Waikanae North Development

Fast Track Application

Native Freshwater Fauna Salvage and Relocation Plan

Report prepared for

Waikanae North Developments Limited

Prepared by

RMA Ecology Ltd

Report number and date

Job 2144

March 2026

BETTER ECOLOGICAL OUTCOMES

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BETTER ECOLOGICAL OUTCOMES

Contents

1.0 Background and scope

Waikanae North Developments Ltd (WNDL) intends to progress a Fast-track Approvals Act (FTAA) application for a residential and commercial development in an area described as Kukutauaki, at Peka Peka Road, Peka Peka, Kapiti (the site; **Figure 1**). The site is located between the Kapiti Expressway and the Kapiti Coast, and covers approximately 141 ha excluding a leased block for stormwater management. The area supports mainly pastoral grazing within a lowland dune landscape.

The proposed earthworks (approximately 102 ha) for the development will result in several impacts on aquatic ecosystems, including:

- the removal of 1.67 ha of wetland extent;
- the realignment of approximately 1, 060 m of stream length (7,710 m^2 stream-bed);
- the realignment of two artificial watercourses;
- the removal of all other watercourses (artificial drains);
- the removal of two existing culverts (24.1 m combined length) from Ngarara Stream;
- the installation of four culverts (up to 91 m combined length) in Ngarara Stream.

As part of the Ecological Effects Assessment report, a Native Freshwater Fauna Salvage and Relocation Plan (NFFSRP) was recommended. WNDL has engaged RMA Ecology to provide the plan to address potential adverse effects on native freshwater fauna arising from the development.

Figure 1. The site and investigations extent (cyan polygon).

1.1 Purpose and Scope

The intent of this Native Freshwater Fauna Salvage and Relocation Plan is to outline the procedures and methodologies for safely capturing, relocating, and protecting native freshwater fauna prior to and during wetland reclamation and stream works, minimising environmental impact and preserving biodiversity with the affected area.

Specific information requirements of this plan are to address:

a) Details of the suitably qualified and experienced professional who will find, capture and relocate the freshwater fauna, including relevant Ministry for Primary Industries (MPI) permit information;

b) Details of all measures to find, capture and relocate freshwater fauna from the areas affected by the stream and wetland works;

c) Timeframes associated with finding, capturing and relocating native freshwater fauna;

d) Methodologies to ensure effects on freshwater fauna from any stream and wetland works are minimised;

e) Identification of suitable relocation sites for the freshwater fauna, as close as practicable within the same catchment (but beyond the zone of impact);

f) Methodologies to determine effort or success to achieve at least 80 % population relocation of indigenous freshwater fauna;

g) Storage and transport measures, including prevention of predation and death during capture;

h) Euthanasia methods for pest fish, or diseased or injured indigenous freshwater fauna;

i) Biosecurity protocols that seek to prevent the introduction of invasive aquatic organisms and diseases;

j) Procedures for maintaining a record of the number, size, and species determination of each fish and large macroinvertebrate found and relocated; and

k) Procedures for entering the records into the New Zealand Freshwater Fish Database.

The consent holder will hold responsibility for ensuring the successful implementation of this plan. This plan will be implemented by a suitably qualified and experienced contractor; the contractor will be engaged and provided with this plan prior to implementation.

1.2 Credentials and Code of Conduct

Dr Ussher, Dr Nicole, and Mr Lurling (variously, the authors, co-authors or technical reviewers to the ecology reports and plans) are qualified and experienced ecologists.

Dr Ussher holds the qualifications of BSc, MSc (1st class honours) and PhD in conservation ecology. He has 34 years experience as an ecologist in New Zealand, with speciality expertise in herpetology, and effects assessment and management, including offset accounting and modelling.

Dr Nicole holds the qualifications of BSc, MSc, and PhD in ecology and botany. He has 9 years experience as an ecologist in New Zealand, with speciality expertise in conservation, restoration, and taxonomy with strengths in botany, biostatistical analysis, and GIS bio-analysis.

Mr Lurling holds the qualifications of BSc, Postgraduate Diploma in Wildlife Management (Distinction), and GradDip (Geography), specialising in Aquatic Ecology & Water Quality (Distinction). He has 28 years experience as an ecologist and specialises in the fields of bat ecology, wetland ecology (botany, plant communities, wetland classification and functions), avifauna, and botany.

Dr Ussher, Dr Nicole, and Mr Lurling have extensive experience in ecological site assessments, significance assessments, impact assessment, and impact management, including extensive experience on the ground designing, constructing, implementing, monitoring and reporting on interventions to restore, enhance, salvage, and protect ecology values at sites across New Zealand. They are considered to be sufficiently qualified to undertake an assessment of this kind.

