

Greater Heretaunga and Ahuriri  
Land and Water Management  
Collaborative Stakeholder (TANK)  
Group



**Meeting 37:  
22 February 2018**

# Karakia

# Karakia

Ko te tumanako

Kia pai tenei rā

Kia tutuki i ngā wawata

Kia tau te rangimarie

I runga i a tatou katoa

Mauriora kia tatou katoa

Āmine

Water is a taonga

# Agenda

- 9:00am Welcome & notices (Robyn)
- 9:05am Objectives for today (Mary-Anne)
- 9:15am Introduction to Urban Water Management (Rina)
- 9:20am Urban Water Management – NCC (Jon Kingsford)
- 10:00am Urban Water Management – HDC (Brett Chapman)
- 10:40am Urban Stormwater and Water Supply (Rina)
- 12:00pm LUNCH**
- 12:30pm Tutaekuri Values (Te Kaha)
- 1:00pm Stream Flow Augmentation (Jeff/Grant)
- 2:00pm Ngaruroro Storage Scheme (Jeff/Grant)
- 3:30pm COFFEE BREAK**
- 3:45 pm Plan Drafting (Plenary)
- 4.15pm Confirm Meeting records (Mtg 36)
- 4.20pm Meeting 37 Agenda (22 February)
- 4:30pm **CLOSE MEETING**

Introductions  
Apologies  
Housekeeping  
Recording

# Engagement etiquette

- Be an active and respectful participant / listener
- Share air time – have your say and allow others to have theirs
- One conversation at a time
- Ensure your important points are captured
- Please let us know if you need to leave the meeting early

# Ground rules for observers

- RPC members are active observers by right (as per ToR)
- Pre-approval for other observers to attend should be sought from Robyn Wynne-Lewis (prior to the day of the meeting)
- TANK members are responsible for introducing observers and should remain together at break out sessions
- Observer's speaking rights are at the discretion of the facilitator and the observer should defer to the TANK member whenever possible.

# Notices and announcements



# Action points- Meetings 36

ID	Action item	Person responsible	Status
36.1	Assess impacts of changes in classification of the point of take to another zone for all consents that might change	Jeff/Malcolm	In prep
36.2	Need a mechanism for those treated as a river take but actually a groundwater take to measure what the new allocation limit will be	Mary-Anne	In prep (plan drafting)
36.3	Due to low confidence in the model need a protocol to allow for consents to 'move'.	Mary-Anne	In prep (plan drafting)
36.4	More information to be provided from the urban water supply managers about water efficiency and water management programmes	NCC & HDC	This meeting
36.5	Augmentation Group may come back with some concepts (TBC)	Jeff/Grant	This meeting

# Meeting objectives

1. Agree to stormwater and urban water management framework
2. Agree stream depletion management
  - Stream flow augmentation
  - Ngaruroro storage scheme
  - Riparian land/wetland management
  - Re-allocation of water
3. Understand Tutaekuri Values
4. Provide feedback on plan drafting

# Urban Water Management: Stormwater Water supply

Jon Kingsford - Napier City Council

Brett Chapman – Hastings District Council

# Stormwater Policy and Rules

Rina Douglas  
Senior Planner

# Proposal 1; Stormwater Management

That the policy and rules outlined in: “Draft Stormwater Rules; Discussion Document” be further developed with input by NCC and HDC.

Reference SWG input.

Agree with proposal

And/Or

Provide feedback on draft

# Drinking water policy and TANK

- The Water Safety Joint Working Group was formed in 2016 at the direction of the Commission of Inquiry on the Havelock North Drinking Water contamination incident
- JWG is: Hastings District Council, Hawke's Bay Regional Council, Napier City Council, Hawke's Bay DHB and the Drinking Water Assessors
- Directed by the Panel specifically to investigate better information sharing on drinking water safety risks, and to investigate aquifer matters of potential relevance to drinking water safety
- Meets monthly, discusses panel directions and White Paper actions

# Proposal 2; the JWG is adopted by TANK as a working group

Purpose of the JWG as a TANK Working Group:

