

8 June 2018

Maggie Burns
Fast-track – Environmental Protection Authority



By Email: Maggie.Burns@epa.govt.nz

Dear Maggie

**RE: FTAA-2603-1185 HUNUA QUARRY DEVELOPMENT SUBSTANTIVE APPLICATION
LODGED UNDER FAST-TRACK APPROVALS ACT 2024 – UPDATES TO APPLICATION
FOLLOWING LODGEMENT**

1. The purpose of this letter is to provide an update to the Hunua Quarry Development proposal under the Fast-Track Approvals Act 2024 (FTAA) with regards to the following:
 - confirmation that the structure proposed to live the realignment channel is a weir, and to provide the relevant assessments; and
 - amend an error in the Part B – Assessment of Environmental Effects.

Construction of a temporary weir

2. The following provides further details of the structure proposed to assist in the livening of the stream diversion, proposed as part of the Substantive Application for the Hunua Quarry Development.
3. As set out in the Substantive Application¹, it is proposed to stage the diversion of flow from the Mangapū tributary into the new realignment channel. The purpose of the staged diversion (or 'livening' of the stream) is to provide for a transition of aquatic ecological values, enabling improved monitoring and adaptation as required.²
4. At the time of lodgement (30 March 2026), it was considered that the livening of the stream would be achieved through the placement of materials including rock, gravels, sandbags and geotextile fabric within the stream bed. Materials would be added/removed to achieve staged flow over an 18 – 24 month period. Once the new

¹ **Section B3.4.1, paragraph 227** of the Part B – Assessment of Environmental Effects dated 22 June 2026; **Section 4.0** of Appendix B12.8.7 Stream Realignment Management Plan dated 30 March 2026; **Pages 134 – 136** of Appendix B12.4.5b Ecological Assessment dated 30 March 2026; and **Page 31** of Appendix B12.4.6a Mangapū Tributary Realignment Preliminary Design and Effects Technical Report dated 30 March 2026.

² See Page 135 of the Ecological Assessment dated 30 March 2026 (Appendix B12.4.5b of the Substantive Application).

channel has been completed, the materials would be removed. It was anticipated that the materials would not extend across the width of the stream.

5. Following consultation with the Department of Conservation (DOC) regarding the stream realignment, further consideration of the design has identified that the materials will need to extend across the full width of the stream in order to minimise the risk of bank erosion.
6. Section 3 of the Resource Management (National Environmental Standards for Freshwater) Regulations 2020 ('NES-F') defines a weir to mean:

an open-topped structure across the full width of any river or connected area that—

(a) alters the water level and the flow characteristics of the water; and

(b) allows water to flow passively through or over the top

7. The structure will extend across the width of the stream, will alter the water level and flow characteristics of the stream and will allow water to flow through and over the top. Accordingly, the structure is considered a weir and requires assessment against:
 - the relevant planning framework including the National Policy Statement for Freshwater Management 2020 (NPS-FM), the NES-F and the Auckland Unitary Plan – Operative in Part ('Unitary Plan'); and
 - Schedule 9 Complex Freshwater Fisheries Activities of the FTAA.
8. This letter is supported by a memo entitled "Stream Realignment – Enlivening Structure" prepared by PDP, dated 7 July 2026 (**Appendix 1**) and a memo entitled "Mangapū Tributary Realignment Weir – Ecological Assessment" prepared by Boffa Miskell, dated 7 July 2026 (**Appendix 2**).

Description

9. The PDP memo dated 7 July 2026 provides an overview of the weir including dimensions, design features and operation. The location of the weir within the tributary is yet to be determined, but as identified by PDP will be approximately 10m from the proposed diversion channel. The location of the weir will determine the final dimensions. However, it is anticipated that at the final phase of the staged diversion, the height could exceed 0.5m (potentially reaching up to 1m in height).
10. The design will maintain a continuous flow over surface of the weir (i.e., no perched flows), with design features such as a rounded crest, shallow downstream gradient and v-shaped profile to mimic the naturally occurring variable flow velocities. The slope of the weir will likely to be steeper than 1:30 (1:3 on the upstream slope and 1:5 on the downstream slope) due to the combination of the finished height and the limited natural channel shape and size.
11. The weir will be constructed from rocks and the height and permeability of the structure will be altered by adding or removing materials as needed. This provides the ability to progressively reduce water flow over the 18 – 24 month period. The phasing of the flow diversion is set out in Table 30 Phases of livening

of Mangapū Tributary, Hunua Quarry Development, Page 135 of the Ecological Assessment ([Appendix B12.4.5b](#)) – a copy of which is provided below.

