

Tongariro River Flood Protection Scheme

Proposed Annual Works Programme 2023/2024

(updated 27 June 2023)

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Proposed Annual Works Programme

Introduction

Waikato Regional Council operates and maintains a flood protection scheme on the Tongariro River. The scheme is designed to protect the Turangi community from a 1 in 100-year flood event (1,500 m³/s), also known as the 1% Annual Expected Probability (AEP) flow, which has a 1% statistical probability of occurring in any one year based on the existing flow records. The flow of water down the Tongariro River have been continuously recorded since 1957 by a gauge located at Turangi. An average flow is between 20 and 25m³/s and the recent freshes during April-June 2023 were recorded at 200-330m³/s. Two extreme floods (recorded in 1958 and 2004) both exceeding 1400m³/s. The river transports large amounts of sediment through the upper catchment with thousands of tons of gravel and larger size sediment (and a significantly higher amount of finer sized material including sand) carried past Turangi each year, depositing in the river's delta downstream of Turangi. Continued monitoring and maintenance of the flood protection assets, the floodway and main channels is required to ensure the scheme operates to design standards.

An 'asset condition assessment' has been undertaken within the last 12 months to assess the condition of all flood protection assets (including an aerial inspection). The 'asset condition assessment' provides the basis for the proposed 2023/24 Annual Work Programme, which this year targets vegetation control in key locations.

The requirement for gravel extraction within the riverbed will be re-considered following planned cross section surveying and subsequent modelling of floodway adequacy.

Consultation

In 2011, comprehensive resource consents were granted to the Waikato Regional Council's Integrated Catchment Management Directorate (ICM) for the management of the river floodway and flood protection scheme.

Resource Consent No.	Activity authorised
121305	Erosion control/flood protection works: gravel extraction up to 150,000cum/year, erosion control works and vegetation removal, temporary diversion bunds and culvert crossings.
121306	Divert water and temporarily dam and divert water within the Tongariro River.

Resource consent conditions require the distribution of a proposed Annual Works Programme (AWP) to allow consultation and input from the following parties,

- Department of Conservation,
- Tongariro and Lake Taupo Anglers Club Inc,
- Advocates for the Tongariro River,
- Taupo Fishery Advisory Committee,
- Tuwharetoa Maori Trust Board,
- Ngati Turangitukua,
- Genesis Energy, and,
- Waipapa and Tokaanu Maori Lands Trust.

In addition, the proposed AWP will be provided to Te Kotahitanga o Ngāti Tūwharetoa (established under the Ngāti Tūwharetoa Claims Settlement Act 2018 and after the resource consents relating to the maintenance of the Tongariro River Flood Protection Scheme were granted).

Council Staff are available to meet with any party to discuss any issues or concerns relating to the proposed work.

The purpose of this AWP is to:

- Highlight proposed works, limited this year to nuisance vegetation control at key sites
- Outline how the proposed work will be managed in accordance with best practice and within the conditions of the consent,
- Allow parties to consider whether the proposed works will impact on sites of importance and/or species of significance, and
- Encourage discussions around appropriate solutions to concerns.
- Provide a basis for seeking the written permission from all relevant landowners on whose land work is proposed to be undertaken.

Tongariro Flood Protection Scheme Assets

The Tongariro flood protection scheme is comprised of:

- **Flood protection assets:** The management focus is to maintain structural integrity and design freeboard height.
- **River channel and floodway:** The management focus is to maintain channel stability and flood scheme capacity.

The location of the primary flood protection scheme assets are shown in Figure 1.

