Rangitāiki River Forum

NOTICE IS GIVEN

that the next meeting of the **Rangitāiki River Forum** will be held in **Council Chambers, Taupo District Council, 107 Heuheu Street, Taupo** on:

Friday, 7 December 2018 commencing at 10.00 am.

Members please note there will be an informal session for Forum members only after the meeting.

Maramena Vercoe
Chairperson
Rangitāiki River Forum

The Rangitāiki River Forum is a permanent joint committee made up of representatives from:

Te Runanga o Ngati Whare
Te Rūnanga o Ngāti Awa
Te Runanga O Ngati Manawa
Great Lake Taupō Taupō District Council
Ngati Tuwharetoa (BOP) Settlement Trust
Whakatāne District Council
Te Kōpere o te iwi o Hineuru
Toi Moana Bay of Plenty Regional Council
Tūhoe Te Uru Taumatua

Rangitāiki River Forum

Terms of Reference

Interpretation

"Rangitāiki River" means the Rangitāiki River and its catchment, including the:

- Rangitāiki River
- Whirinaki River
- Wheao River
- Horomanga River

The scope and delegation of this Forum covers the geographical area of the Rangitāiki River catchment as shown in the attached map.

Purpose

The purpose of the Forum is as set out in Ngāti Manawa Claims Settlement Act 2012 and the Ngāti Whare Claims Settlement Act 2012:

The purpose of the Forum is the protection and enhancement of the environmental, cultural, and spiritual health and wellbeing of the Rangitāiki River and its resources for the benefit of present and future generations.

Despite the composition of the Forum as described in section 108, the Forum is a joint committee of the Bay of Plenty Regional Council and the Whakatāne District Council within the meaning of clause 30(1)(b) of Schedule 7 of the Local Government Act 2002.

Despite Schedule 7 of the Local Government Act 2002, the Forum—

(a) is a permanent committee; and

(b) must not be discharged unless all appointers agree to the Forum being discharged.

The members of the Forum must act in a manner so as to achieve the purpose of the Forum.

Functions

The principle function of the Forum is to achieve its purpose. Other functions of the forum are to:

- Prepare and approve the Rangitāiki River Document for eventual recognition by the Regional Policy Statement, Regional Plans and District Plans. See Figure 1 Rangitāiki River Document Recognition Process for RPS.
- Promote the integrated and coordinated management of the Rangitāiki River
- Engage with, and provide advice to:
    - Local Authorities on statutory and non-statutory processes that affect the Rangitāiki River, including under the Resource Management Act 1991.
    - Crown agencies that exercise functions in relation to the Rangitāiki River.
- Monitor the extent to which the purpose of the Rangitāiki River Forum is being achieved including the implementation and effectiveness of the Rangitāiki River Document.
- Gather information, disseminate information and hold meetings
- Take any other action that is related to achieving the purpose of the Forum.

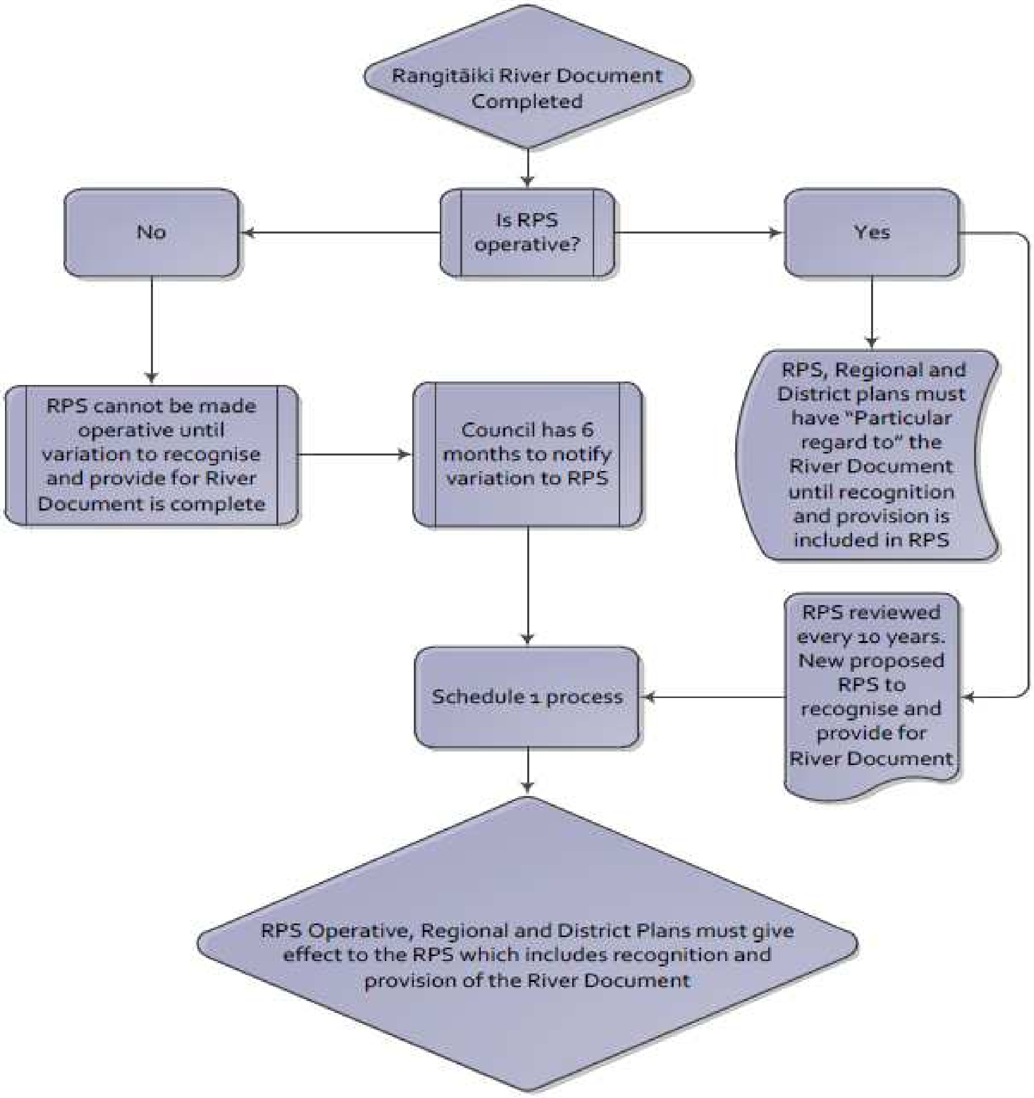

Figure 1 Rangitāiki River Document Recognition Process for RPS

Membership[1]

- One member appointed by Te Rūnanga o Ngāti Whare;
- One member appointed by Te Rūnanga o Ngāti Manawa;
- One member appointed by Ngāti Tūwharetoa (Bay of Plenty) Settlement Trust;
- One member appointed by Te Rūnanga o Ngāti Awa;
- One member appointed by Ngāti Hineuru;
- One member appointed by Tūhoe Te Uru Taumatua;
- One member appointed by the Whakatāne District Council;
- One member appointed by the Taupō District Council;
- Four members appointed by the Bay of Plenty Regional Council.

Note:

Despite the composition of the Forum, this is a joint committee of the Bay of Plenty Regional Council and the Whakatāne District Council.

[1] *Consequential amendments adopted Regional Council Meeting 17 August 2017*

Quorum

In accordance with Rangitāiki River Forum standing orders 2.3.3 and 2.3.4, the quorum for a meeting of the Forum is six members, comprising of:

- Three members appointed by the iwi appointers; and
- Three members appointed by the local authority appointers; and
- Must include a member appointed by Ngāti Whare and a member appointed by Ngāti Manawa.

Term of Committee

This Forum is a permanent committee under the Ngāti Manawa Claims Settlement Act 2012 and the Ngāti Whare Claims Settlement Act 2012 and therefore will not disbanded at the end of a triennium.

The establishment of the Forum is also supported by the Ngāti Whare Deed of Settlement – Clauses 5.49 (October 2009) and the Ngāti Manawa Deed of Settlement – Clause 5.40 (October 2009).

Ngāti Whare Deed of Settlement

5.49 The Crown and Te Rūnanga o Ngāti Whare acknowledge and agree that:

5.49.1 the parties are yet to finalise discussions in relation to a framework for the effective participation of Ngāti Whare in the management of the Rangitāiki River;

*5.49.2 following the signing of this Deed the parties will continue to discuss a framework that provides for the effective participation of Ngāti Whare in the management of the Rangitāiki River (“**Rangitāiki River management framework**”), with the objective of improving the health and wellbeing and sustainable use of the river;*

5.49.3 the discussions in relation to the Rangitāiki River management framework will:

a. be undertaken in good faith, honour and integrity and will reflect the wider commitments set out in the Deed of Settlement;

b. be undertaken in accordance with an agreed programme for further engagement and completed by the date of the introduction of the Settlement Legislation;

c. where appropriate, reflect a catchment wide and integrated approach to management of the Rangitāiki River and its resources;

d. reflect the need to recognise and provide for the interests of other iwi, local authorities, and other entities with interests or statutory roles in relation to the Rangitāiki River;

e. develop a programme for engagement with other iwi, local authorities, and other entities with interests or statutory roles in relation to the Rangitāiki River; and

f. allow for the Rangitāiki River management framework to be incorporated in the Settlement Legislation as necessary either at the time of introduction to Parliament or by way of a Supplementary Order Paper.

5.49.4 the discussions will be based on:

a. Ngāti Whare’s principles, to be agreed with the Crown, regarding the Rangitāiki River;

b. as appropriate, the principles of other iwi with interests in relation to the Rangitāiki River as agreed with the Crown;

c. the need to protect the integrity of existing statutory frameworks; and

d. the need to ensure consistency and fairness between settlements.

5.40 The Crown and Ngāti Manawa acknowledge and agree that:

5.40.1 the parties are yet to finalise the redress for the effective participation of Ngāti Manawa in the management of the Rangitāiki River;

5.40.2 following the signing of this deed the parties will continue to discuss a framework that provides for the effective participation of Ngāti Manawa in the management of the Rangitāiki River (the "Rangitāiki River management framework"), with the objective of improving the health and best use of the river;

5.40.3 the discussions will be based on:

a. Ngāti Manawa's principles regarding the Rangitāiki River as set out in clause 5.41;

b. the need to protect the integrity of existing statutory frameworks; and

c. the need to ensure consistency and fairness between settlements;

5.40.4 the discussions will:

a. be undertaken in good faith, honour and integrity and will reflect the commitments set out in the deed of settlement;

b. be undertaken in accordance with an agreed programme for further engagement and completed by the date of the introduction of the settlement legislation;

c. reflect the need to recognise and provide for the interests of other iwi, local authorities, and other entities with interests or statutory roles in relation to the Rangitāiki River;

d. develop a programme for engagement with other iwi, local authorities, and other entities with interests or statutory roles in relation to the Rangitāiki River; and

e. allow for the Rangitāiki River management framework to be incorporated in the settlement legislation as necessary either at the time of introduction to Parliament or by way of a Supplementary Order Paper.

Specific Responsibilities and Delegations

To avoid doubt, the Forum, except as identified in the functions above, has the discretion to determine in any particular circumstance:

- Whether to exercise any function identified.
- To what extent any function identified is exercised.

Provision for other groups to join the Forum

Other iwi and local authorities through consensus of the Forum, may join the Forum.

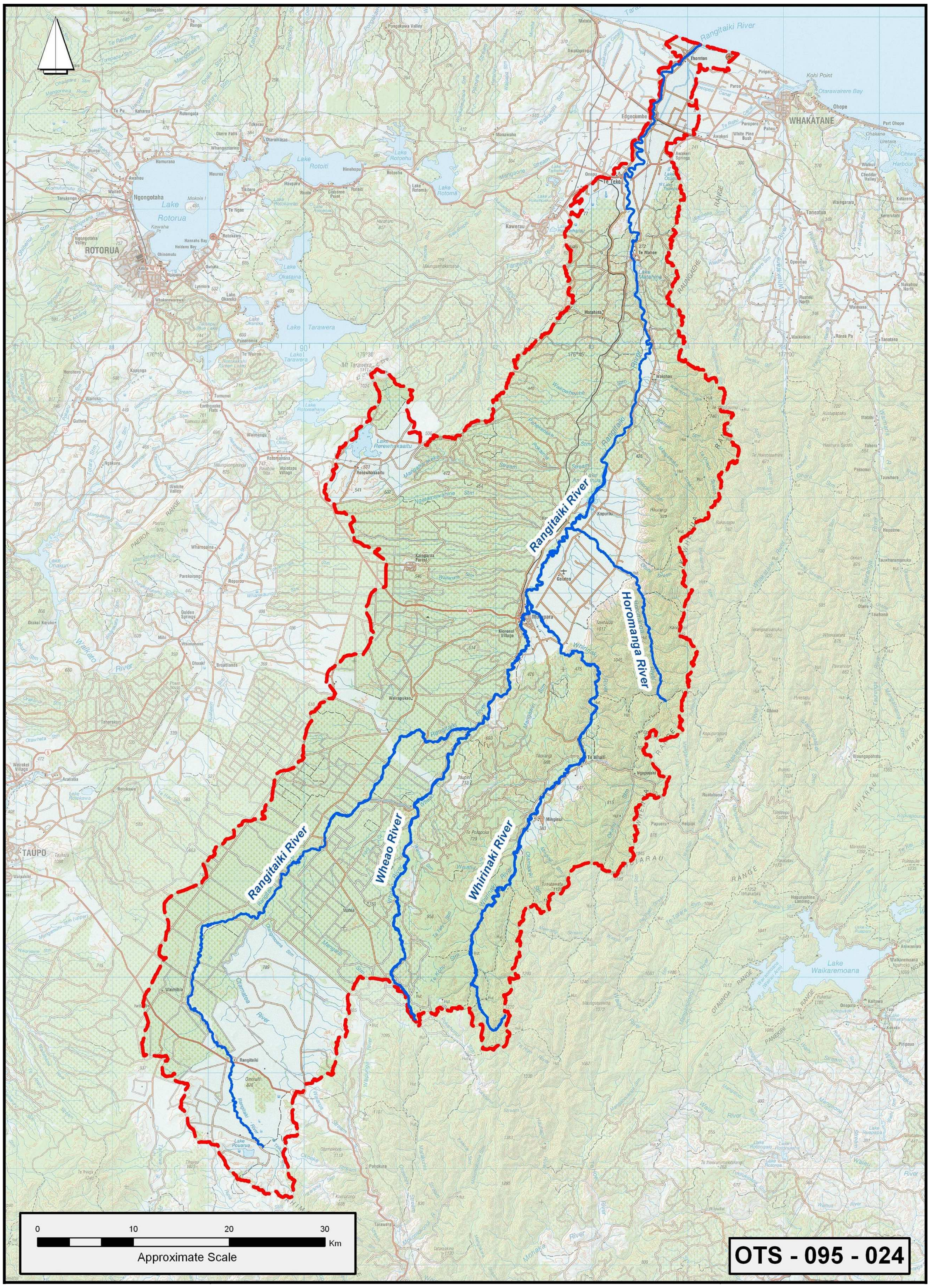

Figure 2 Map of the Rangitāiki River Catchment

Public Forum

1. A period of up to 15 minutes may be set aside near the beginning of the meeting to enable members of the public to make statements about any matter on the agenda of that meeting which is open to the public, but excluding any matter on which comment could prejudice any specified statutory process the council is required to follow.

2. The time allowed for each speaker will normally be up to 5 minutes but will be up to the discretion of the chair. A maximum of 3 public participants will be allowed per meeting.

3. No statements by public participants to the Council shall be allowed unless a written, electronic or oral application has been received by the Chief Executive (Governance Team) by 12.00 noon of the working day prior to the meeting and the Chair's approval has subsequently been obtained. The application shall include the following:

   - name of participant;
   - organisation represented (if any);
   - meeting at which they wish to participate; and matter on the agenda to be addressed.

4. Members of the meeting may put questions to any public participants, relevant to the matter being raised through the chair. Any questions must be asked and answered within the time period given to a public participant. The chair shall determine the number of questions.

Membership

Chairperson:	M Vercoe (Te Rūnanga o Ngāti Manawa)
Deputy Chairperson:	Vacant to be appointed
Appointees:	**Bay of Plenty Regional Council** Crs W Clark, T Marr, K Winters, D Love, M McDonald (Alternate) **Ngāti Hineuru** I Kahukiwa Smith, J Wall (Alternate) **Ngāti Tuwharetoa (BOP) Settlement Trust** Reverend G Te Rire, E August (Alternate) **Taupo District Council** Crs T Kingi, R Harvey (Alternate) **Te Rūnanga o Ngāti Awa** M Araroa, T O'Brien (Alternate) **Te Rūnanga Ngāti Whare** W Rangiwai, B Carson (Alternate) **Tūhoe Te Uru Taumatua** N Rangiaho **Whakatāne District Council** Cr G Johnston, Mayor A Bonne (Alternate)
Committee Advisor:	S Kameta

Recommendations in reports are not to be construed as policy until adopted.

Agenda

1 Mihi Whakatau and Opening Karakia

2 Apologies

3 Public Forum

4 Acceptance of Late Items

5 General Business

6 Declarations of Conflicts of Interests

7 Previous Minutes

8 Reports

9 Presentation

9.1 He Pūtaiao He Tangata – Presentation from Ngarangi Walker, Māori Research Leader, Institute of Environmental and Science Research (ESR)

10 Consideration of General Business

11 Closing Karakia

Previous Minutes

Minutes of the Rangitāiki River Forum Meeting held in Council Chambers, Whakatāne District Council, Civic Centre, Commerce Street, Whakatāne on Friday, 14 September 2018 commencing at 10.00 a.m.

Present:

Chairperson:	Maramena Vercoe (Te Rūnanga o Ngati Manawa)
Appointees:	Crs Tīpene Marr, Bill Clark, Kevin Winters, David Love - Bay of Plenty Regional Council, Reverend Graham Te Rire - Ngāti Tuwharetoa (BOP) Settlement Trust, Miro Araroa - Te Rūnanga o Ngati Awa, Cr G Johnston - Whakatāne District Council, Ivy Kahukiwa Smith, Janice Wall (Alternate) - Hineuru, Cr Tangonui Kingi - Taupo District Council, Te Waiti Rangiwai (Alternate) - Te Rūnanga o Ngāti Whare, Ngapera Rangiaho – Tūhoe
In Attendance:	Bay of Plenty Regional Council: Chairman Doug Leeder, Simon Stokes – Eastern Catchments Manager, Kataraina O'Brien – Strategic Engagement Manager, Yvonne Tatton – Manager Governance, Michelle Lee – Planner (Water Policy), Mieke Kapa - Land Management Officer, Fiona Wood – Programme Coordinator Integrated Catchments, Shari Kameta – Committee Advisor; Dominic Bowden – Taupō District Council, Bill Kerrison – Kokopu Trust, Brad Bluett – Department of Conservation, Cr Alison Silcock – Whakatane District Council, Chris Fern - Trustpower, Tina Porou – Poipoia Ltd, Jason Nairn, Iwi Environment Manager – Te Rūnanga o Ngāti Manawa
Apologies:	Earl Rewi (Deputy Chair) - Te Rūnanga o Ngāti Whare, Tuwhakairiora O'Brien (Alternate) - Te Rūnanga o Ngāti Awa, Councillor Rosie Harvey (Alternate) - Taupō District Council, Chris Ingle, General Manager Integrated Catchments – Bay of Plenty Regional Council

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1 Karakia

Provided by Reverend Graham Te Rire.

Cr Tīpene Marr responded with a mihi of acknowledgment.

2 Apologies

Resolved

That the Rangitāiki River Forum:

1 Accepts the apologies from: Earl Rewi, Tuwhakairiora O'Brien, Cr Rosie Harvey and Chris Ingle tendered at the meeting.

Marr/Rangiwai
CARRIED

3 Public Forum

3.1 Mr Bill Kerrison, Kokopu Trust

Refer Tabled Document Number 1.

Mr Bill Kerrison of the Kokopu Trust presented a proposal, jointly prepared by Mr Kerrison and Mr Alan Riwaka of Te Ohu Kaimoana, to mitigate tuna mortalities and address passage of adult tuna migrating to sea at Matahina Dam.

Key points:

- The proposed system was designed to trap migrating tuna ahead of the dam intake pipes without causing injury or fatality;
- Would require socialising the concept with Iwi and Trustpower, development of a plan, detailed specifications and costings, which would rely on gaining support from Trustpower and the Forum.
- Highlighted more concerning issues with tuna passage at Aniwhenua Dam, which Mr Kerrison was prepared to work with others to address.

In response to questions:

- The proposal had been endorsed by American experts;
- Electricity generation would have to cease during installation of the proposed system.

Members' Comments:

- Acknowledged the proposal and issues raised regarding Aniwhenua Dam.
- Supported the proposal and further discussion to be taken under Agenda item 9.1.

4 Acceptance of Late Items

Nil

5 General Business

1) Plight of Galatea Farmers

6 Confidential Business to be Transferred into the Open

Nil

7 Declaration of Conflicts of Interest

Nil

8 Previous Minutes

8.1 Rangitāiki River Forum Minutes - 08 June 2018

Correction

Agenda page 19, Minute item 7.3, fourth bullet point – amend “Maggie Papakura” to “Guide Maggie Makereti Papakura”.

Matter Arising

Agenda page 19, Minute item 7.3, second paragraph – regarding consideration of future trials, members were informed of a research project study that was being undertaken in New Zealand on whitebait entering into a range of fish passage, which may provide learnings for the Forum’s work.

Staff Follow-up Action:

It was requested that the whitebait study be investigated and information reported back to the Forum.

Resolved

That the Rangitāiki River Forum:

1 Confirms the Rangitāiki River Forum Minutes of 8 June 2018, as a true and correct record with the foregoing correction.

Winters/Rangiaho
CARRIED

9 Reports

9.1 Rangitāiki Integrated Catchment Programme Annual Work Plan Results 2017-2018 and Annual Work Programme 2018/2019

Eastern Catchments Manager Simon Stokes and Taupō District Council Strategic Relationship Manager Dominic Bowden highlighted points from the annual work programme.

Key points:

- The Rangitāiki Catchment Programme was in its third year of delivery, with much of the current focus on repair and restoration as a result of the 2017 April cyclones.
- In regard to Taupō District Council’s key projects:
  - The Taupo District 2050 urban growth strategy draft document was out for consultation until 14 September 2018, with no growth areas identified within the upper Rangitāiki catchment;
  - The Taupo District Plan review would look at land use with an initial report open for feedback in November 2018 followed by a strategic approach to commence in May 2019;

- Roading and footpath maintenance was being undertaken, with no work planned within the Rangitāiki catchment;
- The Biodiversity Strategy to establish indigenous biodiversity targets was due to commence later in 2018.

In response to Questions:

- Regarding maintenance of Aniwaniwa Reserve, Southern Generation had received some funding to carryout maintenance in the reserve area;
- River scheme management stopped below Aniwhenua Dam and restarted after Kopuriki Road, Galatea;
- Regarding the proposal and issues raised by Mr Bill Kerrison in the Public Forum, Te Hekenga Nui o Te Tuna Steering Group and the Tuna Forum were working with Matahina and Aniwhenua Dam owners to progress issues and find a solution for fish passage over the hydro dams, with analysis completed on fish passage sites;
- The Forum had the ability to hold constructive conversations with Trustpower;
- The 2018/2019 Work Plan had been approved by Bay of Plenty Regional Council and Whakatāne District Council;
- Status of the management of Edgecumbe and Ratahi reserves was not listed in the 2017-2018 Work Plan. Ownership of red stickered reserve land still remained with the Regional Council, however would be resolved in due course with the Rangitāiki Community Board and Whakatane District Council;
- Future inclusion of Iwi work programmes in the Work Plan was acknowledged and noted.

Staff Follow-up Action:

- Invite Mr Bill Kerrison to discuss tuna passage issues with Te Hekenga Nui o Te Tuna Steering Group and the Tuna Forum.
- Provide advice to the Forum on the resolution of Proposed Change 3 appeal point in regard to existing and new fish passage structures.
- Provide an update on Aniwaniwa Reserve maintenance and management.

Resolved

That the Rangitāiki River Forum:

1 Receives the report, Rangitāiki Integrated Catchment Programme Annual Work Plan Results 2017-2018 and Annual Work Programme 2018/2019.

2 Endorses the Rangitāiki Integrated Catchment Programme Annual Work Plan 2018/2019.

Love/Marr
CARRIED

Change to Order of Business

With the leave of the Forum, the Chair advised that consideration of General Business would be taken next on the agenda.

10 Consideration of General Business

10.1 Plight of Galatea Farmers

An issue was raised concerning several farms that were underwater downstream of Aniwhenua Dam, causing significant impacts on the economic, health and wellbeing of the affected farmers. Frustration was noted towards the dam owner's disregard of the overall cumulative and negative effects associated with the dam. Consideration was sought on potential for the Forum to advocate for the affected individuals via communication with the dam owners and potential avenues to have the dam's resource consent reviewed.

Advice noted:

- Continual flooding and gravel build-up from the Whirinaki River and Te Urewera had caused inability for the farmers to utilise their flooded land since April 2016;
- Responsibility for the dam and the reserve rested with Southern Generation, Nova Energy and Whakatāne District Council respectively;
- Conditions of Aniwhenua Dam's resource consent did not require flood mitigation;
- Regional Council had been in discussions since 2017 to seek an engineering solution for Kopuriki Road, which to this point had been unsuccessful;
- Regarding the Forum's purpose and the appropriate vehicle to progress the matter, it was suggested that advocating for the interests of the affected individuals would gain the respect and trust of the community, while achieving the Forum's purpose.

Members' Comments:

- Sought detailed information on the issues identifying short and long-term solutions to be reported back to the Forum.
- Asked for consideration of dredging impacts on Ngāti Haka/Patuheuheu hapū, associated civil defence activity and Iwi further downstream;
- Noted a consent application to remove gravel from the island channel below Aniwhenua Dam had been rejected by Ngāti Haka/Patuheuheu hapū;
- Considered a rates relief for affected farmers should be explored;
- Requested a report from the Rivers & Drainage team on short and long-term engineering solutions associated with Aniwhenua Dam and affected farmland; with inclusion of a response for how Regional Council can advocate for affected farmers;
- Supported the facilitation of a high level meeting with affected stakeholder representatives, Nova Energy and Southern Generation management (and Trustpower if appropriate).

11 Public Excluded Section

Resolved

Resolution to exclude the public

THAT the public be excluded from the following parts of the proceedings of this meeting.

The general subject of each matter to be considered while the public is excluded, the reason for passing this resolution in relation to each matter, and the specific grounds under section 48(1) of the Local Government Official Information and Meetings Act 1987 for the passing of this resolution are as follows:

General Subject of Matter to be Considered	Reason for passing this resolution in relation to this matter	Grounds under Section 48(1) LGOIMA 1987 for passing this resolution
10.1 Public Excluded Rangitāiki River Forum Minutes - 08 June 2018	**To maintain legal professional privilege.**	**Disclosing the information may constitute contempt of Court.**

Marr/Winters
CARRIED

12 Confidential Business Transferred into the Open

Resolved

That the Rangitāiki River Forum:

1 Notes the only business transacted in public excluded was to confirm the Public Excluded Rangitāiki River Forum Minutes of 8 June 2018. In accordance with the Local Government Official Information and Meetings Act 1987, no reason for withholding this information from the public exists.

