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POUND ROAD FAST TRACK – AQUATIC ECOLOGY ASSESSMENT

1. INTRODUCTION

NTP Development Holdings Limited (NTP) are seeking approvals through the Fast-track process to use approximately 59.35 ha of land in Templeton (the Site) for industrial purposes. The Site is identified under Schedule 2 of the Fast-track Approvals Act 2024 as the Pound Road Industrial Development. The proposed development is located on approximately 60 ha at the junction of Hasketts, Barters, and Pound Roads (the Site), as shown in Figure 1. The Site is located south of Templeton Country Club and is opposite (west of) the Waterloo Business Park. Ruapuna Park is located to the northwest of the Site.

NTP has engaged Instream Consulting Ltd (Instream) to undertake an assessment of the aquatic ecology values, identify potential and actual impacts of the Site's development and provide recommendations on opportunities to mitigate actual and or potential impacts on aquatic ecology values.

2. METHODS

2.1. Desktop Review

To identify aquatic ecology values within the Site, a desktop assessment was undertaken. Environment Canterbury's Canterbury Maps Ecology and Biodiversity layers[1], as well as the Christchurch City Council 3-Waters Network Asset Map[2], Selwyn District Council water race network maps, and aerial imagery were reviewed to identify known values.

2.2. Field Survey

A site walkover was undertaken on September 3rd, 2024, to determine the current state and alignment of an internal drain. Access was not available to all waterways on this date; therefore, a follow-up field survey was completed on the 7 May 2025.

A Rapid Habitat Assessments (RHA; Clapcott 2015) was undertaken along a 50 m reach of the waterway and a fish survey was undertaken during the follow-up survey. To determine fish

[1] Canterbury Maps Viewer
[2] 3-Waters Network Asset Map (ccc.govt.nz)

presence three fyke nets (1 x fine fyke and 2 x mini fykes) and 12 gee minnow traps were set overnight between Barters Road and the pond. Basic water quality was also collected using a calibrated YSI ProDSS. Locations of the RHA and fish surveys are provided in Figure 2.

