13. FRESHWATER FISHERIES APPROVALS AND DISPENSATIONS APPLICATION

13.1 INTRODUCTION

Section 43(3)(j) of the FTAA sets out that a substantive application for approval for a complex freshwater fisheries activity must include the information required by clause 3 of Schedule 9 of the FTAA. This section of the substantive application outlines the information necessary to obtain approvals for complex freshwater fisheries activities sought by Bathurst. It seeks authorisation under the FTAA for activities as part of the BPCP that would typically require an application under regulation 42 of the Freshwater Fisheries Regulations 1983 ("**Freshwater Fisheries Regulations**") and dispensations under Regulation 43 of the Freshwater Fisheries Regulations.

No approvals or dispensations under the Freshwater Fisheries Regulations 1983 are sought for the Stockton or Cypress sub-areas. While mining activities are proposed within these areas, they do not involve the construction of culverts, dams, or diversion structures within natural watercourses and therefore do not trigger Regulations 42 or 43. Works are limited to the ongoing use, maintenance, and internal management of water within already-modified mining environments and do not constitute "construction" affecting natural waterways for the purposes of the Regulations. No new natural watercourses are proposed to be intercepted or modified. Accordingly, no freshwater fisheries approvals are required.

In contrast, and as described in detail in this part of the application, approvals and dispensations are sought for new infrastructure components of the Project that involve the construction of culverts within natural drainage features, including the UWHR and MFS Access Road, pest exclusion fenced areas, and clean water diversion drains, where fish passage may be required or is not practicable.

This application is supported by the following reports, included in **Part B** of these application documents:

- Kōura movement ecology and passage requirements – A rapid literature synthesis, by NIWA;
- Assessment of Environmental Effects: Aquatic Ecology, by Earth Science New Zealand;
- Stockton Plateau Aquatic Ecology: History, Thresholds and Long-Term Management, by Instream;
- Characterisation of Culverts for Kōura Passage, by Bathurst; and
- Hydrological Assessment by MWM.

The FTAA defines a complex freshwater fisheries activity as including any activity involving the construction of a culvert or ford that will permanently block fish passage.[142]

Bathurst is seeking approval of fish passage provision under the FTAA for:

> Selected culverts installed as components of the UWHR.

Bathurst is also seeking dispensation from fish passage requirements under the FTAA that would otherwise be sought under Regulation 43 of the Freshwater Fisheries Regulations for specific components of the Project where providing for passage is not practicable. These include:

> Selected culverts installed as components of the UWHR and MFS Access Road;

> Culverts installed as components of the proposed Pest Exclusion Fenced areas; and

> Clean water diversion drains constructed throughout internal haul roads within the disturbance areas.

Copies of conditions proposed to be attached to these approvals being sought are attached as **Appendix 13.A** and **13.B (approvals and dispensations)**.

13.1.1 UWHR and MFS Access Road

Constructing the UWHR and MFS Access Road will require installing 59 culverts to convey natural water flows beneath the proposed road alignments connecting Stockton, ESE, and MFS. Of these, 12 culverts will be designed to provide fish passage. The remaining culverts do not provide for fish passage. Some have been designed with features intended to facilitate fish passage, such as roughened substrates; however, the effectiveness of these designs has not been verified through testing at the time of lodgement of this application, and, therefore, fish passage cannot be definitively demonstrated. The remainder are not proposed to include fish passage provisions because they are not associated with defined streambeds, concentrated flow paths, or waterways where fish passage is anticipated. Culverts through which fish passage will be practicably provided for have been identified through a screening process based on ecological and hydrological criteria, as described later in this section.

13.1.2 Pest Exclusion Fenced Areas

In relation to culverts installed as components of the proposed pest exclusion fenced areas, Bathurst seeks dispensation under regulation 43 of the Freshwater Fisheries Regulations on

[142] Section 4 of the FTAA.

the basis that current knowledge cannot confirm whether provision for kōura passage is feasible through the specific style of culverts that are required to ensure that pests cannot use the culverts to enter the fenced areas. It is proposed that the detailed fence design process includes a targeted investigation into the practicability of allowing kōura passage through such culverts without jeopardising their necessary pest-exclusion function. This investigation will be completed during the design phase of each fence intersecting koura habitat. In addition, relevant streams will be surveyed to assess flow characteristics, including flood flows, and to determine the presence or absence of kōura. As a precautionary measure, Bathurst is applying for a dispensation for all culverts installed as part of the proposed pest-exclusion fenced areas. This ensures regulatory coverage while investigations into the feasibility of kōura passage are conducted as part of the detailed design process for the proposed pest exclusion fenced areas.

Clean Water Diversions

Bathurst is also seeking dispensation under regulation 43 of the Freshwater Fisheries Regulations for fish passage in relation to clean water diversion drains. Fish passage has not been incorporated into the design of these features, reflecting the absence of finfish populations on the Plateaux where these drains are to be located and the general unsuitability of the hydrological conditions of these diversion systems to support kōura populations or upstream movement.

It is noted that a number of temporary culverts will also be required during the Construction phase of the Project to facilitate access and support infrastructure development. These temporary structures will be in place for short durations and are not intended to permanently modify watercourses. As such, they are not subject to the fish passage requirements of the Freshwater Fisheries Regulations. Instead, their installation and operation will be managed through the relevant resource consents under the RMA with construction methodologies guided by established industry best practice (as outlined in Appendix A of BPCP-ENV-PLN-013 Erosion and Sediment Control Plan for Land-Disturbance Activities), attached in **Part G** to this application, including measures to manage potential effects on aquatic habitat and connectivity.

Bathurst, therefore, seeks both approvals and dispensations under the FTAA for the complex freshwater fisheries activities associated with the BPCP.

A full description of the Project, including the Project Site, is provided in **Chapter A.1 – Project Overview** and **Chapter A.4 – Project Description** of this application, which should be read in conjunction with this section on freshwater fisheries approvals.

13.2 DESCRIPTION OF FRESHWATER FISHERIES

Under the Fisheries Act 1996, 'fish' are defined as including both finfish and shellfish. The definition of shellfish includes "all species of the class Crustacea". Kōura are crustaceans. Existing investigations undertaken by Earth Sciences (ESNZ, 2026a), indicate that kōura (*Paranephrops planifrons*) are the only fish species present in the relevant catchments within the Project footprint, owing to geographical barriers that prevent fish from migrating to the upper reaches of the Buller Plateaux waterways. As such, for the purpose of Bathurst's application for the Project, kōura must be considered 'fish' and the fish passage provisions of the Freshwater Fisheries Regulations, NES-F and NPS-FM apply.

The freshwater environment of the Project area shows clear spatial variation between upper headwater streams and lower river reaches. Differences in stream gradient, elevation, and physical connectivity strongly influence the distribution of aquatic fauna. These patterns are driven largely by natural physical controls such as stream gradient, elevation, and channel form, which govern habitat suitability and connectivity for different species.

13.2.1 Fish Distribution across the Denniston Plateau

Fish distribution data collected between 2000 and 2025, including field survey results and records from the New Zealand Freshwater Fish Database ("**NZFFD**"), are presented in **Figure 13-1** for the Denniston Plateau. The mapping shows a clear distinction between the lower and upper catchments. Records of fish presence (depicted in the top panel) are concentrated in the middle and lower reaches, while the upper streams show almost no fish presence. In contrast, kōura distribution (depicted in the bottom panel) is extensive across upper catchment areas, illustrating their dominance in zones where the physical stream environment favours their survival.

This pattern aligns with previous survey findings, which consistently report greater fish diversity in the lower reaches of the Whareatea and Waimangaroa waterways, as summarised in ESNZ (2026). Bullies and īnanga predominantly occupy these lower-gradient areas. Two climbing species, kōaro and shortjaw kōkopu, have been recorded in the middle reaches of the Waimangaroa River, although neither species has widely colonised the Buller Plateaux, likely due to the steep and fragmented nature of upstream habitats.

Collectively, these findings confirm that the upper catchments form a distinct ecological zone where kōura are the primary aquatic fauna, and other fish are effectively absent. This context is directly relevant to fish passage design within the Project area. For this reason, the proposed measures align with the natural stream characteristics favoured by kōura and ensure that culvert installations do not create new barriers for kōura in habitats that are already naturally isolated from other fish.

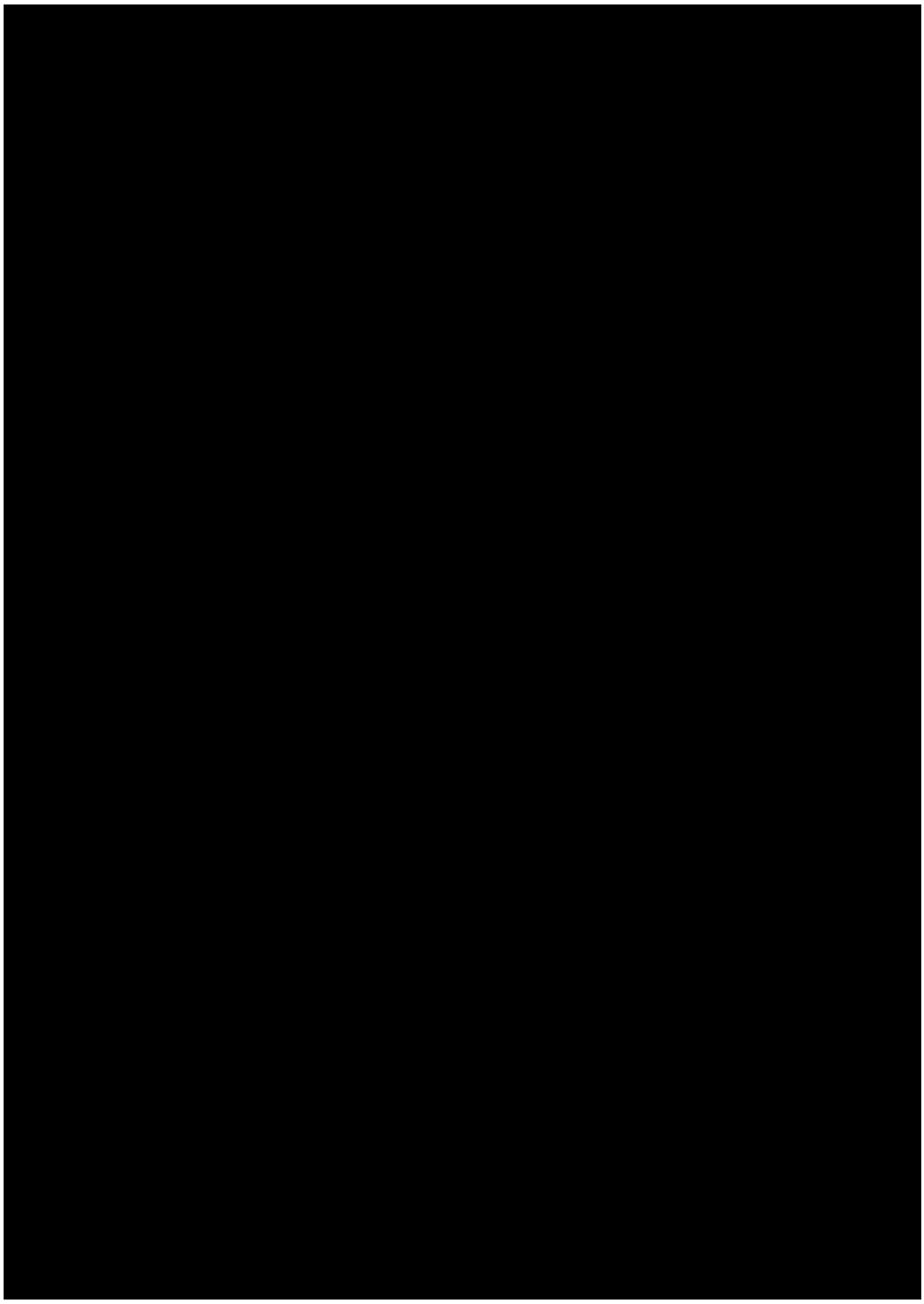

Figure 13-1: Distribution of fish (top panel) and kōura (bottom panel) in the Waimangaroa and Whareatea River catchments from 2000–2025. ***(Source: Earth Science New Zealand: Assessment of Environment Effects: Aquatic Ecology)***

13.2.2 Kōura (Freshwater Crayfish)

A literature review report prepared by Earth Sciences states there are two species of freshwater crayfish present in New Zealand: *Paranephrops zealandicus* - distributed along the eastern side of the South Island and on Stewart Island; and *Paranephrops planifrons* - located in the North Island and in the northwest of the South Island, including the West Coast. Collectively known as kōura, these species are endemic to New Zealand and play a vital role in freshwater ecosystems. These species inhabit a range of aquatic environments including streams, lakes, and wetlands, with preferences for habitats offering structural complexity such as cobble substrates, woody debris, and undercut banks.

