Tauranga Taupo River Flood Protection Scheme

Annual Works Programme 2025/2026

WRC Resource Consents 125772 and 125773

Updated 29/8/2025

Contents

Introduction

Waikato Regional Council maintains a flood protection scheme on the Tauranga Taupo River. This scheme is designed to protect the communities of Te Rangiita and Oruatua from flooding up to a 1 in 50-year event. Continued monitoring and maintenance of flood scheme assets, floodway and the river channel is required to ensure the scheme operates to its design during flood events.

Consents and Consultation

In 2013, the following 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.

RC #	**Activity authorised**
125773	Divert water temporarily or permanently associated with erosion control/flood protection works
125772	Erosion control/flood protection works: extraction of up to 20,000 cubic metres per year of river bed material including debris, erosion control works and vegetation and obstructions removal.

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

- Tuwharetoa Māori Trust Board
- Te Rangiita Residue Trust and,
- Te Rangiita hapu
- Te Kōpu a Kānapanapa (Te Kotahitanga o Ngati Tuwharetoa)
- Lake Taupo Forest Trust.
- New Zealand Forest Managers.
- Department of Conservation.
- Taupo District Council.
- Tauranga-Taupo River Association.
- Tongariro and Lake Taupo Anglers Club.
- Resource Use Directorate (RUD) - Waikato Regional Council (WRC).

The purpose of this document is to:

- Highlight proposed work,
- Report on engagement that has been undertaken to date on the proposed work,
- Allow parties to consider whether the proposed work will impact on sites of importance and/or species of significance,
- Encourage discussion and appropriate solutions to concerns, and,
- Outline how the proposed work will be managed in accordance with best practice and within the conditions of the consent.

Scheme Overview

The Tauranga Taupo flood protection scheme is comprised of:

- **Flood protection assets:** The management focus is to maintain structural integrity and design freeboard height.
- **Spillways:** The Quarry Closure, Maniapoto, Kiko and Eastern Spillway need to work in conjunction releasing design flows to ensure the entire scheme can handle a flood event.
- **River channel and floodway:** The management focus is to maintain channel stability, flood scheme capacity and river health.

Figure 1: Flood Scheme Overview.

Scheme Monitoring

The inspections and assessment that informs this works programme are undertaken by WRC river and catchment staff and is reviewed by WRC's technical advisor and environmental consents team.

Important observations and information on changes in the river relating to erosion or flooding is also passed to the Council from a number of local residents, iwi and others throughout the past 12 months.

Ongoing discussions and engagement in relation to maintenance issues have also been undertaken in regard to the proposed work programme with:

- Te Rangiita Residue Trust
- Te Rangiita hapu
- Te Kotahitanga o Ngati Tuwharetoa
- Tuwharetoa Māori Trust Board
- Department of Conservation (DoC)
- Project Tongariro supported volunteers - DoC reserve restoration project (Tuki Street)

River levels recorded at the SH1 bridge over the past 12 months show several moderate storm events and a significant flood overnight 4-5 June 2025. The June event did not result in overly high rainfall measurements at the Kiko Road rain gauge, however this did result in the highest recorded river level at the Te Kono monitoring site upstream, of the scheme, however levels observed at the bridge were less than those observed in previous years.

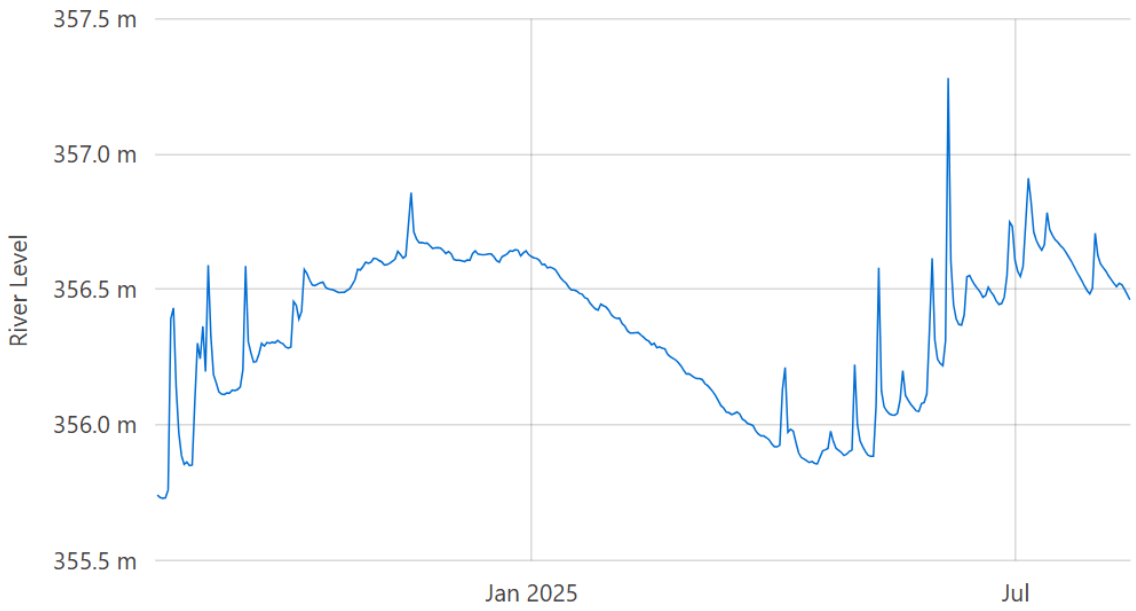


Figure 2: Tauranga-Taupo River - SH1 Br - River level[1]
Environmental maps and data | Waikato Regional Council

