

A black circular logo containing the text 'Te Kerevu' in a white script font and 'ASSOCIATES' in a white sans-serif font below it.

Te Kerevu
ASSOCIATES

A vertical strip on the left side of the cover featuring a close-up photograph of a feather with intricate patterns and colors, including shades of brown, tan, and green.

NGĀTI RANGI HAPU CULTURAL IMPACT
ASSESSMENT REPORT
PROPOSED BUSINESS AND INNOVATION
PARK AND HORTICULTURAL HUB

APRIL 2020

Created by
Te Kerevu
ASSOCIATES

He kupu whakatau, he reo mihi aroha tēnei ki te whānau whānui o Ngāti Rangi

Ehara taku toa i te toa takitahi, engari he toa takitini

Heoi anō koutou mā, huri noa, huri noa, he mihi mahana, he mihi kau ana ki a koutou katoa i
tautoko mai i tēnei mahi.

Copyright © 2020 by Te Kereru Associates Ltd.

All rights reserved. No part of this publication may be reproduced, stored or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, scanning, or otherwise without written permission from the publisher. It is illegal to copy this report, post it to a website, or distribute it by any other means without permission.

First edition

Introduction	9
Site Identification	13
Regulatory Framework	17
Resource Management Act 1991 (RMA)	17
Far North District Plan	18
Regional Water and Soil Plan for Northland	19
Te pou tuatahi - Ranginui	22
Ngā Take – Issues	22
Climate change	22
Air pollution	22
Ngā Whāinga – Objectives	23
Climate change	23
Air pollution	23
Kaupapa Tohu – Policies	23
Climate change	23
Air pollution	23
Ngā Ture – Rules	23
Climate change	23
Air pollution	24
Ngā Kaupapa Matua - Assessment of Effects	24
Te pou tuarua - Papatūānuku	26
Ngā Take – Issues	26
2.1 Mining and quarrying	26
2.2 Subdivision and development	26

2.3 Roadworks and earthworks	26
2.4 Soil contamination	26
2.5 Erosion and sedimentation	27
2.6 Land use	27
2.7 Waste	27
Ngā Whāinga – Objectives	27
Kaupapa Tohu – Policies	28
Mining and quarrying	28
Subdivision and development	29
Roadworks and earthworks	30
Soil contamination	31
Land use	31
Erosion and sedimentation	31
Waste	31
Ngā Ture – Rules	32
Mining and quarrying	32
Subdivision	32
Roadworks and earthworks	32
Soil contamination	33
Land use	33
Erosion and sedimentation	33
Waste	33
Ngā Kaupapa Matua - Assessment of Effects	33
Te pou tuatoru -Tanemahuta	36

Ngā Take – Issues	36
3.1 Forestry	36
3.2 Native flora and fauna	36
3.3 Customary use	36
3.4 Tourism	36
3.5 Genetic engineering	36
3.6 Pest control	36
Ngā Whāinga – Objectives	37
Kaupapa Tohu – Policies	37
Forestry	37
Native flora and fauna	37
Pest control	38
Tourism	38
Ngā Ture – Rules	39
Forestry	39
Pest control	39
Genetic engineering	39
Tourism	39
Ngā Kaupapa Matua - Assessment of Effects	39
Te pou tuawha - Tangaroa-i-te-wai-māori	41
Ngā Take – Issues	41
4.1 Water quality	41
4.2 Point and nonpoint source discharges	41
4.3 Storm water	42

4.4 Riparian margin management	42
4.5 Water takes	42
4.6 Diversions and water mixing	42
4.7 Culverts, weirs and dams	42
4.8 Wetland drainage	43
4.9 River and drain clearance	43
Ngā Whāinga – Objectives	43
Kaupapa Tohu – Policies	43
Water quality	43
Point and nonpoint source discharges	43
Storm water	44
Riparian margin management	45
Water takes	45
Diversions	45
Culverts, weirs and dams	46
Wetland drainage	46
River and drain clearance	46
Ngā Ture – Rules	46
Water quality	46
Point and nonpoint source discharges	46
Storm water	47
Riparian margin management	47
Water takes	47
Diversions	47

Culverts, weirs and dams	47
Wetland drainage	48
River and 'drain' clearance	48
Ngā Kaupapa Matua - Assessment of Effects	48
Te pou tuarima - Rongomātāne	50
Ngā Take – Issues	50
Ngā Whāinga – Objectives	50
Kaupapa Tohu – Policies	50
Market gardens	50
Ngā Ture – Rules	50
Agrichemicals	50
Discharges	51
Ngā Kaupapa Matua - Assessment of Effect	51
Te pou tuaono - Rūaumoko	52
Ngā Take – Issues	53
6.1 Management of natural events	53
6.2 Tourism and recreation	53
Ngā Whāinga – Objectives	53
Kaupapa Tohu – Policies	53
Management of natural events	53
Ngā Ture – Rules	53
Management of natural events	53
Ngā Kaupapa Matua - Assessment of Effects	54
Recommendations	55

Bibliography

Introduction

This Cultural Impact Assessment Report has been prepared on behalf of Ngāti Rangi in relation to the proposed Ngawha Innovation and Enterprise Park and Horticultural Hub. It must be first noted that early and full consultation with Ngāti Rangi on activities relating to any proposed use of our environment is an essential element within our environmental management. We welcome early engagement with applicants to ensure all matters concerning actual and potential environmental and cultural impacts are resolved prior to the lodging of a consent. This can avoid time and consumption of resources for both parties if we work collaboratively and in partnership through early and timely discussions. It can allow consent holders and Ngāti Rangi to work together through the consents process towards an outcome desired by both parties. The guiding principles and values outlined in this Cultural Impact Assessment Report are what is important to Ngāti Rangi and what guides the decisions we make when responding to applications. The below table illustrates the stages that were undertaken when addressing the proposed Ngawha Innovation and Enterprise Park and Horticultural Hub by Te Kereru Associates:

Stage One

Key Task(s)	Deliverables/Output(s)
Initial site visit - to ascertain the cultural values and historical context associated with the site and broader area. Note all key cultural landscape features and sites of significance, pertaining to Ngāti Rangi mana whenua.	Initial Site Assessment update to Ngāti Rangi
Desktop Research of Site	Draft Literature Review and Desktop Research
Initial Meetings and Hui organised and planned with Kaumatua and Ngāti Rangi Hapū Members	Draft document of interviews and hui

Stage Two

Key Task(s)	Deliverables/Output(s)
Prepare an assessment of cultural effects (positive, adverse, short term, long term, etc)	Draft Assessment
Ensure cultural values are taken into account in the design of the Park (and in policy framework to be drafted into the private plan change) and/or in terms of any consenting conditions to be recommended in association with resource consents. Regulatory framework: Resource Management Act 1991 (RMA), Far North District Plan, Regional Water and Soil Plan for Northland and Regional Policy Statement	Regulatory Framework Draft
GIS Mapping to include: Archaeology, Survey Maps, cultural layers, wahi tapu layers, mahinga kai layers, water catchments, geothermal layers and any other relevant data layers	GIS Database: Draft Layers relevant for the proposed park and Horticultural Hub

Stage Three

Key Task(s)	Deliverables/Output(s)
A Cultural Impact Assessment Report for the Innovation and Enterprise Park and Horticultural Hub	Final report for Ngāti Rangī Perusal and sign off
GIS Mapping to include: Archaeology, Survey Maps, cultural layers, wahi tapu layers, mahinga	Final Layers relevant for the proposed park

kai layers, water catchments, geothermal layers and any other relevant data layers	
Recommendations in relation to the Park	Included in the Final Report

The material relied on in producing this Report includes:

- (a) Waitangi Tribunal Reports;
- (b) Iwi / hapū documentation, including:
 - (i) Iwi/ hapū Management Plans; and
 - (ii) Submissions by iwi / hapū in various regulatory processes.

Ngāti Rangī members involved in this report have contributed their respective mātauranga, by way of kanohi ki te kanohi hui and providing responses to questions posed.

This Cultural Assessment Report is based on the Ngāti Rangī principles and values that have been embedded into the Ngāti Rangī Environmental Management Plan. The Plan provides a statement of Ngāti Rangī values, experiences, and aspirations pertaining to the use and management of our environment. The Plan is a living and practical document that will assist Ngāti Rangī to proactively and effectively engage in and shape: current and future policy, planning processes, and resource management decisions. Underpinning the Plan is the acknowledgment that people are inextricably linked to the environment. Our social, cultural, environmental, and economic well-being is dependent on the welfare of the environment – first and foremost we must acknowledge and protect the natural environment and uphold the values, mātauranga, and tikanga of our tūpuna.

It provides Ngāti Rangī with an avenue for continued participation in the resource consent process and involvement in the wider environmental policy and planning arena. Under the Resource Management Act (sections 61, 66, and 74) local authorities must recognise iwi planning documents that are endorsed by iwi authorities when preparing or altering regional policy statements, regional plans, and district plans. The Plan covers current issues, however, Ngāti Rangī concerns are not limited to those listed.

The Ngāti Rangī Hapū Management Plan has been endorsed by the Ngāti Rangī Ahuwhenua Trust and Ngawha Marae Trust. As well as providing clarity and structure for ourselves as Ngāti

Rangi, local councils will be able to use the plan to guide their alterations or development of district and regional plans and statements so that Ngāti Rangi values can be properly recognised and honoured in this place.

The focus of the Plan is on enhancing, through practice, the relationship between Ngāti Rangi and the natural world. In the application of this Plan Ngāti Rangi intends to be proactive in undertaking actions by Ngāti Rangi, for Ngāti Rangi, that reflect cultural preferences and priorities. We look to lead by example, not just through words but through actions.

While the plan is first and foremost a planning document to assist Ngāti Rangi to participate effectively in natural resource and environmental management in the takiwā, a fundamental objective of the plan is to enable external agencies to understand issues of significance to tāngata whenua, and how those issues can be resolved in a manner consistent with cultural values and interests.

We as Ngāti Rangi Hapū, Whānau and individuals will live in a way that we are in sync with our environment, taonga and surroundings. In order for Ngāti Rangi to be a flourishing Hapū in perpetuity, the connections that exist within the natural world need to be strengthened. We will do this by: reconnecting with our Whānau, Hapū and wider iwi groupings; revitalising our connections with our natural world through talking with and listening to our waterways, ngahere, whenua and maunga; and playing an active role in the protection of the taiao.

Our vision where the natural environment and our people are nurtured and supported to enable them, in turn, to nurture and support each other. Achieving this requires acknowledging connections and interdependencies in the natural world, and restoring and protecting these relationships and balance; including Ngāti Rangi whakapapa and kaitiaki responsibilities for future generations.

Site Identification

The Site identification for the proposed Business and Innovation Park and Horticultural Hub is Lot 1 DP 336520, Lot 1 DP 196319, Lot 2 DP 185847, Orauruwharo 5B2C, Section 15S Te Pua Settlement, Lot 1 DP 172355, Lot 2 DP 196311, Lot 1 DP 190387, Reiwhatia B1, Pt Orauruwharo 5B1A, Lot 1 DP 196320, Lot 1 DP 172355.

Consisting of 204.67 ha the property is located on the north side of SH12 and east of Wallis Road, Ngawha, Northland. The property is zoned Rural Production. The known current and historic land use is dairy farming with some cropping and minor sheep grazing. It is proposed that an Innovation and Enterprise Park be developed on part of the property requiring a change in land use to Commercial/Industrial.

The Innovation and Enterprise Park is accessed directly off State Highway 12 while the Horticultural Hub is accessed off Wallis Road. Wallis road is a small no exit road with the hub entrance located just over 200m from the State Highway 12 intersection. Figure 1 below shows the layout of the different blocks, outlined in purple.