Earth Science New Zealand's report concluded from investigations that while fin fish are absent from the upper catchments of the Waimangaroa and Whareatea Rivers, kōura are widespread, as shown in **Figure 13-1**. This pattern reflects the physical nature of these environments: high elevations, steep gradients, and a series of natural barriers that limit or entirely prevent upstream passage of fin fish. As a result, the upper catchments lack the habitat continuity and hydraulic conditions required to support fin fish populations.

In contrast, kōura are widespread throughout the upper catchments. Their presence reflects their ability to thrive in steep, confined, and structurally complex stream systems where predatory fish are absent. Kōura are well adapted to these environments, utilising rocky substrates, boulder faces, and interstitial spaces for shelter and movement. Their climbing ability allows them to navigate steep or stepped streambeds that would act as barriers to most fish species, supporting their persistence in the Buller Plateaux's upper waterways. These physical conditions exclude fin fish and create habitat refugia that allow kōura to establish dense, stable populations.

Kōura are expected to be present in most waterways where suitable habitat conditions exist. These habitats typically comprise moderate to low flow environments, stable substrates, and adequate water quality. A key determinant of aquatic ecological health across the Buller Plateaux is the presence or absence of AMD from historic mining activity. AMD-affected waterways are characterised by low pH, elevated dissolved metal concentrations, and, in some cases, increased suspended fine sediments. As outlined in "*Stockton Plateau Aquatic Ecology: History, Thresholds and Long-Term Management"* (Instream, 2026), such conditions can result in direct toxicity to aquatic flora and fauna, degradation of habitat and food resources, and disruption of ecological processes. Fish richness and abundance in AMD-impacted streams are typically very low, with fish generally absent at pH levels below 5. Under severe AMD conditions, waterways may be largely devoid of life other than extremophile bacteria and algae. Consistent with these findings, kōura are not expected to

occur in waterways significantly affected by legacy AMD, as these environments do not provide suitable habitat conditions.

Several waterways within or in the vicinity of the Stockton sub-area and Escarpment Extended sub-area have been identified as being impacted by legacy AMD and are therefore considered unlikely to support kōura populations.

In contrast, waterways unaffected by AMD generally retain higher ecological values and are more likely to support kōura populations. Across the Buller Plateaux, waterway condition is therefore variable, ranging from degraded legacy AMD-impacted systems to relatively intact headwater environments.

Further evidence of the ecological value of non-AMD-impacted systems is provided by Earth Sciences (ESNZ, 2026aA). Surveys undertaken across 34 sites within the UWHR, MFS, and ESE sub-areas (located in the upper Waimangaroa and Whareatea catchments) indicate that streams support high ecological value under naturally acidic conditions typical of high-elevation coal measures landscapes. Kōura (*Paranephrops planifrons* – Not Threatened) were recorded at nearly all survey sites, with varying abundance, while *Paranephrops zealandicus* (At Risk – Declining) was identified in several tributaries. No finfish (or any other fish species) were recorded, which is consistent with the presence of natural migration barriers in these upper catchments.

13.3 APPROVALS SOUGHT THAT WOULD OTHERWISE BE APPLIED FOR UNDER THE FRESHWATER FISHERIES REGULATIONS

Approvals required for the BPCP that would otherwise be required under the Freshwater Fisheries Regulations are:

- **Approvals** in respect of complex freshwater fisheries activities[143] in relation to Regulation 42 (Culverts and fords).
    - 12 culverts associated with the UWHR and MFS Access Road;

[143] Under s4 (interpretation) of the Act a complex freshwater fisheries activity means 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
...
(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.

- **Dispensations** under Regulation 43 (Dams and diversion structures) of the Freshwater Fisheries Regulations for:
    - All 'new' clean water diversions related to the BPCP affecting natural watercourses;
    - All culverts associated with Pest Exclusion Fences affecting natural watercourses; and
    - Selected culverts (47) associated with the UWHR and MFS Access Road affecting natural watercourses.

It is noted that approvals in respect of standard freshwater fisheries activities are included in consideration of the relevant approvals relating to RMA consents for structures in the beds of lakes / rivers (RMA section 13) and damming and diversions of water (RMA section 14).

The New Zealand Fish Passage Guidelines (NIWA, 2025) establish national best-practice expectations for the design, installation, operation and assessment of instream structures, including culverts, with the overarching objective that fish passage is maintained or improved, except where it is demonstrably appropriate to restrict passage to protect ecological values or manage adverse effects (Sections 1, 3 and 4). The approach adopted for the BPCP is consistent with this framework. The Guidelines explicitly recognise that fish passage solutions must be site-specific, evidence-based, and responsive to ecological context, uncertainty, and operational constraints (Sections 1.1, 1.2 and 4.2). They caution against requiring unproven or impractical designs and support staged investigation, testing, and adaptive management where the state of knowledge is incomplete.

At this stage, 12 culverts are seeking approval and can be confidently designed to provide for kōura passage. The design details for these culverts are outlined in **Table 13-3** in **Section 13.3.1.4** below.

For areas seeking dispensation, Bathurst proposes to install culverts that provide kōura passage where practicable as part of the BPCP. While fish passage for finfish is not considered relevant in this instance (given their absence), culverts will still be designed in line with NES Freshwater requirements to support the widespread kōura population where practicable.

13.3.1 Culverts – Upper Waimangaroa Haul Road and Mt Frederick South Access Road

Culverts are required to pass clean water flows under the road alignments proposed for transport corridors linking Stockton, ESE and MFS. This includes 52 culverts along the UWHR alignment and 7 culverts along the MFS Access Road (including the major Waimangaroa River crossing). Overall, a total of 59 new road culverts are proposed. As

explained in further detail in the following sub-sections, approval is sought for 12 of the proposed culverts.

There are eleven existing culverts on Whareatea Road which will be used to access Escarpment Infrastructure and operations areas. (Whareatea Road was upgraded in 2013/14 by Buller Coal Limited as part of the Escarpment mine access upgrade). Five of these existing culverts at the southern end of Whareatea Road will be within the disturbance footprint of the operation, at the headwaters of the Whareatea River. These culverts will be replaced with site water management infrastructure based upon the new layout designed to collect site water and direct it to water treatment ponds and facilities before release.

The remaining six culverts have demonstrated adequate capacity to convey existing flows, with no evidence of road damage during the approximately 10 years since their installation. To accommodate the proposed road widening and maintain safe vehicle access, these culverts will be extended slightly while remaining in their current locations and retaining their existing configuration. The proposed road widening works do not involve the redesign or replacement of these culverts, as they service very small catchments (less than 2 ha) and convey runoff from minor ridgelines that do not contain defined permanent watercourses. As these culverts are existing structures and are not the subject of the approvals or dispensations sought through this application, they are provided as context only. Accordingly, the culverts associated with Whareatea Road are not discussed further in this chapter.

The locations of the culverts along the UWHR and MFS Access Road alignments are shown in **Figures 13-3 to 13-7** below. Two types of culverts are proposed including box and pipe type culverts. Some culverts (as presented in **Figures 13-3** to **13-7**) will offer no koura passage as they are not located in a waterway, rather they will be placed to smooth the gradient of the relevant access road.

Table 13-1 below lists the culvert number by access road required for bypassing clean water where kōura passage requirements were evaluated.

Table 13-1: Culverts required to transfer clean surface water beneath site access roads

	Number
UWHR	52
MFS Access Road	7
Whareatea Access	0

13.3.1.1 Waimangaroa River

As shown in **Figures 13-3** to **13-7** below, the UWHR and MFS access road proposed 12 culverts to provide fish passage pass through the Waimangaroa River.

Earth Sciences New Zealand undertook aquatic ecology and water quality monitoring of the Waimangaroa River across multiple survey campaigns (2019, 2020, 2024 and 2025) at a range of mainstem and tributary sites in the upper catchment. Detailed site locations, methods, and results are provided in report attached as **Part B** (ESNZ, 2026aA). which includes monitoring across 17 sites associated with the UWHR and surrounding areas.

Water Flows

The upper Waimangaroa River catchment is characterised by small, steep headwater tributaries and a confined mainstem channel. Recorded flows are generally low in tributaries (often <0.05 m^3/s), reflecting their small size, while the mainstem exhibits higher but still moderate flows (e.g. ~0.26–0.42 m^3/s at monitored sites). The system is also described as "flashy", with flow responding rapidly to rainfall events due to steep gradients and limited storage.

Freshwater species and values

The upper Waimangaroa River supports significant aquatic ecological values despite the absence of fish in these headwater reaches. Fish are typically absent due to elevation, steep gradients, and physical barriers restricting migration.

In contrast, kōura (*Paranephrops planifrons*) are widespread and represent a key ecological value, occurring at most monitored sites, although generally in low to moderate abundances. A second species, *Paranephrops zealandicus* (At Risk – Declining), has been recorded in several tributaries.

Macroinvertebrate communities are diverse and often indicate high ecological condition, with many sites rated "Excellent" under MCI/QMCI metrics. Species of conservation interest recorded in tributaries include:

- Kokiria miharo (caddisfly; At Risk – Declining); and
- Megaleptoperla grandis (stonefly; At Risk – Naturally Uncommon).

These values highlight the importance of the river for regionally significant invertebrate biodiversity and kōura populations.

Water quality and quantity (upstream and downstream)

Water quality in the upper Waimangaroa River is generally high and reflects natural background conditions. Key characteristics include:

- **pH:** Typically acidic (mainstem ~4.6–5.4), with tributaries ranging from acidic to near neutral depending on local geology;
- **Conductivity:** Consistently low (<110 µS/cm), indicating low dissolved mineral content;
- **Temperature:** Cool (generally 8–10°C during surveys); and
- **Turbidity and suspended solids:** Low overall, indicating relatively clear water and limited sediment input under baseflow conditions.

Ecological condition is generally high, particularly in tributaries where intact riparian vegetation and low disturbance support diverse and sensitive macroinvertebrate communities. However, some variability occurs in the mainstem upstream and downstream of tributary confluences (e.g. near Deep Stream), where community condition ranges from good to poor based on QMCI scores.