The Tauranga-Taupo River is situated in a mobile alluvial floodplain and is subject to significant erosion. Due to the Te Rangiita settlement and State Highway 1 bridge and culverts, the natural channel movement, is restricted, and gravel transport compromised. During the 2023-2024 and 2024-2025 financial years, rock stub-groynes were installed on three outside bends on the left bank to counter channel migration toward the west, and associated loss of storage volume within the floodplain. Some settling/slumping of rock has occurred as could be expected, however significant erosion is continuing where bank overtopping (and subsequent flood plain drainage) occurs. As flood levels fall, concentrated flows drain via a narrow path on the outside of a corner on the access track through the reserve near Tuki Street. This is an ongoing concern, and while some works have been undertaken to reduce erosion in this area, ongoing erosion control remains necessary.

Undesirable willow/weed growth continues to be an issue in the lower reaches of the river (upstream of the SH1 Bridge), contributing to the observed bank erosion.

Critical to the flood scheme operation and warning to residents is the river level recording site located some 4km upstream of the SH1 bridge. Functioning of this gauge is dependent upon channel shape since the measured water levels vary with river flow as it passes through particular restrictions. Willows growing on a shoal opposite the river gauge location are causing gravel accumulation which changes the river profile, and, in turn is causing erosion of the opposite bank.

A significant volume of tree debris exists in the channel. Much of this material results from stems disturbed during Cyclone Gabriel and other recent storm events. A large Beech tree and a large willow overturned and were removed from the channel last year.

Scheme survey was undertaken recently, preliminary findings have been presented, however modelling and assessment has yet to be undertaken.

Other more minor work identified is also detailed in the following sections.

Proposed Works

The following tasks have been identified as necessary to maintain function of the flood scheme. Some elements of this work have high urgency and should be completed promptly to ensure continued scheme protection. Other elements are non-urgent, part of long term scheme maintenance: some of this work will increase in scope if delayed and some can be achieved most efficiently if packaged with other works. The listed works are intended to be undertaken this year, however operational matters including weather and contractor availability may affect the work timetable.

Vegetation management

Various sites have been identified for nuisance vegetation control (refer to Figure 3). Last year UAV spraying was undertaken late in the season, the effectiveness of this will be apparent when new growth appears this year.

It is recommended that a 10m wide river margin be sprayed by ground control methods using glyphosate chemical (commonly referred to as ‘Roundup’) on identified inside bends, which can be progressively widened during the following seasons. Spraying on three outside bends was undertaken last season and this year’s works will build upon that work. Although glyphosate is registered for use over water, by following best-practice guidelines it is possible to minimise the risk

of chemical entering water. WRC is considering use of a UAV spray drone (Unmanned Aerial Vehicle) in some locations due to the improved cost effectiveness and efficiency.

If UAV application is undertaken, it will not attempted when windspeed exceeds 5km/h or if rainfall is forecast within 6 hours following completion. This will be undertaken from the left (south west) bank by a licenced operator maintaining line of sight to the UAV at all times. Legislation requires that an operational spray plan is developed prior to aerial spray works, this would be made available to any party requesting a copy.

Of particular consideration are the following locations:

-Extending the inside bend willow control undertaken last year.
-Clearance of willows adjacent to the Te Kono river gauge site.
-Locations where heavy willow infestation is narrowing the channel

Erosion Protection Work

Groynes were installed on two outside river bends near the end of the 2023/2024 and a further bend on the 2024/2025 year; these require initial maintenance (topping up of rock as they settle and bed into the riverbed and possible extension as the river channel adapts to its new alignment.)
No further new rock groynes are proposed at this time.

Following elevated rainfall events, much of the DoC reserve becomes inundated with floodwater. As the floodwater recedes, a significant volume of water must drain back into the river channel. This de-watering flow concentrates over the bank at two locations: a point in the middle of the bend where groyne placement was undertaken last year, and at the furthest downstream point in the DoC reserve. Works were undertaken last year to reinforce these areas and ongoing maintenance is required to minimise further erosion.

Photo 1: Drainage Erosion mid-bend

Photo 2&3: Drainage Erosion Downstream end of DoC reserve

Woody Debris in the Riverbed Upstream of SH1

There are a number of sites upstream of the SH1 Bridge where woody debris were deposited by high flows over the past 24 months and several zones cleared in recent flooding. Much of this debris is native vegetation, kanuka or similar and is not anticipated to cause any issues as woody debris in the river is part of the natural process and can provide important habitat for fish and other instream ecology. Furthermore, some of this material is protecting areas of bank from erosion. Trees that overturned and lodged within the channel at high erosion locations were extracted in the 2024/2025 year. We will continue to monitor the situation and consideration is being given to the removal of material that is deemed to be at high risk of causing erosion.

	
Photo 4:	Photo 5

Kiko canal downstream of SH1 to Lake Taupo

Dead willows continue to break down within the channel. These do not appear to be obstructing flow and will be monitored periodically.

	
Photo 6 (22/08/2025)	Photo 7 (2024)

Kiko spillway area.

