Attachment 2:

Responses to Requests for Further Information.

Memorandum

To: Alex Erceg, Southland Regional Council

From: Doyle Richardson, Alliance Group Limited

Date: 9 August 2019

Re: APP – 20191339 Further Information Request under Section 92(1) of the Resource Management Act 1991

INTRODUCTION

In response to the questions 1 - 4 contained in Council's letter dated 5 July 2019 requesting further information on APP – 20191339, Alliance Group Limited (Alliance) provides the following further information.

As has already been discussed with you, the cultural impact assessment requested in question 5 of your letter is still being completed and it will be provided to you when it is finalised. Our response to question 6, which is intimately intertwined with cultural impacts and the cultural impact assessment, will also be provided at that time.

RESPONSE TO QUESTIONS

1. Clarification of your discharge volumes.

Alliance is seeking resource consent to take up to 8,000 cubic metres per day (m^3/day) of process water and to discharge the same amount of treated wastewater into the Mataura River. This is described in Section 4.2 of the AEE and is set out in the proposed conditions. Table 5 of the AEE, and the Freshwater Solutions and Streamlined Environmental Reports included in Appendix 2 and 3 of the AEE, incorrectly references 14,400 m^3/day of process water being abstracted and wastewater being discharged (this is the volume allowed by the current consent). The adverse effects on the environment of taking and / or discharging 8,000 m^3/day are the same of less than those of taking and / or discharging 14,000 m^3/day.

2. An explanation of how the water intake pumps operate, such as, how they are activated and when they are activated.

There are 18 pumps that supply cooling water and process water to the plant. The layout of these is shown in Figure 1 below. Details of each pump, including how the pump control mechanism operates is provided in Table 1 which follows Figure 1.