Phase of livening	Mangapū Tributary	Realigned channel	Ecological Actions
Pre-livening	100% flow	Channel construction	Construction of instream channel habitat features Vegetation clearance and fauna salvage and relocation (as required).
Phase 1 Extended period of time (many months)	66% flow	34% flow	Monitoring aquatic colonisation and values
Phase 2 Moderate period of time (2-3 months)	34% flow	66% flow	Monitoring aquatic colonisation and values Aquatic fauna salvage and relocation
Phase 3 Short period of time (2-3 weeks)	Flow ceases	100% flow	Outcome monitoring commences

12. The completion of the new diversion channel upstream of the weir will result in the remaining flow from the Mangapū Tributary being cut-off. At that stage, the weir will be decommissioned.

Resource Management (National Environmental Standards for Freshwater) Regulations 2020

13. The following provides an assessment of the proposed weir against the relevant provisions in the NES-F.

Regulation	Standards / Conditions	Comment
Regulation 72	(1) The placement, use, alteration, extension, or reconstruction of a weir in, on, over, or under the bed of any river or connected area is a permitted activity if it complies with the conditions.	The proposed weir does not comply with conditions 2(b), (c), (d) and (e). a) As confirmed in the Boffa Miskell memo dated 7 July 2026 and PDP memo dated 7 July 2026, the weir will provide for the same passage of fish upstream and downstream.
	(2) The conditions are that— a) the weir must provide for the same passage of fish upstream and downstream as would exist without	

	the weir, except as required to carry out the works to place, alter, extend, or reconstruct the weir; and b) the fall height of the weir must be no more than 0.5 m; and c) the slope of the weir must be no steeper than 1:30; and d) the face of the weir must have roughness elements that are mixed grade rocks of 150 to 200 mm diameter and irregularly spaced no more than 90 mm apart to create a hydraulically diverse flow structure across the weir (including any wetted margins); and e) the weir's lateral profile must be V-shaped, sloping up at the banks, and with a low-flow channel in the centre, with the lateral cross-section slope between 5° to 10°.	b) While the final design of the weir is yet to be determined, it is likely the height will exceed 0.5m. c) The slope of the weir will be steeper than 1:30 (see PDP memo, Sheet 2, Revision A, July 2026). d) While design is yet to be finalised, it is likely that some spacings could be less than 90mm and rocks of varying sizes. e) As noted in the PDP memo dated 7 July 2026, the weir's lateral profile will be v-shaped, have sloping banks with a low flow centre channel and lateral cross-section slopes which are likely to exceed 10 degrees.
Regulation 73	(1) The placement, use, alteration, extension, or reconstruction of a weir, in, on, over, or under the bed of any river or connected area is a discretionary activity if it does not comply with any of the conditions in regulation 72(2).	Resource consent is required as a discretionary activity as the proposal does not comply with Regulation 72(2)(b), (c), (d) and (e)
Regulation 62(3) Information requirements	The information is— (a) the type of structure: (b) the geographical co-ordinates of the structure: (c) the flow of the river or connected area (whether none, low, normal, or high): (d) whether the water is tidal at the structure's location: (e) at the structure's location,— (i) the width of the river or connected area at the water's surface; and (ii) the width of the bed of the river or connected area: (f) whether there are improvements to the structure to mitigate any effects the structure may have on the passage of fish: (g) whether the structure protects particular species, or prevents access by particular species to protect other species:	(a) the structure is a weir (b) to be confirmed at detailed design stage (c) flow monitoring and assessment is provided in section 2.2 and 2.2.1 of the Engineering Design report (Appendix B12.4.6a) (d) the water is not tidal at the structures location (e) to be confirmed at detailed design stage (f) the weir is proposed to be designed to maintain fish passage (g) As set out in the ecology memo (dated July 2026), no invasive species have been detected and the

	(h) the likelihood that the structure will impede the passage of fish: (i) visual evidence (for example, photographs) that shows both ends of the structure, viewed upstream and downstream.	proposed weir will maintain fish passage for native climbing species. (h) The design will not impede fish passage (i) To be confirmed at detailed design stage.
Regulation 64(3) Information requirements	The information is— (a) the weir's asset identification number, if known: (b) whether the weir's ownership is— (i) held by the Crown (for example, the Department of Conservation), a regional council, a territorial authority, the New Zealand Transport Agency, or KiwiRail Holdings Limited; or (ii) held publicly by another person or organisation; or (iii) held privately; or (iv) unknown: (c) the type of weir: (d) the weir's crest shape: (e) the weir's height: (f) the weir's width: (g) the material from which the weir is made: (h) the type of bed substrate that is present across most of the weir: (i) whether there are any remediation features (for example, baffles or spat rope) in the weir: (j) whether the weir has wetted margins: (k) the slope of the weir: (l) the backwater distance from the weir, meaning the distance furthest upstream where the water level is influenced by the weir: (m) the numbers of each other type of structure to which this subpart applies, or of wingwalls or screens, on the weir: (n) if there is any apron or ramp on the weir, the information required by regulation 68 for each of them.	(a) – (c) to be confirmed at detailed design stage (d) As indicated in Sheet 2 of the PDP memo, the weir will have a rounded crest shape. (e) – (f) to be confirmed at detailed design stage (g) Materials will consist of rocks. (h) The bed substrate is the same as that described in section 2.1.2 of the Engineering Report (Appendix B12.4.6a) and section 7.4.2 of the Ecological Assessment (Appendix B12.4.5a) (i) To be confirmed at detailed design stage (j) The weir will have wetted margins. The extent to which margins are wet will vary depending on natural flow. (k) The weir will have a slopes steeper than 1:30, with plans indicating 1:3 and 1:5. (l) As set out in Appendix 1, there will be limited backwater effects at the weir as the stream flow will be routed into the new realigned channel. (m) At this stage, no other associated structures are proposed. (n) No aprons or ramps are proposed.