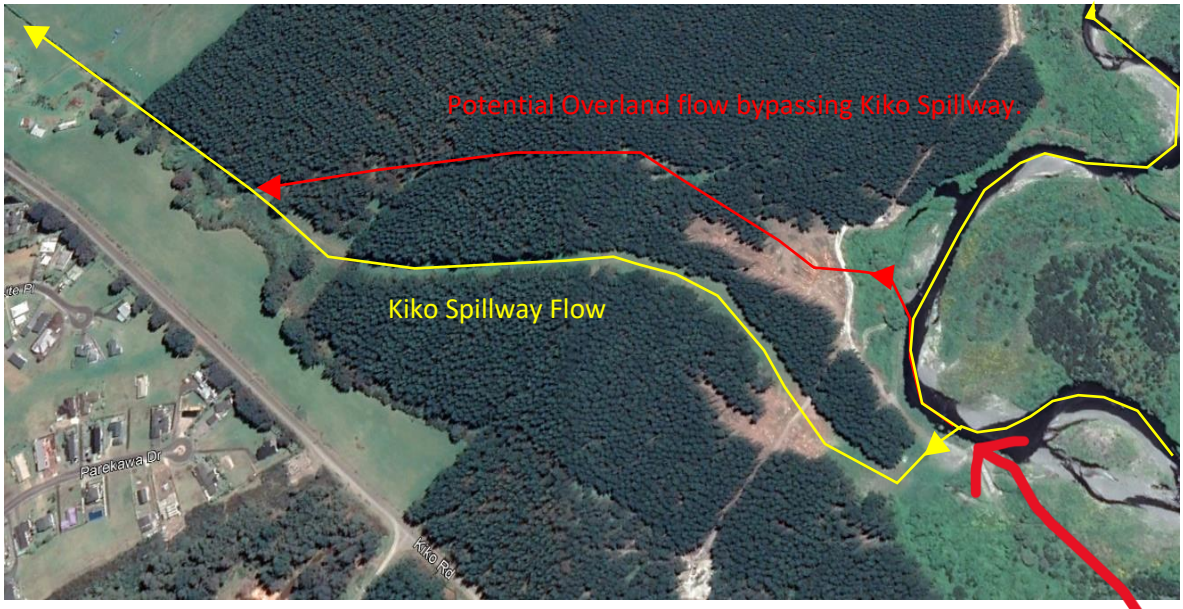


Figure 3: Kiko spillway area.

Just upstream of the spillway area (known as Maniapoto's Bend), bank erosion has been observed on the right side of the river, this will continue to be monitored to ensure that flow is not permitted to bypass the spillway structure.

Photo No.8.

Gravel Extraction:

The Tauranga Taupo has a relatively high gravel and sediment bed load. Prior to development of the Te Rangiita settlement and confinement of the awa to the State Highway bridge, this material would have been distributed across the flood plain/delta by channel migration. Development in this area has led to a need to restrict the migration of the channel and consequently limit its ability to distribute the bed load. Without removal of some gravel, over time the bed will rise, reducing channel capacity, increasing the frequency of flood plain inundation and the likelihood of channel breakout. No extraction of bed material has been undertaken in some time, and accumulations are evident at several locations.

Proposed locations for gravel extraction have been selected based upon the following principles:

1) Locations where accumulation of gravel on inside bends have resulted in significant erosion and/or overtopping to opposing outside bends.
2) Locations upstream of points where flow is impinging directly upon the bank.
3) General extraction from locations where accumulation is significant, and access is straight forward.

Removal of bed material can interrupt the general flow of gravel/sediment downstream, this can be beneficial, in that extraction from easy-to access areas can be utilised to reduce accumulation elsewhere. However, excessive extraction has the potential to result in bed lowering, and subsequent bank collapse. WRC intend to take a conservative approach to gravel extraction to avoid potentially causing problems elsewhere.

Proposed locations are shared in the appendices, however exact locations/requirements are best assessed closer to the time of works and feedback on the locations shown would be appreciated, however we will reach out to stakeholders/owners immediately prior to works.

Environmental Management

The following mitigation methods will be applied at each work site (as applicable). Applicable consent conditions referenced in brackets:

- Site notices will be erected five days prior to works (cc=consent condition 7)
- Public access will not be unduly restricted (cc 8)
- Hours of operation are restricted to Mon-Sat, 8am-6pm max. (cc 11)
- Machinery will be cleaned prior to entering work sites (cc 14)
- Machinery will be operated in accordance with best environmental practice (cc 17)
- A spill prevention plan will be identified and addressed (cc 18-20)
- Best practice for sediment control will be applied (cc 22-30)
- Notification and work plans will be circulated (cc 37-39)

Other mitigation measures include:

- Threatened species and archaeological remains discovery processes will be discussed before each job site commences work.
- Mitigation and enhancement measures for fish habitat will be discussed and implemented where possible.

Primary Consideration of Timing of Works

The Tauranga Taupo River hosts a range of indigenous fish species and is a nationally significant Trout fishery. The planned timing of in-stream works has been limited to the months outside of May to October inclusive. In-river work is proposed to occur after October to ensure work falls outside of the main trout and indigenous fish spawning season. The spring portion of this season is more prone to inclement weather than late summer/autumn. Works dependant upon low flows will generally be timed for later in the season to avoid spring/summer storm events.

Routine maintenance to assets out of the wet river channel and emergency maintenance may be performed at any time throughout the year.

Spraying of nuisance vegetation is most generally effective in spring.Where it can be achieved, spraying would be scheduled for periods when the chemical is most effective on the target species.

Consent Compliance Monitoring

Compliance monitoring takes two forms; on-site health and safety audits and environmental compliance audits.