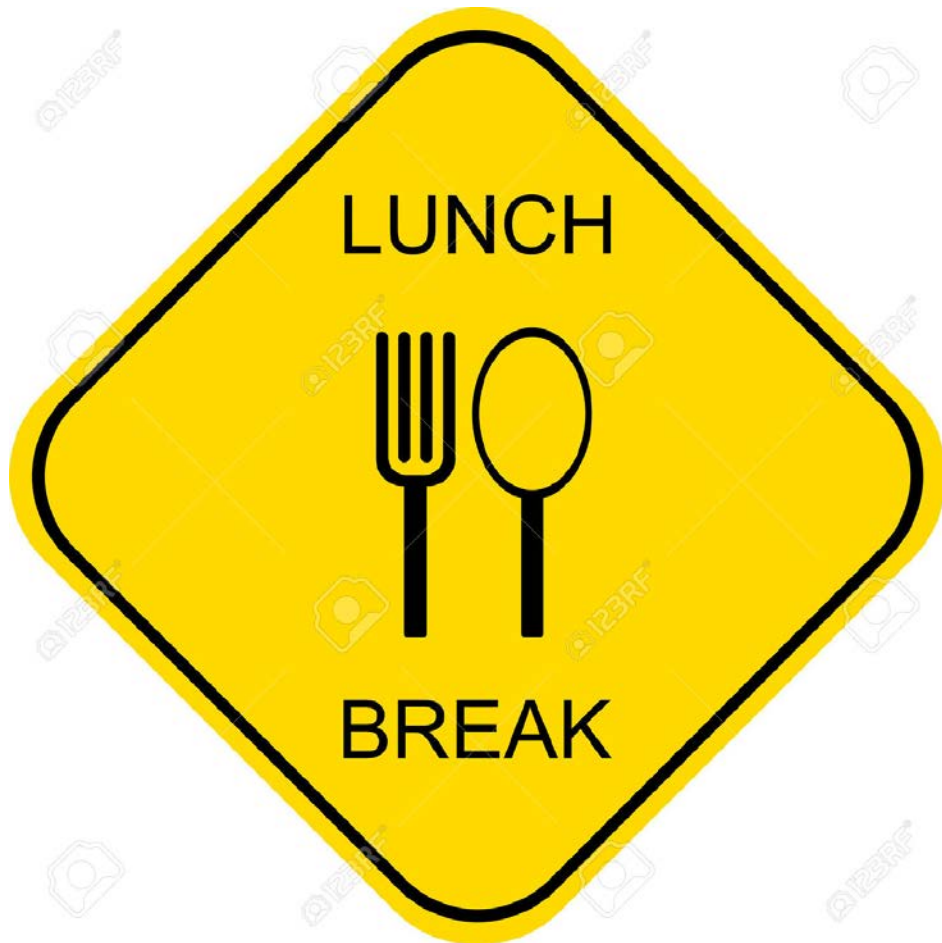
- Identify issues and develop solutions for TANK's approval
- This will include:
  - Investigating the application of Source Protection Zones using examples from around New Zealand
  - Identifying risk activities and ways to manage these



Agree with proposal

Or

State why there is disagreement



# Tutaekuri

## Te Kaha Hawaikirangi

# Managing Groundwater Stream Depletion Effects

WAG

Jeff Smith

Grant Pechey

Simon Harper

Monique Benson

Pawel Rakowski

Thomas Wilding

# Groundwater Depletion Management

Brief re-cap

WAG findings; recommendations and update (Monique)

New information (Grant)