Although this document has not been written as a statement of expert evidence, we confirm that at all times we have complied with the Environment Court's Code of Conduct for Expert Witnesses contained in its Practice Note 2023 as well as the UDIA Code of Ethics. No part of this report has been authored by an AI or other software.

We declare that in relation to our role in providing expert ecological assessment and advice for this project we are not, to the best of our knowledge, subject to any real or perceived conflicts of interest.

2.0 Site description

2.1 Project Description

The project is an urban subdivision that will provide for approximately 1,200 residential allotments, 11 commercial lots, and 4 jointly-owned access lots.

Relevant development activities include:

- Earthworks that will disturb or infill some wetlands, sections of Ngarara Stream, a network of artificial farm drain and part of one SNA;
- Flood hazard mitigation works to ensure that, as a minimum, hydraulic neutrality can be achieved. A bund and weir will be constructed on Ngarara Stream on the southern end of the stormwater easement for flood management purposes;
- Re-meandering and bank recontouring of a reach of the Ngarara Stream; and realignment of two major drains feeding into the stream;
- Removal of existing culverts, and the construction of new culverts and walkway/cycleway bridges over the stream and drains for road crossings, providing for fish passage.

2.2 Ecological context

The site is located within the Foxton Ecological District (ED) of the Manawatu Ecological Region. This ED stretches from Kapiti to south Taranaki, and is characterised by New Zealand's most extensive dune system. These dunes are now primarily stabilised and dominated by agriculture and pine forestry, as well as extensive lifestyle block development. Extensive wetland systems, including naturally uncommon dune slack wetlands, have been heavily impacted by agricultural, lifestyle and urban development, with drainage, stock disturbance, fertilizer application, and pest plant invasion impacting wetland extent and values.

A narrow, intermittent strip of fore-dunes persists along the coastline, where aeolian processes continue to cause significant sand mobility, maintaining habitat for a series of rare pioneering dune and wetland plant species

The site landform is characteristic of the ED, with a high stable dune ridge, extensive flats to the west and east, with a scattering of low rolling stable dunes. The site is an active farm and has been farmed for over a century, with the eastern flats extensively drained. Vegetation onsite is primarily exotic pasture, with exotic shrubland and rank grass covering most of the high dunes.

2.3 Streams

Ngarara Stream is the one watercourse at site that meets the criteria as a highly modified stream (**Figure 2**: W1; **Plate 1**). Ngarara Stream has existing natural stream channels upstream of the reach. At site Ngarara Stream has been historically modified into two approximately straight sections: an eastern stretch approximately 850 m long, and then a southwest stretch approximately 750 m long.

Ngarara Stream is in moderate ecological condition and low–moderate representativeness. Remaining watercourses include networks of farm drains with poor to poor–moderate ecological condition. Generally, these drains have high sediment loading, steep banks, and homogenous flow and habitat.

Figure 2. Watercourses onsite, including Ngarara Stream (blue) and the network of farm drains (purple lines).

Figure 3. Wetlands at the site (cyan polygons). The blue polygon at W7 is a wetland which meets the pasture exclusion test. Blue circles are wetland plot locations (with soil cores), and white circles are soil-core-only locations. Note, plot locations in W3, W4 and W5 are obscured by wetland labels. W1.1-1.2 is Te Harakeke Swamp SNA and W11 is Peka Peka Road Wetland SNA.

Plate 1. Typical watercourses at site. (Top left) Ngarara stream forming long straight stretches. The other three images are examples of artificial watercourses (farm drains) at site: (Top right) Watercourse 1.1. (Bottom left) Watercourse 1.11. (Bottom right) Watercourse 1.2.

Plate 2. Example wetlands at site. (Top left) W5 primarily covered in *Persicaria hydropiper* and *Ranunculus repens* and *Juncus sarophorus*. (Top right) W2.1, near Ngarara stream, with *J. edgariae*, *Holcus lanatus* and *R. repens*. (Bottom left) W9 with common *J. sarophorus* and *J. edgariae*. (Bottom right) W3 with common *J. sarophorus* and *P. maculosa*.

2.4 Wetlands

There are 21 discrete areas that meet the classification of natural inland wetland under the NPS-FM (**Figure 3**). These wetlands are largely groundwater influenced, with surface water inputs and significant fluctuations in water table. Some provide habitat for fish, although most are dry year-round with moist soils or only hold standing water (fish habitat) for part of the year.

2.5 Freshwater fauna species

Records in the catchment on the New Zealand Freshwater Fish Database (NZFFD, NIWA 2025) included 11 native species (**Table 1**). Site surveys, which included eDNA sampling, fyke netting, and Gee's minnow trapping, detected and confirmed six (6) native fish species, two (2) of which are At Risk – Declining. There were five (5) species in the catchment undetected in the field surveys.

