



The Northland Regional Council Freshwater Action Plan - DRAFT

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The Northland Regional Council is seeking feedback on its draft Action Plan for Freshwater. We're already doing a range of different things to improve our understanding of freshwater and to support improving freshwater health – but we could be doing more. In this Action Plan we've set out a range of new activities we could do – but we know we can't afford to do them all. We'd like to hear what you think are the priority activities council should be doing to help support improving the health of Northland's freshwater.

We'll be receiving feedback up until 4 March 2024. Visit www.wai-it-matters.nz to find out the different ways you can provide feedback.

Introduction

This is the Northland Regional Council's draft Action Plan¹ for improving the health of the region's freshwater.

The Action Plan:

- Covers the whole region and all freshwater attributes².
- Sets out existing and proposed new actions.

The Action Plan is intended to meet the various requirements of the National Policy Statement for Freshwater Management 2020 (NPS-FM) for action plans, with the following exceptions:

- Any actions for returning soft-bottomed streams and rivers to their natural hard-bottomed state³ (cl 3.25).
- Fish Passage Action Plan – this is being developed separately (draft due late 2023)⁴ (cl 3.26)

The bigger picture

The draft Action Plan should be read in conjunction with the draft Freshwater Plan Change. The Freshwater Plan Change sets the environmental outcomes (objectives) sought for freshwater and the more detailed target attribute states⁵. It also sets out the policies and rules for activities impacting freshwater (to achieve the freshwater environmental outcomes and target attribute states).

This action plan sets out how the Northland Regional Council (NRC) will contribute to meeting the outcomes and target attribute states through its various functions. These actions are some of the

¹ As required under the National Policy Statement for Freshwater 2020, to assist with achieving the target attribute states and environmental outcomes (objectives) set in the draft Freshwater Plan Change.

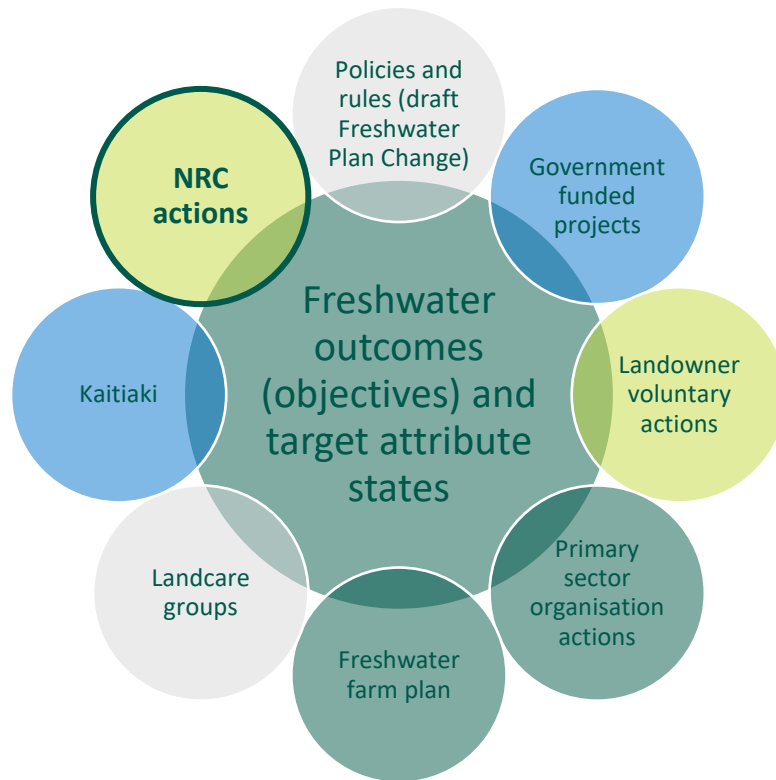
² It is a single action plan for all the region's freshwater management units and addresses all the freshwater attributes as set in the draft Freshwater Plan change.

³ It's anticipated that NRC will have adequate data on deposited fine sediment attribute by 2027, which will enable council to identify the streams that are naturally hard-bottomed but suffering from sedimentation due to upstream land use pressure and/or geological influence.