Discussion paper proposals

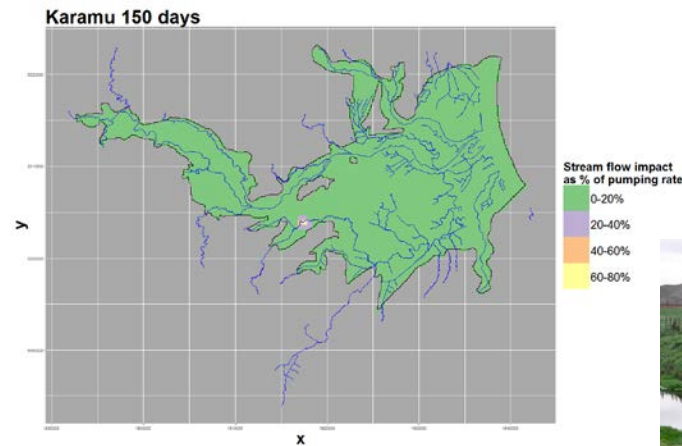
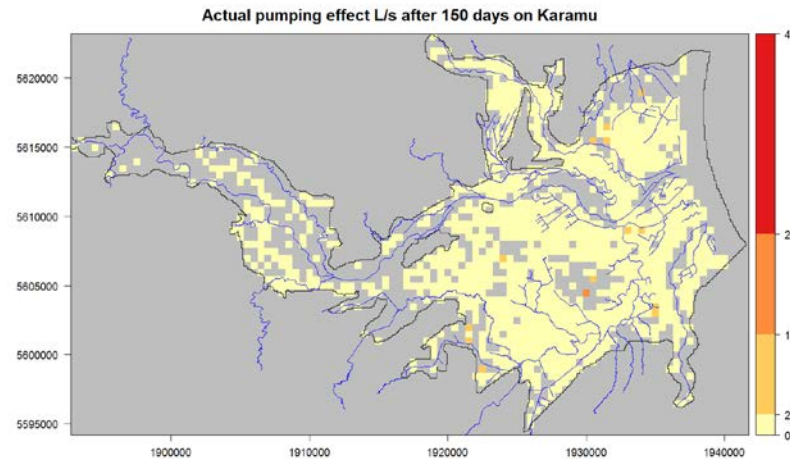
# Groundwater Abstraction: Stream Depletion

1. Surface water has a strong hydraulic connection with HP aquifer

2. Effects of g/w pumping on stream depletion distributed across the aquifer

3. Stream depletion is result of cumulative impact of all g/w pumping

4. The state of lowland stream quality and ecosystem health is poor



# WAG findings; recommendations



# Water Augmentation Working Group recommendations – lowland streams

Based on initial desktop assessments the WAWG **mostly supports:**

- Further investigation – full feasibility
- Provision allowed in Regional Plan Change
- Cost distribution - develop fair & equitable methodology
- Costs to be used as a guide for other mitigations (but not limited to)
- Establish consultation committee - feasibility & implementation
- Flexibility to recognise different stream characteristics and needs
- Support alternative mitigation options eg wetland and riparian planting

**Not agreed to:**

- Enhancement flow triggers – needs further consideration



# Water Augmentation Working Group recommendations – Ngaruroro Flow Enhancement

Recommend further investigation of an enhancement scheme

- From the Te Tua dam
- Mitigate the effects of existing groundwater abstraction
- In conjunction with other mitigation measures.
- Provision of feasibility within the regional plan

Partial vote to date

# Stream Flow Augmentation – Allocating Capital and Operating costs

Grant Pechey

# OVERVIEW

1. Annual augmentation costs
2. Principles underpinning the allocation of costs
3. Method used to allocate costs
4. Validating allocation outcomes
5. Cost allocation results

# Annual Costs for Allocation: Lowland and Dam Augmentation

	<b>Ngaruroro</b>	<b>Irongate</b>	<b>Karamu</b>	<b>Karewarewa</b>	<b>Mangateretere</b>	<b>Raupare</b>
Capital costs	\$1,972,574	\$27,137	\$119,901	\$32,206	\$35,734	\$27,349
Operating costs	\$90,000	\$11,333	\$60,029	\$25,875	\$28,516	\$10,554
Total Costs	\$2,062,574	\$38,470	\$179,930	\$58,081	\$64,250	\$37,903

# Total Annual Costs to be Allocated

<b>Capital costs (annual)</b>	<b>\$2,214,901</b>
Operating Costs	\$226,307
Total	\$2,441,208

# Principles underpinning the Allocation of Costs

**Exacerbator pays** – those persons carrying out abstraction activities not connected to minimum flows that directly or indirectly impact the river during periods of stress when augmentation interventions are prescribed.

The cost attribution process must result in a **fair and equitable** distribution of costs to all affected consent holders based on a reasonable determination of their relative impact on rivers during periods of low flow.