Overall, the Waimangaroa River upstream environment is characterised by low-flow, high-quality headwater systems with naturally acidic chemistry, strong ecological integrity, and a dominance of kōura and sensitive invertebrate taxa.

13.3.1.2 Catchment Type Results

The culverts along the UWHR and MFS Access Road are located within a range of catchment types, with variable practicability to provide kōura passage. **Figure 13-2** showcases a catchment where a culvert is considered non-practicable. This practicability is controlled by catchment size, gradient and shape, which is a function of the underlying geology and geography.

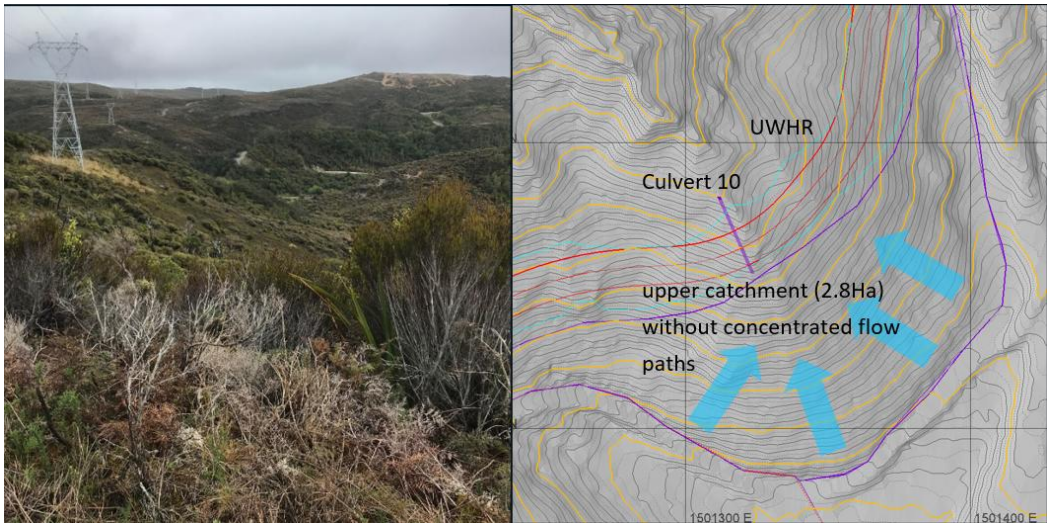

Figure 13-2: Example of Type 1 culvert location (Culvert 10) (Source: Bathurst)

Fundamentally, if there is an established watercourse with perennial or ephemeral flows within which a culvert is to be placed, there is potential for koura to be present, for which koura passage will be provided where practicable.

For each culvert, the catchment that reports through it has been mapped and classified. Some catchments are very small and/or within shallow gradients where there is no central watercourse or stream bed present. This is particularly so where the headwaters of a catchment are artificially isolated by the road alignment. Because there is no developed stream bed or likelihood of perched ponds upstream, associated with these types of catchments, kōura passage is not proposed as an objective of culvert design in these locations. Dispensation for the provision of kōura passage is sought in these cases on this basis.

The following definitions were used to classify catchment types and subsequently to define culvert crossing design requirements for kōura passage:

1. Small dry catchment with no permanent or obvious drainage path;
2. Small catchment above artificial cut-off structure (Road);
3. Ephemeral forested catchment without central drainage;
4. Ephemeral forested catchment central drainage; and
5. Large catchment with perennial central drainage path.

Based upon the characterisation of catchments introduced above, there are 29 culverts that have been designed for kōura passage. Of these, approval is being sought for 12 under the

Freshwater Fisheries Regulations 1983, and dispensation is being sought for 17 due to the proposed use of an untested approach utilising roughened substrates in high-gradient culverts to provide kōura with a surface that offers traction for walking. A further 30 culverts located in catchments where there is no defined central drainage pathway will seek dispensation under the Freshwater Fisheries Act 1983 based upon the catchment classification, indicating there is unlikely to be any kōura habitat above the culvert location. Overall, approval for 12 culverts is being sought and dispensation for all other culverts related to the UWHR and MFS Access Road.

