

Method 44 Developing Mauri Models





Literature Review
Prepared for Bay of Plenty Regional Council

2 May 2017



Boffa Miskell

Document Quality Assurance

<p>Bibliographic reference for citation: Boffa Miskell Limited 2017. <i>Method 44 Developing Mauri Models: Literature Review</i>. Report prepared by Boffa Miskell Limited for Bay of Plenty Regional Council.</p>		
Prepared by:	Mapihi Martin-Paul Kaiaho Te Hīhiri / Graduate Advisor Māori Boffa Miskell Limited	
	Jade Wikaira Kaiarataki Te Hīhiri / Strategic Advisor Māori Boffa Miskell Limited	
	Nicole Hodgson Graduate Advisor Māori / Graduate Ecologist Boffa Miskell Limited	
Reviewed by:	Craig Pauling Principal / Kaiarataki Te Hīhiri / Strategic Advisor Māori Boffa Miskell Limited	
	Te Pio Kawe Associate Principal / Kaiarataki Te Hīhiri - Strategic Advisor Māori Boffa Miskell Limited	
Status: DRAFT	Revision / version: FINAL	Issue date: 2 May 2017
<p>Use and Reliance This report has been prepared by Boffa Miskell Limited on the specific instructions of our Client. It is solely for our Client's use for the purpose for which it is intended in accordance with the agreed scope of work. Boffa Miskell does not accept any liability or responsibility in relation to the use of this report contrary to the above, or to any person other than the Client. Any use or reliance by a third party is at that party's own risk. Where information has been supplied by the Client or obtained from other external sources, it has been assumed that it is accurate, without independent verification, unless otherwise indicated. No liability or responsibility is accepted by Boffa Miskell Limited for any errors or omissions to the extent that they arise from inaccurate information provided by the Client or any external source.</p>		

RĀRANGI ŪPOKO / CONTENTS

1.0	HE KUPU WHAKATAKI / Introduction	2
1.1	Tāhuhu Kōrero / Background	2
1.2	Ngā Kauneke / Methods	3
2.0	TIROHANGA WHĀNUI / Overview of Existing Exemplars	4
2.1	Cultural Health Index (CHI)	4
2.2	State of the Takiwā (SoT)	5
2.3	Mauri Model	5
2.4	Mauri Compass	6
2.5	COMAR (Cultural Opportunity Mapping, Assessment and Response)	6
2.6	Māori Environmental Performance Indicators for Wetland Condition and Trend	7
2.7	Tauranga Moana, Tauranga Tāngata: Coastal Cultural Health Index for Te Awanui, Tauranga Harbour	7
3.0	NGĀ MAHERE TAIAO / Iwi and Hapū Management Plans	9
3.1	Tapūika Environmental Management Plan (2014 – 2024)	9
3.2	Ngāti Whakaue ki Maketu Iwi Resource Management Plan Phase 2 (2011)	10
3.3	Ngai Tūhoe Integrated Planning Protocol between Tūhoe Te Uru Taumatua, BOPRC, HBRC, Wairoa DC and Whakatane DC (2013)	11
3.4	Ngāti Rangitīhi Iwi Environmental Management Plan (2011)	11
3.5	Ngāti Kea Ngāti Tuara Iwi Environmental Management Plan (2016)	12
4.0	NGĀ AKORANGA ME NGĀ HERE / Lessons and Limitations	14
4.1	Considerations for developing a Mauri Assessment Framework	15
5.0	TE WHAKAMUTUNGA / Conclusion	16
6.0	KŌHINGA KŌRERO / References	17

APITIHINGA / Appendices

Appendix A: Summary of Existing Mauri Model Literature Reports

Appendix B: Summary of Existing Iwi Management Plans

1.0 HE KUPU WHAKATAKI / Introduction

This literature review was conducted in order to assist the Bay of Plenty Regional Council (BOPRC) in creating a method for assessing the mauri of natural resources in relation to the values of local iwi, hapū and mana whenua (those who hold local authority).

The intention is to create a framework for measuring mauri that provides the opportunity for mana whenua to participate in the implementation of cultural monitoring in relation to planning provisions such as those in regional plans, as well as within wider state of the environment monitoring. A particular aim of the framework is to assess the efficiency and effectiveness of regional plan provisions and where conditions are attached to consenting activities.

By creating a framework, the values of mana whenua can play a more active role in the management of natural resources and enables matters of significance to Māori to be considered in future decision making processes.

1.1 Tāhuhu Kōrero / Background

From a Māori world view, ancestral knowledge, or mātauranga Māori, advocates that all living creatures and natural resources are infused with their own mauri and co-exist in a collaborative state. The maintenance of mauri is a traditional practice of ensuring the relationship between all parts within the environment, including between people and the environment, is maintained. This practice forms a fundamental role of kaitiaki (guardian). These practices are based on a natural order and inter-dependency based on the cosmology traditions of Ranginui and Papatūānuku that Māori express as their whakapapa (genealogy/lineage).

A framework which adequately measures the state of mauri can show both negative and positive effects, as well as changes over time, which provides the ability for mauri to be measured, monitored and managed. However, the attributes or indicators that are currently used to assess mauri can often be specific to environmental typologies and will most often be iwi/hapū specific. In terms of environmental typologies, natural resources can vary throughout coastal, freshwater, terrestrial or geothermal environments in any region and this requires the formation of a framework that is able to accommodate and be adaptable to each type of environment. The level of specificity at an iwi or hapū level is also a consideration and can only be determined by mana whenua. Assessment tools often raise concerns around the protection of knowledge and management of mātauranga Maori that is specific to iwi and hapū and focusses on the need to ensure respectful measures to identify knowledge are observed, articulated and communicated.

In addition to this, the definition of mauri and how it is perceived varies throughout Te Ao Māori (The Māori World) and can vary from hapū to hapū; yet all definitions are true and correct for each. This variation between hapū requires a series of individual assessments to be conducted between a range of iwi and hapū representatives - with the intention of these assessments/interviews being to understand the individual's definition of mauri and allow them to provide an authentic representation of the state of mauri in their rohe (territory). The ability to understand the traditional perspectives, values, customary practices, associations and principles that underpins the essence and energy that manifests itself within the concept of mauri is an empowering and enlightening journey for all.

Various cultural monitoring tools have already been created and are currently available and under use. Many of these existing tools have been created for a specific environment (e.g. freshwater or terrestrial) and in some cases have been applied to specific hapū or iwi. A commonality in these frameworks however is that they all aim to capture the cultural and environmental values of significance and importance to mana whenua, including mauri.

1.2 Ngā Kauneke / Methods

This literature review forms part of the discovery phase in our methodology for assessing mauri, and aims to provide a summary of key existing monitoring tools, models and examples relative to the implementation of Method 44 across a range of environments and scales. This review will assist in the progression in to the next phase of this assessment which involves the development of questions and scenarios that will later drive the consultation process with mana whenua.

Included in this report is a review of existing literature and cultural monitoring tools as well as iwi/hapū management plans relevant to tāngata whenua participants who may have been a part of the consultation phase in previous projects. An additional step of reviewing and Waitangi Tribunal and Claimant reports can also be undertaken if required.

It is imperative to note that the suite of cultural monitoring tools reviewed in this paper have been adapted and improved over time since their initial inception so the data accumulated and exemplified in these examples reflects a local perspective at only one point in time.

2.0 TIROHANGA WHĀNUI / Overview of Existing Exemplars

Māori participation and input into formal environmental monitoring in New Zealand began in the late 1990's (Harmsworth & Tipa 2006) and since the early 2000's a number of Māori researchers along with iwi and hapū have developed cultural environmental monitoring tools and methods for particular needs and environments.

A number of reviews of these efforts and tools have also been undertaken and include those by Harmsworth & Tipa (2006), Chetham et al (2010), Nelson & Tipa (2012), Awatere & Harmsworth (2014) and Black (2015). These reviews identify over 20 cultural monitoring approaches, of which 7 key tools are presented below. These tools were chosen as the most relevant to the BOP situation. Appendix A provides a summary table of the key features of these tools.

2.1 Cultural Health Index (CHI)

The Cultural Health Index (CHI) was a tool initially developed to facilitate the participation by iwi in resource management processes – in particular, where streams and rivers were involved. The CHI helps convey the perspectives and concerns of Māori in relation to streams and rivers in the hopes that these values can be incorporated into management decisions. This monitoring tool was developed to be used by iwi, hapū and rūnanga for purposes such as prioritising stream health problems and evaluating the ways in which they can remedy, restore and enhance stream health in their own backyard.