Winters/Love
CARRIED

The meeting closed at 11:43 am.

CONFIRMED: ________________________________

Maramena Vercoe, Chairperson
Rangitāiki River Forum

Reports

Report To: Rangitāiki River Forum

Meeting Date: 07 December 2018

Report From: Yvonne Tatton, Governance Manager

Change in Membership and Appointment of a new Deputy Chairperson

Executive Summary

This report is to advise the Rangitāiki River Forum (Forum) of a change in membership for Te Rūnanga o Ngāti Whare and seeks the Forum's consideration to appoint a new Deputy Chairperson.

Recommendations

That the Rangitāiki River Forum under its delegated authority:

1. **Receives the report, Change in Membership and Appointment of a new Deputy Chairperson;**
2. **Acknowledges the resignation of Earl Rewi as Deputy Chairman and a member of the Rangitāiki River Forum and recognises his contribution to the Forum.**
3. **Acknowledges the appointment of Te Waiti Rangiwai as the appointed member and Bronco Carson as the alternate member for Te Rūnanga o Ngāti Whare.**
4. **Selects System B as the voting system to appoint a new Deputy Chairperson.**
5. **Appoints ________________ as the Deputy Chairperson for the Rangitāiki River Forum.**

1 Change of Membership

Te Rūnanga o Ngāti Whare has given notice of Earl Rewi's resignation and the succeeding appointments of Te Waiti Rangiwai as the appointed member and Bronco Carson, Chair of Te Rūnanga o Ngāti Whare as the alternate member (refer Appendix 1).

2 Appointment of a new Deputy Chairperson

The resignation of Earl Rewi as a member of the Forum creates a vacancy in the Deputy Chairperson position. The provisions for appointment of this position are subject to the same conditions set out under Rangitāiki River Forum Standing Order 2.5 for the appointment of a Chairperson:

- The appointment is for a term of 3 years, unless the Deputy Chair resigns or is removed by the Forum during that term.
- The Deputy Chair may be reappointed or removed by the Forum.
- The appointment must be decided at a meeting by vote and by the majority of members present and voting.

2.1 Voting Systems

The Forum must resolve to use one of the following voting systems, as set out on pages 14 and 15 of the Standing Orders:

"System A

(a) requires that a person is elected or appointed if he or she receives the votes of a majority of the members of the Forum voting; and

(b) has the following characteristics:

(i) there is a first round of voting for all candidates; and

(ii) if no candidate is successful in that round there is a second round of voting from which the candidate with the fewest votes in the first round is excluded; and

(iii) if no candidate is successful in the second round there is a third, and if necessary subsequent round of voting from which, each time, the candidate with the fewest votes in the previous round is excluded; and

(iv) in any round of voting if 2 or more candidates tie for the lowest number of votes, the person excluded from the next round is resolved by lot.

System B

(a) requires that a person is elected or appointed if he or she receives more votes than any other candidate; and

(b) has the following characteristics:

(i) there is only one round of voting; and

(ii) if 2 or more candidates tie for the most votes, the tie is resolved by lot."

It is recommended that the Forum selects System B as its voting system for simplicity.

The voting process:

(i) The Forum resolves to adopt a voting system and procedure in the event of a tie.

(ii) The Chairperson calls for nominations for Deputy Chairperson, which must be seconded.

(iii) Nominees may be allowed up to 10 minutes to make a presentation.

(iv) Voting for the appointment of the Deputy Chairperson as per agreed system.

(v) The Chairperson declares the Deputy Chairperson elected.

In agreeing the voting process, ground rules are also agreed.

2.2 Ground rules

(i) A member may nominate or second themselves.

(ii) Any member can call for a Division – where the names of members voting for and against and any abstentions, are taken down in random order.

(iii) Any member can abstain from voting.

Shari Kameta
Committee Advisor

for Governance Manager

27 November 2018

APPENDIX 1

Te Runanga o Ngati Whare Representation on the Forum Letter - 27 September 2018

TE RUNANGA O NGATI WHARE

Rangitaiki River Forum
C/- Bay of Plenty Regional Council
WHAKATANE

27 September 2018

Re: Te Runanga o Ngati Whare representation on the Forum

Tena koutou
Due to Earl Rewi's recent resignation from Te Runanga o Ngati Whare, please be advised that the following recommendations have been resolved by the board of Te Runanga o Ngati Whare for acceptance and approval by the Forum at your convenience, they are:

1. That the appointed member will be Te Waiti Rangiwai, Pou Whakahaere vacating the Alternate seat

2. That the Alternate will be Bronco Carson, Chair Te Runanga o Ngati Whare

If you have any patai , please let me know.

Nga mihi

Te Waiti Rangiwai
Pou Whakahaere

PO Box 162 | Murupara 306[illegible] | Murupara, New Zealand
P 07 366 5690 | E admin@ngatiwhare.iwi.nz | W www.ngatiwhare.iwi.nz

Ko Wharepakau te Tangata

Receives Only – No Decisions

Report To: Rangitāiki River Forum

Meeting Date: 07 December 2018

Report From: Chris Ingle, General Manager, Integrated Catchments

Rangitaiki River catchment - Operations and General Update

Executive Summary

This report provides an update on general matters and operations occurring within the Rangitāiki Integrated Catchment Programme annual work plan for 2018-2019.

The following matters are covered:

- Biodiversity and riparian management;
- Biosecurity;
- Te Hekenga Nui o Te Tuna;
- Rangitāiki Wetlands project;
- Rangitāiki River Scheme activity;
- Rangitāiki Integrated Catchment Programme 2018-2019

Recommendations

That the Rangitāiki River Forum:

1 Receives the report, Rangitāiki River catchment - Operations and General Update.

1 Update on general activity

The following information provides an update on general activity and operations occurring within the Rangitāiki River Catchment of interest to the work of the Forum.

1.1 Biodiversity and riparian projects and general land management items

There are 18 programmes on the books including four biodiversity dominant and the others a mix of riparian and biodiversity together. There are 18.5 km of fencing planned for the financial year.

- Maramara a Tawa restoration is progressing well. Native plants that were covered by willow are becoming more visible, and the wetland is distinctly different with the native understorey coming away. The third year of the restoration will deal to the weeds that have evaded the contractor until now and some planting where there once was a dense stand of 1.5 m blackberry. Crews are working in the wetland at the moment to complete the follow-up weed control for this year.


Photo 1 – Maramara a Tawa: Left - 20 December 2016; Right - 5 November 2018


Photo 2 – Te Manukapiko: Left – 8 September 2017 and right – 5 November 2018 showing significant regrowth of sedges after one year of stock exclusion.

- Te Manukapiko within blocks managed by Wai o Te Hau (also in Waiohau) - aerial willow control undertaken in February this year requires a touch up and plants that were planted this winter need releasing but all in all the wetland is looking very different with the stock fenced out and weed control undertaken.
- Recorders were set out at Maramara a Tawa, Lamberts and Te Manukapiko to listen for birds. Bittern and spotless crake were recorded at Lamberts, and although nothing was recorded, improved habitat at Te Manukapiko and Maramara a Tawa may draw these birds in over time, particularly bittern as they are quite mobile and will use a wider landscape network of sites.
- Pūtauaki (partly within the catchment) – rebaiting for the spring season (253 bait stations) is completed, and small bird monitoring fieldwork also completed although results are still pending. Previous years have shown an increasing trend of relative abundance of small birds.
- Lochinver have signed a new agreement for 6.5 km of fencing, continuing their improvements and security of waterways and natural areas from stock.
- Members of Te Roopu Manaaki, Te Manawa o Tūhoe and Waiohau locals spent a day in November visiting various wetlands that are undergoing restoration as a personal development day. This was organised as an

opportunity for those groups to learn from each other, see how other projects are progressing and talk about their work in general.

- At Lambert's wetland, the photo points have all been re-taken following the willow control last season. It was reassuring to see that the threatened ferns survived the spraying. Most of the clumps that had been located before treatment were covered with boxes to protect them from any spray coming through the canopy.
- A new Priority 1 Biodiversity Site has been signed to an agreement with Ngāti Manawa Incorporation. The site includes eight hectares of mixed podocarp (rimu, matai, totara)/kahikatea remnant wetland, a vegetation type with less than 5% of the estimated original cover remaining in the region. Restoration work will start this summer season.

1.1.1 Fonterra 50 Catchments

Recently Fonterra added the lower Rangitāiki plains to their 50 Catchments programme which is a partnership with the Department of Conservation called the Living Water Partnership. For our Rangitāiki catchment specifically this will mean approximately 22 dairy farms will have farm environment plans developed for implementation by Fonterra staff. Bay of Plenty Regional Council staff will work alongside the Fonterra staff and advise on options and opportunities for the farmers.

1.1.2 Water Quantity workshops (Plan Change 9)

Four workshops were recently completed by DairyNZ and the Bay of Plenty Regional Council across the Bay of Plenty titled 'Water Use of Farms'. Two were held for dairy farmers who reside in the Rangitāiki catchment. The field days were well attended by dairy farmers where they learnt about water use on farm, metering and the requirements of Plan Change 9 – the water quantity plan change that council has recently taken submissions and had appeals lodged.

1.2 Lake Aniwaniwa

1.2.1 Aquatic weed spraying

Spraying of 3.4 hectares of Lake Aniwaniwa aquatic weed in the ski lane, ski launch/boat parking area, boat ramp and swimming areas should have occurred by the time this report is published. Funding has been contributed by Southern Generation Ltd, Whakatāne District Council and Bay of Plenty Regional Council. This is to ensure the summer's recreational use of the lake is viable for the local community and visitors.

1.2.2 Whakatāne District Council Aniwhenua Reserve (Black Road)

Whakatāne District Council ("WDC") owns and manages the 2.7 hectare Aniwhenua Reserve at 71 Black Road, on the shores of Lake Aniwaniwa. Under the WDC District Reserve Management Plan this is considered a Premier District Reserve. These are defined as larger multiple-use spaces with high amenity value and an emphasis on providing for the needs of the wider community.

Regular maintenance of the reserve includes fortnightly mowing, monthly inspections and maintenance of the playgrounds, and maintenance of the toilet facility. Rubbish is regularly collected from the bins located on site. From time to time other maintenance work, such as tree maintenance, is undertaken in the reserve.

The WDC Open Spaces team works closely with the local community, and as a result of community fundraising we will shortly be installing a lantern swing at the playgrounds

1.3 Biosecurity

1.3.1 Wallabies

Council has increased funding to support wallaby containment through the Long Term Plan (LTP). Waikato Regional Council and Department of Conservation have also increased resourcing. Current work remains focused on surveillance for wallabies that are spreading out of the containment area and the eradication of any new populations detected. There will be a further attempt to control the satellite population in Matahina Forest near the Rangitāiki River in late summer as initial attempts were not successful. This population does not pose an immediate risk as it is located 4km away from the nearest crossing point on the Rangitāiki River, and surveillance around the bridge heads on the Rangitāiki has not detected any wallaby movements.

A reminder that the online wallaby reporting application should be used if wallabies are seen outside their current known range (www.stoppests.co.nz).

Nationally work continues with the development of a business case to support Crown funding of wallaby control and research. The business case preferred option is containing spread and seeks $41 million over the next 10 years (to be spread across the North and South Island wallaby populations).

1.3.2 *Pinus contorta*

MPI are currently preparing a new budget bid to support wilding conifer control across New Zealand. Should new funding be available it is likely that Bay of Plenty will be included in the national control programme at some stage in the short to medium term future. This could be a significant advantage to the Rangitāiki Catchment where much of the *Pinus contorta* exists.

1.3.3 Alligator weed

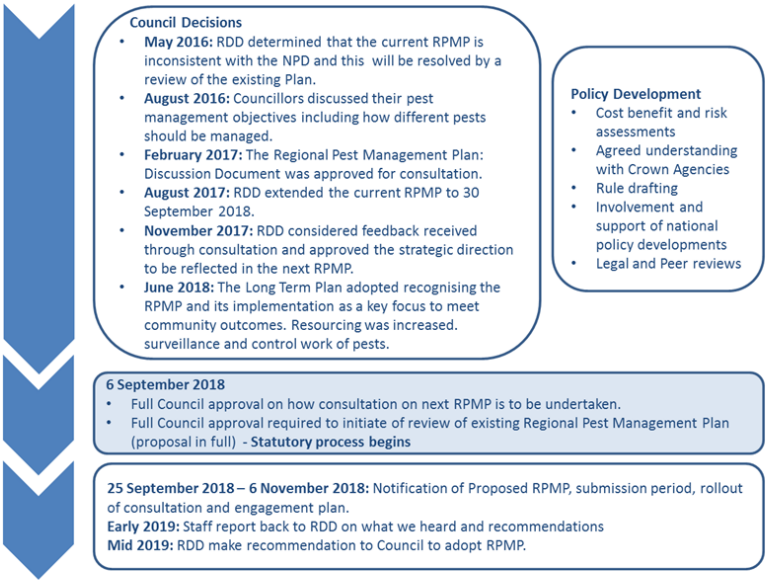
The control programme for alligator weed is not due to start until December, but there are definitely areas of the weed located in the lower river plains of the Rangitāiki catchment which requires management.

1.3.4 Proposed Regional Pest Management Plan (RPMP)

The process of renewing the management of pests across the region is nearing completion. The Proposed RPMP closed for submissions (6th November 2018).

All the considerations and recommendations from the submissions will go to the December meeting of the Bay of Plenty Regional Council Regional Direction and Delivery Committee. Recommendations are then made by that Committee to Regional Council, where the decision is made to adopt or otherwise. A timeline is shown in Figure 1 for progressing the proposed plan. The Forum should seek an update on the RPMP at its March 2019 hui in relation to their catchment and decisions that relate to the future of pest management.

Figure 1:



1.4 River Catchment Management

1.4.1 Floodway and Drainage Bylaw review

The Floodway and Drainage Bylaw 2008 provides for the security and efficient operation of flood protection and drainage schemes. The Bylaws are established to protect the scheme assets that have been constructed to prevent damage, danger and distress to the community from river flooding and problems associated with a lack of drainage. They apply to stopbanks, bank protection works, bunds, crossings, drains, pumps, structures and other scheme assets which are owned by or under the control of the Council.

The current Bylaw consists of Part I, which applies to all river and drainage schemes in the region managed by Bay of Plenty Regional Council, and Part II which is a set of bylaws that apply only to the Rangitāiki Drainage District.

The current Bylaw is about to be reviewed, which will include chances for community input. This process is intended to be completed before June 2020. In the meantime, the current Bylaw remains in effect.

1.4.2 River Scheme Sustainability (RSS) project

The RSS project is developing long term flood management solutions for the 5 main schemes in the Bay of Plenty. The RSS project is currently working on developing upper catchment option in the Rangitāiki Catchment and we are expecting preliminary results in the first quarter of the next calendar year.

1.4.3 River Catchment projects

A request to understand more about the Kopuriki Road area and Lake Aniwaniwa issues was requested by the Forum. Attached in Appendix 1 is the report completed by Opus Consultants earlier in 2018. This report was produced for the Whakatāne District Recovery programme and assesses the issue and explains possible options for the future. These options are being used in conversation with those involved in the location – farmers, community, HEP owners, supporting agencies and councils.

In addition, the river catchment above Lake Aniwaniwa is being re-surveyed. This information will be provided to the River Scheme Sustainability project which is going to study the geomorphological change in the riverbeds above Lake Aniwaniwa. This will give the river engineers an understanding of the trends in bed level since cyclone Debbie in 2017 where, for example river bedload may have changed. The Whirinaki and Horomanga rivers are a priority to understand. This assessment does not include the riverbed above Murupara.

1.4.4 **Rangitāiki River Scheme review update**

The Evacuation Planning recommendations are complete for Edgecumbe and draft triggers are also under development for other scheme rivers. The second and third new monitoring sites in the catchment are due for installation this month (November) and staff gauges have been installed at Edgecumbe to help with public record. The College Road stopbank reconstruction is complete and work is underway as a result of geotechnical analysis on other sites. Work with Trustpower is ongoing and communication protocols are complete and tested. Options for the Rangitāiki Floodway upgrade, consistent with the Review recommendations have had technical analysis along with community engagement and a recommendation will be brought to the December Bay of Plenty Regional Council meeting. Long term sustainable flood risk solutions for the Rangitāiki are being scoped as a priority in the River Scheme Sustainability Project. The Flood repair project is ongoing in the catchment and the Horomanga bridge reparations are nearing a start date.

1.3.5 **April 2017 Flood Repair Project**

As expected unfavourable ground conditions and wet weather slowed total programme progress for the flood repair project over the winter months. The conditions have allowed a focus on softer engineering works and planning as we head into the summer construction season. Rock supply in the Rangitāiki and Whakatāne areas is of concern and this has influenced the summer works programme planning with a shift in focus to the Kaituna and Waioeka-Otara Rivers Schemes, until supply improves. Continued engagement with key stakeholders for scheduled work and funding has also been a priority. Highlights for the project over the last 3 months include;

- Infrastructure insurance progress payment of $2m approved
- Practical completion of repairs now at 152 sites (out of 520 in total)

2 Te Hekenga Nui o Te Tuna

2.1 Culvert remediation for fish passage

This is a new work stream to address fish passage issues at culverts and small structures that were surveyed in 2015, and to implement the remediation recommendations to re-establish fish passage where it is compromised. An internal project is being planned, with an aim to get work underway early in the new calendar year. This project is listed in the Rangitāiki Integrated Catchment Programme 2018-2019.

In addition, a summer student will begin to survey structures on private land to assess their status with regard to fish passage, to determine needs for re-establishing fish passage from the main stem into the sub-catchments across the Galatea plains.

2.2 Steering Group and Tuna Forum integration

There was some discussion as to the structure of the Tuna Forum at the May 2018 meeting when it was initially presented to the Forum, around the mechanics of how it might work and how the Tuna Forum and the Steering Committee worked under the Rangitāiki River Forum. The structure diagram in Appendix 2 explains where and how each group sits in terms of how the Steering Group is going to work.

A revised terms of reference for the Steering Group is attached Appendix 3, and reinforces the role of the Steering Group as a conduit between the Tuna Forum and the Rangitāiki River Forum.

2.3 Current actions – status update of the action plan for Te Hekenga Nui o Te Tuna

2.3.1 Goal 1

The harvest strategy is well underway and delivers to a number of the Objectives and Actions, as they are all part of the harvest strategy package.

2.3.2 Goal 2

Objective 1, Action 4 – Working relationships have begun and are continuing to establish and grow with some experts.

Objective 2, Action 4 is considered completed by the literature review "Tuna passage options for Matahina and Aniwhenua hydro-dams, Rangitāiki River Catchment" that was provided to the Forum at the June 2018 meeting.

Objective 2, action 6 is the next step from Action 4, in terms of moving forward with the power companies to determine viable options and an implementation pathway.

Objective 4, Actions 1 and 2 – is underway (see 2.1) The culvert remediation work will address fish passage concerns at culverts on public roadways. The initial survey was done by the Engineering Section at BOPRC, and remediation work will be undertaken by ATS Consultants (Kelly Hughes), funded by BOPRC. Further mapping work will also be undertaken over time.

2.3.3 Goal 3

Objective 6, Actions 1, 2 and 3 – the Rangitāiki Wetlands project is a contribution to this objective, where wetland ecosystems have been identified, their management needs laid out and an option to implement management is underway.

2.4 HEP schemes fish passage

2.4.1 Aniwhenua scheme

Southern Generation Limited Partnership (SGLP) are continuing to use trap and transfer to facilitate movement of tuna over the dam both for upstream elver transfers and downstream adult migratory transfers as follows:

- Partnering with Trustpower to fund the upstream elver trap and transfer program that is run by Kokopu Trust from the Matahina station.

- Developing a partnership with Te Runanga O Ngati Manawa to provide an adult tuna trap and transfer program from the catchment above Aniwhenua Power Station.
    - Ngati Manawa are currently in the process of acquiring permits from MPI, purchasing trap equipment and PPE and setting up a study program.
    - Ngati Manawa and SGLP are working on plans to undertake adult eel trap and transfer during 2019 migration period.

Other options for fish passage such as bypass structures are still to be worked through.

3 Rangitāiki River Wetlands project

The project team is continuing discussions with landowners and refining of Environmental Programme (EP) documents to define the works programme for each of the four proposed project sites. We currently have one EP signed and ready for works to begin at Karamuramu (Waikaramuramu Trust), where the landowners have been preparing to undertake some of the works themselves. Planning for operational site works to commence in the New Year is underway and will be executed once the individual EP's are signed by the remaining landowners.

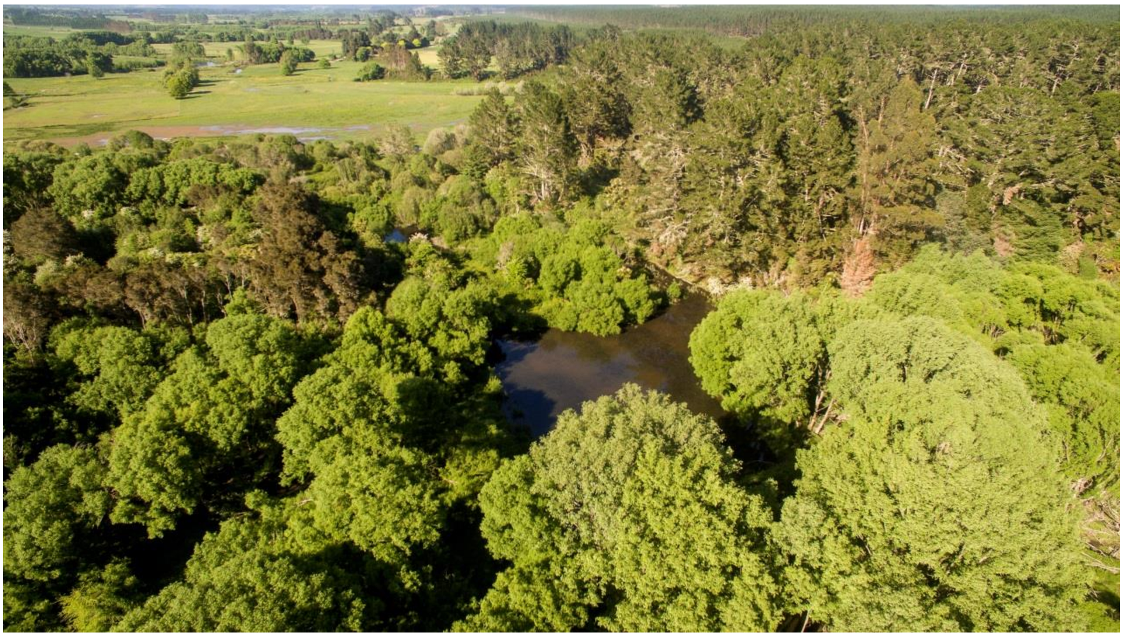


Photo 3 – Rangipo: Main open water areas looking south (ish). Note stands of kanuka to left, and dense willow canopy. The understorey has good indigenous cover around the pond margins.

Photo 4 - Karamuramu south: The project work area is mostly in the foreground bounded by the tracks, and extending to the left of the open brown area. The understorey beneath the willows is a bit more mixed with exotic species but still includes a good component of indigenous species.

Baseline bird monitoring has been completed for this year at all the sites. A matuku (Australasian Bittern) was heard at one of the sites, which is an exciting find as they are nationally critical species in terms of their threat status, and the wetlands in the project are an ideal network for them. Puweto (Spotless crake - declining) were also heard at two of the sites. Tangata whenua accompanied the ecologist who undertook the surveys, to share their knowledge and also learn the specific skills for this type of monitoring. Baseline pest animal and vegetation monitoring are still being finalised by the project team.

The Project Governance Group (PGG) has reviewed and adopted the Project Plan, Communications and Engagement Plan and Draft Delivery Schedule at the initial PGG hui in September. A draft Terms of Reference will be finalised at their next meeting (4th December). Quarterly reporting (July to September 2018) to MfE has been completed.

4 Rangitāiki Integrated Catchment Programme update

Attached in Appendix 4 is the dashboard which highlights the current status of the work programme being implemented by councils in 2018-2019. Currently the overall status is ‘green’ which indicates that on average the programme is on track to deliver to its projects. There are however some ‘amber’ projects which are falling behind in relation to project delivery and timeframes. It will be important to monitor the status of these at the next hui to ascertain their ability to be completed within the 2018-2019 financial year.

5 Māori implications

The report provides information relating to actions that support the delivery of Te Ara Whānui o Rangitāiki – Pathways of the Rangitāiki, which supports positive implications for Māori in the long term. Te Ara Whānui o Rangitāiki is required by legislation and takes into consideration all planning documents of importance to Māori.

Nancy Willems
Team Leader, Eastern & Rangitaiki Catchments

for General Manager, Integrated Catchments

28 November 2018

APPENDIX 1

Te Hekenga Nui o Te Tuna - Draft Terms of Reference

Te Hekenga Nui o Te Tuna Steering Group
Terms of Reference

Steering Group Responsibilities

The Steering Group is responsible for making decisions, and is accountable for the delivery of the project outputs and the realisation of the project benefits.

The Steering Group reports to the Rangitāiki River Forum, and seeks endorsement for decision-making, and outputs. Individual members report to their respective organisations.

Key responsibilities:

- Adopt the Te Hekenga Nui o Te Tuna Project Plan and review progress;
- Oversee and ensure the implementation of the project Plan;
- Give direction with regard to key priorities, and time-frames for delivery;
- Determine the annual programme of work towards delivery, and agree workstream leads;
- Give direction with regard to development of detailed planning for individual work streams;
- Identify potential sources of funding and submit applications as appropriate;
- Work together, share information and ensure a partnership approach to achieving the outcomes of the plan;
- Actively develop a culture of collaboration and flexibility.

Roles

The key roles of the steering group are:

- Undertake their role with a focus on delivering positive outcomes for tuna in the Rangitāiki Catchment;
- Provide strategic advice and direction;
- Active engagement and participation of members;
- Keep their respective agencies informed and represented.

Tuna Forum

The Tuna Forum is a wider stakeholder grouping, all with interests in tuna, from a range of perspectives.

This group:

- Includes representatives from a range of organisations, iwi and functions;
- Can grow/change depending on what is happening and what is relevant for each group;
- Are kept up to date with project actions and progress;
- Can influence, and/or have input into the implementation of the action plan;

Project workstreams may be delivered by members of this group.

The Steering Group is the conduit between the Tuna Forum and the Rangitāiki River Forum.