Activity status

14. Overall, resource consent is required as a **discretionary** activity pursuant to Regulation 73 of the NES-F, as the proposed weir does not comply with Regulation 72(2)(b), (c), (d) and (e).
15. Pursuant to Regulation 62(2)(b) and 64(2)(b) it is proposed that a consent condition require detailed design to confirm the information requirements specified in Regulations 62(3) and 64(3).

Statutory Assessment

16. Section B9.5.2 of the [AEE dated 22 June 2026](#), and [Appendix B12.9](#) of the Substantive Application provide an assessment against relevant objectives and policies of the National Policy Statement for Freshwater Management 2020. The living of the realignment channel was considered in that assessment and it is considered that the confirmation that the mechanism to stage diversion as a weir does not alter the overall assessment.
17. Accordingly, it is considered that the statutory assessments undertaken in the Substantive Application are applicable to the proposed weir. Overall, it is considered that the weir is consistent with the relevant objectives and policies of the NPS-FM as the design will maintain fish passage and construction and design will maintain water quality by minimising erosion and sediment effects.

Auckland Unitary Plan – Operative in Part

18. Chapter J – Definitions of the Unitary Plan defines a dam to be:
A structure which, either:
 - *permanently impounds surface water; or*
 - *temporarily impounds surface water as its primary function, and includes weirs but excludes culverts, rain gardens and culvert headwalls.*
19. The Unitary Plan does not define a weir, so the NES-F definition is relied on. The proposed weir will be temporary (18 – 24 months) and meets the definition of a dam under the Unitary Plan.
20. The Assessment of Environmental Effects ('AEE') prepared by Boffa Miskell, dated 22 June 2026 already includes a non-complying resource consent under E3.4.1(A49) for the reclamation or drainage of the Mangapū Tributary, including any associated structures, bed disturbance or depositing any substance, diversion of water, incidental temporary damming of water, and discharges arising from the piping of a reclaimed waterbody (as provided for under Table E3.4.1 of the Unitary Plan).
21. As stated above, the purpose of the proposed temporary weir is to assist in staging the diversion of flow from the Mangapū Tributary to the new diversion channel. Therefore, the proposal is considered to be temporary damming which is incidental to the reclamation and is provided for under E3.4.1(A49).
22. The Substantive Application already provides a comprehensive assessment of the proposed diversion and reclamation, including a specific assessment relating

to the staged diversion of water flow (pages 134 – 136 of the [Ecological Assessment, Appendix B12.4.5b](#)).

23. The ecological memo dated 7 July 2027 (Appendix 2) confirms that the proposed weir will not result in any adverse effects on fish passage and will not change the overall effects assessments and conclusions set out in the substantive application.

Complex Freshwater Fisheries Activity

24. The Substantive Application lodged 30 March 2026 includes complex freshwater fisheries activities and seeks authorisation under s42(4)(j) Fast-track Approvals Act 2024 (“FTAA” or “the Act”) for activities that would typically require an application under regulations 42³ and 43⁴ of the Freshwater Fisheries Regulations 1983 (“Freshwater Fisheries Regulations”) and section 26ZM(2)(a) of the Conservation Act 1987.⁵
25. [Part E – Complex Freshwater Fisheries Activity Authority](#) already provides an assessment of the livening structure pursuant to Regulation 43 of the Freshwater Fisheries Regulations. In light of the confirmation that a weir is required to liven the stream, this memo will update that assessment in accordance with the requirements under Schedule 9 of the FTAA.
26. Section 2 of the Freshwater Fisheries Regulations 1983 (the Regulations) defines a dam to mean:
any structure designed to confine, direct, or control water, whether permanent or temporary; and includes weirs.
27. The Regulations do not define a weir, so the NES-F definition is relied on.
28. Section 4 of the FTAA defines a Complex Freshwater Fisheries Activity to mean:
an activity that includes construction of any of the following:
(a) a culvert or ford that permanently blocks fish passage;
(b) a permanent dam or diversion structure;
(c) works—
(i) that require disturbance to a water body, including diversions, in-stream operations, and removal of gravel, that persists for more than 3 months; or

³ Associated with the Stage 2 culverts which propose to block fish passage (see paragraph 95, Part E – Complex Freshwater Fisheries Activity Authority).

