



SUBSTANTIVE APPLICATION FOR APPROVALS

Volume E – Complex Freshwater Fisheries Approval

NZ Transport Agency Waka Kotahi
Tauriko West | Tupenga

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GLOSSARY OF ACRONYMS AND ABBREVIATIONS

The glossary of acronyms and abbreviations tables in **Volumes A and B** of the Substantive Application apply to this Volume and should be referred to.

Acronym / Abbreviation	Term
CFFA	Complex Freshwater Fisheries Approval

1 COMPLEX FRESHWATER FISHERIES APPROVAL

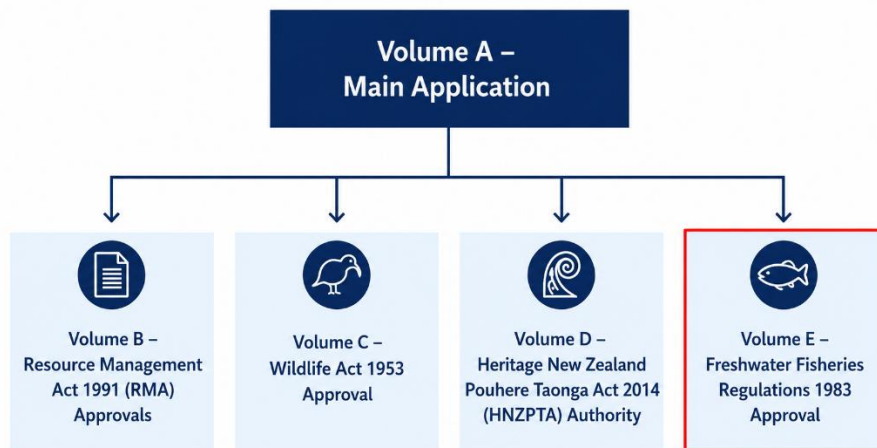
1.1 Overview

Volume E of the Application has been prepared on behalf of NZ Transport Agency Waka Kotahi (NZTA) in support of the Complex Freshwater Fisheries Approval required under the Freshwater Fisheries Regulations 1983 (FFR) for the Tauriko West – Tupenga Project (the Project).

The approval is sought for temporary dams and diversion structures that may be required during construction, and that would otherwise require approval or a dispensation under regulation 43 of the Freshwater Fisheries Regulations 1983 (FFR).

This Volume describes the activities for which approval is sought, the relevant freshwater fisheries values, the potential effects of those activities and the measures proposed to manage those effects. No approval is sought in relation to regulation 42 of the FFR. The Project does not propose to construct a culvert or ford in a natural river, stream or water in a manner that would impede fish passage.

This Volume should be read in conjunction with **Volume A**, which contains the overarching Project information, the Ecological Impact Assessment in **Volume B – Appendix K**, which assesses the related freshwater ecological effects and the proposed regional resource consent conditions in **Volume B – Appendix E**.



1.2 Approval sought

This Volume of the Application has been prepared to support the Complex Freshwater Fisheries Approval (CFFA) sought for the Project under section 42(4)(j) and Schedule 9 of the FTAA. The following sections identify the activities for which approval is sought under regulation 43 of the FFR and explain why no approval is required under regulation 42.

1.2.1 Regulation 43

NZTA seeks approval for the construction and use of temporary dams or diversion structures to enable the construction of the Project and that are subject to regulation 43 of the FFR.

The FFR define a “diversion structure” as a structure designed to divert or abstract natural water from its natural channel or bed, whether permanently or temporarily.

The temporary structures may be required to:

- a) Isolate active work areas from flowing water;
- b) Divert or convey water around or through active work areas;
- c) Facilitate the construction and connection of stream realignments;
- d) Facilitate bridge, stream-bank stabilisation or other works within or adjacent to watercourses; and

- e) Provide temporary access across a watercourse during construction.

The structures may include temporary bunds, cofferdams, pipes, flumes, pump-around systems, temporary diversion channels and temporary culverts.

Temporary culverts used as part of a temporary diversion or construction-access arrangement are included within the approval sought under regulation 43 to the extent that they form part of a temporary dam or diversion structure.

The final location, dimensions, form and duration of each temporary structure will depend on the detailed design, construction methodology, affected watercourse and flow conditions applying at the time of the works.