Table 1. Native freshwater species at site based on a desktop survey (NZFFD) and site field surveys (trapping and eDNA sampling). Threat Status based on Dunn *et al*. (2017), and the species is 'Not Threatened' if empty.

Species	Common name	Threat Status	Desktop Survey	Site Survey
Anguilla australis	shortfin eel		✓	✓
Anguilla dieffenbachii	longfin eel	At Risk – Declining	✓	✓
Galaxias fasciatus	banded kōkopu		✓	✓
Galaxias maculatus	Īnanga	At Risk – Declining	✓	✓
Gobiomorphus cotidianus	common bully		✓	✓
Paranephrops planifrons	kōura		✓	✓
Galaxias argenteus	giant kōkopu	At Risk – Declining	✓	
Gobiomorphus breviceps	upland bully		✓	
Gobiomorphus gobioides	giant bully	At Risk – Naturally Uncommon	✓	
Gobiomorphus huttoni	redfin bully		✓	
Neochanna apoda	brown mudfish	At Risk – Declining	✓	

2.6 Summary of effects on freshwater fauna habitat

This Plan treats all stream and wetland areas as potentially providing habitat, and requires that a freshwater ecologist first assesses the state of these freshwater environments prior to deciding whether or not to undertake a salvage operation. It is expected that a portion of the wetland areas will have no ability to support freshwater fauna. In those situations, the freshwater ecologist may elect to avoid undertaking a salvage, or elect to undertake a limited number of exploratory excavation holes to assess sub-ground conditions, and then decide on whether or not to undertake a salvage.

The earthworks footprint indicates the area to be impacted at site (**Figure 4**). Proposed works include the realignment of 979 m of un-culverted stream length (2,965 m^2 stream-bed), as well as the installation and removal of two culverts (14 m combined length) (**Figure 5**). A total of 1.69 ha of wetland area is permanently impacted by the development (**Figure 6**). All these areas require implementation of the freshwater fauna salvage protocol laid out in this Plan.

Figure 4. Earthworks footprint (pink shaded polygons).