⁴ Associated with a dispensation from including a fish facility with the proposed diversion channel (see paragraphs 96 – 100, Part E – Complex Freshwater Fisheries Activity Authority).

⁵ Associated with the movement of live aquatic life between locations where the species already exists (see paragraphs 101 – 104, Part E – Complex Freshwater Fisheries Activity Authority).

- (ii) *that require disturbance of any duration during the whitebaiting season to a water body within 500 m of the coast; or*
 - (iii) *that require disturbance of any duration during the relevant spawning season to a water body that is known for the spawning of trout, salmon, or native fish; or*
 - (iv) *that require repeated disturbance to a water body and are temporary works for which there is a period of 6 months or less between each period of work*
29. The proposed weir is a complex freshwater fisheries activity pursuant to s4(c)(i) as the weir is located within the stream to assist in staging the diversion of water flow and will be in place for 18 – 24 months.
30. Pursuant to Regulation 43(1) FFR, the Director-General may require a dam or diversion structure include a fish facility. Regulation 43(2)(b) requires that approval for or dispensation from the provision of a fish facility must be sought.
31. **A dispensation is sought from the provision of a fish facility associated with the proposed weir.** A fish facility is not considered necessary in this instance given the weir will not disrupt fish passage and that fish salvage and relocation is proposed to occur prior to passage becoming impeded or blocked, as described in paragraphs 98 – 99 of [Part E of the substantive application](#).
32. The following addresses the relevant Schedule 9 information requirements:

Schedule 9 Information Requirements	Comment
Type of Activity (Schedule 9, cl. 2(a) and (b))	The proposal involves a temporary weir that will assist in diverting water flow over a period of 18 – 24 months.
Description & dimensions of structure (Schedule 9, cl.3 (i)&(ii))	A description and dimensions are set out in the PDP memo dated 7 July 2026 and summarised in paragraphs 9-11 above. In brief, the dimensions and design are yet to be finalised but the weir will be relatively low in height and will extend across the width of the stream. Materials will include rocks and the height and permeability of the structure will be altered by adding or removing materials as needed. As set out in Table 2 above, spacings could be less than 90mm and rocks will be of varying sizes.
Placement of the structures (Sch.9cl.3 (iv))	As demonstrated in Sheet 2 of the PDP memo dated 3 July 2026, the weir will be embedded a minimum of 50mm within the bed of the tributary.
Design of structure & water flows (Schedule 9, cl.3 (iii)&(v)).	As set out in paragraphs 9 - 11 above, design features will include a rounded crest, shallow downstream gradient and v-shaped profile. The weir will maintain a continuous flow over the crest, however materials will be added or removed to progressively divert flow into the

	realignment channel. Flood flows will be managed as necessary to prevent large volumes of flood waters from entering the realigned channel until it is completed.
Water quality (sch.9 cl. 3(c))	An overview of water quality is provided in Sections E4.5, paragraphs 56 – 57, Part E – Complex Freshwater Fisheries Activity Authority dated 30 March 2026. The weir will be designed to maintain water quality in the Mangapū tributary. Extending the structure across the whole width of the stream minimises bank erosion. The varying rock sizes will replicate the natural flow characteristics of the tributary, minimising the risk of erosion and sedimentation beyond what naturally occurs. Additionally, the construction of the weir will be undertaken in accordance with the proposed ESCP (Appendix B12.4.7 of the Substantive Application). Overall, the proposed weir is not anticipated to significantly alter water quality within the Mangapū Stream catchment.
Water quantity, flows and operating regime (sch.9(3)((a)(v) and (vi) and (c).	As set out in section 2.2 of the Engineering Report (Appendix B12.4.6a of the substantive application) and section E4.6.1 of Part E of the substantive application, the proposed stream realignment will reduce the catchment area of the lower Mangapū Tributary catchment by 0.12km². This reduction in catchment will result in a small reduction in flows to the realigned watercourse and Mangapū Stream. The proposed weir will facilitate that reduction in catchment area over an 18 – 24 month period. The approximate rate of flow reduction is stipulated in Table 30 of Appendix B12.4.5b, a copy of which is provided above.
Freshwater species and values present Sch.9(3)(b)	A description of freshwater species is provided in section E4.7, paragraphs 75 – 80, Part E of the substantive application. This information remains the same for the proposed weir.
Provision of fish passage (Sch.9,cl3(d))	As set out in Ecology and PDP memo's dated July 2026, the proposed weir will be designed to provide for fish passage and has been designed in accordance with the New Zealand Fish Passage Guidelines (NIWA 2024). Section E4.8.1, Part E of the substantive application provides an overview of relevant fish speeds. This remains the same for the weir.

