinement of the options.

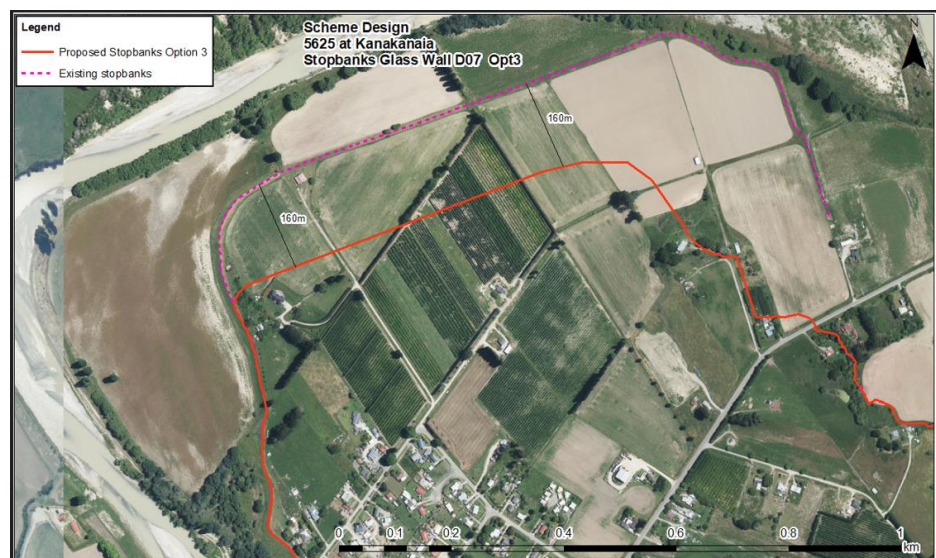
MCA workshop – key outcome

- 2.10 Option 3 (Preferred Option) clearly stood out and was strongly supported by the MCA, achieving the highest overall MCA score (0.7) compared with 0.3 for Option 4 and 0.1 for Options 1 and 2.
- 2.11 Option 3 scored positively for long-term sustainability (+1) and natural processes (+2), reflecting the benefits of moving the stopbank away from the active channel and allowing greater space for river processes. It maintained strong protection of residential properties (+2), equivalent to all other options, while also providing better protection of other assets (+1). This was a key advantage over Option 1 which scored -1 for other assets.
- 2.12 Option 1, while easiest to deliver and consent, required the greatest stopbank raising, constrained the river most and had the greatest potential erosion and residual-risk concerns.
- 2.13 Option 3 stood out because it provided the strongest overall balance—substantially improving flood protection while creating more room for the Waipaoa River, improving sustainability and protection of other assets.

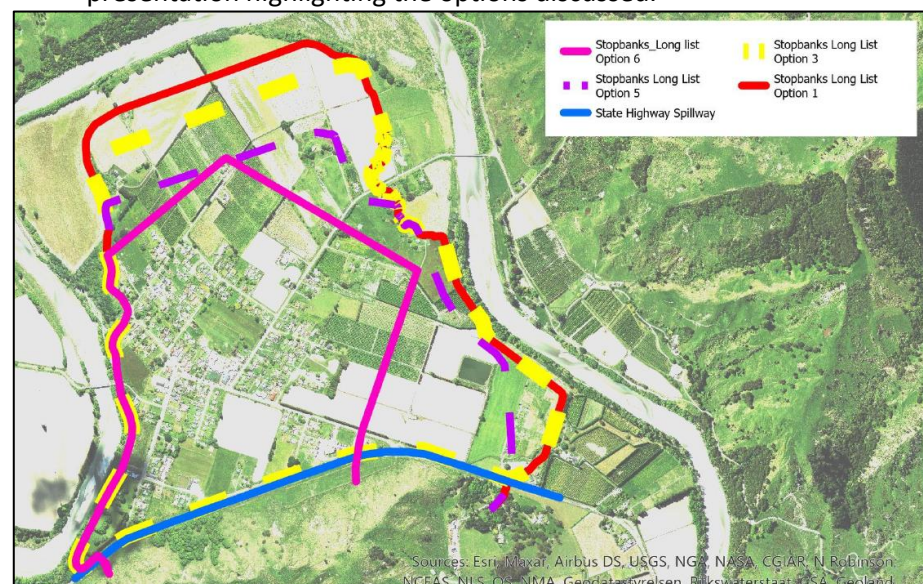
3 Consultation with Wi Pere Trust

3.1 Consultation has been robust, authentic and ongoing since Cyclone Gabrielle, with iwi, landowners and the wider Te Karaka community actively involved in the development and consideration of the preferred options.