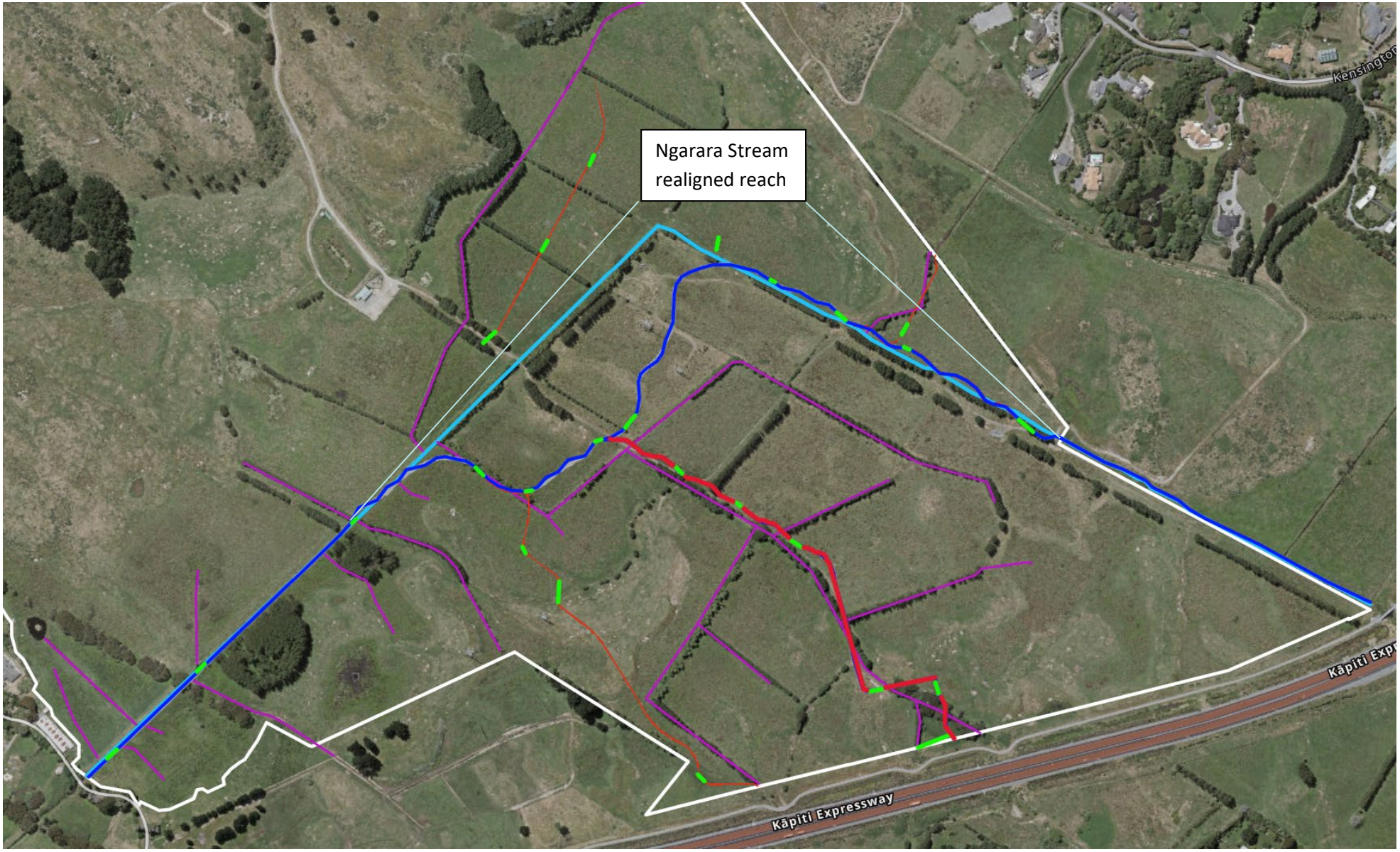

Figure 5. Proposed watercourse alterations, showing existing stream (blue lines) and proposed stream (light blue lines) including labelled realigned reach, existing drains (purple lines) and proposed drains (red lines), existing culverts (yellow lines, obscured) and proposed culverts and bridges (green lines).

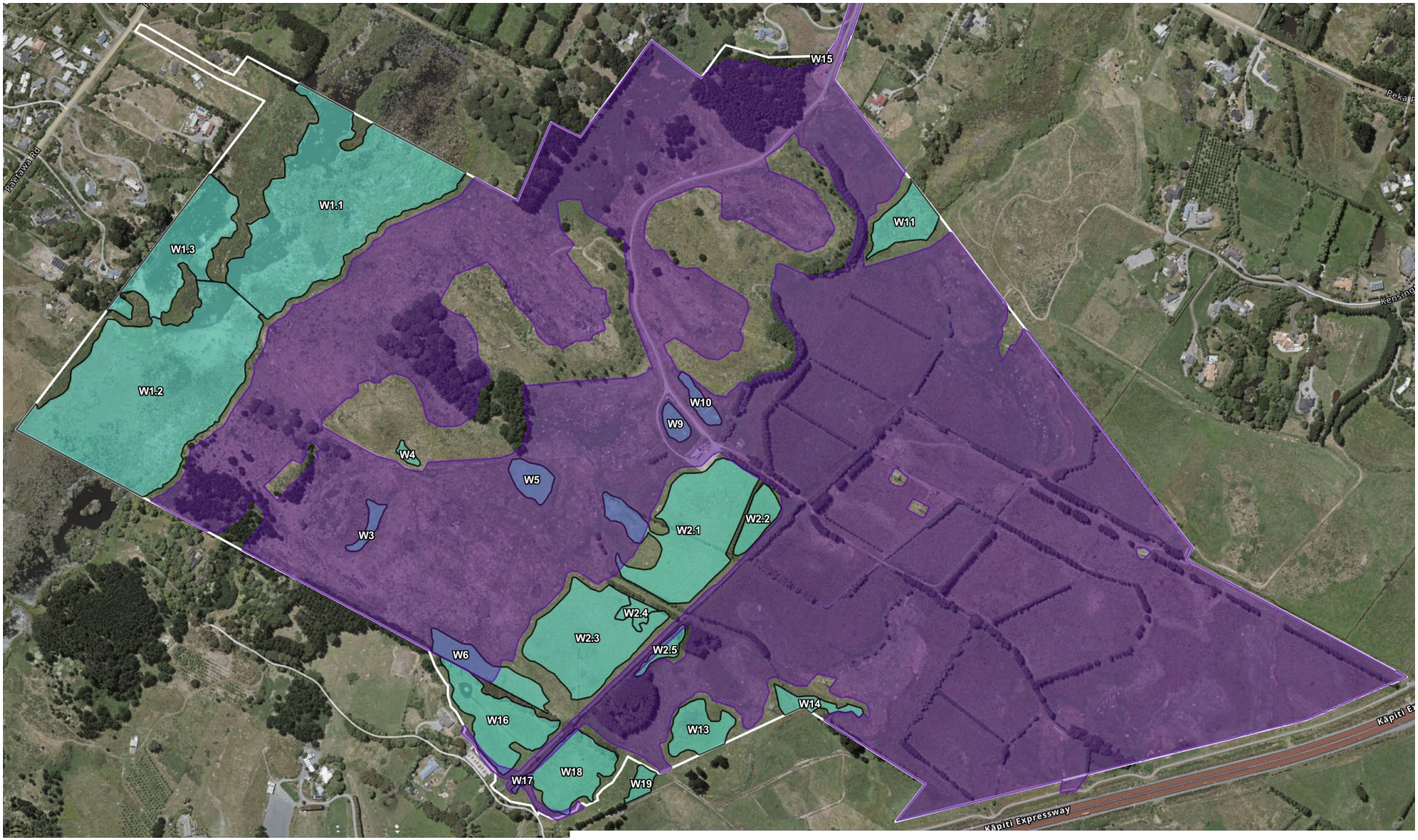

Figure 6. The earthworks footprint (purple polygon) relative to existing wetlands (cyan polygons), and impacted wetlands (blue polygons).