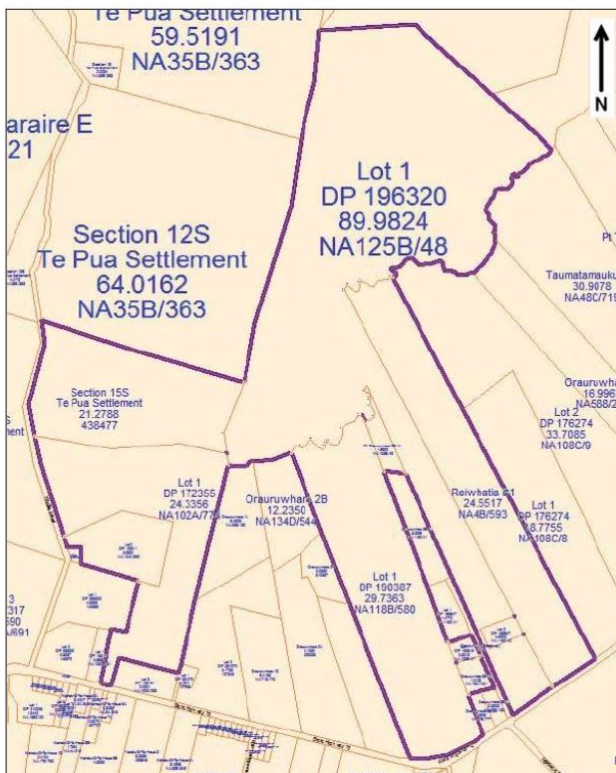


Figure 1. Aerial view of site legal descriptions outlined in purple (Cook & Costello, 2019)

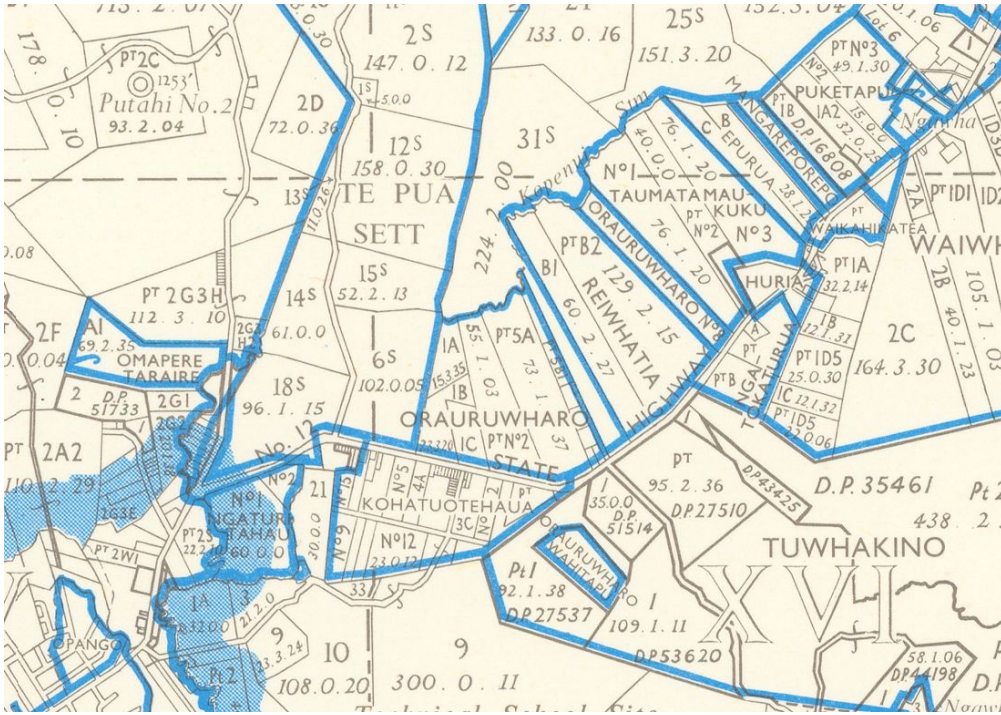


Figure 2. 1965 Kaikohe map naming early Māori Land Blocks (Department of Lands and Survey, 1965)

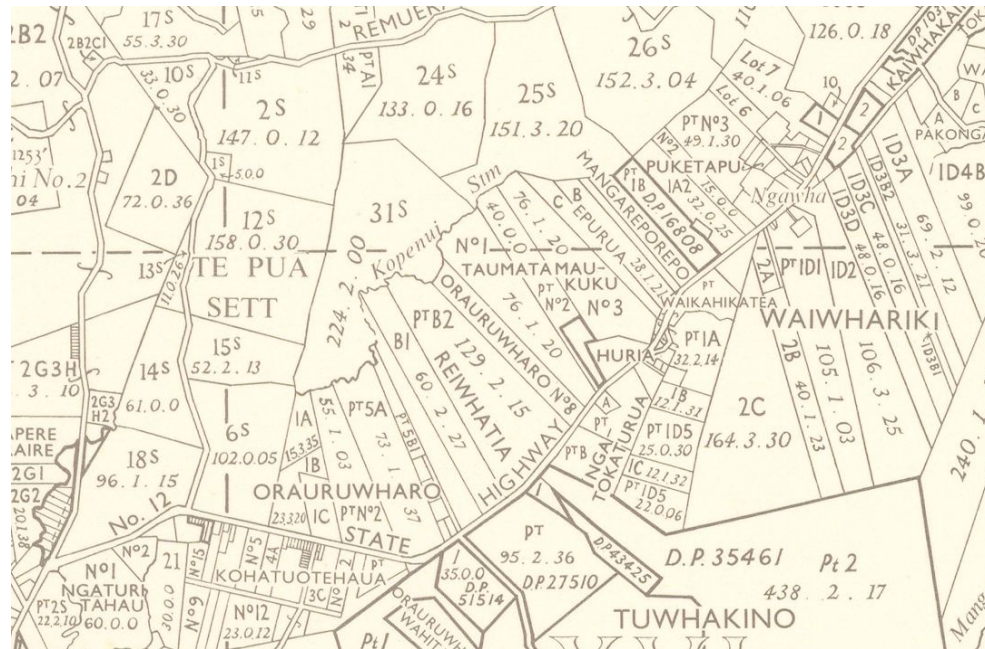


Figure 3. 1971 Kaikohe map naming early Māori Land Blocks (Department of Lands and Survey, 1971)

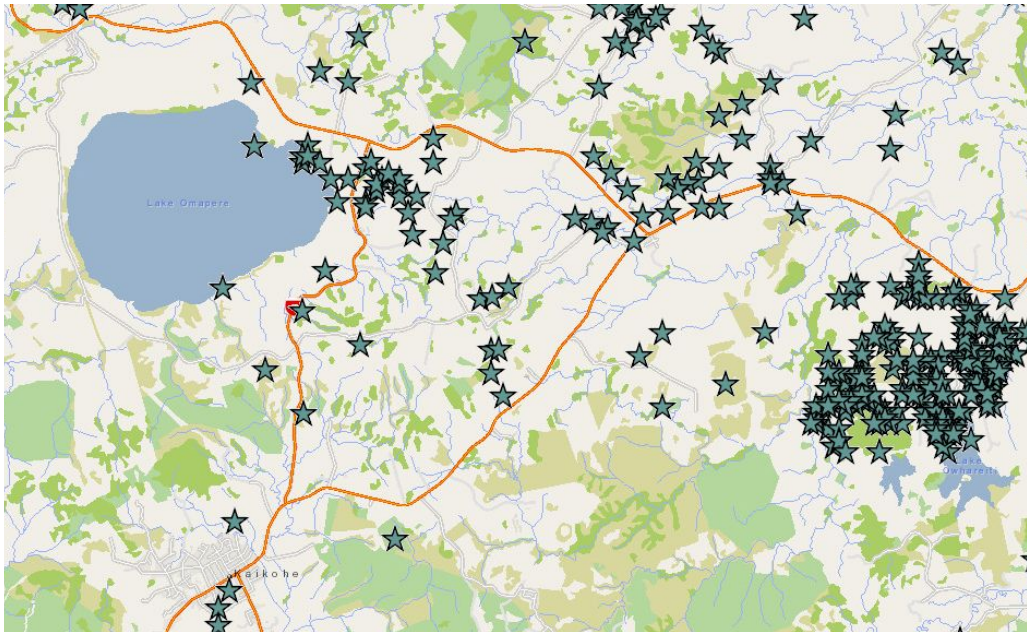
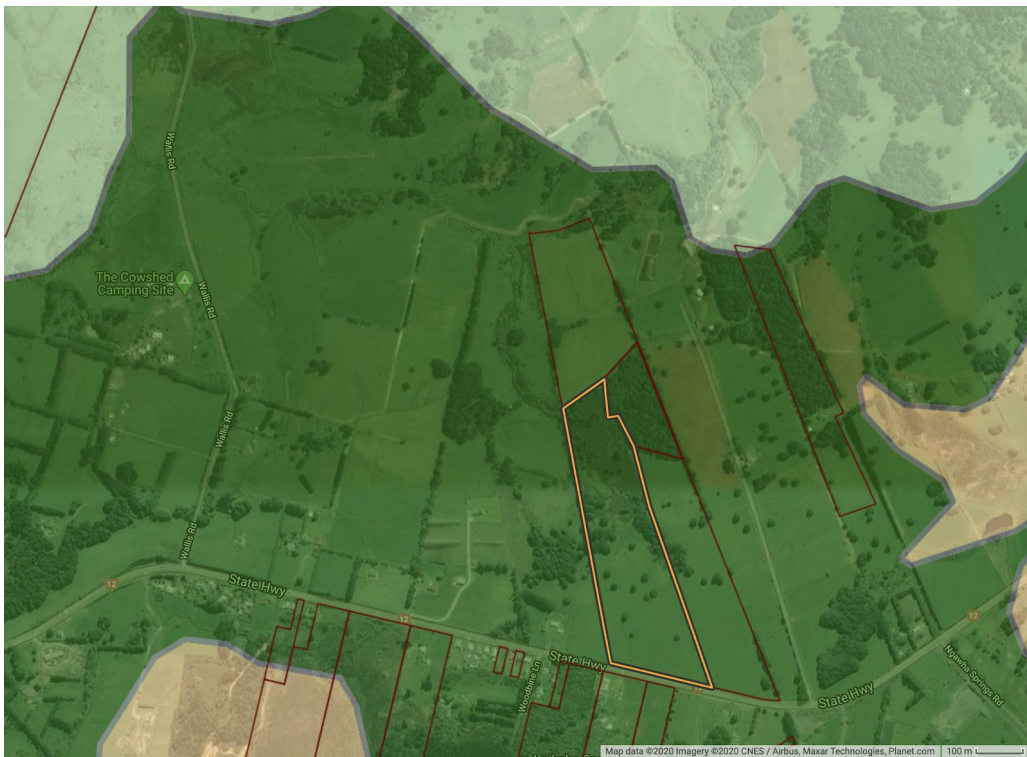


Figure 4 (Above). Recorded archaeological sites near the proposed site (NZ Archaeological Association, 2020)

Figure 5 (Below). Land Use capability Map & Māori land blocks near proposed site (Landcare Research,



Land Use Capability

This layer shows the general capability and versatility of the land, and incorporates the degree of physical resource limitation to agriculture, by interpreting and colour coding each of the original eight land-type classes of Land Use Capability (LUC) within the New Zealand Land Resource Inventory (NZLRI).