# Allocation Methodology

- 1471 Current GW Consents evaluated.
- Irrigation, potable, and industrial (but excl frost takes).
- List excludes Zone 1 takes.
- The analysis used average take rate, based on the consented annual volume.
- For consents with more than one bore , the rate has been distributed amongst individual bores.
- Where annual allocations did not exist then they were either calculated by scaling up the weekly/monthly allocations or relied on benchmark data.

# Outline of Pumping Impact Calculation Process

**Consent  
Annual  
Allocation**

**Calculate  
each Consents  
Average Annual  
Instantaneous Rate**

Industry } 365 days  
Potable }  
Irrigation 180 days

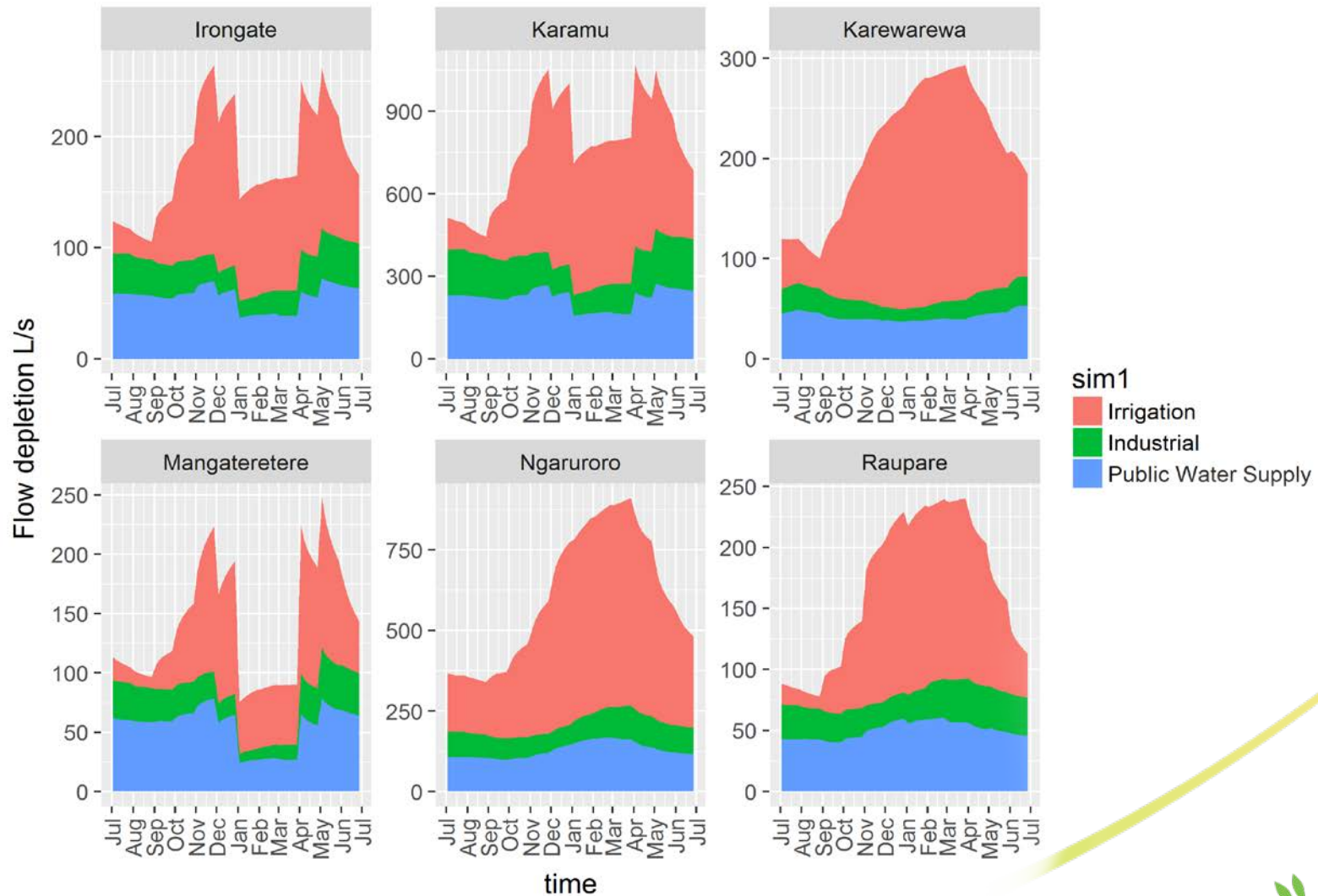
**Pumping  
Impact after  
period of  
Continuous  
Pumping  
(l/s)**