3.0 Freshwater fauna salvage

3.1 Species covered by this NFFSRP

Based on desktop, site, and eDNA surveys, salvage methods will target particular species (listed below). The methods used will be appropriate for species which were found, as well as for species which were undetected but may be present (see **Table 2**). Target species include:

- Shortfin eel, longfin eel;
- Īnanga;
- Banded kōkopu, giant kōkopu;
- Common bully, upland bully, giant bully, redfin bully;
- Brown mudfish; and
- Kōura.

3.2 Locations for salvage

Salvage protocols will be undertaken at the streams, drains and wetlands which will be permanently impacted by the project development activities, including through reclamation and through realignment or diversion (see **Figure 5** and **Figure 6**). No salvage will be undertaken in the Ngarara Stream reach undergoing bank recontouring, with no bed disturbance.

3.3 Method – freshwater fauna capture

The freshwater fauna relocation will be undertaken by a suitably qualified and experienced freshwater ecologist (see **Section 7**), operating under a current MPI permit to salvage and relocate freshwater species. A range of methods will be used to capture various species at site (**Table 2**). Methods will be undertaken at the discretion of the experienced freshwater ecologist given environmental conditions at site. Methods will be taken only when conditions meet method requirements.

Table 2. Methods that will be used to capture freshwater fish species. **Yes** = suitable method for that species. **Some** = appropriate in limited cases. **Blank cells** = methods with unlikely success. Application of methods will be site-specific and applied if sufficient conditions are present that meet the requirements of that method.

Common name	Spotlighting	Hand netting in shallow reaches	Fyke nets and Gee's minnows	Electric fishing	Muck out inspections
Shortfin and longfin eels	Some	Some	Yes	Yes	Yes
Kōkopu and īnanga	Yes	Some	Some	Some	Yes
Bullies (see above)	Some	Yes	Yes	Yes	Yes
Brown mudfish	Some	Yes	Yes	Some	Yes
Kōura	Some	Yes	Yes	Some	Yes

3.3.1 Kōura

Kōura are most active at night, and they are generally limited to using streams with overhead cover, woody materials, or leaf litter accumulations within the stream channel.

All stream and wetland habitat that has water present will be considered potential habitat for kōura and will be treated as such.

For each reach of stream or wetland that has potential kōura habitat, a minimum of two (2) nights of spotlighting searches will be undertaken prior to dewatering. These will target active fish (especially eels) as well as kōura, which will be captured by hand net.

For each reach of stream or wetland that has potential kōura habitat, a minimum of four (4) nights trapping using Gee's minnows will also be undertaken. Where there is adequate space to set fyke nets, these will also be used to capture kōura.

Where electric fishing is proposed to be used, kōura will also be targeted.

Every wetland and stream that contains potentially suitable habitat for kōura will be mucked out, and the sediments in the top 200 mm of the bed will be spread on the adjoining margin, and sorted through to salvage freshwater fauna, including kōura.

3.3.2 Fish

Fish salvage will follow these steps in sequence, each at the discretion of the freshwater ecologist:

1. Assess aquatic environment to see if there is water present in that site; if none is present, salvage may not be necessary, or go to **Step 5**.
2. Install fish stop nets (minimum aperture mesh size 3 mm but see additional notes below).
3. Two (2) spotlighting surveys to hand net active fish and kōura.
4. Electric fish (if suitable habitat for EFM).
5. Set traps in adequate water — sumps may need to be excavated in drains and wetlands. Run for a minimum of four (4) nights (can be in conjunction with spotlighting).
6. Hand net.
7. Install upstream bund.
8. Dewater – may require excavating sumps for water to accumulate if standing water is very shallow or is not flowing to a low point.
9. Final hand net of remaining pools and depressions & pump out remaining water.
10. Install downstream bund.
11. Excavate top 200 mm of sediments, spread on adjoining margin for inspection by freshwater ecologists.

Stop nets will be constructed using 3 mm aperture silt mesh fabric fencing. Apertures nets ≤3 mm ensure that young banded kōkopu and small elvers cannot pass through.