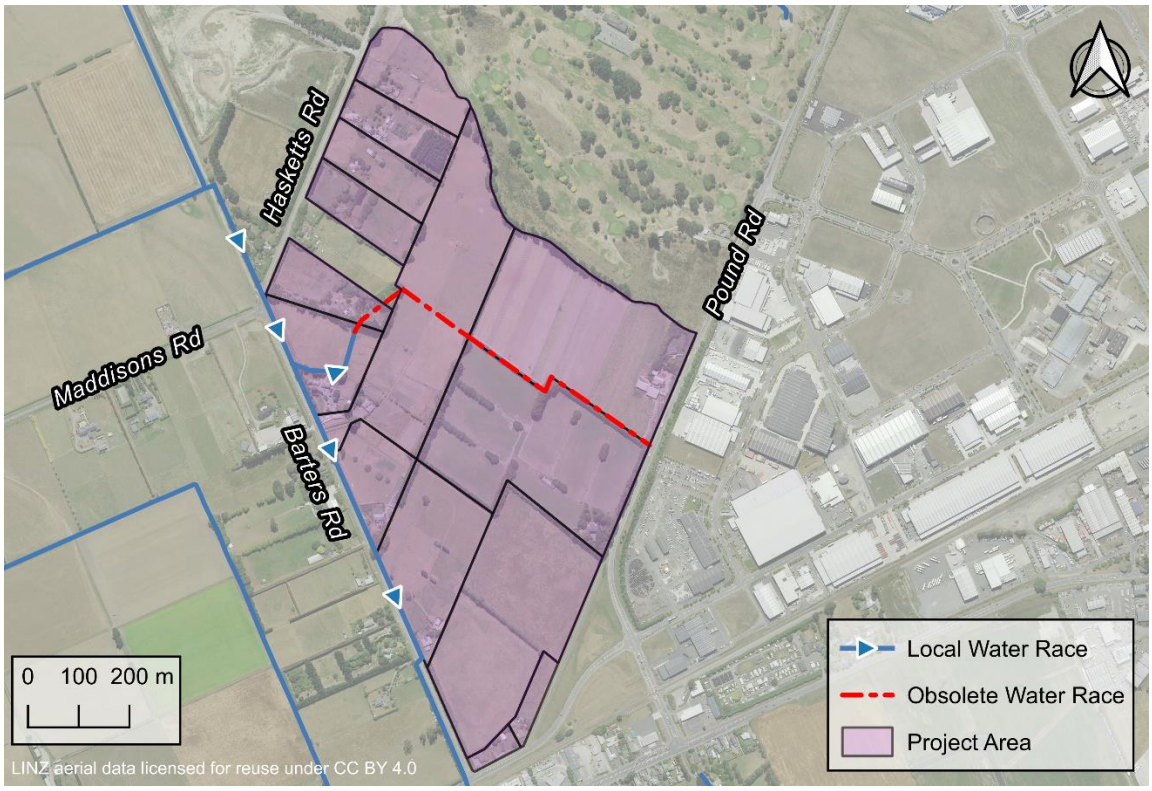

Figure 1: Site location and mapped waterways.

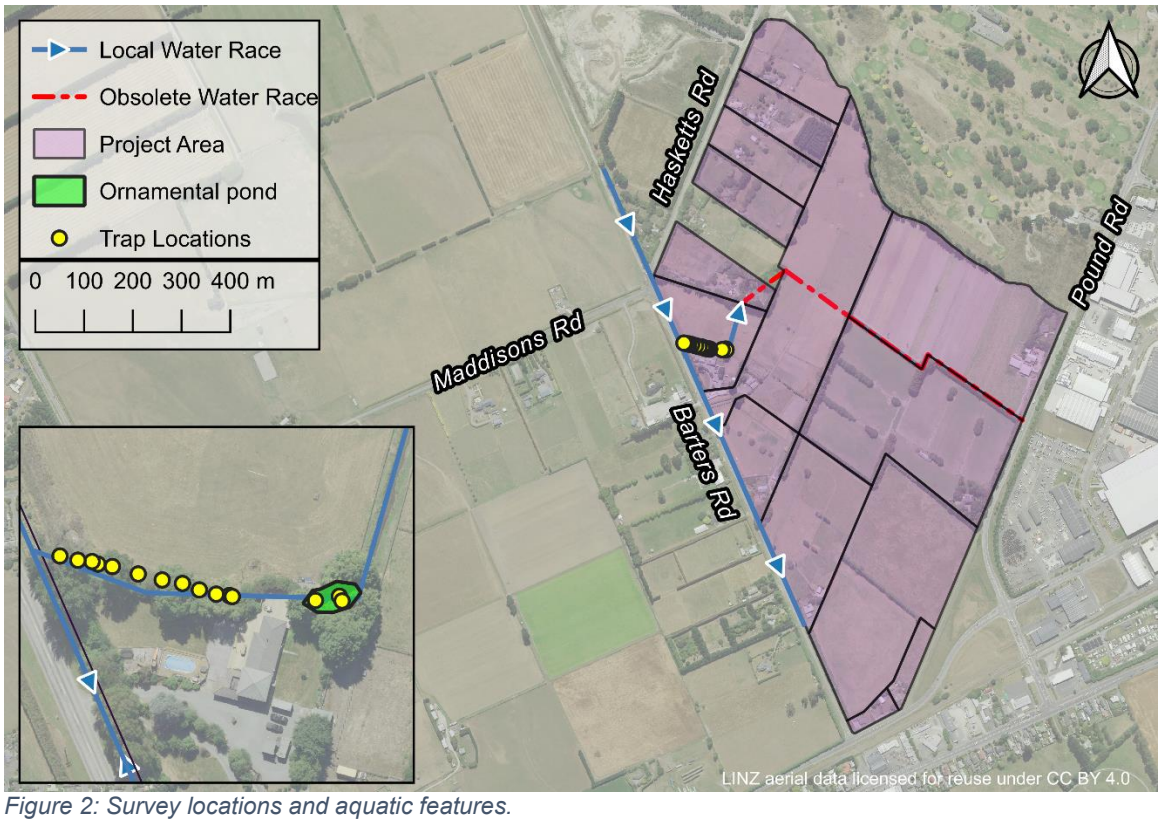

Figure 2: Survey locations and aquatic features.

3. RESULTS

3.1. Desktop Review

One 'local' water race is mapped within the Christchurch City Council 3-Waters Network Asset Map, along the southwestern boundary of the Site (Barters Road). A section of this mapped water race (200 m) is located within the Site, at 94 Barters Road. The water race is part of the Paparua Race Scheme. The section of race within the Site was part of a larger historical race network, which is now mapped as 'obsolete' in the Selwyn District Council water race maps. These features are shown in Figure 1.