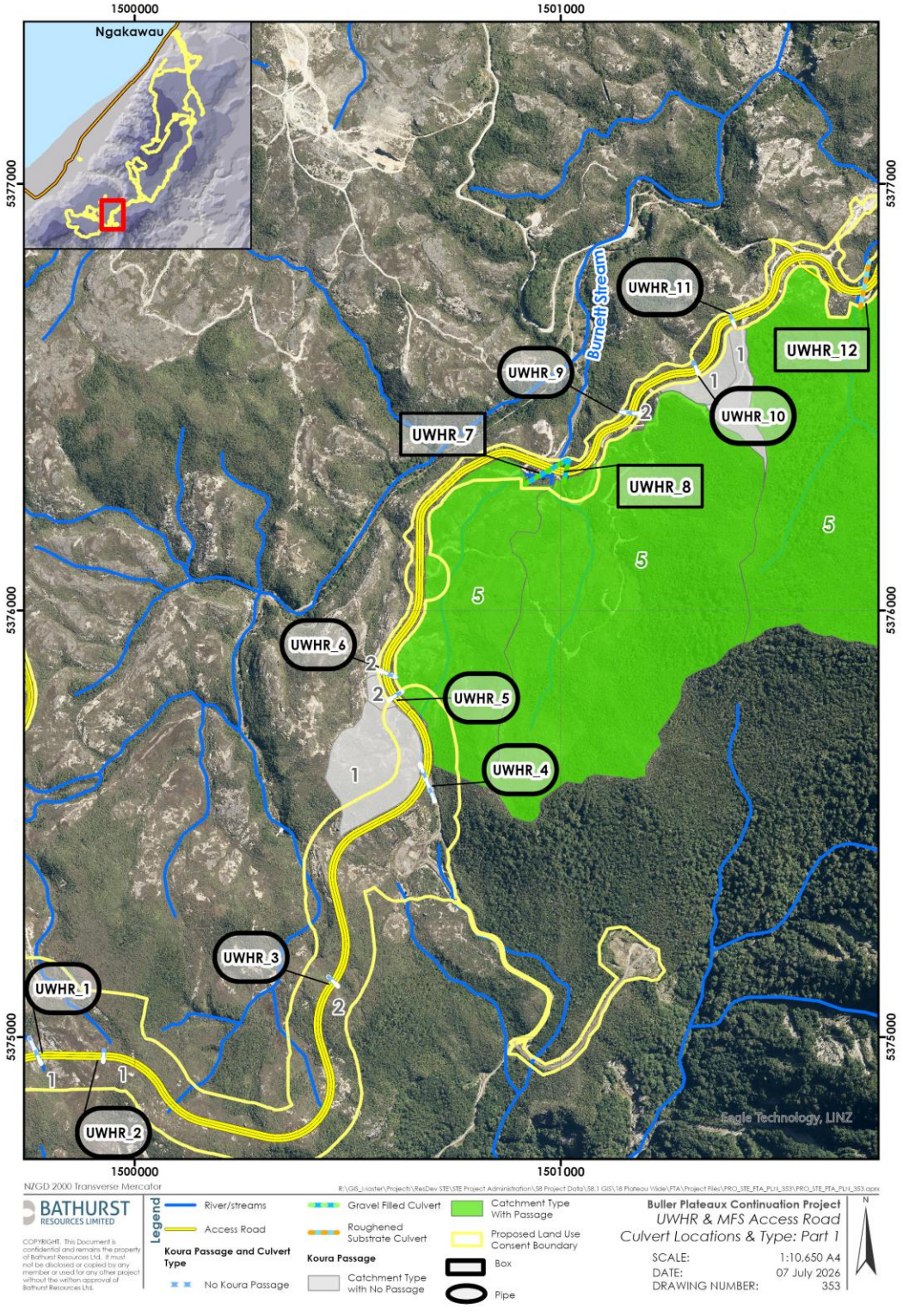

Figure 13-3: UWHR and MFS Access Road Culvert locations and Type: Part 1

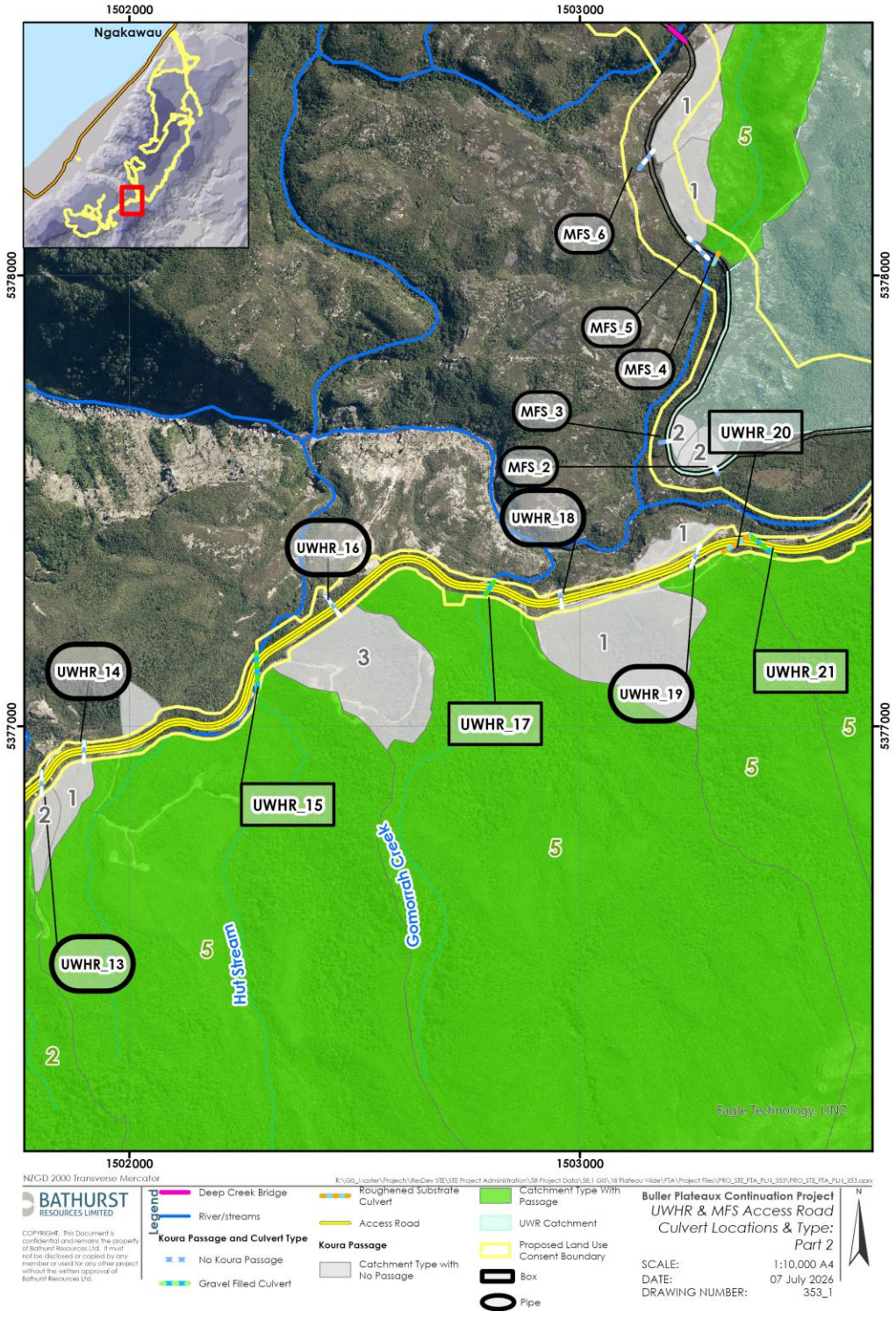

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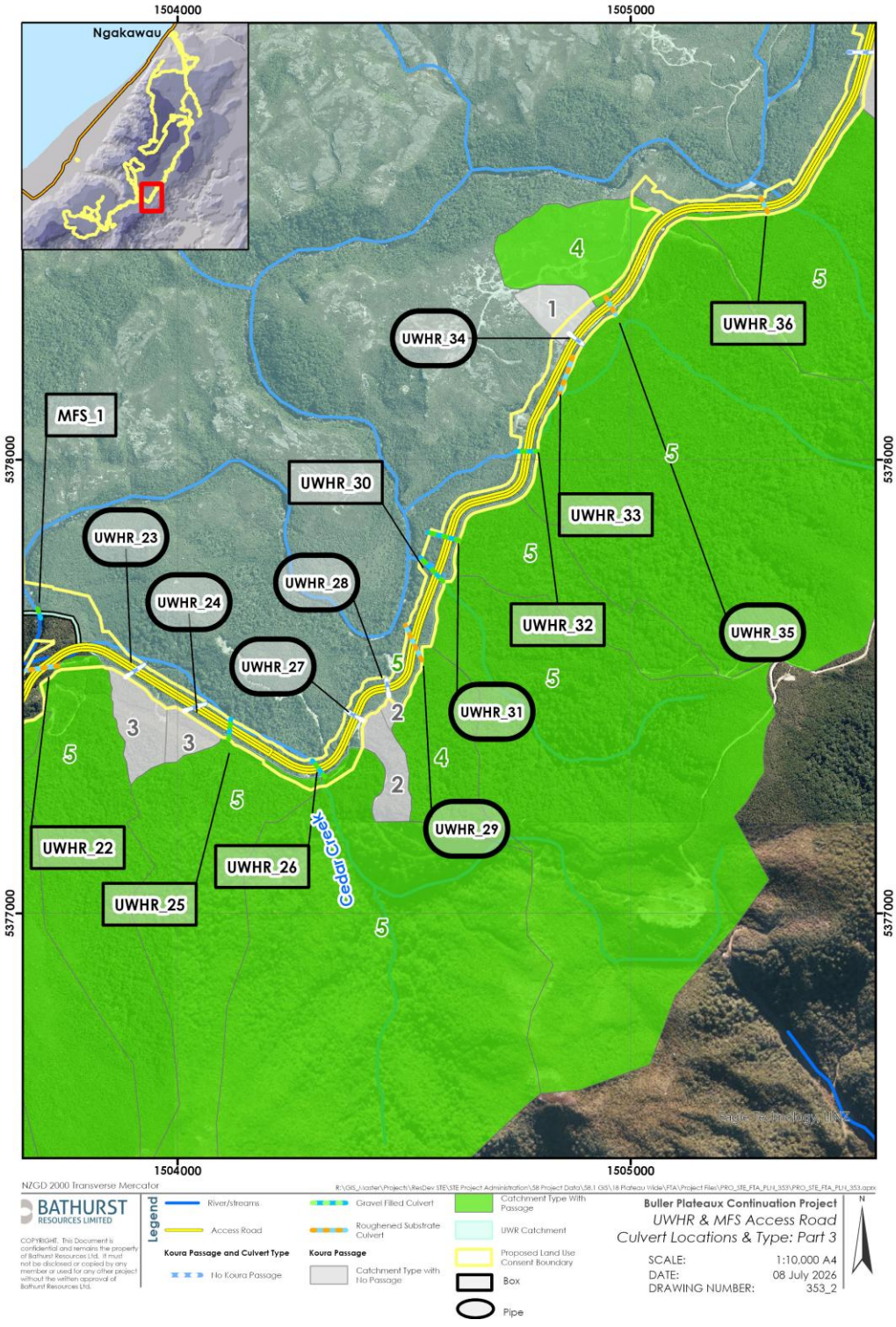
Figure 13-4: UWHR and MFS Access Road Culvert locations and Type: Part 2



350 **Figure 13-5: UWHR and MFS Access Road Culvert locations and Type: Part 3**

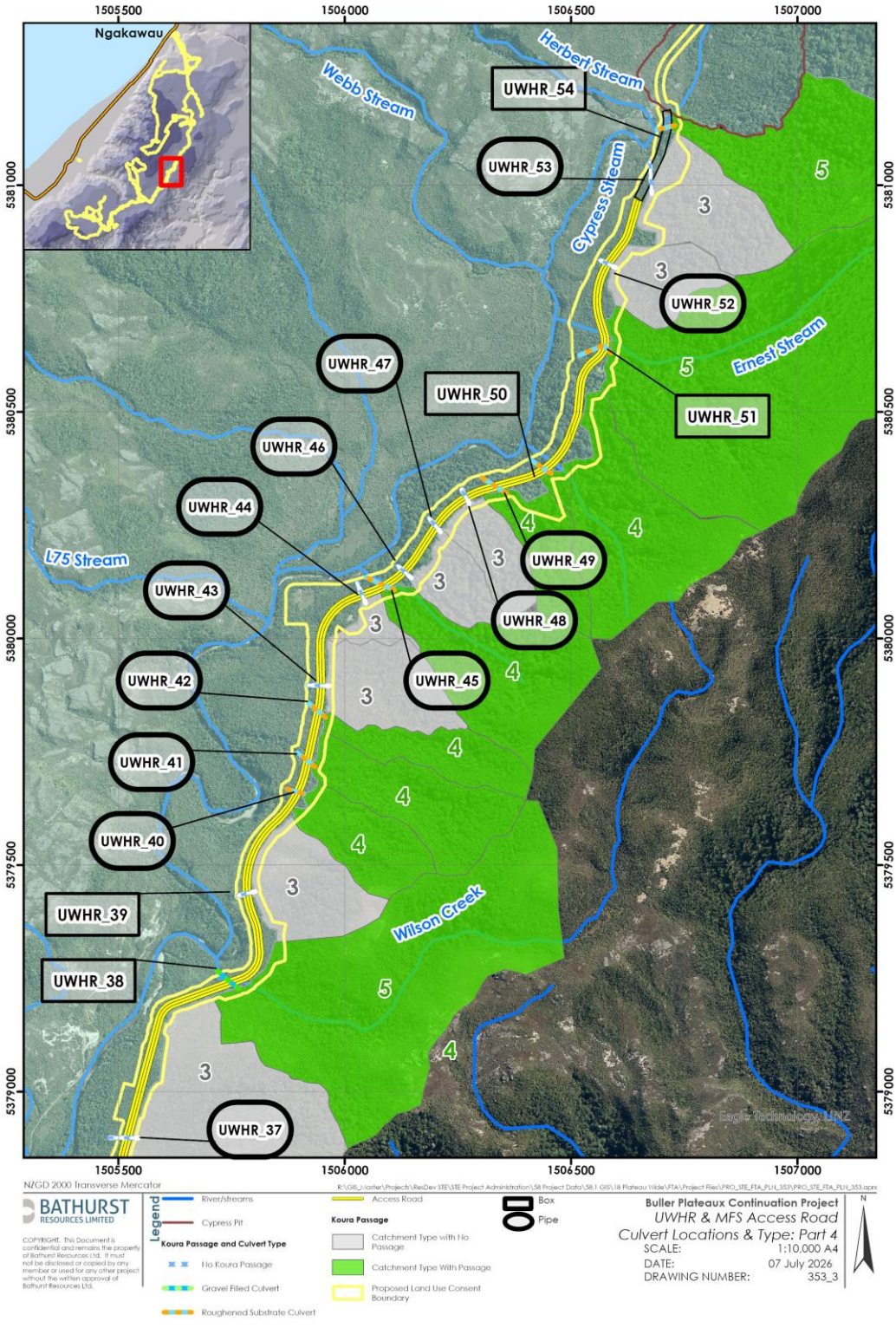


Figure 13-6: UWHR and MFS Access Road Culvert locations and Type: Part 4

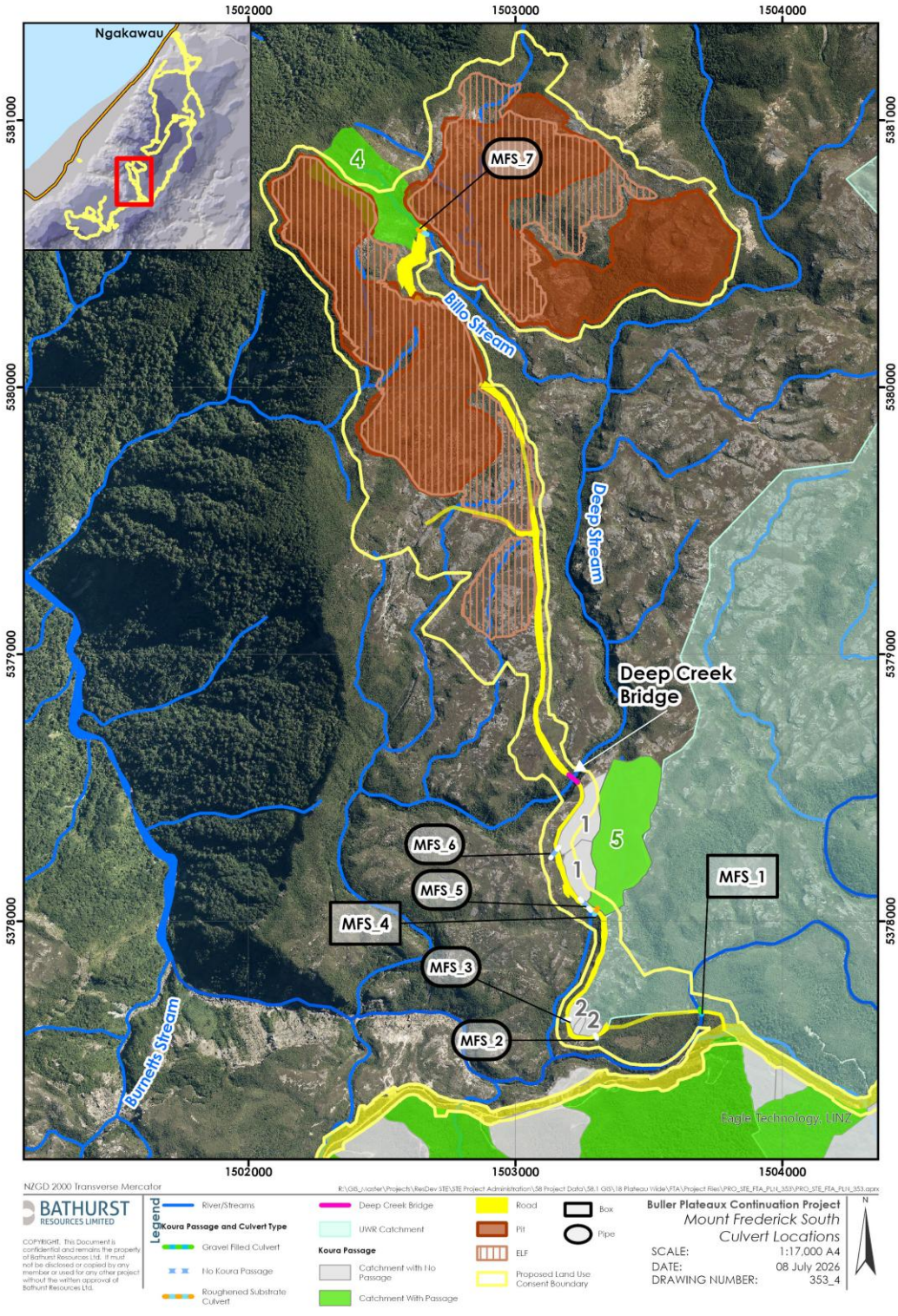


Figure 13-7: MFS Culvert Locations

13.3.1.3 Culvert Requirements

As described in the "Kōura Passage Culvert Characterisation" report, based on the catchment characterisation, 29 culverts have been designed to provide for kōura passage and are therefore will comply with the relevant passage requirements. However, as the proposed roughened substrate design relies on an untested culvert configuration intended to facilitate kōura passage in high-gradient environments, and testing had not been completed at the time this application was lodged, dispensation is being sought as a precautionary measure for 17 of these culverts, leaving a total of 12 culverts seeking approval.