Membership:

Role	Name	Organisation
	[ ]	Te Runanga o Ngati Whare
	Ngapera Rangiaho	Ngai Tuhoe
	Atamira Nuku	Te Runanga o Ngati Manawa
	Tu O'Brien	Te Runanga o Ngati Awa
	Charlie Bluett	Te Rūnanga o Ngāti Awa and (or ICP??)
	Alan Riwaka	Te Ohu Kaimoana
Project Manager	Nancy Willems	Bay of Plenty Regional Council

Administration

Project Reporting:

Project reporting will be delivered by the Steering Group project manager (or at times steering group members) to the Rangitāiki River Forum through agenda reports and presentations.

Progress will also be reported to the Tuna Forum to keep stakeholders informed. By the most appropriate steering group representation.

Meeting schedule:

Steering Group will meet prior to each Rangitāiki River Forum meeting (4 x per year). Additional meetings may be called if required.

Review:

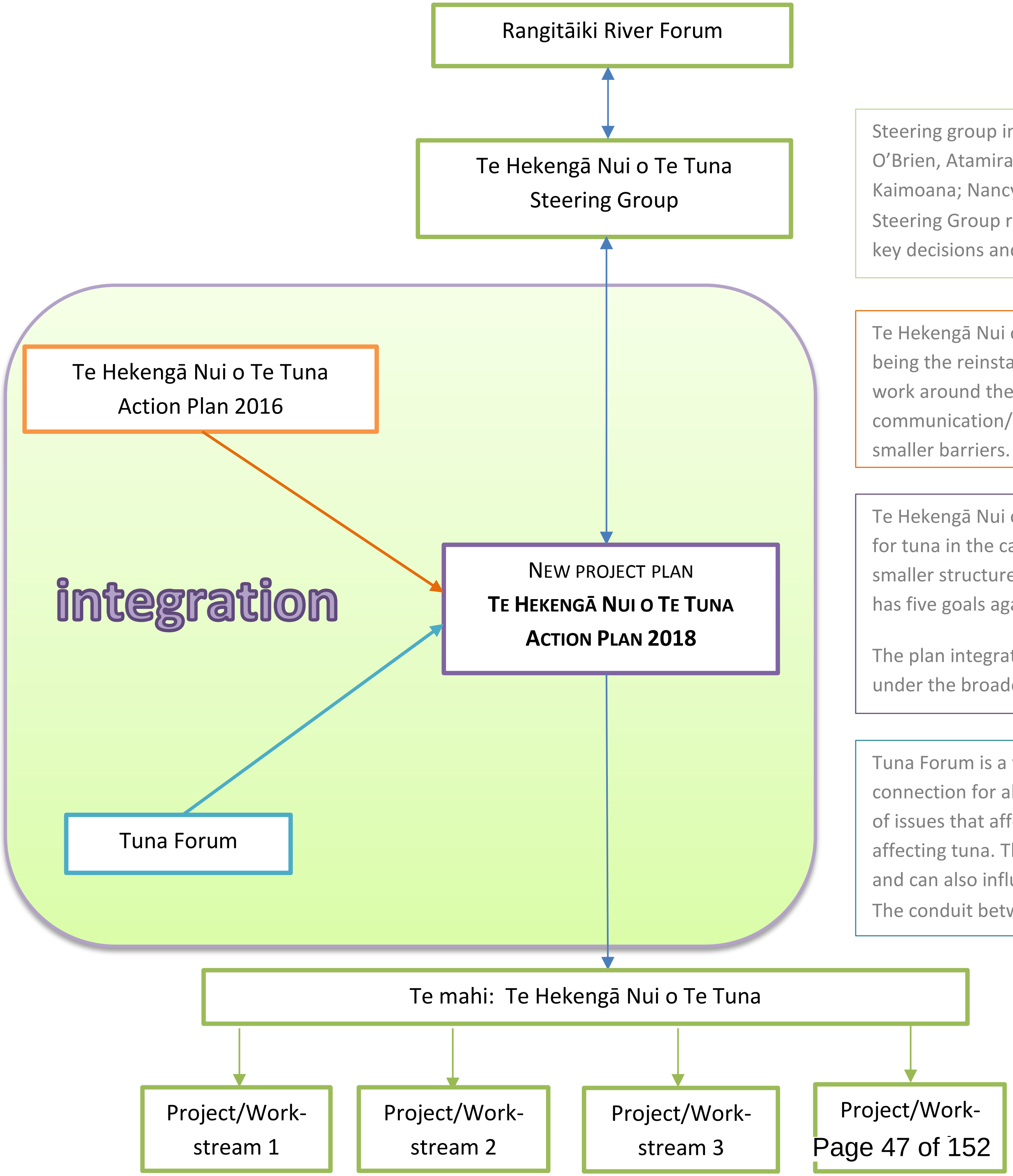
These Terms of Reference will be reviewed by 31st August 2019.

Project Manager :

- Implements workstreams as directed/agreed with Steering Group;
- Supports convening of the Steering Group meetings;
- Completes reporting requirements to the Steering Group;
- Compiles reporting to the Rangitāiki River Forum.

APPENDIX 2

Te Hekenga Nui o Te Tuna - Proposed Structure



Steering group includes representation from Rangitāiki River Forum iwi partners – [Ngati Whare], Tu O'Brien, Atamira Nuku, Ngapera Rangiaho; Charlie Bluett, chair of the Tuna Forum; Alan Riwaka, Te Ohu Kaimoana; Nancy Willems, Bay of Plenty Regional Council.
Steering Group reports up to the Rangitāiki River Forum on project progress and seeks endorsement for key decisions and workstream deliverables.

Te Hekengā Nui o Te Tuna – Action Plan 2016 was developed by the Steering Group with a key target being the reinstatement of fish passage over the Matahina and Aniwhenua dams. The plan included some work around the commercial fishing of tuna, matauranga Māori, kaitiakitanga and tikanga, and communication/awareness/engagement. It did not include the enhancement of habitat or fish passage at smaller barriers.

Te Hekengā Nui o Te Tuna – Action Plan 2018 was developed to broaden the work to include wider issues for tuna in the catchment, specifically: sustainability and commercial fishing; fish passage (at dams and smaller structures); habitat degradation; water quality; coordinated management. The new action plan has five goals against these problems, with further objectives and actions under each goal.

The plan integrates the work of the Tuna Forum with the original Action Plan, to become a single plan under the broader kaupapa of working for tuna in the Rangitāiki Catchment.

Tuna Forum is a wider stakeholder grouping with interests in tuna, from a range of perspectives. The key connection for all is a desire to enhance tuna populations in the catchment by addressing the wide range of issues that affect tuna. This group was the driver for broadening the action plan to include all issues affecting tuna. The group can grow and shrink depending on what is relevant for each group at the time, and can also influence, have input into, and/or implement all or parts of a project workstream.
The conduit between this group and the Rangitāiki River Forum is the Steering Group.

APPENDIX 3

Kopuriki Assessment of Flooding and Drainage Report 30 November 2017 by Opus Consultants Whakatane

Bay of Plenty Regional Council

Assessment of Flooding and Drainage Issues at Kopuriki

Bay of Plenty Regional Council

Assessment of Flooding and Drainage Issues at Kopuriki

Prepared By

Peter Askey
Principal Environmental Engineer

Reviewed By

Jack McConchie
Principal Hydrologist

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Date:	30rd November 2017
Reference:	2-34346.00
Status:	Issue 2

Contents

Figures

Executive Summary

The Rangitaiki River was dammed at Aniwhenua (now called Aniwaniwa) in 1980 to form the 4.4 km long Lake Aniwaniwa. The Lake is relatively shallow and over the ensuing 37 years a delta has formed which now extends some 1.2km into what was clear water when the lake was filled. The effect of the delta is to lengthen the flow path and reduce the gradient for the Rangitaiki River to reach the lake. The change in gradient of the channel has led directly to a change in form of the river; from an incised meander to a highly braided, multi-channel delta. There has been a consequent rise in normal water levels and flood levels experienced at properties upstream of the Kopuriki Road bridge. Currently some 44 ha of land are adversely affected by impaired drainage. Flood levels are elevated over what would have existed immediately after lake filling over a reach at least as far upstream as the Horomanga confluence.

The option which provides most surety and longevity around both drainage and flood impacts is to construct and maintain a clear waterway for the Rangitaiki River out into the lake along the eastern shoreline. This action will have benefits for a number of parties by:

- Improving drainage and flood protection to land upstream of Kopuriki
- Protecting the Whakatāne District roading assets at Kopuriki
- Preventing further infill of the shallow wetlands on the south western shore of the Lake
- Maintaining the lake as open water area with useful depth for recreation
- Maintaining the live storage for hydro generation purposes

Without intervention, the delta will continue to progress down the lake and slowly but steadily increase water levels in the Kopuriki area. However it is important to recognise that any “solution’ can only mitigate the problem and in effect treat the symptoms and will require on-going maintenance intervention. The fundamental problem caused by the change in gradient and level of the river through this reach remains.

1 Introduction

1.1 Background

The Rangitaiki River was dammed at Aniwhenua (now called Aniwaniwa) in 1980 to form the 4.4 km long Lake Aniwaniwa (Figure 1). The barrage forming the lake is relatively low and the lake was quite shallow with a maximum depth of around 10 m over the original river channel and much of the lake being between 2-5 m depth. Land was acquired by the power scheme for the purposes of forming the lake and reserve areas beside it.

Immediately after the lake was formed a delta commenced to form at the upstream end and has gradually extended downstream from the (relocated) Kopuriki Road Bridge (Rabbit Bridge). The change in gradient of the channel has led directly to the change in the river form; from an incised meander to the highly braided, multi-channel delta. This was a foreseen consequence of the dam construction as the upper end of the lake was too shallow for the sediment travelling down the river to be accommodated in the "dead storage" of the dam. These matters were traversed at the original (pre RMA) planning hearings and appeal before the Planning Tribunal. The sedimentation and possible adverse effects on land immediately upstream were recognised at the Planning Tribunal hearings but apparently not given weight in comparison to the benefits of the electricity generation.

The continued accretion of the Kopuriki Delta is seen by landowners adjacent the Rangitaiki River upstream of the Kopuriki bridge as contributing to flooding and drainage issues on their properties. This has been a source of concern to them since the lake filled.

Responsibility for the lake and river lies with both the power scheme owner (currently Pioneer Energy) and the Bay of Plenty Regional Council (BOPRC). BOPRC's main responsibility is for river control and flood management for the river upstream of Kopuriki Bridge.

Following pressure from the landowners and the wider Galatea community, works have been undertaken both immediately upstream and downstream of Kopuriki Bridge on a number of occasions since the dam was built, but principally since 2009. Largely these works have been funded by the power scheme owner (previously BOPE and Nova) and implemented by BOPRC.

However the concern remains that there is a continuing gradual increase in river water levels. This was brought to a head with the April 2017 storms which saw widespread flooding and pasture damage at a number of locations in the Galatea basin, including around Kopuriki. Accordingly BOPRC commissioned Opus Consultants to undertake a review of the river morphology and provide options for management of the effects of the power scheme upon upstream lands.

The brief for this report is to present options for management of sedimentation with advantages, disadvantages and costs. This can then be used as a basis for consultation with affected parties. Input from affected parties will determine the feasibility of options.

1.2 Key Issues

The effects of the delta formation on the upstream lands at Kopuriki fall into two distinct albeit related aspects:

1.2.1 Land Drainage

Firstly there is the loss of drainage under normal river levels. The Rangitaiki River water level at the Kopuriki Bridge is now some 300 mm higher (as an annual median, more in winter) than it was after lake filling in 1980 due to the delta. In effect the river now has to flow some 1.2 km further into what was initially lake, and this requires a water surface gradient. This is especially evident in winter when river flows are higher, this results in high groundwater levels that approach the ground surface on the low ground adjacent the river.

In all some 23 ha of land are affected with groundwater normally within 500mm of the surface and 44 ha of land have water within 1.0m of the surface. The effects of this drainage impediment are to restrict pasture growth, promote weed growth in pasture at the expense of higher producing grasses and severely curtail the ability to traffic the ground with machinery. Livestock pug the ground under wet conditions. These areas are shown on Figure 3. The drainage affected areas have been plotted from LIDAR survey, taking a point at RL 147.2m as reference. When inspected in August 2017 this point was the commencement of surface water at the north end of the Healey property.

1.2.2 Flooding

A main consequence of the delta formation is that the passage of floodwaters into the lake is impeded. This is the result of aggradation of the Rangitaiki river bed over the reach immediately upstream and downstream of the Kopuriki Bridge, but more particularly by the multiple branching of the main river stem as it enters the lake. The single channel at Kopuriki bridge splits into 2-3 main channels and some 5-6 smaller subchannels. These are shallow and prone to willow growth and encroachment which slows the flow and causes sediment to deposit. Consequently the passage of larger floods out into the lake is restricted. The effects of the restriction on peak water levels upstream of Kopuriki Bridge do vary depending on the lake level (see Section 2.2 below) and on the delta configuration. The extent of upstream influence is not well defined but would appear to extend upstream to at least as far as the Horomanga confluence at 5.2 km upstream from Rabbit Bridge (by river).

Higher flood levels result in more water spilling onto farmland more frequently with consequent silt deposition, bank erosion, damage to pastures, fencing and ponding.

1.3 Land ownership

The land around the head of the lake is in a large number of parcels, comprising various portions of lake reserve, riparian margin, road reserve and old river bed. Upstream of the original (1980) lake bed and foreshore reserves (now owned by Pioneer Energy) the land is in freehold title. The property owners are Healey, Ng and Bridgeman (true left up to Horomanga confluence) and Noe on the true right.

A brief review of the land titles was undertaken. The original lake bed is noted as for hydroelectric purposes, as is the lakeshore reserve. Generally the titles for the land upstream of the original lake have no encumbrances or covenants on the title that the land is subject to flooding or otherwise affected by the hydro lake.

1.4 Resource Consents

Two resource consents are relevant to the operation of Lake Aniwaniwa:

1.4.1 Water Right No 190

The damming of the Rangitaiki River to form Lake Aniwaniwa (then Aniwhenua) was originally authorised by Water Right 190 issued under the Water & Soil Conservation Act 1967 by the Bay of Plenty Catchment Commission and Regional Water Board dated 4th December 1975. With the passage of the RMA in 1991 this Water Right became an RMA consent with a termination date of 1 October 2026 as per the sunset provisions for existing permits under the RMA.

Consent 190 has been varied a number of times over the years and ownership transferred through the various entities that have owned the scheme. The changes have been relatively minor being mainly around details of flows through the power station etc.

The key conditions relevant to consideration of the sedimentation, flooding and drainage issues are sparse and can be summarised as:

Rights conferred:

(a) Dam the Rangitaiki River and Pokairoa Stream at the their confluence to form a lake to be known as the “Aniwhenua Lake” (Map reference N86:235829)

Condition 2 Lake Aniwhenua Water Levels

Condition 2.1 defines the term ‘*water level*’ to be the level of the water of Lake Aniwhenua to Moturiki datum as “*measured on a gauge to be installed…as close as practicable to the entrance of the canal leading from Lake Aniwhenua to the Pahekeheke headpond*”

Condition 2.2 sets the normal operating level range of Lake Aniwhenua as 146.6m to 146.8m (Aniwhenua local datum).

Commentary: Conditions 2.1 and 2.2 define “Lake Aniwhenua” level for compliance purposes. It appears that to date the Consent holders and the Bay of Plenty Regional Council have taken the compliance point as solely the above mentioned staff gauge location and not the lake as a whole as defined by the original foreshore. Under this interpretation the water level at Kopuriki, while now exceeding the maximum lake level, is presumably deemed to be complying.

Condition 6 Sediment surveys

Condition 6 requires the consent holder to establish at least 6 cross sections of the lake and survey these at least once annually, “to determine the amount of siltation occurring”. Results are to be sent to the Regional Water Board (Council).

Commentary: This is the only reference in the consent to sedimentation. There is no requirement anywhere to manage sediment accumulation.

Condition 10 Groundwater Table

Conditions 10.1 and 10.2 required the Grantee to establish groundwater monitoring bores on properties adjoining the lake and record levels quarterly. This could be changed or cancelled after 2 years.

Commentary: These bores are no longer being monitored according to BOPRC.

Condition 12 Lake Shore Reserve

Condition 12 required the setting aside of a 20m foreshore reserve around the whole lake as a public reserve.

Condition 13 Existing streams and drains

This required the Grantee to maintain drainage of specified streams and drains through the foreshore reserve.

Commentary: A plan of drains is specified but has not been viewed.

1.4.2 Consent 64684

Consent 64684 is the general consent for work in rivers held by the Rivers & Drainage Group of BOPRC. Work carried out by BOPRC in the Rangitaiki River at Kopuriki, downstream and upstream of the Rabbit Bridge, has been undertaken under this consent.

2 Lake Aniwaniwa and the Rangitaiki River

2.1 Lake Accretion Rates

Under the resource consent which the power scheme operates, the power scheme operator is required to survey the lake bed on an annual basis. This is done at 9 main cross section locations (Figure 1). These surveys have been undertaken since lake formation in 1980.

The survey data has been analysed for this study. Commencing from the 1980 lake formation survey, we have looked at changes on approximately a 5 yearly interval. A key objective is to understand how rapidly the lake is infilling and what proportion of the sediment passing under the Kopuriki bridge is passing completely through the lake and out the barrage.

The lake surveys are helpful in defining trends but do not fully establish the sediment transport dynamics.

Estimates have been made in previous reports of the sediment transport rate into the Lake. This is variously estimated between 60,000 and 100,000 m^3/annum (BOPRC File notes). In practice it is difficult to be precise about how much sediment would pass under Rabbit Bridge on an annual basis. Principally this is as the sediment transport occurs in an episodic manner driven by large floods and changes in the catchments upstream. In reality the actual quantity is of somewhat academic interest, the important factor is the nett accumulation in the lake and hence the rate at which the delta progresses down the lake. This is measurable from survey (also see Section 6.1 below on future monitoring).

The key findings of this analysis are (Appendix 1) :

- At sections 6 and 7 immediately downstream of the current end of the delta, the lake is largely infilled, with water depths now only 1-1.5m over the full width of the lake.

- At sections 6 & 7 the original river channel is now completely infilled, meaning a rise in bed level of 4-5m from the deepest point originally (1980)
- At Section 6 a slightly deeper channel (approximately 2m) remains on the east of the lake, where flow from one of the main river threads enters the lake.
- Further downstream at Sections 10 and 11, the lake bed as a whole has risen by a lesser amount, typically between 0.5 - 1.0 m.
- At Sections 10 and 11 the sedimentation in the original river channel has been more pronounced, with a rise in bed level of around 2.0m.

2.2 Lake levels

2.2.1 Operating Range

Lake Aniwaniwa is operated under a narrow operating range under normal power generation conditions. This is 200mm between RL 146.32m and 146.52m (BOPRC datum. The original operating range was quoted in a BOPE datum of Moturiki + 0.28m ie 146.6 m to 146.8m). This is the "live storage". Sediment that accumulates within this range is a disbenefit to the power scheme operator as it reduces their ability to hold back water for optimum generation times during the daily power peak. Sediment accumulating beneath RL 146.32 in the "dead storage" is less of a concern to the power scheme.

Below the normal operating range, the lake is on occasion drawn down by anything up to 2 m using the radial gates on the barrage. This can be for weed control purposes. The lake is also drawn down in flood conditions to create a strong gradient at the delta margin and so draw more sediment into the dead storage and in fact right through the lake to the outlet gates.

The standard operating procedure is to draw down the lake level when flow in the Rangitaiki River is > 90 m^3/s (a moderate fresh in the river). There is a progressive response proscribed by the operating rules with more aggressive drawdown as river flows increase.

2.2.2 Lake levels at Kopuriki road

Visual inspection confirmed by survey during August and September 2017 showed that there is a water level difference of up to 600mm across the western section of the Kopuriki Rd approach embankment (Figure 2). This difference has led to the suggestion from landowners that a culvert be put through the western embankment to assist in draining the upstream lands. This possible action is discussed further in Section 4.2.

This survey observation suggests that the water level immediately downstream of the Kopuriki west embankment is close to or in fact is, lake level. As opposed to the water level in the river at Kopuriki bridge which is manifestly higher. To better understand the relative levels we undertook an inspection of the lake from a boat in September 2017 and carried out soundings at a number of locations.

This revealed:

- The delta has not as yet reached fully across on the western shore of the lake (Figure 2). This leaves a section of the original river channel where it used to flow hard against the true left bank

- The water depth in the remnant channel is around 3-3.5m, so is not overly deep. The width between the western shore and the delta shingle banks is typically 30m, but only 20m at the narrowest point

- At the current downstream extent of the delta at some 60-100m upstream of cross section 6, the water depth is only 1.0 -1.4 m deep

- Immediately upstream of the Kopuriki bridge on the true left (west) side, the channel which leads from the main river out into the western lagoon is 15m wide and 1.5m deep.

This remnant of the lake is therefore allowing the shallow wetland area downstream of the Kopuriki west approach embankment to drain and maintain at lake level. Once the delta infills across onto the western shore the lagoon area immediately downstream of the Kopuriki road embankment will be dammed off and in time water level will rise to meet the river level at the bridge.

2.3 Rangitaiki River Levels

2.3.1 River Levels at Kopuriki (Rabbit) Bridge

There has been a level recorder at the Rabbit Bridge since 2010. This replaces a previous recorder site that was drowned when the lake was formed. The period of record is thus somewhat limiting as it doesn't include the first 30 years of the lake.

Nonetheless a useful insight into the long term trends of water level can be gained from this record. It can be assumed that in 1980 the river level at the bridge would have been lake level or very close to it. An analysis of the water level record is included as Appendix 2.

Key findings from the analysis of the water level record are shown in Table 1:

Lake Level (midpoint of range) m	Water level case	Level at Kopuriki Bridge(m)	Level at Healey Boundary (m)	Water level rise (m)
146.42	Annual median	146.67	146.78	0.36
	Median Spring	146.67	146.783	0.363
	Upper Quartile spring	146.73	146.84	0.42
	Maximum spring	147.11	147.226	0.806
	August	146.79	146.90	0.48

Table 1: Water Level analysis

Notes to Table 1: - All levels are Moturiki datum

- Level at Healey boundary taken as Kopuriki plus distance times river slope of 0.00023m/m

Table 1 shows that water levels in winter and spring conditions are typically around 0.4m higher than in 1980. When the Lake was first filled the lake finished some 200 m upstream of Rabbit bridge, ie Kopuriki Road was on a causeway in the lake bed.

An analysis of long term trends in the level at Kopuriki recorder has also been undertaken (Figures 5 & 6 in Appendix 2). The data has been presented as a 7 day moving average, to smooth out the effects of minor freshes and of the upstream power schemes at Wheao and Flaxy, and also as monthly minima to show the effect on base water levels.

The long term trend in level is affected by lake drawdown events, flood scour and other interventions. However it is apparent that in periods of relatively stable flows, such as 2012 through to 2015 there is a gradual rising trend of around 80mm/year. The correlation in the data for the 7 day moving mean is only moderate (coefficient 0.6). The correlation for the monthly minima is much stronger (0.86) and clearly shows a strong time trend. This reflects the gradual accretion in the delta area pushing up river levels.

2.3.2 Bed levels in the Rangitaiki River upstream of Rabbit Bridge

While the lake surveys are the responsibility of the electricity generator under the resource consent, the survey of the river upstream of Rabbit Bridge is undertaken by BOPRC as part of their river management role. Sections are surveyed on a 5 yearly basis. The sections are spaced at approximately 1.0 km intervals from Rabbit Bridge up to Murupara.

Examination of the bed levels shows a definite accretion of the river bed over the reach from the Rabbit bridge up to at least the Horomanga confluence.

The bed levels at the bridge itself vary quite widely (ie by up to 2 m) and are currently more reflective of flood scour events than accretion due to the delta. There was a large rise in bed level under Rabbit bridge of 3 m over the years after the dam was filled.

2.3.3 Flood levels upstream of Kopuriki

Figure 4 shows the reach of the Rangitaiki River from Kopuriki to the Horomanga River confluence. The effect of the delta on flood levels in this reach is not well defined by available measurements. In particular there is no rating applied at the Kopuriki Bridge recorder site (ie it only records water level). This is as the cross section scours in floods and it is not feasible to establish a flood flow rating. Flood flows into the lake would have to be back calculated from the power station discharge after allowing for attenuation through the lake, or estimated from upstream recording sites at Whirinaki and Murupara (as per Water Right 190).

Nonetheless, given the constricted nature of the river exit into the lake, as apparent from the 2016 aerial imagery (Figure 2), supported by our observations in the lake, it is reasonable to expect that the delta is causing flood levels to rise for any given flood magnitude. As the delta extends further into the lake, then less gradient is available for the river hydraulic grade line and water levels upstream must rise to compensate. Anecdotally, observations from the upstream landowners support this. They note that even when the lake is drawn down, this has only minor effect on water level in the river at their properties.

Modelling of flood flows by BOPRC (File note “Flood Water Levels for Different Flows: Existing Scheme”) shows a steeper gradient through the delta area (implying more flow resistance over this reach), a slight rise of 100mm approx. through the Rabbit Bridge constriction and then a backwater effect persisting to chainage 5000m (Horomanga confluence) at which point flood levels for flows in excess of 170 m^3/s return to the indicative “Historic Water Surface Slope”.

Specific modelling would need to be undertaken to more accurately establish the levels upstream of Rabbit Bridge for a particular flood discharge and how this would change with differing conditions in the delta. This work would need to be undertaken to establish the optimum channel width if a channel clearway option is chosen (Section 4.3).

2.4 The Delta

The delta currently extends 1.2km into the lake. Currently the Rangitaiki River flows in one defined channel for 600m downstream of the Kopuriki Bridge. There is one side flow to the west at 150m downstream where the original lake training groyne ended. Generally this is kept closed off by BOPRC to stop flow out to the west, but the river bank scoured out in April 2017 and some flow was still running down it in August.

At 600m downstream there is a major bifurcation with slightly over half the flow taking the western branch. Both channels then further branch to form several sub channels flowing into the lake. When observed in September 2017 there was strong flow from a subchannel into the western lake area (Figure 2).

The delta is formed of a fine gravel (reported as generally <10mm) with sand and silts. There is thick growth over the islands, with grass on the recent deposits by the water’s edge and then pampas and dense willow thickets on the older and higher sand banks. The vegetation would have a high roughness and resistance to flow.

Where the delta currently ends at around cross section 6 (1.2km downstream of the bridge) the lake is 240m in width and relatively shallow at around 1.5m depth with no remnant of the original river channel.

3 River Works To Date

3.1 Works in the Rangitaiki River Channel

A number of works have been undertaken over the years to attempt to influence the rate and location of the delta formation.

When the lake was formed rock protected training groynes were built both upstream and downstream on either side of Kopuriki Bridge to direct river flow (and presumably targeting sediment) out into the lake proper.

For a number of years after this only limited works were undertaken, mainly to maintain the groynes and keep the river downstream of the bridge to a single channel. However by 2000 this was somewhat of a lost cause.

A renewed effort was put into maintenance of the river channel from 2009. Actions taken over the period 2009 to present are summarised in Appendix 3.