- | | | | |
|---|---|--|---|
|  Highest quality land in NZ |  Excellent land for cropping and horticulture |  Moderate limitations for cropping and horticulture |  Significant limitations for cropping and horticulture |
|  Unsuitable for cropping but high production for pastoral and forestry |  Not suited to cropping but good for pastoral and forestry |  Marginal for pastoral and forestry |  Extreme limitations |
|  Unclassified | | | |

2019)

Figure 6. Soil drainage for Proposed Ngawha Innovation & Enterprise Park (Landcare Research NZ Ltd, 2019)

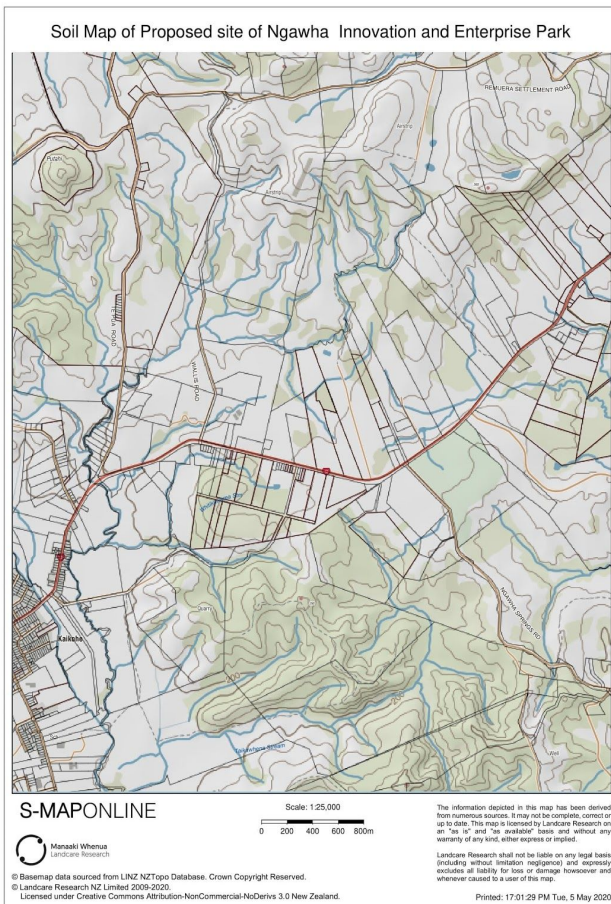
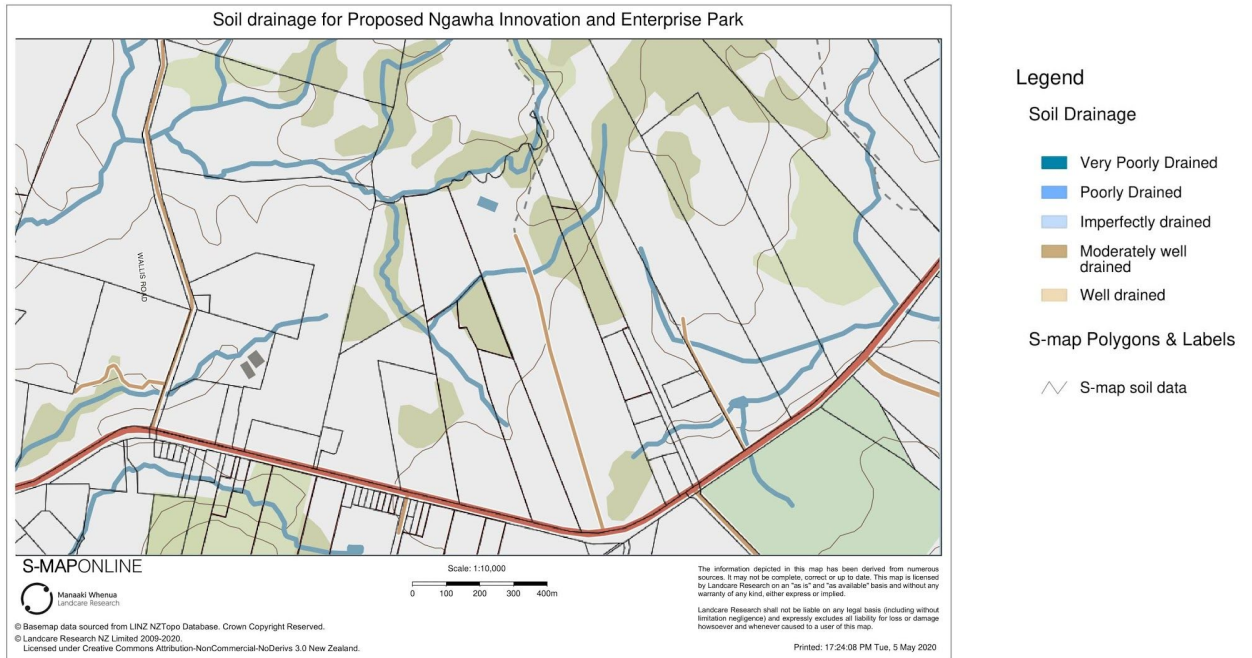


Figure 7 (Left). Depth to hard soil/gravel/rock profile of proposed site (Landcare Research NZ Ltd, 2019)

Regulatory Framework

Ngāti Rangī believes there are four primary statutory and regulatory components to bear in mind when looking at the interests of Ngāti Rangī. These are:

1. Resource Management Act 1991
2. Far North District Plan
3. Regional Water and Soil Plan for Northland
4. Regional Policy statement

Resource Management Act 1991 (RMA)

The purpose of the RMA is to promote the sustainable management of natural and physical resources (Section 5). The RMA contains a number of provisions specific to Māori (recognising that many other provisions are of interest and relate to Māori), and gives statutory recognition to Iwi Management Plans:

Section 6 identifies a number of matters of national importance, including two which relate specifically to Māori:

(e) The relationship of Māori and their culture and traditions with their ancestral lands, water, sites, wāhi tapu, and other taonga;

(f) The protection of historic heritage from inappropriate subdivision, use and development (this includes sites of significance to Māori, including wāhi tapu).

Section 7 requires decision makers to have particular regard to Kaitiakitanga.

Section 8 requires that all persons exercising functions and powers under the Act must take into account the principles of the Treaty of Waitangi.

Section 35A requires local authorities maintain records for each iwi and hapū within their area, including contact details and Iwi Management Plans.

Clause 3A and 3B of the First Schedule (see also Section 60) require local authorities to consult with the tāngata whenua of the area (through iwi authorities) during the preparation of a proposed policy statement or plan, and sets out the criteria for this.

Section 33 states that a local authority that has functions, powers, or duties under the Act may transfer any one or more of those functions, powers, or duties to another public authority, including an iwi authority.

Sections 36B provides a framework for public authorities and iwi authorities and groups that represent hapū to enter into joint management agreements about natural or physical resources.

Section 88 requires resource consent applicants to undertake an assessment of effects on the environment, including cultural effects.

Far North District Plan

At a high level the Tāngata whenua section of the Far North District Plan (Chapter 2) states:

2.6.1 To the extent possible, the rights guaranteed to Māori by Te Tiriti O Waitangi (Treaty of Waitangi) are given effect in the Plan.

2.6.3 Development on ancestral land occurs in a way that achieves sustainable management of natural and physical resources, and protects Sites of Cultural Significance to Māori and other taonga.

Specific objectives intended to achieve this include:

2.7.1 Through the provisions of the Resource Management Act, to give effect to the rights guaranteed to Māori by Te Tiriti O Waitangi (Treaty of Waitangi).

2.7.2 To enable Māori to develop and manage their land in a manner which is consistent with sustainable management of the natural and physical resources of the District as a whole.

2.7.3 To recognise and provide for the protection of wāhi tapu and other ancestral sites and the mauri (life force) of natural and physical resources.

These, in turn, are accompanied by policies including:

2.8.1 That Council will provide opportunities for the involvement of tāngata whenua in the sustainable management of the natural and physical resources of the District.

2.8.2 That tāngata whenua be consulted over the use, development or protection of natural resources where these affect their taonga.

2.8.3 That the Council will have regard to relevant provisions of any Whānau, Hapū or iwi resource management plans, taiapure plans or mahinga mataitai plans.

2.8.4 That development on ancestral land will be provided for, consistent with the requirement for sustainable management of resources.

2.8.5 That wāhi tapu and other taonga be identified and protected by provisions in the plan.

The District Plan also goes on to say (12.9):

“Council also recognises the importance of the role and responsibilities of kaitiaki and the need for their empowerment and the requests for early and effective engagement”.

12.9.5.9 Council may investigate joint approaches to renewable energy development and use, including the possible Transfer of Power or Joint Management Agreements, between itself and Northland Regional Council or other authorities, including Recognised Iwi Authorities and Mandated Iwi Authorities.

12.9.5.10 Council will encourage applicants to actively engage with Māori, including Recognised Iwi Authorities and Mandated Iwi Authorities, through early dialogue to ensure that adverse effects on the relationship of Māori with their culture, traditions and taonga are avoided, remedied or mitigated and will look for opportunities to encourage kaitiaki involvement in monitoring.

Regional Water and Soil Plan for Northland

Northland’s Regional Water and Soil Plan defines geothermal water as “groundwater”. The rules relating to groundwater generally permit small takes for ‘reasonable’ domestic purposes and stock drinking uses, but if compliance with these rules cannot be achieved, a discretionary consent is necessary. If approved, the installation of a water meter may be required, depending on the volume [$>200\text{m}^3$ per day] and effects on the recharge of the aquifer and any associated surface water resource. Whilst geothermal water is not subject to the 2010 Resource Management Regulations on Measurement and Reporting of Water Takes which ‘automatically’ imposed metering of freshwater takes, Northland Regional Council is able to apply metering conditions to new or renewed consents for geothermal takes. The explanation for this rule (25.3) states that it applies to the:

...taking and use of water, heat or energy from a bore constructed in the Ngawha Geothermal Field as defined in Schedule C, except where the activity is in accordance with tikanga Maori for the communal benefit of the tāngata whenua of the area and the activity does not have an adverse effect on the environment.

This section is the central element of Ngāti Rangi Environmental Planning and the way Ngāti Rangi approach the Cultural Impact Assessment Reporting. The pou of the whare – the pillars of the house – are structurally important as the key element in the stability and support of a sound building. Without these pillars the whare will crumble. For this report, our pou take the names of atua Māori (Māori Gods). Ngāti Rangi has chosen these pou atua as a framework to formulate our perspectives on issues relating to Ngāti Rangi and the care and management of the taiao (natural environment) within our Hapū boundaries. This report therefore has been organised under the following six pou atua who personify the natural elements; Ranginui (of the skies), Papatūānuku (of the earth), Tānemahuta (of the forests), Tangaroa-i-te-wai-māori (of the fresh waters), Rongomātāne (of the foods cultivated) and Rūaumoko (of the energy below and above the ground). The Ngāti Rangi Hapū Environmental Management Plan uses terminology similar to that found within Council planning documents, which include:

- **NGĀ TAKE - ISSUES** - An existing or potential problem (or opportunity) that requires intervention.
- **NGĀ WHAINGA - OBJECTIVES** - Where we would like to be; what the future looks like for us.
- **KAUPAPA TOHU - POLICIES** - A broad course of action to accomplish the objective(s).
- **NGĀ TURE - RULES** - A set of explicit or understood regulations or principles governing conduct or procedure within a particular area of activity and aligned to the achievement of the objective(s).
- **NGĀ KAUPAPA MATUA - ASSESSMENT OF EFFECTS** - A written statement identifying the effects of the proposed activities upon the environment and the Hapū of Ngāti Rangi.

In many cases, we will include our statements of position on specific matters - predominantly to Councils - which describe things we want (or don't want) to see happen in order to achieve our objectives. For the purposes of this Cultural Impact Assessment Report we will be using the same format found within our Plan. The relevant issues, objectives, policies will be the relevant ones that are pertinent to the Proposed Ngawha Innovation and Enterprise Park and Horticultural Hub. Utilising the atua as our pou for this document aids in our interaction not only with the atua, but also our kaitiaki and tūpuna. We view ourselves as a reflection of the universe; therefore using this as a base to structure this section helps us to aspire to the beauty, brilliance, and ultimately the purity of the atua. Ngā Pou refers to the key components that have been selected by the Hapū as reference points and groupings for this mahi. Under each pou, our issues, objectives, policies, and rules have been outlined. Where possible, rules have been developed for all issues under each pou. However, not every issue can be developed into a rule enforceable by Ngāti Rangi. In these circumstances, the reader should refer to the objectives and policies. The pou in this document are ordered in terms of their whakapapa, and are outlined below.

Te pou tuatahi - Ranginui

Ehara ngā tai katoa me ngā rangatiratanga, he rangatiratanga aporei, kāpā ko au, ko te titi, ko te aporei, ko tama purupuru mārire, ko Ngāti Rangī, ko angaanga titi iho i te rangi.

All other seas and chiefs are not the principal ones, but I am the adorned one, the principal, the man who holds to peace, Ngāti Rangī, the head which shines down from heaven.

Ranginui is significant to Ngāti Rangī in regards to our whakapapa and origins. The quality of the air at ground level and also atmospheric pollution are indicators of the health of Ranginui. Human activities impact the health of Ranginui; climate change and air pollution are two key examples of this.

Air is viewed as a taonga derived from Ranginui (the Sky Father). Ranginui is the sky, husband of Papatūānuku (Mother Earth) and father of her earthly progeny. Ranginui is adorned by celestial bodies such as the moon and stars, and is associated with life and light. From Ranginui's union with Papatūānuku came the offspring, who were responsible for creating the elements that constitute our world and environment today.

As with other taonga, the mauri, or life-supporting capacity, of air must be protected, and air must be used with respect and passed on to the next generation in a healthy state.

Ngā Take – Issues

Climate change

Climate change has very real direct and indirect impacts on Ngāti Rangī and the environment in our rohe. The potential impact through rising temperatures, climate variation, weather event intensities and unpredictability creates increased pressure on our waterways, ngahere, maunga, native species, and also on us as people.

Air pollution

Industrial, vehicular and domestic sources contribute to air pollution within Ngāti Rangī tribal lands. Poor air quality impacts individuals and whānau health and quality of life.