In addition, a further 30 culverts are located within catchments that do not contain a defined central drainage pathway and are also subject to a dispensation request. Accordingly, dispensation is being sought for a total of 47 culverts.

The following table summarises catchment classification, culvert type, and whether provision for kōura passage is proposed, as highlighted in green.

Table 13-2: Culvert number and type matched to catchment classification

	Catchment Type	Design for Passage	Total	Pipe (#)	Box (#)
1	Small dry catchment with no permanent or obvious drainage path	N	9	9	-
2	Small catchment above artificial cut-off structure (Road)	N	9	10	-
3	Ephemeral forested catchment without central drainage	N	12	11	1
4	Ephemeral forested catchment central drainage	Y	9	8	1
5	Large catchment with perennial central drainage path	Y	20	2	18
	TOTAL		**59**		

For catchments classified as Type 1 – small dry catchments with no concentrated drainage paths, nine culverts occur within these areas, and the design is proposed to not provide for

kōura passage. These catchments are relatively small (approximately 1–5 hectares) and do not contain an established central watercourse due to the hard sandstone pavement of the Brunner Coal Measures. As a result, drainage does not concentrate into defined channels. These areas typically occur at headwater locations and are characterised by sparse scrub vegetation.

For Type 2 catchments – small catchments above an artificial cut-off structure - nine culverts are also required; however, none are proposed to be designed to provide kōura passage. These catchments are very small (generally less than 2 hectares and averaging less than 1 hectare) and occur where the upper limits of a catchment are artificially isolated by road alignment. The average centreline length between the culvert and the upper catchment boundary is approximately 50 m. In these areas, water flows across the ground surface without concentrating into a defined watercourse before being intercepted by a roadside cut-off drain.

For catchments classified as Type 3 – ephemeral forested catchments without a concentrated drainage path, twelve culverts are required, none of which are proposed to be designed to provide for kōura passage. These catchments are characterised by the absence of a developed central drainage path. Although slightly larger than Type 1 and Type 2 catchments, they remain relatively small, typically ranging from approximately 5 – 20 hectares. Type 3 catchments occur exclusively in the northern half of the UWHR alignment and are associated with mixed rimu, beech, and rātā forest types. The absence of established stream beds observed during field investigations is attributed to a combination of catchment shape and size, along with rainfall attenuation through the denser forest canopy. Field observations indicated no obvious stream beds or drainage channels where water would typically concentrate. In the larger Type 3 catchments, the surrounding topography tends to have shallow gradients and comparatively short centreline lengths. In steeper areas, the limited catchment area, combined with dense native forest cover, reduces the concentration of surface water flows, resulting in the absence of established stream beds.

For catchments classified as Type 4 – ephemeral forested catchments with a central drainage path, nine culverts are proposed. All have been designed with features intended to facilitate kōura passage. However, given the current state of knowledge and the lack of proven performance data for these designs in such environments, it cannot be definitively concluded that they will provide for kōura passage in all circumstances. Accordingly, a dispensation is sought for these culverts as part of this application. Type 4 catchments are similar in area to Type 3 catchments; however, steeper topography and longer centreline lengths (generally greater than approximately 300 m) result in water flows concentrating rapidly into a defined central drainage path. This drainage path is ephemeral due to the

relatively small catchment area, but may contain perched ponds that can provide isolated habitats for kōura.

For catchments classified as Type 5 – large catchments with a perennial central drainage path, 20 culverts are required. Only 12 can be confidently designed to provide for koura passage based on current state of knowledge, the other 7 will require dispensation. These catchments are like Type 4 catchments but differ in that they support perennial rather than ephemeral flows along well-defined central drainage paths. Type 5 catchments are typically characterised by larger areas (generally greater than 10 hectares), although flows may vary depending on the underlying geography and geology. The resulting Type 5 waterways are representative of the streams and small rivers typically found on the Denniston Plateau.

13.3.1.4 Culvert Design Elements to Support Kōura Passage

A range of culvert design approaches can be implemented to maintain or enhance kōura passage, depending on the characteristics of each catchment and the specific requirements identified.

Earth Science New Zealand's kōura passage literature review notes that the surface or substrate type within structures is particularly important: smooth concrete or steel surfaces can prevent crayfish from gaining traction, whereas roughened substrates or wetted margins with lower flows provide footholds that can facilitate successful passage (Louca et al., 2014). The main barriers to kōura movement typically arise from smooth culvert interiors and perched inlets or outlets. The following design options outline how these issues may be addressed across the Project where kōura passage is required.

Low-gradient culverts

In low-gradient environments, enabling kōura passage is generally straightforward. Culverts will be set into the existing stream bed to ensure a natural alignment, with inlet and outlet overhangs avoided. Rock will be placed within the culvert to replicate the surrounding bed conditions, allowing natural materials to settle and form a suitable substrate for kōura movement.

High-gradient culverts

High-gradient culverts present additional challenges due to the potential for elevated water velocities, which can scour material from inside the culvert and prevent natural substrate from accumulating. Although overhangs can be managed through appropriate rock placement, the lack of stable bed material within the culvert may still create a barrier for kōura passage. The following measures are proposed to reduce these risks whilst minimising the potential for culvert blockage.

Internal substrate treatments

Where high gradients and predicted flow velocities are likely to remove natural substrate, the use of roughened concrete surfaces is proposed to assist kōura passage. While there are currently no established New Zealand examples designed specifically for kōura, roughened concrete provides a durable and stable surface that improves traction. These surfaces may be formed during precast manufacture or applied after installation.

For these reasons it is considered that roughening of the final finish of the internal surfaces of the culvert is the design approach to providing for kōura passage where natural substrates cannot be established within the culvert.

The exact internal finishing of culverts to provide for kōura passage will need to be developed in conjunction with culvert manufacturers and other stakeholders including the testing of alternatives in a flume. As a result of this current national knowledge and experience gap, the application is applying for dispensation under the Freshwater Fisheries Regulations 1983 for these types of culverts while the effectiveness of the design approach is further evaluated.

Inlet and outlet treatments

To avoid overhangs at culvert entrances and exits, rock armouring will be installed. This will function both as erosion protection and as a stable, textured surface that enables kōura to access the culvert.

The detailed culvert designs will be developed in accordance with the New Zealand Fish Passage Guidelines (NIWA, 2025) and will apply the key principles for good fish passage design relevant to kōura, including bed continuity/embedding, suitable wetted margins or roughened internal surfaces where needed, avoidance of inlet/outlet perching, and provision for ongoing maintenance to retain passage function.

12 of the 59 culvert locations on the project's access road network are characterised by large catchments, perennial flows (Type 5) and shallow gradients. These culverts will be designed as per the New Zealand Fish Passage Guidelines,[144] referenced policy statements and regulations as they relate to culverts, providing unimpeded passage for any aquatic fauna present. The objective for these culverts will be to establish water velocities and depths equivalent to adjacent reaches and causing no greater impediment to fish movements than occurs in adjoining river reaches.[145]

[144] New Zealand Fish Passage Guidelines, Version 2.0, Ministry for the Environment, June 2024.

[145] New Zealand Fish Passage Guidelines, Version 2.0, Figure 3-1, page 42.

475 **Table 13-3** below, lists these 12 “Type 5” culverts and their anticipated sizing. For the locations of these culverts refer to **Figures 13-3** to **13-7**.

Table 13-3: Culvert Design Specifications

Culvert Number	Road Section Name	Box / Pipe	Culvert Size (m)	Barrels (#)	Length (m)	Location (NZTM mE,mN)
7	UWHR-C2B	Box	1.5H x 2.0W	1	100	[redacted]
8	UWHR-C2B	Box	1.5H x 3.0W	1	44	
15	UWHR-B2B	Box	1.5H x 4.0W	3	40	
17	UWHR-B2B	Box	1.5H x 4.0W	3	24	
21	UWHR-B2B	Box	1.5H x 3.0W	1	54	
25	UWHR-B2B	Box	1.5H x 2.0W	1	47	
26	UWHR-B2F	Box	1.5H x 3.0W	1	36	
30	UWHR-B2F	Box	1.5H x 4.0W	1	25	
31	UWHR-B2F	Pipe	1200	1	51	
32	UWHR-B2F	Box	5x (1.0H x 2.0W)	5	49	
38	UWHR-F2C	Box	1.5H x 2.0W	1	41	
1	MFS-UWR Crossing	Box	4mHx4mW	5	30	

13.3.2 Culverts – Pest Exclusion Fences

As described in **Chapter A.4 – Project Description**, four pest exclusion fenced areas are proposed throughout the Buller Plateaux. Two fenced areas are proposed on the Stockton Plateau (Mt Augustus and Whirlwind Rise). Two fenced areas are proposed on the Denniston Plateau (Denniston North and Coalbrookdale).

As a precautionary measure, dispensation is sought under the relevant Freshwater Fisheries Regulations for all culverts associated with Pest Exclusion Fenced areas across the BPCP Project area. This approach reflects the current level of uncertainty regarding the practicability of providing effective passage for kōura through fence-culvert structures whilst still ensuring their pest-exclusion purpose.

Should these investigations confirm that kōura are present and that passage can be practicably achieved without compromising the pest exclusion function of the culverts, the culvert designs will be adapted accordingly to incorporate appropriate kōura passage provisions. Conversely, where kōura are determined not to be present and/or provision for kōura passage is demonstrated to be impracticable, the dispensation sought will provide an authorised pathway that recognises these limitations.

Figures 13-8 to **13-12** below present each of the four pest exclusion fences, outlining their locations and highlighting where they intersect with specific waterways. These plans provide a broader understanding of which waterways are affected by the fence alignments and identify areas where fish passage, particularly for kōura, may be restricted or not possible.