In addition, all sites are monitored by WRC staff for adherence to the use of environmental best practice as set out in the Best Practice Guidelines. This includes protocols designed to avoid and mitigate adverse effects on the environment, i.e. aquatic life recovery protocols, accidental archaeological discovery protocols, and hydrocarbon spill response protocols.

Biosecurity is of particular concern in the Tauranga Taupo catchment. Machine hygiene protocols are in place to minimise the risk of introducing any aquatic or terrestrial plant or animal pests.

Dust

It is unlikely but should dust become an issue which may result in an objectionable or offensive effect beyond the work site boundary, works shall cease until appropriate dust suppression measures are put in place. These measures may include slowing or minimising vehicle movement, the use of water carts or irrigation on the exposed areas.

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.

In addition, a contingency plan will 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 process

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 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 (RUD) and the Department of Conservation.
- Works shall only re-commence once approval has been obtained by RUD 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.

Archaeological remains discovery process

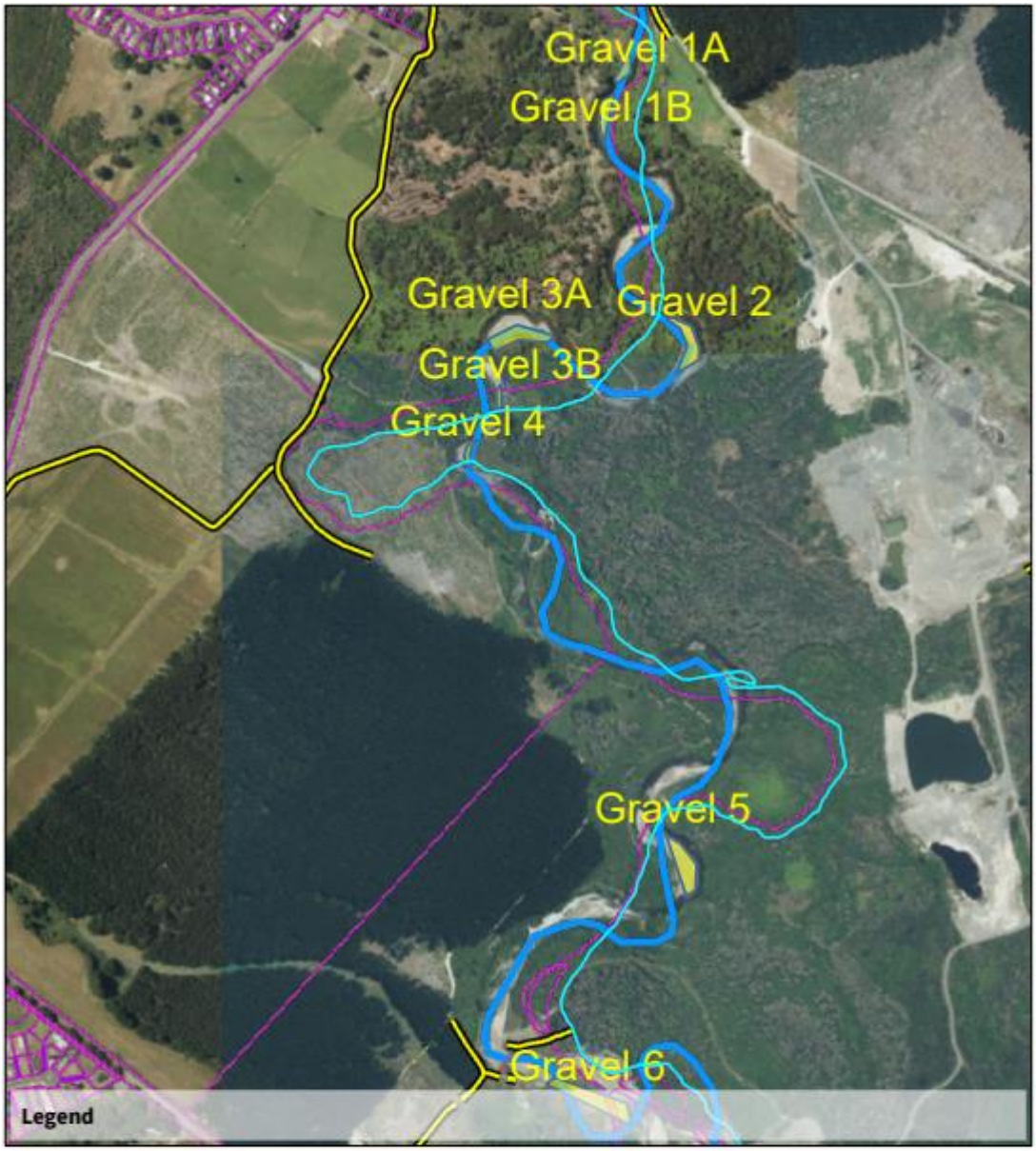
The following procedure **must** be followed by the person responsible for the site (e.g. the ICM Works Supervisor/Project Manager/Contractor):

- Immediately cease all earth moving work and shut down earth disturbing machinery within 10 metres of any part of the discovery. Stay away from the area to avoid any further disturbance.
- Secure the immediate vicinity of the discovery to restrict access and ensure remains are left undisturbed (e.g. by installing a temporary mesh fence).
- As soon as practicable, and within six hours of the discovery, inform:
    - The Director and/or a Section Manager of the ICM Directorate.
    - The ICM Environmental Compliance team.