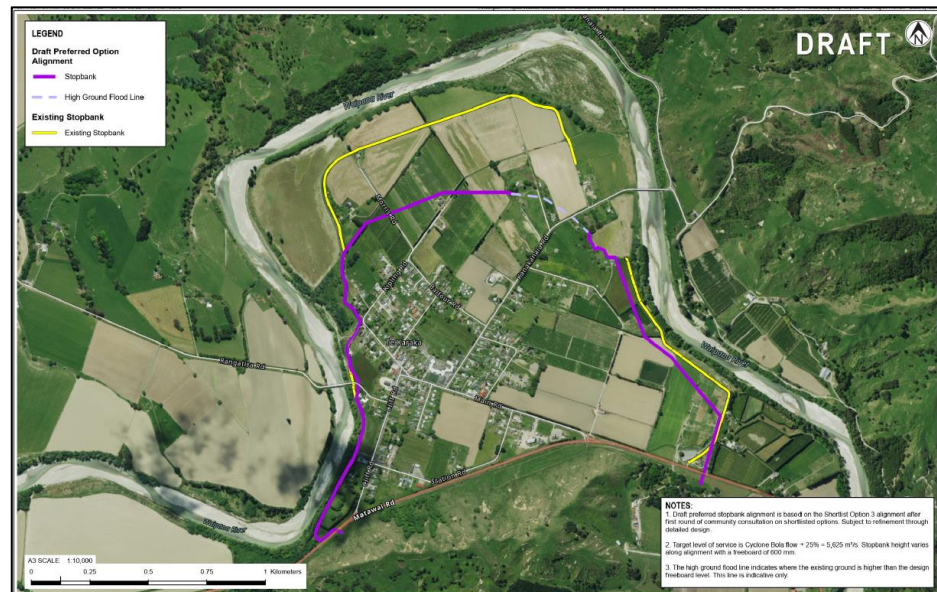
- Since Cyclone Gabrielle I have in my calendar x15 meetings held with Tim Rhodes, while many didn't cover Te Karaka specifically, this goes to highlight that there has been an ongoing relationship with open communication and dialogue with significant opportunity to discuss Te Karaka.
- On 4 Dec 2024 I emailed Mr Rhodes a copy of one the preliminary options that was being modelled, with a minor stopbank retreat and stopbank alignment crossing Wi Pere Trust whenua. Screenshot below of the emailed plan.



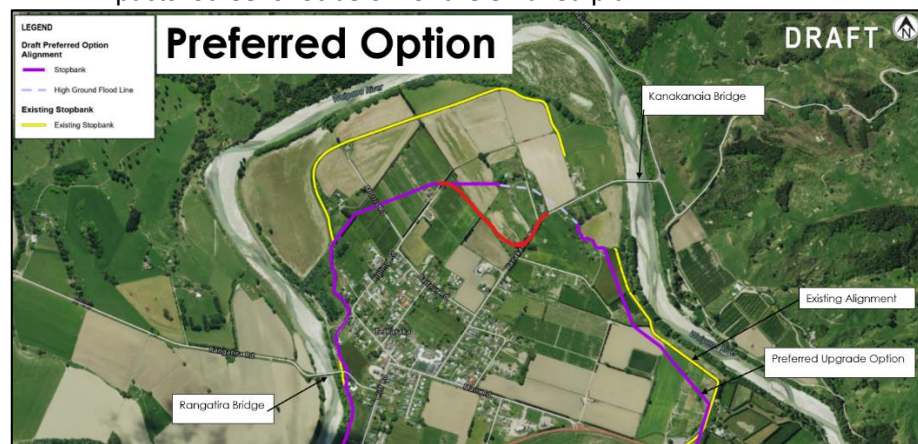
- On 24 April 2025 I delivered a presentation to Wi Pere Trustees entitled "Te Karaka Flood 'ShortList'" held at locally at BDO Offices, this included 14 slides covering the 4 shortlisted options. Refer to snip below from presentation highlighting the options discussed.



- On 6 August 2025 I emailed Mr Rhodes a copy of the preferred alignment map, showing stopbank retreat and stopbank alignment crossing Wi Pere Trust whenua. Screenshot below of the emailed plan.