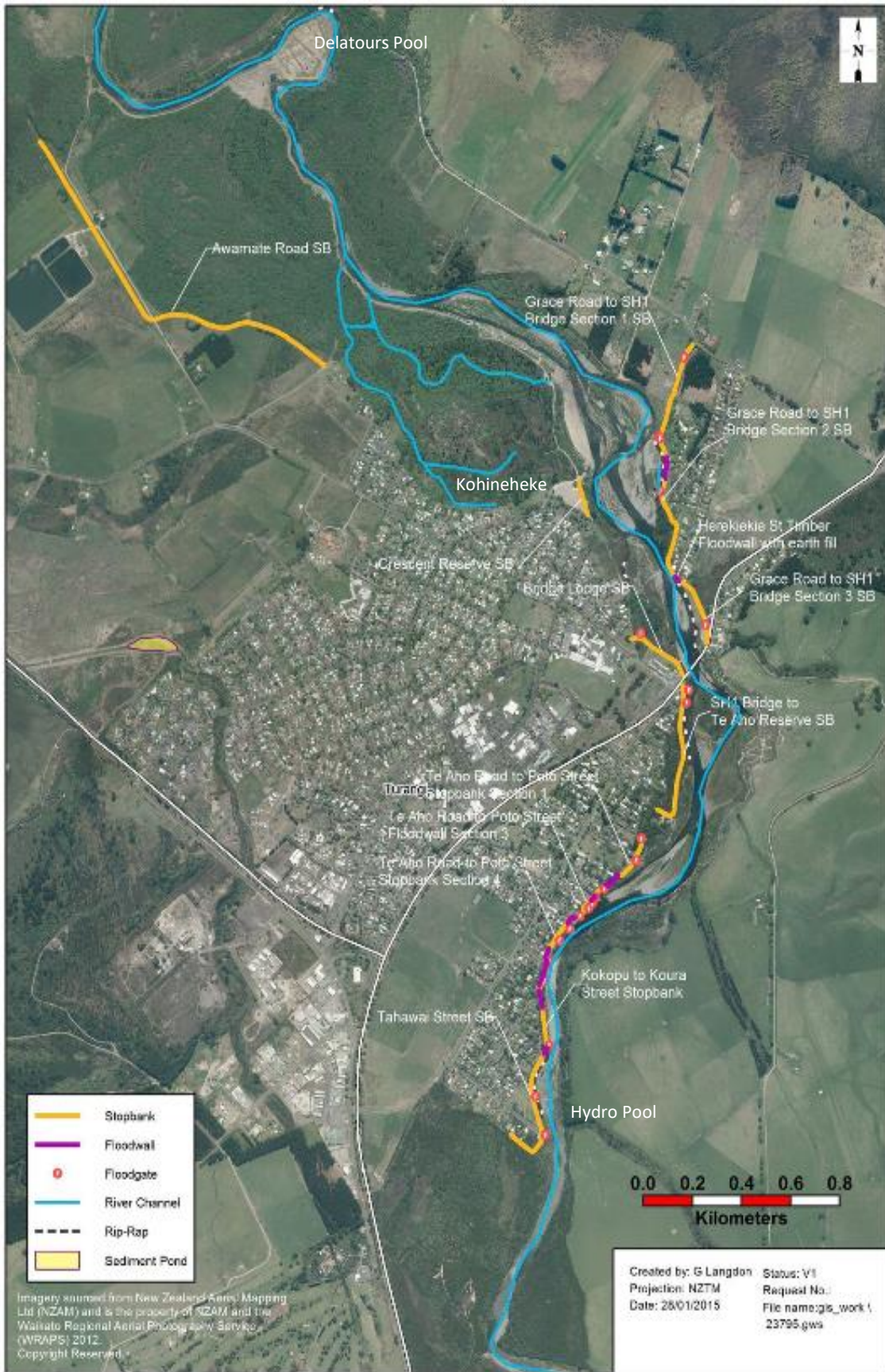


Figure 1: Tongariro River Flood Control Scheme

2023-2024 Works Season

General Maintenance

Includes, managing emerging invasive vegetation on assets identified in Fig 1. This includes rock walls, stop banks and floodgates/flap valves. Thinning or removal of flood deposited debris blockages and replacement and maintenance of damaged assets and asset components may also be required.

Planned Asset Maintenance

SH1 Bridge to Te Aho Reserve rock protection and Floodgate Flap Valves.

Two culvert floodgates (70483 & 70484) situated on the SH1 Bridge to Te Aho Reserve Erosion Control Rock Wall section are currently unserviceable due to invasive vegetation growing within the structure, preventing access to inspect or maintain. The vegetation is also a threat to the rock wall stability. All vegetation within the rock wall will be managed by removing woody vegetation and spot spraying emerging vegetation. Vegetation growing at the base of the stop bank may be mechanically mulched so that roots do not threaten the stability of the structure.