33. A statutory assessment pursuant to Schedule 9, Clause 5 FTAA is provided in section E5.1 of [Part E of the substantive application](#). That assessment is considered applicable to the proposed weir, which forms part of the stream realignment.
34. The conditions proposed in section E8 of [Part E of the substantive application](#) and in Part J of [Appendix B12.7](#) of the Substantive Application will apply to the proposed weir.
35. Overall, it is considered that this letter, the assessments provided by PDP and Boffa Miskell (Appendix 1 and 2) and the relevant sections of the substantive application address the information requirements of Schedule 5 and Schedule 9 of the FTAA.

Amendment to Part B – Assessment of Environmental Effects

36. Part B6.4, paragraph 483 incorrectly states that the zone of influence for groundwater effects includes catchments of the Wairoa River and its tributaries.
37. This is amended to read as follows:

The zone of influence for groundwater effects which Winstone is seeking to approve does not include the catchments of the Wairoa River and its tributaries.
38. No amendments are required to the assessments as a result of this change.

Yours sincerely

BOFFA MISKELL LTD



Nick Pollard

Planner | Partner

Attachments: Appendix 1: Engineering Memo entitled "Stream Realignment – Enlivening Structure" prepared by PDP, dated 7 July 2026
Appendix 2: Ecology Memo entitled "Mangapū Tributary Realignment Weir – Ecological Assessment" prepared by Boffa Miskell, dated 7 July 2026

Appendix 1: Engineering memo



Memorandum



TO	Phil Heffernan	FROM	Verity Kirstein
	Winstone Aggregates	DATE	7 July 2026
RE	Stream Realignment – Enlivening Structure		

1.0 Introduction

Pattle Delamore Partners Limited (PDP) has been engaged to develop a concept design for a structure that will be used to manage flows into the new realigned channel to assist the gradual enlivening of the stream. This memo is intended to present the concept of the structure and the considerations taken in developing it.

The purpose of the structure is to allow for a gradual flow regime change with the reduction of water flowing through the Mangapū Tributary and the increase of flow into the new realigned channel, leading to the eventual full transfer of water from the Mangapū Tributary into the new channel and the cessation of flow in the tributary.

2.0 Location

The flow management structure will be located on the Mangapū Tributary, near to the connection to the realigned channel. The precise location has yet to be determined but it will be located within 10 m of the connection. Figure 1 below shows the indicative location of the structure on the Mangapū Tributary relative to the realigned channel.



Figure 1: Location of the proposed realignment channel and approximate location of the flow management structure (yellow dot)

3.0 Concept Design

The purpose of the structure is to manage flows into the realigned channel once it has been constructed and facilitating the gradual transfer of water from the Mangapū Tributary. The enlivening of the realigned channel will be an ongoing process likely over several years.

The structure is a rock weir that can be adjusted in height and shape to alter the volume of water passing over it. Some water will also pass through the structure between the rocks. The structure will be constructed of a mixture of rocks and gravels sourced from the quarry and the excavation of the realigned channel.

Its position in the stream channel will be dependent on the channel shape, elevation and accessibility, with a narrow section of the channel being more favourable as it will cross the entire width of the Mangapū Tributary. Its extent across the stream bed is to enable secure positioning (keyed into the bank) and to minimise bank erosion.

At this stage the design has not been fully progressed to provide precise dimensions (which are location dependent), but it is anticipated that it will need to be several metres long to allow for a shallow slope on the downstream face. The longitudinal slope of the weir will likely to be steeper than 1:30 (the plans indicate 1:3 on the upstream slope and 1:5 on the downstream slope) due to the combination of the

finished height and the limited natural channel shape and size. It is likely that the lateral slope of the structure will be outside of the range of 5° – 10° , given the natural shape of the channel and the materials used to construct it. The finished initial height is still to be determined and is influenced by the final location and the range of flow volumes but will exceed 0.5m and likely range between 0.5 m – 1.0 m. It is anticipated that there will be limited backwater effects at the weir as the stream flow will be routed into the new realigned channel. Any backwater effect will be minor, localised and be characteristic of the natural stream conditions, evident as a pool for example, much like those found on the stream currently at natural rock weir formations.