The main action was to dredge (by land based long reach excavator) the channel from 400m upstream of the bridge down to the bifurcation. This work removed an estimated 22,000 m^3 of sediment (placed into the bunds and islands beside the river). However this work did not close off the western channel or extend the main channel down to the lake. Subsequent to this major intervention further flood damage repairs and river training works were carried out after floods in 2010 through to 2012. These works were implemented by BOPRC under consent 64684 largely using funding from BOPE.

3.2 Management of the Lake Sedimentation

Two major dredging operations were undertaken by BOPE in the late 1990's. This work was carried out by Heron Dredging using a cutter suction dredge. One operation was in the western side bay immediately upstream of the barrage (Pokairoa stream delta). A second operation was in the main body of the lake approximately between sections 7 and 9 (Figure 1). The quantity of material moved is not known but may be available in old BOPE records. Presumably it would have been in the tens of thousands of cubic metres to justify the high establishment cost of the dredge. Dredging has also been undertaken in the last 2 years immediately upstream of the barrage. This is to minimise sediment entering the headrace canal from the Pokairoa stream.

As part of the lake management, NOVA (now operating the hydro scheme on behalf of Pioneer Energy) do draw down the lake immediately in advance of floods. This is with the intent of forming a steep gradient at the delta edge and scouring sediment into the dead zone of the lake. This operation is flow dependent but could take place 1-2 times per year.

The effect of the lake drawdown on sedimentation is not clearly defined, with no available surveys immediately prior to and after a significant flood. It would be expected that lake drawdown would assist in moving finer sediments (silts and sands, and especially pumiceous material) right through the lake. It would be unlikely to have much effect on fine gravels as the velocity across the lake bed would be insufficient to move coarser sediments. This appears to be borne out by the observations from the lake cross sections in Section 2.1 above, with substantial infill taking place in the deeper parts at sections 10 & 11 close to the barrage.

4 Flood and Drainage Management Options

4.1 General

The sections below present several options for management of the flooding and drainage issues identified. Some interventions are more specifically aimed at drainage, while others address both problems.

4.2 Kopuriki Rd Embankment Culvert

When the Kopuriki road embankment overtopped and breached in the April 2017 flood this was observed to assist passage of floodwaters and reduce upstream water levels. The breach would have immediately generated a steep flood gradient down to lake level. The volume of flood water passing through the breach is not known. These observations have led to suggestions by the upstream landowners that a culvert(s) through the embankment would be useful.

There are two possible scales to this option:

a) A large waterway capable of passing a significant flood flow. Say 100-200 m^3/s. This would require multiple culverts or a flood bridge

b) A culvert sized to pass normal drainage flows

Considering these approaches:

4.2.1 Flood Bridge

To pass a significant volume of floodwater would require either multiple box culverts or a bridge span. There are however major morphological (river and delta formation related) issues with this approach.

Opening up a large waterway through the west embankment will only be effective for as long as the "Western channel" in the lake remains open (Section 2.2.2). Passing floodwaters through the Kopuriki Road embankment will draw flow and hence sediment from the main river. This sediment will immediately deposit north of the embankment and rapidly infill this area. This could in theory be mitigated by a sediment weir that held back the bedload in the main river, but this would just worsen the aggradation in the existing channel.

More problematic will be that the diversion of flow would reduce the velocity and hence sediment transport capacity in the main river channel downstream of Rabbit bridge, exacerbating the already limited sediment transport capacity through this reach.

The expected result in a relatively short timeframe (ie < 10 years) would be infilling of the western embayment and further aggradation of the delta eastern channels. Thus benefit would be short lived. This option is high cost and of doubtful longevity and is not recommended.

4.2.2 Drainage culvert

Survey indicates there is between 600 and 800 mm of water level drop across the road embankment in winter conditions. If this difference could be translated up to the low lying areas of the Healey property there would be an immediate benefit to approximately 33 ha of land. There would be no benefit to the true right side of the river (Noe property).

There is a small catchment that drains into the western lagoon. A culvert of approximate size 1500 mm would drain this area. However to be effective it would also be necessary to block off the opening between the lagoon and the main river (Figure 1, Section 2.2.2) as otherwise flow from the main river would be drawn to the culvert by the large gradient compared to the flow path out to the lake via the main channel. Not only water would be drawn into the lagoon, but also fine bedload sediment. In time this would fill the lagoon. The gap between the main river and the lagoon could be closed by a rock fill.

The longevity of this solution is short to medium term (say < 10 years) unless works are undertaken to maintain the open waterway on the west of the lake. As soon as this waterway is infilled (Section 2.2.2) then the gradient through the culvert will be lost.

For this to be anything other than a short term fix, this option would need to be in conjunction with main channel maintenance. However if the main channel is kept as a clear way as discussed below then the need for the drainage culvert is negated.

4.3 Main Channel Maintenance

Currently the river channel branches approximately 600 m downstream of the Rabbit Bridge. The smaller channels though the delta area are prone to sedimentation and vegetation growth. If a clear waterway could be maintained for a further 600m down to (currently) Section 6, then passage of flood flows would be greatly assisted. This clear waterway would need to be around 40- 50m wide.

The channel needs to be subject of specific design, based upon the flow regime and sediment gradings. If the channel is too wide velocities will not be sufficient to pass sediment through to the lake. However if the channel is too narrow it will be efficient at transporting sediment, but still create upstream backwater (flooding) and also be more prone to bank erosion. Creating this clear waterway was the intention of the 2009 works (Section 3.1) but it was not completed.

The work to form this clearway is substantial, requiring the excavation of some 20,000 m^3 of material. The river banks would need to be protected with rock in parts, or the flood flows will just erode the sides and spread the flow back into the delta. The east bank of the river would need armouring to prevent erosion to the farmland, as happened in April 2017.

With the clearway established it is expected that periodic dredging would be required at the lake end of the channel to maintain depth and encourage sediment transport out into the dead storage. The section of the lake into which the channel would feed is now relatively shallow at 1- 1.5m depth and will rapidly form a delta if not actively managed. This maintenance dredging could be carried out using a long reach excavator working off bunds beside the channel, or alternatively could be efficiently carried out using a cutter suction dredge on the water (as was done in the 1990's).

The cost to establish a cutter suction dredge is substantial (Heron Construction have provided an estimate of $60,000 for mobilisation and demobilisation of their dredge the "Matuku"). The advantage is that working from the Lake, the full width of the channel can be cleared. Sediment can be pumped up to 500m (longer with boost pumps). Whether this is cost effective compared with working with long reach excavators would depend upon the volume of material to be shifted. The dredge has the advantage that excavated material does not need to be double handled. Long reach excavators have a low establishment cost but a lesser productivity. The cutter suction dredge would be more suitable for a periodic major scale cleanout, say every 5-10 years.

The benefits of maintaining a clear outflow channel right through to the lake are principally to flood flow passage. It will also assist in reducing water levels in the Healey and Noe properties especially in winter conditions. The exact amount of drainage improvement that would result is difficult to estimate precisely but could be expected to be in the range of 200-300mm in winter/spring high flow conditions. What maintaining a clear waterway into the lake will do is prevent the gradual rise in upstream water level which otherwise will occur.

4.3.1 Channel Establishment

The works to establish the clear channel from the bifurcation down to the Lake at Section 6 involve:

- Closing off the western channel with 90m of bund and rock protection.
- Willow removal on the true left bank for some 550m, willows to be laid on the ground and an access road formed with gravel from the river excavation (as was done in 2009)
- Rock protection to the banks at some locations
- Excavation of the channel

Survey of the channel and a specific design is required to accurately cost this work, but based upon the 2009 channel works it is expected to cost in the order of $100-150,000. This is inclusive of engineering and survey costs and does include a small allowance of $5,000 for resource consents. This assumes works are able to be undertaken under BOPRC Consent 64684. If the works are controversial with third parties and consents are opposed then costs would be considerably greater.

4.3.2 Channel Maintenance

The ongoing effort that will be required to maintain the clear channel will depend in part upon frequency of flood events and the effectiveness of lake drawdown in shifting sediment through the lake. Principally the dredging would need to be concentrated over the downstream end of the channel as it enters the lake.

An approximate estimate would be that an area of 1 ha would need dredging (being 350m length of channel by 30m width). Dredge depth would be in the range of 1.5 - 2.0 m giving a dredge volume of 15,750 to 21,000 m^3. In comparison around 22,000 m^3 was reported to have been cleared from the river channel in 2009.

Assuming the cutter suction dredge is used, then the dredge cost at $7.50/$m^3$ plus mobilisation/demobilisation would be in the range of $178,000 - $217,000. This assumes the dredge spoil can be disposed of within 500m by building up the already dry land on the delta. If this cannot be done and the dredge spoil has to be removed completely from the area then costs would rise very substantially.

It is hard to be definitive over the frequency at which this operation would need to be carried out. A reasonable estimate would be on a 5-10 yearly cycle. In addition some flood damage repairs to river banks and rock work would be expected on occasions in the intervening years. Therefore on an annualised basis the maintenance budget would be in the order of $20,000 - $50,000 pa.

4.4 Pumped Land Drainage

It would in theory be possible to improve the drainage on the lowest parts of the Healey and Noe properties by low stopbanks and pumped drainage. However this is a high capital and operating cost option. It does not address the causes of the problems or provide long term surety against future accretion and rising river levels.

4.5 Retreat from lowest paddocks, possibly with farm amalgamation

In total some 44 ha of the Healey and Noe properties are currently adversely affected by the elevated water tables.

If the cost of improving and maintaining the drainage exceeds the productive value of the land then a better long term solution may be retiring the low land from farming. The funding and mechanism for this would need be worked out between the affected landowners and the power scheme operator. We would make the observation that loss of the lower lying land may leave the affected farms as a whole an uneconomic unit unless other (higher) land could be added.

Without works to maintain a clear channel into the lake then the backwater from floods will continue to rise and extend further up the river.

4.6 Extraction of Gravel Upstream

The sediment that is forming the delta is being transported through the upper river systems of the Rangitaiki, Whirinaki and Horomanga and other smaller tributaries coming off the Galatea foothills. The Horomanga River in particular has a broad gravel floodplain and transports large quantities of gravel. Gravel is removed for forestry roading purposes at several locations, principally around the Troutbeck Road bridge. Removal of gravel from the rivers upstream of Kopuriki would be of some assistance in slowing the accretion in the delta and decreasing the frequency and scale of maintenance activity, but is not in itself a solution.

4.7 Wider Benefits

Achieving a viable long term solution to the accretion at Kopuriki brings benefits to more than just the immediately adjoining and upstream landowners. A number of other stakeholders have an interest and would benefit. These include:

4.7.1 The Roading Network

Whakatāne District Council advise that Kopuriki Road is a strategically important link for the Galatea plain. In particular the bridge is rated for HPMV loads (High Productivity Motor Vehicle). This links the Galatea area to milk processing sites at Reporoa and Edgecumbe via the off highway. The current Galatea Road is not suitable for these vehicles due to limitations on the bridge at the head of Lake Matahina.

Further accretion at Kopuriki will increase the frequency of flooding of the Kopuriki Road and use of the overflow weir (Section 5 below).

4.7.2 The Hydro Electric Scheme

Further loss of volume from the live storage of Lake Aniwaniwa does affect the ability of the power scheme operator to take advantage of peak generation periods. The quantum of this loss is not known, but is understood to be not a major concern to the current owner (Pioneer Energy, perscomm Peter Mulvihill).

4.7.3 Loss of wetlands

Currently there are extensive areas of shallow water and wetlands on the west of the lake below the Kopuriki Road embankment (Section 2.2.2, Figure 2). Continuing infill and loss as wetlands of these areas from the delta can be expected if no intervention is made to the deltachannels.

4.7.4 Loss of lake area and depth

Lake Aniwaniwa is a Regional asset for various water recreation activities including boating and fishing. Continuing infill and shallowing of the lake is steadily diminishing the value of the Lake as a recreational asset. Shallower water promotes macrophyte weed growth and development of islands.

5 Long Term Predictions

Currently the delta extends 1.2 km into the lake, leaving a further 3.2 km until it reaches the barrage. While it has taken 37 years for the delta to build to this extent, it would be misleading to pro rata the development of the delta and predict a further 135 years for the delta to reach the barrage. In reality it is likely to be considerably longer. The current regime of lake drawdown is moving finer sediment through the lake and this will become more effective as the delta gets closer to the barrage (a steeper gradient will result). Interventions around maintaining the clear waterway and periodic judicious dredging would assist in transporting sediment through to the barrage.

Without intervention, the delta will continue to form, the lake will infill and eventually reach the barrage. At that time the river will form a new stable gradient. The gradient would be a function of the river flow regime, frequency of flooding, sediment supply, sediment grading, vegetation and land use on the old lake etc. Given that complete infilling of the lake is many years away it is speculative to attempt to say exactly what the gradient of the re-established river would be. However we can say it will be greater than zero and less than the natural gradient of the Rangitaiki River as existed prior to the dam.

The natural river gradient as existed prior to the dam was approximately 0.0013 m/m (reference is Figure 19 of the water right hearing). The current gradient taken from the mid-range lake level (146.42 Moturiki) to the mean spring water level at Kopuriki (146.68m Moturiki) is around 0.00023 m/m. If it was assumed that the re-established channel stabilised at a gradient similar to the existing (ie 0.00023 m/m) then the typical winter/spring water elevation at Rabbit Bridge would be around RL 147.4 m Moturiki, ie 700mm higher than today. The effect of this on the low lying land upstream of Rabbit Bridge would be substantial, extending the area of drainage impeded land upstream of the currently affected 44 ha (Figure 3). This would be a “best case” figure and depending on how the channel through to the dam was allowed to develop and be maintained it could be considerably higher (ie +1-2m).

River levels in floods would be higher also. The extent of the resulting backwater effect would need to be established by modelling but would be expected to extend well upstream of the Horomanga confluence.

6 Future Monitoring

The monitoring of lake and river water and bed levels undertaken to date has been of some assistance in defining trends and establishing the level of effects on upstream property, but unfortunately has not been found to be definitive. In particular we observe:

6.1 Lake Bathymetry and Delta Extent

The annual lake surveys are taken on sections between 200-400m m apart. These establish the trends at these locations but make an overall volume calculation difficult and imprecise. Also from the data available to us, not all years have been surveyed and in some years not all sections are on the file. With modern technology it would be relatively easy to capture the whole lakebed with sonar linked to GPS. This could be done on a 3 yearly basis and would then give a surface which can be easily processed to accurately assess overall changes in bathymetry. The annual frequency is not required. A specific pick up of the vegetation margin at the edge of the delta should be captured. This is easily done with a drone. It would also be very helpful to complete a bathymetric survey immediately after a flood drawdown event.

6.2 Upstream flood levels

The trend in flood levels upstream is not well understood. The river bed surveys (5 yearly) give some indication of trends but do not directly relate to water levels in flood conditions. We would recommend installing 3-4 high stage flood recorders (basically a painted post in a pipe) at strategic locations (such as the corner on Bridgeman's property opposite the Horomanga). These would be levelled in and can then be easily read after a flood event. This information is useful in two regards:

- Allowing a direct comparison of levels for similar sized flood flows using the measured outflows at Aniwaniwa. This will track flood backwater effects with time.

- The level and corresponding flow records could then be used in conjunction with the 5 yearly river surveys to accurately calibrate a river model. A river model is required to optimise the width of the clearway channel into the lake.

6.3 Groundwater levels.

Currently there is no monitoring of groundwater level in the Healey property close to the lake. This leaves the assessment of drainage impediment and trends in the drainage condition subjective. It would be helpful for all parties to have a monitored bore that can be used to track the groundwater level at a point some 400m upstream from the property boundary (Figure 3).

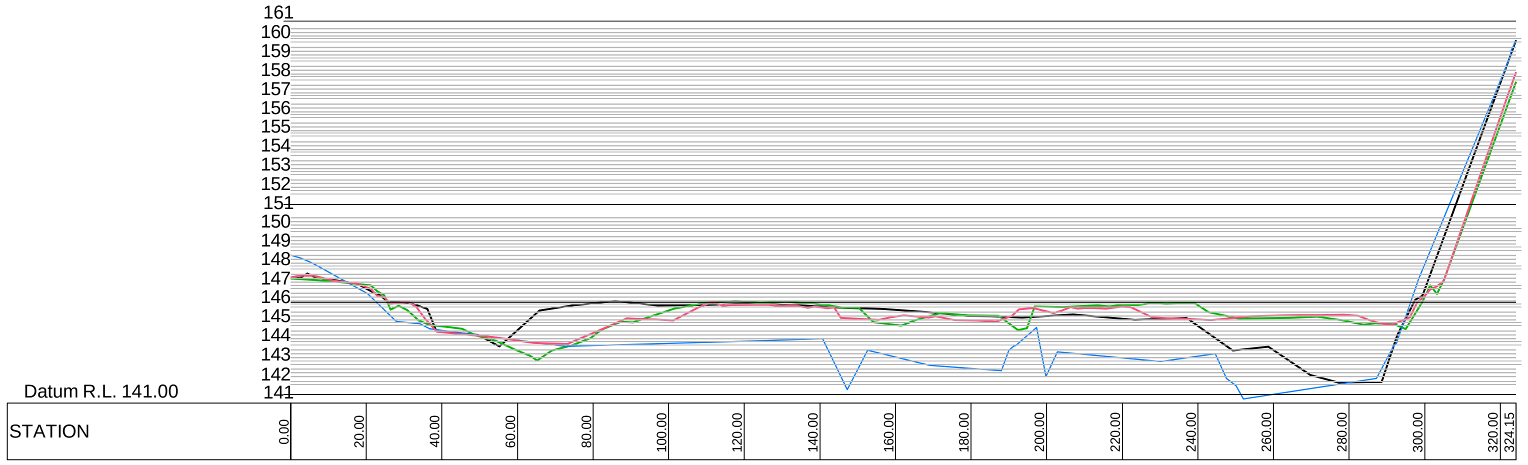
7 Conclusions

On the basis of this review the following conclusions are reached:

1. The most reliable option for providing long term drainage and flood relief to the land adjacent the Rangitaiki River and upstream of the Kopuriki Bridge is to establish and maintain a clear channel to the lake
2. Survey and specific design including hydraulic modelling for the clear channel is required to better define the optimum channel width and hence costs.
3. The cost effectiveness of this approach needs to be determined following consultation with the various parties, being Pioneer Energy, the landowners, BOPRC and third parties with an interest in the river and lake being Iwi and Fish & Game.
4. A focussed programme of survey and water level monitoring needs to be put in place to ensure quality data is collected that will define trends and provide a sound basis for planning the management of the lake and river.

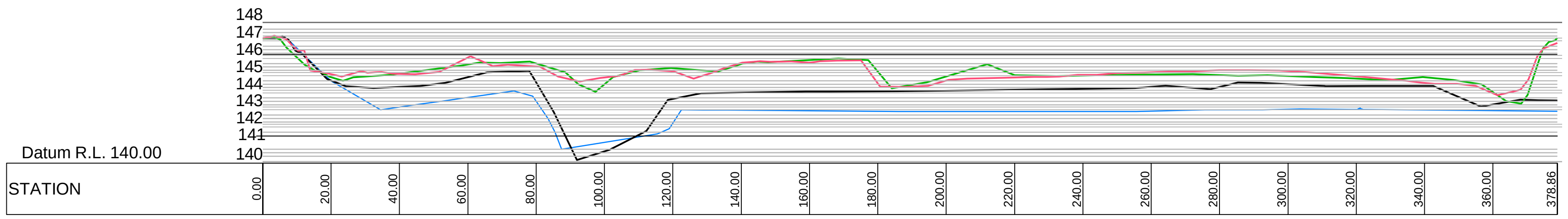
It is important to recognise that any "solution' can only mitigate the problem and in effect treat the symptoms and will require ongoing maintenance intervention. The fundamental problem caused by the change in gradient and level of the river through this reach remains.

Appendix 1 – Lake Cross Sections



LONGSECTION - SECTION 6

1:1000H 1:200V (A1) 1:2000H 1:400V (A3)



LONGSECTION - SECTION 7

1:1000H 1:200V (A1) 1:2000H 1:400V (A3)

LEGEND

1981	
2002	
2012	
2016	

Revision	Amendment	Approved	Revision Date

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Bay of Plenty REGIONAL COUNCIL

Project	LAKE ANIWANIWA CROSS SECTIONS
Sheet	SECTION 6 & 7
Approved	F SHILTON
Approved Date	14/11/2017
Drawn	G ROSE-INNES
Scales	AS SHOWN
Project No.	234346.00
Sheet. No.	C01
Revision	A

1:1000@ A1 1:2000@ A3 0 10 20 30 40 50 60 70 80 90 100 m

300 mm 200 100 50 10 mm 0

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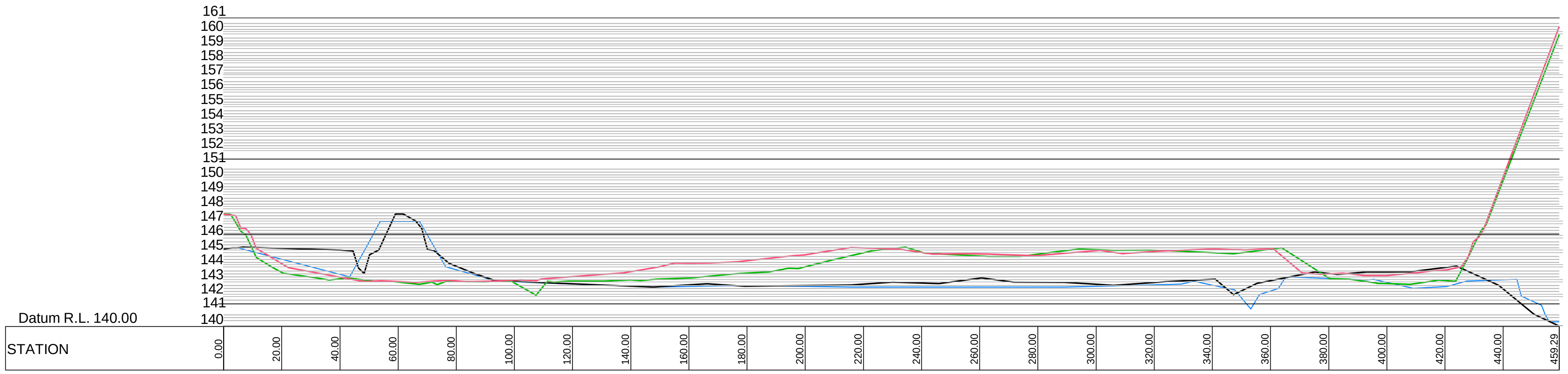

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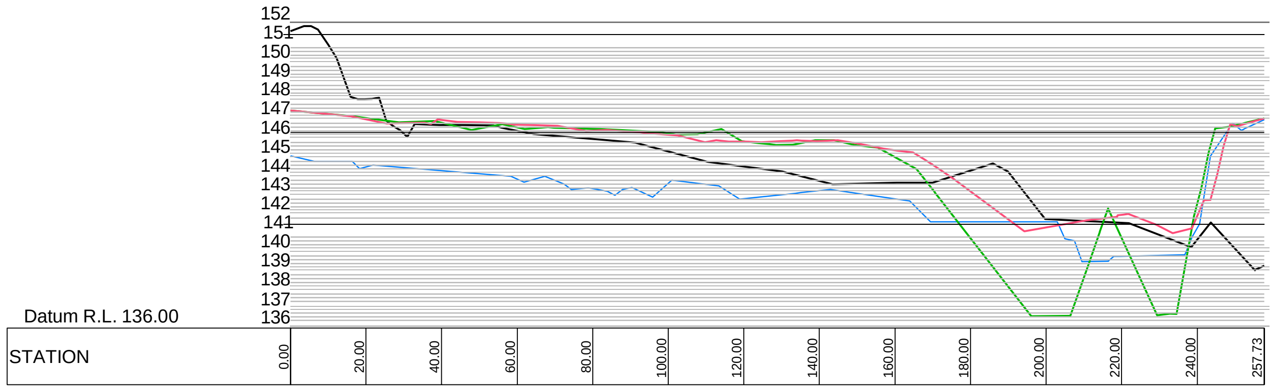

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LEGEND

1981
2002
2012
2016

Revision	Amendment	Approved	Revision Date

Bay of Plenty REGIONAL COUNCIL

OPUS
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PO Box 1245
Rotorua 3040
New Zealand

Approved	F SHILTON	Approved Date: 14/11/2017
Drawn: G ROSE-INNES	Scales: AS SHOWN	

Project: LAKE ANIWANIWA CROSS SECTIONS

Sheet: SECTION 8 & 9

Project No.	Sheet. No.	Revision
234346.00	C02	A

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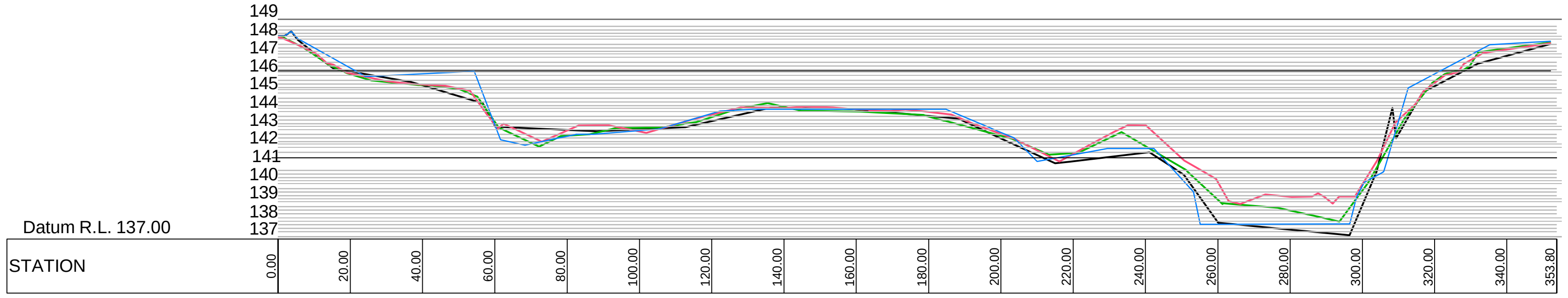

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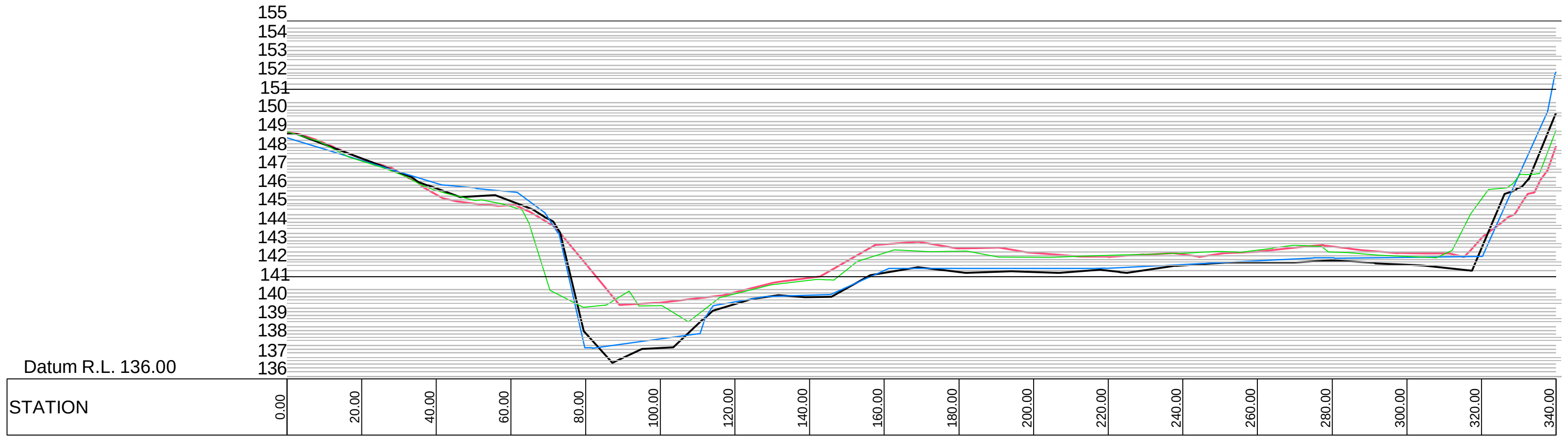

LONGSECTION - SECTION 11

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LEGEND

1981
2002
2012
2016

Revision	Amendment	Approved	Revision Date

Bay of Plenty REGIONAL COUNCIL

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Approved: F SHILTON
Approved Date: 14/11/2017
Drawn: G ROSE-INNES
Scales: AS SHOWN

Project: LAKE ANIWANIWA CROSS SECTIONS
Sheet: SECTION 10 & 11
Project No.: 234346.00
Sheet. No.: C03
Revision: A

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Appendix 2 – Kopuriki Water Level Recorder Analysis

Memorandum

To	Peter Askey
Copy	
From	Lizzie Fox
Office	Wellington Office
Date	20/11/2017
File	2-34346.00/200WK
Subject	Rangitaiki River at Rabbit Bridge Water Level Analysis

As part of the Kopuriki flooding project in the Bay of Plenty, water level analysis is required of the Rangitaiki River. This will provide supplementary information on how the Rangitaiki River has changed over time and how this influences flooding adjacent to the river.