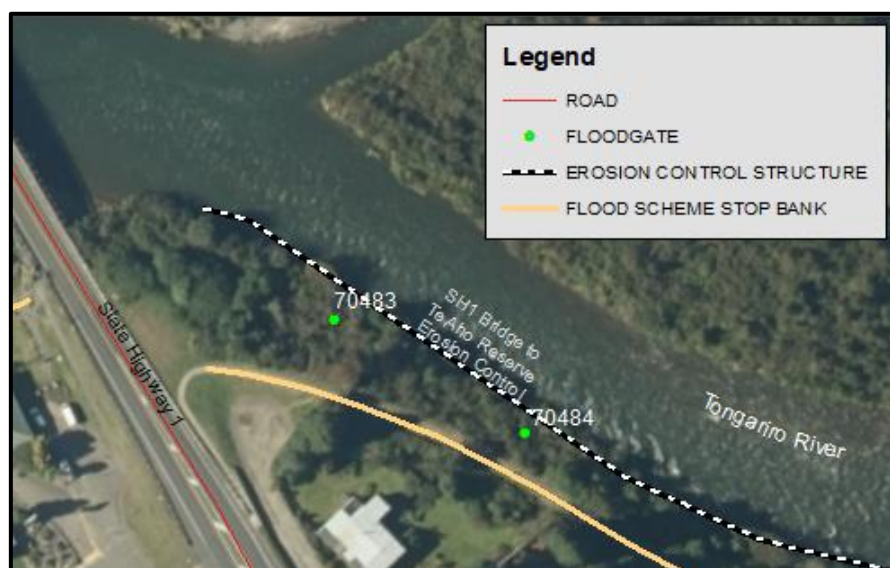


Figure 2: SH1 Bridge to Te Aho Reserve rock protection, Floodgate Flap Valves and stopbank location.

Nuisance Vegetation Management

Nuisance vegetation growth throughout the floodway may affect the river in a number of ways relating to flood protection, including;

- Restricting the rivers natural functions.
- Promoting an unnatural rate of gravel and sediment aggradation.
- Decreasing flood scheme capacity and increasing channel instability.

Target species predominantly include, but are not limited to, Willow, Broom, Wildling Pine, Buddleia. The target areas for this works season are identified within Appendix 1.

Methods used to control vegetation will vary depending on the site, but will be in accordance with best practice, such as;

- Ground crew spot spraying of juvenile vegetation away from water,

- Vegetation overhanging or dense strands near water to be cut and pasted, drilled or manually removed (depending on access and density).

Native low growing species will be encouraged to establish throughout the scheme rather than larger trees or weed species. Planting or the spread of woody species, native or exotic, near or on scheme assets may compromise the integrity of that asset.

Potential control of wilding pines/other species of interest in the riverbed upstream of Turangi (from the SH1 bridge to prison and more specifically, above the Hydro Pool) is an ongoing matter for consultation with interested parties.

Timing of Works

The Tongariro River hosts a range of indigenous fish species and is a nationally significant trout fishery and the timing of work within the river bed is generally limited to the months outside of May to October. This ensures work falls outside of the main trout and indigenous fish spawning season.

Although trout fishing is popular all year, fishing activity generally falls over the warmer summer months. For this reason, works will be scheduled for middle summer. This will also coincide with low flows. Representatives from DoC will be consulted prior to the works commencing to ensure the best possible outcomes in the event of late spawning runs or other such natural events. Continued Whio (blue duck) population increase gives rise to an appreciation for nesting timing and known nesting sites. Continued consultation with DoC will be maintained to minimise any disturbance.

Monitoring and Mitigation

To perform best practice and adhere to consent conditions the following mitigation strategies will be implemented at each work site:

- Site notices will be erected five days prior to works.
- Public access will not be unduly restricted.
- Hours of operation are restricted to Mon-Sat, 8am-6pm max.
- Machinery will be cleaned prior to entering work sites.
- Machinery will be operated in accordance with best practice.

Other mitigation strategies include:

- Threatened species processes will be considered before work commences at each site.

