Tongariro River

Proposed Annual Works Programme 2018/2019

Stakeholder Version

Waikato REGIONAL COUNCIL
Te Kaunihera ā Rohe o Waikato

Disclaimer

This internal series report has been prepared for the use of Waikato Regional Council as a reference document and as such does not constitute Council's policy.

Council requests that if excerpts or inferences are drawn from this document for further use by individuals or organisations, due care should be taken to ensure that the appropriate context has been preserved, and is accurately reflected and referenced in any subsequent spoken or written communication.

While Waikato Regional Council has exercised all reasonable skill and care in controlling the contents of this report, Council accepts no liability in contract, tort or otherwise, for any loss, damage, injury or expense (whether direct, indirect or consequential) arising out of the provision of this information or its use by you or any other party.

Prepared by:

James Linehan

For:
Waikato Regional Council
Private Bag 3038
Waikato Mail Centre
HAMILTON 3240

Contents

Annual works programme

Introduction

Waikato Regional Council maintains and operates a flood protection scheme on the Tongariro River. The scheme is designed to protect the Turangi community from a 100-year flow event. Continued monitoring and maintenance of stopbanks, river banks, berms, flood plains, floodway and main river channels ensure that the scheme operates to design standards.

Consultation

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

RC #	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.

Consent conditions require the distribution of an 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.

The purpose of this consultation is to:

- Identify proposed works and how they will be managed in accordance with the conditions of consent,
- Allow parties to consider whether the proposed works will impact on specific sites and/or species of significance, and,
- Identify solutions to address any concerns parties may have.

Works Meeting

Pre-works meetings will be scheduled with Works Supervisors, WRC staff, affected parties, and contractors. The purpose of these meetings are to advise interested parties of the works to be undertaken, the methodologies involved and any mitigation measures. This allows interested parties to raise any concerns before work plans are finalised and is seen as a good opportunity to have an informal discussion about any current or future issues.

Scheme Overview

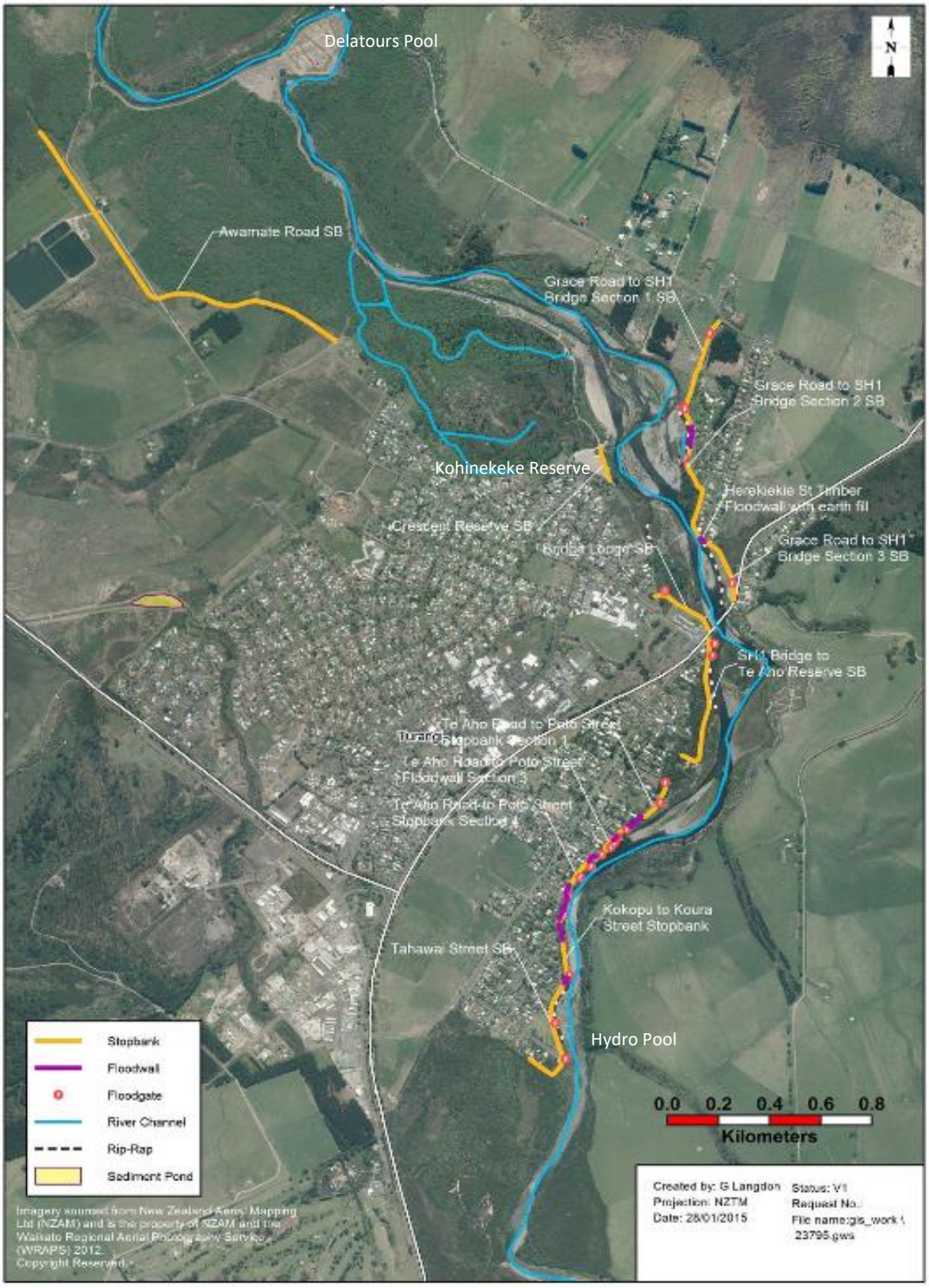

Figure 1: Scheme Overview.