Effect vs Time (for selected stream)





# Model Calibration using GW Model Results

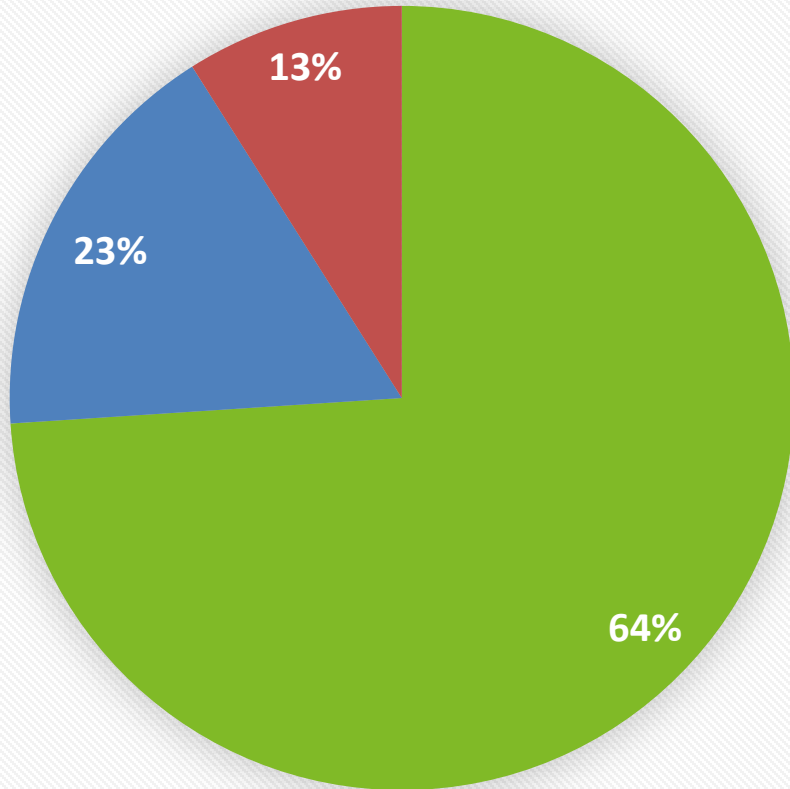


# Calibration Outcome – Current differences between the Cost Allocation & GW Models

	Ngaruroro	Irongate	Karamu	Karewarewa	Mangateretere	Raupare
Irrigation	2%	3%	-2%	-2%	1%	3%
Potable	0%	-1%	2%	1%	-1%	-1%
Industrial	-2%	-2%	1%	1%	-1%	-2%