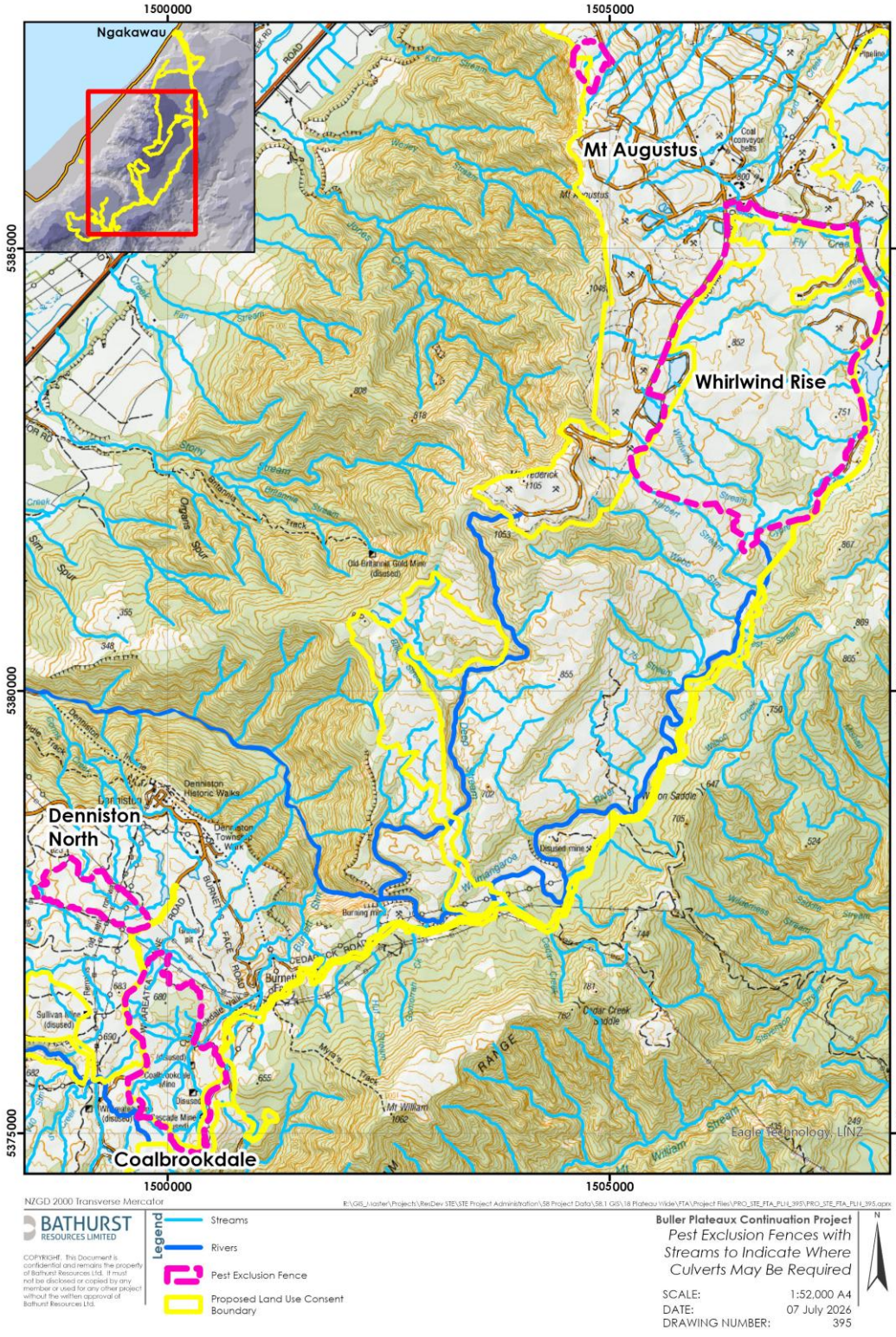


Figure 13-8: Pest Exclusion Fences and Streams Indicating where Culverts may be Required

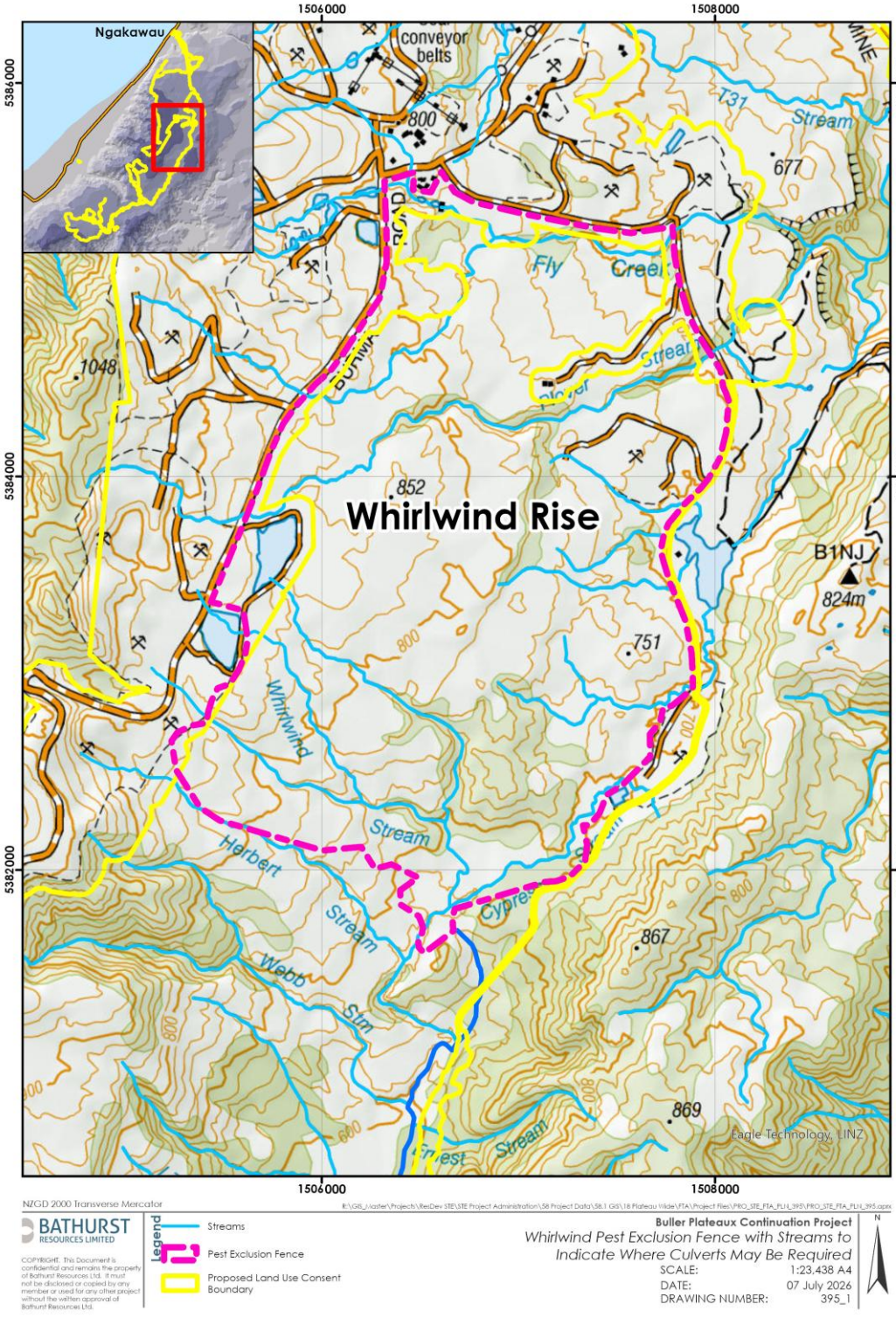


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Figure 13-9: Whirlwind Rise Pest Exclusion Fence Streams Indicating where Culverts may be Required

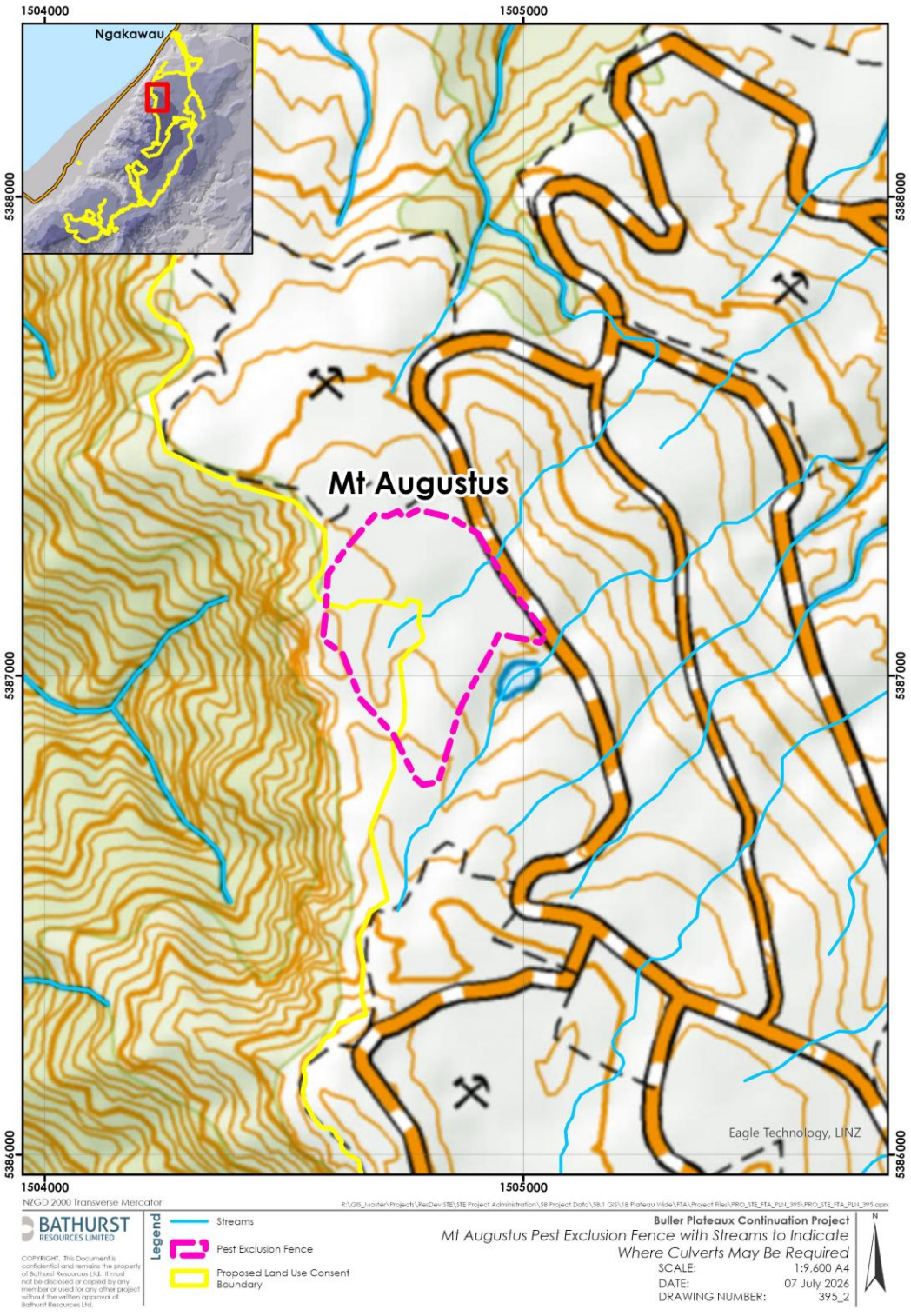

Figure 13-10: Western Escarpment Pest Exclusion Fence Streams Indicating where Culverts may be Required