⁴ Section 3.26 of the NPS-FM requires NRC to prepare an action plan to improve fish passage.

⁵ Attributes are the things measured in the water (e.g. *E. coli* and dissolved oxygen). "Target attribute states" are the future target levels for each attribute. Generally, they show an improvement over time.

many activities that will contribute to meeting the environmental outcomes sought for freshwater and target attribute states.



Existing actions

These are actions the NRC is already undertaking or has committed to in order to improve our knowledge of freshwater and support the improvement of freshwater health.

Action 1: Freshwater state of the environment monitoring programme

NRC currently has approximately 20 staff involved in monitoring the state of freshwater – including water quality monitoring, hydrology monitoring and data processing. The annual budget for these activities is \$2.54 million⁶ - made up of, hydrology monitoring (\$1.135m) and water quality monitoring (\$1.404m) and data processing (\$0.6m).

Council's freshwater monitoring programmes include:

- 46 River water quality sites:
 - o discrete sampling at all – monthly
 - o 7 continuous monitoring stations
 - o 24 continuous dissolved oxygen sensors
 - o Up to 20 investigation sites – monthly
- 15 Lake water quality sites:
 - o monthly discrete sampling
 - o 2 continuous monitoring water quality buoys

⁶ 2023/2024.

- 11 continuous dissolved oxygen chains.
- 2 additional cyanobacteria sites – monthly during summer.
- 5-yearly Lake submerged plant survey.
- Recreational swimming water quality sampling and modelling at 21 sites.
- Microbial Source Tracking (MST) across all programmes. MST is used to identify source of *E.coli*, specifically human, ruminant, or avian.
- Biological Monitoring:
 - 34 Periphyton sites - monthly
 - 20-25 Freshwater fish sites – annually
 - 40 Macroinvertebrate and habitat assessments - annually
- Groundwater Quality:
 - 39 sites monitored quarterly for full suite of groundwater health indicators
 - 13 continuous telemetered sites monitoring conductivity
 - Up to 15 sites monitored monthly or quarterly relating to specific investigations
- Rainfall:
 - 45 continuous telemetered sites
 - 26 daily manual sites
- Groundwater levels:
 - 80 manual sites, recorded monthly or every three months, includes different depths at the one site
 - 17 continuous telemetered sites, includes different depths at the one site
- River Monitoring:
 - 57 continuous telemetered sites
- Tide level:
 - 8 continuous telemetered sites
- Lake water levels:
 - 29 continuous sites (9 telemetered)

Sediment monitoring:

- Monthly water clarity and turbidity measurements are made at 46 river sites and 15 lakes.
- Deposited sediment is monitored at 34 river sites.
- There are seven river stations collecting continuous turbidity measurements.
- There are two lake stations collecting continuous turbidity measurements.
- There are two ISCO samplers which are deployed to collect sediment measurements during high flow events.

NRC's freshwater data is available on its website:

<https://www.nrc.govt.nz/environment/environmental-data/>

Action 2: Existing science programme

Council currently has two freshwater scientists, two water resource scientists, a surface water scientist, and a groundwater scientist. They are responsible for designing the monitoring networks, analysing and interpreting the data, and reporting the results. The science team is also responsible for managing scientific investigations to address water quality or water resource issues. The budget

for the freshwater aspects of the science team is \$1.024m⁷. Recent and current projects underway include:

Water quality:

- Developing a regional sediment monitoring strategy and network.
- Developing nutrient criteria to achieve target attribute states for periphyton growth in Northland rivers.
- Preliminary research on identifying physiographic controls over water quality contaminants for Northland rivers.
- A review of the microbial water quality in Northland rivers to identify current state and potential sources of microbial contamination.
- Environmental drivers of macroinvertebrate communities in Northland's rivers and streams.
- Developing a GIS-based digital river network model by using latest LiDAR captured across the region.
- An Envirolink advice on automated estimation of river ecosystem metabolism and NPS-FM attributes using continuous dissolved oxygen data.
- An initial search of freshwater conservation interest species in Northland using GBIF species occurrence database and Northland's eDNA samples.