- On 9 February 2026 I emailed Mr Rhodes a copy of the preferred alignment map, and showing the alternative stopbank alignment crossing Wi Pere Trust whenua, as well as an initial indication of compensation likely to be payable under the Public Works Act 1981 (PWA) for land and related impacts. Screenshot below of the emailed plan.



- On 28 August 2025 I met with Wi Pere Trustees at BDO Offices primarily covering concerns about the Waipaoa Stopbank construction impacts, but Te Karaka was also discussed.

- 3.2 Based on the evidence above, which was in addition to the numerous public meetings held, and online consultation and submission optioneering process, I would like to respectfully bring balance to the comment from Mr Haronga regarding the “lack of direct engagement by Council” statement. This statement is completely unfounded.
- 3.3 In summary, there have been numerous meetings held specifically with Wi Pere Trust engaging directly and providing ample opportunity for korero and engagement.

4 Multi criteria analysis and whenua Māori

- 4.1 Wi Pere Trust criticised the MCA for not factoring in the impacts of different options on their connection with their whenua.
- 4.2 While there was not a specific category in the MCA dedicated to that issue, it was factored into the MCA under the heading of Delivery. The “Te Karaka Flood Management Optioneering – Final Option Recommendation” report dated September 2025, contained in Appendix 6 to the AEE, at paragraph 8.1 explains that option 1 (raising the stopbank in place) scored the highest in delivery because maintaining the existing alignment had the least impact on Māori land.
- 4.3 If the MCA had separate category for impact as suggested by Wi Pere Trust, we would have double-counted the same issues that were factored into the delivery score.
- 4.4 In relation to Mr Williams statement regarding the weighting of scores through the MCA a sensitivity analysis was undertaken. This statement is pulled from the optioneering report “A sensitivity analysis was undertaken as part of the 26 June MCA workshop to assess the robustness of the scoring outcomes under varying weighting scenarios. A range of alternative weightings were applied to the MCA criteria to evaluate how changes in the relative importance of criteria affected the overall alignment rankings. This process provided insight into the influence of individual criteria on the final scores and helped ensure that the preferred alignment options remained consistent across a range of plausible weighting assumptions. It was found that Option 3 scored consistently high in relation to the other options, across a range of reasonable sensitivity weightings (typically a 200% or 300% weighting on a particular criterion or pair of criteria).

5 Alternative Alignment for Wi Pere Trust land

- 5.1 The commissioners have requested further information relating to the two options in the vicinity of the Wi Pere Trust whenua, being the Preferred Option and the Alternative Alignment.
- 5.2 The Wi Pere Trust parcel is Whenua Māori registered with the Māori Land Court and to date discussions with Wi Pere Trust have provided some uncertain as to whether they would permit the stopbank to go directly across their whenua (as per the Preferred Alignment). GDC’s power to utilise the PWA to obtain land access is constrained due to its status. Stopbank construction can only occur if land access permissions and/or easements are granted.
- 5.3 In response to Wi Pere Trusts position, the Alternative Alignment was included within the consent application to provide a viable option that avoids crossing the Wi Pere Trust land. The Alternative Alignment therefore provides flexibility to accommodate Wi Pere Trust’s autonomy while still enabling the proposed stopbank upgrade to proceed and have a pathway to successfully deliver the flood protection benefits needed for to this community.

Alternative Alignment



Preferred Alignment



- 5.4 The Wi Pere Trust land within the affected area comprises two parcels, referred to as the eastern and western parcels. The majority of the western parcel is currently protected by the existing stopbank; however, overtopping is expected to occur in an event of approximately 40-year ARI or larger. Accordingly, any future residential development within this area would remain exposed to flood risk under the existing arrangement.
- 5.5 Under the proposed stopbank upgrade and Preferred Alignment, approximately 6 ha of the western parcel would become subject to more frequent flooding, with inundation occurring from approximately a 5-year ARI event. Conversely, approximately 3 ha of Wi Pere Trust land would receive a substantially higher