Ngā Whāinga – Objectives

Climate change

The Ngāti Rangi and wider regional contribution to climate change is reduced. The air quality within our region is no longer affected by the consumption of fossil fuels, the use of inefficient wood burners, or other sources of air pollution.

Air pollution

Clean, renewable energy is harnessed in a way that does not impact on the environmental, cultural, visual, and spiritual connections Ngāti Rangi have with Ranginui, our whenua and waterways. To protect the mauri of air from adverse effects related to the discharge of contaminants to air. Ngāti Rangi is involved in regional decision making on air quality issues.

Kaupapa Tohu – Policies

Climate change

1.1.2 Ngāti Rangi supports New Zealand reducing climate change emissions to safe levels.

1.1.5 Ngāti Rangi will support initiatives by primary industry to reduce greenhouse gas emissions and sequester carbon.

1.1.7 Ngāti Rangi encourages the development of a plan by local government to address the potential for increased drought and intensity of weather events resulting from climate change. The plan should explore resilience measures such as wetland restoration and local water capture and storage. It should be noted however that Ngāti Rangi does not necessarily support large water capture infrastructure.

Air pollution

1.2.1 Ngāti Rangi does not support air emissions within our region that cause any effects on Ranginui, our air quality, or the health and wellbeing of our people.

Ngā Ture – Rules

Climate change

R3.3 To require that local authorities recognise and provide for the potential effects of climate change on resources and values of importance to Ngāti Rangi, for example:

- (b) Increased salination of rivers and wahapū, affecting mahinga kai resource and customary use;
- (c) effects on ecosystems, including those in the wetlands;
- (d) Changes to the amount of rainfall, and effects on aquifer recharge;
- (e) Lake management regimes, including the opening of waterways; and
- (f) Changes to the habitats of indigenous flora and fauna, including taonga species.

R3.6 Restoration planning for wetlands and lagoons must take into account the potential for the future sea-level rise associated with climate change.

Air pollution

R1.1 To protect the mauri of air from adverse effects associated with discharge to air activities.

R1.2 To require that the regional council recognise and provide for the relationship of Ngāti Rangī with air, and the specific cultural considerations for air quality, including the effects of discharge to air activities on sites and resources of significance to tāngata whenua and the protection of cultural amenity values (see Issue R2 below).

R1.3 To ensure that regional policy enables tāngata whenua to identify particular sites and places of cultural significance as sensitive environments, to protect such sites from the cultural and environmental effects of the discharge activity.

R1.4 To support the use of indigenous plantings and restoration projects as a means to offset and mitigate industrial, agricultural, and residential discharges to air.

Ngā Kaupapa Matua - Assessment of Effects

The traffic intensity of the Horticultural Hub is increased with traffic movements exceeding the permitted activity. The estimated total of traffic movements equates to 580 daily traffic movements. This increased traffic movement and increased air pollution has adverse cultural effects to the mauri of the air. Just the day to day running of the Horticultural Hub will increase the amount of traffic and workers to the proposed site. Consultation and monitoring with Ngāti Rangī would have to take place on ways to monitor and alleviate the impacts for affected Ngāti Rangī hapū, the mauri and the surrounding environment.

Noise and light pollution for the Horticultural Hub at different times will have to be addressed so that it does not affect Ngāti Rangī and the surrounding environment. Any shift work rotations at the proposed site would allow the potential for noise disturbance continuing outside of normal business hours. The high volume of traffic movement at various times by trucks and staff into the

carpark will need to be addressed so that it does not affect Ngāti Rangi and the surrounding environment. Building height of the flue in regards to the aesthetic views from the neighbouring properties and affected Ngāti Rangi hapū members will need to be addressed. Lighting of the Horticultural Hub during the day and night time. Glare of the building/hot houses was a concern for Hapū members at the Hapū Wānanga and workshops so this will need to be addressed as well.

Te pou tuarua - Papatūānuku

The health of Papatūānuku, our eternal mother, is central to our health and wellbeing as humanity. She is the ultimate provider; we depend on her fertility and her gifts for survival. Ngāti Rangī is concerned about the unsustainable use and exploitation of Papatūānuku and her gifts. As tāngata tiaki we are duty-bound to ensure care and reciprocity is actioned.

Ngā Take – Issues

This section covers issues such as mining, subdivision, roadworks, soil contamination, erosion and sedimentation, land use, and waste management. These issues are based on how the whenua is used and managed and the pollution and waste that accompanies these issues.

2.1 Mining and quarrying

Mining is detrimental to the environment and destroys habitats. It is near impossible to restore mined sites fully. Ngāti Rangī considers that it is an activity that leaves a scar on Papatūānuku and depletes her gifts. Wastes resulting from mineral extraction are often toxic and dangerous to the environment. Some products of mining (eg. fossil fuels) result in other critical environmental issues such as climate change. The extraction of gravel from our waterways and streambeds is also an issue for Ngāti Rangī.

2.2 Subdivision and development

Increased population density and structures associated with subdivision places extra pressure on the region's waterways and water supply. This can cause an increase in contaminants entering water bodies through storm water systems, as well as an increase in abstraction pressure. Subdivision can result in an increase in pest species and can put local native flora and fauna at risk. It can also mean vegetation clearance and alteration of the natural drainage characteristics. There may be visual and landscape changes also. Subdivisions in particular areas may be culturally inappropriate.

2.3 Roadworks and earthworks

Inadequate management of road construction and works can allow sediment to enter waterways. The maintenance and construction of roads in our region can encourage weed migration, noise, dust, vegetation clearance, vibration, stream diversion, and water extraction from local rivers and streams for settling dust issues.

2.4 Soil contamination

Contamination of the soil occurs through a variety of avenues such as industrial operations, cropping, pastoral farming, household discharges, solid waste plants, use of agrichemicals and

fertilisers, and sewage disposal. Soil contamination poses a threat to soil health, productivity, and the health of Ngāti Rangī, the local community, and the environment.

2.5 Erosion and sedimentation

Some land uses in vulnerable areas are causing erosion and ultimately leading to sediment entering waterways and a loss of soil productivity.

2.6 Land use

Lands in the Ngāti Rangī tribal area incorporate a number of differing land-use activities, such as forestry, agriculture, horticulture, and residential use. Many of these have improved in their environmental awareness and practices over the last decade, however, some associated practices still contribute to a number of environmental issues experienced locally, such as algae and weed growth, soil loss, and stream sedimentation. Land Use Capability Classifications categorise land according to the underlying rock type, soil type, slope, erosion susceptibility, and vegetation, and give a score of 1 to 8 as to what that land can be safely and practically used for. Basically, land use is inappropriate for the Land Use Capability Classification results in environmental and safety issues.

2.7 Waste

Waste accumulation is an issue. The use of plastic and polystyrene packaging is increasing. While some of this is recyclable, much of it ends up in landfills, taking up land space with rubbish. Rubbish tips also contain materials that can form leachate, potentially polluting waterways and contaminating the soil. Many waste products have a long life span that take time to break down or will not break down at all. Using Papatūānuku as a dumping ground for waste is an issue for Ngāti Rangī, and contrary to our values around caring for Papa. Likewise, wasteful use of resources through over-packaging, short life-time design or excess use of non- biodegradable material conflicts with our values.

Ngā Whāinga – Objectives

Mining is prohibited in the Ngāti Rangī rohe unless it is categorically proven that there will be no effects, minor or otherwise, short or long term, including through the use of the products of the mining activity.

Subdivision is undertaken in a controlled manner that avoids all risks to the environment and protects culturally significant areas.

Roads, road construction, and road maintenance are managed to prevent run-off from entering waterways. For example, sediment traps, treatment wetlands, and retention areas are utilised.

Only local material will be used for roading, to prevent weed spread.

Roading vehicles external to the region will undergo full biosecurity clean before entering the rohe.

Vegetation clearance will only occur with prior Ngāti Rangi approval.

Stream use for dust treatment will be discussed with Ngāti Rangi before approval.

Relevant authorities will work with Ngāti Rangi to compile a register of contaminated sites in our rohe for iwi reference. Relevant authorities will actively work to eliminate sources of soil contamination in our rohe. Contaminated soil will be rehabilitated.

The land is used and managed in a way that is appropriate to its Land Use Capability Classification.

Waste is reduced and prevented.

Kaupapa Tohu – Policies

Mining and quarrying

2.1.1 No prospecting, exploration and extraction of minerals, coal or petroleum is to be conducted in Ngāti Rangi tribal lands as this is inconsistent with Ngāti Rangi values and principles.

2.1.2 Notwithstanding policy (i) above, Ngāti Rangi may consider potential small scale mining activities with proven low environmental impacts on a case-by- case basis.

2.1.3 If any mining projects are approved by Ngāti Rangi, adequate funding for full ecological restoration post mining shall be put aside in a secure and independent facility prior to the commencement of work.

2.1.4 No gravel extraction will be undertaken in- stream or within the 10 year flood zone. Any gravel extraction undertaken will be conducted in a way that avoids adverse effects on the environment and:

- a. does not occur in any unmodified area;
- b. does not occur in an area of environmental and cultural significance to Ngāti Rangi; and
- c. has no impact on native fish, their habitat, migration or spawning.

Subdivision and development

2.2.1 All subdivision and development requires adequate consultation with Ngāti Rangī.

2.2.2 Subdivision or development will not put at risk culturally significant areas, or native flora and fauna.

2.2.3 All new subdivision will ensure that an Accidental Discovery Protocol is adhered to. This is to ensure that the potential unearthing of archaeological material is protected. The conditions in this protocol must include the following:

- a. Ngāti Rangī be contacted immediately;
- b. work will cease until permission is given by Ngāti Rangī; and
- c. an archaeological assessment will be undertaken by an archaeologist approved by Ngāti Rangī.

2.2.4 Town planning within our region must ensure that new subdivisions or development include the following:

- a. <10% impervious surface across the properties and supporting infrastructure;
- b. storm water treatment facilities, eg treatment wetlands;
- c. no new piping of streams, and daylighting of existing piped streams;
- d. fish passage on any new culverts or in-stream structures;
- e. adequate community greenspace/openspace;
- f. adequate provision of pedestrian and cycle routes;
- g. inclusion of electric vehicle charging stations, if new fuel stations are included as part of the development;
- h. roading design to promote community connectivity, eg few to nil cul-de-sacs;

2.2.5 Future housing development projects will promote sustainable living and be in line with but not limited to the following attributes:

- a. be self-sufficient;
- b. be built with sustainable materials;

- c. have low to nil environmental impact;
- d. generate own power;
- e. have water storage facilities;
- f. have water recycling; and/or
- g. have composting toilets where this is beneficial. Where possible, renovations will also follow these principles.

Roadworks and earthworks

2.3.1 Roadworks and earthworks will utilise appropriate mitigation measures to ensure:

1. no sediment enters adjacent waterways; and
2. no air-borne sediment enters waterways

2.3.2 The Regional and District Councils will ensure that any new earthworks undertaken within the Ngāti Rangī iwi boundary have a condition addressing an accidental discovery protocol for the potential unearthing of any archaeological material. This must contain the following conditions:

1. Ngāti Rangī be contacted immediately;
2. work will cease until permission is given by Ngāti Rangī; and
3. an archaeological assessment will be undertaken by an archaeologist approved by Ngāti Rangī.

2.3.3 Protocols are in place to ensure that the sourcing, transportation and stockpiling of aggregate is conducted in a controlled manner to eliminate weed dispersal within and to our rohe.

2.3.4 All vehicles will be fully cleaned in accordance with biosecurity protocols between sites and catchments.

2.3.5 No vegetation clearance will occur without consultation with Ngāti Rangī.

2.3.6 Any roadworks and earthworks occurring on the Mountain Road will identify appropriate depository sites in consultation with the Department of Conservation and Ngāti Rangī Trust for all excess material as a result of slips or road maintenance. No naturally occurring material from the mountain is to be removed off the mountain under any circumstance without consultation directly with Ngāti Rangī.

Soil contamination

2.4.1 The use of chemicals that leave long-lasting residues in soil is not agreed to by Ngāti Rangi. Nor is the dumping of such chemicals.

2.4.2 Ngāti Rangi will develop positive relationships with the agricultural community with regard to the use and storage of fertilisers, pesticides and other chemicals to reduce the likelihood of soil contamination.

2.4.3 Adequate measures are undertaken by industry and regulators to eliminate current and avoid future soil contamination through leaching or deliberate application of chemicals.