Water quantity:

- Assessing impacts of using alternative flow statistics for setting Northland's river allocation limits.
- Literature review of impacts of afforestation on groundwater recharge.
- Investigation of the effects of afforestation on catchment water balance: Case studies in Northland and Waikato.
- Forest Flows Programme; detailed measurement of impacts of afforestation on surface water and groundwater in Coal Creek, Te Hiku. The programme will significantly improve our understanding of impacts of afforestation on catchment water balance.
- Assessment of medium to high flow harvesting regimes on Northland's in-stream values.
- Fully allocated catchments investigation to assess whether catchment specific water allocation regimes are needed.
- Aquifer mapping for Northland.
- Aupōuri recharge and pathways assessment.
- Te Hiku Water Study – Aupōuri SkyTEM Mapping
- Pouto Groundwater Assessment
- Soil moisture monitoring at 10 sites across the region
- Evaporation monitoring at 1 site in Aupouri Peninsula.
- Assessment of Lake Taharoa water level variation – Climatic vs. water practice impacts
- Assessment of 2018-2020 drought for Northland
- Assessment of July 2020 storm flood for Northland
- Satellite-based applications for environmental monitoring
- Ongoing modelling of dam allocation
- Drought hazard and water resilience project

⁷ Estimate for 2023/2024 financial year. Note – it is an estimate as the council's financial system does not differentiate between freshwater and other resource science.

- Flood forecasting for Kaitaia

Action 3: Existing land management programme

The NRC has a land management team made up of 14 staff. Their role is to:

- Provide advice to landowners on how best manage their land to reduce erosion and improve water quality.
- Working with others on projects to implement sustainable land management practices on (e.g. Waimā Waitai Waiora).
- Administer council (and sometimes central government) funding subsidies for landowners, the largest being the Environment Fund (\$554,000⁸) and Tangata Whenua and Catchment Fund (\$493,000⁹).
- Manage a 13 hectare¹⁰ poplar nursery and distribute poplar poles to landowners for soil conservation purposes. Current annual production is approximately 4000-5000 3m poles¹¹.

The land management team is currently preparing a 'Soil conservation strategy' which will set the priorities for the land management teams soil conversation work.

Action 4: Kaipara Moana Remediation

In October 2020, the Ministry for the Environment, Kaipara Uri (Ngā Maunga Whakahii o Kaipara, Te Rūnanga o Ngāti Whātua, Te Uri o Hau), Northland Regional Council and Auckland Council signed a Memorandum of Understanding to jointly protect and restore the mauri of the Kaipara Moana.

Under a collaborative governance arrangement, Kaipara Moana Remediation (KMR) is a multi-year programme which invests in projects with the long term aim of halving sediment flows into the Kaipara Moana. As Aotearoa's largest harbour restoration programme, genuine partnership is key to protecting waterways and erosion-prone land across a 6,000km² catchment. KMR also supports local, nature-based employment, training, and accreditation, with a particular focus on rangatahi. KMR is currently funded until mid-2026 by central government (\$100 million from the Jobs for Nature fund), Auckland Council (\$10 million) and NRC (\$10 million).

The programme is building a catchment-scale approach with broad engagement and participation, and has been fully operational since early 2022.

As at 30 June 2023, KMR's achievements include:

- 57 people trained as KMR Field Advisors, including many from local iwi/hapū
- 28 local businesses and 21 nurseries accredited as KMR suppliers
- >440 plans identifying actions to reduce sediment completed with landowners
- >94,000ha managed under KMR plans
- >950,000 plants planted or contracted to plant in riparian areas and erodible hill country
- >480km of fencing completed or contracted to exclude stock from waterways

⁸ 2023/2024 financial year

⁹ 2023/2024 financial year

¹⁰ Productive area

¹¹ 2018-2022 average

- >\$10.3m in project value underway or completed, supporting local, nature-based employment.