Consideration has been given to fish passage. It is understood that climbing fish (eels and banded kokopu) predominantly inhabit the Mangapū Stream network, so the structure will be designed so that they can continue to move up and down the stream. With this in mind and following the NZ Fish Passage Guidelines¹, the design has incorporated features to enable climbing fish passage such as a rounded crest and a shallow gradient downstream face. The structure will also have a v-shaped profile to provide areas of different flow velocity. The surface will be varied due to the rock sizing to create a hydraulically diverse flow environment, but one that replicates the natural characteristics of the existing stream.

As the realigned channel becomes more established, the flow entering it will be increased by raising the height of the structure, with the flow passing down the Mangapū Tributary diminishing. There will be a time whereby close to all the flow will enter the realigned stream; it is at this point that fish recovery from the Mangapū Tributary will be carried out, and the Tributary permanently blocked.

The structure will be used to manage flood flows as necessary, to prevent large volumes of flood waters from entering the realigned channel until it is sufficiently established to handle such events.

The benefits of using a rock weir include the ability to adjust the height and shape by the adding/removing and placement of rocks, the replication of natural features already found in the Mangapū Tributary, and readily available materials with no lasting construction effects on the stream environment. The structure will also be used to divert flows whilst the final cut-off structure is constructed. All construction will be in accordance with the approved erosion and sediment control plan.

The conceptual details of the structure are presented on the separate plans. These will be fully developed as part of the Detailed Design phase.