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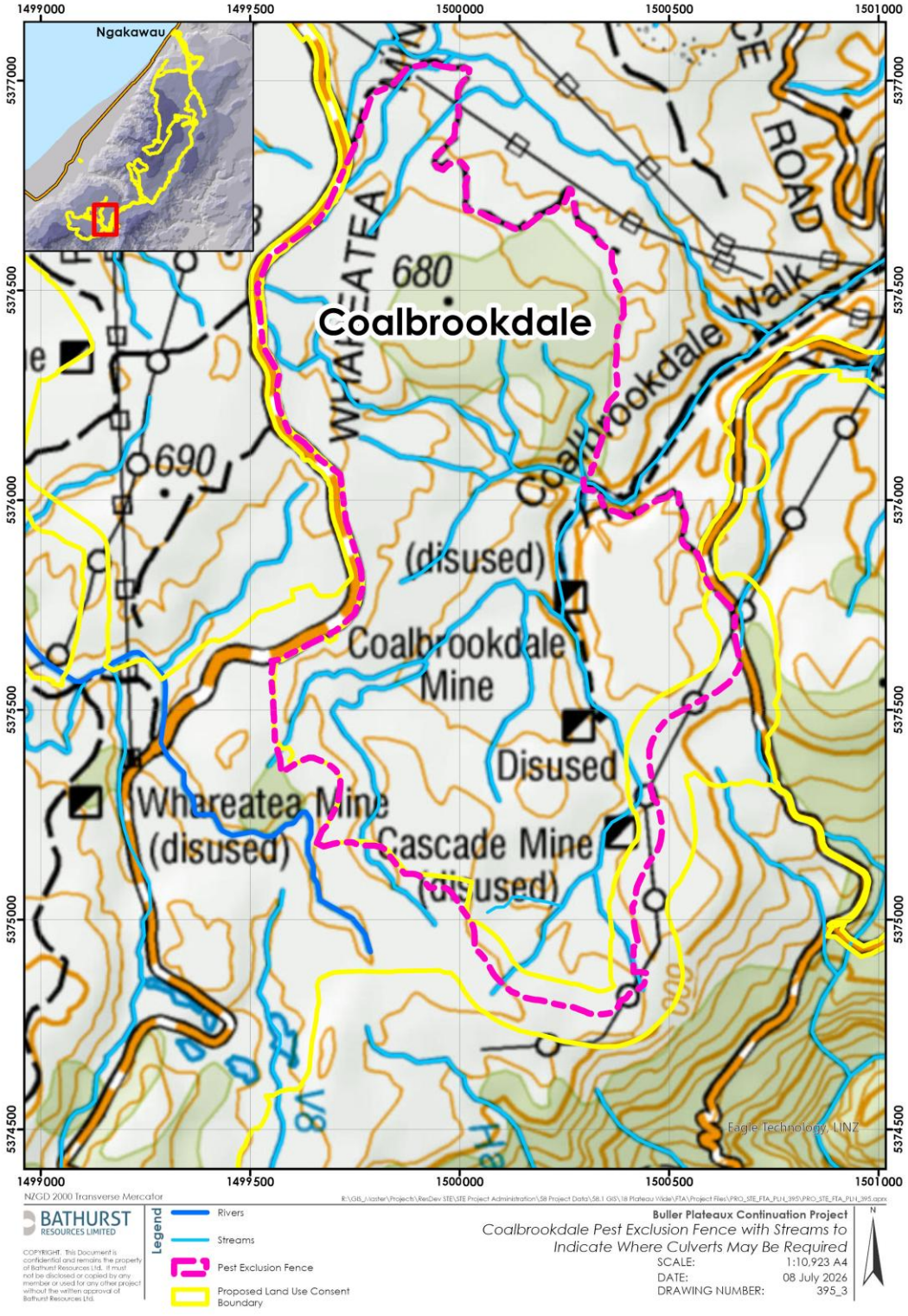
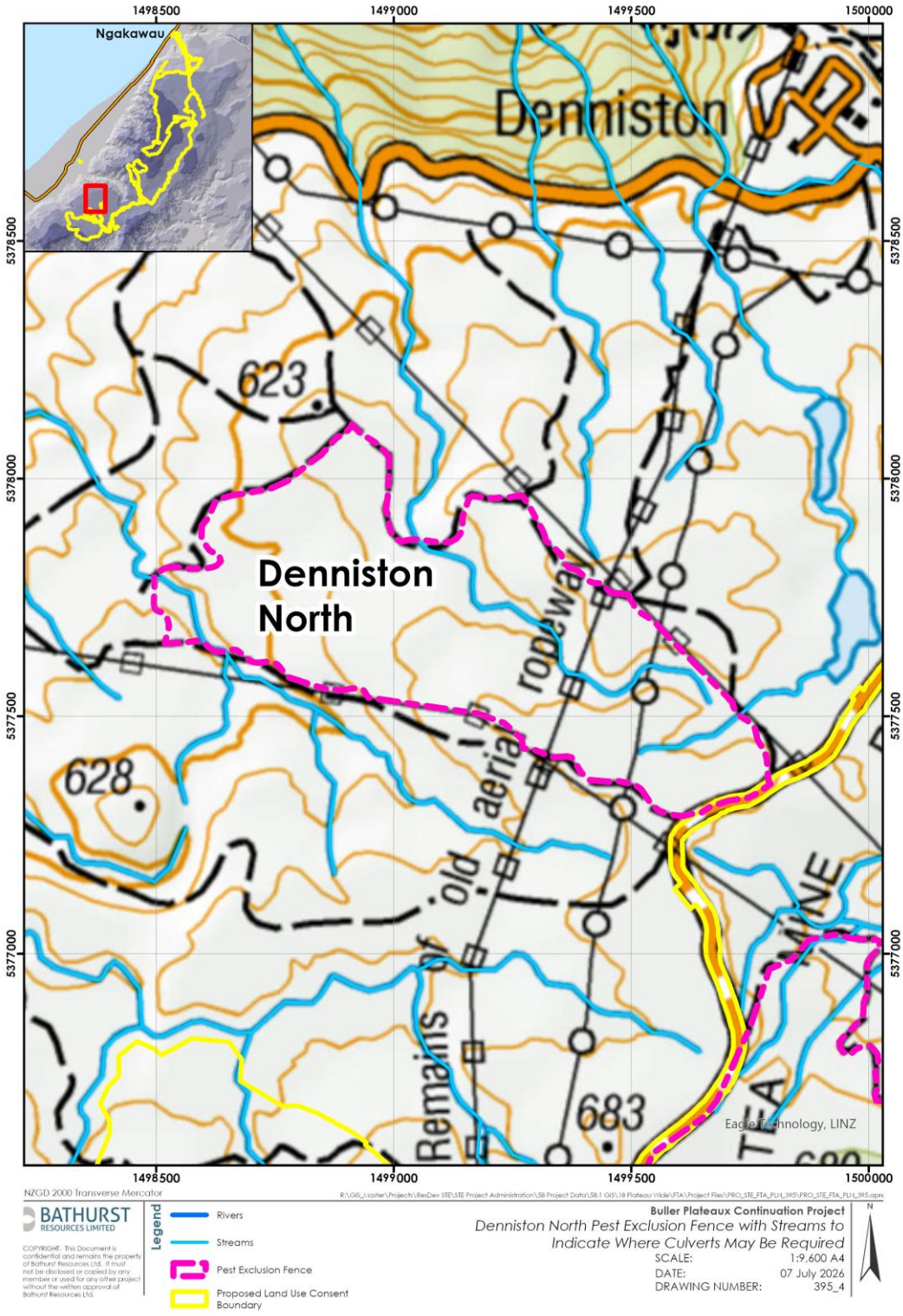


Figure 13-11: Coalbrookdale Pest Exclusion Fence Streams Indicating where Culverts may be Required



510 **Figure 13-12: Denniston North Pest Exclusion Fence Streams Indicating where Culverts may be Required**

13.3.3 Clean Water Diversions

A precautionary approach is proposed for the provision of fish passage within clean-water diversion drains, with a dispensation sought under the relevant Freshwater Fisheries Regulations for all such structures across the BPCP.

At a high level, fish passage has not been incorporated into the design of clean water diversion drains. This reflects the expert assessment that finfish are absent from the Plateaux where these diversion systems are to be located. In addition, the hydrological characteristics of these drains (typically involving intermittent or low flows with shallow depths, interspersed with high flows/velocities associated with the heavy rainfall events typical of the West Coast), and limited habitat connectivity, make them unlikely to support fish populations (including kōura) or facilitate upstream movement.

On this basis, the need to provide fish passage within clean-water diversion drains is considered unlikely. Dispensation is therefore sought for all such structures proposed as part of the BPCP, recognising both the absence of fish and the physical constraints that would limit fish utilisation of these environments.

13.3.4 Complex Freshwater Fisheries Activity

As part of the BPCP, approval is sought under the Freshwater Fisheries Regulations for 12 culverts, proposed with designs that provide for kōura passage, to be constructed as part of the UWHR and MFS Access Road. These culverts will be designed, installed and maintained in accordance with the New Zealand Fish Passage Guidelines.

As discussed above, dispensation is sought for all other culverts and clean water diversion drains proposed as part of the BPCP.

13.4 RELEVANT STATUTORY ASSESSMENT TO THESE APPROVALS

13.4.1 Introduction

In assessing applications, Panels are to give the greatest weight to the purpose of the FTAA, which is "*to facilitate the delivery of infrastructure and development projects with significant regional and national benefits*". Section 81(4) of the FTAA states that, when taking into account the purpose of the FTAA, the Panel must consider the extent of the Project's regional or national benefits. Where a substantive application is made, the approval process set out in the FTAA applies instead of the processes provided for under other legislation.[146]

[146] Section 40 of the FTAA.

An assessment of the provisions relevant to this application for complex freshwater fisheries activities is provided in the sections below.

13.4.2 Purpose of the FTAA

In accordance with clause 5(a) of Schedule 9 of the FTAA, assessment of this application for approval for a complex freshwater fisheries activity must take into account, and give the greatest weight to, the purpose of the FTAA.

The alignment of the Project with the purpose of the FTAA is discussed in detail in **Chapter A.1 – Project Wide Overview**.

The BPCP will supply high-quality coal that is in high demand in international steelmaking markets. The ability to blend different coal types from various areas across the wider plateau is a key operational requirement, as blending ensures the final product meets the specific quality specifications of global steel producers. In addition, the BPCP will generate significant regional and national economic benefits, including the creation and maintenance of jobs, ongoing economic activity along the West Coast, and contributions to New Zealand's export economy.

Proposed culvert crossings are required to enable construction of the UWHR and associated access infrastructure. Culverts are necessary to allow clean water flows to pass beneath the proposed road alignment, forming the transport corridors linking Stockton, ESE, and MFS. These culverts are an essential component of the transport network, enabling access to the various Project sub-areas and facilitating the transportation of coal to Stockton for processing and load-out. As such, the culverts are a necessary component of the infrastructure that enables the BPCP to operate effectively. In addition, the proposed culverts will enable the installation of pest-exclusion fencing, facilitating implementation of the proposed residual effects package. Where appropriate and practicable, culvert design will also incorporate provisions to meet kōura passage requirements, ensuring aquatic connectivity is maintained.

The freshwater fisheries approvals sought through this application concern the presence of kōura in certain upstream environments associated with the proposed culvert locations. The design and construction methods proposed for these culverts include measures specifically intended to protect and maintain kōura habitat conditions. As a result, the work will avoid, minimise, or appropriately manage potential effects on these species. As such, the proposed approvals sought are consistent with the purpose of the FTAA.