The Tongariro flood protection scheme comprises two separate but integrated features:

- Flood protection stopbanks, which retains design flood flows within the main river channel and associated floodway up to a specified design height. The key management focus is on maintaining the design height and structural integrity of stopbanks to withstand the design conditions.
- River management works, which ensures that the river channel and associated floodway maintains adequate capacity to accommodate the design event. The key management focus is on maintaining a stable channel with adequate capacity.

  The scheme maintenance programme is proposed following surveys, inspections and assessments of the stopbanks and river channel condition and performance.

  This report provides the findings of these surveys and inspections, and recommends implementation of the river management programme for the Tongariro River.

Scheme Assessment May 2018

It is important to note that while the Tongariro River catchment is considered as one of the key factors contributing to the river channel and floodway dynamics, this assessment relates primarily to the flood scheme reaches, and does not extend further upstream or downstream.

The inspections and assessment were undertaken by the Taupo Zone River Management Officer, Taupo Zone Manager, ICM's Principal Technical Advisor Ghassan Basheer and Tonkin and Taylor Consultants' Senior Environmental Engineer David Bauma. Both Ghassan Basheer and David Bouma have been involved in the investigations, design, and construction of the Tongariro River Scheme. They have also kept an overview of all changes and reviews of the scheme.

Tongariro River Reach - (Hydro Pool to State Highway 1 Bridge)

This reach of the river starts upstream of the Kutai Street/Tahawai Street stopbank along the true left bank of the river. The pool is shallow, wide and accessible from the left bank above the stopbanks section. The river bank along the Tahawai Street stopbank is on a bend and is protected by a rock revetment. A prominent deep river channel runs hard against the rock protection and a shallow narrow flanks the right of a central gravel island. Works have been performed to divert part of the river flow through the right by enlarging the channel and by creating a partial flow barrier. The barrier is simply river boulders placed strategically in the wide and shallow pool above to deflect the flow to the right channel.

The teams' observations included the following:

- Channel widening works have helped to direct flow into the right, however, the majority of the flow is continuing to be directed into the left channel, which potentially could undermine the rock revetment along the left bank.
- The channel along the right side of the island is getting infilled with gravel during high flows.

It is recommended that the river channel design opposite Tahawai street stopbank be re-established by firstly removing any vegetation and then shifting or removing gravel to form the right channel.

Further downstream from Tahawai Street to Taupahi Reserve, the river channel is generally confined and stable.

The teams' observations included the following:

- No river bank erosion was evident.
- No deposition of gravel and bed material was evident.
- No significant vegetation growth was observed to affect the channel and floodway capacity.

No specific work is required within this section.

Downstream of Taupahi Reserve to SH 1 Bridge, the channel is wide with significant gravel islands in the middle. These islands are well established with significant vegetation growth. The vegetation also causes further deposition of bed material, which reduces the river channel capacity to accommodate floods within the design levels. The vegetation is also expected to wash out under severe flood conditions and build up a debris barrier under the Bridge. This situation occurred during 2004 flood causing the bridge to be closed due to risk of failure.

The teams' observations included the following:

- Significant tree and vegetation growth in the islands upstream of the bridge.
- Gravel and boulder accumulation forming diversions within the floodway.
- Some erosion along the right bank

It is recommended that trees and vegetation are controlled and reduced through a vegetative growth management programme. Also, some minor gravel management to ensure flows are spread across the different channels, thereby reducing the risks of bank erosion.

The team has also made the following general observation along the whole reach:

- Undesirable vegetation has established within the rock protection that protect areas of the true left bank. This vegetation is a threat to the structural integrity of the revetment and stability of the river bank and stopbanks.

It is recommended that vegetation growth control and removal of undesirable plants should be included within the maintenance programme. Such work should be undertaken gradually, potentially along with planting other plant species to ensure soil conservation and bank stability.

Tongariro River Reach - (State Highway 1 Bridge to De Latours Pool)

This reach is considered the head of an actively building fan dominated by greywacke gravels and boulders with some "volcanic" stones from the Tongariro ranges. The gravels, are flushed downstream in pulses during freshes and generally move to below the SH1 Bridge. Splitting and reforming of channels in this reach is a function of progressive gravel deposition and channel (banks and bed) erosion. The scale of these changes in river channel and floodway is limited by the physical (topography, bed and bank geological formation, structures, vegetation, etc) and hydraulic (flow, velocity, catchment hydrology, etc) constraints along the reach.

The teams' observations included the following:

- The river channel section extending approximately 200 m from a point immediately downstream of SH1 Bridge, was infilled and the whole flow diverted into a deep channel

hard against the right bank. The right bank is protected by a rock wall, however this was subsiding due to bed erosion and under cutting.

The team recommended to remove the gravel, open the main channel through the middle and fill the deep channel with the gravel removed.

- This work was completed in April 2018.

Further widening is recommended. This can be achieved by removing gravel from the left side of the channel and stockpiling the material against the left bank, for removal out of the floodway. The additional width required is assessed to be 4 meters at a minimum depth of 1m.