A CHI score is generated by measuring three components; site status, mahinga kai and cultural stream health. Data is collected by representatives of the local iwi, hapū and rūnanga where they assess the site physically and record their observations on an assessment form; scores of 1 – 5 are applied to a variety of indicators measured in accordance to each component and a general score is calculated that depicts its significance. For example, a stream may have low traditional significance where Māori may not be inclined to return often but the stream supports good mahinga kai practices and has exceptional cultural stream health values. The CHI allows iwi and hapū to confidently assess the cultural and biological health of rivers and streams of any size or type right across Aotearoa, New Zealand.

The first CHI study was undertaken on the Taieri and Kakaunui Rivers in Otago, in collaboration with Te Rūnanga o Ōtākou and Te Rūnanga o Moeraki. The tool was then improved and refined prior to application on the Hakatere and Tukituki Rivers – in collaboration with Te Rūnanga o Arowhenua and Ngāti Kahungunu – where a generalised CHI was finalised and validated for future use. Since the tool was completed, it has also been used by a number of other iwi, including in Te Tau Ihu, Te Arawa and Waikato. Some iwi have also taken aspects of the CHI and adapted it for their own use. The recently release Freshwater 2017 report from the Ministry for the Environment contained CHI data from 41 sites across the country (MfE & Stats NZ 2017).

Key Reference/Link: <http://www.mfe.govt.nz/publications/fresh-water/using-cultural-health-index-how-assess-health-streams-and-waterways/why-0>

2.2 State of the Takiwā (SoT)

The State of the Takiwā (SoT) database is an environmental monitoring tool and system developed by Te Rūnanga o Ngāi Tahu that enables the gathering, storing and analysis of information and produces reports on the cultural health of an environment relative to values important to mana whenua.

The aim of the tool is to assist mana whenua with planning for the future management of their environment, particularly where there are high risks or where community values are concerned. The SoT pilot project started in 2004 with mana whenua from Murihiku (Southland) and was based around assessing the cultural health of the Waiau River Catchment. Various studies have been conducted since then across Te Waipounamu, particularly in the Canterbury region.

The methodology begins with identifying sites and researching historic information about these places, including cultural heritage and past mahinga kai to be used as baselines. Next hīkoi or assessments are planned across the sites to collect data using a number of specially developed forms, data from which is loaded into the Takiwā database that automatically analyses and develops site assessment scores. These scores and data can be extracted to create catchment reports to understand the overall 'state' of the takiwā or cultural health of the catchment. Further habitat or environmental specific assessment can be carried out during data collection hīkoi including CHI, SHMAK, ecoli and toxin sampling of water, sediment, soil and flesh as well as fish, bird and plant surveys. The aim is to create a one stop shop of readily accessible and usable information that can be used by mana whenua to understand and solve problems, develop responses and make decisions. The oral nature in which Māori traditionally recorded their information has proved to be disadvantageous but the systematic approach of the SoT monitoring tool presents the information in a reputable and defensible form.

Key Reference/Link: <https://www.takiwa.org.nz/>

2.3 Mauri Model

The Mauri Model is a decision making framework or support tool that can be used to assess the favourability of particular options, solutions, proposals, policies and developments by using mauri as a measure of sustainability.

It involves two key stages:

1. Analytic Hierarchy Process (AHP): where relative values of participants are established, against 4 well-beings: cultural, social, environment and economic
2. Mauri-ometer Assessment: of identified solutions, options, proposals, policies etc. vs a do-nothing/BAU option to prioritise most preferred options as well as potential gaps.

The tool requires the development of performance indicators or potential solutions to act as criteria that are assessed against the mauri-ometer – a scale of -2 (Diminished sense of mauri) to +2 (Strong mauri) – that depicts the strength of the mauri that is subsequently a measure of sustainability. The rating for each indicator is then multiplied by the indicators weighting according to the AHP, summed, and then divided by the number of indicators used and this indicated the sensitivity of the result to different worldviews.

The mauri model has been used in a range of situation including most recently in assessing options around the Rena recovery and to indicate the effectiveness of options in relation to mātauranga Māori.

It has also been used to assess water discharge, roading, urban development and fracking activities particularly in Auckland and around Rotorua.

Key Reference/Link: <http://www.mauriometer.com/>

2.4 Mauri Compass

The Mauri Compass is an environmental tool designed to assess and restore the mauri of waterways by using 12 attributes relating to tangata (people), tane (land) and tangaroa (sea) and incorporating both Māori and Western Science views.

The tool uses questions for each attribute that are analysed and grouped together to help form a view of the mauri of a waterway. The 12 questions relating to 3 main areas or kete, with a focus on tuna as an indicator species, include:

- Tāngata: values of wairua, tikanga and mahinga kai (including tuna)
- Tāne: land based values and effects on tuna habitat
- Tangaroa: tuna health, abundance, composition and growth

Responses to 12 questions are recorded against a 1-5 scale, with some requiring scientific measurement. The responses are then plotted on a 12 sided compass or web providing a snapshot of 'mauri' for the particular site or activity.

The Mauri compass was developed by Te Rūnanga o Turanganui a Kiwa and the Gisborne District Council and has been used in a number of studies in Gisborne District, including at Pa o Kahu, Repongaere, Taurheru, Whareponga and to assess the Te Karaka Sewage scheme and the Gisborne Regional Plan.

Key Reference/Link: <http://www.mauricompass.com/>

2.5 COMAR (Cultural Opportunity Mapping, Assessment and Response)

COMAR is a system of tools/approaches to assist whanau to understand, evaluate and support environment decision making.

The system involves 7 stages, each with various tool options depending on the activity or issue being faced. It includes the use of Report Cards that can help show changes and how these impact of cultural values.

The 7 stages include:

- i. Mapping Cultural Association
- ii. Mapping Opportunities
- iii. Concept Mapping
- iv. Understanding the scale of change
- v. Undertaking Assessments against opportunities/values (including CHI, Flow Assessment, CIA etc)
- vi. Developing Plans/Policies to restore/respond to issues

vii. Monitoring responses (report cards)

The system includes various checklists and templates for different stages to record associations, opportunities, assessments and responses and key outputs include cultural association and opportunity maps, assessment scores, action plans and report cards.

COMAR was developed by Tipa & Associates and has been used in various places, including the Taieri, Kakaunui and Waitaki rivers as well as for various flow assessments and cultural impact assessments of activities affecting waterways, as well as most recently at Te Waihora and within the Canterbury Water Management Strategy.

Key Reference/Link: <http://comar.co.nz/>

2.6 Māori Environmental Performance Indicators for Wetland Condition and Trend

This report was formed as Phase 2 of the Coordinated Monitoring of NZ Wetlands project and aims to provide nationally consistent indicators and tools for the monitoring of wetland condition and trends across Aotearoa, New Zealand where Māori were asked to develop a generic set of mātauranga Māori related indicators. The process for this includes identifying the indicators through consultation with iwi and hapū, researchers and kaitiaki communities, applying them in the field, re-calibrating them in order to be nationally viable and document the final results as a State-of-the-Environment (SoE) report.

A key concept expressed with immense importance by tāngata whenua during the interviewing process was that of mauri; they described it as signifying the spiritual connection and significance of a place and grounds people to place. The inclusion of this concept into the SoE report helps evoke the importance of the physical and spiritual relationships Māori have with the environment. Along with measuring mauri, Māori also expressed interest in the presence or absence of taonga species, presence and abundance of exotic/introduced species and presence of cultural heritage sites – e.g. wāhi tapu, wāhi taonga – that formed the basis for the set of indicators. These were analysed against each other to narrow down those that could be used to monitor wetland sites nationally.

The development of this method means it can be passed on to tāngata whenua, iwi, hapū and Local and Central Governments to assist them in assessing changes to the environment over time and preparing State-of-the-Environment (SoE) reports that will underlie and support any future management decisions.

Key Reference/Link:

http://www.landcareresearch.co.nz/publications/researchpubs/harmsworth_monitoring_wetlands.pdf

2.7 Tauranga Moana, Tauranga Tāngata: Coastal Cultural Health Index for Te Awanui, Tauranga Harbour

The fast paced rate of modification in Tauranga in order to support the rapid population growth has meant issues of retaining environmental integrity is being recognised; the Coastal Cultural Health Index (CCHI) is a monitoring tool being developed for Te Awanui, Tauranga Harbour. This monitoring tool aims to build a baseline of knowledge that allows for the assessment, evaluation and future monitoring of one of Tauranga's key marine and coastal environments to happen from an indigenous tāngata whenua perspective. In doing so, this provides iwi and hapū

with the tools to exercise their right of kaitiakitanga (guardianship) and tino rangatiratanga (sovereignty) over their own territory.