Where stop nets are installed, the project freshwater ecologist will inspect the stop net at least once a week and after heavy rain events to ensure the integrity of the stop net.

An initial inspection of the salvage site will be undertaken immediately prior to the commencement of salvage activities to confirm that adequate habitat exists for native fish.

If sufficient habitat is present, fish isolation stop nets will be installed, followed by two (2) nights of spotlighting surveys and electric fishing salvage (if appropriate).

Baited fyke nets and Gee's minnow traps will be installed within the areas, for a minimum of four (4) days. Nets and traps will only be used if there is sufficient water to ensure fish safety, and the traps will be installed with the entrance cone just below water or mud surface and the entire trap partially submerged, so that captured fish still have access to airspace within the trap. If insufficient water cover exists, an excavator may be used to clear areas of aquatic weeds or to excavate small sumps to allow trap installation.

The density of Gee's minnows and fyke nets will depend entirely upon the distribution of habitat along the stream reach or wetland area. Approximate rule of thumb is one device (fyke or minnow) installed per 5 m^2. For example, one device installed per 10 m of stream length for a 0.5 m bed width; or one device would be installed per 5 m stream length for a 1 m bed width. Where habitat is concentrated in few locations (e.g. pools during the dry season), a greater density of devices will be installed at those areas.

Hand netting and inspection of excavated bed sediments will commence after a reasonable fishing effort has been expended, at the discretion of the experienced freshwater ecologist.

In terms of isolating salvage reaches from adjoining waterbodies:

- For all streams, fish stop nets will be installed a maximum of 10 m upstream and downstream of each works area to isolate the works reach from freshwater fauna from entering the works area during fishing. Stop nets will be constructed of robust materials—silt cloth strung between waratah posts with at least one horizontal wire, attached with cable ties. The sides and bottom will be pegged or weighed down to secure the bottom to the bed (**Plate 3**).
- For wetlands, fish stop nets will be installed where the wetland joins to a stream or other waterbody potentially subject to flood flows. If those waterbody joins are absent, stop nets are unnecessary.
- Where streams and wetlands are choked with aquatic weeds, mechanical removal of weeds may be required to expose the bed and banks to securely install the fish stop net. Any aquatic weed removal will be undertaken in the presence of a freshwater ecologist to salvage freshwater fauna.

After stop nets have been installed, a thorough walkover salvage using hand nets will be undertaken for fish and kōura prior to upstream bunding and dewatering.

Water levels within each salvage area will be progressively lowered using a pump with a fish screen (≤3 mm mesh to prevent accidental fish ingress) to enable safe access to the deeper reaches of the wetland or stream and to concentrate remaining fish in a progressively smaller area. During this process of progressively lowering the water level, fishing will continue using the methods described above.

Excavation will be undertaken as soon as is practicable after dewatering. Sediment excavated from the bed will be spread carefully over the adjacent banks, at which point a freshwater ecologist will sort through sediments to salvage and relocate remaining fish, eels, and kōura. The excavator will use a toothed bucket for mucking out sediment to reduce the risk of injury to freshwater fauna.

Once hand netting has been completed, the works reach will be searched again using hand netting as the stream dewaters. Any remaining pools will be manually searched.