Consent Compliance Monitoring

All relevant resource consent conditions will be monitored and assessed. If required a compliance audit report will be prepared and identify any areas of non-compliance and any remedial actions undertaken to rectify this non-compliance.

A representative number of sites may be selected for monitoring, based on the scale, location and sensitivity of the proposed sites.

Hazardous Substance Spillages

All machinery will be refuelled, serviced and maintained in manner to ensure spillages of contaminants are prevented, and in a location that, should a spill occur, it will not enter a waterway. Spill prevention and response activities will be undertaken in accordance with WRC's Oil Spill Contingency Guidelines and in addition, a contingency plan will be prepared to ensure:

- Equipment on site can deal with a containment spill,
- Procedures are in place in the event of a containment spill,
- Interested and affected parties are notifiable,
- Refuelling locations and fuel storage areas are clearly identified.

Threatened species discovery protocol.

In the event that a species listed as "threatened" is discovered at a works site, the following process shall occur:

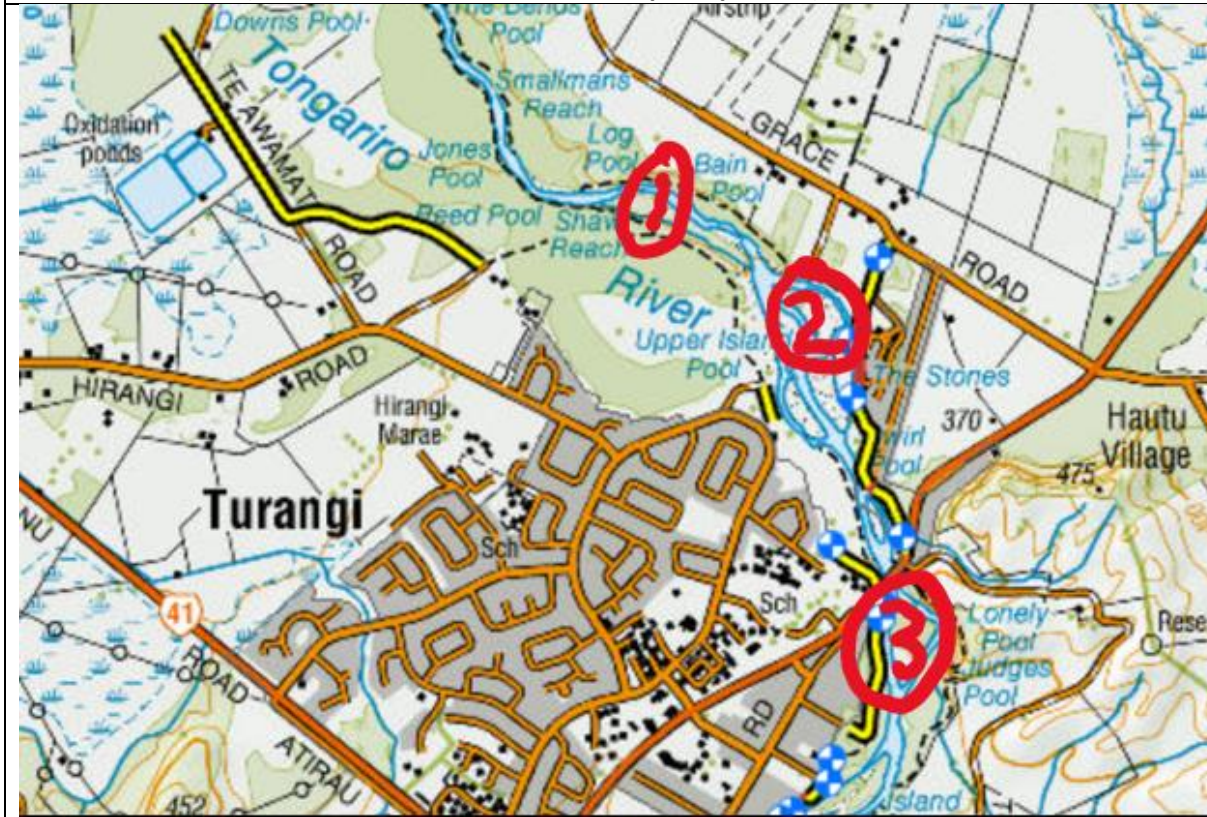
- All works at the site shall cease immediately.
- Notify the WRC ICM Environmental Compliance team (Senior Environmental Officer or Environmental Officer – in their absence notify the Team Leader Regional Hazards and Environmental Compliance or Manager Business and Technical Services) as soon as practicable following the discovery.
- Within 24 hours of the discovery, the ICM Environmental Officer (or delegate) shall inform the WRC Resource Use Directorate and the Department of Conservation.
- Works shall only re-commence once approval has been obtained by WRC Resource Use Directorate following their consultation with the Department of Conservation.