This report reviews the Te Kupenga Tairoa cultural framework that the CCHI is guided by, it is a framework that acknowledges the value of incorporating mātauranga Māori into the decision making process and aims to provide a uniform and easily useable approach that other iwi can utilise to monitor their own marine and coastal environments. In this example, mātauranga Māori was expressed during the consultation stages with hapū, the interviews were completed via voice recordings that were later transcribed.

Through the revision of existing monitoring tools and extensive consultation with iwi and hapū, a set of cultural health indicators were developed. They were summarised by environmental issues, mahinga mātaītai issues and cultural issues. The next phase of the Tauranga Moana, Tauranga Tāngata project includes the development of these indicators so as to provide the means to measure cultural health on site through a pilot project.

Key Reference/Link: <http://www.mtm.ac.nz/cchi/>

3.0 NGĀ MAHERE TAIAO / Iwi and Hapū Management Plans

A number of iwi and hapū management plans were reviewed in order to provide an overview of issues of significance to the respective iwi and hapū. This was also an opportunity to understand iwi and hapū approaches to the management of natural resources and expectations around engagement, consultation and collaboration.

Iwi Management Plans (IMP) are important documents for iwi and hapū and often document tangata whenua cultural values, interests and associations with an area or a resource, and the potential impacts of proposed activities on these values. A regional council must take into account any relevant planning document recognised by an iwi authority when preparing or changing a regional policy statement.

A summary table is provided at *Appendix 2* and brief descriptions are outlined in the sections below. The summary table identifies components within each IMP that focus on priority issues of significance, significant resource management issues and a precis of how mauri is articulated in each plan.

The consideration of these documents will be useful when considering statutory obligations including:

- Requests for further information under s92 in order to assess the application.
- Providing information to assist the council in determining notification status under ss95 to 95F.
- Providing information to enable appropriate consideration of the relevant Part 2 matters when making a decision on an application for resource consent under s104.
- Consideration of appropriate conditions of resource consent under s108.

3.1 Tapūika Environmental Management Plan (2014 – 2024)

The Tapūika Environmental Management Plan (EMP) provides a comprehensive description and expression of Tapūika values, concerns and the outcomes they would like to see in the management of their resources. The EMP is recognised by Tapūika Iwi Authority for the purposes of resource management processes.

The EMP is structured to establish an overview of the history, marae, hapū and people of Tapūika including a description of the natural environment and Tapūika world view and perspective. This follows with an assessment of priority issues of significance to Tapūika and range from:

- Tapūika Land Use and Development
- Land Use Impacts on Waterways
- Cultural Heritage / Waahi Tapu
- Capacity Building
- Active Involvement and Participation
- Recognition of Tapūika Values and Interests
- Sustainability of Fish and Shellfish Stocks

- Air Discharges
- Opportunities for Strategic Relationships
- Land Use Impacts on the Coast

The priority issues and topics of significance to Tapūika are then described in terms of issues (or opportunities); expected outcomes which include objectives or goals to address identified issues; and policies as courses of action to achieve or implement the expected outcomes.

The protection of mauri is very important to Tapūika and the EMP specifically references protecting the mauri of waterways, land and soil resources and that mauri of air resources is valued and enhanced. Tapūika also require the preparation of cultural impact assessments for activities that may adversely affect the mauri of natural resources.to Maori.

3.2 Ngāti Whakaue ki Maketu Iwi Resource Management Plan Phase 2 (2011)

This Ngāti Whakaue ki Maketu Iwi Resource Management Plan is an IMP that requires reviewing every five years to ensure it remains a “working, living document”. The purpose of the plan is to consolidate the Ngāti Whakaue ki Maketu Hapū (NWKMH) values, knowledge and perspectives on natural resources, environmental management and kaitiakitanga issues; it is an expression of partnership. Te Rūnanga o Ngāti Whakaue ki Maketu are the iwi authority which was formed in 2002 by NWKMH. They are responsible for a role in ensuring the hapū is consulted by territorial and local authorities.

The plan provides an in-depth discussion on the value and necessity for good consultation between Councils and NWKMH and how this can influence and demonstrate partnership. The plan also recognises the role of NWKMH as having kaitiaki roles and responsibilities and recognises the role of the regional council in achieving good environmental outcomes and healthy environments.

The natural resources of significance to NWKMH include:

- Estuarine Margins Fresh Water & Salt Water
- Fresh Water both Natural & Unnatural
- Coastal Water
- Wetlands
- Natural Landscape of Maketu
- Geothermal Energy
- Natural Energy
- Fisheries Resources
- Land Acquisition
- Planting on Leased Land
- Aquaculture
- Economic Development
- Planning / Co-Management

Each natural resource issue identifies a number of core values to demonstrate cultural significance to tangata whenua. For example, the core values under ‘Estuarine Margins, Fresh Water and Salt Water’ include: kaimoana, flax, native vegetation, underground mineral value, habitat regeneration and natural character. Outcomes are specified and includes an explanation of how regional councils, government departments, iwi and community could assist

in achieving the outcomes. The plan highlights the importance of protecting and maintaining mauri of the people through good relationship development, policy implementation and collaboration.

3.3 Ngai Tūhoe Integrated Planning Protocol between Tūhoe Te Uru Taumatua, BOPRC, HBRC, Wairoa DC and Whakatane DC (2013)

The planning protocol records the understanding of the councils with an interest in the area of Ngai Tūhoe and with Tūhoe Te Uru Taumatua (collectively the Protocol Partners). It sets out a number of planning protocols in order to meet requirements under local government and resource management legislation as frameworks for decision-making. Tūhoe Te Uru Taumatua express the desire for an integrated and consistent framework within which Ngai Tūhoe strategic and business interests can be recognised.

The main focus is to ensure that the roles and responsibilities in respect of the Ngai Tūhoe rohe are clear and that all parties agree to work collaboratively together. An interaction hierarchy is outlined as below:

Interaction Hierarchy

- **Early Communications:** irrespective of whether a statutory or organisational planning activity; partners with an interest should seek to clarify any significant points of difference and focus effort on resolving these differences.
- **Engagement:** when draft stage is reached, prior to public consultation, draft should be shared with governing bodies. Good practice for Partners to discuss any comments lodged to ensure full understanding is achieved and opportunities to reach agreement are further explored.
- **Statutory Consultation:** Protocol Partners are encouraged to make supportive further submissions as a reflection of the co-operation that has occurred at the initial stages of development.
- **Legal Appeals:** If matters are not resolved before this point and an appeal is to be lodged as a matter of courtesy it is expected that Protocol Partners will provide advance notice of, and the rationale for, such an appeal.
- **Process Completion – Statutory and Organisational Process:** Notification of finalisation should be given to all Protocol Partners (who have expresses an interest). A published document, if applicable, shall also be provided.

3.4 Ngāti Rangitihī Iwi Environmental Management Plan (2011)

The iwi environmental plan identifies and records places of importance and articulates cultural preferences and expectations of how the environment should be managed into the future. It provides a comprehensive description of Ngāti Rangitihī aspirations to:

- Genuinely care for their people
- To be progressive and positive in the approach
- To work collaboratively in unity
- To show integrity and honesty
- To hold steadfast to the unique Ngāti Rangitihī qualities

The plan provides supporting maps and schedules to assist the iwi with managing natural and cultural resources of importance to Ngāti Rangitīhi. The seven resource areas Ngāti Rangitīhi focus on include:

- Ko te Iwi – the people
- Ngā Rawa Whakahirahira – places of significance, customary resource areas, archaeological sites and water bodies
- He Wai - water
- Ko Te Papa – Land
- Ko Tāne Mahuta –Flora and Fauna
- Ko Tangaroa me Tūtewehiwehi - Fisheries
- Ko Tāwhirimātea - Air

As with other plans, Ngāti Rangitīhi provide a specific explanation and guidance around how to use and implement the plan. The structure is configured with the intention of making it accessible and coherent. The initial part one provides an overview, background and narrative and outcomes are specified and includes an explanation of how regional councils, government departments, iwi and community could assist in achieving the outcomes. Part two contains a series of maps to identify rohe boundaries and the significant resources of Ngāti Rangitīhi. These also include planning mechanism maps; and maps of other statutory acknowledgements.