Find out more about KMR: <https://kmr.org.nz/>

View a video about KMR: <https://youtu.be/wK8ln4qUIJl>

Action 5: Existing commitments to involve tāngata whenua in freshwater management and operations

NRC has various initiatives (existing and committed to) that contribute to involving tāngata whenua in freshwater management and operations:

- Te Taitokerau Māori and Council (TTMAC) Working Party.¹²
- Tāngata Whenua Water Advisory Group (TWWAG) — \$100K plus additional consultancy budget for the 2023/24 financial year.¹³
- Tāiki ē (NRC Te Tiriti Strategy and Action Plan).¹⁴
- Mana Whakahono ā Rohe agreements (Ngāti Rēhia, Patuharakeke).¹⁵
- Treaty Settlements and Statutory Acknowledgements.¹⁶
- Te Mana o Te Wai projects (e.g. Me He Wai, Ngā Kaitiaki O Ngā Wai māori) (NRC’s commitment is to actively participate when requested).¹⁷
- Mātauranga Māori monitoring framework development (\$100-150K budget for the 2023/24 financial year).¹⁸
- Funding for Iwi/Hapū Environmental Management Plans (IHEMPs) — \$100K for IHEMPs with a climate change component in the 2022/23 financial year, with \$30K allocated for the 2023/24 financial year and more requested for subsequent years.
- Funding for the Tāngata Whenua Environmental Monitoring Fund (TWEMF) — \$20K annual budget, and more requested for subsequent years.
- Annual scholarships for three Māori undergraduate students who whakapapa to Te Taitokerau (\$4,000 each, with summer work experience opportunity at NRC).

¹² See [Council working parties](#) for more information about TTMAC and the following links: [TTMAC Strategic Intent 2021-2040](#) and [TTMAC terms of reference \(2020\)](#)

¹³ TWWAG is an advisory group established by council in 2020 to provide advice on the freshwater plan change. More information about TWWAG is available here: [Advisory Groups](#) and their reports available here: [TWWAG Reports](#)

¹⁴ [Tāiki ē](#) is council’s plan for implementing its Treaty Partnership responsibilities with tangata whenua and covers all aspects of council’s work.

¹⁵ Refer [Mana Whakahono ā Rohe agreements](#) for more information on the existing agreements that council and tangata whenua have in place with respect to resource management.

¹⁶ Refer [Statutory Acknowledgements \(2019\)](#) for more information on the existing Statutory Acknowledgments and associated Treaty Settlements in Northland.

¹⁷ There are six hapū and iwi projects in Te Taitokerau that are being funded (in part) through MfE’s Te Mana o Te Wai funding. Several of these projects involve NRC as a strategic partner/stakeholder and/or have a relationship with the freshwater plan change process. More information is available here [MfE Te Mana o Te Wai Fund](#)

¹⁸ Council’s Tāiki ē implementation includes working with tangata whenua to support them undertaking their own monitoring (Action 8) and associated with this council is developing a Mātauranga Māori Monitoring Framework.

- Capacity and capability building through involvement in NRC's water quality monitoring (\$50K budget in the 2023/24 financial year).

Action 6: Freshwater farm plans

Freshwater Farm Plans (FWFP) are a key tool for landowners to identify, manage and reduce the impact of farming and horticulture on freshwater¹⁹. The date for when FWFPs in Northland are required has yet to be set, but it will be sometime before the end of 2025.

NRC has an important role in FWFPs:

- Appointing certifiers and auditors (the people who certify and audit FWFPs).
- Providing information about catchments (*e.g.*, maps showing popular swimming sites and the parts of the land more susceptible to erosion) – called 'catchment context, challenges and values' (CCCV).
- Providing guidance to landowners about how to go through the FWFP process.
- Undertaking compliance action against landowners who are not complying with the FWFP.

Action 7: Compliance and enforcement

NRC has approximately 27 staff involved in freshwater compliance and enforcement. This includes:

- Monitoring resource consents. NRC undertook 5,851 freshwater consent compliance checks for the year July 2022 – June 2023.
- Operating a 24/7 'environmental hotline' where the public can report environmental incidents (about 500 per year relating to freshwater).
- Following up on environmental incidents.
- Education about the rules
- Formal compliance, *e.g.*, issuing infringement notices and undertaking prosecutions. NRC issued 176 abatement notices and 101 infringement notices for activities impacting freshwater for the year July 2022 – June 2023.