There are two active recording sites directly on the Rangitaiki River; Rangitaiki at Rabbit Bridge and Rangitaiki at Te Teko. The former site is a water level only site, monitored by Bay of Plenty Regional Council (BOPRC) and installed in April 2010. It is located on Rabbit Bridge where Kopuriki Rd crosses the Rangitaiki above the Aniwhenua Lake, which was damned in 1980/1981. The latter Rangitaiki site is run by a combination of BOPRC and NIWA and is located in the town of Te Teko, approximately 34km south of the present day Rabbit Bridge site.

A third Rangitaiki River flow monitoring site, named Rangitaiki at Kopuriki, existed from 1966 to 1980. This was closed due to the damming of the Rangitaiki resulting in the formation of Lake Aniwhenua as part of the Rangitaiki River hydro scheme. This site was operated by NIWA and was located approximately 3.4km downstream of the present day Rabbit Bridge site.

Analysis was therefore carried out using the Rangitaiki River at Rabbit Bridge site, though the short record (~ 7 years) impacts the applicability of the results for long term analysis.

Figure 1 shows the Rangitaiki River at Rabbit Bridge water level record from April 2010 until June 2017. Water Level is measured in mm at the site, and has been converted to the Moturiki datum for analysis.

The relationship of the Rabbit Bridge site to the Moturiki datum is + 145.989 i.e. if the water level recorder measured 0, then this is equal to 145.989m to Moturiki

Figure 2 compares the measured water level at Rabbit Bridge with a surveyed water level taken at the site on 31st October 2002. It also has data points filed in 1980 to represent the original operating range of the downstream Lake Aniwhenua; a minimum water level height of 146.320m and 146.520m (Moturiki datum). Figure 3 shows the same data but with the lake level thresholds as lines to show how the recent data compares with the original operating range.

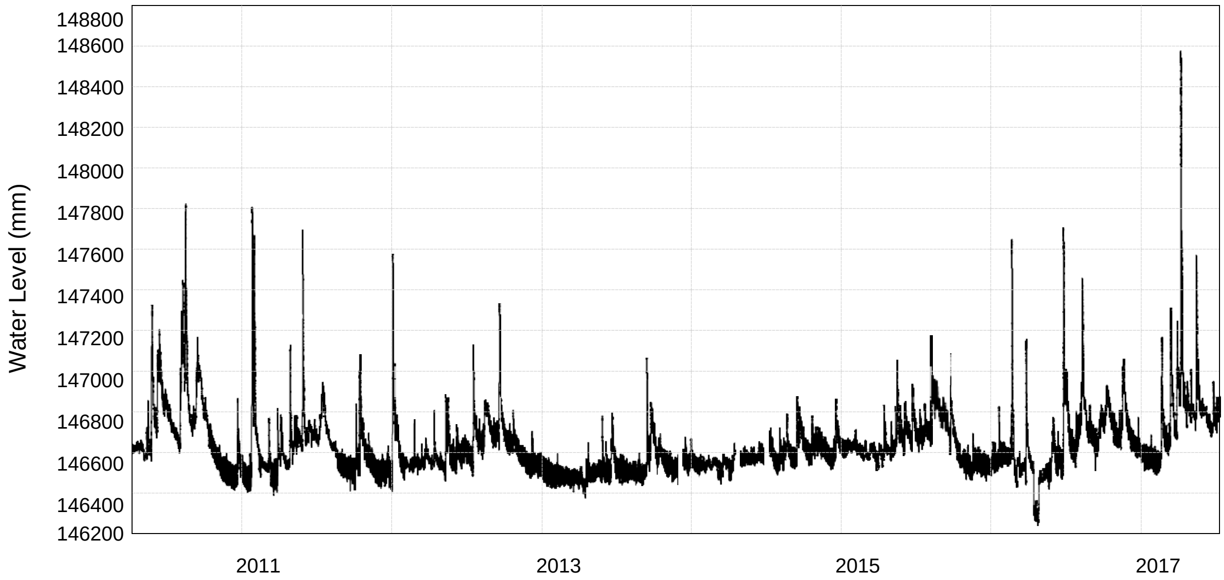

Figure 1: Rangitaiki River at Rabiit Brige Water Level record to Moturiki datum (+145.989m added to site RL). Data provided by BOPRC from April 2010 to June 2017

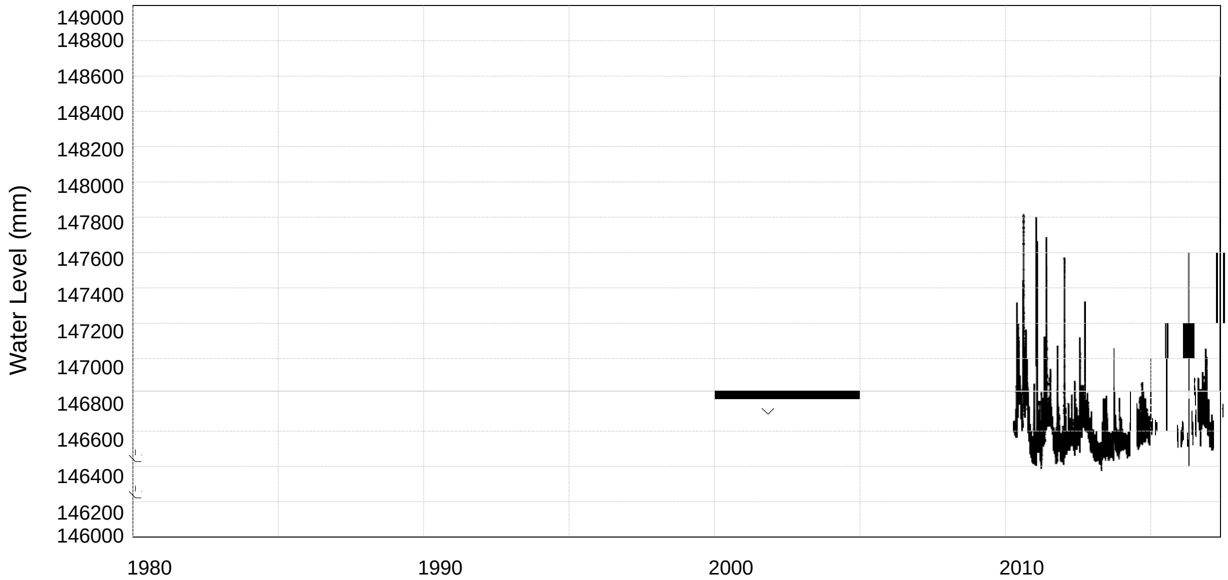

Figure 2: Extended Water Level record at Rangitaiki River at Rabbit Bridge using obtained water level survey points

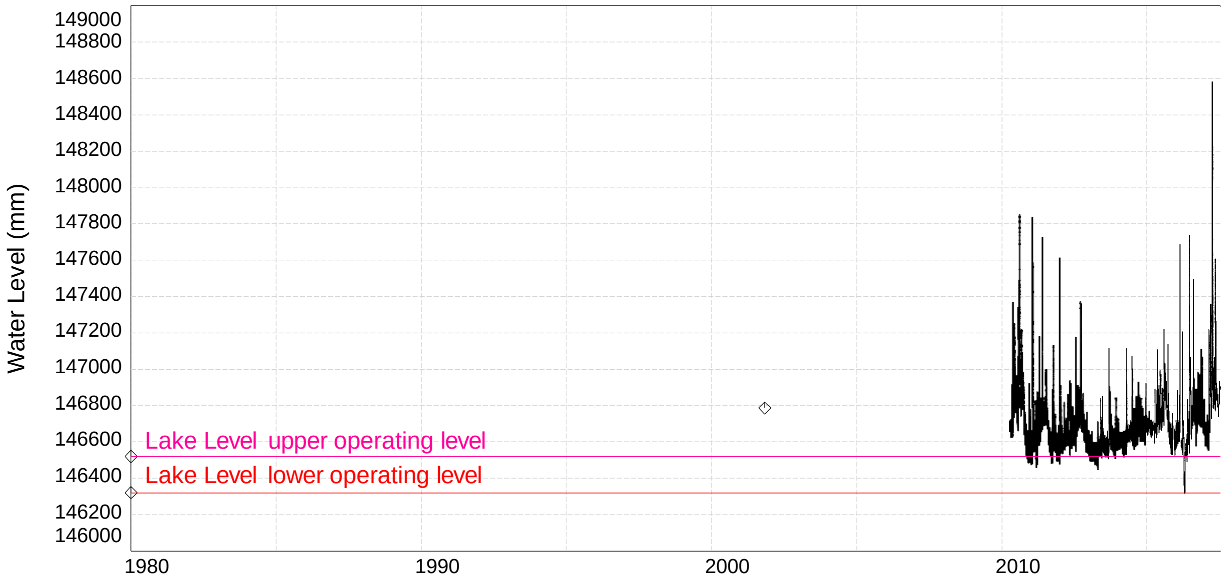

Figure 3: Extended Water Level record at Rangitaiki River at Rabbit Bridge using obtained water level survey points with the original lake operating range displayed as threshold lines to demonstrate how the water level has changed from 1980 to present.

Of particular interest to the Kopuriki flooding project are water level heights over time. Table 1 displays the annual statistics for the site for each year (i.e. from 2010 to 2017). Note that years 2010 and 2017 are incomplete years.

Table 1: Annual statistics on Water Level (m) for Rangitaiki River at Rabbit Bridge (2010-2017)

Year	Minimum	Median	Mean	Maximum	Lower Quartile	Upper Quartile
*2010	146.484	146.755	146.796	147.854	146.656	146.888
2011	146.460	146.642	146.684	147.837	146.586	146.743
2012	146.527	146.659	146.691	147.613	146.615	146.734
2013	146.448	146.586	146.600	147.114	146.555	146.623
2014	146.516	146.651	146.666	147.116	146.620	146.696
2015	146.527	146.698	146.720	147.220	146.651	146.768
2016	146.317	146.700	146.722	147.738	146.619	146.798
*2017	146.557	146.833	146.846	148.583	146.691	146.899
All	146.317	146.668	146.704	148.583	146.608	146.762

The time of year that is prone to flooding in the Kopuriki area is in mid to late spring; Table 2 compares the annual statistics for the site for the month of October and November based on the available water level record at Rabbit Bridge. During spring months the mean water level is 146.684m relative to Moturiki datum.

Table 2: Annual statistics on Water Level (m) for Rangitaiki River at Rabbit Bridge for the 'spring' months of October and November (2010-2017)

Year	Minimum	Median	Mean	Maximum	Lower Quartile	Upper Quartile
*2010	146.506	146.642	146.665	146.931	146.588	146.727
2011	146.486	146.622	146.65	147.132	146.578	146.691
2012	146.557	146.679	146.679	146.869	146.638	146.714
2013	146.511	146.624	146.626	146.805	146.593	146.655
2014	146.6	146.69	146.692	146.84	146.666	146.717
2015	146.529	146.629	146.639	146.786	146.601	146.667
2016	146.655	146.823	146.836	147.113	146.77	146.885
All	146.486	146.667	146.684	147.132	146.614	146.73

The water levels for August are also considered a time where flooding may be an issue; as winter comes to an end and temperatures begin to increase into the spring months. The annual statistics for the months of August are displayed in Table 3. The mean water level is 146.792m relative to Moturiki datum; this is greater than the spring mean water level, and higher than the overall year mean water level measured at this site; of 146.704m relative to Moturiki.

Table 3: Annual statistics on Water Level (m) for Rangitaiki River at Rabbit Bridge for August months only (2010-2017)

Year	Minimum	Median	Mean	Maximum	Lower Quartile	Upper Quartile
*2010	146.662	147.016	147.074	147.854	146.849	147.267
2011	146.552	146.667	146.656	146.762	146.616	146.696
2012	146.630	146.782	146.787	146.915	146.730	146.853
2013	146.510	146.579	146.577	146.668	146.560	146.594
2014	146.550	146.674	146.677	146.850	146.650	146.700
2015	146.659	146.882	146.883	147.220	146.824	146.944
2016	146.708	146.840	146.885	147.496	146.783	146.910
All	146.510	146.745	146.792	147.854	146.656	146.874

To 'smooth' the data to give less weight to the peaks and low water levels of the Rangitaiki, a 7 day moving mean was derived from the dataset. This is displayed in Figure 4. Annual statistics were derived for the smoothed data and are displayed in Table 4.

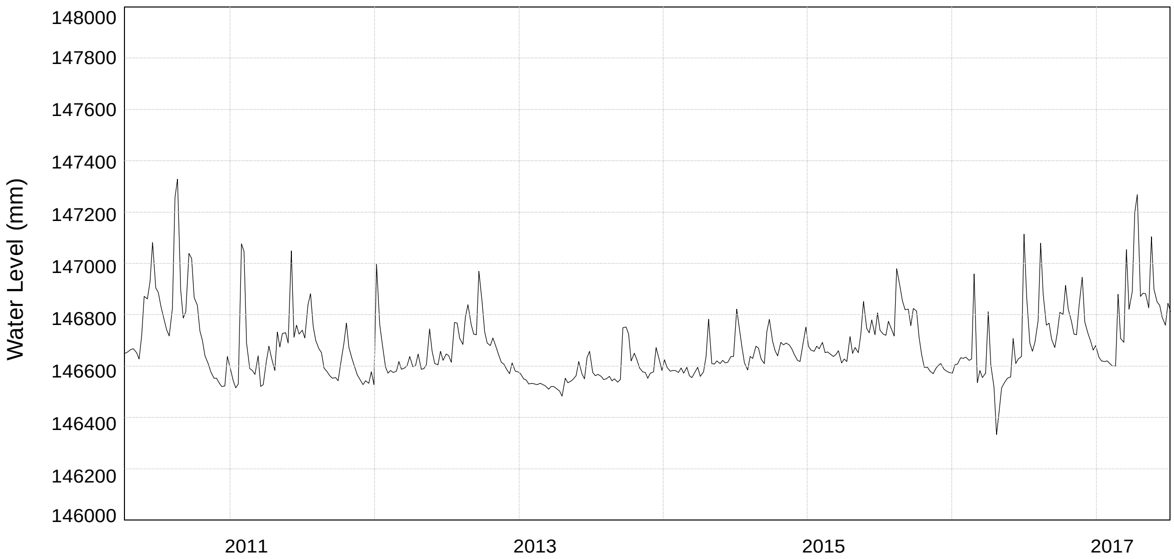

Figure 4: Rangitaiki River at Rabbit Bridge 7 day moving mean water level (2010-2017).

Table 4: Annual statistics for 7 day moving mean Rangitaiki River at Rabbit Bridge (2010-2017).

Year	Minimum	Median	Mean	Maximum	Lower Quartile	Upper Quartile
***2010**	146.545	146.760	146.798	147.344	146.658	146.903
2011	146.538	146.651	146.686	147.347	146.585	146.751
2012	146.589	146.655	146.689	147.068	146.619	146.739
2013	146.502	146.583	146.599	146.818	146.563	146.617
2014	146.568	146.652	146.666	146.868	146.621	146.702
2015	146.578	146.697	146.720	146.999	146.651	146.773
2016	146.355	146.706	146.722	147.143	146.633	146.801
All	146.622	146.850	146.845	147.536	146.713	146.902

From the smoothed, seasonal 'spring' and for all months of the year datasets, the brief analysis suggests that overall, from 2010 to the present, there has been a general increase in the mean water level measured at this site. This is further implied by the current water levels exceeding the original operating range of the downstream Lake Aniwhenua, implying the river is generally aggrading. Large flood events reduce the water level at the site as the channel is momentarily scoured and eroded, but continual sediment supply is slowly infilling the river channel, increasing the water level measured at this site.

This is supported by the trend analysis of the 7-day moving mean data displayed in Figure 5. From 2013 to 2015, there appears to be a relatively steady increase in minimum water level at the site, as evident by the positive trend line analysis. It is important to note that though the 7-day moving average has been used here to reduce bias from the peak flows, they are still included in deriving the trend line, creating positive bias.

To reduce further bias peak flows have on determining the overall trend of water level at the site, the minimum monthly water levels for each month between the stable period of 2013 to 2015 were analysed (Figure 6). This also shows that there is an increasing water level pattern observed at the site, with less bias from large peak flows during the relatively stable period.

It is important to note that only assessing the water level of a site to determine the flood risk has inherent uncertainty; it is assumed that the increase or decrease in water level is a direct result of the channel bed degrading or aggrading, and is representative of the reach. No assessment could be carried out to determine if the change is site specific i.e. scour or deposition restricted to the water level site at Rabbit Bridge. It is recommended to incorporate this data with cross sectional surveys along the Rangitikai to verify the assumptions made here of an aggrading river channel.

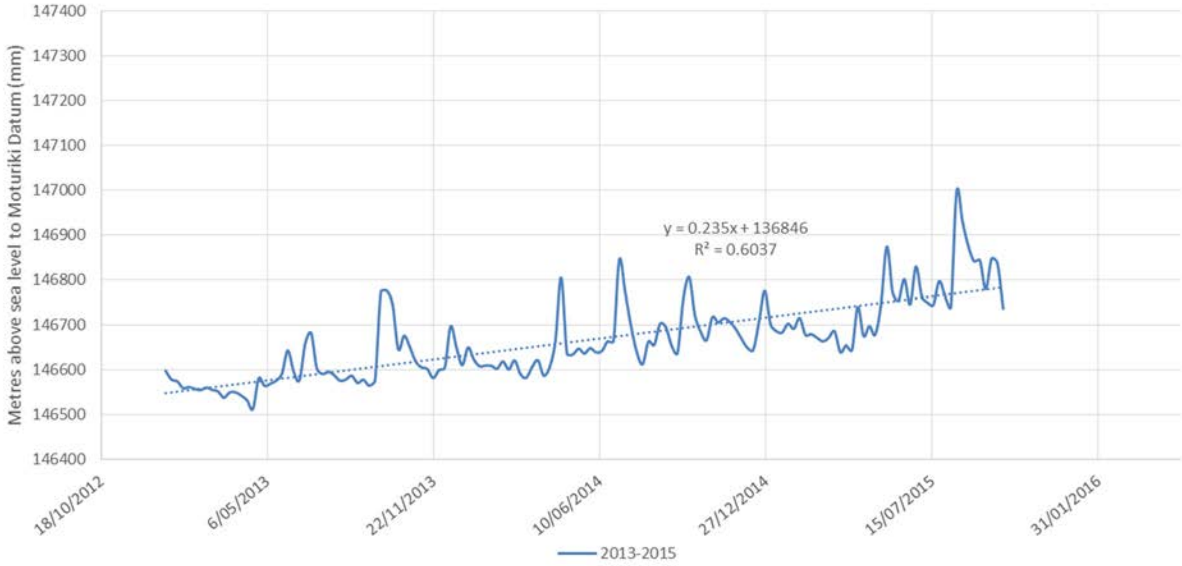

Figure 5: Mean water level trend analysis for 7-day moving mean water level data at Rabbit Bridge

Figure 6: Minimum monthly water level trend analysis at Rabbit Bridge (2013-2015)

Appendix 3 – Works undertaken at Kopuriki

Memorandum

To	File
Copy	Simon Stokes
From	Peter Askey
Office	Whakatane Office
Date	24 August 2017
File	2-34346.00
Subject	Channel Works at Kopuriki

From perusal of the BOPRC box files (Volumes 1-3) I have identified the following occasions when BOPRC has carried out work in the Rangitaiki channel and delta area. Generally this appears to have funded by BOPE:

Date	Work carried out	Cost	Excavation quantity	By
1994	Extend training banks into lake			BOPE
Nov 2007	Willow clearing at Rabbit Bridge	$14,500	Not stated	BOPRC
March – April 2009	Pilot cut and channel excavation, 400m u/s to 800 m d/s of bridge	$77k ($60k BOPE $17k BOPRC	22,000m3	BOPRC
December 2009	New causeway d/s, minor erosion repairs, shut off LH channel	$14,844 (continuation of March works)	Not stated	BOPRC
February 2010	Causeway d/s of bridge	$16,371		BOPRC funded by BOPE
March-April 2010	Works u/s of bridge, willow clearance and rock armour	On going funding by BOPE		BOPRC
Sept 2010	Post flood repairs of causeway d/s of bridge	Not stated		BOPRC
Aug-Sept 2011	Remove islands, clear willows, bank protection	Not stated		BOPRC funded by BOPE
February 2016	Intention to remove gravel at head of lake March/April 2016	Not stated		Not clear if work completed

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APPENDIX 4

Rangitaiki Integrated Catchment Programme Dashboard September/October

Rangitāiki River Forum Dashboard September - October 2018

Programme Manager	Simon Stokes	As of Forum meeting	Dec-18	Green
Project Sponsor	Chris Ingle	Previous RAG status	Sep-18	Green

Category	Previous RAG Status	RAG Status Current	Comment on any RAG where status is not Green.
Overall	Green	Green	
Schedule	Green	Amber	There is schedule slippage occuring on 7 projects across the programme
Scope	Green	Green	
Resources	Green	Green	
Budget	Green	Green	

No.	Annual Work Plan Projects 2016/17			
	SHARED	**Scope**	**Budget**	**Schedule**
1	Te Hekenga o Te Tuna Plan	Green	Green	Amber
2		Please select	Please select	Please select
3		Please select	Please select	Please select
4		Please select	Please select	Please select
	BAY OF PLENTY REGIONAL COUNCIL	**Scope**	**Budget**	**Schedule**
1	Biosecurity	Green	Green	Green
2	Consents	Green	Green	Green
3	Engineering	Green	Green	Green
4	Governance	Green	Green	Green
5	Integrated Planning	Green	Green	Green
6	Kotahitanga Strategic Engagement	Green	Green	Green
7	Maritime	Green	Green	Amber
8	Rangitāiki & Eastern Catchments Land Management	Green	Green	Green
9	Regulatory Compliance	Green	Green	Green
10	Rivers & Drainage	Green	Green	Amber
11	Science	Green	Green	Green
	WHAKATANE DISTRICT COUNCIL	**Scope**	**Budget**	**Schedule**
1	Whakatāne District Recovery Plan – Rangitāiki - Funded from existing budget and assigned recovery budget where applicable	Green	Green	Green
2	Lake Aniwaniwa (Aniwhenua) - $6,000 (plus staff time)	Green	Green	Green
3	Edgecumbe Reserves - $8,500 (plus staff time)	Green	Green	Green
4	Thornton Domain - $44,500 (plus staff time)	Green	Green	Green
5	Tahuna Road Water Supply consent replacement - $35,000 (plus staff time)	Green	Green	Green
6	Murupara water network renewal - $183,000 (plus staff time)	Green	Green	Green
7	Murupara Wastewater Treatment Plan receiving environmental monitoring - $30,000 (plus staff time)	Green	Green	Green
8	Horomanga Bridge repair - $1,500,000 (plus staff time)	Green	Green	Amber
9	Integrated Wastewater Scheme - staff time only	Green	Green	Green
	TAUPO DISTRICT COUNCIL	**Scope**	**Budget**	**Schedule**
1	TD2050 refresh	Green	Green	Green
2	District plan review	Green	Green	Amber
3	Maintenance of the northern part of Taharua Road, Matea Road, Matea Bridge and Rangitaiki School Road	Green	Green	Green
4	Washed out gully on Matea Road	Green	Green	Amber
5	Biodiversity Strategy	Green	Green	Amber

Programme Highlights

- Whakatāne District Recovery Plan – Rangitāiki - has now been completed
- Rangitāiki Water Management Area -Current State and Gap Anaylsis has been completed
- Work recommenced on the Rangitāiki Floodway Channel Widening (Stage 4) and is due to be completed by the end of December.
- Bittern were heard during the bird survey on one of the Rangitāiki Wetland sites. Bittern are nationally critical in terms of their threat status, and the wetlands in the project are an ideal network for them.
- Workshop with Freshwater Futures Community Group on water quality estimated (by computer catchment modelling) for the Rangitāiki.
- Drafting the Freshwater Futures Discussion document, this is to be taken out to the Freshwater Futures Community Group and Iwi partners next year.
- Cresswell New Zealand Limited are heading into mediation with the appellants, two of them being Ngāti Awa and Ngāti Tūwharetoa prior to attending Environment Court hearings. The purpose of the mediation is to identify the issues to be resolved in the Environment Court.