The river channel section extending between Te Herekiekie Street and downstream end of the Tongaririo Lodge stopbank is significantly wide with a large central island. The island is heavily vegetated in the middle and has two channels on either side interconnected by other smaller channels/overflows. Over the last 3 years, the left side channel has been actively deepening and widening causing significant erosion of the left bank. While natural, these changes in river channel are the source of instability.

The teams' observation included the following:

- Significant erosion of the river bank along the Kohinekeke Reserve.
- Islands formed in the middle have established vegetation, which attracts further deposition and diversion of flows onto the side channels.
- The reduced conveyance capacity resulting from bed material deposition is being compensated for by widening and deepening of the left channel by way of erosion.
- Undesirable vegetation at some locations is causing opposite bank erosion.

It is recommended that the channel stability be restored through a gravel management and vegetation management programme. These should include opening a wide channel within the gravel islands taking the shape of the current meander of the islands. Removal and control of vegetation growth on the island and planting the river banks with appropriate plant species.

Proposed Works 2018-2019

Nature of Proposed Works

Proposed works for the 2018/2019 season involves gravel island, riparian margin and flood scheme asset vegetation control, along with gravel management. The locations of the proposed works are outlined in (Figure: 2, 3 & 4). These are considered the most appropriate strategies to maintain the design standards of the Tongariro River flood protection scheme. Other works may include stopbank and general asset maintenance.

Primary Consideration of Timing of Works

The Tongariro River is a nationally significant Trout fishery and also hosts a range of indigenous fish species. As such the timing of consented in-stream works are limited to the months outside of May to October inclusive. 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 most of the works will be scheduled for mid to late summer. This will also coincide with seasonal low river levels. Representatives from DoC will be consulted at various stages 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 and local experts will be maintained to minimise any disturbance.

Tuwharetoa Maori Trust Board and Ngati Turangitukua, as holders of mana whenua of the river and surrounding land, will be consulted on all river works. After the consultation and works are agreed and finalised representatives will be contacted to ensure the timing is appropriate. In addition, condition 38 of this consent requires works to cease immediately if any cultural site is identified and further action must be undertaken before any work will resume. These actions will be undertaken with the full engagement of Ngati Turangitukua representatives.

Vegetation Management

In recent years woody vegetation growth has increased through the river floodway. Vegetation has grown to a size that will impact on flood flow capacity. There is a requirement for ongoing management of larger woody species both in the riparian area and within the channel where woody debris has resulted in the build-up of gravel and a consequent re-direction of river flows. Management of this vegetation is also necessary to ensure that high flow events do not result in large accumulations of woody debris in downstream reaches where they have the potential to significantly undermine the SH1 Bridge and damage the flood protection structures in and around Turangi Township.

Scheme focused vegetation management objectives within the floodway align well with other stakeholder aspirations and a collaborative approach will be sought.

Gravel Management

To ensure an effective floodway, gravel occasionally needs to be moved within or from the bed of the river channel. Rapid gravel deposition at the locations outlined in (Figure: 2) is accelerating stopbank/riverbank erosion, threatening channel stability and reducing flood scheme capacity. The focus will be to encourage a more even distribution of flow (during high flow events) through this reach by opening a wide channel within the gravel island taking the shape of the current meander. It is estimated that between 60,000-80,000 cubic meters of gravel needs to be removed from the system to achieve this objective.

.