Ngāti Rangitīhi provide for the importance of mauri throughout the entire document and specifically reference it with regard to freshwater with provisions to:

- To sustain the mauri of natural and physical resources in ways which enable provision for the social, economic, and cultural wellbeing of Māori.
- Avoid channelling, diversions of rivers and streams in a way that significantly alters the natural character and mauri of that water body.
- Restore, maintain and protect the mauri of freshwater resources.
- Implement existing strategies and develop new strategies to improve the mauri of freshwater.

3.5 Ngāti Kea Ngāti Tuarā Iwi Environmental Management Plan (2016)

The iwi environmental management plan for Ngāti Kea Ngāti Tuarā documents the environmental goals and aspirations for the future and the basis of the plan is to express rangatiratanga in terms of the exercise of kaitiaki roles and responsibilities within the rohe. The plan provides detail on the extent of its land holding and the associated trusts tasked with managing enterprises.

The plan also focusses on the importance of relationships and notes a number of expectations and commitments with local authorities, iwi trusts and government departments in order to collectively manage environmental responsibilities. The final sections focus on the values, aspirations and objectives that Ngāti Kea Ngāti Tuarā hold with regard to land, water and geothermal resources.

- **Land** - Land is an important resource for Ngāti Kea Ngāti Tuarā and has sustained its people for many generations. Aspirations include to restore, enhance and protect the mauri of the land for the future.
- **Water** - Ngāti Kea Ngāti Tuarā reference Te Horohoroinga o ngā ringa o Kahumatamomoe and the connection to the environment that is a part of its people. All waterways have sustained Ngāti Kea Ngāti Tuarā over many generations and need to continue to be nurtured and protected for future generations.
- **Geothermal** - Ngāti Kea Ngāti Tuarā have resided at Tarewa in Rotorua for generations and whanau have strong links with the geothermal resource for cooking, heating and bathing. It is important that Ngāti Kea Ngāti Tuarā are actively involved in geothermal management and decision making.

4.0 NGĀ AKORANGA ME NGĀ HERE / Lessons and Limitations

This section provides a review of the key lessons and limitations identified from the review of existing exemplars. These can help in understanding the best course of action going forward in terms of developing a tool and method for use in the Bay of Plenty region.

It is clear from the literature that the assessment of mauri or cultural environmental monitoring is a developing field in Aotearoa and that a variety of approaches have been developed, most often with a particular iwi or hapū. This creates limitations where the particular tool may not work for other iwi and hapū, however, the lessons learnt in relation to the development and application of the tools is more important.

The most used tool across Aotearoa is the Cultural Health Index, highlighted by the fact that data for this use of this tool has recently been utilised in the 'Our fresh water 2017' report by the Ministry for the Environment. This tool is simple to use, follows a set of clear assessment questions and does not require western science measurement or external expertise to undertake. Its limitations are that it only applies to freshwater environments and cannot be used to assess other taonga, environments or issues. The calculation of the index score can also be difficult but can be improved by utilising software or digital recording methods (e.g. IForms). All other tools have had limited use across different iwi and regions, but have various strengths and weaknesses (as provided in the table in Appendix A).

The State of the Takiwā tool has the advantage of being able to be used across various environments and also has its own software that can assist with data entry, storage and analysis. It can also be used in conjunction with other assessment, including the CHI as well as western science methods and measures. The tool/software can however be a bit cumbersome to use and requires a lot of planning and logistics to make happen.

The Mauri Compass (Ruru is a more recent tool that like the CHI also focuses on assessing freshwater environments (and is therefore limited to this) but that incorporates both mātauranga and western science measures. This can provide additional rigour to assessments but also means a level of training or expertise can be required. One of its strengths is that it provides an immediate 'picture' of the state of mauri and utilises a biological (or real life) indicator (tuna/eels) as a basis for understand mauri.

The Mauri Model is a different type of tool that is less of a monitoring tool and more of a decision support tool. Its advantage is that it can be used and adapted for a diverse range of situations and activities, including assess plans and policies. The mauri-ometer also provides a useful and instinctive measuring scale, while it can involve both Māori/manā whenua and non-Māori, unlike the other systems which only Māori/manā whenua can apply. This is due to the Analytical Hierarchy Process (AHP) which allows for an assessment of values alongside the assessment of an activity. The AHP is also limiting however, as it can be difficult to run and requires a lot of time in a workshop setting vs field assessments.

The COMAR tool is another decision support type tool/system that actually incorporates a range of assessment methods (including CHI) and can be applied to a range of situations, activities and places. It provides a lot of flexibility but also requires training and/or additional expertise to use.

Both the Māori Wetland Indicators tool (Harmsworth 2002) and the Coastal Cultural Health Index (Taiapa et al 2014) are similar to the CHI, Takiwā and Mauri Compass tools in that they

utilise a questionnaire based site assessment and scoring system, but which are focused on particular environments (similar to the CHI and Mauri Compass). These tools therefore have similar limitations in relation to only being able to be used for the specific environment they are designed for, and can also be onerous in relation to data capture, storage and analysis.

4.1 Considerations for developing a Mauri Assessment Framework

A number of considerations for developing a mauri assessment method fall out of the review. These are outlined below along with ideas for how to deal with these in the next phase of the project.

Questionnaire & Site Based vs Process & Decision/Activity Based

There are 2 main types of tools:

- those that focus on questionnaire based site assessments (CHI, Takiwā, Mauri Compass, Wetland Indicators & CCHI); and
- those that focus on a process and assisting in assessment activities and decisions (Mauri Model & COMAR).

There is no tool that has been created to do both, although all could probably be adapted to do so. It is therefore important to consider what type of assessment and what method is most appropriate for the outcome desired.

Focussed vs Comprehensive

The key tools can also be divided into two areas based on what scale or issue/environments they are trying to assess:

- those that are focussed on a single environment type/scale (CHI & Mauri Compass – freshwater; Wetland Indicators – wetlands & CCHI – coastal); and
- those that can be applied across a range of environments and scales (Takiwā, Mauri Model and COMAR).

Again, it is important to consider the focus for particular outcomes and aspirations and picking the type of tool that best suites the situation.

Mātauranga & Mana Whenua vs Western Science & Others (Relationships and Funding)

The tools also differ in the use of western science and external/non-Māori expertise, with some requiring a level of science input and expertise (e.g. Mauri Compass, Takiwā) and others being totally mātauranga based (CHI). Both approaches have strengths and weaknesses, particularly around how much expertise may be required to undertake the assessments, but again the key consideration is being clear on the purpose and outcome being sort. All approaches however, rely on mana whenua being the key informants (and owners) of the assessments and therefore, this implies a level of autonomy/leadership by mana whenua and/or the need for clear and structured relationships between mana whenua and external agencies (including Councils) that may be facilitating or funding the assessment processes. Funding of assessment processes is also a key factor because without resourcing to support mana whenua involvement in both field assessments and workshops it will be difficult to achieve anything.

5.0 TE WHAKAMUTUNGA / Conclusion

This report has been developed to assist the Bay of Plenty Regional Council (BOPRC) understand and develop a method for assessing the mauri of natural resources in relation to the values of local iwi, hapū and mana whenua.

To achieve this the report provides a review of key existing mauri assessment / cultural monitoring tools as well as relevant iwi management plans, and summarises the major lessons, limitations and considerations for developing a mauri assessment tool in the future.

The review of iwi management plans highlight both the issues of significance to mana whenua as well as a clear desire to see the mauri of taonga and the environment protected. The plans note the need to assess the impacts of activities and actions on mauri and outline those that they see as either degrading or restoring mauri. The plans also highlight the central importance of freshwater, estuarine and coastal environments to protecting mauri and wellbeing.

The review of existing assessment tools highlights a diversity of approaches that either focus on questionnaire/site assessment based systems or process/decision support systems as well as tools that are either focussed on a single environment (e.g. freshwater) or that can be applied across the range of environments, scales and issues.

The major considerations for developing an assessment tool revolve around the particular focus and outcomes sought by the assessments as well as the level of mana whenua leadership and/or external expertise required (or desired). There also needs to be a consideration of simply utilising an existing tool, adapting/refining an existing tool and/or creating an entirely new tool. In all cases, the involvement of mana whenua, and their ownership in the process is fundamental and will require a structured approach to achieve. This can include developing clear relationship agreements and/or agreed work programmes, along with appropriate funding.