¹⁹ For more information about Freshwater Farm Plans visit the Ministry for the Environment website: <https://environment.govt.nz/acts-and-regulations/freshwater-implementation-guidance/freshwater-farm-plans/#when-farmers-need-to-have-freshwater-farm-plans-in-place>

Potential new actions

A long list – what are the priorities?

There are many new actions the NRC could undertake to improve our understanding of freshwater and improve freshwater health²⁰. However, these actions need to be balanced against the costs and benefits because it is unlikely Northland ratepayers can afford to do them all. NRC has come up with a ‘long list’ of potential actions and is wanting feedback on what the priorities should be. NRC will then have to decide on the new actions it will proceed with.

While NRC has discretion on all the new actions it proceeds with, it recognises *Potential action 10: Supporting tāngata whenua involvement in freshwater management and decision-making* is key to meeting NRC’s obligation under the NPS-FM to involve tāngata whenua in freshwater management. NRC is also committed to meeting its obligations as a Te Tiriti partner, and *Potential action 10* is directly aligned to this commitment.

The following table shows the total cost of delivering all the potential new actions (does not include costs of delivering existing actions). The percentage is the percentage increase in rates (based on an annual rate take of \$47 million for the 2023/2024 year).

Type of action	Lower range	Upper range
Ongoing actions (\$ / yr)	\$4,060,000 (8.6%)	\$5,795,000 (12.3%)
One-off actions	\$150,000 (0.3%)	\$375,000 (0.8%)
Other actions (e.g. over multiple years)	\$270,000 (0.6%)	\$350,000 (0.7%)

Limitations of setting of new (currently unfunded) actions

A limitation of the setting of new (currently unfunded) actions in the Action Plan is that council cannot commit to their delivery at this time – they are at most an intention:

- NRC cannot commit itself to any new currently unfunded actions until it goes through a separate process to approve additional council expenditure. New council expenditure is generally paid for by rates²¹, and councils must go through a separate process under the Local Government Act to consult with the community.
- For many actions, the potential cost is wide ranging – particularly where the action is for NRC to provide financial support. It is very difficult to come up with a precise cost in the Action Plan because a decision on how much the NRC (ratepayers) is willing or able to contribute is dependent on weighing it up against all the other services council provides. This weighing up is done through NRC’s Long-Term Plan, which sets out all the services (and their cost) the NRC commits to deliver.

²⁰ To help achieve the environmental outcomes for freshwater and target attribute states being sought in the Draft Freshwater Plan Change

²¹ Although the costs of compliance and enforcement work are at least partly recovered/offset by user charges and fines.

Potential action 8: Funding to support stock exclusion, riparian planting and restoring wetlands

NRC could invest a further \$1 – \$2 million per year to support landowners with stock exclusion, riparian planting and wetland restoration.

Stock exclusion, riparian planting and restoring wetlands are critical for improving freshwater health.

Any new rules for excluding stock will likely have a massive financial impact on landowners – including lost income from reduced grazing area, costs of excluding stock (such as fencing) and reticulating stock drinking water.

One of the reasons for the stock exclusion is to help provide the conditions for riparian vegetation to establish. The cost of riparian planting is huge. There will be many landowners who won't be able to afford or won't be willing to pay for riparian planting.

Wetlands are very important for freshwater health (*e.g.*, filtering out sediment), and are important freshwater habitats in themselves. There is significant potential for creating and restoring wetlands. Fencing of wetlands (which is already required for wetlands of a certain size and location) will provide some restoration, but there is a lot more work that could be done, such as planting and pest management.

An obvious answer to reducing the financial impact of the stock exclusion rules, and encouraging riparian planting and wetland restoration, is to provide funding support.