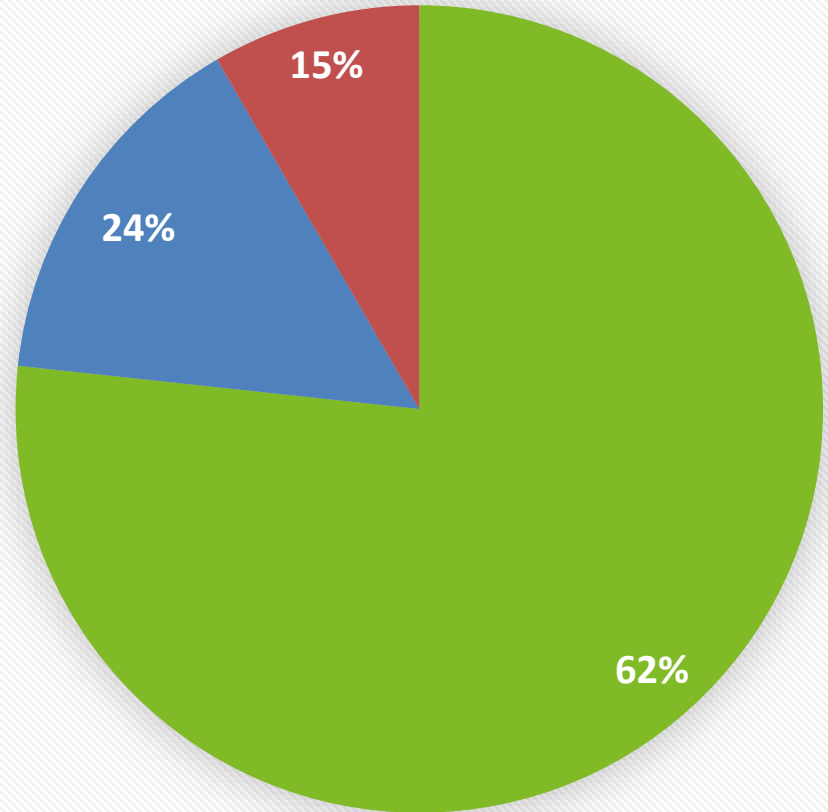
# Validating Cost Allocation Model Results

Cost Allocation Model



Irrigation Potable Industrial

GW Model Pumping Impacts



Irrigation Potable Industrial

# Allocation Results (%) by sector & by site

	Ngaruroro	Irongate	Karamu	Karewarewa	Mangateretere	Raupare
Irrigation	72%	66%	64%	78%	58%	64%
Potable	18%	22%	22%	15%	29%	23%
Industrial	10%	12%	14%	8%	13%	13%

# Overall Cost Allocation by Sector – With and Without Dam

	With Dam	Without Dam
Irrigation	71%	65%
Potable	18%	22%
Industrial	10%	13%

# Cost Allocations by Sector

	Average Costs	Median Cost	\$ per 100 m3 consented volume
Irrigation	\$1,290	\$555	\$1.84
Potable	\$11,832	\$697	\$0.79
Industrial	\$3,804	\$1,059	\$0.79

# Groundwater depletion management

## Discussion paper proposals;

1. Lowland stream flow augmentation with groundwater pumping
  - *Scheme design and limitations*
  - *Estimates of costs*
  - *Allocation of costs*
  - *Exceptions*
2. Ngaruroro flow enhancement with storage scheme
  - *Scheme design and feasibility*
  - *Estimates of costs*
3. Further reductions in allocations
  - *Effects of further reductions on modelled stream flows*
  - *Costs of further reductions (still to come)*
  - *Staged approach to reduction decisions*
4. Improved riparian land management and wetland creation

# Proposals; Groundwater Depletion Mitigation

That the TANK group adopt the following policy directions;

3. Development of a groundwater flow enhancement scheme for the lowland rivers in the Heretaunga Plains (*page 26/27*).

- *with other mitigation options also provided for*

4. Improvement of riparian land management and wetland creation as part of the mitigation package (*page 27*).

- Will complement wider mitigation required for macrophyte and water quality management

5. Reductions in allocation of water as part of the mitigation package (*page 28*).

- *Need for and method of imposing further reductions to be considered as part of plan review*