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Prepared by

Reviewed & Approved by

Verity Kirstein

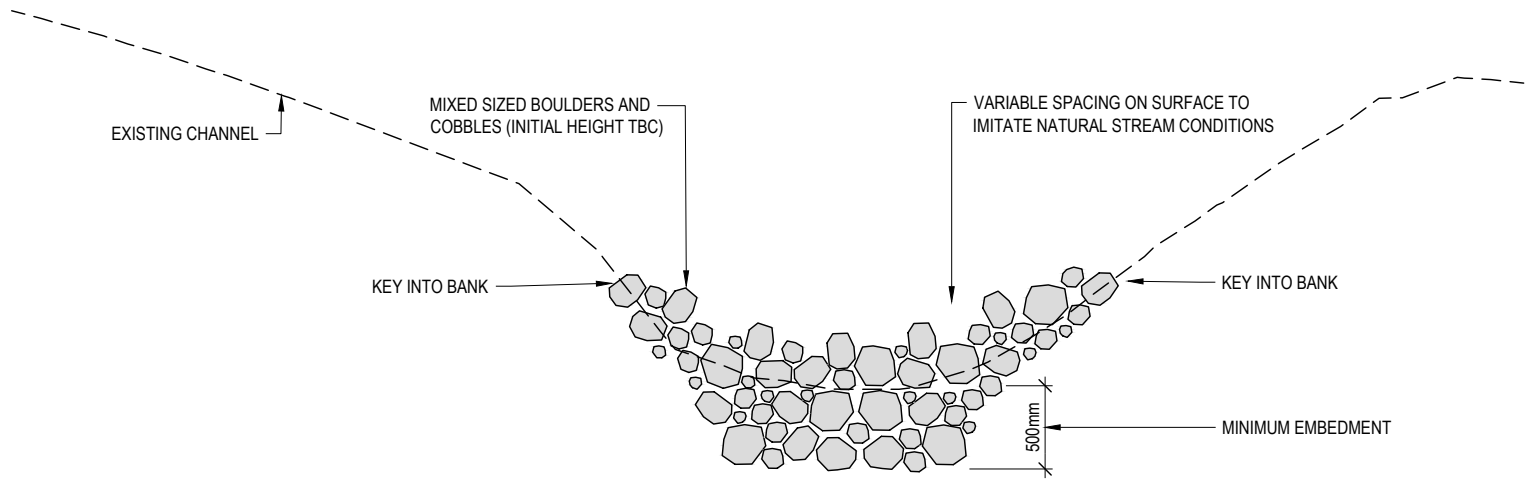
Ingrid Cooper

Service Leader – River Engineering

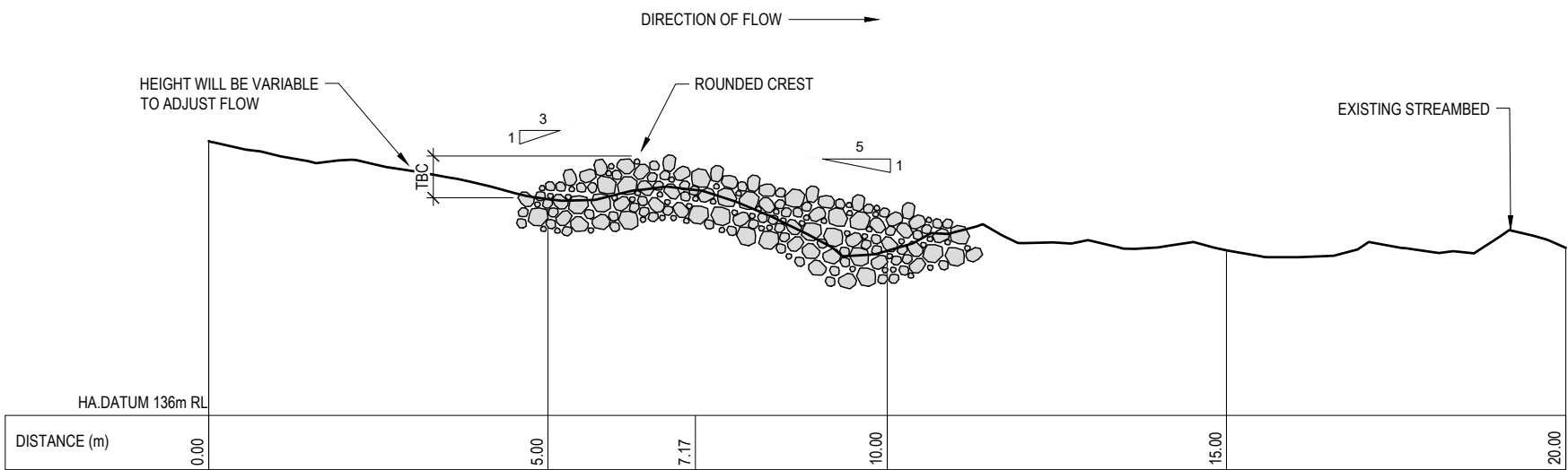
Technical Director – Water Infrastructure

¹ New Zealand Fish Passage Guidelines, Version 2.0 (June 2024), NIWA

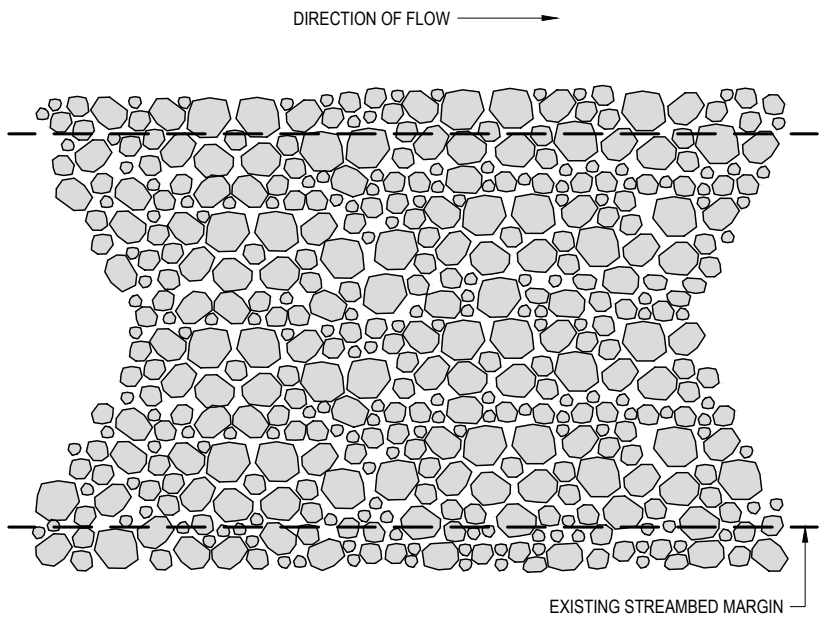
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TYPICAL LONG-SECTION
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TYPICAL PLAN VIEW
SCALE 1:50

CONCEPT DESIGN

A	CONCEPT DESIGN	JUL 26	
NO.	REVISION	DATE	APP.





MEMBER

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PROJECT: HUNUA QUARRY STREAM REALIGNMENT				
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Appendix 2: Ecology memo



Memorandum

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Attention: Phillip Hefernan

Company: Winstone Aggregates

Date: 7 July 2026

From: Ian Boothroyd

Message Ref: Mangapū Tributary Realignment Weir – Ecological Assessment

Project No: BM250767

Introduction

As part of the substantive Fast Track Application for the expansion of Hunua Quarry, the applicant seeks to realign the Mangapū Tributary. Detail of the development of the realignment is set out in the application (Sections 10.3 – 10.42, pages 128 - 137 of Appendix 12.4.5b, Assessment of Ecological Effects dated 30 March 2026). A key stage in the realignment is the switching of the water flow from the existing to the newly realigned channel, or the livening¹ of the realignment. It is intended that the realignment channel will progressively become live, with a phased diversion of the stream flows from the existing channel to the newly formed channel over time.