2.4.4 Relevant authorities work with Ngāti Rangi to compile a register of contaminated sites in our rohe.

2.4.5 Contaminated soils will be cleaned and, where possible, kept within our Ngāti Rangi region.

Land use

2.5.1 Ngāti Rangi are in support of organic farming and organic agriculture in our region.

2.5.2 Land within our region should be used according to its Land Use Classification and within its natural capabilities. Land currently used beyond its capabilities should be converted over time to more appropriate uses.

2.5.3 Where a change or intensification of land use is proposed, land users shall undertake nutrient benchmarking and implement an approved nutrient management plan for that property.

Erosion and sedimentation

2.6.1 Areas at risk from erosion should be identified and planted with appropriate species to avoid damage to waterways, people, property and productivity.

Waste

2.7.1 Ngāti Rangi supports local and national zero waste initiatives that reduce the waste build up in rubbish tips within our region and country. This may include:

- a. encouraging food production companies to use recyclable packaging for their products;
- b. encouraging retailers to offer bulk buying or to allow customers to bring their own containers;
- c. banning plastic bags in the Ngāti Rangi rohe; and

d. campaigning to reduce packaging sold in our region.

Ngā Ture – Rules

Mining and quarrying

2.1.1.1 No prospecting, exploration, or mining of any minerals, metals and/or fossil fuels shall take place in the Ngāti Rangī region.

2.1.1.2 No gravel extraction shall be undertaken in a river/stream bed or within the 10 year flood zone.

2.1.1.3 Any gravel extraction undertaken will be conducted in a way that avoids adverse effects on the environment and:

- a. will not occur in any unmodified area;
- b. will not occur in an area of environmental and cultural significance to Ngāti Rangī; and
- c. must have no impact on native fish, their habitat, migration or spawning.

Subdivision

2.2.1.1 Any subdivision or development must be undertaken in accordance with the policies listed above and must:

- d. Involve adequate consultation with and secure the approval of Ngāti Rangī
- e. Not involve risk to culturally significant areas or native flora and fauna
- f. Include an Accidental Discovery Protocol
- g. Apply socially and ecologically sound town planning practices
- h. Utilise sustainable materials and practices.

Roadworks and earthworks

2.3.1.1 Roadworks and earthworks will utilise appropriate mitigation measures to ensure no sediment enters adjacent waterways.

2.3.1.2 All road and earthworks will contain an Accidental Discovery Protocol.

2.3.1.3 Biosecurity protocols will be followed for both aggregate and machinery to prevent weed invasion and dispersal.

2.3.1.4 Appropriate consultation will be undertaken.

2.3.1.5 No naturally occurring material from the mountain is to be removed off the mountain under any circumstance without consultation directly with Ngāti Rangi.

Soil contamination

2.4.1.1 Consenting authorities will not grant consents for activities that involve a risk of contaminants entering soil.

Land use

2.5.1.1 Resource consent will not be granted by local authorities where it allows land to be used beyond its Land Use Capability classification.

2.5.1.2 Resource consent will not be granted by local authorities for intensification of land use unless that consent includes nutrient benchmarking and effective nutrient management mechanisms.

Erosion and sedimentation

2.6.1.1 Consenting authorities will include conditions to appropriately manage erosion-prone areas when granting consents.

Waste

2.7.1.1 Waste creation and disposal will be considered by consenting bodies as part of resource consent application assessments, and conditions to avoid waste build-up will be included in any consents granted.

Ngā Kaupapa Matua - Assessment of Effects

As stated in the Soil contamination policies that Ngāti Rangi have:

2.4.1 The use of chemicals that leave long-lasting residues in soil is not agreed to by Ngāti Rangi. Nor is the dumping of such chemicals.

It was identified by Windsor (2019) in the report *Detailed Site Investigation and Remediation Action Plan*, that there were several locations on the proposed site that had contaminated soil results after being tested. One sample reported arsenic at 170 mg/kg, above the soil guideline

value for the Commercial/Industrial Outdoor Worker land use scenario. The following stage two sampling identified arsenic contamination in the yards near an old shearing shed.

Ngāti Rangī's policies continue to state that:

2.4.3 Adequate measures are undertaken by industry and regulators to eliminate current and avoid future soil contamination through leaching or deliberate application of chemicals.

2.4.4 Relevant authorities work with Ngāti Rangī to compile a register of contaminated sites in our rohe.

2.4.5 Contaminated soils will be cleaned and, where possible, kept within our Ngāti Rangī region.

Further to Windsor's (2019) report, upon the positive testing of soil contamination it was recommended that the Areas of Interest be marked at this time (or as appropriate). These sites were then registered with council and a remediation plan was set in place to deal with the contaminated soil and the site. The remediation plan undertaken without consulting Ngāti Rangī involved the capping over of contaminated soil sites. Ngāti Rangī do not view this as appropriate remedial action nor conducive to the relationship held between Ngāti Rangī and the whenua as stipulated in the policies of Ngāti Rangī. For these and any future marked areas of interest a more suitable plan for remediation or removal from site needs to be developed in consultation with Ngāti Rangī. This is of high significance to the Hapū and the mauri of the soil.

Te Kereru Associates visited the proposed Horticultural Hub site and noted the vicinity of the neighbouring properties. On further inspection, these neighbouring properties were owned by Ngāti Rangī Hapū members. These Ngāti Rangī Hapū members attended the consultation workshops and wānanga that Te Kereru Associates held at various dates in 2019 and 2020. It was then brought to the attention of Te Kereru Associates that the hapū members had not been notified of the proposed site and proposed activities which would have significant effects to their mana, mauri, land, household, whānau and their business. These hapū members have a business that they run out of their home which is the neighbouring property to the proposed site. Their livelihoods will be affected by the proposed site and the aesthetic value of their house will be diminished. The Hapū members feel that the situation has impacted the wellbeing and mauri of their whānau and whenua. Throughout the consultation workshops Te Kereru Associates encountered other neighbouring properties and whānau that had been affected by the proposed site and the proposed activities.

A small hard rock quarry was also sited on the proposed site which is not in use. The quarry is not in use at the moment. If there is any removal of rock, boulders, rock material, Ngāti Rangī would require consultation.

The proposed site is in the vicinity of some significant and important sites for Ngāti Rangī. Ngāti Rangī have wahi tapu and urupa in the vicinity. Extreme measures would need to be put in place

given the proximity of these sites to the proposed site. Refer to figure 4 of the maps in regards to the NZ Archaeological Association's recorded archaeology sites in the vicinity of the proposed site. The sites that are of close proximity are recorded pa sites, however there are also recorded urupa in this area that were once connected as the same Maori land block(refer to figure 2 and Figure 3). Given the amount of excavation that is required on the proposed site processes would need to be put in place to ensure that an Accidental Discovery Protocol is adhered to. This is to ensure that the potential unearthing of archaeological material is protected. The conditions in this protocol must include the following:

- a. Ngāti Rangī be contacted immediately;
- b. work will cease until permission is given by Ngāti Rangī; and
- c. an archaeological assessment will be undertaken by an archaeologist approved by Ngāti Rangī.

ensure that an Accidental Discovery Protocol is adhered to. This is to ensure that the potential unearthing of archaeological material is protected. The conditions in this protocol must include the following:

- a. Ngāti Rangī be contacted immediately;
- b. work will cease until permission is given by Ngāti Rangī; and
- c. an archaeological assessment will be undertaken by an archaeologist approved by Ngāti Rangī.

Te pou tuatoru -Tanemahuta

Ngāti Rangī's history has been centred in the realm of Tāne, as we are people of the ngahere. The protection of native flora and fauna is paramount to Ngāti Rangī, but so too is the protection of our customary needs. The balance between this give-and-take relationship needs to be restored to enable the protection of our taonga as well as ensuring our cultural practices are not jeopardised.

Ngā Take – Issues

3.1 Forestry

Forestry itself provides numerous benefits for the environment in terms of reducing the likelihood of flooding, soil erosion, landslides, nutrient losses, and also improved water quality. Despite this, the clear-fell harvesting and replanting phase increases the likelihood of impacts such as flooding, soil erosion, and landslides. This can impact our waterways, soil productivity, and native flora and fauna.

3.2 Native flora and fauna

Whilst the Ngāti Rangī area has extensive native bush patches, pasture and farmlands dominate the region. A number of taonga species have disappeared from the Ngāti Rangī tribal area due to the removal of native bush, pest invasions, and modification of the landscape and freshwater systems.

3.3 Customary use

Administrative barriers and policies limit and restrain Ngāti Rangī in our continued use of native plants and animals for customary purposes.

3.4 Tourism

Tourism has the potential to exploit and take advantage of Ngāti Rangī wāhi tapu and special places. Environmental and cultural impacts can include accumulation of waste, misuse, and a general lack of understanding regarding the importance of an area.

3.5 Genetic engineering

The potential for negative and unforeseen outcomes resulting from the introduction of genetically engineered plants, animals, and organisms is an issue for Ngāti Rangī.

3.6 Pest control

Ngāti Rangī is concerned with the threat posed to native flora and fauna populations from invasive species. Our taonga species are continually at risk not only from invasive species predation but also the displacement of plants and animals by introduced species

Ngā Whāinga – Objectives

Forestry practices actively protect rivers, streams and wetlands during harvesting and replanting periods. Populations of native flora and fauna throughout Ngāti Rangī rohe increase. Native flora and fauna is abundant and available for customary purposes at the discretion of Ngāti Rangī. Tourism is conducted in a way that is consistent with Ngāti Rangī values and principles. Ngāti Rangī as an iwi, our natural world, and the region will remain G.E. free. Pest control is conducted in a way that is consistent with Ngāti Rangī values and principles.

Kaupapa Tohu – Policies

Forestry

3.1.1 All rivers, streams, and wetland margins within forestry plantations are planted with appropriate native plants (e.g. flaxes and grasses), with a 10 m or greater buffer. (More may be needed in steeper areas.)

3.1.2 Forestry roads are managed to prevent sediment entering water bodies.

3.1.3 Ngāti Rangī support sustainable forestry and selective harvesting of planted forests. We do not support clear felling. We support the inclusion of native species in silviculture.

3.1.4 Ngāti Rangī are in support of forestry methods that reduce negative impacts during harvest and replanting.

Native flora and fauna

3.2.1 Ngāti Rangī considers there is a need for the development of a project that will enable the protection, access and storage of the seeds of local species.

3.2.2 Locally extirpated species will be reintroduced into Ngāti Rangī tribal lands.

3.2.3 Ngāti Rangī seek to establish a managed native forest, in line with sustainable practices and tikanga tuku iho, to provide wood for carving and other customary activities in the future.

3.2.4 Naturally occurring native forests should be left to stand, unless there are exceptional circumstances and approval is given by Ngāti Rangī.

3.2.5 When any native bush clearance is undertaken by the Department of Conservation, or native bird carcasses are recovered, Ngāti Rangi will have full access to these for cultural purposes.

3.2.6 Within the limits of what the forest is sustainably able to give, Ngāti Rangi uri and descendants have uninhibited access to traditional plant and animal species for cultural purposes. This could include, but is not limited to the following:

- a. native tree felling for cultural purposes;
- b. unearthing of any significant native timber for cultural purposes;
- c. sourcing material for weaving, structures and cultural purposes;
- d. access to plants as wai rākau and for the purposes of rongoā; and
- e. access to plants and animals for cultural purposes.

Pest control

3.3.1 Pest control (especially involving pigs and deer) within the Ngāti Rangi rohe should be undertaken in conjunction with iwi to ensure that food sources are not heavily impacted on.

Genetic engineering

3.4.1 The Ngāti Rangi region will remain free of G.E. This includes but is not limited to:

- a. animal and plant gene manipulation;
- b. any G.E. field trials; and
- c. any food containing anything from a G.E. origin.

Tourism

3.5.1 Current and potential new tourism ventures operations will comply with Ngāti Rangi guiding principles and values relating to the protection of our environment.

3.5.2 Tourism operators within the Ngāti Rangi rohe have at least 50% of their workforce sourced locally.

3.5.3 Ngāti Rangi cultural kōrero is delivered by Ngāti Rangi uri or Ngāti Rangi approved guides only.

Ngā Ture – Rules

Forestry

3.1.1.1 Resource consents for forestry must include conditions for sediment control, planted riparian buffers and soil loss prevention that align with Ngāti Rangī policies and the best known practice at the time, internationally.

Pest control

3.3.1.1 All pest control operations will involve Ngāti Rangī, and will be managed in a way so as to facilitate food recovery by uri and locals.