1.2.2 Regulation 42

Regulation 42 of the FFR applies to the construction of a culvert or ford in a natural river, stream or water where the manner of construction would impede the passage of fish.

No approval under regulation 42 is required or sought because:

- a) The permanent crossings of the Kōpūrerua Stream, Nanako Stream and Belk Road watercourses will be provided by bridges rather than culverts or fords;
- b) No permanent culvert or ford is proposed within those stream channels that would impede fish passage; and
- c) Any other permanent culvert associated with the Project (i.e. for stormwater management) will be designed and constructed so that it does not impede fish passage where fish passage is required.

Temporary culverts used as part of a temporary diversion or construction-access arrangement are included within the approval sought under regulation 43 to the extent that they form part of a temporary dam or diversion structure.

1.3 Purpose of the proposed activity

The purpose of the proposed activities is to enable the construction of the Project. As described in Section 4 of Volume A, Project Works require works within and adjacent to waterbodies, including permanent stream realignments, bridge works, stormwater conveyance infrastructure, stream stabilisation and other in-stream construction activities. Those works may require temporary dams or diversion structures to isolate active work areas and manage watercourse flows during construction.

1.4 Temporary dams and diversion structures

Temporary dam and diversion structures may be required to isolate active work areas and convey watercourse flows around or through those areas while stream realignment, bridge construction, stream stabilisation or other project works within or adjacent to watercourses are undertaken.

The temporary works will principally facilitate construction of the proposed Kōpūrerua Stream, Nanako Stream and Belk Road watercourse realignments and their associated bridge crossings. Those permanent works are described and assessed in Volumes A and B and are not repeated in this Volume.

Depending on the location and construction methodology, these may include temporary dams or bunds used with pipes, flumes, pump-around systems or temporary diversion channels, together with temporary culverts used to convey watercourse flows beneath construction access routes.

The structures may be installed within the Kōpūrerua Stream, Nanako Stream, Belk Road watercourses and other watercourses affected by the Project Works.

The location, dimensions, form, design, operating period and flow-management methodology for each temporary structure will be determined through detailed design and construction planning. The particular method used at each location will be selected by a suitably qualified person having regard to:

- a) The nature and scale of the works;
- b) The characteristics of the affected watercourse and aquatic habitat;
- c) Anticipated flow conditions;
- d) The duration and sequencing of the works;
- e) Fish passage and aquatic fauna requirements; and
- f) The need to minimise disturbance to the bed and banks of the watercourse.

The temporary structures will be limited to the extent and duration reasonably necessary to undertake the relevant works. Watercourse flows will be maintained or conveyed around or through the active work area where practicable.

Once the relevant works are complete, watercourse flows will be returned to the permanent channel, the temporary structures will be removed, and the affected bed and banks will be stabilised or reinstated.

The detailed design and construction methodology for the temporary structures will be documented through the information and management measures required under the proposed regional resource consent conditions.

1.5 Existing freshwater environment

The freshwater environment associated with the Project extent is described in Section 2.9.5 of Volume A of this SAR and assessed in detail in the EclA in **Volume B – Appendix K**.

As set out in Section 2.9.5 of Volume A, the Project extent includes perennial, intermittent and ephemeral watercourses, together with modified and artificial drainage channels. These watercourses are located within the Wairoa River, Kōpūrererua Stream and Waimapu Stream catchments.

The highest freshwater ecological values are associated with the Wairoa River and Ōmanawa River receiving environments and the larger, connected reaches of the Kōpūrererua Stream and Nanako Stream. These watercourses provide habitat and migration pathways for a range of native and diadromous fish species.

The Kōpūrererua Stream, Nanako Stream and Belk Road watercourses will be directly affected by the permanent stream realignments. The existing reaches proposed for realignment are modified channels generally associated with historical floodplain drainage and land development.

The Belk Road watercourses form part of a constructed and modified drainage network adjacent to the Business Estate and it remains hydrologically connected to the downstream Wairoa River system. This provides the potential for diadromous fish to move into the area. However, their ecological function is comparatively limited by recently disturbed or modified habitat, fine and readily mobilised substrates, limited riparian vegetation, simple hydraulic conditions and possible barriers to fish passage. Macroinvertebrate communities within the retained natural channel are dominated by tolerant taxa and reflect soft-bottomed, low-complexity habitat conditions.