A branch of water race located within the Templeton Country Club (located to the north of the Site) has New Zealand Freshwater Fish database records within flowing and ponded sections. Upland bully (*Gobiomorphus breviceps*) is the only species recorded.

3.2. Field Survey

The site visit confirmed the presence of an internal channel connected to the roadside water race at 94 Barters Road. However, site observations showed low to no flow within the channel at the Barters Road end of the channel, with the remainder of the channel length dry. A ponded area is present at the corner of the mapped race length, with lining visible indicating past landscaping to create a pond feature. These locations are shown in Figure 2. Upstream of the pond the channel was dry, with terrestrial vegetation growing within the base. The condition of the race upstream of the pond was similar to that in the mapped 'obsolete' water race section. Photographs of the waterway at various locations within the Site are provided in Appendix 1.

The following observations were made during the site assessment. The waterway (where water is present) had an average width of 2.8 m and an average water depth of 0.15 m, the pond was approximately 8 m in diameter, with a max depth of 0.65 m. The waterway substrate consisted of 100% fine sediment, with bank erosion visible. RHA results are summarised in Table 1. The site had a total RHA score of 36.5, indicating fair habitat quality. For context, total RHA scores of 0–25 are indicative of "poor" quality habitat, 26–50 is "fair", 51–75 is "good", and 76–100 indicates "excellent" habitat quality (Clapcott et al. 2020). Water quality showed suitable conditions for instream life, water temperature was 9.8 °C, dissolved oxygen was recorded at 66.2 % and 7.51 mg/L, conductivity at 72.0 µs/cm and pH was near neutral at 6.94.

Table 1: Rapid habitat assessment summary

Habitat parameter	Condition category
Deposited sediment	1
Invertebrate habitat diversity	4
Invertebrate habitat abundance	1
Fish cover diversity	5
Fish cover abundance	4
Hydraulic heterogeneity	3
Bank erosion	6.5
Bank vegetation	4
Riparian width	2
Riparian shade	6
Total score	**36.5**

Of the three fyke nets and 12 gee minnow traps set overnight, only two upland bully (*Gobiomorphus breviceps*) were recorded (60 and 72 mm in length). Upland bully are not threatened[3], and are widespread in Canterbury waterways.

3.3. Waterway Classifications & Regulatory Requirements

The National Policy Statement for Freshwater Management 2020, as amended October 2024 (NPS-FM) includes policy 3.24 to avoid the loss of river extent and values. Regional Council must be satisfied that:

(i) the applicant has demonstrated how each step in the effects management hierarchy will be applied to any loss of extent or values of the river (including cumulative effects and loss of potential value), particularly (without limitation) in relation to the values of: ecosystem health, indigenous biodiversity, hydrological functioning, Māori freshwater values, and amenity; and

(ii) if aquatic offsetting or aquatic compensation is applied, the applicant has complied with principles 1 to 6 in Appendix 6 and 7, and has had regard to the remaining principles in Appendix 6 and 7, as appropriate; and

(iii) there are methods or measures that will ensure that the offsetting or compensation will be maintained and managed over time to achieve the conservation outcomes; and

Any consent granted is subject to conditions that apply the effects management hierarchy, and conditions that specify how the requirements in (i) – (iii) will be achieved.

To understand how this fits within the context of the site's waterways, a 'river', as defined under the Canterbury Land and Water Regional Plan (LWRP) means a continually or intermittently flowing body of fresh water, and includes a stream and modified watercourse; but does not include an artificial watercourse (including an irrigation canal, water supply race, canal for the supply of water for electricity power generation, and farm drainage canal). 'Artificial' includes 'farm drainage canal channel' in the definition. But 'drainage water' means '*water,… from the drainage water from the soil profile, or excess surface water from agricultural or rural land.*' For this definition, evidence is needed that it is water from within the soil profile, as opposed to groundwater from the saturated zone/ water table. Water from the soil profile (drainage water) is directly related to rainfall inputs and not related to groundwater levels.

Previous advice from Environment Canterbury on this interpretation when it comes to internal farm drains is that they can be 'modified natural', which is defined as the areas that have historically been wetlands and waterbodies but are now drained and confined within historically natural flow paths but are modified to be (often) straightened watercourses.