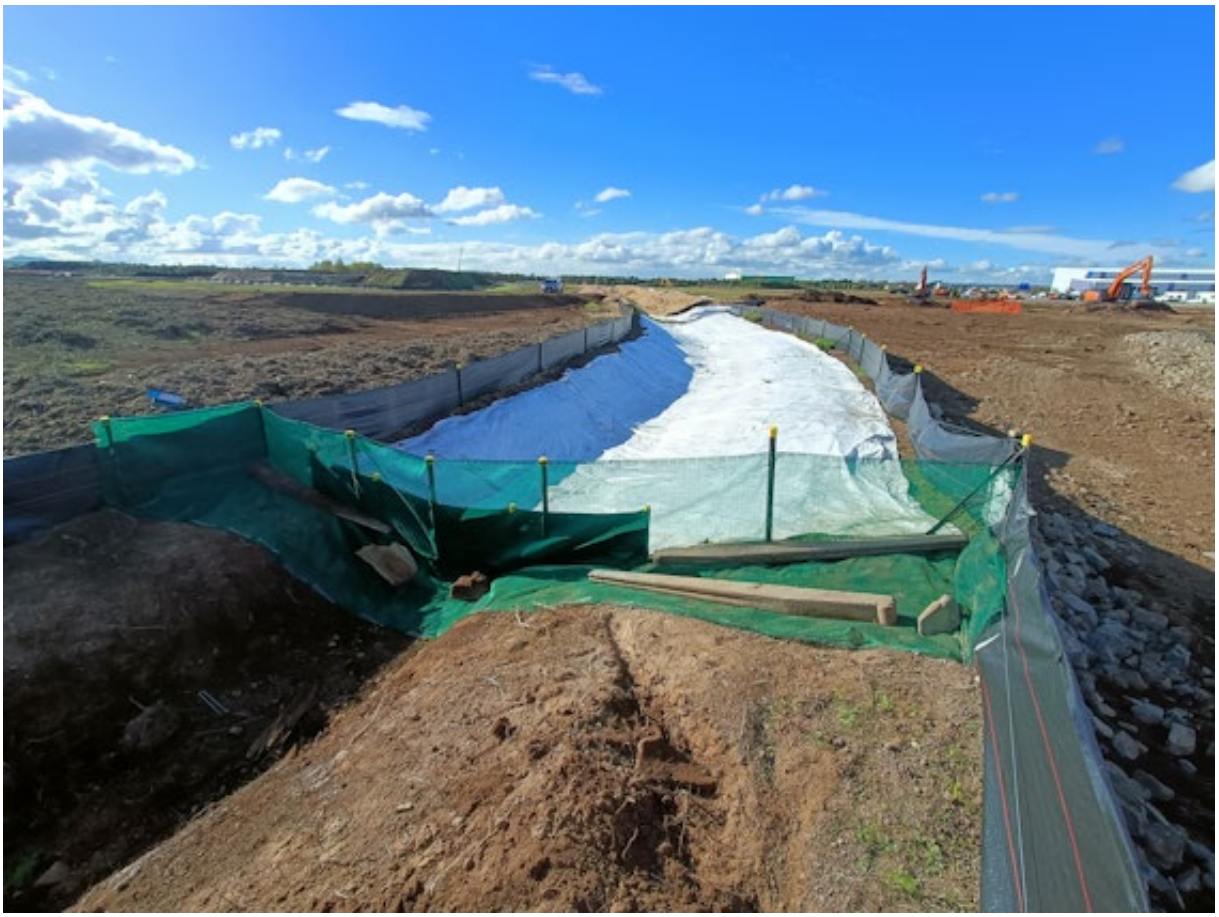

Plate 3. Example of fish stop net used as part of the stream/drain reconstruction project before being made live. The stop net has full channel and bank coverage with additional material added to the low flow and usual inundation section. The toe is weighted down with concrete beams.

Where there is sufficient water to use fyke or minnow traps, or where sumps have been excavated for their installation, the effort allocated to fish salvage will follow the decreasing catch per unit effort, whereby trap catch over successive days will be plotted (against total number previously caught) to provide an estimate of when 80 % of the fish present have been caught. Where possible, it is intended to fish until catch rates are nil. Once ≥80 % of estimated fish have been caught, excavation of the stream or wetland bed will be undertaken to salvage from within sediments.

It is usual that approximately 50 % of the fish salvaged are caught through sediment inspections, rather than pre-excavation trapping. Decreasing catch estimates indicate that a declining catch has been achieved using trapping, triggering timing for bed excavation and inspection of sediments. Using trapping and bed sediment inspections in combination is estimated to result in ≥99 % of freshwater fauna being caught and relocated.

As trapping will occur in potentially low-oxygen conditions such as wetlands, muddy sediments, and excavated sumps where organic material is abundant, potentially in warm conditions with further oxygen reduction, an elevated risk of fish mortality exists. Therefore, an experienced ecologist will undertake salvage trapping and will employ best practice methods to minimise stress to fish:

- For each trapping night, fyke nets and traps will be set in the late afternoon, and cleared in the early morning to minimise heat and oxygen stress, as well as minimising risk of predation within the traps. Where consecutive trapping nights are undertaken, clearance of traps and resetting will take place as close as feasible to these times;
- All traps will have sufficient airspace, considering potential water fluctuations from forecast rainfall.

- All freshwater fauna will be handled with wet hands;
- All freshwater fauna will be temporarily held in a covered container away from direct sunlight for less than 1 hour with regularly refreshed freshwater in storage containers (large buckets with stress coat and bubblers) before being transported to the release site (see below); and
- Large eels will be stored in separate containers to elvers (juvenile eels) and to other fish species for predation risk. Kōura will be held in separate buckets from fish for predation risk.

3.4 Pest plant and animal transfer risk

The following procedures are standard for the transfer of native fish to new locations, and will be applied as native fish are caught:

1. Only native freshwater fauna will be transferred to capture containers. Freshwater fauna will be carefully brushed clean (with a wet hand to gently remove any plant materials on the freshwater fauna). Plant material will not be transferred with freshwater fauna.
2. Only healthy freshwater fauna will be transferred. If visual inspection detects abnormalities, lesions, deformities or other out-of-the-normal features, the freshwater fauna will not be transferred. RMA Ecology has undertaken fish salvage for many years, and we have never encountered any abnormal or diseased fish. We expect the same from this freshwater system.