The next stage of the project will focus on understanding the views of mana whenua in relation to mauri and undertaking assessments, including preferences for particular methods as well as how assessments should be undertaken and managed.

The collaborative relationship between mana whenua and BOPRC will also enhance and encourage a positive working relationship that can continue into the future. The information sourced from mana whenua through interviews will therefore be critical in driving the development of a framework in which mauri can be measured in the Bay of Plenty region.

6.0 KŌHINGA KŌRERO / References

- Awatere, S & Harmsworth, G. (2014). *Ngā Aroturukitanga tika mō ngā Kaitiaki: Summary review of mātauranga Māori frameworks, approaches, and culturally appropriate monitoring tools for management of mahinga kai*. Report for the University of Waikato. Landcare Research.
- Black, M. (2015). *Cultural Monitoring Tools Summary Report*. Report 1402. Mauri Protection Agency.
- Chetham J, Shortland T, Nuttall P & Newell A (2010). *Māori Cultural Environmental Monitoring Stocktake*. Whangārei, Repo Consultancy Ltd.
- Feek, A., & Morgan, T. (2013). *Mauri Model Analysis: Proposed Rotorua Eastern Arterial 4 Lane Highway Bypass*.
- Harmsworth, G. (2002). Coordinated Monitoring of New Zealand Wetlands, Phase 2, Goal 2: Monitoring environmental performance indicators for wetland condition and trend. Christchurch, New Zealand: Landcare Research.
- http://www.landcareresearch.co.nz/publications/researchpubs/harmsworth_monitoring_wetlands.pdf
- Harmsworth, G.R. & Tipa, G. (2006) *Māori Environmental Monitoring in New Zealand: Progress, concepts, and future direction*. Report for the Landcare Research ICM website.
- Ministry for the Environment & Stats NZ (2017). *Our fresh water 2017*. Manatū Mō Te Taiao, Ministry for the Environment, Wellington
- Morgan, T.K.K.B. (2004). *A tangata whenua perspective on sustainability using the mauri model: Towards decision making balance with regard to our social, economic, environmental and cultural wellbeing*. International Conference on sustainability engineering and science.
- <http://www.mauriometer.com/>
- Morgan, T.K.K.B. (2006). *Water pollution mitigation using the Mauri Model*. Auckland, New Zealand.
- Morgan, T., Fa'auai, T., & Manuel, R. (2013). *Decision making at the Interface: Mauri and its contribution to the Rena Recovery*. SCANZ.
- Nelson, K.D. & Tipa, G.T. (2012). *Cultural Indicators, Monitoring Frameworks & Assessment Tools*.
- Pauling C, & Norton T. (2010). *Cultural Health Assessment of ō Tū Wharekai / The Ashburton Lakes*. Te Rūnanga o Arowhenua Report
- Pauling, C. (2008). *Ngā Wai Pounamu: Cultural Health Assessment of South Island Waterways*. Te Rūnanga o Ngāi Tahu: Christchurch, NZ.
- Pauling, C. Lenihan, Te Marino. Rupene, M. Tirikatene-Nash, Nukoroa. Couch, Rewi. (2007). *State of the Takiwa: Cultural Health Assessment of the Avon-Heathcote Estuary and its catchment*.
- Pauling, C, Mattingley, B & Aitken, J. (2005). *Te Āhuetanga o Te Waiau – Cultural Health Baseline Report 2005*. TRoNT/Ministry for the Environment.

- Ruru, I. (2014). *The Mauri Compass: A Concept Paper Showing the Mauri Compass as an Evaluation Tool in a RMA Freshwater Context*. Te Rūnanga o Turanganui a Kiwa.
<http://www.mauricompass.com/>
- Taiapa, C., Hale, L., Ramka, W & Bedford-Rolleston, A. (2014). *Tauranga Moana, Tauranga Tangata: A Framework for Development of a Coastal Cultural Health Index for Te Awanui, Tauranga Harbour*. Manaaki Taha Moana Research. Report No 16. Massey University, Palmerston North.
<http://www.mtm.ac.nz/cchi/>
- Tapūika Iwi Authority Trust (2014). *Tapūika Environmental Management Plan: 2014 – 2024*.
- Te Arawa River Iwi Trust. (n.d.). *Cultural Framework for Restoration and management*. Final Report.
- Te Mana o Ngāti Rangitihī Trust. (2011). *Te Mahere a Rohe mō Ngāti Rangitihī – Ngāti Rangitihī Iwi Environmental Management Plan*.
- Te Rūnanga o Ngāti Kea Ngāti Tuarā Trust. (2016). *Ngāti Kea Ngāti Tuarā – Iwi Environmental Management Plan*.
- Te Rūnanga o Ngāi Tahu / Pauling, C. (2004). *State of the Takiwā - Cultural Monitoring and Reporting on the Health of our Environment: A scoping document for developing a culturally based environmental monitoring and reporting system*. TRoNT.
<https://www.takiwa.org.nz/>
- Te Rūnanga o Ngāti Whakaue ki Maketu (2011). *Ngāti Whakaue ki Maketu – Iwi Resource Management Plan Phase 2*.
- Tipa & Associates & Williams, E. (2015). *The Cultural Health of the Waitaki Catchment*.
- Tipa, G, & Nelson, K. (n.d.) *Cultural opportunity mapping and assessment: a framework to enable cultural perspectives to inform resource management*. Tipa & Associates.
<http://comar.co.nz/>
- Tipa, G., Teirney, L. (2006). *A Cultural Health Index for Streams and Waterways: A tool for nationwide use*. Manatū Mō Te Taiao, Ministry for the Environment, Wellington.
<http://www.mfe.govt.nz/publications/fresh-water/using-cultural-health-index-how-assess-health-streams-and-waterways/why-0>
- Tūhoe Te Uru Taumatua., Bay of Plenty Regional Council., Hawke's Bay Regional Council., Wairoa District Council., Whakatane District Council (2013) *Integrated Planning Protocol*.