Programme Updates

- Rangitāiki Integrated Catchment Programme 2017/2018 Annual Report and Highlights Summary and the Rangitāiki Integrated Catchment Annual Work Plan 2018-2019 were both presented at the Sept 14 hui.
- Regional Pest Management Plan review - submissions closed on 6 September, they are being collated and summarised, individual submitters will be engaged with directly.
- Implementation of the NPSFM in Rangitāiki (PC12) - the Government recently released the "Essential Freshwater" blueprint for freshwater policy, which has significant implications for Council and the bay of plenty region.
- A Roadmap outlining the next phases in He Korowai Matauranga Māori project will be delivered in early December and also this will align with a draft Implementation Plan planned for staff.
- Cameras at the Rangitāiki River mouth - will now be proceeding in the Autumn.
- Te Hekenga A Nui O Te Tuna (Tuna Plan) - Harvest Strategy is well underway; Community Awareness and Engagement Strategy has yet to be actioned; fish passage at small structures is a new workstream to address issues at culverts/small structures that were surveyed in 2015.
- Freshwater Improvement Fund - Wetland Restoration Project - site assessments completed, baseline bird survey underway, discussions continue re landowner agreements (x2 have withdrawn from the project), operational works are dependent on agreements being signed.
- Lake Aniwaniwa Management Plan - this project has stalled, pest plant control work due to take place in ?
- April 2017 Flood Repair Project - rock supply shortages currently limiting the flood repair work programme in the Rangitāiki; has been a switch in focus to areas where softer engineering solutions can be used. Rock supply issues will potentially affect ability to achieve KPI's related to high priority sites and reduce the number of repair sites completed on the Rangitaiki in 2018-2019.
- Rangitāiki Floodway bifurcation, bridge and road raising - bridge and bifurcation engineering design completed, consent for bifurcation granted, additional joint consent application with WDC in progress for road raising work. Job currently out for tender, closes end of November.
- College Road Stopbank Reconstruction - new stopbank construction completed mid August, road realignment work scheduled for completion by end of November.
- Flood Wall Remedial Work - components of the geotechnical analysis report received and work proposed at 3 floodwall sites during 2018-2019 - College Road, West Bank Road (Checkley's) and East Bank Road (Thornton School). Surveying is underway at the 3 sites.
- Lysimetre installation in the upper Rangitāiki catchment (Republican Road, Rerewhakaaitu and Goudes Road) started in early November.
- Ground water flow model for the Tarawera-Rangitaiki-Whakatāne - some delay likely due to staff resources following resignations.
- Lake Aniwaniwa - Reserve maintenance undertaken in accordance with annual work plan
- WDC - Staff and members of the Edgecumbe Collective engaged Richard Hart Landscapes to develop concept plans for the improvement of Puriri Crescent Playground, Riverslea Park, Bill Orr Park and the Edgecumbe Domain; public consultation is currently underway on the proposed developments and exploring funding options.
- Tahuna Road Water Supply Consent Replacement - Replacement application is with BOPRC for processing.
- Murupara Water Network Renewal - Valve replacement nearing completion. Backflow preventers project progamming underway.
- Murupara Waste Water Treatment Plan receiving environmental monitoring - Monitoring of receiving environment is underway
- Replacement of damaged Horomanga bridge - Resource consents to be lodged shortly with work scheduled to commence in early 2020
- TD2050 refresh attracted 42 Submissions. Hearings and deliberations were held on 18 October 2018. The Council adopted TD2050 refresh on 18 October 2018

TDC Biodiversity Strategy - Project initiation has been delayed as WRC is undertaking pilot biodiversity strategies with HCC, MPDC and SWDC to enable the creation of model approach for biodiversity strategies and a biodiversity toolbox.

Programme upcoming Activities

- Rangitāiki River Forum communications and engagement project - consultant work is completed and communications strategy and action plan going to Dec 7 hui for approval for next steps.
- Strategy mapping project of Rangitāiki River Forum members – te whariki - consultant work is completed and assessment going to the Dec 7 hui for approval next steps.
- Reviewing and planning for Te Hekenga Nui o Te Tuna for workstreams underway and moving on to next stages.
- Fish passage at small structures - An internal project is being planned, with an aim to get underway early in the new calendar year. In addition, a summer student will begin to survey structures on private land to assess their status with regard to fish passage.
- Discussion papers for implementing NPSFM are being prepared during November 2018 to March 2019.
- A Blessing is planned prior to College Road being reopened.
- The Alligator weed control programme will recommence in December.
- WDC - Damaged Horomanga Bridge - work scheduled to commence in early 2020.
- TDC District Plan Review - the Issues report goes out for targeted feedback in December 2018. Strategic approach for the district plan is expected to be open for feedback in mid 2019.
- TDC - Meeting with Waikato Regional Council Biodiversity staff to undertake initial scoping of the Biodiversity Strategy project. Planning to meet with BOPRC staff to discuss scope of the Biodiversity Strategy project in early 2019.

Bay of Plenty REGIONAL COUNCIL WHAKATĀNE District Council GREAT LAKE TAUPŌ Taupō District Council

Receives Only – No Decisions

BAY OF PLENTY REGIONAL COUNCIL TOI MOANA

Report To: Rangitāiki River Forum

Meeting Date: 07 December 2018

Report From: David Phizacklea, Regional Integrated Planning Manager

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Freshwater Futures Update

Executive Summary

This report provides an update on work being undertaken by the Freshwater Futures programme, including work underway to support implementation of the National Policy Statement for Freshwater Management and relevant national updates.

Key activities since the last Forum meeting include:

- Release of the Government's blueprints for freshwater *Essential Freshwater: Healthy Water, Fairly Allocated* and *Shared Interests in Freshwater* on 8 October 2018 which outline the key actions government will be taking in the freshwater management space over the next two years. This work acknowledges that water quality cannot be addressed without a concurrent and substantive discussion with Māori.
- Land, Air, Water Aotearoa (LAWA) released new 10-year river quality trends information on the LAWA website on 4 October 2018.
- Council decisions on the Region-wide Water Quantity Plan Change (Plan Change 9) were notified on 9 October 2018. Environmental Court Appeal period closed on 21 November 2018 with 14 appeals received.
- Further technical catchment modelling work is being delivered for the Kaituna-Pongakawa-Waitahanui and Rangitāiki Water Management Areas. The next community group meetings will be held early next year to present the modelling.

Recommendations

That the Rangitāiki River Forum:

1 Receives the report, *"Freshwater Futures Update"*.

2 Notes a Forum Freshwater workshop is planned for February/March 2019.

1 Purpose

The purpose of this report is to provide an update on planning work underway to improve management of freshwater in the region, in particular for the Rangitāiki catchment. It also provides a brief update on freshwater matters at a national level.

2 Outcome alignment to *Te Ara Whānui o Rangitāiki*

The work on Freshwater Futures partially addresses the objectives and actions in *Te Ara Whānui o Rangitāiki*, which are:

- Water quality is restored in the Rangitāiki catchment (Objective 3)
- Prosperity in the Rangitāiki catchment is enabled within the sustainable limits of the rivers and receiving environment (Objective 4)
- Work with rural industries, iwi, landowners, the community, and other willing stakeholders in the Rangitāiki catchment to articulate their aspirations for prosperity and values for freshwater through the Freshwater National Policy Statement framework (Action 4.1)
- Identify, forecast, and assess emerging pressures on the resources in the Rangitāiki catchment and likely opportunities and targets for restoring water quality (Action 3.3)
- Develop sustainable environmental flow and Rangitāiki Catchment load limits (e.g. nutrients, sediments, and bacteria) through the Freshwater National Policy Statement framework, including establishing:
    - The current state and anticipated future state
    - Freshwater objectives
    - Limits for meeting freshwater objectives (Action 3.1).

3 Freshwater Planning

3.1 Region-wide Water Quantity - Proposed Plan Change 9

Bay of Plenty Regional Council adopted the Hearing Panel recommendations on the *Region-wide Water Quantity Proposed Plan Change 9*. Council's decisions were notified on 9 October 2018. The appeals period was closed on 21 November 2018, Council received 14 appeals.

Plan Change 9 is part of a two-step process towards improving water management in the Bay of Plenty.

3.2 Rangitāiki and Kaituna/Pongakawa/Waitahanui Water Management Areas - Plan Change 12

The purpose of this work is to deliver freshwater objectives based on freshwater values, and to set appropriate water quality and quantity limits and methods to support those objectives by way of a change to the *Regional Natural Resources Plan*.

A Rangitāiki community group workshop was held on 24 September 2018, and a further meeting was held on 23 October 2018 for members unable to attend the earlier meeting due to a tangi. The workshop covered surface water quality modelling outputs for the Rangitāiki Water Management Area, including *E.coli* concentrations[1] and suspended solids, nitrogen and phosphorus loads[2] and yields for four different scenarios (naturalised, current, and two potential land use futures), along with context

[1] *E.coli* is bacteria that can indicate a risk of sickness if contaminated water or food is ingested.
[2] Elevated levels of nitrogen and/or phosphorus can cause algae to grow on stones and boulders, and can have a big impact on the health of lakes and estuaries.

around how results relate to in-river values and objectives. The Rangitāiki group members were reasonably comfortable with the water quality modelling results, yet questioned the estimated high level of sediment losses from the forestry area. The group agreed that the next modelling scenario will apply a basic level of good management practice across all land uses, and across the whole Water Management Area. The Rangitāiki Community Group workshop notes are attached. More information about the workshop, including the briefing notes and presentations, is available online at www.boprc.govt.nz search key words *"Community Group Workshop"*.

Further work on the water quality model is ongoing. Findings and policy options will then be summarised for inclusion in a discussion document scheduled early-mid 2019. Staff are also developing a method and policy options for surface and ground water quantity limits in Rangitāiki Water Management Area, to discuss with Community Groups and the Forum in 2019. The estimated timeline for Plan Change 12 is shown below in Figure 1.

At its June 2018 meeting, the Forum requested freshwater workshops in parallel with the Rangitāiki Freshwater community group workshops, starting with a presentation on *Te Mana o te Wai* by Tina Porou at the following 14 September meeting. Staff are working towards a workshop with the Forum in February/March 2019.

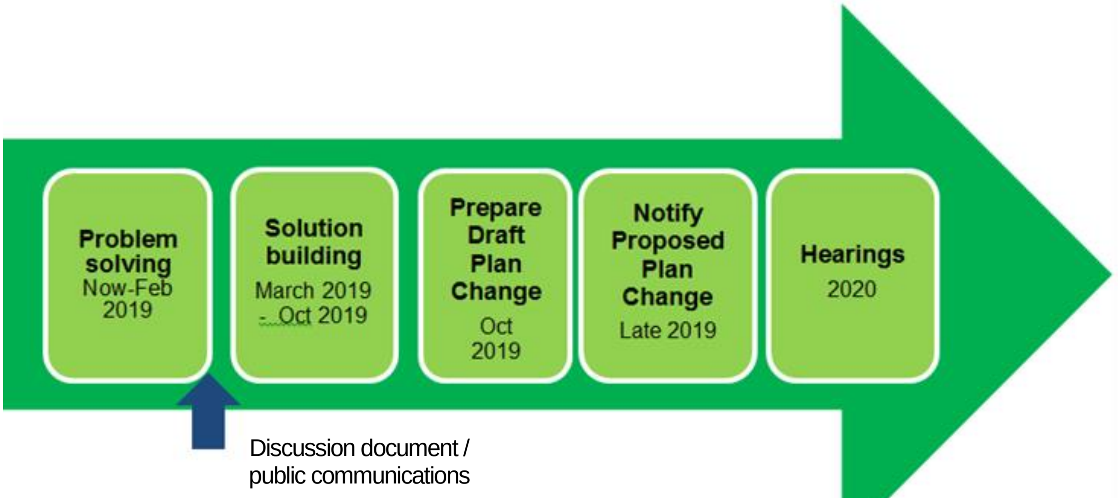

Figure 1: **Current time line for Plan Change 12 planning process**

3.3 Update on engaging tangata whenua in freshwater management

The team is continuing to engage with iwi and hapū in the Rangitāiki Catchment to gain a better understanding of iwi freshwater values and interests, which are important for setting freshwater objectives and limits.

Staff recently met with staff of Ngāti Tahu - Ngāti Whaoa Rūnanga Trust about identifying freshwater values and interest in the part of their rohe that is in the Rangitāiki catchment. A brief profile of Ngāti Tahu–Ngāti Whaoa from Te Kahui Mangai is attached.

4 National Updates

There are a number of important national activities currently underway that may have implications for the freshwater work.

4.1 Central Government direction on freshwater

The Government's blueprint for freshwater *Essential Freshwater: Healthy Water, Fairly Allocated* was released Monday 8 October 2018 outlining the key actions government will be taking in the freshwater space over the next two years. This is likely to see changes to the *National Policy Statement for Freshwater Management* and a new *National Environmental Standard*.

The three key objectives identified that inform this direction include:
1) stopping further degradation and loss
2) reversing past damage
3) addressing water allocation.

To achieve these three objectives a series of actions have been identified in six workstreams. A multi-agency taskforce[3] led by the Ministry for the Environment and the Ministry for Primary Industries has been set up and will be supported by the Māori Freshwater Forum (Kahui Wai Māori), Freshwaters Leaders Forum, Science and Technical Advisory Group and Regional Councils.

The Government's *Shared Interests in Freshwater* report outlined the need for substantive discussions with Māori to occur to ensure water quality is addressed. These discussions acknowledge Māori have rights and interests in water and need fair access to water to meet their aspirations and enable the broad NZ economy to thrive. The Government summarised[4] these aspirations as:

- Improving water quality and the health of ecosystems and waterways: this was consistently identified as the most important and pressing issue.
- Governance/management/decision-making: Māori want to be involved in freshwater decision-making, and to have the capacity, capability and resources to do so effectively.
- Recognition: ensuring there is formal recognition of iwi/hapū relationships with particular freshwater bodies.
- Economic development: Māori want to be able to access and use water resources (ie, water takes and discharge rights) to realise and express their economic and development interests (although this remains within the context of a holistic view of Te Mana o te Wai).

That report states that no one 'owns' freshwater, however, this is subject to the Waitangi Tribunal's recommendations on Māori ownership, rights and interests in freshwater, which is expected at the end of 2018.

4.2 LAWA - 10 Year River Quality Trends

Land, Air, Water Aotearoa (LAWA) released new 10-year river quality trends information on their website on 4 October 2018. In this round, it included a new water quality indicator - Macroinvertebrate Community Index (MCI), and applied an approved new way to measure trends. The information is available on the LAWA website at the following link: https://www.lawa.org.nz/explore-data/river-quality/.

[3] This taskforce includes representatives from the Ministry for the Environment, the Ministry for Primary Industries, the Treasury, Te Puni Kōkiri, Māori Crown Relations Unit, the Department of Internal Affairs, the Department of Conservation, the Ministry of Business, Innovation and Employment, and expertise from local government.
[4] From Cabinet Committee Paper – *A New Approach to the Crown/Māori Relationship for Freshwater*.

4.3 At Risk Catchments

The Ministry for the Environment (MfE) is currently focusing on defining and prioritising action in at-risk catchments. MfE is expected to provide further progress by the end of December 2018.

5 Implications for Māori

It is recognised that Māori involvement in planning and delivery of improved water management is integral to the role as kaitiaki and necessary to achieve requirements of the *National Policy Statement for Freshwater Management*. Opportunities for Māori involvement in engagement on freshwater discussions will continue to be provided.

The Rangitāiki and Kaituna Rivers and their tributaries are culturally significant to iwi. Change 3 to the Regional Policy Statement recognises and provides for the *Te Ara Whānui o Rangitāiki Pathways the Rangitāiki* River Document, and will be further recognised and provided through Plan Change 12 to the *Regional Natural Resources Plan*. These changes will further enable the aspirations of the Forum to be realised over time.

The new government direction recognises the importance of Māori in freshwater management. It increases the level of engagement and input to freshwater policy direction across New Zealand through *Kahui Wai Māori*. It may eventually provide opportunities for the development of Māori Land and the values associated with freshwater to be inherently ingrained within regulatory documents. Waitangi Tribunal’s recommendations on Māori interests in fresh water will have a significant bearing on how this space develops.

Michelle Lee
Planner (Water Policy)

for Regional Integrated Planning Manager

28 November 2018

APPENDIX 1

Rangitaiki Freshwater Futures Community Group Workshop Notes 25 September 2018

Rangitāiki Freshwater Futures Community Group Workshop 8 Notes: Surface Water Quality

Galatea Hall, 50A Mangamate Road, Galatea

Wednesday, 24 September 2018 commencing at 9:00am

Members present:	Larry Wetting (Chair), Christina Bunny, Kirsty Joynt, Linda Conning, Kerry Snowdon, John Gibson, Dan Phillips (standing-in for Colin Maunder), Matt Osborne, Nick Doney, Mark Ross (attended between 11.20am – 12pm).
Apologies:	Alamoti Te Pou, Cr Bill Clark, Beverley Hughes / Keri Topperwien, Cathy Brown, Colin Maunder, Craig Rowe, James Doherty, Matt Gowe, Nicholas Woodley, Alan Law, Tom Lynch
BOPRC staff present:	Kerry Gosling (Facilitator), Stephanie Macdonald (Facilitator), Nicki Green (Senior Planner – Water Policy), Michelle Lee (Planner), Paul Scholes (Water Quality, Science Team Leader), Rochelle Carter (Environmental Scientist).

Related documents previously circulated:

1 Workshop briefing note. Workshop 8: Surface water quality.

2 Rangitāiki Water Management Area: Draft measurable objectives to support in-river values.

3 Workshop paper: Analysis of contaminant mitigation costs and effectiveness.

These papers and the workshop presentation are available online here. A copy of the full PerrinAg Analysis of Contaminant Mitigation Costs and Effectiveness report is available here.

1 Welcome/Purpose

Kerry opened the workshop.

The purpose of workshop was to: gauge member's comfort with the draft measurable objectives; present surface water quality information from modelling, and further explore issues and causes.

2 National and Regional Update

Nicki noted potential upcoming changes to the National Policy Statement for Freshwater Management and/or national environmental standards. Central government is indicating discussion documents may be published in early to mid-2019, but there is uncertainty as to scope and content. Central government appears to be considering managing land use intensification regulations and has recently asked Councils to list catchments at risk, potentially with a view to prioritising policy and investment.

Regionally, Nicki noted that Council has accepted the hearing panel's recommendations for Proposed Plan Change 9: Region-wide Water Quantity, and that a decision version will be notified 9 October after which submitters may make appeals to the Environment Court.

Regional Policy Statement Change 3: Rangitāiki River will be made operative on 9 October. This recognises and provides for Te Ara Whānui o Rangitāiki and Council must give effect to it in this project (Plan Change 12).

Simon provided an update on actions relating to Rangitāiki River in the catchment, referring to the Rangitāiki Catchment Programme Annual Plan available here. Simon noted $17million will be spent by Council in Rangitāiki, the majority of which is in response to the flood events. Noted also that Whakatāne District Council is starting some more monitoring below the Murupara wastewater discharge to inform their planning prior to apply for consent renewals in 2026.

3 Progress and next steps

A current project time line was presented. We are still in the exploratory phase of understanding the issues, defining how much we need to reduce contaminants by, and working on potential solutions. Staff intend to prepare a discussion document for the public around mid-2019 before publishing the draft plan change. Iwi engagement is continuing.

Key work in progress includes modelling and research to support setting minimum flows and water allocation limits, reporting on recent science and monitoring (including the lowland drainage network water quality, and periphyton monitoring), and further work to understand nutrient effects on ecological health in HEP dam lake Matahina.

Following this workshop, next steps include determining:

- how much we need to reduce sediment (total suspended solids, TSS), nitrogen, phosphorus and *E.coli* by
- modelling mitigation actions to determine what we might need to do to achieve these reductions
- developing solutions
- wider public engagement
- drafting a plan change.

Surface water catchment model development

Staff briefly summarised catchment model development.

Key points from discussion:

- Significant effort went in to calibrating the modelling outputs with monitored data. Industry organisations were consulted during the model build.

- The current land use map has been ‘ground-truthed’.

- A report detailing the modelling assumptions and development will be available in the near future.

- The modellers are generally comfortable with the calibration. Good calibration with monitored data, with more confidence near monitored sites with continuous flow gauges. Some areas have no monitored data, e.g., for the catchments showing B band results for *E. coli*. The model assumptions are to be clarified in the upcoming technical report, which will be reviewed by staff and sectors. The industry groups who are feeding into the model include Zespri, Dairy NZ, Hort NZ, Regional Water Advisory Group members (forestry, farming).

- Modelling runs use data from last 30 years, but the results presented related to 2011-2016 5 yr period. Land use change scenarios estimate credible change in the next 30 years

- In the naturalised state scenario, assumed wild/feral animal faecal matter.

Actions:

1 Council staff to share modelling technical report once published.

4 Contact recreation

Staff noted the RPS: Rangitāiki objective (Change 3) and the group's preferred state objective for contact recreation.

Staff then presented working draft measurable objectives for *E.coli* and sought feedback. Objective is A (where currently A) or B band (where "naturally B" band), and arrest declining trends. Maintain or improve is a requirement. B band may be appropriate objective in catchments where B is "natural" but this may need some monitoring as there are no monitoring sites in the B band catchments.

Staff presented monitoring and modelling results for the current state, and modelling results for the naturalised scenario and two potential future scenarios.

Group members were asked to indicate their *level of comfort* with the draft measurable objectives for *E. coli* using the following scale. Note this *does not* mean the group formed its recommendation to Council.

Level of comfort/Gradient of agreement	
1	Whole hearted agreement
2	Agreement with minor point/s of contention
3	Support with reservations
4	Abstain
5	More discussion needed
6	Don't like but will support
7	Serious disagreement
8	Veto

Level of comfort with draft measurable freshwater objectives for *E. coli* for Contact Recreation:

1 seven members

2 one member

3+ no members at the 24 September 2018 workshop.

Generally members supported the draft measurable objectives.

Key points from discussion:

- Community group preferred state: safe 'where people swim' is not appropriate – suggest it should be safe everywhere.
- There is a schedule in the Regional Natural Resources Plan with monitoring bathing sites. Staff are still recording information about sites.
- There was a suggestion that perhaps staff should instead note where not to swim and the rest should be safe for swimming.
- Long term trends could not be defined for Matahina because of insufficient data

- Other toxicants are not being considered for contact recreation values.
- Members noted there appears to be very little difference between government's A, B and C bands.
- Maintain or improve are requirements in the National Policy Statement. We cannot set an objective that allows degradation, reducing water quality is not an option.
- PC12 project will have to manage risk associated with any significant land use change. However, discussions with CNI suggest large scale land use change to more intensive land use is not likely.
- *E. coli* survival in rivers depends on various things, e.g., temperature, sediment predation, and we can get naturalised populations. Model makes assumptions about decay.
- The proposed development scenarios are estimates of a future which is uncertain, but they have been checked with industry organisations and community group. It was noted that Murupara is probably too high and cold for kiwifruit as suggested in scenario C, but cherries do well.
- Scenario C contains more extensive wetlands area than Scenario D. The wetland expansion is related to assuming sea level rise/water table rise in Scenario C, whereas Scenario D assumed additional pumping to mitigate sea level rise and enable arming to continue. The scenarios are exploratory only, enabling us to consider different outcomes through the modelling.
- The purpose of the scenarios (naturalised, current state, Development C and Development D) was to explore what contaminant generation we should expect naturally and so should not be a problem vs. contaminants generated by human activity. We have only explored current and potential future land *use* change that we anticipate might happen. We will explore change in *practice* solutions next, before considering whether land use change is necessary.

Actions:

2 Amend preferred state statement to "water quality should be safe for swimming, except after heavy rainfall".

3 Staff to consider clarifying which locations are not swimming locations rather than all of the swimming locations.

4 Potentially explore (using model) whether higher *E. coli* in lower reaches is locally sourced or cumulating from upstream.

5 Ecosystem Health

Staff presented current state monitoring information about the Rangitāiki River and HEP dam lake Matahina. They then presented the approach to the draft measurable objectives, i.e., A or B band applied. Refer to Table 3 in the *Rangitāiki Water Management Area: Draft Measurable Objectives to Support In-river values* document.

Key points from discussion:

- Dissolved oxygen is an attribute in rivers, below point discharges as set out in the National Policy Statement for Freshwater Management.
- Note some attributes bands are a part of the National Objectives Framework that is not subject to changes at the regional or local level. Please see Table 3 for descriptions of the bands.
- A member does not like the use of the terms "excellent, good, fair and poor" for invertebrate index results as found it emotive. The member suggested instead, use

objective wording like ‘no observable difference’, ’slight change/effects’, ‘moderate’, ‘large/high’. It was acknowledged that the indices record presence, abundance and diversity which are objective – see Table 3.

- Dissolved oxygen monitoring in the Rangitāiki River suggests more investigation needed in the lower reaches. Need to monitor DO both up and downstream of discharge. The water is warmer and has lower DO level at Edgecumbe site. The two are related.
- Aniwhenua behaves more like a slow stretch of river so not using lake attributes like TLI. Matahina behaves more like a lake so using lake attributes.
- Meaning of terms, Oligotrophic etc. Oligotrophic / clear ←→ Supertrophic / Grows a lot of plant material / productive (usually not natural)
- Thinking towards solutions, members suggested water could be applied to land to remove nitrate, but would need to ensure it is taken up by plants. Concerns were raised relating to Tuna being quite hardy vs. trout having higher needs for water quality and quantity. The Nitrate and Ammonia toxicity measure relates to fairly sensitive species and are relevant for trout.
- It was noted Brown trout temperature, DO tolerance similar across species, Rainbow probably most sensitive to water quality
- Where any long term trends are degrading (getting worse), we will need to halt that decline, even though, for example, Nitrate toxicity is currently in the A or B band.

Actions:

5 Lowland water quality report will be sent out once published. The MCI methodology is explained.

6 Council will seek Fish and Game input to review significant habitat for trout schedule. Note staff are also reviewing lists for indigenous species.

6 Nitrogen, Phosphorus and Total suspended solids

Staff presented cumulative load graphs and sub-catchment yield/source maps for nitrogen, phosphorus and total suspended solids for naturalised, current, and two potential future scenarios.

The information is detailed in section 4 of the briefing note.

Members level of comfort with nitrogen and phosphorus modelling results:

Level of comfort scale (1 to 8, 1 being comfortable as a whole) for **nitrogen** info: **Comfortable.**

Level of comfort scale (1 to 8, 1 being comfortable as a whole) for **phosphorus** info: **Comfortable.**

Key points from discussion:

<u>Total Suspended Solids</u>

- Total Suspended Solids is measured/estimated in the water, so sub catchment yield maps do not tell us what is causing the TSS e.g., bank/bed erosion vs. erosion from land. Whirinaki is contributing a large amount of sediment into the Rangitāiki River.
- Challenge on East Coast / Tolaga Bay – no pulp and paper mill means logs are left on the land and come down the rivers in floods.

- We are under no illusion as to where sediment ends up - in Aniwhenua dam lake and on farms.
- By comparing “naturalised” and current state results we can infer the sediment generated by productive land use/caused by human activities.
- Forestry results were worse than members expected in modelled results. The Forestry sector have been involved in the model development, provided input into assumptions around forest harvest cycles. The sector will also review the technical report on the model assumptions, such as different forest age classes/stage of rotation at any one time.
- Concern was raised that there might be limits on natural sources that affect the community. Staff advised that we may need to explore impacts of climate change further, but wouldn’t expect to be managing natural levels of sediment for ecosystem health value.
- Individual practices can make a huge difference and are difficult to manage. Members suggested further exploration is required into contribution from poor practice.