Genetic engineering

3.4.1.1 Genetic engineering is prohibited within the Ngāti Rangī rohe, including any animal or plant gene manipulation. This will include any introduction of G.E. species.

Tourism

3.5.1.1 Ngāti Rangī kōrero will only be delivered by Ngāti Rangī uri, or other guides approved by iwi if appropriate.

Ngā Kaupapa Matua - Assessment of Effects

As discussed in the report prepared Bramley (2019) riparian planting is present on the proposed site however on site inspection by Te Kereru Associates it was apparent that although fencing had excluded cattle other species however were present and observed. Water testing and cultural health index monitoring was carried out by Te Kereru Associates at the various water sites. The water samples were taken back to the lab to be tested to get baseline data for the proposed site. Native trees are present and extensive at most of the riparian areas, which have cultural significance for Ngāti Rangī as explained in the policies above.

Most of the riparian areas on the property have been fenced to exclude cattle. Streamside vegetation includes rank pasture grasses (particularly kikuyu, *Cenchrus clandestinus*) and common shrubs such as pate (*Schefflera digitata*), karamu (*Coprosma robusta*), mahoe (*Melicactus ramiflorus*) and tree ferns such as mamaku (*Cyathea medullaris*) and wheki (*Dicksonia squarrosa*) as well as small trees such as totara (*Podocarpus totara*) and kahikatea. The most common weeds present in riparian areas are gorse (*Ulex europaeus*) and woolly nightshade (*Solanum mauritianum*), but pampas (*Cortaderia seloana*) and small-leaved privet (*Ligustrum sinense*) are also present at some locations. (Bramley, 2019, p. 9)

Bramley documents the Native and introduced bird species that are present on the proposed site refer to Appendix A in the Bramley Report (2019). These Native bird species also hold cultural significance to Ngāti Rangi, with specific mention to one of the most important taonga species of Ngāti Rangi, the kereru.

As well as providing habitat for terrestrial flora and fauna such as birds and lizards, riparian vegetation also acts to buffer aquatic habitats from adjoining land uses and improve water and aquatic habitat quality by reducing nutrient, sediment and debris runoff, slowing water movement, moderating water flow, reducing water temperature, providing instream feeding, resting and spawning habitat (in the form of roots, fallen branches and leaves) and stabilising stream banks. The riparian vegetation at the Site varies in quality and extent but will be fulfilling all those ecological functions to varying degrees according to location.(Bramley, 2019, p. 9).

Te pou tuawha - Tangaroa-i-te-wai-māori

Ngāti Rangī as tāngata whenua, have customary rights and responsibilities associated with freshwater resources in the region, as expressed through the exercise of manawhenua, rangatiratanga, kaitiakitanga and manaakitanga, and as guaranteed by Te Tiriti o Waitangi. Ensuring that freshwater management recognises and provides for these rights and interests is critical to enabling tāngata whenua to protect water as a taonga for future generations. The RMA recognises the relationship of Māori to freshwater as a matter of national importance.

Our rivers, groundwater, lakes, and wetlands have provided our people with food, spiritual nourishment, cleansing, modes of transport, and communication as well as medicinal, building, and weaving materials. Water is a sensitive and complex taonga that Ngāti Rangī has a duty to respect, protect, and restore. Our mana whakahaere is balanced by the inherent responsibilities that come as guardians of our water bodies. This places the expectation that each generation leaves our water bodies in a healthy and balanced state for future generations.

Ngā Take – Issues

4.1 Water quality

Water quality is impacted by point source discharges and leaching and run-off from urban and rural sources. Parameters affecting water quality include phosphorus and nitrogen (and the resulting increase in algal growth), sediment, effluent, heavy metals, bacteria, organic inputs and hydrocarbons. Abstractions also impact on water quality through loss of dilution factors. Water quality is linked to the mauri of our rivers and streams.

4.2 Point and nonpoint source discharges

Protection of the mauri and the ecological values of individual waterways is a priority for Ngāti Rangī. Discharges can impact on the ability of the waterway to undertake its role in supporting the life contained within and around it. In the Ngāti Rangī rohe, discharges include agricultural and horticultural run-off, vegetable washing water, storm water, industrial discharges, hydro-generation discharges, and effluent discharges. Some of these are treated; others are not. Coupled with specific treatment systems to remove contaminants, passing wastewater through Papatūānuku can be a culturally acceptable means to cleanse discharges.

4.3 Storm water

Storm water carries a large array of contaminants. These include fertilisers, detergents, heavy metals, bacteria, hydrocarbons and sediment. Contaminants originate from roads, carparks, industrial sites and domestic properties.

In most cases, storm water is not treated before it enters water bodies. Furthermore, during high rain events current storm water systems transport large volumes of water quickly to streams and rivers, causing rapid increases in water levels. This has negative impacts on native fish species, plants and bank stability. When not separated from sewage lines, storm water also impacts on the ability of treatment plants to process sewage.

4.4 Riparian margin management

Many places in the region have little or no riparian planting, leaving them unmanaged and susceptible to increased temperatures, erosion, sedimentation and at a higher risk from run-off of nutrients, sediment and other contaminants into waterways.

4.5 Water takes

Water takes are an issue for Ngāti Rangī. Water is abstracted in our region for hydroelectricity generation, irrigation, vegetable washing, snow-making, and industrial use. Ngāti Rangī are concerned with the impact water takes have on aquatic species, the hydrology and ecology of local water bodies, water quality, and the mauri of our waters. There is also concern over our region's aquifers and the impacts resulting from abstraction. Identifying acceptable abstraction limits and low flow limits for our waterways is essential to maintaining their ecological and cultural health.

4.6 Diversions and water mixing

The diversion of Ngāti Rangī waterways for power generation is an issue the iwi has been dealing with for over three decades. These diversions involve substantial cultural and ecological impacts, including the severing of spiritual connections, the unnatural mixing of the mauri of different water bodies, loss of natural flow variability, and the dewatering of multiple streams. The diversions remain a cause of grief amongst Ngāti Rangī people.

4.7 Culverts, weirs and dams

Badly designed or managed weirs and culverts pose a problem for the movement of native fish species throughout a catchment by blocking upstream and downstream passage.

4.8 Wetland drainage

As with much of New Zealand, many historic Ngāti Rangī wetlands have been drained, taking with them the eels and kōura that lived there, the plant resources for weaving and housing, and the flood and drought protection these places provided.

4.9 River and drain clearance

Digging in rivers, streams and ‘drains’ on farmland and in urban settings destroys eel, fish, and kōura habitats. Often these species are dug out with the sediment and die on the banks or are crushed by the digging equipment. Any kākahi present are also at risk of being dewatered. Better sediment management combined with targeted planting along the banks of these areas would alleviate the need for digging in ‘drains’ and streams in the first place.

Ngā Whāinga – Objectives

Water flowing out of our region will be clean and healthy, to ensure Ngāti Rangī’s obligations to our downstream whānau are met. There are no discharges (either point source or non- point source) that impact on water quality. Land is utilised throughout the region as an added measure of purification for wastewater prior to any discharge into waterways. Storm water is captured and treated, and where possible utilised as a resource. Where released to streams, it is released in a manner aligned with natural flow regimes. All water bodies and wetlands in the Ngāti Rangī region have planted riparian margins. Water takes are managed in a way that allows our rivers and streams to be healthy and flourishing. Waters flow in their natural catchments. Culverts, weirs, and dams allow for native fish migration but block trout access to uninvaded areas. All water bodies and wetlands are free from digging.

Kaupapa Tohu – Policies

Water quality

4.1.1 Water quality in the Ngāti Rangī rohe must be swimmable and fishable at all sites, at all times, unless it is naturally unswimmable.

4.1.2 Ngāti Rangī aims to be involved in all water quality monitoring in our region.

Point and nonpoint source discharges

4.2.1 Ngāti Rangī does not support discharges to water.

4.2.2 However, some discharges may be considered in

exceptional circumstances. Any discharges agreed to by Ngāti Rangī will:

- a. pass through land or a wetland prior to release to water; and
- b. be high quality, free from contaminants, not contribute to cumulative impacts nor have any effect on the water body and its mauri.

4.2.3 There should be no impact on the mauri and ecology resulting from point or non point discharges to water. Neither should there be any stress to aquatic species through algal blooms, temperature increases, or contaminants contributed by discharges.

4.2.4 Ngāti Rangī supports buffer zones around horticultural crops. We support soil retention practices, such as aligning crop rows to land contours to reduce runoff.

4.2.5 Ngāti Rangī supports the full exclusion of stock from all water bodies in our region. Ngāti Rangī will seek opportunities to support landowners in practical ways as they work to exclude stock from their water bodies. Ngāti Rangī will support moves by local and national authorities to exclude stock access to water bodies.

Storm water

4.3.1 The management of storm water in the region needs to be such that:

- a. rainwater is collected and utilised (e.g. for irrigation of city and town gardens, use for private gardens, toilet flushing and clothes washing etc.)
- b. storm water is able to be retained at source so that the rate of discharge is attenuated
- c. storm water treatment areas are created (e.g. constructed wetlands in urban streets, pooling areas in parks and on farms, etc.)
- d. any storm water discharged to water bodies is of a high quality and not contaminated with sediment, heavy metals, bacteria, or other pollutants.

4.3.2 Ngāti Rangī supports the use of plants, gravel, etc in urban storm water systems to aid in the purification of water prior to its reuse or discharge.

4.3.3 Local government policies and rules should facilitate the adoption of low impact systems in new buildings and renovation, including:

- a. building and decorating materials (e.g. paint) that is environmentally friendly and/or endorsed by 'Environmental Choice NZ';

- b. tanks to capture rainwater from roofs for domestic purposes other than for drinking water; and
- c. green roofs.

Riparian margin management

4.4.1 Ngāti Rangī considers that the margins of all water bodies should be planted to:

- a. Prevent runoff
- b. Provide shading,
- c. Provide a terrestrial food supply;
- d. Provide terrestrial corridors for birds and lizards; e. Provide rongoā; and
- f. Provide amenity values.

Water takes

4.5.1 Abstractions that impact the ecology, hydrology or mauri of the waterbody are not supported by Ngāti Rangī.

4.5.2 Ngāti Rangī, in conjunction with the Regional Council, will conduct an audit to identify takes that occur within our rohe.

4.5.3 Ngāti Rangī will work with Northland Regional Council at the common catchment review period to ensure the National Policy Statement for Freshwater Management policies and objectives on allocation are fully implemented, in particular, that over-allocation is eliminated.

4.5.4 Ngāti Rangī will work with Northland Regional Council at the common catchment review period to ensure abstractions are ecologically and culturally sound, including an abstraction rate of not greater than 30% of MALF and low flow limits that retain 100% of critical habitat for streams in the Ngāti Rangī rohe.

Diversions

4.6.1 No new unnatural mixing of waters from different catchments will take place within the Ngāti Rangī region.

Culverts, weirs and dams

4.7.1 All culverts and other structures are modified or designed to ensure that no disruption to the migratory path of native fish species occurs. Regular maintenance is undertaken to ensure continued passage.

4.7.2 Sediment issues on existing structures are managed to prevent sediment starvation, bed armouring and/or oversupply of fine material.

4.7.3 No new dams will be constructed in the beds of Ngāti Rangi waterbodies.

4.7.4 No new structures that affect natural flow variability will be built in the Ngāti Rangi rohe.

Wetland drainage

4.8.1 All wetlands within the Ngāti Rangi region will be protected from drainage and enhanced where possible.

River and drain clearance

4.9.1 No in-stream digging of any river, stream, or 'drain' within our region is to be undertaken.

4.9.2 Sedimentation and flooding issues will be dealt with using soft engineering methods, eg planting and water retention.

Ngā Ture – Rules

Water quality

4.1.1.1 No resource consent shall be granted that renders a water body unswimmable or unfishable, including resource consents that contribute to cumulative effects on swimming quality or fishability, or takes that impact on water quality and habitat.

Point and nonpoint source discharges

4.2.1.1 In general, discharge consents to water should not be granted.

4.2.2.1 Any discharge consents that are granted must:

- a) Not impact upon the mauri of the waterbody;
- b) Have no impact on the receiving waterbody (as opposed to less than minor effects);

- c) Not contribute to cumulative effects; and
- d) Pass through Papatūānuku.

Storm water

4.3.1.1 Resource consents for storm water will ensure that stormwater:

- a) Is captured, treated and, where possible, utilised;
- b) Discharges are high in water quality; and
- c) Releases mimic natural flow regimes.