The assessment of freshwater fish communities is based on existing studies, assessments, records and associated datasets, together with field verification of watercourse condition, habitat and connectivity. No targeted aquatic fauna surveys were undertaken specifically for the Project.

The Wairoa and Ōmanawa Rivers, Kōpūrererua Stream and Nanako Stream support, or are likely to support, longfin eel, shortfin eel, giant kōkopu, inanga, redfin bully, giant bully, common smelt and common bully. These larger and better-connected watercourses provide comparatively diverse native fish habitat and important migratory pathways.

The fish community within the Belk Road watercourses is expected to be more limited and dominated by tolerant or mobile species such as longfin eel, shortfin eel and common bully. Other modified natural tributaries are expected to support a similar assemblage, while fish use of artificial drains is likely to be minimal, sporadic or opportunistic.

Several of the species potentially present are diadromous and rely on connected freshwater, estuarine and coastal environments to complete their life cycles. Inanga is classified as Threatened – Nationally

Vulnerable, while longfin eel, giant kōkopu, common smelt and redfin bully have an At Risk classification. Shortfin eel and common bully are Not Threatened.

Kākahi, if present, may also be affected by works within watercourses and will be addressed through the aquatic fauna rescue and relocation measures.

No specific native fish spawning sites have been confirmed within the proposed works areas. However, potentially suitable migration or spawning habitat may occur within or adjacent to affected watercourses and will be addressed through the construction methodology and aquatic fauna management measures.

1.6 Fish passage

Fish passage has been an important consideration in the design of the Project's stream realignments, bridge structures and stormwater conveyance infrastructure. The design approach has been informed by the New Zealand Fish Passage Guidelines, with the objective of maintaining fish passage through affected watercourses.

The Project does not include any culvert or ford that will be constructed in a manner that impedes fish passage. The primary crossings of the Kōpūrerua Stream, Nanako Stream and Belk Road watercourses will be achieved using bridges rather than culverted stream crossings. This avoids introducing new permanent barriers within the main stream channels and enables stream-bed levels, substrate continuity and hydraulic connectivity to be maintained beneath the bridge structures.

The realigned watercourses will be designed to maintain upstream and downstream hydraulic connectivity and provide suitable low-flow depths and velocities for fish passage. The permanent fish passage outcomes are assessed in Volume B and are not repeated in detail in this Volume.

The general fish passage approach is to:

- a) Maintain full fish passage where streams are perennial, or where intermittent streams provide viable upstream fish habitat;
- b) Provide fish passage that is at least equivalent to existing conditions where natural or existing gradient constraints limit passage for some species; and
- a) Not provide fish passage for ephemeral drainage paths that do not provide, or connect to, viable fish habitat.

During construction, fish passage will be managed through construction methodology and proposed conditions. Temporary works within waterbodies may require temporary diversions, damming, over-pumping, isolation of works areas and staged diversion of flows into realigned channels. These works will be managed to:

- a) Maintain watercourse flow and upstream and downstream hydraulic connectivity around or through the active work area where practicable;
- b) Minimise the extent and duration of any temporary restriction on fish passage;
- c) Provide fish passage through temporary structures where appropriate, having regard to the duration and timing of the works and the habitat available upstream and downstream;
- d) Avoid or minimise fish stranding, injury or mortality;
- e) Provide for fish recovery and relocation where required; and
- f) Remove temporary structures as soon as practicable once the relevant works are complete.

1.7 Effects on freshwater fisheries values

The effects of the Project on freshwater ecology are assessed in Section 1.9.7.3 of Volume B and in the EclA in **Volume B – Appendix K**. This section focuses on the freshwater fisheries matters relevant to the CFFA.

The main potential effects on freshwater fisheries values include:

- a) Temporary disturbance to waterbodies during construction, including stream diversions, damming, over-pumping, isolation of works areas and staged diversion of flows;
- b) Temporary disruption to fish passage during construction;
- c) Potential fish injury or stranding during instream works;
- d) Entrainment of fish in pumps or diversion systems;
- e) Sediment discharge or temporary effects on water quality during construction;
- f) Disturbance to bed, banks and aquatic habitat that may be used by native fish species, including diadromous galaxiids;
- g) Temporary changes in flow depth, velocity or hydraulic connectivity; and
- h) Disturbance of habitat that may be used for fish migration or spawning.