13.4.3 Requirements for a Substantive Application for a Complex Freshwater Fisheries Activity

Clause 3 of Schedule 9 of the FTAA sets out the information requirements for an approval for a complex freshwater fisheries activity. Applications must include the following information:

In relation to the structure and any fish facility:

- A description of the type of structure or fish facility;
- The dimensions of the structure or fish facility;
- The design of the structure or fish facility;
- The placement of the structure or fish facility;
- The water flows;
- The operating regime.

This is addressed in Sections 13.3.1 of this application document, including Tables 13-1, 13-2 and 13-3, and Figures 13-4 to 13-7, and the supporting technical reports listed in Section 13.1.

The freshwater species and values present (with particular focus on threatened, data-deficient, and at-risk species as defined in the New Zealand Threat Classification System);

This is addressed in Section 13.3.1.1.

The water quality and quantity in the surrounding habitat (at the proposed structure location, upstream and downstream); and

This is addressed in Section 13.3.1.1.

How the passage of fish will be provided for or impeded.

Fish passage is proposed to be provided in relation to kōura at the subset of road culverts identified for passage design (12 culverts associated with the UWHR and MFS Access Road). For other road culverts, Pest Exclusion Fence culverts, and clean water diversion drains, Bathurst seeks dispensation from fish passage requirements where kōura passage is not practicable and/or where kōura are expected to be absent (including where there is no defined streambed or concentrated flow path, catchments are highly ephemeral, or waterways are legacy AMD-impacted). The approach and screening process are described in Sections 13.3.1 to 13.3.3, and the design elements proposed for kōura passage culverts are set out in Section 13.3.1.4.

13.4.4 Criteria for Assessment of Applications for Complex Freshwater Fisheries Activity Approval

Clause 5 of Schedule 9 of the FTAA sets out the criteria for assessment of applications for complex freshwater fisheries activity approval. The Panel must take into account, giving greatest weight to the purpose of the Act:

The purpose of this Act:

This is addressed in Section 13.5.2 of this application document.

The alignment of the proposed activity with best practice and the New Zealand Fish Passage Guidelines;

This is addressed in Section 13.3 of this application document.

How the proposed activity will manage risks to freshwater values or habitat, including prevention of access to or spread of invasive species;

This is addressed in Section 13.5.4.1 of this application document.

The availability and quality of the habitat upstream and downstream of the proposed activity;

Section 13.2.2 addresses this alongside Earth Science New Zealand's reports, referenced in Section 13.1, to this application document.

The presence of threatened, data-deficient, or at-risk species under the New Zealand Threat Classification System in the vicinity of the proposed activity; and

This is addressed in Section 13.2 of this application document and in the supporting aquatic ecology assessments listed in Section 13.1 (including Earth Science New Zealand's aquatic ecology assessment).

The advantages and disadvantages of providing fish passage upstream or downstream of the proposed activity.

This is addressed in Section 13.5.4.2

13.4.4.1 Management of risks to freshwater values and habitat (including invasive species)

In accordance with clause 5 of Schedule 9 of the FTAA, Bathurst will implement the following measures to manage risks to freshwater values and habitat during the construction, installation, and maintenance of culverts and diversion structures:

- Construction water management and erosion and sediment controls implemented in accordance with BPCP-ENV-PLN-013 Erosion and Sediment Control Plan for Land-

Disturbance Activities (referenced in Section 13.1), including staging of works, use of diversion and bypass channels to isolate active work areas, progressive stabilisation and rehabilitation of disturbed areas, and post-rainfall inspections and maintenance to minimise sediment discharge to waterways.

- Biosecurity and hygiene controls for machinery and equipment used in or near waterways, secured through the Biosecurity Management Plan, including mandatory clean-down prior to entry to the site and when moving between sub-areas, removal of adhered sediment and vegetation, and inspection for aquatic weeds and pest invertebrates. All equipment used within or near waterbodies will follow “check, clean, dry” protocols prior to reuse in another location to prevent the transfer of aquatic pest species, with these measures supported by specific consent conditions requiring inspection, cleaning and hygiene procedures.

- Controls on materials used in and around waterways, including sourcing of rock, gravel and substrates from clean or weed-free locations where practicable, segregation of potentially contaminated materials, and avoidance of acid-generating or unsuitable materials in stream reconstruction and reinstatement works, to protect water quality, benthic habitat and aquatic ecosystem function. These requirements are implemented through the Biosecurity Management Plan and the Rehabilitation Management Plan, including controls on material sourcing, handling, and placement.

- Spill prevention and response measures for fuels, oils and cementitious products, including designated storage areas with setbacks from waterbodies, use of secondary containment systems, and implementation of immediate containment and clean-up procedures in the event of a spill to avoid contamination of freshwater environments. These measures will be reflected in the site's environmental management procedures and in relevant consent conditions.

- Access management and site controls, implemented through the Biosecurity Management Plan, including restriction of vehicle and personnel access to sensitive riparian and instream areas, use of designated crossing points, and installation and use of wheel-wash and boot-wash facilities to prevent the spread of weeds and pests within and between freshwater habitats.

- Monitoring and adaptive management measures, including routine inspection of works areas, waterways and high-risk locations, early detection monitoring for pest species (including aquatic pests), and implementation of rapid incursion response procedures where new pests are detected, including notification, containment and eradication actions. These requirements are established through the Biosecurity Management Plan

and associated consent conditions, including regular monitoring and reporting obligations.

- Rehabilitation and habitat restoration, implemented through the Rehabilitation Management Plan, including progressive re-establishment of indigenous riparian vegetation, restoration of natural channel form and substrate, and design of reinstated waterways to minimise barriers to aquatic fauna passage and reduce sedimentation, thereby supporting kōura habitat and broader freshwater ecological values.
- Adaptive management where pre-construction investigations or site conditions identify additional risks to freshwater values (including kōura habitat), including refinement of design details, construction methodologies and management responses through the relevant certified management plans.

These measures will focus on avoiding degradation of aquatic habitat (including kōura habitat), maintaining or enhancing habitat condition and connectivity where practicable, and preventing the introduction or spread of invasive freshwater species and aquatic pests. These requirements have been embedded within consent conditions and certified management plans, and cross-referencing between those plans, and ensures that measures are not only identified at a conceptual level but also implemented, monitored, and enforced throughout the life of the Project.

Advantages and disadvantages of providing fish passage

In accordance with clause 5 of Schedule 9 of the FTAA, the advantages and disadvantages of providing fish passage have been considered in the ecological and physical context of the Project area.

Advantages of providing for kōura passage (where practicable) include maintaining aquatic connectivity within upper catchment environments where kōura are widespread, avoiding the creation of new barriers within otherwise connected kōura habitat, and supporting ecological resilience (including recolonisation) following disturbance events. Designing culverts to maintain bed continuity and suitable wetted margins can also reduce outlet scour and improve alignment with best practice in the New Zealand Fish Passage Guidelines.

Disadvantages and constraints include situations where passage provision is not practicable or may introduce unacceptable operational or environmental risk. For example, in steep, high-velocity culverts, installing internal roughening or bed material to assist kōura movement may increase the risk of debris accumulation and blockage, with consequent flood risk, maintenance burden, and potential for downstream scour or erosion. For Pest Exclusion Fence culverts, design options may be constrained by the need to maintain the

fence's pest-exclusion function; some passage solutions (e.g., larger openings or additional internal structures) may compromise the fence's integrity or increase maintenance requirements. In waterways significantly affected by legacy AMD, providing passage is unlikely to deliver ecological benefit and may not be an efficient or proportionate response. In addition, many upper catchment systems are naturally isolated from finfish by existing natural barriers; therefore, the ecological benefit of finfish passage provision is limited in the Project area, and the fish passage focus is appropriately directed at kōura where present.

Bathurst is seeking approvals and dispensations for complex freshwater fisheries activities associated with culvert crossings, Pest Exclusion Fence culverts, and clean water diversion drains for the BPCP, as outlined in Section 13.3. The approach is evidence-informed and consistent with the New Zealand Fish Passage Guidelines (NIWA, 2025), recognising that fish passage solutions must be site-specific and proportionate to ecological context and practicability. Based on current investigations, Bathurst seeks approval for the subset of culverts that are proposed to be designed to provide for kōura passage (identified in this section as 12 culverts associated with the UWHR and MFS Access Road), and seeks dispensation for other structures where kōura passage is not practicable and/or ecological benefit is not expected (including where catchments lack defined streambeds, are highly ephemeral, or are legacy AMD-impacted).

13.5 CONSULTATION

Consultation has been undertaken with the DOC and Te Rūnanga o Ngāti Waewae throughout the development of the Project, including engagement on aquatic ecology, kōura habitat, freshwater values, proposed culvert crossings, pest exclusion fencing, and fish passage matters. Discussions with Ngāti Waewae in particular have included consideration of cultural values associated with freshwater ecosystems, the protection of indigenous species and habitats, and the proposed approaches to maintaining or providing for kōura passage where practicable. In addition, the CIA seeks, and Bathurst has proposed approval conditions that provide for ongoing involvement of Te Rūnanga o Ngāti Waewae in the management, monitoring, and adaptive management of freshwater values, including matters relating to kōura habitat, fish passage, and the review and implementation of relevant management plans throughout the life of the Project.

Further detail on the broader consultation programme undertaken for the Project, including ongoing engagement with DOC, Te Rūnanga o Ngāti Waewae, other iwi organisations, statutory agencies, landowners, and stakeholders, is also set out in **Chapter A.5 – Application Approach and Structure**.

13.6 CONCLUSION

In summary, Bathurst seeks approval for complex freshwater fisheries activities under the FTAA in respect of a defined subset of culverts associated with the UWHR and MFS Access Road, while seeking dispensation for other structures where provision of fish passage is not practicable or where ecological benefit is not expected. As outlined in Section 13.3, a total of 59 culverts are proposed across the UWHR and MFS Access Road, of which 12 culverts located within larger catchments with defined perennial flow paths will be designed to provide for kōura passage. These culverts will be designed in accordance with the New Zealand Fish Passage Guidelines, maintaining bed continuity (including embedding and/or substrate treatment), avoiding inlet and outlet perching, and achieving hydraulic conditions suitable for kōura movement.

For the remaining culverts, as well as all culverts associated with Pest Exclusion Fences and clean water diversion drains, dispensation is sought where passage is not practicable, is constrained by engineering or operational requirements (including pest exclusion), or where kōura are unlikely to be present due to catchment characteristics such as the absence of defined streambeds, highly ephemeral flows, or legacy AMD impacts.

The approach adopted is evidence-based and consistent with national best practice, recognising that fish passage solutions must be site-specific and responsive to ecological context, uncertainty, and practicability. Where uncertainty remains (including for high-gradient culverts and fence crossings), a precautionary approach is proposed, supported by pre-construction investigation, targeted testing, and adaptive design refinement to confirm whether kōura passage can be practicably achieved.

Importantly, the proposed approach is underpinned by a comprehensive suite of management measures, secured through consent conditions and implemented via management plans, which collectively manage risks to freshwater values, maintain or enhance habitat condition where practicable, and prevent the introduction or spread of invasive species. Ongoing engagement with Ngāti Waewae, including monitoring, research (including kōura passage design), and adaptive management processes, will ensure that cultural values and mātauranga Māori inform implementation throughout the life of the Project.

Collectively, these measures provide a robust and proportionate framework that enables the construction and operation of the UWHR and MFS Access Road, clean water diversion systems, and Pest Exclusion Fences, while appropriately managing effects on freshwater fisheries values and meeting the purpose and intent of the FTAA.