PDP (2026) have detailed a conceptual design for the methodology and structure to deliver the phased livening of the watercourse. In this memo we provide an assessment of the concept design considering the following:

- National Environmental Standards Freshwater
- Complex Freshwater Fisheries Approvals

Stream Realignment Design Framework

Providing for the phased livening of the realignment involves blocking the Mangapū Tributary once the realignment channel has been sufficiently established. The phased flow diversion means that ecological values supporting ecological function in the realigned channel commence before the complete loss of flows from the existing channel. In addition, the phased livening approach means that flood flows are restrained from entering the realignment channel before vegetation and sediment accumulation have established enough to withstand larger flows.

It is proposed that livening occurs through a staged transition of flows from the Mangapū Tributary to the realigned tributary over some 18-24 months as set out section 10.4.2 and Table 30 of Appendix 12.4.5b of the substantive application.

As set out in the application documents (pages 135 – 136 of Appendix 12.4.5b), we emphasise that livening of the realigned channel will only occur once the instream habitat features have been designed and built in to the realigned channel. The phased livening provides opportunity for monitoring the colonisation and advancement of aquatic ecological values, allowing for modifications prior to full livening at Phase 3. The

¹ Livened = When a connection is 'livened' (e.g., water can flow from the distribution network to the connection).

transitioning of the ecological values from the Mangapū Tributary to the realigned channel is an important factor in the management of effects of the Project.

Weir Design

PDP (July 2026) set out the proposed location and design of the weir structure for the phased livening of the realigned channel. The weir will be located on the existing Mangapū Tributary, just downstream of the proposed confluence with the new realigned channel.

The structure will be a rock weir that can be adjusted in height to alter the volume and flow of water passing over it. As the height of the weir is increased so a greater volume of the stream water will pass down the realigned channel. The weir is expected to have a shallow gradient, be several metres in length and low height.

Water is expected to flow over the surface of the rock weir most of the year, but there may be times when flows are interstitial (i.e., in between the rocks), most typically during summer low flows. During such times, the weir is expected to remain passable to fish moving in amongst the rocks. Most notably, the rock weir is expected to exhibit surface flows and thus accessible during the main springtime migration period of juvenile fish.

Fish passage

As set out in section 7.4.6 of Appendix 12.4.5a of the substantive application, eDNA results confirmed the presence of climbing fish species (longfin and shortfin eels, and banded kokopu) but also confirmed the absence of swimming species. There are a number of significant waterfalls located within the Mangapū Tributary that are likely to restrict upstream fish passage to all species except those with good climbing ability (i.e., eels and kokopu).

The weir has been designed following the NZ Fish Passage Guidelines to provide for upstream and downstream passage of climbing fish species, and incorporates the following:

- Rounded crest to the weir.
- Shallow gradient downstream face.
- V-shaped profile to provide areas of differing water velocity.
- Varied surface of rock sizes and structural integrity to provide diverse habitat features.
- Continuous flowing water over rock surface.

NES-F requirements

The requirements of the NES-F are set out in section 10.8 and Table 33 of Appendix 12.4.5b of the substantive application. The same requirements and outcomes are relevant to the proposed weir structure such that:

- whether there are improvements to the structure to mitigate any effects the structure may have on the passage of fish: The structure is designed to provide for the passage of naturally occurring indigenous climbing fish in the Mangapū Tributary.
- whether the structure protects particular species or prevents access by particular species to protect other species: No invasive species have been detected within the Mangapū Tributary, and does not modify the existing protections for indigenous fish species provided by natural features within the catchment (i.e., waterfalls inaccessible to invasive fish species).
- the likelihood that the structure will impede the passage of fish: the proposed weir structure is designed to not impede the passage of fish (climbing fish: eels and banded kokopu).

The proposed rock weir for livening the realigned channel will not result in any adverse effects on fish passage. Accordingly, there is no change to the conclusions and the overall effects assessment for the stream realignment in the original ecological assessment (Section 10, Appendix 12.4.5b and Part E of the substantive application).

Complex Freshwater Fish Approvals

Section 10.8 and Table 33 of Appendix 12.4.5b and Part E of the substantive application sets out the requirements and our responses for the Complex Freshwater Fisheries Approvals. The same requirements and outcomes are relevant to the proposed weir structure such that:

- Installation of the weir will not result in impediment to fish passage. Installation will meet all regulatory requirements (2a).
- Natural habitat remains available upstream and downstream of the proposed weir, and within the realigned channel (5d).
- The description, dimensions, design and placement of the proposed weir (structure) is provided in PDP (2026) (3a).

Essentially the provisions of the Complex freshwater Fisheries requirements are met as set out in Part E of the substantive application.

Conclusion

In conclusion, the requirements of the NES-F and the Complex Freshwater Fisheries Approval are met, and fish passage for climbing fish that occur in the existing watercourse is provided for as set out in the substantive application (Appendix 12.4.5b and Part E of the substantive application).