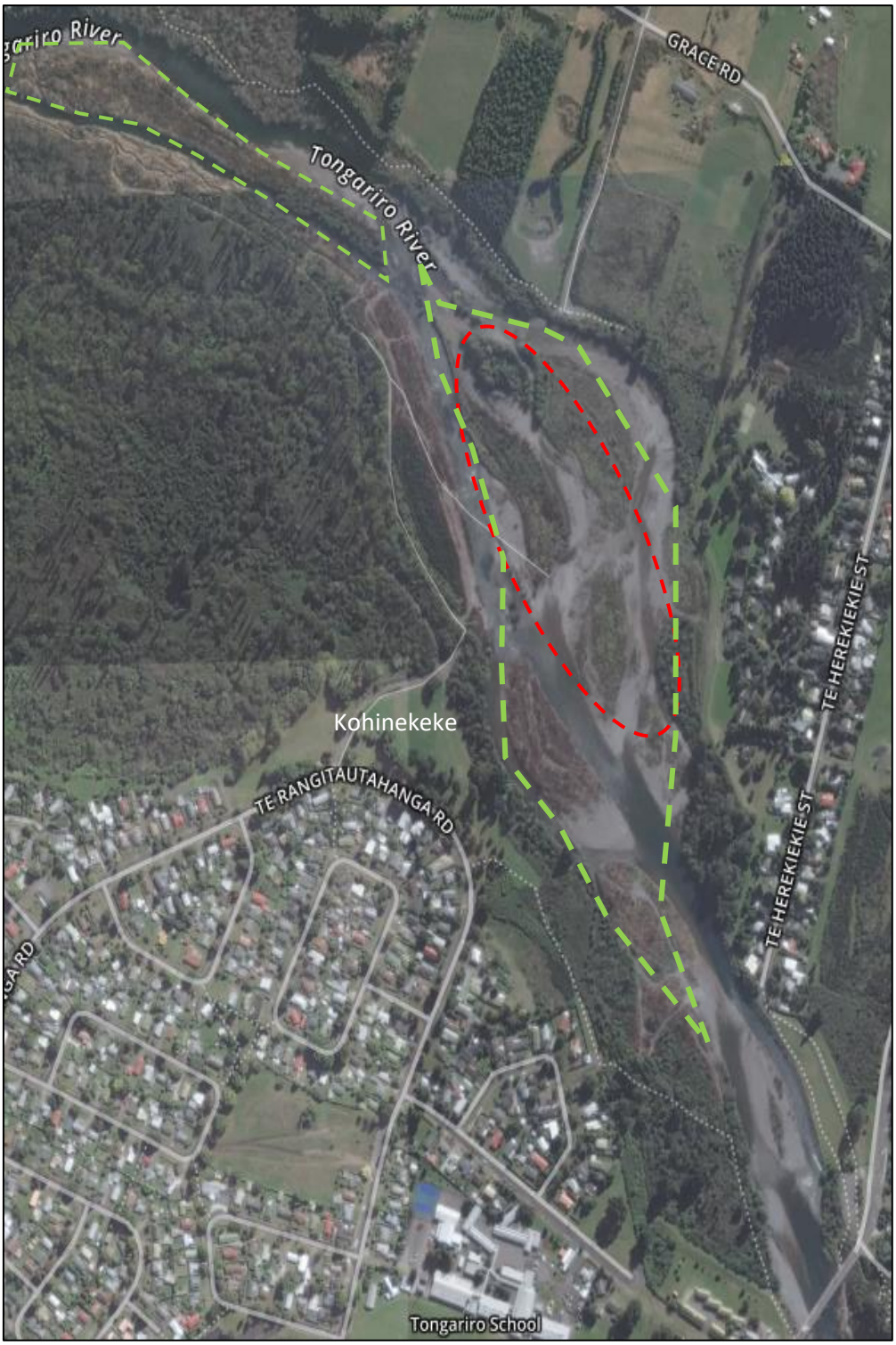

Figure 2: Proposed works locations down river of SH1 Bridge. Red: Gravel management Zone. Green: Vegetation Management.

Figure 3: Proposed works locations up river of SH1 Bridge. Green: Vegetation Management.

Tahawai St Revetment

Flows through the constricted true left channel are putting pressure on the Tahawai St Revetment, especially during high flow events. In places the base of the revetment is showing early signs of slumping and re-settling due to undercutting (Figure: 4). Widening of the true right channel last summer has helped to reduce pressure on the revetment however further work is needed to ensure the stability of the rock wall.

Vegetation clearance is necessary on the gravel island to increase scheme capacity, reduce gravel build up and allow for better assessment and access while widening of the true right channel will reduce pressure on the rock wall especially during high flow events.