Modified natural watercourses are subject to the 'no loss of extent or value' for streams under the NPSFM policy 3.24. Under the Fast Track consenting processes, the applicant will need to demonstrate how loss of waterway extent and value has been avoided, and if not, adequately offset.

Based on the desktop assessment and field survey, the waterway within the site is an artificial watercourse with low ecological values. The section of waterway within the site was originally

[3] Conservation status of New Zealand freshwater fishes, 2017

part of the water race network; however, much of the length is mapped as obsolete and the reach that remains has been modified to create an ornamental pond. There is no interaction with shallow groundwater and the reach dries out on occasion. The field surveys recorded low habitat values (RHA score of 36.5/100), and fish presence was limited to two upland bullies that would have moved into the channel from the roadside water race. Downstream of the Site, the water race flows into a series of culverts that flow under Barters Road, then under Waterloo and Marshes Roads. These substantial culverted sections likely result in behavioural barriers for upstream fish migration and limit opportunities for ecological enhancement.

4. EFFECTS ASSESSMENT

A summary of potential adverse effects and how the proposed plan meets regulatory requirements, is provided below.

4.1. Land use change

The proposed development will result in the removal of the internal artificial waterway. As this waterway has been classified as an 'artificial watercourse' it does not require offsetting under policy 3.24 of the National Policy Statement Freshwater Management (NPSFM 2020).

To mitigate for the loss of the artificial watercourse, recognising it provides aquatic habitat for fish as it is connected the Barters Road water race, and improve the ecological values of the water race, a 5 m setback is proposed along Barters Road. The water race is classified as a network waterway under the District Plan, therefore a 5 m setback is in alignment with the District Plan requirements. A planting plan will be a condition of consent, with eco-sourced native riparian species selected from the updated Christchurch City Council streamside planting guide. This planting will enhance ecological corridors for terrestrial and aquatic animals and plants. Planting will need to be undertaken in a manner that does not impact the hydraulic requirements of the water race.

4.2. Stormwater

As there are no natural watercourses on site, adverse effects associated with stormwater are limited to overland runoff to the water race network that borders the Site. To avoid overland flow into the water race bordering the Site, all lots bordering Barters Road will be graded away from the water race. This will direct overland runoff originating within the lots towards roadside drainage and ultimately the site's stormwater management area. Overland runoff to the water race will therefore be limited to the 5 m planted buffer zone.

4.3. Construction Phase

Construction phase stormwater will be stage specific and discharged to ground. Therefore, risk of overland flow to the Barters Road water race or infiltration to ground surfacing at water bodies downgradient very low. Erosion and sediment control plans will be required.

4.4. Operational Phase

Operational phase stormwater from all sites will be directed to stormwater basins located in the various utility reserves identified on the subdivision plan and discharged to ground. The depth to groundwater has been measured at 14-16 m, therefore risk of infiltration to surface water bodies downgradient is very low.

4.5. Instream Works

Culverts are proposed to be used for the two road Barters Road crossings, designed as per the updated New Zealand Fish Passage Guidelines (NIWA 2024). Designs should be reviewed and approved by a suitably qualified freshwater ecologist to ensure consistency with these guidelines. As works will be required within the bed and banks of the water race for installation of the culverts, mitigation will be required to avoid adverse effects.

Key mitigation controls include requirements for the reach to be isolated, and a fish salvage undertaken by a suitably qualified freshwater ecologist with the required permits in place.

A fish salvage will also be required for infilling of the short reach of artificial waterway located within the Site. This should be undertaken when water levels are low to minimise the reach required to be salvaged.

5. SUMMARY

The Site has a short section of water race that terminates within the property. Discussion with the landowners indicates that the remnant water race reach has no function for the Site and has been retained for amenity values. The section of wetted channel that remains is of low ecological value, and had been highly modified for amenity values, with plastic liner and landscaping to form an ornamental pond.

Effects of the Site's development to a general industrial subdivision are not expected to result in adverse effects to aquatic ecology values. The channel within the Site will be removed, as there is no function for a water race within the development. The current ornamental pond and channel will need to be filled in. If this work is undertaken with the works area isolated and a fish salvage undertaken by a suitably qualified freshwater ecologist, no adverse effects on the water race network are expected. To provide mitigation for the loss of the short section of artificial waterway and the change in land use adjacent to the Barters Road water race, a 5 m setback with native riparian vegetation on the true left bank (the side adjacent to the site) is proposed. With the recommended mitigation in place, it is considered that effects to aquatic ecology values will be very low.