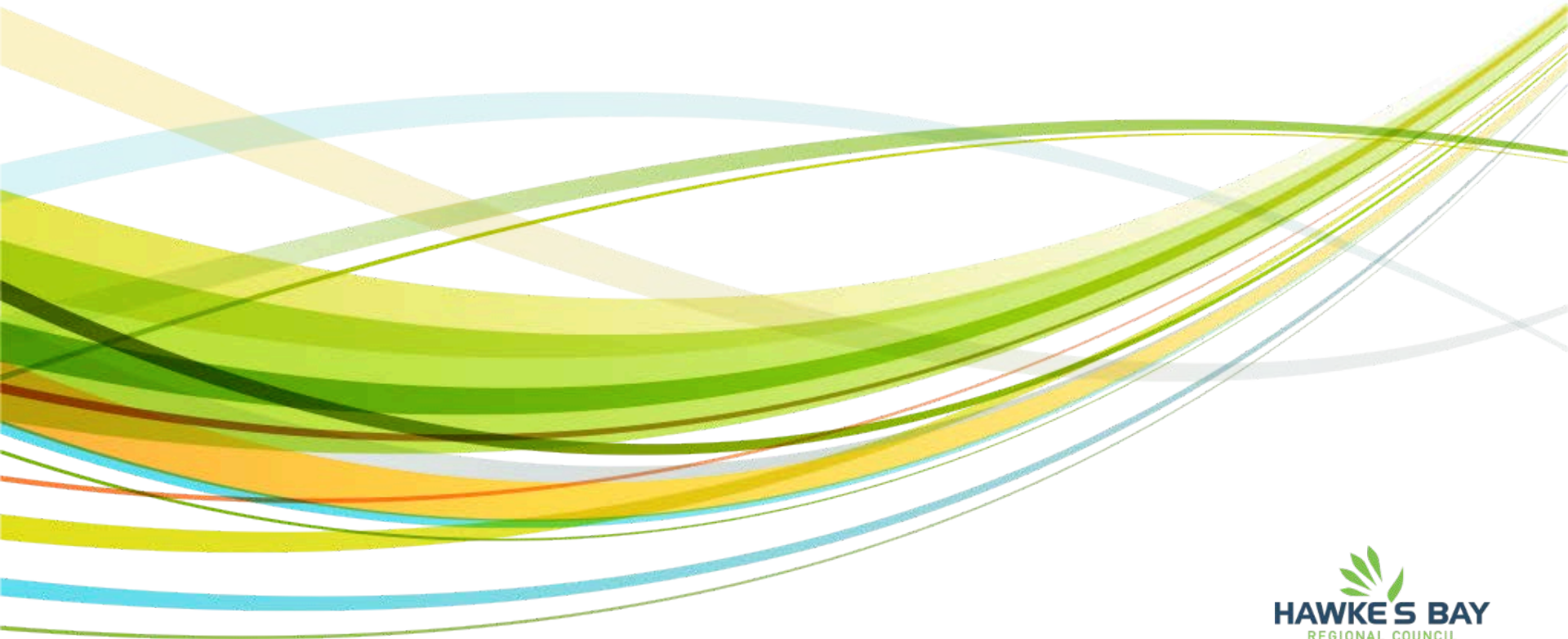


Agree with proposal

Or

State why there is disagreement

# Ngaruroro River Flow Enhancement



# Ngaruroro River Flow Enhancement

- The stream depletion effect on the Ngaruroro is approximately 1000l/sec
- Groundwater pumping across the Heretaunga plains contributes to this stream depletion
- Stream enhancement using groundwater pumping is not technically feasible
- A hypothetical storage proposal (based on Te Tua) has potential to provide flows to enhance Ngaruroro flows
- More work is needed to understand other effects, costs and benefits
- Funding models would need further development