The magnitude of these effects will depend on the location, timing and duration of the temporary works, the construction methodology used, flow conditions and the aquatic values present at the works location.

Construction effects will be temporary and managed through the construction methodology, erosion and sediment controls, staged transfer of flows and implementation of an Aquatic Fauna Management Plan (AFMP). The AFMP will require aquatic fauna recovery and relocation to be undertaken before isolation, dewatering or other works that may strand or harm aquatic fauna and will establish procedures for managing any fish or other aquatic fauna encountered during the works.

These measures will substantially reduce the risk of injury, mortality and stranding. Some temporary disturbance and displacement may still occur during construction, but the residual effects on freshwater fisheries values are expected to be low following implementation of the AFMP and the other proposed management measures.

The temporary works will not result in a permanent loss of fish passage or access to upstream or downstream habitat. The structures will be removed once they are no longer required and the affected beds and banks will be stabilised or reinstated.

1.8 Measures to manage effects

Effects on freshwater fisheries values will be managed through the Project design, construction methodology and proposed regional resource consent conditions.

The relevant management measures will include, as appropriate:

- a) Ecological input into the design and sequencing of temporary works;
- b) Undertaking works offline from flowing water where practicable;
- c) Limiting the extent and duration of temporary damming, diversion and dewatering;
- d) Maintaining or conveying watercourse flows around or through active work areas;
- e) Avoiding unnecessary obstruction of fish passage;
- f) Designing temporary structures to provide for fish passage where appropriate;
- g) Screening pump intakes where required to avoid fish entrainment;
- h) Isolating the active work area before dewatering;
- i) Recovering and relocating fish and kākahi (if present) before works that may strand or harm aquatic fauna;
- j) Selecting suitable release locations with appropriate habitat and connectivity;
- k) Inspecting temporary structures and remedying any blockage, scour or fish passage impediment;
- l) Implementing erosion and sediment controls to minimise sediment discharge and deposition; and

m) Stabilising or reinstating affected beds and banks following removal of the temporary works.

The method used for aquatic fauna recovery and relocation will be determined by a suitably qualified freshwater ecologist having regard to the affected watercourse, habitat, flow conditions and species potentially present.

The approach to conditions for the CFFA is addressed in Section 1.11.

1.9 Consultation

Consultation and engagement for the Project is described in Section 4 of Volume A.

Engagement relevant to freshwater fisheries matters has occurred through the broader freshwater ecology, stormwater and works in waterbodies engagement for the Project, including technical engagement with BOPRC and DOC.

1.10 Assessment criteria

Schedule 9, clause 5 of the FTAA sets out the matters the Panel must take into account when considering an application for a Complex Freshwater Fisheries Approval. Those matters are assessed in Table 2 below.

Table 2: Assessment against Schedule 9 matters

FTAA Requirement	Response
Purpose of the FTAA	• Granting the CCFA will support the delivery of the Project, which is a listed project under the FTAA and will provide significant national and regional benefits, as described in Section 1.7 of Volume A. • The approval is required for temporary dams and diversion structures used to enable construction of the stream realignments, bridges and associated Project Works.
Alignment with best practice and the New Zealand Fish Passage Guidelines	• The Project seeks to maintain fish passage through affected watercourses. • The permanent stream crossings and realignments have been designed having regard to the New Zealand Fish Passage Guidelines. • Temporary works will be designed and undertaken with ecological input and in accordance with the proposed construction controls and the AFMP. Watercourse flows and hydraulic connectivity will be maintained around or through active work areas where practicable, and aquatic fauna recovery and relocation will be undertaken before dewatering or other works that may strand or harm aquatic fauna.
Management of risks to freshwater values or habitat, including invasive species	• Risks to freshwater values and habitat will be managed through the construction methodology, AFMP, erosion and sediment controls and proposed regional resource consent conditions. The measures include undertaking works offline from flowing water where practicable, limiting the extent and duration of temporary works, maintaining or diverting flows, screening pump intakes where required, aquatic fauna recovery and relocation, and stabilisation or reinstatement of affected stream beds and banks. • The potential for the works to facilitate the movement or establishment of invasive species is limited and will be managed through the proposed construction practices, including the cleaning of machinery and equipment used within waterbodies, where required. Machinery, equipment and materials used within watercourses will be managed in general accordance with the BioNet A16 "Keep it Clean" guidelines to reduce the risk of transferring invasive species between waterbodies and works areas.