Nitrogen

- Nitrogen occurs naturally in the environment and cycles through different forms as it moves through the landscape. Excess nutrients can come from a range of sources including fertilisers, agricultural sprays, uncontained waste dumping, animal urine, sewerage overflows and storm water.
- The natural nitrogen load (e.g., from organic material) is largely a result of the catchment size, because the load is cumulative down the river.
- Current N load at Te Teko is about ~17% on top of natural. Still working through how significant this may be. Need to consider, understand the relationship between TN load and Periphyton, and HEP dam Lake TLI.
- For Developments C and D, the change isn’t as great as some members might have thought. Need to remember the large size of the catchment and the small areas of change proposed.

Phosphorus

- The Whirinaki is contributing about 30% on average where it discharges into Rangitāiki River.
- Some phosphorus attaches to sediment. Dissolved Reactive Phosphorus is the phosphorus available to plants.
- The amount of Nitrogen and Phosphorus that is suitable for healthy ecosystems is still being explored.
- Total Phosphorus is a key measure for lakes and lake fed rivers. We monitor both TP and Dissolved Reactive Phosphorus.
- Some phosphorus becomes bound to soil (the amount depend on soil type) and some is dissolved and plant available.
- It was noted that some fertiliser recommendations are excessive and Council may want to target fertiliser reps about this.
- Most P levels are above the ANZECC guidelines naturally (the guidelines are not always appropriate for our catchments). However we do need to look at the impact of Dissolved Inorganic Nitrogen and Dissolved Reactive Phosphorus on periphyton growth. This is work in progress.

Actions:

7 Make modelling maps for all constituents available for members online through a hyperlink. [Note the modelling maps are included in briefing note and presentation slides.]

8 Check sedimentation modelling with forestry. [Note this is a planned component of the project.]

7 Approach to modelling mitigation bundles

At the last workshop, the community group provided feedback on mitigation bundles. The bundles were amended and the economic cost and contaminant reduction report has been prepared by PerrinAg. This was summarised in the briefing note circulated.

Looking towards modelling mitigation scenarios, staff propose:

Applying the M1 bundle across all land uses and the whole water management area to explore the water quality outcomes if everyone applied good practice. Once we are clear on what contaminant load reductions we need to achieve, we can then estimate whether good practice (M1) would be enough to achieve them. If not, staff propose to model M2 and M3 targeted to key source areas or activities.

Level of comfort (1 to 8, 1 being comfortable as a whole) with the approach to applying mitigation bundles in the modelling scenarios: **1** two members **2** three members (see notes below requesting some actions be moved out of M1) **3** one member **4** nil **5** two members **Rest** none on the 24 September 2018 workshop. Generally agreed to the approach, subject to considering shifting some actions to M2 and seeing more detailed specifications of the scenario.

Feedback:

- Member would like to see some actions moved from one bundle in to another, e.g., Dairy Action M1 action 16 should be stock exclusion from all waterways not just those >1m wide. A member disliked the alignment with the Dairy Accord. Also amend wording to include the words “stock exclusion”.
- Some discussion about whether only permanent water bodies or also intermittent should be included in stock exclusion. Noted that including intermittent and even all permanent would extend the stream length.
- Each action is open to lots of interpretation to do a little or a lot. Lots of wriggle room. Need clear definitions, audit process and compliance. Actions should be industry led.
- Check M1 alignment with the new industry approved good farming practice agreement.
- Complete protection of gully heads is now in M0 but it is not currently happening.
- Dairy M1 actions 7, 14 and 15 should be M2. Things people would not be happy to have to implement.
- Kiwifruit M1 action 2 Maintain optimal Olsen P. Is Olsen P the right measure?
- Drystock M1 action 11. Add the words “stock exclusion” to be clear and consistent with M2 action 6.

- Kiwifruit M1 action 6 could be in M0, assuming there is no extra cost. It is also a risk in assuming all actions have a cost, and assuming all farmers are doing M0.
- M1, M2 and M3 should be more clearly and separately costed in the report so farmers aren't scared off. M1 is not so costly and first actions in M1 will *increase earnings before interest and tax* (EBIT).
- Note the tables showing N inputs and N losses are very interesting. Also recommend reading the "further observations" sections of the full report.
- Dariy M1 action 3 - reduced tillage practices – should be tilling on sloping soil around the contour (not down).
- Buffer widths of riparian areas are not specified. There's a difference between 1, 5 or 10m. The distance will be specified for modelling mitigation scenarios. However, Simon noted that in practice it should be fit for purpose.

Actions:

9 Suggested amendments to Mitigation bundle lists to be sent to Santiago and PerrinAg for consideration.

10 Share the PerrinAg Economic Analysis report. Members to send comments directly to Santiago.Bermeo@boprc.govt.nz

11 Staff progress M1 scenario specifications and send to community group.

8 What's next

Staff summarised next steps and intention to hold another workshop in December.

Staff noted that an unexpected event meant a large number of members were absent. Given the importance of the information, the attending members suggested to include one catch-up workshop to members who could not make it today. A small catch-up workshop would be organised.

Workshop ended at 2.25pm.

Note: These notes from the 24 September 2018 workshop are provided without prejudice. As part of the process, the content records key discussions points, which do not form the group's re[…]il, except where it is explicitly stated so.

Appendix One – Actions

1	Council staff to share modelling technical report once published
2	Amend preferred state statement to "water quality should be safe for swimming, except after heavy rainfall".
3	Staff to consider clarifying which locations are not swimming locations rather than all of the swimming locations.
4	Potentially explore (using model) whether higher *E. coli* in lower reaches is locally sourced or cumulating from upstream
5	Lowland water quality report will be sent out once published (note the MCI methodology is explained as a part of the report).
6	Council will seek Fish and Game input to review significant habitat for trout schedule. Note staff are also reviewing lists for indigenous species.
7	Make modelling maps for all constituents available for members online through a hyperlink
8	Check sedimentation modelling with forestry.
9	Suggested amendments to Mitigation bundle lists to be sent to Santiago and PerrinAg for consideration.
10	Share the PerrinAg Economic Analysis report. Members to send comments directly to Santiago.Bermeo@boprc.govt.nz
11	Staff progress M1 scenario specifications and send to community group.

APPENDIX 2

Rangitaiki Workshop 8a Notes 23 October 2018

Rangitāiki Freshwater Futures Community Groups
Workshop 8a (optional) Notes:

1. **Opportunities & Barriers to Freshwater-Related Sustainable Economic Growth**
2. **Surface Water Quality Catchment Modelling Results**

Acacia House, Whakatāne
Tuesday, 23 October 2018, 9am – 12.30pm

Members present: Alamoti Te Pou, Alan Law, Cathy Brown, Cr Bill Clark, James Doherty, Larry Wetting, Linda Conning (first item only), Luke Gibson, Keri Topperwien, Mark Ross, Matt Gow, Ngapera Rangiaho, Nicholas Woodley.

BOPRC staff and contractors: Santiago Bermeo, Sue Simpson, Simon Stokes, Nicki Green

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Opportunities & Barriers to Freshwater-Related Sustainable Economic Growth
(Presented/led by Santiago Bermeo)

The Council has engaged Aqualinc Research to undertake an assessment of freshwater-related opportunities and barriers to sustainable economic growth throughout the region, as an action from the Regional Growth Study. This work is not directly related to our Plan Change 12 work, although the outputs will be of relevance. The objective of this work is to answer the following questions:

- Is fresh water (quantity) a constraint to economic growth?
- What is the economic growth opportunity created from fresh water, including through more efficient allocation and use?
- Subject to the extent of any such constraints and opportunities, is there a need for irrigation infrastructure in the region and if so where and for what purpose?
- Are there other opportunities and barriers to economic growth?

Aqualinc looked at the current status of water allocation (under PC9 interim allocation limits, which are likely to change under PC12) and a future scenario ("Scenario C", the same one considered in the catchment model) in terms of land use and water demand.

It is acknowledged that our databases and freshwater accounts have a number of limitations which are in the process of being addressed; the analysis is based on the best information we have now. Andrew Millar covered groundwater availability in Workshop 7. This now includes an assessment of groundwater availability for Mid-Upper Rangitāiki. The Council intends to put real-time assessments of surface and groundwater availability online soon, once some of these limitations have been addressed.

Despite the limitations, the assessment found that:

- In lower Rangitāiki, some groundwater zones are over allocated while others are not. Overall, total allocation is slightly less than the cumulative allocation limit across all zones.
- On the other hand, there is large headroom[1] for surface water in lower Rangitāiki.
- In mid-Upper Rangitāiki, there is large headroom for groundwater, although a significant amount of this would be under land that is in exotic forestry or within Te Urewera. However, any new groundwater consents would be subject to not affecting surface water flow (which

[1] Where total water allocated is less than the total allocation limit.

this assessment has not considered) as this would derogate from existing surface water consents.
- Surface water in mid-upper Rangitāiki is considered over-allocated[2] due to the prevalence of existing consents (e.g. for hydro-electricity generation).

According to Aqualinc's analysis, if allocations for irrigation are reduced to reasonable use rates, additional headroom for development can be created in the lower Rangitāiki for both surface water and groundwater. This would be sufficient to provide for the development projected in "Scenario C".

In mid-upper Rangitāiki, if allocations for irrigation are reduced to reasonable use rates, over-allocation could be phased out and some headroom created for new takes within allocation limits. However, this would not be sufficient to provide for all the development projected in "Scenario C". At a general level, available groundwater would be sufficient to provide for most of the development projected in "Scenario C".

A complete draft of Aqualinc's analysis will be circulated to the community group when available.

Discussion and questions

We discussed pros/opportunities, cons/barriers and information gaps relating to irrigation development in the catchment generally.

Pros Opportunities	Cons Barriers	Information gaps
• Employment opportunities • Land availability (e.g. CNI Kāingaroa Forest) • Go for [or stick with] trees (as they don't need irrigation) • Diversified portfolio of activities but need flexibility • Need good information on crop suitability* (Opportunity for PGF investment in this area) • Scale (e.g. forestry)	• Limited access to capital • Water quality implications • Surface water availability in Mid-Upper Rangitāiki is constrained by existing consents (e.g. hydro-electricity generation) • Lack of willing and trained labour • Limited access to markets (e.g. processing plants) • Limited technical capability (e.g. rural professionals) with an environmental and economic focus* • Limited domestic market for perishable products (including proximity, cost – particularly for upper catchment) • Limited transport infrastructure (particularly for upper catchment) • As a consequence of the above, more vulnerable to price drops [or cost increases] • Very limited land use options in Te Urewera • Funding for research* (landowners shouldn't be relying just on trial & error) • Economic shocks, social licence • Inequitable water allocation	• Suitability of land for different crops* - need land use change research close to the land users[3] • Big catchment with different conditions so limited opportunity to generalise research findings.

- Members highlighted that existing consents in mid-upper Rangitāiki (e.g. hydro-electricity generation) present a major challenge for development in that part of the catchment. New consents can't generally derogate from existing consents. However, there may be opportunities for agreements between different resource users to enable further use of the resource. A member noted that this was likely to be subject to payment for the water, which would not seem appropriate.

[2] Where total allocation exceeds the cumulative allocation limit.
[3] However, some members considered that there already is a lot knowledge held by local land owners.

- One member noted that the reasonable use rates for pasture in mid-upper Rangitāiki estimated by Aqualinc are too low. Previous work undertaken by Plant & Food Research on the Galatea Plains to refine Galatea Sands properties in S-Map was noted. [It appears this issue has been addressed within SPASMO (the Plant & Food Research model used by our Consents Team to assess reasonable use), but it hasn't been addressed in S-Map and may not be able to be addressed within the Aqualinc analysis due to the scale of the analysis. This will be noted as a limitation].
- There are different models to estimate reasonable use (e.g. SPASMO, SMWBM, IrriCalc, Hydrus, etc.). In general it is expected that they would come up with similar answers but occasionally, it appears they don't always.
- Central government has signalled amendments to the RMA that would make it easier for regional councils to review consent conditions (such as by reducing allocations to reasonable use prior to expiry to "unlock" some water).
- Examples of constraints to development are resourcing (possibly a bigger barrier to growth than water), availability of trained and willing labour, knowledge of land suitability and existing consents.
- Strategic conversations on economic growth, big picture thinking and capital investment should factor into future land use in the catchment.
- Questions:
    - What happened to the "recharge areas" under the previous (2016) groundwater availability assessment? The current availability assessment simplifies classifications slightly. The zones previously defined as "recharge areas" effectively have a nil allocation limit. Therefore, if there are any consents for those zones, they are now considered "over-allocated" (as is the case for the Waikowhewhe and Mangamako zones in lower Rangitāiki).
    - How far back do records for recharge estimates go? As long as available rainfall records, which would capture wet years and dry years.

Surface water quality catchment modelling results

This part of the workshop is to present and discuss surface water quality modelling results, for those members that couldn't make it to Workshop 8. Refer to the notes from Workshop 8 for a summary of the presentation and discussion. Other topics raised during this workshop included:

- Management of gorse, noting there is not a lot of gorse in the catchment.
- Noted that the lower Rangitāiki catchment is one of Fonterra's 50 priority sustainable catchments.
- Noted that as a next step, we will test the impact of the M1 mitigation bundle in the catchment model and see how far that gets us.

We will keep in touch with any new information that becomes available between now and the end of the year, but our next workshop is likely to be in the new year.

APPENDIX 3

Ngati Tahu Ngati Whaoa in Te Kahui Mangai November 2018

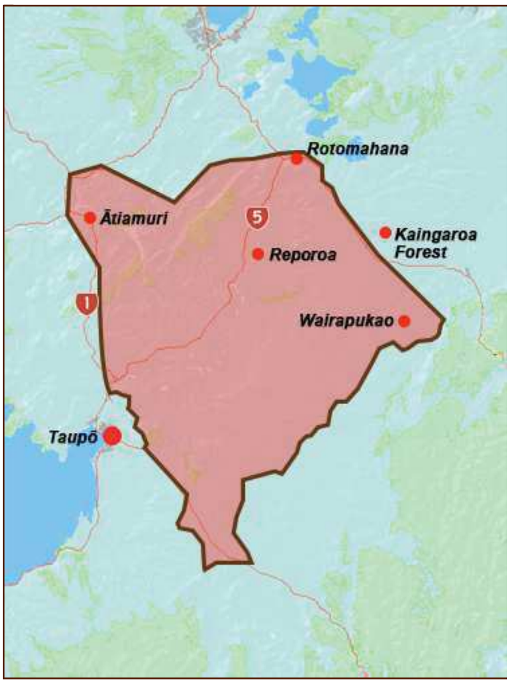
Te Arawa Waka

Ngāti Tahu / Ngāti Whaoa

Recognised iwi in the Māori Fisheries Act 2004

Population: 1,638 (does not include any of 19,719 "Te Arawa but iwi not specified")

This rohe map represents the area over which Ngāti Tahu – Ngāti Whaoa exercises kaitiakitanga for the purposes of the Resource Management Act 1991.



Mai i te Waiheke o Huka

Whakarawhiti atu ki te mania o Kaingaroa

Ko te tihi o Maunga Kakaramea

Puta atu ki te Pae Maunga o Paeroa

Orakei Korako ki Pohaturoa ki Atiamuri.

Ngati Tahu-Ngati Whaoa's traditional rohe (tribal district) extends from Te Waiheke o Huka to the south.
We extend east to our pouwhenua at Ngapuketerua beyond the Rangitaiki River.
Our lands then spread northward across the plains of Kaingaroa to Wairapukao and further on to Pekepeke.
From here we extend to our northern pouwhenua at Maunga Kakaramea, turning west to the Paeroa Range and on to Orakei Korako on the banks of the Waikato River, the birth place and principal papakainga of Ngati Tahu-Ngati Whaoa.
From Orakei Korako we extend further west to Pohaturoa, an ancient Pa site.

Ngāti Tahu / Ngāti Whaoa Area of Interest [JPG, 12.6MB].

This rohe extends into the regions or districts of these local authorities:

Regional Council

- Waikato Regional Council
- Environment Bay of Plenty (Regional Council)

Territorial Authority

- Taupō District Council
- Rotorua District Council

Contact information for hapū and marae may be provided by the Representative Organisation at their discretion.

Hapū	Marae	Wharenui	Location
Ngāti Mataarae	Mataarae	Mataarae	Mataarae Marae Road, Reporoa
Ngāti Rahurahu	Waimahana (Marapounamu)	Rahurahu	Mihi Bridge, SH 5, Reporoa
Ngāti Tahu	Ōhākī	Tahumatua	249 Piripiri Road, Reporoa
Ngāti Te Rama	Te Toke	Te Rama	Te Toke Road, Reporoa
Ngāti Whaoa	Mataarae	Mataarae	Mataarae Marae Road, Reporoa
	Te Toke	Te Rama	Te Toke Road, Reporoa

Iwi Representative Organisations

5 Iwi Representative Organisations:

Ngāti Tahu Ngāti Whaoa Runanga Trust

Last updated: 18/01/2016

RMA Represents Ngāti Tahu / Ngāti Whaoa as an "iwi authority" for the purposes of the Resource Management Act 1991.

➢ Affiliate iwi organisation of Te Arawa River Iwi Trust and Te Pumautanga o Te Arawa Trust.

Legal entity: Common Law Trust

Governance structure: Te Toke marae, Ohaaki marae, Mataarae marae, Waimahana marae, Kōhanga Reo Reporoa, kaumatua, kuia, Reservation Trust, Land Trusts, and Whānau Trusts are represented by the Runanga on behalf of the iwi.

Chairperson: Roger Pikia

Office Manager: Blanche Reweti

Secretary: Evelyn Forrest

RMA Contact: Evelyn Forrest **Ph:** 021 0812 5304

Receives Only - No Decisions

Report To: Rangitāiki River Forum

Meeting Date: 07 December 2018

Report From: Simon Stokes, Eastern Catchments Manager

Rangitaiki River Forum Communication Strategy

Executive Summary

Within the Rangitāiki Integrated Catchment Plan 2018-2019 there was an action for a communication strategy to be completed for the Rangitāiki River Forum. Communications for the Forum has been an issue since 2014 with no clear strategy or plan to support communications with the Rangitāiki community or the wider public. A communications strategy has been drafted for consideration by the Rangitāiki River Forum by Elizabeth Hughes (Consultant), who will present the draft strategy for approval.

Recommendations

That the Rangitāiki River Forum:

1 Receives the report, Rangitāiki River Forum Communication Strategy.

1 Introduction

Communications by and from the Rangitāiki River Forum has been limited since the inception of the Forum in 2014. The only communication information has been located within the Bay of Plenty Regional Council website where the formal records of the Forum agendas and minutes are held. This site also holds all documents and presentations to the Forum but it is difficult to find.

The issue of communications from and by the Forum has been noted since 2014 and it is only now that we have completed an action from the Rangitāiki Integrated Catchment Plan 2018-2019. This report contains the work of consultant Elizabeth Hughes who has interviewed Forum members to ascertain what would be a suitable and appropriate communications strategy and action plan for the Forum. She will present her draft communications strategy at this hui.

2 Rangitāiki River Forum Communication Strategy (Draft)

2.1 Background

The Rangitāiki River Forum was established in 2012 representing a partnership between Maori and the Crown. The purpose of the Forum is the protection and enhancement of the Rangitāiki River and its catchment. This includes: the Whirinaki River, Wheao River and Horomanga River.

The Forum is also represented in a joint committee of the Bay of Plenty Regional Council and the Whakatane District Council who will deliver work programmes that support the Forum's direction – outlined in the document Te Ara Whānui o Rangitāiki – Pathways of the Rangitāiki.

A communication strategy was commissioned with the intent of raising the profile of the Forum and to better communicate the work programme being delivered through Te Ara Whānui o Rangitāiki.

This communication strategy will support the Forum's purpose - "the protection and enhancement of the environmental, cultural and spiritual wellbeing of the Rangitāiki River and its resources for the benefit of present and future generations".

Prior to drafting the strategy, it was agreed that the Forum members themselves would be invited to contribute to help define the goal and objectives that would contribute to its success.

Interviews were held with ten members of the Rangitāiki River Forum from July to October.

This draft strategy has developed as a result of these conversations.

Feedback from the Forum members (especially those who did not get interviewed) is now required to finalise the strategy (specifically to agree on the goals and objectives) before the implementation plan is completed.

Interviewees were asked the following questions:

1. What are the key challenges you think the Forum faces with regard to communication?
2. What outcome would you like to see from a communication strategy?
3. Should the strategy focus on the Forum or the River?

2.2 The Key Challenges

While the Rangitāiki is "one river" – it is viewed differently by each iwi – this needs to be recognised in our communication.

The Forum is not always clear on its own mandate or status.

People outside the catchment confuse the Rangitāiki River with the Rangitikei River.

The River communities are very spread out.

Trustpower – has a different agenda.

Council elected members, staff and consultants/contractors – have variable levels of cultural awareness and River knowledge.

Other Rivers in NZ have higher profile and better understanding about their stories (if we want the Rangitāiki to be in this space then we are competing with others).

Can't assume digital connectivity in the catchment.

Also – there is some confusion over reporting processes and internal communication between members of the Forum?

2.3 Outcomes from a Communication Strategy

Success looks like…

The mana of the Rangitāiki River is elevated to awareness with more people.

People are talking about the Forum and taking us seriously.

The whanau are more fully involved in River activities.

There is widespread confidence in the Forum model and process.

Greater openness and transparency.

People in each rohe know the stories about the entire catchment [not just their own place].

And from the Rangitāiki River Forum workshop 2017…

- *more kids bombing off bridges*
- *the River is alive with community use and events*
- *whanau are connected and re-tell the stories*
- *everybody knows about the Forum*
- *the River is the be all end all*

2.3.1 Below is a summary of what was shared in the interviews regarding no 3 above…

Note: the comments are grouped below for ease of reference – not all interviewees made comments under each heading.

The Forum

The Forum is one of the few local government/iwi/Crown institutions that is working – we should be lifting its profile as an example.

The Rangitāiki River Forum is not about the mana of the iwi, but the iwi taking on the mana of the River.

We need to ensure that our people know of the relevance of the settlements and the establishment of the Forum.

With co-governance, it needs to be clear that both voices are heard equally.

We have as much authority as a full Council but have been relegated to less – the Forum needs to grab its mana – nobody really knows we exist.

Tūhoe representation want to work collaboratively – generally focused on mana – not in the head space to be focused on kaitiaki.

The Forum cannot become Council-centric.

Māori starting to take the Forum seriously because they can see results [ref to Plan Change 3].

It's taken five years to work out how co-governance should work (Councillors might have known but iwi did not).

The strategy should reinforce kaitiakitanga.

The River

The Rangitāiki is our tipuna awa – this always needs to be kept front of mind [we treat our ancestors with respect].

People don't see, hear or feel the broader mana that the River has – we need to enhance the mana of the entire River – not just the bits relevant to each hapū.

We need to put kaitiakitanga of the River above the mana of iwi.

To Tūwharetoa, the Rangitāiki is one of the veins of the Taupō.

The River is a dynamic, significant taonga.

Different iwi have different perspectives on the River, and can take the lead on different things – this is where our strength will come from as a co-governance Forum.

For Ngati Hineuru the mana of the River is where it starts [Lake Pouarua] and if the communication strategy can let that be known, then that message is enough.

The River is primarily a food source so therefore it must be in a fit state to generate enough food, then it can be seen as a recreational place.

We want to attract people to enjoy the Rangitāiki River experience – along the entire River - the same was that other tourism ventures (e.g. South Island cycle trails) are doing it.

The Rangitāiki River needs to be a 'must-see" place to go.

If tourism/recreation upholds the mana of the River, then this is okay.

The communication strategy should enforce the view that when you come to the Bay, the rivers are swimmable, clean and accessible to all.

The River should be the focus – the Forum is only a means (is "Forum" even the right name?).

Publicising tangata whenua working in their rohe on River projects.

All landowners adjacent to the River just want to know how we're going to stop it flooding again.

Tuna

The passage of the tuna up the River is seen as a force that unifies the iwi – the tuna is the common thread.

With reference to the tuna – they don't care who the iwi is.

The tuna is our flagship species.

Tuna is our symbol.

Using tuna in "a trial" was offensive – tuna is not just a fish.

Tuna is a luxury that identifies us – when we went to a hui we took tuna, and in return, they would give us whitebait or mutton birds.

Draft Communication Strategy

Rangitāiki River Forum

communication strategy

Goal

"The Rangitāiki River story is told"

Objectives

The mana of the Rangitāiki River is more widely understood and valued.

The Rangitāiki River Forum is viewed widely as a successful model of co-governance.

Measurement of objectives

The Forum can either make an assumption about how much is understood and valued about the Rangitāiki River or create a benchmark (via a survey). Either way, based on the commentary from interviewees, one can assume that any movement upwards in 'understanding' and 'value' would be welcomed.

Regarding the successful model of co-governance, at the moment the Forum's profile is very low and probably invisible to the wider community. Again, any movement upwards would deliver a successful outcome.

This draft strategy will enable both of these objectives to be realised simultaneously.

Target audiences

While the objectives are separate, the delivery of tactics will be addressed to the following audiences to enhance each activity. Specific people need to be identified in each group.

Internal	External
The Forum members and alternates	People who live in the Rangitāiki catchment

BOPRC elected members and staff	The wider BOP community - all
Iwi organisations of Forum members	Other councils and iwi organisations in NZ
	Government agencies/organisations/MPs
	Relevant non-government organisations
	Students/young people
	The media

Tactics

To achieve the goal and objectives will require:

1. Clarity of messages
2. Consistency of story
3. Connectedness between elements
4. Commitment of the Rangitāiki River Forum to action

The communication strategy actions contribute to each.

Actions

Group 1 – supporting communication elements

Creating an identity (based on imagery incorporating the elements of tuna and tipuna awa that represents the Rangitāiki River Forum and its sub-committees. This identity will be unique to the Forum and will be used in all future collateral that is developed

Create key messages that represent the Forum purpose, decisions and activities and may be used consistently in all communication. These can be agreed up to a year in advance and used for ongoing communication (internal and external)

Establishing communication policies and procedures that:

- clarify spokesperson for key messages.
- when and how key messages can be communicated.
- protocols for all internal and external communication eg before and after every Forum meeting to listed target audiences.
- consistent protocols for engagement and communication with iwi, councils and others on matters to do with the Rangitāiki River.
- a contact database for all target audiences (this will need to be coordinated from one place).
- efficient processes for when the “voice of the Rangitāiki River Forum” needs to be heard.

Creation of website dedicated to Rangitāiki River Forum – and linked to BOPRC, WDC, TDC and partner websites. This website will be the holding place for all Rangitāiki River Forum collateral as well as a place to gather all other Rangitāiki River material – e.g. videos, plans, and images

A brief web-based newsletter (bi-lingual) that is sent regularly to individuals within all internal target audience groups and selected external people. Sub-committee activities should feature in this also

Group 2 – telling the story of the Rangitāiki River (our tipuna awa)

Create the narrative – engage a writer to tell the story of our River (ideally this would end up being developed into a book).