To make funding support worthwhile to a landowner, it must be of an amount to make a meaningful difference. Experience through the likes of the Kaipara Moana Remediation programme is that funding needs to be at least 50% of the costs to be at a level to encourage a good number of people to take up the funding and do the work.

If a new rule were to be introduced requiring stock be excluded 10 metres from waterways, the estimated combined cost of stock exclusion and riparian planting (initial planting only) for the region is \$1.53 - \$2.29 billion over 30 years which equates to \$51 – \$76 million per year²². Taking the annual amount and assuming a 50% subsidy, this equates to \$25.5 - \$38.2 million per year. To give some perspective, NRC's total annual rate take is about \$47 million²³.

We haven't done any work to cost out the potential cost of restoring wetlands at scale – but its undoubtedly a big number.

The reality is that at most council might consider contributing an additional \$1 - \$2 million / year, which will provide at most a 4% contribution to the total cost of stock exclusion and riparian planting (not including wetland restoration) based on a 10-metre stock exclusion rule. At a regional scale, it's expected this level of contribution would not be nearly enough to encourage landowners to undertake works they wouldn't otherwise do.

There is the option of council targeting its funding to priority areas.

²² NRC, 2023. *Have Your Say on Stock Exclusion: a discussion document on options for livestock exclusion rules and companion report on cost estimates.*

²³ 2023/2024 council budget

Ultimately, to make a meaningful contribution to supporting landowners across the region will require a significant investment which is well beyond NRC (ratepayers) means.

Potential action 9: Increased compliance

NRC could invest an extra up to \$1 million / year in compliance.

Implementing rules in a timely fashion will be critical to achieving the improvements in freshwater health we're aiming for. There is little point in having more stringent rules if we can't reasonably ensure that they are being implemented and complied with.

The Freshwater Farm Plan process will provide additional scrutiny for compliance as it will mean there are more 'eyes on the ground'. However, it will still be NRC's responsibility to undertake enforcement on non-compliance that comes to its attention through the Freshwater Farm Plan audit process.

Compliance is costly. Only some compliance work is cost recoverable. There will no doubt be technological advances that may make compliance easier and stretch budgets further (e.g., use of satellite imagery). However, compliance will always be a resource hungry (but necessary) part of the suite of tools for improving freshwater health.

Given the range of more stringent rules, there is a strong argument to increase compliance efforts. As with most things, it comes back to affordability and priority. At this stage, as an initial indication NRC might be able to afford an increase of an additional \$1 million a year.

Potential action 10: Supporting tāngata whenua involvement in freshwater management and decision-making

In addition to its existing commitments, NRC will:

<i>Proposed action</i>	<i>Estimated cost</i>
<i>(a) Scope out and implement a haukāinga led freshwater planning process to define their hapori wai/rohe awa, and associated vision, values, objectives, targets, attributes and baselines to be the subject of a future plan change. In response to TWWAG recommendation.</i>	<i>Scoping: \$30 - \$50k Implementing haukāinga led freshwater planning process: TBC</i>
<i>(b) Set up and implement a Māori freshwater values attributes monitoring programme. Requirement of NPS-FM is to monitor all attributes.</i>	<i>\$1m+ / yr</i>
<i>(c) Investigate the concept of representing water in resource management processes as a 'living entity', and its rights (to be healthy and flourishing) being represented by someone. In response to TWWAG recommendation.</i>	<i>\$50k – \$75k</i>
<i>(d) Review Tāiki ē in light of TWWAG's recommendations on education/training and capacity building and Transfer of Powers/Functions and Joint Management Agreements. Implement</i>	<i>\$20k – \$50k</i>

<i>actions to progress these aspects of Tāiki ē. In response to TWWAG recommendation.</i>	
<i>(e) Encourage landowners to provide access to water bodies to tangata whenua. In response to TWWAG recommendation.</i>	<\$5k /yr
<i>(f) Provide additional funding for tangata whenua to implement the freshwater aspects of the Mātauranga Māori Monitoring Framework</i>	\$300k - \$500k / yr (TBC once Mātauranga Māori Monitoring Framework confirmed)
<i>(g) Provide additional funding to support implementation of tangata whenua focused provisions of the Freshwater Plan (e.g., support tangata whenua to develop guidance for applicants on CIAs).</i>	\$100k - \$300k / yr

New actions over and above existing NRC commitments

Tāngata whenua are categorical in their view that they need to be more involved in freshwater management (monitoring, compliance, resource consent processes, decision making), to better reflect the commitments made under Te Tiriti o Waitangi and He Whakaputanga, and to get better outcomes for freshwater. NRC is fully behind this and is committed to better involving tāngata whenua in the services it provides and better supporting tāngata whenua as kaitiaki and rangatira.