  Provide them with as much information as possible about the site and what has been uncovered or found on the site.
- As soon as practicable, and within 24 hours of the discovery, ICM shall inform:
    - The appropriate Mana Whenua representative.
    - The Director and/or a Section Manager of RUD.
    - Heritage New Zealand – infonorthern@heritage.org.nz, 09 307 9920.
    - The relevant Territorial Authority.
    - NZ Police if the discovery is of potential human remains.
- ICM shall assist with any investigation as required and proffer a site inspection for initial assessment and response with RUD and all other parties that have expressed an interest in attending.
- If the accidental discovery is of potential human remains the remainder of the process does not apply until the NZ Police confirm they have no further interest.
- Following the site inspection and consultation between all parties, RUD and Heritage NZ will determine the statutory requirements and Mana Whenua will determine cultural requirements.
- Works may only recommence within the area of the discovery upon the written approval of the Resource Use Directorate, after considering the following matters:
    - Mana Whenua interests and values.
    - Protocols agreed upon by Mana Whenua and ICM.
    - ICM's interests.
    - Any Heritage New Zealand authorisations.
    - Any archaeological or scientific evidence; and
    - The assessment of the discovery by a registered archaeologist.

Appendix 1, Gravel extraction sites:

Since the awa is a dynamic environment the precise location of (and need for) extraction sites may alter before work is scheduled (during summer with low water levels.). Recent aerial photos (August 2025) are also included. Wherever possible, gravel will be removed from above the water line during low flow conditions, allowing subsequent flood waters to redistribute material.



2025/2026 Proposed Gravel Extraction Locations

Acknowledgements and Disclaimers
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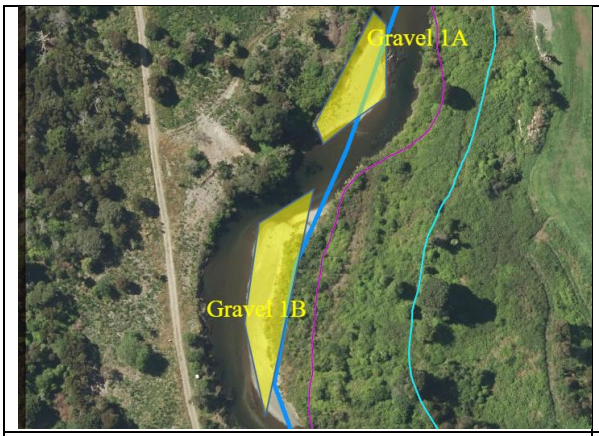
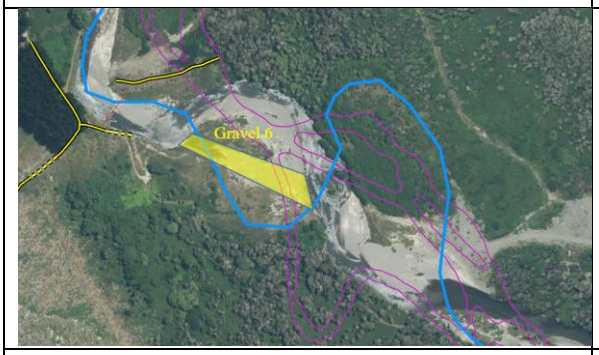
	
Site 1A and 1B	Site 1 lies upstream of the end of the eastern stopbank. (which follows the western side of Hingapo Road). Around the outside of the bend, the bank is protected with rock armour. Accumulations of gravel are directing the channel toward the upstream end of this rock. Gravel extraction can reduce the impact on the left bank in this area.
	
Site 2: (adjacent to the lodge under development off Hingapo Rd)	Significant gravel accumulation on the left bank is applying pressure to the outside bend. Vegetation lodged in the channel currently offers some protection to the right bank, removal of some gravel will reduce the risk of rapid erosion in the event that these logs/trunks become dislodged.
	
Site 3: The uppermost bend where rock	Rapid erosion over the past 5 years has resulted in

groynes have been installed in recent years.	an extremely acute channel alignment. Groynes have reduced migration of the left bank but the tight bend, and material deposited downstream leads to an elevated water surface, spilling onto the floodplain frequently, and causing further erosion when draining back into the channel. We plan to open a channel further right, around where the main channel was located in the late 90s/early 2000s. This will be undertaken by excavating to approximately low flow water level , and allowing flood waters to re-form the bed. The current alignment will likely remain wet for some time with pools that may gradually fill during subsequent flooding events. Site 3b, we will likely need to remove a falling pine, and significant accumulated debris from this location upstream of the bend. While machinery is on site, we would look to open the channel up further left to aid transition into the proposed new "3a" channel.
	
Site 4. Corner at the top of the "DOC reserve" where the anglers access meets the awa.	Similar to site 3, a very sharp bend has formed, Mature willows have been holding this corner in place for some years, however two of these were lost in the last year. A similar solution is proposed by forming a new channel closer to that present in the late 90s/early 2000s.
	