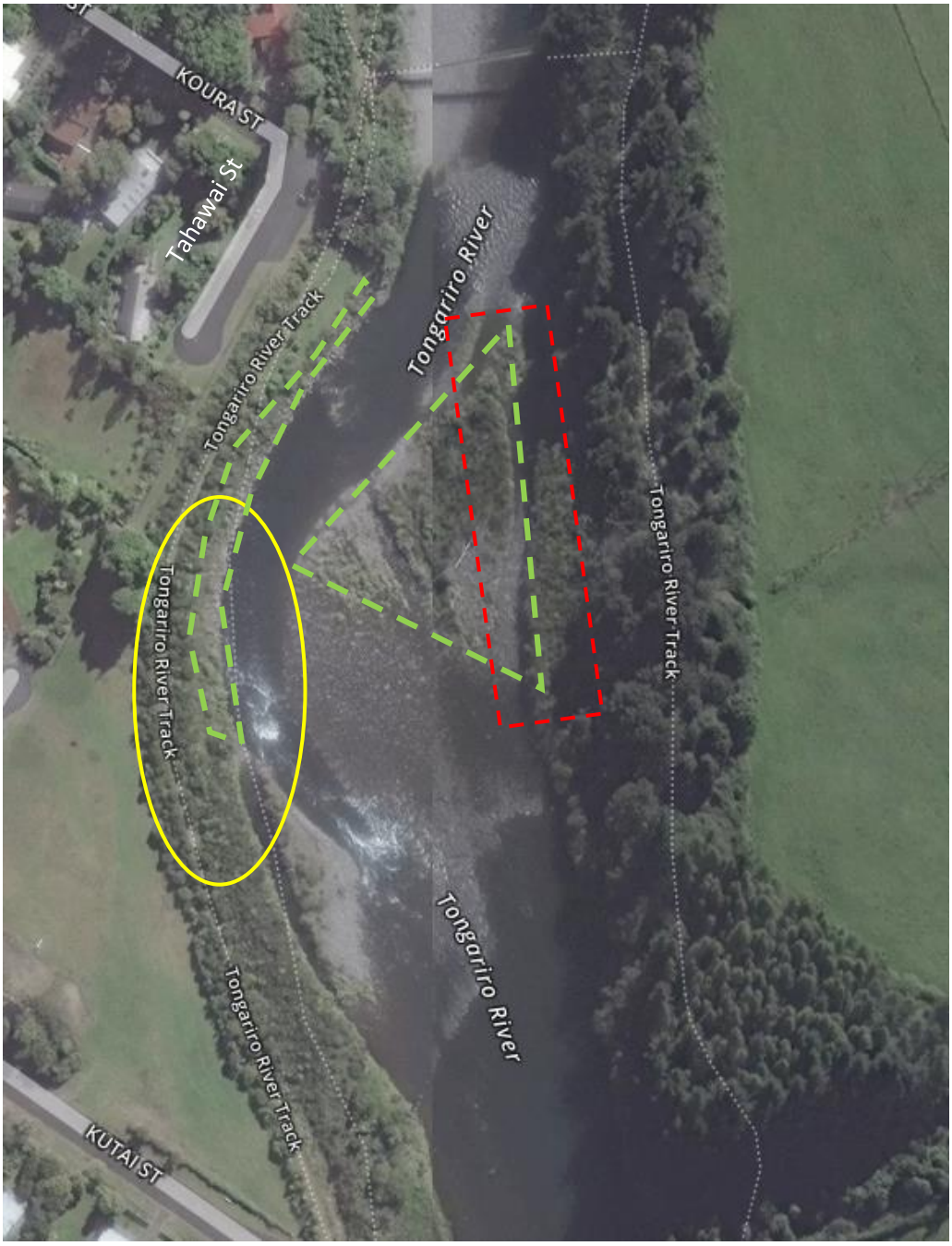

Figure 4: Proposed works adjacent Tahawai St Revetment. Red: Gravel management Zone. Green: Vegetation Management. Yellow: Area of concern.

Emergency Works

Works undertaken in accordance with Section 330 of the Resource Management Act 1991 in response to a sudden event causing or likely to cause loss of life, injury, or serious damage to property. Emergency works are not subject to the provisions of these consents (RC 121306, 121306).

In this case of an emergency (such as imminent flooding) every effort will be taken to notify representatives from the concerned parties.

Monitoring and Mitigation

All works will be carried out in accordance with the conditions of these consents.

All works will be carried out in accordance with Waikato Regional Council's Best Practice Environmental Guidelines – Vegetation Management & Instream Works.

To adhere to specific consent conditions (referenced in brackets) the following mitigation strategies will be applied,

- Site notices will be erected 5 days prior to works (c 7)
- Public access will not be unduly restricted (c 8)
- Hours of operation are restricted Mon-Sat, 8am-6pm max (c 11)
- Machinery will be cleaned prior to entering work site (c 14)
- Machinery will be operated in accordance with best practice (c 17)
- Spill prevention plan will be identified and addressed (c18-20)
- Best practice for sediment control will be applied (c 22-28, 29-30)
- Notification and work plan will be circulated (37-39)

Other mitigation strategies 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.

Consent Compliance Monitoring

A resource consent compliance monitoring regime has been developed in consultation with the Resource Use Directorate (RUD). The Integrated Catchment Management Environmental team will be implementing this process.

All relevant resource consent conditions will be monitored and assessed. A Compliance Audit Report will be drafted, and reviewed by RUD prior to approval. This report will identify any areas of non-compliance and identify any remedial actions undertaken to rectify this non-compliance.

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

Vegetation Management

It is expected that a variety of vegetation management strategies will be implemented including mechanical and chemical. As stipulated by permitted activity rules, notification for any spray works will be via advertisements placed in local papers advising of the programme. In addition, appropriate signage will be in place in the days leading up to spray programme as well as while the spraying is being undertaken. Affected landowners will be directly notified of the program and timing. This includes Ngati Turangitukua through their environment committee. If chemicals are used they will be assessed to be appropriate for the site and purpose. All spraying will be undertaken by contractors with Registered Chemical Applicators accreditation.

Dust

It is expected that dust emissions from these works will be minimal. However, 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 the use of water carts or irrigation on the exposed areas; and slowing or minimising vehicle movement.

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 water way.

Spill prevention and response activities will be undertaken in accordance with the Waikato Regional Council's Oil Spill Contingency Guidelines – Integrated Catchment Management Directorate.

In addition, a contingency plan will be submitted to RUD in conjunction with each notification to ensure all equipment on site will be able to deal with a containment spill, sufficient procedures are in place in the event of a containment spill, and interested and affected parties are notified such as the Waikato Regional Council, Department of Conservation, Emergency Services, and potentially affected water users and landowners.

Detailed spill prevention and response plans for each contract will be undertaken as part of the contract process. This plan will include lists of hazardous materials such as fuels, measures undertaken to prevent spills, work site map showing refuelling locations and fuel storage areas.

Riparian Planting

Condition 37 (e) of the consent relates to consulting on any proposed riparian planting. Riparian management throughout the scheme includes targeting pest plant species which threaten to invade and dominate in this environment. Native low growing species such as Carex sp. and Toi Toi will be encouraged to establish throughout the scheme. These are largely self-sown. Previous native planting along stopbanks will continue to be maintained, with weed species (particularly broom and gorse) being controlled.

Ngati Turangitukua will be included in the planning of any future native revegetation programmes.

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 small area where work is being carried out to ensure public safety.

Fish Habitat

Trout breed in low gradient gravel-bottomed streams between late winter and early spring. The Brown peak spawning period is slightly earlier than that for rainbow trout but both spawning periods are encompassed within the instream works restriction period under the Regional Plan section 4.2.21. After hatching the young fry move into slow flowing habitats for a few months before moving into the main channels. Trout do best in cool, clear and well oxygenated waters where they can easily detect prey visually.

Woody vegetation removal and gravel management have the potential to impact on trout populations through habitat disturbance, habitat loss and decreases in water quality. The effects of the proposed management practices are expected to be short term and minimal. Known habitat preferences and distribution supported by advice from DoC and local fishing authorities will help minimise adverse effects to trout populations.