Appendix A: Summary of Existing Cultural Monitoring Tools

PŪNAHA / Tool	TAKE / Purpose	Overview	Assessment Tool Details			NGĀ AKORANGA ME NGĀ HERE / Successes and Challenges	Iwi Collaboration & Lead	PŪRONGORONGO / Reports & Studies
			Description	Input & Output	Type / Scale / Extent			
CHI (Cultural Health Index)	A questionnaire based tool to allow iwi and hapū to assess the cultural and biological health of rivers and streams of any size or type across Aotearoa. http://www.mfe.govt.nz/publications/fresh-water/using-cultural-health-index-how-assess-health-streams-and-waterways/why-0	Initial cultural values identified by working with various Ngāi Tahu hapū to understand how waterways were valued. The values were then grouped and turned into questions from which the CHI monitoring form was created. Tested in the field by working with 3 different Ngāi Tahu hapū and waterways, and then with another iwi and location in Ngāti Kahungunu.	The three components make up the CHI: <ul style="list-style-type: none"> Site Status – identifies the traditional significance to tāngata whenua. Mahinga Kai – Examines the health of mahinga kai and physical characteristics of the resource. Cultural Stream Health– Measures valued physical characteristics such as water quality, clarity, vegetation etc. 	<u>Input:</u> A monitoring form with 12-15 questions are filled in by iwi/hapū participants, with scores between 1 and 5 being given to questions that make up the three key components. <u>Output:</u> Individual scores are analysed to produce an average CHI score for the group and site.	<u>Type:</u> Freshwater Rivers and Streams, including: single channel, rain fed, braided shingle, snow and rain fed. <u>Scale:</u> Can be used within and across different catchments and time scales.	<ul style="list-style-type: none"> S = The process is relatively straightforward and doesn't require a large amount of commitment by team members. S = This generalised CHI can be applied to other regions by other iwi and hapū. C = Some indicators showed variance between rivers and streams (size related). C = Focussed on freshwater so has limited application. 	Developed with: Ngāi Tahu (Ōtākou, Moeraki & Arowhenua) and Ngāti Kahungunu. Lead: Gail Tipa (Ngāi Tahu)	Numerous CHI studies have been completed across the country by different iwi and hapū, including: <ul style="list-style-type: none"> Taieri, Kakaunui & Hakatere Waitaki (2015) Tukituki Te Arawa Te Tau Ihu Waikato
Takiwā / SoT (State of the Takiwā)	A questionnaire based tool with accompanying database/software to enable iwi and hapū to gather, store, analyse and report on the state of their takiwā, across a range of sites, environments and scales. https://www.takiwa.org.nz/	The assessment form was created by reviewing and incorporating a number of existing tools including the CHI, SHMAK, Kaimoana, Native Forest, Lake and Wetland tools to create a comprehensive cultural monitoring tool that gathers quantifiable information on the cultural health of significant sites, areas and species. It was developed by Te Rūnanga o Ngāi Tahu working with hapū and rūnanga as well as ESR, NIWA and Manaaki Whenua.	The Takiwā tool/database provides a platform for gathering, storing, analysing and reporting on data collected using a number of forms which record information about: <ul style="list-style-type: none"> The visit and conditions on the day/time of the assessment The site and physical and historical features and values Overall site health including modification, pressure, access and mahinga kai species presence and abundance. It also includes modules and forms for undertaking CHI and SHMAK assessments for sites with waterways.	<u>Input:</u> 3 main monitoring forms (site, visit, assessment) are filled in by iwi/hapū participants, with scores between 1 and 5 being given to key questions and further scores generated based on species abundance. <u>Output:</u> Individual or group scores are analysed to produce an overall takiwā score for the site. Scores across sites and time can be extracted and graphed to produce reports.	<u>Type:</u> Can be used across all environments from mountains, lakes, rivers, estuarine, wetlands and coastal sites. Additional modules/tools, such as CHI can be used to provide further data about specific features. <u>Scale:</u> Can be used within and across different catchments and time scales.	<ul style="list-style-type: none"> S = The way the database came together was an achievement in itself and showed the necessity in collaboration and the notion of 'trial and error.' S = Can be used across any environment type as well as to help assess activities. S = Provides for both western science and mātauranga approaches C = The logistical challenge and risks involved in undertaking the data collection via a 'hīkoi' (monitoring walk). 	Developed with: Ngā Papatipu Rūnanga o Ngāi Tahu Lead: Craig Pauling (Ngāi Tahu, Ngāti Mutunga)	Studies include: <ul style="list-style-type: none"> Waiau (2005), Mataura & Waikawa (2008) Rivers (Southland) Ihutai (2007 & 12), Puharakekenui & Ruataniwhā (2012) (Christchurch) Te Roto o Wairewa / Lake Forsyth (2006) & Te Waihora / Lake Ellesmere (2009) Ōtūwharekai / Ashburton Lakes (2010) Ngā Wai Pounamu 2007 (South Island waterways)
Mauri Model	An assessment framework to allow Māori to evaluate policies, proposals and developments against set criteria or indicators using a 'mauri-ometer' as well as understanding the relative value placed on cultural, social, environment and economic wellbeing. http://www.mauriometer.com/	The Mauri Model is a decision support tool that uses mauri as a measure of sustainability across four dimensions of cultural, social, environment and economic wellbeing. It can be customised to many situations and also allows for the identification and prioritisation of solutions.	An assessment is undertaken in 2 main stages: 3. Analytic Hierarchy Process: where relative values of participants are established, against 4 well-beings: cultural, social, environment and economic 4. Mauri-ometer assessment: of identified solutions, options, proposals, policies etc vs a do-nothing/BAU option to prioritise most preferred options as well as potential gaps.	Potential scenarios or solutions are assessed against the mauri-ometer – a scale of -2 (Diminished sense of mauri) to +2 (Strong mauri) – that depicts the strength of the mauri and highlight the potential risks and/or favourability for Māori.	<u>Type and Scale:</u> Can be customised to most environments and activities, but does require initial work to do this. More of a decision support tool than a strict monitoring tool.	<ul style="list-style-type: none"> S = Encourages science and fact based disciplines along with meta-physical concepts of tangata whenua, which doesn't constrain kaitiaki roles. S = Can be applied to a range of resources and used by all iwi/hapū. S = Ensures the worldviews of different stakeholders are understood and synthesized into one outcome. C = Requires initial research and wānanga to identify criteria, solutions and indicators. C = Need to ensure a fair representation of conflicting views 	Developed by: Kepa Morgan (Ngāti Pikiao, Te Arawa, Ngāti Kahungunu, Ngāi Tahu)	The Mauri Model has been used in many studies, including: <ul style="list-style-type: none"> Water Pollution Mitigation (Auckland). Renal Recovery Fracking Roading Industrial waste (Rotoitipaku) Urban development (BOP, House of Tahu)

PŪNAHA / Tool	TAKE / Purpose	Overview	Assessment Tool Details			NGĀ AKORANGA ME NGĀ HERE / Successes and Challenges	Iwi Collaboration & Lead	PŪRONGORONGO / Reports & Studies
			Description	Input & Output	Type / Scale / Extent			
Mauri Compass	An environmental tool designed to assess and restore the mauri of waterways by using 12 attributes relating to tangata (people), tane (land) and tangaroa (sea) and incorporating both Māori and Western Science views. http://www.mauricompass.com/	The tool uses questions for each attribute that are analysed and grouped together to help form a view of the mauri of a waterway.	The tool has 12 questions relating to 3 main areas or kete, with a focus on tuna as an indicator species: <ul style="list-style-type: none"> - Tāngata: values of wairua, tikanga and mahinga kai (including tuna) - Tāne: land based values and effects on tuna habitat - Tangaroa: tuna health, abundance, composition and growth 	<u>Input:</u> Responses to 12 questions are recorded against a 1-5 scale, with some requiring scientific measurement. <u>Output:</u> Responses are plotted on a 12 sided compass/web providing a snapshot of 'mauri'	<u>Type:</u> Focussed on assessing freshwater health and uses tuna as the key indicator species. <u>Scale:</u> Can be used within and across catchments	<ul style="list-style-type: none"> • S = Utilises and incorporates both western science and mātauranga approaches • S = Provides a useful 'picture' of mauri and values immediately • C = Focussed on Freshwater and Tuna, so is limited • C = Scientific input required can take time and be limiting for some 	Developed by Te Rūnanga o Turanganui a Kiwa and the Gisborne District Council Lead: Ian Ruru (Turanganui a Kiwa) & David Wilson (GDC)	The Mauri Compass has been used in numerous studies, including: <ul style="list-style-type: none"> - Pa o Kahu - Repongaere - Taruheru - Turanganui a Kiwa - Whareponga - Te Karaka Sewage - Regional Plan
COMAR (Cultural Opportunity Mapping, Assessment and Response)	COMAR is a system of tools/approaches to assist whanau to understand, evaluate and support environment decision making. http://comar.co.nz/	The system involves 7 stages, each with various tool options depending on the activity or issue being faced. It includes the use of Report Cards that can help show changes and how these impact of cultural values.	The 7 stages include: <ol style="list-style-type: none"> Mapping Cultural Association Mapping Opportunities Concept mapping Understanding the scale of change Undertaking Assessments against opportunities/values (including CHI, Flow Assessment, CIA etc) Developing Plans/Policies to restore/respond to issues Monitoring responses (report cards) 	<u>Input:</u> Various checklists and templates are provided for different stages to record associations, opportunities, assessments and responses <u>Output:</u> Cultural maps, assessment scores, action plans and report cards	<u>Type and Scale:</u> Can be customised to most environments and activities, but does require a lot of work to do this. More of a decision support tool than a strict monitoring tool.	<ul style="list-style-type: none"> • S = Designed by Māori for Māori and supports mātauranga • S = Can be applied to a range of situations and used by all iwi/hapū. • S = Provides flexibility in approach and utilises various tools • C = Requires initial training and time to work through the stages. 	Developed by Tipa & Associates Lead: Gail Tipa (Ngāi Tahu)	COMAR has been used in various places, including: <ul style="list-style-type: none"> - Taieri, Kakaunui and Waitaki rivers - Various flow assessments - Various CIAs - Te Waihora and CWMS
OTHER	Māori Wetland Monitoring	Developing a set of consistent mātauranga Māori related indicators to be used nationally to measure the health of wetland condition and trends across New Zealand.	The four key themes that drive the indicator selection are: <ul style="list-style-type: none"> • Presence/absence of taonga species. • Presence/abundance of exotic species. • Measure/assessment of mauri. • Assessment of cultural heritage sites. 	Data was collected and measured against a set of indicators, a State of the Environment report was produced that determined the health of the wetland.	Freshwater Wetlands: North Island: Auckland, Waikato, Bay of Plenty, Manawatu; South Island: Canterbury, Otago, Southland.	<ul style="list-style-type: none"> • S = Relationships with iwi, hapū, kaitiaki etc. were established as Part 1 of this project and were re-opened and strengthened during this phase. • S = This tool/method can be applied nationally. 	Ngāi Tahu, Ngāti Naho, Ngāti Te Ata, Hauraki, Ngāti Tūwharetoa, Te Arawa, Ngāti Raukawa and Ngāti Porou.	Coordinated Monitoring of New Zealand Wetlands, Phase 2, Goal 2: Māori Environmental Performance Indicators for Wetland Condition and Trend.
	Coastal CHI (Tauranga Moana; Tauranga Tāngata)	The Coastal Cultural Health index (CCHI) was developed to better assess, evaluate and monitor the health of Te Awanui from an indigenous tāngata whenua perspective. This report describes the process used to develop the indicators that will drive the second stage of this process.	Indicators developed were finalised as: <ul style="list-style-type: none"> • Environmental Evaluation – identifies environmental issues such as pollution sources, erosion etc. • Mahinga Mātaitai Evaluation – evaluates the significance of mahinga mātaitai and taonga species. • Cultural Evaluation – emphasises the relationship tāngata whenua have with Te Awanui. 	A literature review was performed and an extensive consultation process occurred finalise the indicators that will drive Phase 2 of this project.	Te Awanui/Tauranga Harbour. Approx. 200km ²	<ul style="list-style-type: none"> • S/C = The mātauranga of Tauranga is traditionally transferred orally, this meant consultations were recorded and needed to be transcribed. While onerous, it created a physical record of information. 	Te Whānau a Tauwhao ki Ōtawhiwhi and Ngāti Taka.	Tauranga Moana, Tauranga Tāngata: A Framework for Development of a Coastal Cultural Health Index for Te Awanui, Tauranga Harbour