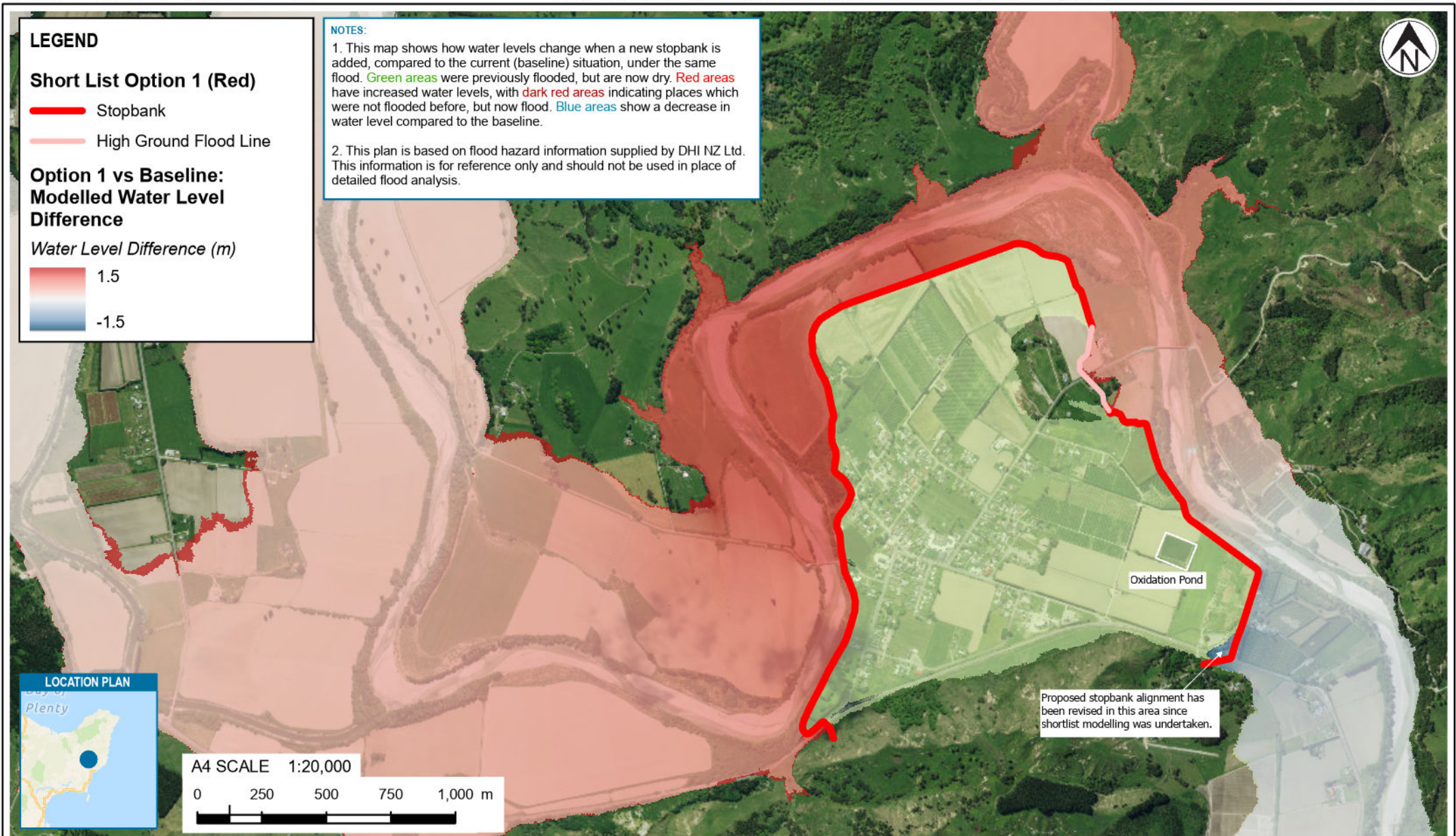
level of flood protection, to a 100-year ARI event or greater. This area would therefore have a materially lower level of flood exposure and would be more suitable from a flood-risk perspective for potential future residential development.

- 5.6 Under the Alternative Alignment, the western parcel would not receive the benefit of the proposed flood protection. The exception is a small area of naturally elevated terrace, which may remain suitable for potential residential development from a flood-risk perspective.
- 5.7 No stopbank construction is proposed on the eastern parcel. However, the proposed stopbank upgrade would result in an increase in flood risk to parts of this parcel. The nature and extent of this change are broadly similar under both the Preferred Alignment and the Alternative Alignment and are therefore not materially influenced by the choice between the two alignments.
- 5.8 This eastern parcel generally slopes up towards the high ground between the two sections of stopbank. The post-upgrade modelling shows the eastern parcel would retain an area elevated above the Design Event which may be suitable for residential development in the future.