The mitigation measure outlined below will also help ensure the health of native fish species.

ACTIVITY TYPE	MITIGATION HIERARCHY			
	Avoidance	**Minimisation**	**Rehabilitation**	**Offset**
Woody vegetation removal	Adhere to appropriate timing restrictions.	Minimise disturbance of -wetted channel -riffle & boulder/pool habitat -instream structures -backwaters/side channels Undertake work at a permitted activity level wherever possible.	Undertake riparian enhancement Install instream structure	Undertake riparian enhancement
Gravel management	Adhere to appropriate timing restrictions.	Minimise disturbance of -wetted channel -riffle & boulder/pool habitat -instream structures -backwaters/side channels Undertake fish recovery operations for any channel diversions in significant trout habitats.	Where applicable apply methods to improve trout habitat.	
Erosion control structures	Adhere to appropriate timing restrictions.	Minimise disturbance of -wetted channel -riffle & boulder/pool habitat -instream structures -backwaters/side channels		

Table 1 Green measures will be implemented when value is known to be present; Red measures will be implemented at the discretion of operational staff: Blue measures will be implemented through Habitat Enhancement Plans or predetermined mitigation packages.

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 team (Senior Environmental Officer or Environmental Officer. In their absence notify the Team Leader, Regional Hazards and Environmental Compliance; or Sectional Manager, business services) as soon as practicable following the discovery.
- Within 24 hours of the discovery, the ICM Environmental Officer (or delegate) shall inform the Waikato Regional Council's Resource Use directorate (RU) and the Department of Conservation.
- Works shall only re-commence once approval has been obtained by RU directorate following their consultation with the Department of Conservation.

The process described above will be discussed at the pre-operations meeting held at the beginning of each works season. A quick-ID guide will be provided to operations staff to assist with identifying "threatened" species that may be present at a site. The presence of "threatened" species may also be detected through presence/absence surveys or desktop ecological assessments of each site prior to any works being undertaken. In this situation steps 2-4 in the above process will be triggered.

Archaeological remains discovery process

In the event that archaeological remains are discovered at the works site, the following process shall occur (in accordance with condition 18) and the ICM Directorate Accidental Archaeological Discovery Protocol (see Discover#10648616).

When an accidental discovery occurs, it is important to immediately cease all earthworks within 10 metres of the discovery, and stay away from the area to avoid any further disturbance. If there is any doubt regarding the historic nature of the discovery, always take a cautious approach by assuming it is an archaeological discovery until advised otherwise.
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 and/or cultural remains are left undisturbed (e.g. by installing a temporary mesh fence).
- As soon as practicable, and within 6 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 Director and/or a Section Manager of the Resource Use Directorate (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; and
    - The appropriate Mana Whenua representative.
- ICM shall assist with any investigation as required, and proffer a site inspection for initial assessment and response with the RUD, and all other parties that have expressed an interest to attend.
- 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.

At the pre-construction meeting, the above process will be discussed.

Appendix 1: Resource consent conditions

Resource Consent Numbers 121305 and 121306

1. The activities authorised by this consent shall be undertaken in general accordance with the documents titled *"Land Use & Water Resource Consent Application and Assessment of Environmental Effects for the Tongariro River Gravel Management - Revised October 2010"*, Sherie McHardy, Taupo Planning Consultant & Design Services except as otherwise identified in the following resource consent conditions.

2. A copy of this resource consent shall be kept onsite at all times that physical works authorised by this consent are being undertaken, and shall be produced without unreasonable delay upon request from a servant or agent of the Waikato Regional Council.

3. The Consent Holder shall notify the Waikato Regional Council in writing of the commencement of activities authorised by this consent, at least 5 days prior to discrete sections of work authorised by this consent commencing.

4. The Consent Holder shall appoint a representative(s) prior to the exercise of this resource consent, who shall be the Waikato Regional Council's principal contact person(s) in regard to matters relating to this resource consent. The Consent Holder shall inform the Waikato Regional Council of the representative's name and how they can be contacted at least 1 working day prior to the commencement of the works authorised by this resource consent. Should the representative(s) change during the term of this resource consent, the Consent Holder shall immediately inform the Waikato Regional Council and shall also give written notice to the Waikato Regional Council of the new representative's name and contact details.

5. The Consent Holder shall arrange and conduct a pre-works site meeting each year that works are proposed and invite, with a minimum of 10 working days notice, the parties listed in condition 38, the Waikato Regional Council Resource Use Group, the site representative(s) appointed under condition 4 of this consent, the contractor if known, and any other party representing the consent holder, prior to commencing the consultative phase of each Proposed Annual Works Programme detailed in condition 37 below.

   Advice Note: *In the case that any of the invited parties, other than the site representative does not attend this meeting, the consent holder will have complied with this condition, provided the invitation requirement is met.*

6. The Consent Holder shall be responsible for all contracted operations related to the exercise of this resource consent, and shall ensure contractors are made aware of the conditions of this resource consent relevant to their work area, and comply with those conditions.

   Notices

7. The Consent Holder shall erect and maintain notices upstream and downstream of each section of the works not less than 5 working days prior to the commencement of the works. These notices shall provide appropriate warning of:

   a) the proposed works;
   b) any relevant safety advice;
   c) the period over which these works will be occurring.