Appendix B: Summary of Existing Iwi Management Plans

Iwi / Hapū	Purpose / Vision	Relationship with Plans and Processes	Values described in Planning document	Iwi Planning Document		
				Ngā Take o te Iwi / Ngā Take o te Hapū	Ngā Take Taiao (Resource Management Issues)	Description of Mauri
<p>Tapūika Environmental Management Plan 2014 – 2024</p> <p>Intellectual Property and Copyright held by: Tapūika Iwi Authority Trust; Ngāti Tuheke, Ngāti Moko; Ngāti Marukukere, Ngāti Kuri</p>	<p>It is recognised by the Tapūika Iwi Authority and therefore has weight under the RMA. The Tapūika EMP has been developed to:</p> <ul style="list-style-type: none"> articulate our environmental issues, aspirations and priority actions guide Tapūika-led environmental projects enable more effective participation in Local and Central Government processes ensure that we are proactive, instead of reactive to environmental issues clarify our expectations with regards to consultation ensure that we work together to achieve positive outcomes 	<p>Changes to RMA Plans: all Councils must take into account the Tapūika EMP when developing or making changes to RMA Plans.</p> <p>Resource Consent and Concession Applications: The Tapūika EMP will:</p> <ul style="list-style-type: none"> Guide applicants to identify relevant matters to be considered in preparing an assessment of environmental effects. Inform and guide decision making in relation to consent (Council) and concession (DOC) applications. Clarify when consultation is required. 	<p><i>“KIA WHAKAMANA TE TAKAPŪ O TAPŪIKA, KIA TU TIKA AI TE ORANGA MO NGA WHAKATUPURANGA KIA PUAWAI”.</i></p> <p>Natural Environment: Dominant land uses include pastoral farming, native bush, exotic forestry and horticulture.</p> <p>Environment World View: based on the principle of total interconnectedness within, and between, the natural environment and ourselves.</p> <p>Tapūika Claims Settlement Act 2014: including cultural and commercial redress.</p>	<p>Priority Issues of Significance to Tapūika</p> <ol style="list-style-type: none"> Tapūika Land Use and Development Land Use Impacts on Waterways Cultural Heritage / Waahi Tapu Capacity Building Active Involvement and Participation Recognition of Tapūika Values and Interests Sustainability of Fish and Shellfish Stocks Air Discharges Opportunities for Strategic Relationships Land Use Impacts on the Coast 	<p>Topics of Significance to Tapūika</p> <p>Interconnections should be viewed in holistic manner:</p> <ul style="list-style-type: none"> Water / Wai Ora Land / Te Whenua Air / Ko Tāwhirimātea Coast / Te Taiao Moana People / Tapūika Mana Tangata 	<p>Mauri (how mauri is described in EMP):</p> <ul style="list-style-type: none"> Water / Waiora: mauri of waterways is protected and enhanced Catchment based restoration projects Land / Te Whenua: mauri of land and soil resources are enhanced Air / Ko Tāwhirimātea: mauri of air resources is valued and enhanced Resource management processes: Tapūika to require the preparation of a cultural impact assessment for activities that may adversely affect the mauri of natural resources.
<p>Ngāti Whakaue ki Maketu Iwi Resource Management Plan Phase 2 (2011)</p>	<p>The plan:</p> <ul style="list-style-type: none"> consolidates values, knowledge and perspectives on natural resource and environmental management and kaitiakitanga issues; it is an expression of partnership. While this Plan is first and foremost a planning document to assist Te Rūnanga o Ngāti Whakaue ki Maketu in carrying out kaitiaki (guardian) roles and responsibilities, it also recognises the role of regional council, and communities in achieving good environmental outcomes and healthy environments, and thus is designed to assist others in understanding tangata whenua (people of the land) values and policy. <p>Given this, continued interagency integrated management of resources is essential.</p>	<p>Section 61(2A), 66 (2A) and 74 (2A) of the Resource Management Act requires regional councils and territorial authorities to take into account any relevant planning documents recognised by an iwi authority and lodged with a local authority when preparing or changing policy statements, and regional and district plans.</p>	<p>Values of Ngāti Whakaue ki Maketu Hapū (NWKMH)</p> <ul style="list-style-type: none"> recognition of mana whenua status by council; facilitate the exercising of kaitiakitanga; recognition of tino rangatiratanga; decision making process; informing regional council what NWKMH will and will not tolerate; ensure the well-being of the natural resources and environment. <p>Value to Regional Council</p> <ul style="list-style-type: none"> ensure resource management issues of relevance to NWKMH are identified and options actively involved in the exercise of kaitiakitanga (guardianship); NWKMH to be part of the management process in decision making; preparation of assessment of environmental effects (AEE) and cultural impacts assessments (CIA) should be read rather than used as ticking the box; resolution and the narrowing of issues; better outcomes and environmental protection; greater certainty in the outcomes. 	<p>Regional Area of Hapū:</p> <ol style="list-style-type: none"> Pāpāmoa (Wairakei Stream) to Otamarakau – NWKMH have an interest as part of Te Arawa waka Iwi. Te Tumu – NWKMH have a registered interest as Te Arawa ki Tai Iwi. Lower Kaituna River – Pongakawa Drain – Okurei Point – State Highway 2 – State Highway 39 – This is the Maketu area and the hapū boundary. Ngāti Whakaue ki Tai have Mana Whenua status. Pukehina Beach – Otamarakau – NWKMH has an interest as Te Arawa ki Tai Iwi. 	<p>Issues</p> <ol style="list-style-type: none"> Estuarine Margins Fresh Water & Salt Water; Fresh Water both Natural & Unnatural; Coastal Water; Wetlands; Natural Landscape of Maketu; Geothermal Energy; Natural Energy; Fisheries Resources; Land Acquisition; Planting on Leased Land; Aquaculture; Economic Development; Planning / Co-Management. <p>Core values are outlined for each area of significance.</p>	<p>Mauri (how mauri is described):</p> <ul style="list-style-type: none"> Freshwater sustained the mauri or life force of the people. Coastal water: māitaitai areas are important in maintaining kaimoana stocks, and to sustain the mauri of NWKMH. Repo / Wetlands: one main consent allows the pollution from Rotorua Lakes to be discharged into Kaituna River that affects the mauri of the river, fishes, the ecosystems and people. Deep sea mineral exploration: potential risk of damage to the 'mauri' of the environment and coastal iwi.
<p>Ngāi Tūhoe Integrated Planning Protocol between Tūhoe Te Uru Taumatua, BOPRC, HBRC, Wairoa DC and Whakatane DC (2013)</p>	<p>Focus</p> <p>Of Protocol is on the Ngāi Tūhoe rohe, which crosses a number of local authority boundaries, statutory and organisational planning that intersects with this area.</p> <p>Intent</p> <p>Records the understanding of the councils that substantially intersect with the area of interest and Tūhoe Te Uru Taumatua (collectively the Protocol Partners).</p>	<p>Protocol of particular relevance for:</p> <ul style="list-style-type: none"> Future changes to planning documents; and New proposals or activities that apply to or may have effects on the joint area of interest. <p>Areas of Potential Mutual Interest</p> <ul style="list-style-type: none"> Statutory Planning (including Regional Policy Statements, District Plans, Regional Plans) Organisational Planning (community development plans, spatial planning, asset management planning) 	<p>Protocol Partners agree that they will engage each other:</p> <ul style="list-style-type: none"> in good faith on a 'no surprises' basis by communicating and consulting openly, honestly, respectfully and proactively in the spirit of integrity, fairness and co-operation in a manner that ensures adequate information and time, appropriate to the complexity of the issues, is available to allow for meaningful interaction. <p>Interaction Hierarchy (page 3)</p>	<p>Interaction Hierarchy</p> <ul style="list-style-type: none"> Early Communications: irrespective of whether a statutory or organisational planning activity; partners with an interest should seek to clarify any significant points of difference and focus effort on resolving these differences. Engagement: when draft stage is reached, prior to public consultation, draft should be shared with governing bodies. Good practice for Partners to discuss any comments lodged to ensure full understanding is achieved and opportunities to reach agreement are further explored. Statutory Consultation: Protocol Partners are encouraged to make supportive further submissions as a reflection of the co-operation that has occurred at the initial stages of development. Legal Appeals: If matters are not resolved before this point and an appeal is to be lodged as a matter of courtesy it is expected that Protocol Partners will provide advance notice of, and the rationale for, such an appeal. Process Completion – Statutory and Organisational Process: Notification of finalisation should be given to all Protocol Partners (who have expresses an interest). A published document, if applicable, shall also be provided. 		
<p>Ngāti Rangitīhi Iwi Environmental Management Plan (2011)</p>	<p>Purpose: This plan represents part of a comprehensive approach to the well-being of Ngāti Rangitīhi that includes Ngāti Rangitīhi taking its rightful place at the decision-making table and participating in a meaningful and effective way.</p>	<p>Relevant policy document recognised by an iwi authority which is Te Mana o Ngāti Rangitīhi Trust was established in 2009 following the settlement of the Central North Island Forests Collective in 2008.</p>	<p>Guiding Principles</p> <ul style="list-style-type: none"> Progressive, sustainable in our approach Well-being and life-force of Ngāti Rangitīhi Lands and resources for our economic livelihood Openness, honesty, integrity and steadfast Working with purpose and in unity <p>Objectives</p> <ul style="list-style-type: none"> The mana of Ngāti Rangitīhi is upheld, developed and recognised Ngāti Rangitīhi resources - identified and optimised The survival and growth of Ngāti Rangitīhi is enabled, including its cultural, economic, social, spiritual, environmental and political survival and growth 	<p>Seven Resource Areas</p> <ul style="list-style-type: none"> Ko te Iwi – the people Ngā Rawa Whakahirahira – places of significance, customary resource areas, archaeological sites and water bodies He Wai - water Ko Te Papa – Land Ko Tāne Mahuta –Flora and Fauna Ko Tangaroa me Tūtewehiwehi - Fisheries Ko Tāwhirimātea - Air 	<p>Mauri (how mauri is described):</p> <ul style="list-style-type: none"> Mauri tū, mauri ora Kia mauri ora a Ngāti Rangitīhi / For the well-being and life-force of Ngāti Rangitīhi To sustain the mauri of natural and physical resources in ways which enable provision for the social, economic, and cultural wellbeing of Māori. Avoid channelling, diversions of rivers and streams in a way that significantly alters the natural character and mauri of that water body. Restore, maintain and protect the mauri of freshwater resources. Implement existing strategies and develop new strategies to improve the mauri of freshwater. Matters of concern to Ngāti Rangitīhi include protecting the mauri of water. 	