Table 2: Assessment against Schedule 9 matters

FTAA Requirement	Response
Availability and quality of upstream and downstream habitat	- The affected watercourses are connected to wider freshwater receiving environments, including the Wairoa River, Ōmanawa River, Kōpūrerua Stream and Nanako Stream. Habitat quality varies across the Project extent, with higher values associated with the larger perennial receiving environments and lower values associated with modified and artificial drainage channels. - The temporary works will not result in a permanent loss of access to upstream or downstream habitat.
Presence of threatened, data-deficient or at-risk species	- The Project extent supports, or may support, freshwater fish with elevated conservation status, including inanga, longfin eel, giant kōkopu, common smelt and redfin bully. Their conservation status and likely distribution are described in Section 1.5 and assessed in detail in the EclA. - Potential effects on those species will be managed through maintenance of fish passage where practicable, implementation of the AFMP and the other measures secured through the proposed regional resource consent conditions.
Advantages and disadvantages of providing fish passage upstream or downstream	- Maintaining fish passage will preserve ecological connectivity for resident and migratory fish species and enable continued access to suitable upstream and downstream habitat. - Fish passage through temporary structures will be provided where appropriate, having regard to the duration and timing of the works, the species potentially present and the availability of habitat upstream and downstream. - Fish passage is not proposed for ephemeral drainage paths that do not provide, or connect to, viable fish habitat. This avoids creating artificial access to unsuitable habitat or facilitating the spread of invasive species into areas they do not presently occupy. - A permanent fish facility is not considered necessary because the structures are temporary, any restriction on fish passage will be limited in duration, and the structures will be removed once the relevant works are complete.

Overall, the temporary works appropriately address the relevant Schedule 9 assessment criteria. The CFFA will enable the temporary dams and diversion structures required during construction while avoiding permanent loss of fish passage and appropriately managing effects on freshwater fisheries values.

1.11 Proposed conditions

No separate conditions are proposed for the CFFA.

The freshwater fisheries matters relevant to this approval will be managed through the proposed regional resource consent conditions for works in waterbodies, together with the broader construction and environmental management conditions for the Project.

Those conditions address the activities relevant to the CFFA, including temporary damming and diversion; works within waterbodies; erosion and sediment control; construction offline from flowing water where practicable; stabilisation and reinstatement of affected stream beds and banks; and implementation of the AFMP.

The proposed regional resource consent conditions also require relevant design information and construction methodologies to be prepared by suitably qualified persons and, where applicable, submitted to BOPRC before the relevant works commence.

NZTA therefore proposes that the CFFA be granted subject to the relevant regional resource consent conditions applying to the temporary damming, diversion and associated works.

1.12 Conclusion

NZTA seeks that the Panel grant the CFFA sought under section 42(4)(j) and Schedule 9 of the FTAA.

The approval is required for temporary dams and diversion structures used to enable the construction of the permanent stream realignments, bridges and associated Project Works.

Those activities would otherwise require approval or a dispensation under regulation 43 of the FFR.

No approval is required or sought under regulation 42 because the Project does not propose to construct a culvert or ford in a natural river, stream or water in a manner that would impede fish passage. The principal permanent stream crossings will be bridges, and any other permanent culverts will be designed and constructed so that fish passage is not impeded where passage is required.

The assessment in this Volume demonstrates that the temporary works appropriately address the relevant Schedule 9 assessment criteria. Effects on freshwater fisheries values will be managed through the construction methodology, implementation of the AFMP and the proposed regional resource consent conditions.

The temporary works will not result in a permanent loss of fish passage or access to upstream or downstream habitat. The structures will be removed once they are no longer required and the affected beds and banks will be stabilised or reinstated.

On this basis, the CFFA is appropriate and should be granted.