Access to Tongariro River

8. The Consent Holder shall, in respect of the works authorised by this resource consent, maintain any existing public access at any location where works authorised by this consent are carried out except where the public are required to be excluded for safety purposes. In the latter situation, every effort must be made to ensure that through or by-pass access to up or down river locations is either available or provided.

Timing of works

9. Works authorised by this consent shall not be undertaken in the wet river channel during the months May to October inclusive each year, except where:
    a) flood flows have resulted in stopbank freeboard loss and the remaining freeboard in the reach upstream of the bridge being less than 150mm and/or the remaining freeboard in the reach downstream of the bridge being less than 400mm; or,
    b) there is a reduction in a cross sectional area which is more than the product of 0.30 times the design width at the design flood level, or
    c) erosion control works to maintain the integrity of the Tongariro River Flood Control Scheme are required.

10. The Consent Holder shall provide survey information to the Waikato Regional Council confirming the trigger levels set in 9a or 9b above have been met prior to undertaking works provided by condition 9.

11. Works may be undertaken up to a maximum of 10 hours per day during the period 8am to 6pm; and, up to six days per week Monday to Saturday. No works shall be undertaken on a Sunday or a Public Holiday.

12. The Department of Conservation shall be notified prior to any works occurring during the months of May to October.

13. The Consent Holder shall check daily and weekly weather forecasts. In the event of a rain forecast which could result in flood flows which may, in conjunction with undertaking the works authorised by this consent, adversely affect the Tongariro River environment, the works shall be postponed, or be suspended if already commenced, and all machinery shall be removed from the river bed and flood plain until the identified flood risk has passed.

Machinery maintenance and hazardous substances spill prevention and response plan

14. The Consent Holder shall ensure that all machinery used in the exercising of this consent is cleaned prior to being transported to the construction site to ensure that all seed and/or plant matter has been removed.

15. All machinery, including bulldozers, loaders, diggers and trucks, shall be operated in a manner so as to minimise time spent in flowing water.

16. No river-bed material extraction shall be undertaken in flowing water.

17. The Consent Holder shall ensure that all machinery shall be maintained and operated in a manner which ensures that spillages of fuel, oil and similar contaminants are prevented. Particular care shall be taken during refuelling and machinery servicing and maintenance. Such activities shall be carried out away from any water body and in such a manner that any spillage can be contained so it does not enter the Tongariro River.

18. The Consent Holder shall provide the Waikato Regional Council with a "Spill Prevention and Response Plan" at least 20 working days prior to the commencement of activities authorised by this consent. This Plan shall be submitted to the Waikato Regional Council for their written approval, acting in a technical certification capacity. The aim of the Plan shall be to minimise the possibility of contamination of water. This Plan shall address, but not necessarily be limited to, the following matters:
    a) a list of the hazardous materials and their quantities kept on site and their storage details;
    b) the prevention measures that will be undertaken on site in order to avoid a spill of hazardous materials;
    c) the equipment available to contain and/or remove spills of hazardous materials;
    d) specific procedures and measures that will be undertaken when machinery is operating within close proximity to water bodies that are designed to minimise the risk of any spillages or significant leakages of hazardous materials entering the water body;
    e) the training staff will receive in the use of hazardous materials spill prevention, containment and clean up measures and associated equipment;
    f) how the disposal of any contaminated materials arising from spills or leakages of hazardous materials will be undertaken; and,
    g) the procedures involved in reporting of any such incidents to the Waikato Regional Council.

19. The Consent Holder shall in exercising this consent comply with the approved "Spill Prevention and Response Plan". Any subsequent changes to the "Spill Prevention and Response Plan" shall only be made with the prior written approval of the Waikato Regional Council, acting in a technical certification capacity.

20. The Consent Holder shall notify the Waikato Regional Council and the Department of Conservation as soon as is practicable, and as a minimum requirement within 12 hours, of the Consent Holder becoming aware of a spill of hazardous materials, fuel, oil, hydraulic fluid or other similar contaminants. The Consent Holder shall, within 7 days of the incident occurring, provide a written report to the Waikato Regional Council, identifying the following:

    a) the possible causes;
    b) steps undertaken to remedy the effects of the incident; and,
    c) any additional measures that will be undertaken to avoid future spills.

Responsibility for erosion control works

21. The Consent Holder shall be responsible for the provision and maintenance of any erosion control works that may be necessary as a result of the exercise of this resource consent.

Sediment control and debris removal

22. The Consent Holder shall ensure that sediment losses to natural water arising from the exercise of this resource consent are minimised for the duration of the works and during the term of this consent.

23. Stormwater runoff from the river-bed material extraction area access road shall be controlled to such an extent that it is discharged into the ground and not discharged directly into the Tongariro River.

24. River-bed material shall only be removed below the adjacent River water level when the excavation site is bunded from direct surface connection with the River.

25. Excavations below water level shall be backfilled to a level not deeper than 1m below the adjacent river channel water level using river bed material from within the site. Inlet and outlet channels shall be provided to a depth similar to that of the completed backfilled area to maximise continuous river flows through the site. A minimum buffer of 10m from the undisturbed river channels shall be left intact.

26. Debris collected during river-bed material extraction shall be removed from the river bed and the floodplain of the river.

27. Should the works authorised by this consent cause a conspicuous change in the visual clarity of the river after a mixing distance of 100 metres downstream from the activity, then the consent holder or its delegate shall measure the concentration of suspended solids in the river at this location and upstream from the activity and provide those measurements to the Waikato Regional Council within 10 working days.