Fishing and Recreational Access

Access to fishing and recreational activities will be retained wherever possible. Access will only be restricted to work sites during hours of operation, and only to the area where work is being carried out to ensure public safety.

Appendix 1 – 2023/24 Proposed Vegetation Control Areas

General Locations (refer to Sites 1, 2 and 3 in subsequent photo's)



Site 1 – Downstream of Grace Road Access (5-10m width on island edge)



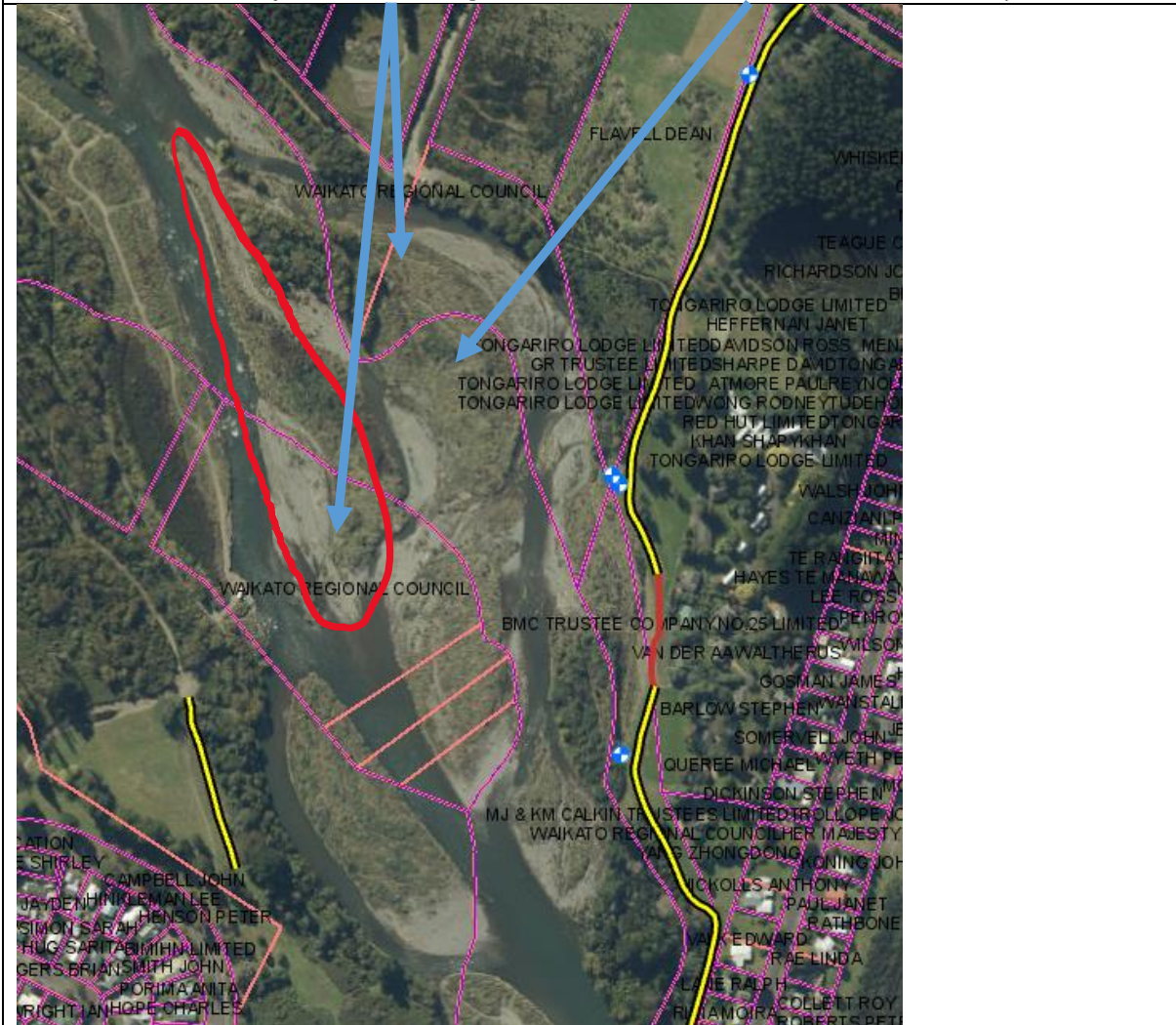
Site 1 – Landownership DOC Tuwharetoa on behalf of hapu