Riparian margin management

4.4.1.1 Resource consents for activities involving water (including but not limited to takes and discharges for industry, forestry, horticulture, and agriculture) will require sufficient riparian planting, stock exclusion, and other run-off control or discharge treatment mechanisms as appropriate.

Water takes

4.5.4.1 No abstraction of greater than 30% of Mean Annual Low Flow (MALF) shall be granted for any waterway in the Ngāti Rangi rohe, unless agreed as part of a Ngāti Rangi Relationship Agreement for exceptional reasons.

4.5.4.2 No abstraction resulting in a low flow of less than 100% of MALF or 100% of critical habitat (whichever is naturally lower) shall be granted for any waterway in the Ngāti Rangi rohe, unless agreed as part of a Ngāti Rangi Relationship Agreement for exceptional reasons.

Diversions

4.6.1.1 No new resource consents to divert water between catchments will be granted in the Ngāti Rangi rohe.

Culverts, weirs and dams

4.7.1.1 No consent will be granted that allows the creation of a barrier to native fish passage, unless approved by Ngāti Rangi for conservation or cultural reasons.

4.7.1.2 No consent will be granted for any in-stream structure that creates sediment issues, including sediment starvation or over-supply of fine material.

4.7.1.3 No new dams in the beds of natural lakes or rivers will be consented in the Ngāti Rangī rohe.

4.7.1.4 No resource consent will be granted that affects the natural flow variability of any waterway in the Ngāti Rangī rohe unless agreed as part of a Ngāti Rangī Relationship Agreement.

Wetland drainage

4.8.1.1 No wetland drainage will be consented in the Ngāti Rangī rohe, for any part or whole of any wetland.

River and 'drain' clearance

4.9.1.1 No new resource consent shall be granted for digging in any channel or canal.

4.2.1.1 'Soft engineering' solutions will be given preference by decision-makers.

Ngā Kaupapa Matua - Assessment of Effects

The Proposed site has varying degrees of riparian planting with both introduced and native species observed. The wetlands that are present on site range from small scale to larger pockets with species diversity apparent throughout. The potential for these areas to be regenerated are of utmost importance to Ngāti Rangī. Ngāti Rangī taonga species were observed in these areas. The change in land use for this site and some of the wetlands set aside to rejuvenate and recover would be advantageous for these taonga species to thrive again. The working cattle farm has apparent negative impacts for the ecosystem and waterways that are present on the proposed site. Wetland species such as kuta (*Eleocharis sphacelata*), raupo (*Typha orientalis*) and flax (*Phormium tenax*), were present in the western area. These wetland species are some of the most revered traditional weaving for Ngāti Rangī and Māori. Kuta only grows in certain conditions and at certain times of the year. Ngāti Rangī rohe has been well-renowned for this cultural harvest of a taonga wetland species. Ngāti Rangī would open the opportunity to do cultural monitoring of this wetland species.

In 2019 freshwater fish surveys were completed during the research process conducted by NZ Environmental (McGlynn & Windsor). Native freshwater fish species were caught in the fyke nets, the freshwater crayfish/koura/kewai in the Waima River and Kopenui stream. All these species are natural indicators for a flourishing and prospering ecosystem with prolific species abundance. Ngāti Rangī kaumatua all reminisced and have many memories in the harvesting of tuna and other species from this particular site. When interviewed by Te Kereru Associates they have fond childhood and adult memories of visiting the site and harvesting various taonga species.

McGlynn & Windsor (2019) comment on the likelihood of these particular species presence in these waterways:

Longfin eel and koura/keiwa are classified as being “At Risk [Declining]” (New Zealand Threat Classification Series). It is possible that banded kokopu (*Galaxias fasciatus*) may also be present both in the Kopenui Stream (Fish Sites 1 & 4) and the forest swamp (Fish Site 5) although none were caught during this survey.

Northland mudfish (*Neochanna heleioides*) are present in several wetlands local to Ngawha, surviving in peat wetlands similar in vegetative composition to the one surveyed as Fish Site 5 wetland remnant. Habitat and pH levels in this wetland appeared favourable for this species. (McGlynn & Windsor, 2019, p.9)

Due to the threatened status of these taonga species, Ngāti Rangī would view these sites as being important cultural and harvesting sites, therefore these would be given preference and priority in restoring these habitats to their former status of abundance.

There are two freshwater springs on the upper slopes that were cited by Te Kereru Associates. Water take from these freshwater springs for the proposed site and activities would not be considered by Ngāti Rangī to be culturally acceptable. The mauri of the water would have to be monitored at these sites by Ngāti Rangī. A small hard rock quarry was also sited on the proposed site which is not in use. The quarry is not in use at the moment. If there is any removal of rock, boulders, rock material, Ngāti Rangī would require consultation.

Te pou tuarima - Rongomātāne

As atua of cultivated food, Rongomātāne plays a fundamental role in our region. The fertility of our soils both from Papatūānuku allows the region to be a produce leader. Ngāti Rangī wish to maintain the fertility of our soils as part of the gifts from Papatūānuku.

Because Rongomātāne only covers cultivated food, the main issues for this section are connected with intensive horticultural land use activities, such as market gardens, and impacts on soil structure. Issues around water quality and land use have been covered in Tangaroa-i-te-wai-māori and Papatūānuku.

Ngā Take – Issues

The Ngāti Rangī rohe, with its rich volcanic soils, is a market gardening stronghold. However, market gardens can place pressure on local water bodies through abstractions and discharges, and can degrade soil structure and reduce its quality and quantity. The impacts of herbicides, pesticides and fertilisers are a matter of concern for Ngāti Rangī.

Ngā Whāinga – Objectives

Organic horticulture becomes the leading industry within the Ngāti Rangī rohe. Horticulture is conducted in a sustainable, zero- impact manner. Chemical use on the soils in our region decreases.

Kaupapa Tohu – Policies

Market gardens

5.1.1 Ngāti Rangī supports movement towards local, commercially-grown, organic crops.

5.1.2 Market gardens utilise best practice methods in all aspects of the industry from planting through to washing.

5.1.3 Vegetable washing does not result in discharges of nutrients, agrichemicals or sediment to water bodies.

Ngā Ture – Rules

Agrichemicals

Relevant authorities will provide feedback to Ngāti Rangi every three years on the use of agrichemicals in the rohe.

Discharges

Consenting authorities will not grant consents for horticultural activities (including vegetable washing) where that consent allows discharges (diffuse or otherwise) of nutrients, agrichemicals, or sediment to local water bodies (including groundwater).

Ngā Kaupapa Matua - Assessment of Effect

As stipulated in the previous comments, Ngāti Rangi rohe, with its rich volcanic soils, is a market gardening stronghold. The soils on the proposed site are made up of *Whakapai clay loam* and *Whakapai friable clay* (Department of Lands and Survey, 1980). These soils are young basalt lava soils, part of the Kiripaka soil suite. These are very friable and break down to a very fine (powdery) granular structure. They are otherwise known as brown loams and are classic volcanic soils suitable for both orchards and cropping. All young basalt volcanic soils are generally free draining, requiring few drainage structure improvements. Refer to Figures 6 and 7 on page in regards to the soil of the proposed site. In this particular proposal, market gardens/hothouses can put pressure on nearby water bodies through abstractions and releases, these can debase soil structure and diminish its quality and quantity. The impacts of herbicides, pesticides and fertilisers are a matter of concern for Ngāti Rangi. In respect to the Horticultural Hub in particular vegetable washing does not result in releases of nutrients, agrichemicals or sediment to water bodies.

Te pou tuaono - Rūaumoko

This section relates to the geothermal resource. Geothermal resources are highly regarded taonga (treasures) and of considerable importance to Ngāti Rangī Hapū. Traditionally, puia (geyser pools), ngawha (boiling pools) and waiariki (warm pools) were utilised in a variety of ways including hot water for cooking, preserving, ceremonial use and bathing.

Taoko Wihongi provides a description below of the origins of the Ngawha Waiariki (Ngawha geothermal reservoir and springs), as he relates his evidence at a Waitangi Tribunal hearing in 1993:

Two maidens left Hawaiki for a new land; they came on a white bird [named] Mokihi. Their flight to Aotearoa was so swift it took them just one day to get here. They landed at Ngawha. They experienced the temperature here – a lot different, a lot cooler than their home. They feared they would not last the night so they performed a karakia to their Ariki in Hawaiki asking him to send them heat. And the Ariki immediately blew some heat from Hawaiki under the sea that bubbled up at Ngawha to keep them warm. They [also] had nothing to cook their kai with so prayed again to the Ariki who blew more heat sufficient to cook their food (as cited in Pita, 2014).

The significance of Kareariki to the people of Ngawha and Ngā Puhī as a whole, becomes all the more vivid when we look at tribal whakapapa, revealing that she was the wife of Uenuku, son of Rahiri, the eponymous ancestor of Ngā Puhī. Thus we can begin to gain some insights into the significant length of time that the people of Ngā Puhī have been associated with Ngawha Waiariki through tribal genealogy as articulated by Ronald Wihongi in his evidence to the Waitangi Tribunal, “Kareariki is the founder of the curative pools of Ngawha – now 15 generations to... myself” (as cited in Pita, 2014).

The geothermal taonga to tupuna(ancestors) and their connection to the people of today and the generations of tomorrow is alive and apparent. The connection of Ngawha springs and the Ngawha reservoir to one another; and, the mutual obligation between tangata whenua and Takauere, and the importance of supporting their taniwha in its role as kaitiaki of their waterways, including their taonga, Ngawha Waiariki.

The healing powers of geothermal waters were renowned and Ngāti Rangī Hapū often travelled to these areas for treatment at Ngawha. Minerals found within geothermal resources were also used for dyes, paints and preservatives for wood.

Ngāti Rangī relationships with the area and its geothermal resources are important. Ngāti Rangī also exercises kaitiakitanga to ensure the mauri of the area and its geothermal resource is sustained for future generations.

Ngā Take – Issues

6.1 Management of natural events

It is Ngāti Rangī's view that Rūaumoko's processes are natural, and should be allowed to occur. Rūaumoko was, after all, in existence before humans. We consider that 'natural hazard management' should not so much be a matter of constraining natural processes in order to protect humans, but of removing ourselves and our buildings from areas of risk in order to let these processes occur as intended. In some ways, the designation of tapu areas is a recognition that those areas are not necessarily safe and should probably be avoided.

6.2 Tourism and recreation

The high volume of visitors to the area brings rubbish, human waste, roadworks and air pollution to our ancestral maunga, ngawha and puia. The protection of Ngawha, significant sites and cultural heritage is a priority for Ngāti Rangī.

Ngā Whāinga – Objectives

The natural processes of the volcanoes and ngawha in our region are not restricted by human intervention. The use of Ngawha is managed in a way that adheres to the values and guiding principles of Ngāti Rangī. Rubbish and waste management (including human waste) on Ngawha is exemplary and leaves ngawha and puia in a pristine state.

Kaupapa Tohu – Policies

Management of natural events

6.1.1 Maunga and ngawha will not be altered or tampered with in any way as part of any management strategy

6.1.2 No new buildings will be erected in known ngawha and geothermal paths.

6.1.3 Monitoring and management of natural events in connection with Rūaumoko will involve Ngāti Rangī.

Ngā Ture – Rules

Management of natural events

6.1.1.1 Ngawha will not undergo any physical works, or have any structure installed as part of any emergency management strategies, to divert or withhold the flow of a ngawha.

6.1.2.1 New consents will not be granted for buildings within known ngawha paths.

Ngā Kaupapa Matua - Assessment of Effects

The presence of geothermal activity on the proposed site was cited by Te Kereru Associates. Kaumatua who were interviewed at the Ngāti Rangi Wānanga and workshops remember as children and in their teens going to the springs on this side of the geothermal field. Te Kereru Associates could see small outcrops of steam and presence of sulphur both on the ground and in the air. As stated in the above policies and research it is apparent the relationship that Ngāti Rangi have to the Ngawha surrounding the area. Ngāti Rangi relationships with the area and its geothermal resources are important. Ngāti Rangi also exercises kaitiakitanga to ensure the mauri of the area and its geothermal resource is sustained for future generations. It is paramount that Ngawha will not be altered or tampered with in any way as part of the proposed site.

Recommendations

The following recommendations have been prepared to address and mitigate the cultural impacts identified in this report. It is recommended that Ngāti Rangī and FNHL work in conjunction with Northland Regional Council to see that these are implemented as a condition of any resource consent(s) for the Proposed Innovation and Enterprise Park and Horticultural Hub. These recommendations are considered the minimum mitigation that should be included in the consent conditions.