28. The activities authorised by this consent shall not result in any of the following standards in the Tongariro River being breached after reasonable mixing and at a point 100m downstream of the works:

    a) black disc horizontal visibility less than 1.6 metres;
    b) a conspicuous change in the visual clarity of the river;
    c) An increase in the concentration of suspended solids above 25g/m^3 after a mixing distance of 100 metres downstream from the activity except when the concentration of suspended solids in the Tongariro River above the work site is greater than 25g/m^3. Then there shall not be any increase in the Tongariro River suspended solids concentration as a result of the activity.

Flow diversion and re-contouring

29. The Consent Holder shall, immediately after the construction of each temporary diversion bund either maintain fish passage past the bund or, in conjunction with the Department of Conservation, salvage any fish stranded in pools in the diverted section of river channel and return them to the main channel of the Tongariro River.

30. Except as provided for by conditions 24-25, on completion of river-bed material extraction at any one location, the Consent Holder shall re-contour the surface of the extraction area back to its original form, to the satisfaction of an officer of the Waikato Regional Council's Resource Use Group.

Erosion control structures

31. Structures and floodways in the immediate vicinity of structures shall be maintained clear of debris.

32. Structures shall not decrease the cross sectional area of the river.

33. All construction materials and equipment shall be removed from the river upon completion of the activity.

34. Where the weight of the structure is insufficient to keep it in place it shall be permanently anchored to the bed of the river.

35. All structures shall be maintained in a structurally sound condition at all times.

Dust emissions

36. All activities undertaken on site shall be conducted and managed in a manner that ensures that all dust emissions are kept to a practicable minimum. To this end there shall be no discharge of dust as a result of the activities authorised by this consent that causes an objectionable or offensive effect beyond the boundary of the property on which works are authorised by this consent.

Proposed annual works programme

37. The Consent Holder shall prepare a Proposed Annual Works Programme including (but not limited to) the following:

    a) details of scheduled works and maintenance requirements authorised by this consent that are to be carried out for the 12 months commencing 1 November including a description of the nature, scale and location of the works; and
    b) the proposed timing of the works; and
    c) any contingency procedures that may be required for specific activities; and
    d) any specific mitigation measures that will be undertaken; and
    e) riparian planting proposed using eco-sourced indigenous plants;

    Any changes to the Proposed Annual Works Programme (with the exception of works required to be undertaken without delay, for example, unscheduled works in response to flood events) shall be advised in writing by the Consent Holder to the Waikato Regional Council within 10 working days of the work commencing.

38. The Consent Holder shall distribute the Proposed Annual Works Programme required by condition 37, to the following parties on or before 30 June each year requesting comment(s) on the proposed works (if any) to be provided in writing within 20 working days of receipt:

    a) Department of Conservation;
    b) Tongariro and Lake Taupo Anglers Club Inc.;
    c) Advocates for the Tongariro River;
    d) Taupo Fishery Advisory Committee via DOC;
    e) Tuwharetoa Maori Trust Board; and
    f) Ngati Turangitukua,
    g) Genesis Energy; and,
    h) Waipapa and Tokaanu Maori Lands Trust.

    Comments received by the Consent Holder from the above parties regarding the proposed works shall be copied to the Waikato Regional Council.
    Any changes to the Proposed Annual Works Programme (with the exception of works required to be undertaken without delay, for example, unscheduled works in response to flood events) shall be advised in writing to the groups listed in this condition.

39. The Consent Holder shall address any comments from the parties listed in condition 38, and upon completion of any related changes to the Proposed Annual Works Programme, advise these parties in writing of any changes. The Consent Holder shall submit the Proposed Annual Works Programme to the Waikato Regional Council prior to 1 October annually. The Consent Holder shall not commence these works until the Proposed Annual Works Programme has been approved by the Waikato Regional Council acting in a technical certification capacity.

Tangata whenua values

38. In the event that any archaeological remains are discovered, the works shall cease immediately in the vicinity of the discovery, and Tangata Whenua, the Historic Places Trust and the Waikato Regional Council shall be notified as soon as practicable and within 48 hours of a discovery. Works may recommence with the written approval of the Waikato Regional Council. Such approval shall only be given after the Waikato Regional Council has considered:

    a) Tangata Whenua interests and values,
    b) the Consent Holder's interests,
    c) Historic Places Trust advice, and
    d) any archaeological or scientific evidence.

Review

39. During the April to June period each year for the term of this consent Waikato Regional Council Resource Use Group may, following service of notice on the Consent Holder, commence a review of this consent under section 128(1) of the Resource Management Act 1991, for the following purposes:

a) To review the effectiveness of the conditions of this resource consent in avoiding or mitigating any adverse effects on the environment from the exercise of this resource consent and if necessary to avoid, remedy or mitigate such effects by way of further or amended conditions; or
b) To review the adequacy of and the necessity for monitoring undertaken by the Consent Holder and specifically to review the method and frequency of record collection for the purposes of determining the most appropriate method and frequency; or
c) If necessary and appropriate, to require the holder of this resource consent to adopt the best practicable option to remove or reduce adverse effects on the environment.

Administration

The Consent Holder shall pay to the Waikato Regional Council any administrative charge fixed in accordance with section 36 of the Resource Management Act 1991, or any charge prescribed in accordance with regulations made under section 360 of the Resource Management Act.