Site 2 – Downstream of Te Herekieke Street



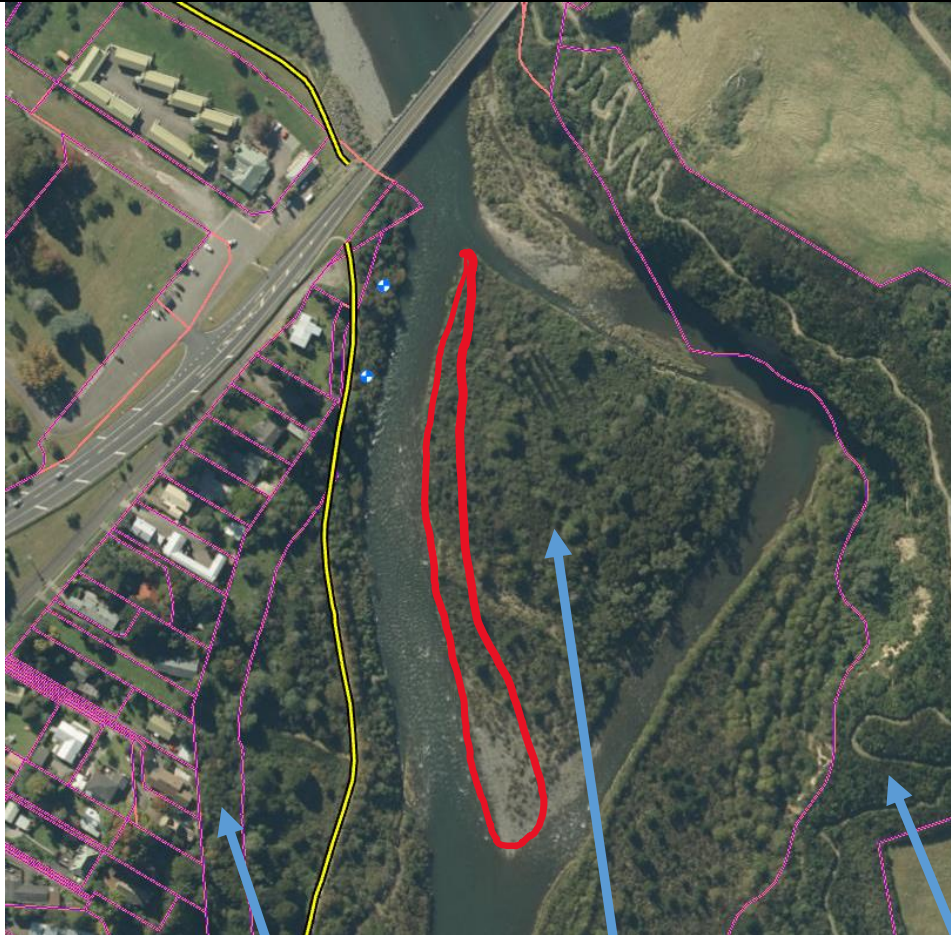
Site 2 - Landownership Waikato Regional Council Tuwharetoa on behalf of hapu



Site 3 – Above SH1 Bridge



Site 3 - Above SH1 Bridge



Landownership

Dept of Conservation

Tuwharetoa on behalf of hapu

DoC