The Tāngata Whenua Water Advisory Group²⁴ (TWWAG) identified in their report²⁵ a range of recommended actions for council to adopt. Many of these recommended actions are already committed to or underway, including through “Taiki e” and the development of the Mātauranga Māori Monitoring Framework²⁶.

The proposed actions listed above, are additional actions NRC are proposing to take, based on the actions recommended by TWWAG, that are not already committed to.

Monitoring Māori freshwater value attributes

The adoption of Māori freshwater values, and corresponding attributes and target attribute states in the Freshwater Plan, will mean there will have to be investment into monitoring of these attributes. As the attributes reflect Māori freshwater values, monitoring needs to be led by tāngata whenua.

²⁴ TWWAG was established in 2020 to provide advice to council on the freshwater plan change from a tangata whenua perspective, through TTMAC. The membership has changed over time and is made up of a collective of individual experts including representatives of TTMAC (planners, kaitiaki, water engineers, etc.) who all whakapapa to Te Taitokerau. More information is available here: [TWWAG background](#)

²⁵ TWWAG (2023) Stage 2 report Nga Roimata o Nga Atua available here [TWWAG reports](#)

²⁶ Tāiki ē represents council’s intent to a collective commitment as Te Tiriti partner and endorses “the partnership with TTMAC, Te Kahu o Taonui, Iwi and Hapū as it aligns with council’s commitment to Te Tiriti o Waitangi, He Whakaputanga o te Rangatiratanga o Niu Tirenī and strengthens our partnerships with tangata whenua. It also provides clear strategic direction and priorities at both a governance and operational level, to give effect to Te Tiriti o Waitangi.” There are various actions identified including development of a Mātauranga Māori monitoring framework, co-design of guidance for consent applicants, and tangata whenua involvement in compliance monitoring.

There is no detail at this stage as to what a Māori freshwater values attributes monitoring programme would look like, and it is very likely that any such programme will require additional council resourcing. It is difficult to estimate what level of funding such a programme will require. We can use our existing state of the environment monitoring programme as a reference - Council currently spends about \$3.5m/yr on freshwater data collection, reporting and science²⁷. It's difficult to determine what an equitable level of funding would be – but however it's viewed, it's likely that if council are to adopt these attributes, then it would need to invest \$1m+/yr to fund an appropriately scaled Māori values attribute monitoring programme. These costs should be considered alongside the significant benefits, not least the strengthened relationships and increased levels of trust with tāngata whenua.

While the Māori freshwater values attributes monitoring programme may be included in the Mātauranga Māori Monitoring Framework, it has been specifically identified here as it is a 'must do' action for NRC.

Implementing the Mātauranga Māori Monitoring Framework

NRC is in the process of working with tangata whenua interests to develop a Mātauranga Māori Monitoring Framework. The framework will:

- Provide a training framework to enable tangata whenua to undertake environmental monitoring using both indigenous and western methods.
- Assist tangata whenua in fulfilling their role as kaitiaki undertaking on-the-ground activities to improve te mana o te wai.
- Support tangata Whenua in developing their own monitoring programmes and tools and leverage off existing systems.
- Embed indigenous knowledge through all layers of NRC's policies and influence -decisions makers. Upskilling staff in te ao māori mātauranga so that māori values are understood and connected to monitoring mahi.
- Create a system that is supported financially to succeed and attract central government funding.
- Provide a flexible system that allows the many aspects of mātauranga across Te Taitokerau to be used where it is gifted.