1. Archaeological protocols: That clear protocols are developed and implemented as part of the resource consent to ensure:

(a) Ngāti Rangī are consulted in advance on any areas FNHL wishes to undertake earthworks and or/drilling activities to ensure such works are not planned in the same location as known wāhi tapu;

(b) enable appropriate cultural rites to be performed ahead of planned works;

(c) provide for Ngāti Rangī to nominate Ngāti Rangī Kaitiaki of any earthworks or drilling activities

(d) in the event a new wāhi tapu or archaeological site is discovered or disturbed, that all works on the site shall cease and Council and Ngāti Rangī shall be notified immediately. Works shall not recommence until Council and the Ngāti Rangī are satisfied that it is appropriate to do so on cultural and archaeological grounds.

2. Disposal of wastewater or storm water would best be achieved with constructed solutions, rather than using natural ecosystems for water treatment. Disposal of treated water to local streams should be required to meet water quality standards so as to protect aquatic habitats. This disposal should also not disturb or change the mauri of the wai in the waterways and ecosystems. Cultural Monitoring of the waterways and ecosystems should be implemented onsite by Ngāti Rangī kaitiaki.

3. Having given regard to the policies and objectives in the Far North District Plan we consider that achieving resource consent to undertake activities in any of the wetlands or any of the three largest forest blocks (including the one which forms part of Kopenui Stream remnants). This would be difficult to support on Ngāti Rangī Cultural tikanga and kawa. On that basis those areas should be avoided. In relation to the smaller forest areas, removal or modification would need to be accompanied by mitigating actions sufficient to address the adverse effects on those habitats.

4. That a peer review committee including Ngāti Rangī representation be convened to provide cultural advice and support to FNHL throughout to mitigate any issues that will arise.

5. Notice of Works: That Ngāti Rangī be notified and informed a minimum of six months in advance of any new planned works that occur onsite.

6. Agreement: That FNHL enter into an agreement with Ngāti Rangī regarding the above matters and provides support to Ngāti Rangī for this purpose (Advisory costs and time).

7. In order to mitigate the adverse effects on the role of Ngāti Rangī as kaitiaki, Ngāti Rangī recommend conditions that:

(a) Recognise and actively protect the relationship Ngāti Rangī have with the whenua;

(b) Recognise the interconnectedness of the land and environments and provide for active protection of Ngāti Rangī cultural values within the activities associated with the whenua;

(c) Provide for Ngāti Rangī to exercise rangatiratanga and kaitiakitanga by ensuring Ngāti Rangī are afforded the opportunity to participate in the Proposed Ngawha Innovation and Enterprise Park and Horticultural Hub during all phases of the consent;

(d) Provide for Ngāti Rangī to express tikanga and mana over the Proposed Ngawha Innovation and Enterprise Park and Horticultural Hub by ensuring participation is inclusive of opportunities to be included in decision-making, monitoring and management of the whenua.

8. In order to mitigate the adverse Ngāti Rangī cultural impacts in respect of kaitiakitanga, mauri, mana, mātauranga and preservation for future generations, Mana Whenua recommend conditions that ensure:

(a) Culturally appropriate management and monitoring mechanisms are in place to allow Mana Whenua to monitor, maintain and enhance the mauri of the Proposed site (including the monitoring of cumulative cultural effects)

(b) Culturally appropriate management and monitoring mechanisms are in place to minimise the adverse effects on the mauri of Ngāti Rangī whenua and the areas of tapu and cultural practices within the Proposed Ngawha Innovation and Enterprise Park and Horticultural Hub. This includes, but is not limited to, water quality and visual amenity.

9. To mitigate adverse Ngāti Rangī cultural effects relating to ecology, Ngāti Rangī recommend conditions that provide:

(a) For the avoidance, to the greatest extent practicable, the disturbance of, or disposition on, the waterways in order to allow for the maintenance of the mauri of wai;

(b) Where the disturbance of the ecosystems is not avoidable, limiting the disturbance of contaminated land to the minimum extent required to reduce the potential for any disturbed contaminants to be discharged into the air, land or water;

(c) For the avoidance, to the greatest extent practicable, the cultural degradation of the environment, both tangible and intangible, in order to allow for the maintenance of the mauri of Proposed Ngawha Innovation and Enterprise Park and Horticultural Hub.

(d) That the implementation of appropriate measures to avoid adverse effect of freshwater species, particularly ecology and biota of the environment;

(e) That timeframes are set and appropriate measures are put in place to promote the recovery of the waterways;

(f) For the monitoring of water and sediment quality by Ngāti Rangī kaitiaki.

To mitigate the adverse Ngāti Rangī cultural effect in respect of access to the Proposed Ngawha Innovation and Enterprise Park and Horticultural Hub, Ngāti Rangī recommend conditions that:

(a) Provide continued access to Ngāti Rangī to their cultural lands, water and taonga before, during and after the consent, without being adversely affected by construction activities;

(b) Provide opportunity to Ngāti Rangī for access to their cultural lands, water and taonga.

To mitigate the adverse Ngāti Rangī cultural effects relating to Ngāti Rangī presence and values, Ngāti Rangī recommend implementing conditions or management plans that:

(a) Reaffirm Ngāti Rangī culture by providing opportunities to recognise and provide for both tangible and intangible reflection of cultural values as a key element of development and management, including, where appropriate:

(i) Ngāti Rangī to perform karakia and site blessings prior to works commencing;

(ii) Cultural induction of construction workers by Ngāti Rangī;

(iii) A direction of spoil reuse, rather than disposal being adopted, with methodology and if reuse is not possible, the generation of a document discussing why reuse was not possible;

(iv) Using traditional Ngāti Rangī names;

(v) Using indigenous plant species;

(vi) Using designs that reflect the cultural perspectives, ideas and materials of Ngāti Rangī;

- (vii) Ensuring appropriate protocols are followed throughout the lifetime of the Proposed Ngawha Innovation and Enterprise Park and Horticultural Hub;
- (viii) Implementation of accidental discovery protocols;
- (ix) Include Ngāti Rangi in the processing of manuhiri that visit;
- (x) Incorporate refuse/recycling facilities to cater to the increased manuhiri in the management plan/design; and
- (xi) Using Ngāti Rangi designed and inspired artwork.

Bibliography

- 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 no. 1402). Mauri Protection Agency.
- Bramley, G. (2019). *Assessment of ecological values of land owned by Grazing North Limited at Ngawha to inform a proposed land change*. (Report no. 2018 276). Kerikeri, NZ: NZ Environmental.
- Bromley, C. (2014). *Subsidence Review of Ngawha Geothermal Field*, GNS Science Consultancy Report 2014/195, dated July 2014.
- Bromley, C. & Burnell, J. (2014). *Subsidence Review of Ngawha Geothermal Field, Version 6*, GNS Science Consultancy Report 214/195, dated August 2014.
- Bromley, C., Burnell, J., Mroczek, E. and Simpson, M. (2014). *2014 Ngawha Conceptual Model*, GNS Science Consultancy Report 2014/181, dated July 2014.
- Burnell, J. and Weir, G. (2014). *2014 Ngawha Numerical Reservoir Model*; GNS Science Consultancy Report 2014/143 dated July 2014.
- Chetham J, Shortland T, Nuttall P & Newell A (2010). *Māori Cultural Environmental Monitoring Stocktake*. Whangārei, Repo Consultancy Ltd.
- Cook Costello. (2019). *Preliminary geotechnical report - 5435 State Highway 12, Kaikohe* (Report no. 14190). Whangarei, NZ: Cook Costello.
- Department of Lands and Survey. (1921). *Kaikohe Town District*. Wellington [N.Z.] : N.Z. Lands & Survey Retrieved from http://ndhadeliver.natlib.govt.nz/delivery/DeliveryManagerServlet?dps_pid=IE18258969
- Department of Lands and Survey. (1965). *Kaikohe drawn by Barbara Skelton*. [Wellington] N.Z. : Dept. of Lands and Survey Retrieved from http://ndhadeliver.natlib.govt.nz/delivery/DeliveryManagerServlet?dps_pid=IE20930852
- Department of Lands and Survey. (1971). *Kaikohe*. [Wellington] N.Z. : Dept. of Lands and Survey Retrieved from

http://ndhadeliver.natlib.govt.nz/delivery/DeliveryManagerServlet?dps_pid=IE17426894

Department of Lands and Survey. (1980). *NZMS 290 sheet P04/05, Whangaroa - Kaikohe*. (New Zealand Land Inventory). Whangarei District Libraries Heritage Collection Retrieved from <https://whangarei.recollect.co.nz/nodes/view/170>

Energy Surveys. (2012). *Subsidence leveling survey report, Ngawha Geothermal Field, March 2012*, Report to Top Energy and NZ Environmental

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

Hewitt, A E. (2010). *New Zealand Soil Classification*. 3rd ed. Lincoln, Canterbury, New Zealand, Manaaki Whenua Press.

Landcare Research NZ Ltd. (2019). *Soil map. S-map - New Zealand's national digital soil map*. 10.7931/L1WC7

Landcare Research NZ Ltd. (2019). *Land use capability map - Kaikohe*. Retrieved from <https://whenuaviz.landcareresearch.co.nz/help?aspxerrorpath=/parcel/31241/landsummaryreport%20https://whenuaviz.landcareresearch.co.nz/Explanation#luc>

Lilburne LR, Hewitt A, Webb T 2012. Soil and informatics science combine to develop S-map: a new generation soil information system for New Zealand. *Geoderma* 170: 232-238, 10.1016/j.geoderma.2011.11.012.

McGlynn, M. & Windsor, H. (2019). *Freshwater fish survey Ngawha industrial and enterprise park*. Kerikeri, Nz: Nz Environmental

McNeill S, Lilburne L, Carrick S, Webb T, Cuthill T. (2018). *Pedotransfer functions for the soil water characteristics of New Zealand soils using S-map information*. *Geoderma* 326: 96-110, 10.1016/j.geoderma.2018.04.011.

- 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*.
- Northland Regional Council. (n.d.). *Managing Northland soils young basalt volcanic soils, soil fact sheet no. 8.1.1*. Retrieved from <http://www.nrc.govt.nz/soilfactsheets>
- NZ Archaeological Association. (2020). *Recorded archaeological sites*. Retrieved from <https://archsite.eaglegis.co.nz/NZAAPublic>
- NZ Environmental. (2006). *Ngawha Geothermal Monitoring Review March 2006*, Report prepared for Ngawha Geothermal Resource Company, Ltd, dated March 2006.
- NZ Environmental. (2014). *6-Monthly Environmental Monitoring Report 14 01*, dated April 2014
- 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.

Pita, M. (2014). *Cultural Impact Assessment, Top Energy's proposed expansion of geothermal electricity generation capacity on Ngawha geothermal reservoir (Ngawha Waiariki)*. Northland: Shea Pita & Associates Ltd.

Price, D. (2019). *Proposed Ngawha Innovation & Enterprise Park, State Highway 12, Ngawha - Archaeological survey and assessment of effects*. Great Barrier Island: Time Depth Enterprises Heritage Consultants.

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](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.
https://forms.justice.govt.nz/search/Documents/WT/wt_DOC_68348162/Ngawha%20Geothermal%20Resources%201993.pdf

Webb TH, Lilburne LR 2011. Criteria for defining the soil family and soil sibling: the fourth and fifth categories of the New Zealand Soil Classification. 2 ed. Lincoln, New Zealand, Manaaki Whenua Press.

Windsor, H. (2019). *Detailed site investigation and remediation action plan - proposed Ngawha Innovation and Enterprise Park* (Report No. 2019 328). Kerikeri, NZ, NZ Environmental.

Windsor, H. (2019). *Preliminary site investigation, proposed Ngawha Innovation and Enterprise Park* (Report no. 2018 275). Kerikeri, NZ: NZ Environmental.

White, S. and Kissling, W. (2006). *Modelling of Ngawha Springs and their response to changing deep geothermal reservoir conditions*; Industrial Research Ltd Report 1796, dated March 2006.

(Photos)

Aerial view of Kaikohe and surrounding countryside. Whites Aviation Ltd: Photographs. Ref: WA-39581. Alexander Turnbull Library, Wellington, New Zealand. /records/23237677

Far North District rural area, near Kaikohe, Northland. Whites Aviation Ltd: Photographs. Ref: WA-45963. Alexander Turnbull Library, Wellington, New Zealand. /records/32054274