Site 5	This location on the left bank has seen significant

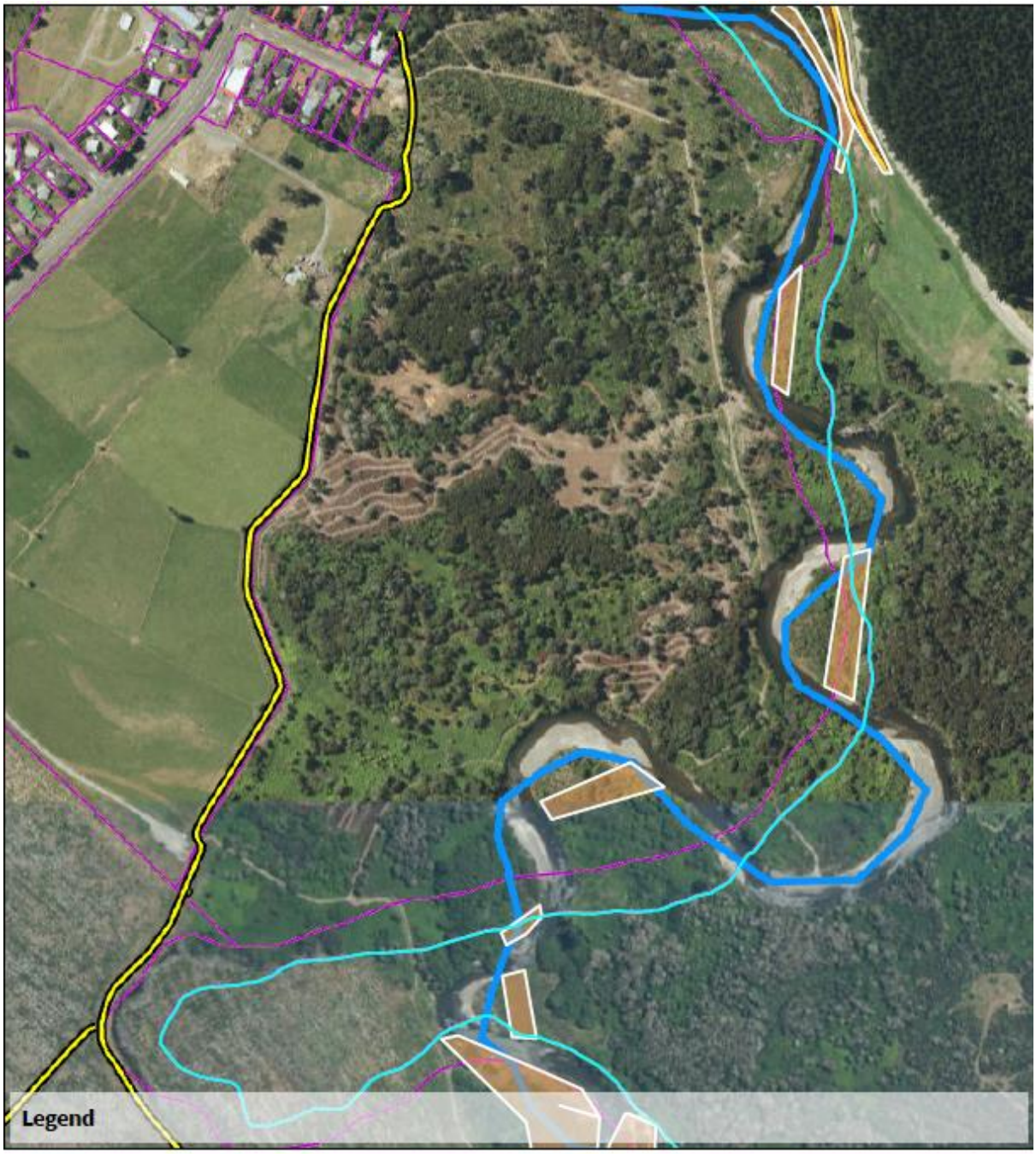
	accumulation of material over the last several years and threatens to extend erosion within the right bank. Access may be limiting and work may not be achievable this year.
	
Site 6	This location lies immediately upstream of Maniapotos bend, the spillway and Kiko swale, leading to Kiko farm. Extraction from this area is important to provide a flood channel with a relatively straight alignment, minimising impact on the right bank upstream, (where breakout could bypass the overflow to Kiko swale,) and left bank where excessive erosion could lead to complete diversion of the main channel down Kiko swale. Furthermore this location is ideal to remove material from the channel before it has the opportunity to obstruct the channel downstream.

Appendix 2, Vegetation Control sites:

The following sites have been identified as requiring removal of vegetation (primarily willow) to allow natural movement of water and bed material (gravel /silt). The scale of works is such that not all works are likely to be possible this year, however these areas will be addressed as resources permit.

3 basic categories of work exist.:

- Clearance of constructed “assets” ie; stopbanks, rock armour, etc. where vegetation threatens to compromise their function. (not all of these are highlighted in this document, spot spraying of gorse, broom, etc. on swales/stopbanks is likely to be necessary.
- Continuation of progressive clearance undertaken over the last 2 years (primarily with inside bends on the right bank in the lower stretches of the scheme. This will overlap with some of the proposed gravel extraction locations.
- Clearance of willows where they are causing significant pressure on opposing banks, and are confining the main channel, and reducing the capacity of flood plain storage.



2025/2026 Vegetation Control locations.