# Proposal; Ngaruroro Storage and Flow Enhancement Scheme

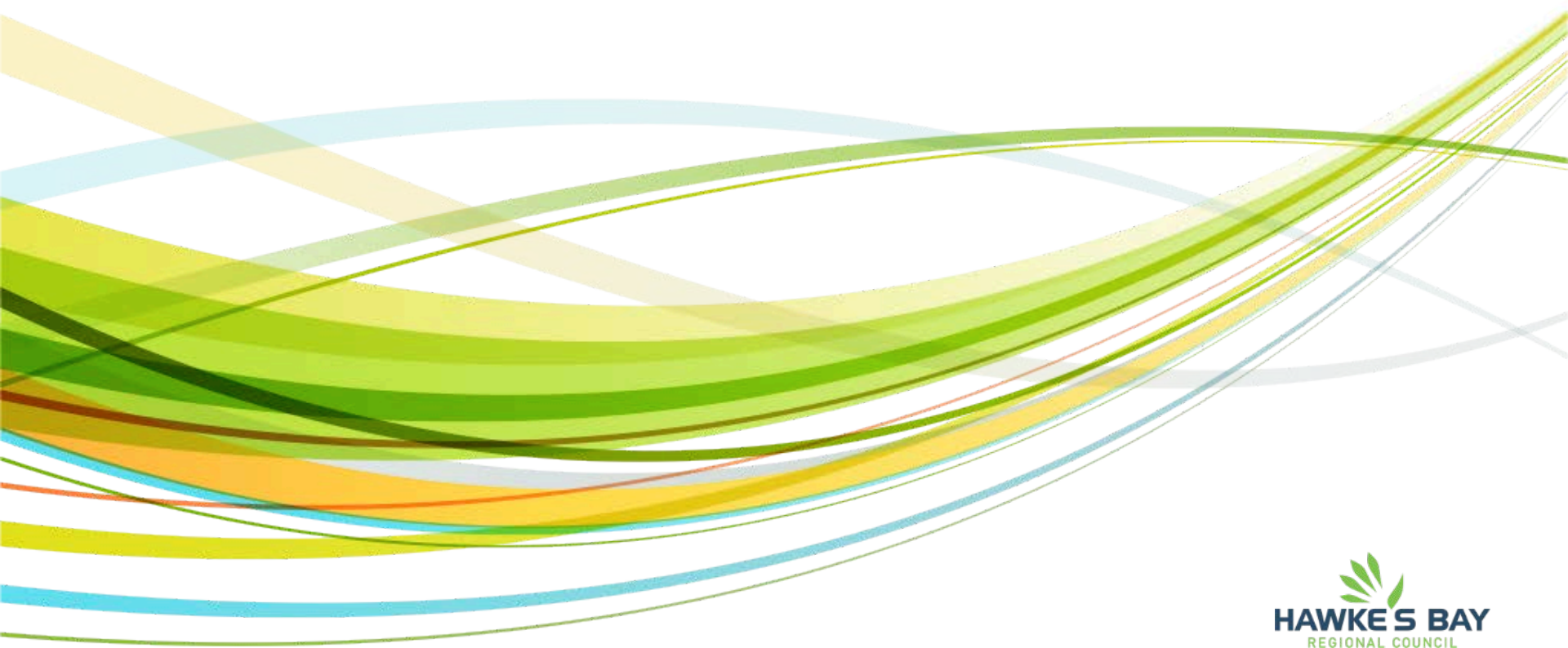
6. The TANK Group adopt policy that commits to further investigate the feasibility and potential effects of the Ngaruroro River storage and flow enhancement option to mitigate groundwater depletion effects on the river flow.

Agree with recommendations

Or

State why there is disagreement

# Review Policy



# Proposal; Review Policy

Include a review policy in the Plan Change that responds to;

- Whether the Ngaruroro flow enhancement scheme progresses;
- The success of the lowland augmentation scheme
- The results of the water permit re-allocations in relation to limits set, actual water use data and modelled water demand
- The effects of water takes on the flows of rivers and groundwater levels.
- The progress and success of the other mitigation measures

Agree with proposal

Or

State why there is disagreement



# Tutaekuri River; Values Report

Te Kaha Hawaikirangi

# Plan Drafting

1. Where we are at with the drafting;
  - The 'strawman' for sediment and nutrient management
    - *Milestones, reporting and auditing details*
    - *Report back at March meeting*
  - The stormwater policy and rules
    - *Refinement of policy and rules*
  - The draft issues, objectives and some general policies
    - *Incomplete and awaiting further TANK decisions*
    - *Draft available for feedback*
2. Further input by TANK between now and 15<sup>th</sup> May;
  1. Updates circulated as on-going revisions made or
  2. Drafts circulated once more complete
3. How document is to be delivered to RPC and stages moving forward.

# Next meeting – 22 March 2018

- Report back on outputs from economic analysis reporting (AgFirst/NimmoBell)
- High Flow Regime (Jeff/Rob Waldron)
- Nutrient and sediment management (EAWG and farmer ref group)
- Updates;
  - Lake management
  - Mana Whenua Group
  - Engagement

# Closing Karakia

Nau mai rā

Te mutu ngā o tatou hui

Kei te tumanako

I runga te rangimarie

I a tatou katoa

Kia pai to koutou haere

Mauriora kia tatou katoa

Āmine