3.5 Euthanasia

Pest fish will be humanely euthanised by pithing.

Injured freshwater fauna will be assessed on site according the severity of their injuries, and a decision made on a case-by-case basis whether to transfer/release, or to euthanise (by pithing).

4.0 Release sites

4.1 Location

Ecologically suitable perennial streams for freshwater fauna release sites exist onsite and offsite, all in the same catchment (Waikanae River to Ōtaki River catchment - NIWA, NZFFD) as the salvage areas (**Figure 7**).

Primary release sites A and B, located onsite on Ngarara Stream, will be the preferred locations for releasing freshwater fauna salvaged from this same stream or drains feeding into it (**Figure 7**).

If high numbers of fish are salvaged and suitable habitat at these sites exceeds release capacity, secondary release sites in lower Ngarara Stream will be utilised (release site C). Available release sites on Ngarara Stream are restricted by limited public access, so tertiary release sites on the stream to the north are specified for use if secondary sites exceed capacity (site D; **Figure 7**).

The release guidelines are as follows:

- Release freshwater fauna in ecologically suitable and logistically accessible perennial stream locations.
    - For eels, the preferred release location will be site A, which has deep, slow flowing water.

- For most bullies and kokopu the preferred location will be site B, which has the occasional run.
- If any brown mudfish are salvaged, they will be released at a different location to eels, due to predation risk.

- Any fish salvaged from wetlands will be released to suitable habitat in unimpacted parts of the same or adjacent wetlands onsite, or alternatively to Ngarara stream release sites.
- Release locations should be separated by approximately 100 m.
- Release approximately 50 individuals per location per season.
- migratory fish such as eels and inanga will preferentially be released upstream or downstream of the works site, depending on the direction of migration (consult NIWA freshwater fish migration calendars).
- Record the release GIS location.
- Record the number of each species released at each location.

Figure 7. Indicative freshwater fauna release sites (blue diamonds) within the Waikanae River to Ōtaki River catchment (NIWA, NZFFD)/ relative to the site boundary (white polygon). Primary release sites (A and B) and secondary release sites (C) within Ngarara Stream, and tertiary release sites on the stream to the north (D) are labelled). Also, Ngarara Stream and drain W1.1 (blue lines) and wetlands (cyan polygons) onsite

4.2 Method

Salvaged fauna will be released from covered buckets or bins by gently dipping the edge of the bucket or bin into the water and allowing native fish and kōura to exit the container.

We predict approximately 10–20 release sites may be required for the operations.

5.0 Timing and approvals

The freshwater fauna salvage is planned to take place prior to earthworks. There are eight stages of earthworks proposed, with the Ngarara Stream proposed to be realigned as part of Stage 7. Timing of salvage will seek to avoid migration seasons of key fish species where feasible. Extended blockages will be avoided where practicable.

If unavoidable, trap and transfer may be required to mitigate effects during peak migration seasons of key species such as longfin eel, shortfin eel and īnanga, as specified in NIWA migration calendars. Longfin and shortfin eel migration peaks from August to March, and inanga migration from March to November.

6.0 Reporting

A report will be submitted to Greater Wellington Regional Council, providing a summary of the number and species of fish caught, dates of relocation and location of releases.

All results will be uploaded into NIWA's New Zealand Native Freshwater Fish Database, and the results lodged with FishServe to meet reporting requirements under the MPI permits.

7.0 Appropriately qualified personnel

The fish salvage and relocation will be undertaken by Mark Newton, or Harrison Kroos, or Douglas Fotheringham of RMA Ecology Ltd.

RMA Ecology holds Ministry for Primary Industry (MPI) permits (Special Permit 904-2 and MPI-NFT440) to undertake trapping, salvage, and relocation activities for native freshwater fauna at this site.

8.0 Equipment required

The following equipment should be noted by site contractors involved in the fish salvage and release activities.

1. **Civil works contractor**

- Rock/toothed buckets (flat blade/weed buckets are **unacceptable**)
- Minimum 5T excavator (preferably 10T or larger)
- At least one pump to dewater areas (with back-up pump on site or on immediate call)
- 3 mm gauge mesh screen for pump intakes to prevent fauna entrainment (entering).

2. **Ecologist**

- Materials to construct fish stop nets
- 3 mm gauge mesh screen for pump intakes to prevent fauna entrainment (entering).
- EFM, traps, and nets
- Hand nets
- Fish storage container and bubblers
- Gear to appropriately handle, measure and release salvaged fish

Report prepared by:

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Reviewed by:

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Dr Graham Ussher

Principal Ecologist

26-Mar-26

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Appendix 1: Greater Wellington Regional Council consent conditions

[to be updated once consent conditions are set]