No funding has been earmarked for implementation of the Mātauranga Māori Monitoring Framework. It is difficult to know what will come out of the development of the framework and the level of additional funding that may be needed to implement. This will become clearer once the Mātauranga Māori Monitoring Framework is complete. However, a broad initial estimate is \$300k - \$500k / yr.

Potential action 11: Better information

NRC will undertake the following additional monitoring, research and modelling:

Action	Estimated cost
(a) Expand the current wetland monitoring programme (increased number of sites and better monitoring of change in extent and condition)	\$15k - \$20k / yr

²⁷ 2023/2024

(b) <i>Mitigation effectiveness monitoring to better ascertain the effectiveness of any interventions/mitigations (and timeframes) in achieving target attribute states.</i>	\$100 k / yr for ten years
(c) <i>Undertake research to identify where in the region naturally occurring processes may prevent us from getting above bottom lines e.g., highly erodible geologies with very fine clays and naturalised E.coli</i>	\$120 – \$150k for 5 years
(d) <i>Further research to better identify critical source areas for faecal contamination (e.g. PCR source tracking).</i>	\$150 - \$200k / yr
(e) <i>Implement a threatened species monitoring programme</i>	TBC
(f) <i>Long-term shift to models that can model changes through time for more accurate modelling of contaminants such as nutrients, sediment and E. coli.</i>	\$50k - \$200k
(g) <i>Regularly updated advice on understand the impacts of climate change on groundwater and surface water hydrology</i>	\$50k - \$100k every 3 years

The listed proposed additions to NRC’s monitoring programme are to fill information gaps that were made evident in preparing the draft Freshwater Plan or it was a gap in councils monitoring programme for the compulsory attributes in the NPS-FM.

Potential action 12: Advocacy

NRC will:

Action	Estimated cost
(a) <i>Work with district councils to improve the performance of wastewater and stormwater networks where there are issues.</i>	\$0 (existing staff time) - \$30 – 40k / yr (1/3 FTE)
(b) <i>Support for water storage in appropriate locations</i>	\$0 (existing staff time) - \$30 – 40k / yr (1/3 FTE)
(c) <i>Work with consent holders for farm dairy and irrigation to improve water use efficiency</i>	\$100 - 150k / yr (1 x FTE and supporting resources)
(d) <i>Work with landowners to address poorly constructed or sealed bores, where groundwater flows freely.</i>	\$30 – 40k / yr (1/3 FTE)
(e) <i>Advocating for changes to ETS to allow carbon credits for riparian vegetation.</i>	\$0 (existing staff time)

Potential action 13: Subsidising resource consent applications

NRC could create an annual fund (\$300 - \$500k) to subsidise the processing costs of resource consent applications.

The Freshwater Plan Change is likely to bring in a suite of more stringent rules. To help with transitioning landowners into this new regime, NRC could subsidise the processing resource consents for particular activities and/or situations. The subsidy could also assist Māori (e.g. marae) and community benefit facilities (e.g. rugby club) resource consent processing costs.

Potential action 14: Reducing rates for rural landowners

NRC could review the way rates are apportioned between rural and urban landowners, recognising the significant economic impact of the new rules on rural landowners.

Once finalised, the new rules for improving freshwater health will likely impact rural landowners in a much greater way than urban landowners. It will be rural landowners that bear the greatest burden for the benefit of everyone. While arguably landowners need to be 'owning' the environmental costs of their activities, as a society we have allowed rural landowners to use their land in the way have – and therefore there is an argument that there should be a collective responsibility for improving freshwater health. One way of taking collective responsibility is by reducing the rates burden for rural landowners, which would mean urban landowners paying a greater proportion than they currently do.

Contribution of actions to achieving environmental outcomes and target attribute states

Clauses 3.12 and 3.15 of the NPS-FM requires that the Action Plan show how the actions contribute to the environmental outcomes and target attribute states set in the Freshwater Plan. Put simply, each action contributes to a greater or lesser extent to achieving each of the draft environmental outcomes and target attribute states in the draft Freshwater Plan Change.

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