Invite each iwi/hapu to contribute their perspectives and gather these stories – recognising each has a different perspective. Turn these into a series of podcasts.

Use a visual designer to create a representation of the River that represents these stories and use this as the base of future communication. Ensure the River is presented as 'one River but with different meaning to each of its parts'. Incorporate the key messages and provide it in several different formats for use in collateral.

Develop infographics about the River that are made available on the website for use by others.

Commission a TV documentary.

Hire interns to undertake an oral history exercise to generate a record of kaumatua and other reflections on the Rangitāiki River (use video).

Use iwi databases as a starting place for engaging young people in projects and activities that the Forum is supporting or working on.

Host planting days along the River banks, integrating with wetland restoration projects.

Arrange bi-annual "Source to the Sea" educational field trips (hikoi) that focus on different interest groups eg council, sustainability, tourism sectors.

Group 3 – raising the profile of the Forum

Create an identity and agree on key messages for the Forum (see 1 above). A stronger presence for the Forum can only be achieved if it has a voice that can be heard.

A spokesperson so that when a response or call to action for the River is required, this person has the authority to speak.

Agreement on the issues that the Rangitāiki River Forum will advocate on for the next six-12 months [this will require a hui and some consideration] and what their position should be.

The Forum should have a visible presence at existing information days/field-days/markets that are held in the catchment. This would require knowledge of all that is currently going on and some collateral such as banners and people resourcing.

An annual hakari nui or tauwhainga (festival/event) 'sponsored' by the Forum that is focused on promoting and representing all the activities along the Rangitāiki River – this can be hosted by different iwi each year. This event would be a showcase for all that is currently underway and the Forum's priorities. The activities can be focused on a practical activity such as tree-planting, fishing and possibly hosting hui with guest speakers. (At the moment there is a Rangitāiki Festival located in Thorndon - build on this concept but take it up the River)

Funding internships/scholarships (capability building – needs to be joined up)

Development of a proactive media plan. This will involve using the key messages (pre-agreed as per 1 above) and creation of appropriate events/material

"Rangitāiki River Forum" awards and scholarships for activities that enhance the Rangitāiki River and for young people studying relevant subjects at University

From here…

The actions outlined above are a response to the challenges and opportunities to enable "the Rangitāiki River story to be told".

The Forum needs to agree that this is the direction it chooses and approve the draft Rangitāiki River Forum Communication Strategy for implementation.

3 Implications for Maori

The report provides information relating to supporting the delivery of Te Ara Whānui O Rangitāiki – Pathways of the Rangitāiki which supports positive implications for Māori long term. Both documents are required by legislation and takes into account iwi and hapū planning documents and Te Tiriti o Waitangi as required in the Regional Policy Statement which also contains a section with direct reference to Te Ara Whānui o Rangitāiki. Engagement with tangata whenua communities throughout the catchment is vital to educate and inform about the Forum's aspirations, actions and achievements.

Simon Stokes
Eastern Catchments Manager

Elizabeth Hughes
Communications Consultant

On behalf of the Rangitāiki River Forum

28 November 2018

PRESENTATION - Rangitaiki River Forum Communication Strategy presentation by Elizabeth Hughes

Receives Only – No Decisions

Report To: Rangitāiki River Forum

Meeting Date: 07 December 2018

Report From: Simon Stokes, Eastern Catchments Manager

Recognising and Providing for Kaitiakitanga

Executive Summary

The purpose of this report is to inform the Rangitāiki River Forum of the progress in recognising, providing for, and implementing Objective 6: The practice of Kaitiakitanga in decision-making for managing the resources of the Rangitāiki Catchment. Objectives for recognising and providing for kaitiakitanga sit within Te Ara Whānui O Rangitāiki and Ngā Tikanga Whakahaere I Ngā Rawa o Te Taiao – Regional Policy Statement (RPS) for the Bay of Plenty. The report was researched by Huia Tohiariki over the last four months and she will provide feedback on her findings.

Recommendations

That the Rangitāiki River Forum:

1 Receives the report, Recognising and Providing for Kaitiakitanga.

1 Introduction

The action plan of Te Ara Whānui O Rangitāiki – Pathways of the Rangitāiki has an objective for kaitiakitanga:

Objective 6: The practice of Kaitiakitanga in decision-making for managing the resources of the Rangitāiki Catchment is recognized and provided for.

They are five contributing actions to support implementation of the objective. They are:

6.1 Develop protocols for recognising and exercising iwi and hapū mana including kaitiakitanga in identified resource management decision making processes

6.2 Collect an inventory of wāhi tapu in the Rangitāiki catchment

6.3 Develop Protocol for accessing holding and using the wāhi tapu information

6.4 Conduct a survey to collect information on tikanga associated with the rivers of the Rangitāiki Catchment

6.5 Encourage the industry sector to actively inform iwi and local communities about their environmental and social performance in the catchment

It was noted in a report to the Forum in 2014 that this objective was very important to understand and implement, in relation to supporting the overall implementation of all actions within Te Ara Whānui O Rangitāiki – Pathways of the Rangitāiki.

……Identified is a need to understand and develop the concepts that underpin kaitiakitanga. This is reflected in actions relating to Objectives 5 and 6 e.g. cultural health index development, wāhi tapu inventory and working protocols. These actions are a priority in their completion as they will be very important in helping everybody understand the protocol, process and kaitiaki required to implement various work throughout the catchment. In essence it is helping decision making occur. Completing these actions will also provide the basis for reconnecting with the community on many levels.

Source: Rangitāiki River Forum, 4 November 2014, Report - Implementing Te Ara ō Rangitāiki – Pathways of the Rangitāiki: draft Rangitāiki River Document.

The Rangitāiki Integrated Catchment Plan 2018-2019 contains an action to complete a project mapping the member's activity in relation to implementing kaitiakitanga. This report in Appendix 1 contains that analysis by Huia Tohiariki and she will provide feedback on her findings.

2 Regional Policy Statement

In addition to the objective of kaitiakitanga sitting within Te Ara Whānui O Rangitāiki – Pathways of the Rangitāiki, it is also recognised and provided for within the Ngā Tikanga Whakahaere I Ngā Rawa o Te Taiao – Regional Policy Statement (RPS) for the Bay of Plenty. This is due to treaty settlement legislation requirements.

Objective 37 states in the RPS;

The practice of kaitiakitanga in decision making is recognised and provided for when managing ancestral lands, water, sites, wāhi tapu and other taonga in the Rangitāiki River Catchment.

Table 10b from the RPS is in Appendix 2, where relevant policies and methods are shown in support of the objective. The wording is subtly different from Te Ara Whānui O Rangitāiki – Pathways of the Rangitāiki so requires understanding. The Implementation of Objective 37 is to be carried out by Councils and iwi authorities.

It is important to note that Objective 37 and Objective 6 require a clear implementation pathway to ensuring kaitiakitanga is recognised and provided for in achieving the overall vision and aspiration of the Forum and its purpose.

3 Implications for Māori

The report provides information relating to implementing Objective 6 and Objective 37 that support the delivery of Te Ara Whānui O Rangitāiki – Pathways of the Rangitāiki and Change 3 – Rangitāiki River, of the Regional Policy Statement, which supports positive implications for Māori long term. Both documents are required by legislation and takes into account iwi and hapū planning documents and Te Tiriti o Waitangi as required in the Regional Policy Statement which also contains a section with direct reference to Te Ara Whānui o Rangitāiki – Pathways of the Rangitāiki. It is imperative that further work is carried out to start and complete various actions that support recognising and providing for kaitiakitanga.

4 Conclusion

The analysis of the member's activity in relation to achieving Objective 6 and Objective 37 is a first step towards understanding what is actually occurring. The next step would be to assess which actions need additional activity to complete or need to be implemented, either by individual iwi or in partnership with councils. The final step is to evaluate how councils and iwi are recognising, supporting and implementing kaitiakitanga.

To ensure there has been a comprehensive approach to addressing kaitiakitanga within the catchment, there may be a need to engage with hapū. This is a question for our iwi members to consider.

The Forum needs to discuss next steps and provide guidance so that kaitiakitanga is embedded into the future.

Simon Stokes
Eastern Catchments Manager

On behalf of the Rangitāiki River Forum

28 November 2018

APPENDIX 1

Te Ara Whanui o Rangitaiki assessment report by Huia Tohiariki November 2018

Te Ara Whānui o Rangitāiki

Objective 6 – Report

Te Whariki

7 December 2018

Prepared for the Rangitāiki Awa Forum

By Huia Tohiariki

"Ko au te Rangitaiki, Ko te Rangitaiki ko au"

Introduction
This report describes and sets out the strategies or methods undertaken by Forum members to give effect to Objective 6 of Te Ara Whanui. Objective 6 informs us that *"the practice of Kaitiakitanga in decision making for managing the resources of the Rangitaiki catchment, is recognised and provided for"*. The actions which contribute to meeting objective 6 form the basis of this report.

Methodology

- The research for this project was undertaken by:
    1. face to face interviewing of each member of the Rangitaiki River Forum.
    2. An analysis of Iwi Management and/or Annual Plan records, where these were available was undertaken.
    3. An appraisal of workshop implementation results of 10 November 2017
- Interviewees were members of the Rangitaiki River Forum.
    1. Group 1 interviews were with Hapu/Iwi representatives residing by the Rangitaiki River. Namely, Ngati Manawa; Ngati Whare; Hineuru; Tuhoe te Uru Taumata; Ngati Awa and Tuwharetoa ki Kawerau Trust
    2. Group 2 interviews were then conducted with BOPRC (Toi Moana) members from Western and Eastern BOP as well as one member from Whakatane District Council and one from Taupo District Council, each being responsible for their rohe within the Rangitaiki Catchment.

Discussion
For the majority of the group, it was apparent that Kaitiakitanga in decision making, entails an active exercise of power or mana over the resource, in a manner that benefits the resource. Therefore forum members, are all viewed as being Kaitiaki, who undertake to work together in partnershachieve the objectives of Te Ara Whanui.

"Kia kotahi te papaki o nga hoe o te waka"

How do we measure progress with regards Objective 6? Kaitiakitanga in decision making today, presents many challenges for Iwi and the Crown alike. Since the workshop implementation in November 2017, the Rangitaiki River Forum has made significant progress. Iwi have been able to identify several pathways, that provide for the restoration, protection and enhancement of resources. These ways are described in Chart 1 of the report. There are also strategies mapped from Iwi members, that relate to objectives 1 to 5 and 7, 8, which were seen as relating to Kaitiakitanga. These are described in Chart2. Thus the Rangitaiki Forum is proactive in pursuing its purpose.

Current Status
Forum members believe the Forum is an excellent example of a working unit that acts to protect and manage resources. Members are respectful of each other and are able to work in harmony together for the betterment of the Rangitaiki catchment. Several members however, express concern about the lack of resourcing provided to the Rangitaiki Awa Forum, when considering that their role, is the same as Toi Moana, in working together, to give effective to the objectives of Te Ara Whanui. In particular the Forum does not receive ongoing funding from the Crown.

Opportunities
The inclusion of Te Ara Whanui in the BOPRC Policy Statements is seen as a step forward in the co- management arrangement in caring for our resources. Capacity building through education and training of Iwi members is identified as an opportunity by Hapu groups. This could be sponsored and organised training, in restoration, project planning, environmental studies and planning, and matauranga Maori were all suggested. Having Maori expertise in these fields, would help to build the capability of the Iwi and the Forum alike, in its co-management role.

It was also strongly viewed by some Hapu groups, that the role of the Rangitaiki Awa forum, needs to be more than Advisory. The Rangitaiki Awa Forum should also have equal decision making powers, when deciding resource consent applications. This would assist Iwi in being able to ensure that the resources are retained and looked after for future generations. This being the aim of the Objectives of Te Ara Whanui.

Conclusion
In the environmental arena, Maori world view is still strongly based on traditional cultural beliefs, knowledge, concepts and values. These key cultural concepts and values, of which kaitiakitanga, tikanga, rahui all abound, are given recognition in legislation, planning, policy and research. These traditions are derived from Maori knowledge or matauranga Maori *(Harmsworth, G. Landcare Research NZ Ltd, Palmerston North. Discussion paper)*.

Te Ara Whanui and the Resource Management Act 1991 as legislation, are not dissimilar. Each of them are about the protection and use of the resources. As are the regional policy statements, which recognise Te Ara Whanui.
The challenge for the Rangitaiki Awa Forum and Toi Moana, in managing the resources, is that they must combine Maori knowledge and values with Western knowledge and values.

These are the strands of flax that weave inside and outside of each other, to make a whariki. Each Hapu weaves its own whariki with the crown, just as each Hapu is responsible for the safekeeping and protection of resources. Te Ara Whanui o Rangitaiki is the document that sets out the pathways for us all to follow.

Toitu he whenua, whatungarongaro he tangata
"The land is permanent, man disappears"

Nga Mihi - Acknowledgements
BOPRC Rangitaiki Catchment Manager - Simon Stokes

Maori Policy Unit – Toi Moana

Nga mema katoa o te Rangitaiki Awa Forum mo to koutou manaaki
(All members of the Rangitaiki Awa Forum for your time and hospitality)

References

Te Ara Whanui o Rangitaiki Pathways of the Rangitaiki
River Document February 2015

Rangitaiki River Forum – Te Ara Whanui o Rangitaiki Implementation
Workshop Summary Results – 10 November 2017

Iwi Management Plans/Annual Documents of
Ngati Manawa
Annual Work Plan 2017-2019

Ngati Whare
Iwi Management Plan – 28 April 2011

Ngati Awa – Cultural Baseline Report

Tuhoe te Uru Taumata – Te Kawa o te Urewera
Tuhoe Economic Development Plan 2016 -2017

Rangitaiki Integrated Catchment Programme
Annual Work Plan 2018-2019

Rangitaiki Water Management Area
The Science Story – Environmental Summary Report

Harmsworth, G. *Landcare Research NZ Ltd, Palmerston North. Discussion paper*

OBJECTIVE 6 – The practice of Kaitiakitanga in decision-making for managing the resources of the Rangitāiki Catchment is recognized and provided for.

6.1	Develop protocols for recognising and exercising iwi and hapū mana including kaitiakitanga in identified resource management decision making processes
IWI	
Ngāti Manawa	*Protocols can be found in Te Mana Whakahono arrangements. Resource consent processes, involvement in plan changes in freshwater development. Being represented and acknowledging cultural values. Representation on forums, Chair/Vice Chair RRF. Drafting of Iwi Environmental management plan includes protocols. Strategy to build beneficiary Kaitiakitanga responsibility.*
Ngāti Whare	*There are consultation and representation protocols in place. If you represent a local body, s81 provides for your organisation to consider ways to foster and develop Maori capacity. This framework enables Maori to contribute to decision making processes. Resource consent processes. Cultural Impact Reports. Restoration programmes. Protocols exist within the governance/trusts/ forums/government agencies where NW currently sit. Provides mechanisms for NW to be included in decision making.*
Hineuru	*Forum representation. Groups work in harmony with respect for views. The guiding principles of Hineuru are: Whanaungatanga* ▪ *Manaakitanga* ▪ *Kaitiakitanga* ▪ *Rahui and Tikanga practices are upheld*
Tuhoe Te Uru Taumata	*Overarching protocol for Tūhoe is Te Kawa o Te Urewera. Decision making process are conducted through the Tribal of Te Urewera whose directives are received through hapū elected delegate representation.*
Ngāti Awa	*Kaitiakitanga is Hapū driven. Refer to Rangitaiki Baseline Report. Consultation; Relationships; Cultural Impact assessments are some of the processes used to exercise kaitiakitanga in managing resources. BOPRC however, has a superiority complex. Objective 6 often goes unrecognised, when NA raises concerns. We make regular submissions, where we believe a resource consent has an adverse effect. This is kaitiakitanga in action. However, using formal processes to exercise our mana in decision making per Hapū of the Rangitāiki Awa Forum, is often fruitless.*
Tuwharetoa ki Kawerau	*Input through Rangitāiki Awa Forum. Processes are followed, that give recognition to Iwi specifics. This Iwi peer group acts to protect resources of the Awa and the catchment. Te Ara Whānui is now written into policy statement, that ensures Maori/Iwi authority is recognised in decision making. The RMA does not give effect to recognising Hapū or Iwi authority when making resource management decisions. At present there is no recognition, but rather there is a "must give regard to" …statement. Iwi should be given authority to consider resource consent applications.*

6.2	Collect an inventory of wāhi tapu in the Rangitāiki catchment
Ngāti Manawa	*Archived. While many places are available to the public, NM has several areas that are forbidden entry.*
Ngāti Whare	*Ngāti Whare keeps records of all known Wāhi tapu on behalf of the Hapū/Iwi.* *Both public and private areas of significance. Yes/ wāhi tapu information associated to the Rangitāiki River and catchment covers purpose re: kainga, bathing, drinking/kai/tuna/watercress etc. and/or known Taniwha/kaitiaki location/s. This information is held by our Office.*
Hineuru	*Historical information including oral history has been collated and recorded.*
Tuhoe Te Uru Taumata	*Ngāti Haka ki Tāwhia are under the mantle of Te Komiti o Rūnanga tribal and Ngāti Tāwhaki ki Ngāpūtahi are covered under the mantle of Manawaru Tribal.* *For Patuheuheu, Ngāti Haka, these protocols are developed by our pepeha. Monthly hapū meetings are the venue to set up wānanga style learning and engagement to identify decision making processes.*
Ngāti Awa	*Ae Mauri enhancements. Restoration; Community input. Identified hapū by hapū. Wāhi Tapu sites of Ngati Awa – June 2000.*
Tuwharetoa ki Kawerau	*Ae. TWTKK have an inventory of Wāhi Tapu. There are special areas of historical significance that are available for public access. Iwi also has specific areas that are private, and not available for access. This information is held by our office.*
6.3	***Develop Protocol for accessing holding and using the wāhi tapu information***
Ngāti Manawa	*An application to the Rūnanga office is required*
Ngāti Whare	*Access to locations and to information, is through Te Rūnanga o Ngāti Whare office in consultation with Hapū. As above comment but next steps to develop/articulate the process/accessing information*
Hineuru	*Not yet specific for the RRC however, protocols in Hineuru Kawenata with DOC sets a precedence for management of wāhi tapu information*
Tuhoe Te Uru Taumata	*Consultation with Patuheuheu, Ngāti Haka, Ngāti Haka ki Tāwhia, Ngāti Tāwhaki ki Ngāpūtahi whānau and hāpu members are required to gain this information. Initial point of contact will be kanohi ki te kanohi. Knowledge protection will apply in certain situations where the onus of responsibility will belie those kaitiaki.*
Ngāti Awa	*There are places of special significance that are tapu, or only available to the Iwi.* *Access and use of this information, is only by permission of the Hapū or Iwi concerned, through contact in the first instance with NA Office.*
Tuwharetoa ki Kawerau	*Accessible only to Iwi, under special circumstances.* *A Software programme designed to hold this information and similar, would be an asset. Can this be developed by the BOPRC, which shows the entire catchment.*

6.4	Conduct a survey to collect information on tikanga associated with the rivers of the Rangitaiki Catchment
Ngāti Manawa	*AS per Annual Work plans, Tuna Forum and Tuna Restoration; Cultural Redress sites; Hapū input into tikanga of the rivers. By sharing and identifying areas of importance along the river, that are part of the restoration project. Te Korowai o Papatuanuku project observes tikanga of NM*
Ngāti Whare	*Hapū /Wananga. Tikanga is Hāpu based and while Ngāti Whare has its own tikanga, being able to participate and access other groups such as Tuna Forum and Rangitāiki Awa Forum, we learn from each other and are able to share information relevant to Kaitiakitanga of our resources.*
Hineuru	*The concepts of restoration, revitalisation and re- education are fundamentals for Hineuru. We are still making plans to collect this information and develop strategies.*
Tūhoe Te Uru Taumata	*Confidential to the whānau, hapū and tribal. Kanohi ki te kanohi engagements where applicable. Wānanga style engagement and development. Knowledge protection will apply in certain situation where the onus of responsibility will belie those kaitiaki*
Ngāti Awa	*Continuous research of Iwi interests. River planning document contains much of this information. Cultural and spiritual assessments. Monitoring changes in the river flow and its effects on the resources*
Tuwharetoa ki Kawerau	*Where Wāhi Tapu areas are completely private, there is a non-disclosure policy. Accessible only to Iwi, under special circumstances.* *A Software programme designed to hold this information and similar, would be an asset. Can this be developed by the BOPRC, which shows the entire catchment.*
6.5	**Encourage the industry sector to actively inform iwi and local communities about their environmental and social performance in the catchment**
Ngāti Manawa	*Tuna forum work with commercial fishermen. NM has dialogue through Plan Changes. Tourism operators work in with Iwi. NM work with DOC, to develop tracks and revegetation of native species. NM issues permits to enter the Forests, in this way we are able to monitor one sector of the community.*
Ngāti Whare	*There are several industries operating in our rohe. Tourism; Hunting and Fishing; DOC; Farming and Forestry. The issuing of permits to enter our Forests and Access our waters will allow Ngāti Whare to have a monitoring role. See Iwi Management Plan*
Hineuru	*Hineuru lays a foundation for positive relationships with local authorities and other stakeholders in the Rangitaiki Catchment. Protocols and processes are being developed, to provide for a positive working relationship with the industry sector.*
Tūhoe Te Uru Taumata	*Industry communication with iwi to be directed to Te Uru Taumata which is communicated to Te Komiti o Rūnga tribal (Ruatoki) and Manawaru Tribal (Ruatahuna). These communications inform both tribals of the activities on the Rangitāiki* *Industry communication with local communities will be directly with Tūhoe Rangitaiki River Forum presentative who reports back to Patuheuheu, Ngāti Haka hāpu hui to be allocated out through various entity reports for communication and activation. Communication with Ngāti Haka ki Tāwhia will be directly with Hapū management committee, Linda Rangitauira for*

	communication. Ngāti Tāwhaki ki Ngāpūtahi is with Manawaru Tribal unless otherwise directed.
Ngāti Awa	*Power Company; Kiwifruit; Farmers. Good relationship with farmers. Erosion being caused by electricity usage. Plan change 3, being adopted will help with managing adverse of effects.*
Tuwharetoa ki Kawerau	*TWTKK requires more knowledge/information of the water quality and the resources that are available in the Awa. If these surveys have been done, could we have a record please. TWTKK would also like to know the number of resource consents issued in our area, and the purpose of them. In being able to conduct a survey around tikanga, we need resourcing.*

IWI	Te Ara Whanui o Rangitaiki objectives
Te Ara Whānui o Rangitaiki	*1) Tuna are protected through measuring including enhancement and restoration of their habitat and migration paths.* *2) The habitats that support indigenous species and links between ecosystems with the RC are created, protected and enhanced.* *3) Water quality is restored* *4) Prosperity in the RC is enabled within the sustainable limits of the rivers and receiving environments.* *5) Relationships between communities and the RC is recognised and encouraged* *6) Naturalness of the river and landscape is respected.* *7) Access to the RR and its tributaries is maintained and enhanced.*
Ngāti Manawa	*1) Tuna Forum established. Feasibility study, Aniwaniwa tuna heke and other speical projects undertaken.* *2) Weltands restoration programme. Taniwha trails and Native Reserve projects* *3) Regular testing by Council is undertaken. Outsource training and information for NM. Otago/Waikato Universities. NIWA* *4) Wilderness values assessed. Tourism feasibility studies. Walkway development* *5) Native planting projects involves schools and wider community. School excursions to the river. Fishing and setting hinaki. Locals camping and swimming. NM tikanga values.* *6) Developing Environmental Plan*
Ngāti Whare	*1) Nil* *2) Works closely with DoC. Nursery programme* *3) Monitoring role. Rahui to restrict overuse or prevent hoarding of water* *4) Iwi plan for forestry. Consent conditions to mitigate impact on rivers and run offs.* *5) Local tourism operators promote Whirinaki forest. Community projects.* *6) DoC and Toi Moana contained also in Iwi Management Plan for Ngāti Whare.*
Tūhoe Te Uru Taumata	*1) Tuna Forum. Quota management system. Mataitai system being developed.* *2) Kaitiakitanga in practice. Working in partnership with Council and RF.* *3) Monitoring* *4) Farming and Forestry area* *5) Native Planting, Social Media & Wananga* *6) Te Kawa o Te Urewera work collaboratively with Toi Moana and DoC.*
Ngāti Awa	*1) Customary sites and mahinga kai areas idenitified* *2) Rangitāiki Hapū coalition document as a response to twin peaking. Cultural impact assessments* *3) Monitoring of water takes and discharge consents* *4) Hapū Document established. Kaitiakitanga role of NA* *5) Meet regularly with Hapu groups* *6) As per Councils*
Hineuru	*Developing*
Tuwharetoa ki Kawerau	*1) Network tuna forum* *2) Resource consent conditions need to be imposed to protect and replace habitats* *3) Protective measures through monitoring of water quality* *4) Iwi peer group in place in respect of geothermal works. Makes recommendations*

APPENDIX 2

Regional Policy Statement Table 10b

Objectives	Policy titles	Page no.	Method titles	Implementation	Page no.
Objective 36 The relationship between communities and the Rangitāiki River Catchment is recognised and encouraged.	Policy RR 5D: Encouraging the strengthening of relationships between communities and the Rangitāiki River.		Method 77: Provide and support environmental education programmes within the Rangitāiki River Catchment.	Regional Council and district councils.	186d
			Method 23M: Establish cultural health indicators for the Rangitāiki River Catchment.	Regional Council and iwi authorities.	180
Objective 37 The practice of kaitiakitanga in decision-making is recognised and provided for when managing ancestral lands, water, sites, wāhi tapu and other taonga in the Rangitāiki River Catchment.	Policy IW 2B: Recognising matters of significance to Māori. Policy IW 6B: Encouraging tangata whenua to identify measures to avoid, remedy or mitigate adverse cultural effects.		Method 3: Resource consents, notices of requirement and when changing, varying, reviewing or replacing plans.	Regional Council and district councils.	173
			Method 11: Recognise statutory acknowledgement areas.	Regional Council and district councils.	175
			Method 12: Take into account iwi and hapū resource management plans in assessments of environmental effects.	Regional Council and district council.s	175
			Method 41: Promote consultation with potentially affected tangata whenua.	Regional Council and district councils.	184
			Method 42: Evaluate matters of significance to tangata whenua.	Regional Council and district councils.	185
			Method 43: Promote the enhancement of mauri.	Regional Council and district councils.	185
			Method 46: Consider the necessity of consulting potentially affected tangata whenua during consent processing.	Regional Council and district councils.	185
			Method 48: Consider appointing pūkenga to hearing committees.	Regional Council and district councils.	185
			Method 64: Encourage agencies and landowners to protect key sites.	Regional Council and district councils.	186b
			Method 78: Promote information sharing between iwi, industry and the community in the Rangitāiki River Catchment.	Regional Council, district councils and iwi authorities.	186e

PRESENTATION - Recognising and Providing for Kaitiakitanga by Huia Tohiariki