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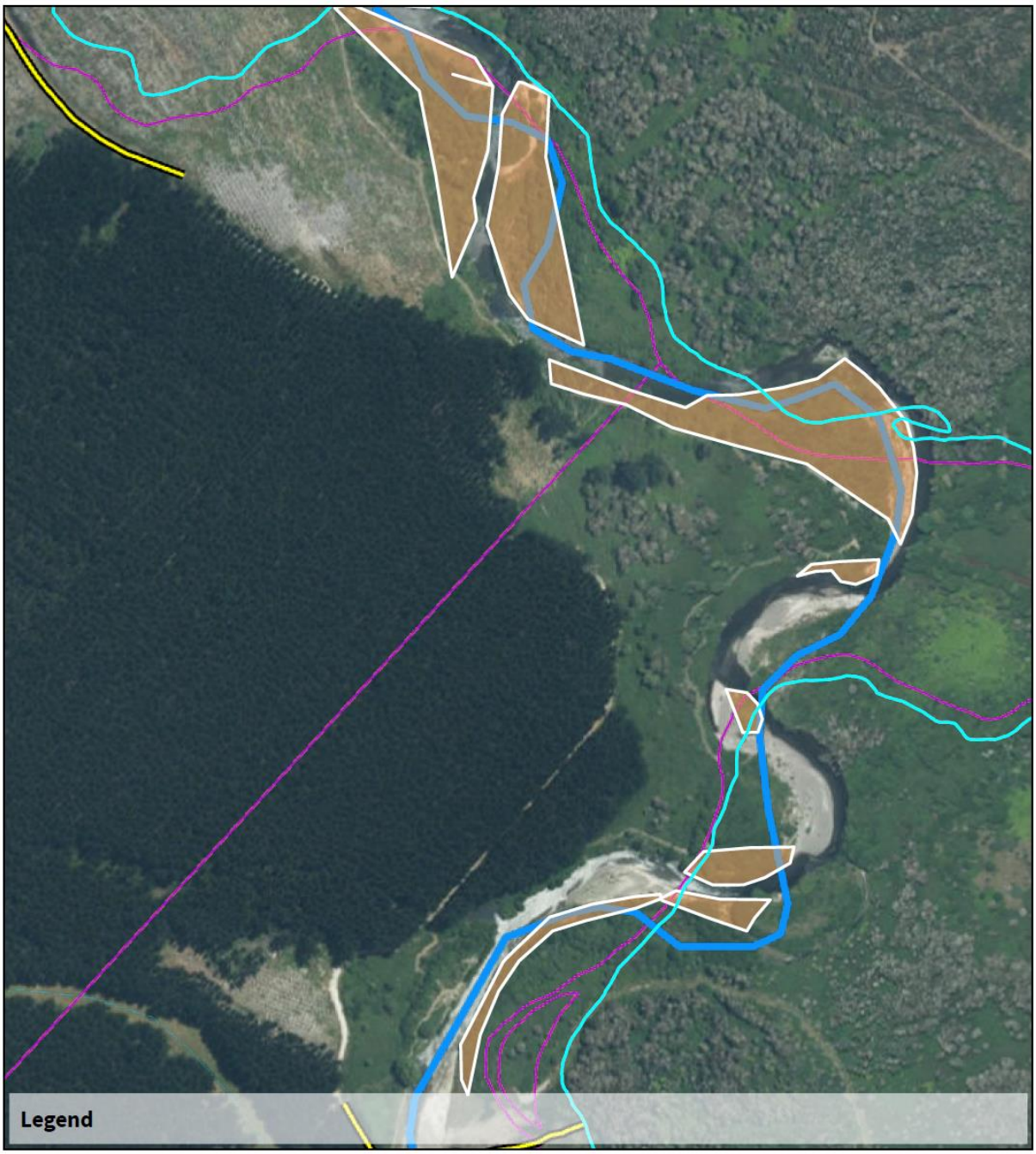

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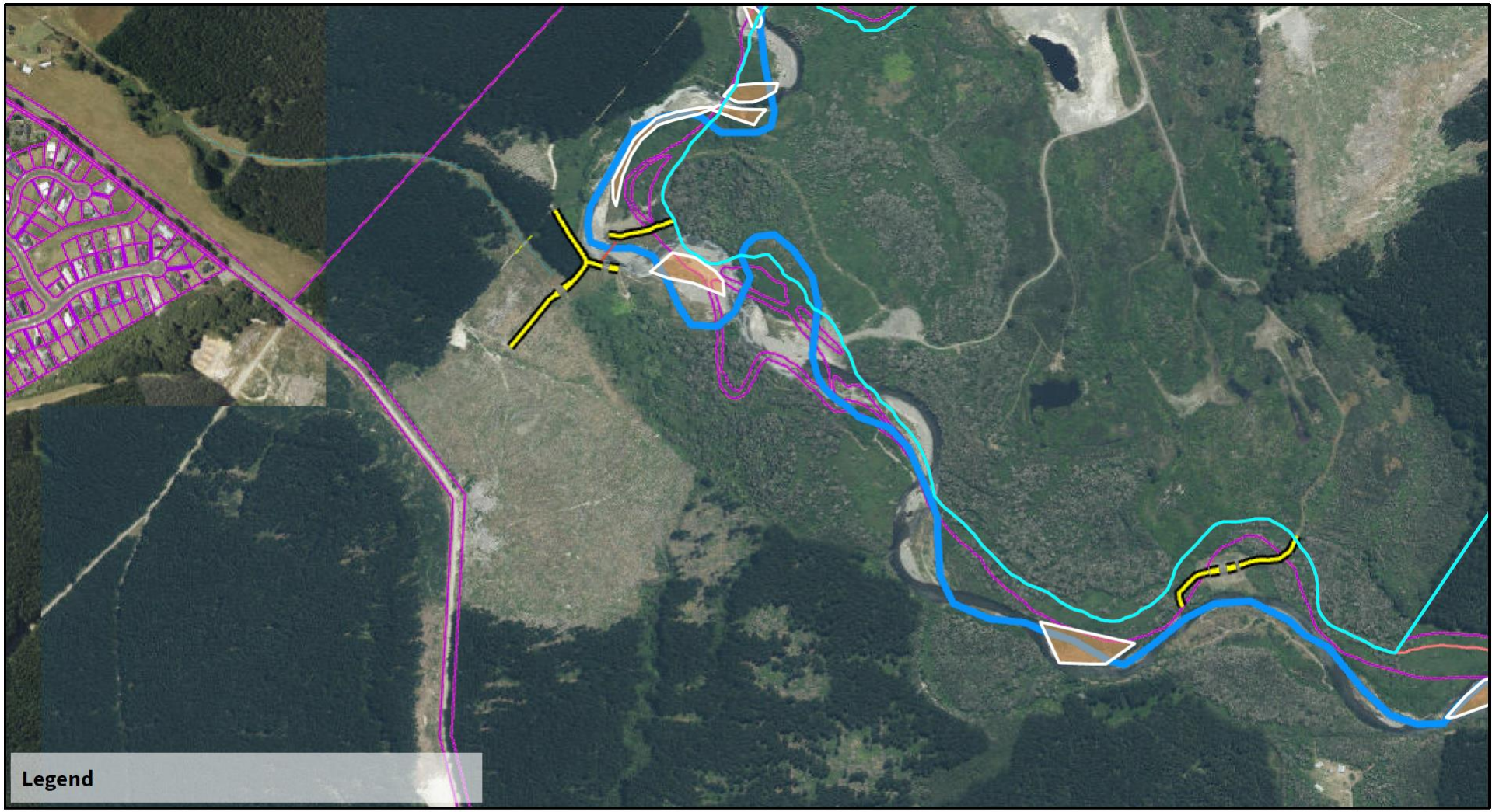