Overall, in light of the above assessment, the proposed development of the site is considered appropriate. There are no adverse impacts that reach the threshold of a 'sufficiently significant adverse impact' such that they need to be taken into account in terms of an assessment under s85 of the Fast-track Approvals Act 2024.

6. REFERENCES

Dunn NR, Allibone RM, Closs GP, Crow SK, David BO, Goodman JM, Griffiths M, Jack DC, Ling N, Waters JM, Rolfe JR (2018). Conservation status of New Zealand freshwater fishes, 2017. New Zealand Threat Classification Series 24, 11.

NIWA (2024). New Zealand Fish Passage Guidelines. Version 2.0. Prepared for Ministry for the Environment. June 2024. NIWA client report number 024157HN.

Yours sincerely

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Principal Scientist
Instream Consulting Ltd

APPENDIX 1: SITE PHOTOS

Figure 1: Flowing water race along Barters Road.

Figure 2: Start of wet water race reach within the Site (from Barters Road). No flow and high level of organics and fine sediment.

Figure 3: Wet reach along the 94 Barters Road driveway, with rock weir and lining.

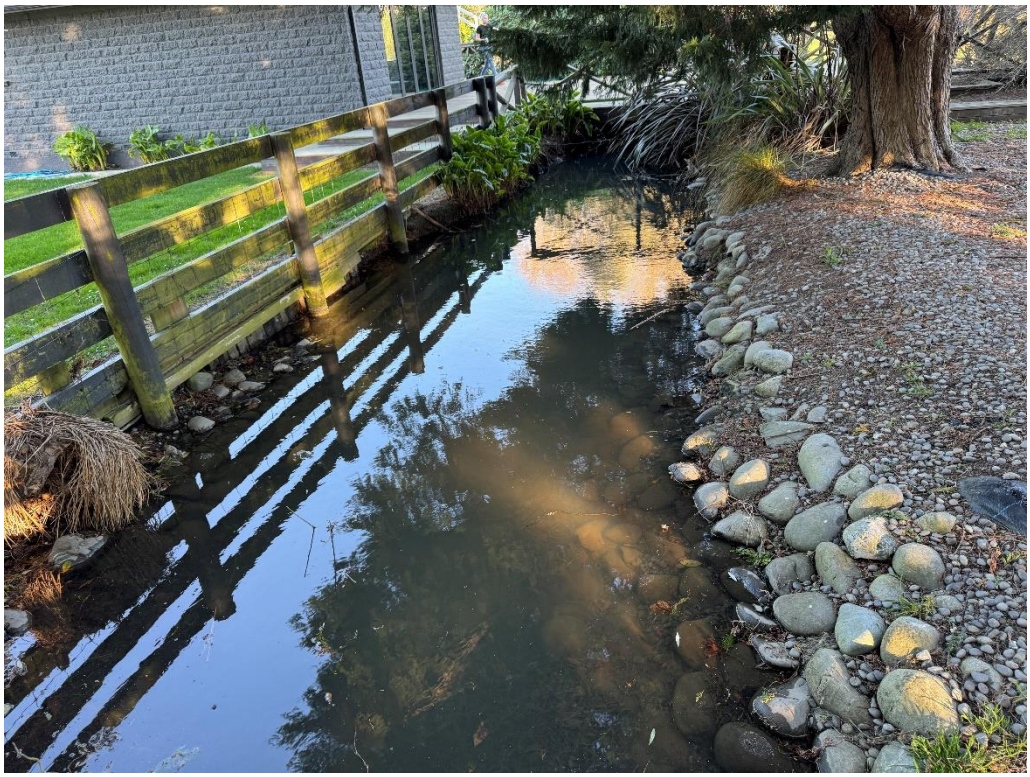

Figure 4: Landscaped reach of wet water race reach alongside house.

Figure 5: Ponded area with lining at end of wet water race reach.

Figure 6: Pond outlet at the end of the wet water race reach.

Figure 7: Dry water race reach.

Figure 8: Dry water race reach with potential wetland vegetation within the base and culvert connection to 4 Hasketts Road.

Figure 9: Dry water race reach in obsolete race reach.