Joss Palmer Ruifrok

29 September 2026

Appendix 1: CFRA modelled flood difference for Option 1



NOTES:

NZ Navigation Map: Eagle Technology, LINZ, StatsNZ, NIWA, Natural Earth, © OpenStreetMap contributors. NZ Imagery: Eagle Technology, Land Information New Zealand, GEBCO, Community maps contributors

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PROJECT TE KARAKA FLOOD MANAGEMENT

TITLE OPTION 1 MODELLED FLOOD LEVEL DIFFERENCE

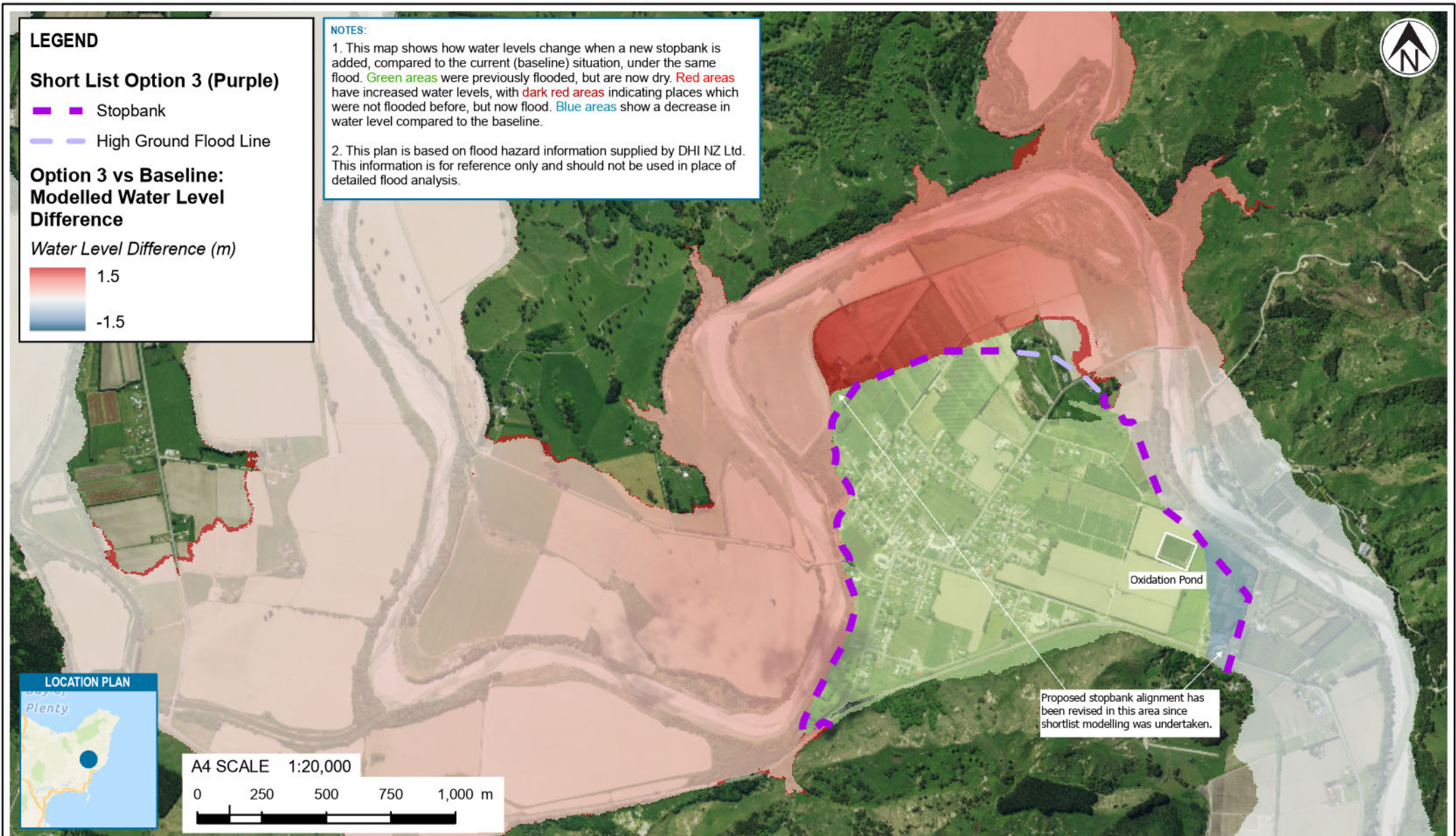
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Appendix 2: CFRA modelled flood difference for Option 3



NOTES:

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