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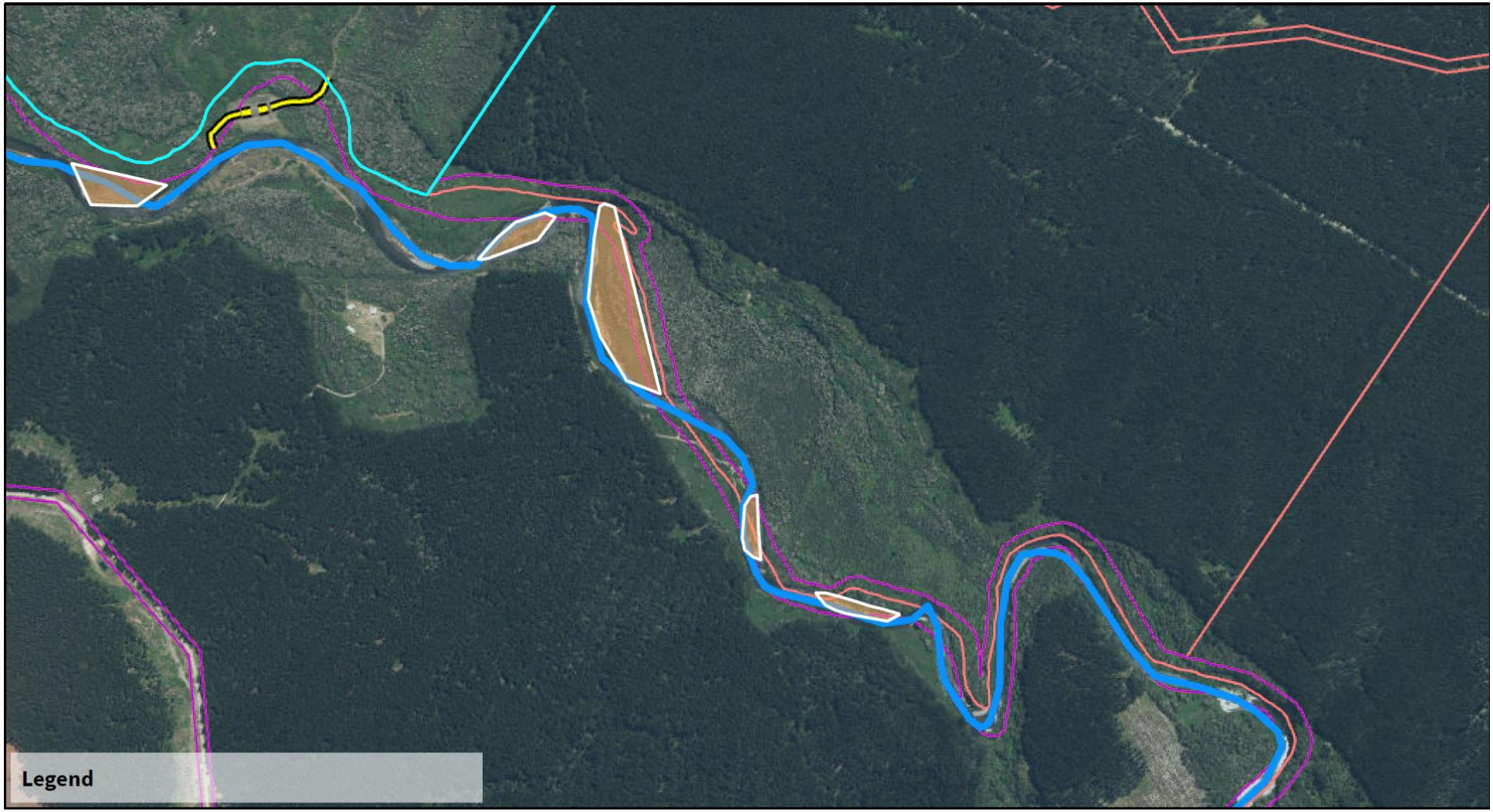

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