Iwi / Hapū	Purpose / Vision	Relationship with Plans and Processes	Values described in Planning document	Iwi Planning Document		
				Ngā Take o te Iwi / Ngā Take o te Hapū	Ngā Take Taiao (Resource Management Issues)	Description of Mauri
			<ul style="list-style-type: none"> The whanau support networks of Ngāti Rangitīhi are developed and maintained The self-reliance of Ngāti Rangitīhi is enhanced 			
Ngāti Kei Ngāti Tuarā iwi Environmental Management Plan (2016)	Te Rūnanga o Ngāti Kea Ngāti Tuarā Trust is responsible for providing strategic direction for the iwi. The iwi environmental management plan is part of that strategic direction.	<p>Strategic Priority – He Whenua – Our Land</p> <ul style="list-style-type: none"> Strategic Objective Five – Kaitiakitanga to nurture, protect and defend our whenua, taonga, language, people and resources. Strategic Objective Six – Rangatiratanga to continue to explore opportunities to grow our resources, build our capacity and increase our capability. <p>Relationships with Local Bodies and Stakeholders</p> <p>BOPRC: As a hapū of Te Arawa, Ngāti Kearoa Ngāti Tuarā comes under the Affiliate Te Arawa Iwi and Hapū Claims Settlement Act 2008 and have two Areas of Statutory Acknowledgement these being: Matahana Ecological Area and Horohoro Geothermal Field.</p> <p>Te Arawa River Iwi Trust – represents Ngāti Kearoa Ngāti Tuarā interests within the Upper Waikato River catchment area.</p> <p>Partnership Protocol with DOC – significant relationship relative to proximity of interests</p> <p>Level of Engagements – acknowledging the assistance of BOPRC in development of plan.</p>	<p>Values: relate to desire to address pollution of waterways as one of the top environmental issues for Ngāti Kea Ngāti Tuarā members, followed by eliminating pest species within our native bush areas and on farm lands.</p>	<p>Horohoro Land Aspirations</p> <ul style="list-style-type: none"> Management of Horohoro Mountain Reserve Good management of whānau farms Access to the cultural redress land at the southern end of the bluff <p>Tarewa Land Aspirations</p> <ul style="list-style-type: none"> Claim back tennis courts on Tarewa Road as they are no longer used More access to parking at Tarewa Marae, as it is a busy marae <p>Water Aspirations</p> <ul style="list-style-type: none"> Safety fences around Pokaitu River that runs at the back of Kearoa Marae Riparian planting of all waterways on Ngāti Kea Ngāti Tuarā land Rubbish collected on road side and in the waterways by Kearoa Marae <p>Geothermal Aspirations</p> <ul style="list-style-type: none"> Access to bore water at Tarewa Investigate potential of geothermal at Horohoro <p>Marae/Hapū Aspirations</p> <ul style="list-style-type: none"> More involvement of hapū in marae Papakāinga housing <p>Continue partnership</p> <ul style="list-style-type: none"> With Te Arawa River Iwi Trust Develop relationships with other entities that could assist in the environmental realm 	<p>Land:</p> <ul style="list-style-type: none"> Land in Rotorua and South to Horohoro and Patetere South block; extend into BOPRC and Waikato RC. <p>Land Blocks:</p> <ul style="list-style-type: none"> Farms at Horohoro managed by whanau trusts. <p>Reserves and Significant Sites:</p> <ul style="list-style-type: none"> Eighteen reserves currently listed with Maori Land Court. Important part of environmental plan as Horohoro Mountain Reserve needs ongoing protection and maintenance. <p>Cultural sites of significance:</p> <ul style="list-style-type: none"> Ngāti Kea Ngāti Tuarā have identified over fifty sites of cultural significance on the lands at Horohoro, Tihi-o-Tonga, Tarewa and Patetere. These sites include old kāinga, pā, urupā and burial caves, and food gathering areas. 	<p>Environmental Aspirations</p> <p><i>“Ngāti Kea Ngāti Tuarā is a small hapū within Te Arawa, but we are also a very proud hapū, we consider relationships with the hapū and whānau as very important, as well as relationships in hapū activities.”</i></p> <p><i>“The Ngāti Kea Ngāti Tuarā environment, its land and waterways are a part of who we are, and just being able to spend time in the environment is very important.”</i></p>