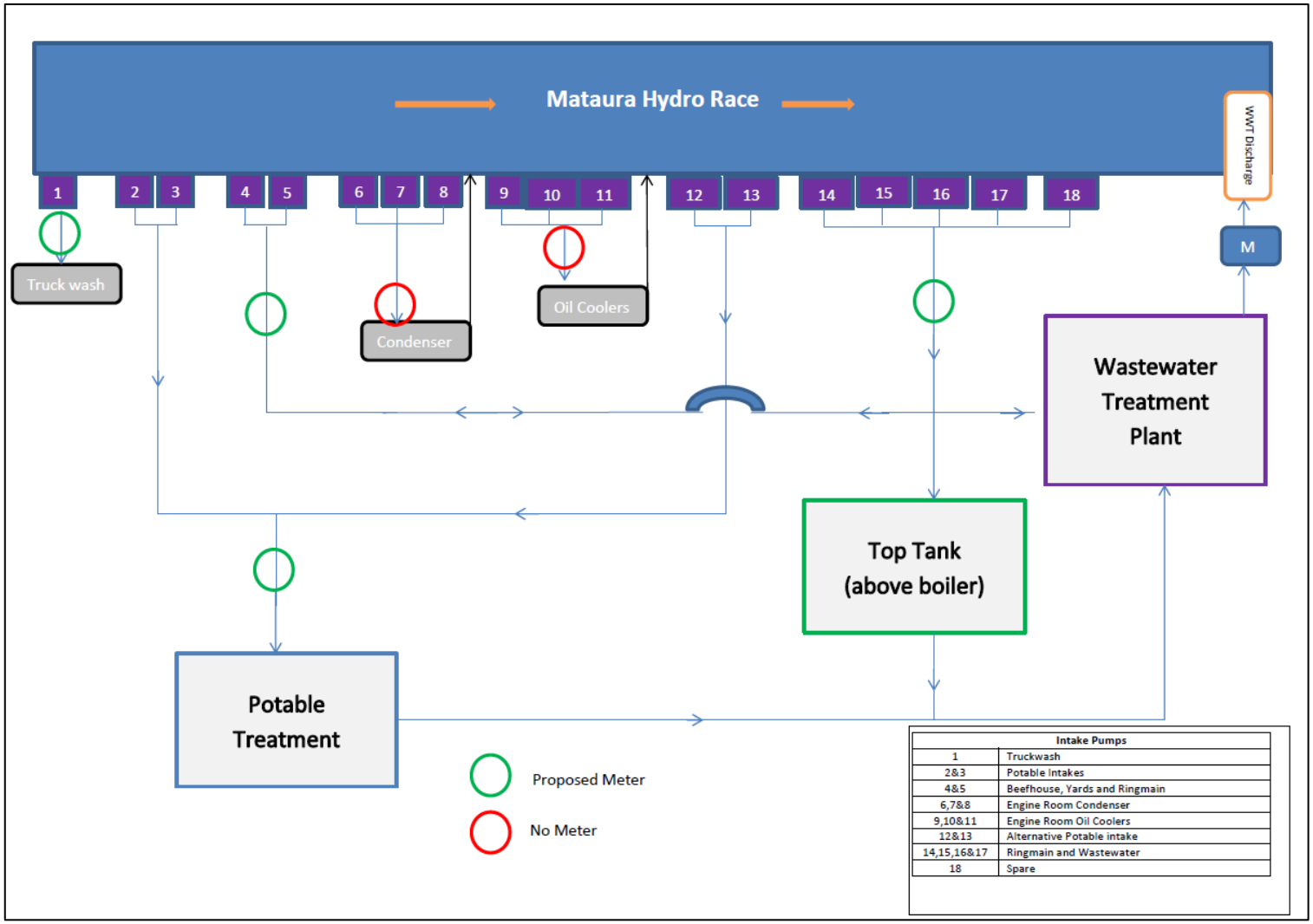


Figure 1:Water pump schematic for Alliance Mataura.

Table 1: Alliance Mataura intake pump details.

Pump	Make[1]	Use	Pump capacity (m^3/hr)	Pump capacity (m^3/day)	Pump control mechanism
1	Grundfos CR5-22	Truck wash	5.7	136.8	Controlled by a manual isolator i.e. This pump is manually turned on when washing a truck via a hose.
2	Ajax 5LS 18.5kw	Potable Intake	275	6600	Operator manually selects and starts the pump when required (i.e. when water levels are declining in the storage tanks). Only one potable intake pump is used at a time. The selected pump operates until a high-level control/switch in the water treatment plant tanks automatically turn it off. Storage tanks are also fitted with a low-level switch which will turn a pump on if the operator is not present. This is not often used.
3	Ajax 5LS 18.5kw	Potable intake	275	6600	
4	Grundfos	Beefhouse, Yards and Ringmain	219	5256	One of these two pumps is a duty pump and one is a standby pump. One pump will turn on, when water is used, from pressure switches detecting a drop in pressure. Water use will fluctuate depending on demand.
5	Grundfos	Beefhouse, Yards and Ringmain	219	5256	
6	Grundfos	Engine room Condenser Pump	270	6480	At least one, and often two of these pumps operate continuously, as refrigeration operates continuously. Flow is on a variable speed control which fluctuates according to pressure demands. The third pump is a standby pump.
7	Grundfos	Engine room Condenser Pump	270	6480	

Pump	Make[1]	Use	Pump capacity (m^3/hr)	Pump capacity (m^3/day)	Pump control mechanism
8	Grundfos	Engine room Condenser Pump	270	6480	It should be noted that water taken via these pumps is returned to the river immediately, i.e. as pump speed increases, the discharge volume increases.
9	Grundfos	Engine room Oil Coolers	58.4	1402	At least one of these operates continuously. Pumps 9 and 10 operate on a variable speed control which fluctuates according to temperature demands. Pump 11 is a standby pump and it is started manually. Pump 11 is only operated when there are operational issues with Pumps 9 and/or 10.
10	Grundfos	Engine room Oil Coolers	58.4	1402	
11	Ajax 4is	Engine room Oil Coolers	150 (estimate)	3600 (estimate)	
12	Chesterton	Alternative Potable Intake	200	4800	These alternative potable intake pumps are used at times when the Mataura River water is dirty. The operator manually selects and starts these pumps when required (i.e. when water levels are declining in the storage tanks and the river is dirty). Only one potable intake pump is used at a time. The selected pump operates until a high-level control/switch in the water treatment plant tanks automatically turns it off. Storage tanks are also fitted with a low-level switch which will turn a pump on if the operator is not present. This is not often used.
13	Chesterton	Alternative Potable Intake	200	4800	
14	Chesterton 45kw	Ringmain and Wastewater	200 (estimate)	4800	These pumps are set up in parallel. While the plant is operating, pumps are manually selected to start and stop.

Pump	Make[1]	Use	Pump capacity (m^3/hr)	Pump capacity (m^3/day)	Pump control mechanism
15	Chesterton 75kw	Ringmain and Wastewater	200 (estimate)	4800	The number of pumps required to operate depends on the size of pump selected. Generally, only one pump is required to meet water demands. The Chesterton 75kw is the pump most commonly operated.
16	Thompson	Ringmain and Wastewater	150	3600	
17	Grundfos	Ringmain and Wastewater	200 (estimate)	4800	
18	Grundfos	Spare			This pump is not currently connected to plant pipework.

3. Confirmation of whether or not there is water storage on-site, and if so, how much.

The potable water treatment plant has two storage reservoirs, with a storage capacity of 722 m^3 and 1,000 m^3.

4. A description of how the proposed volume of water to be abstracted is calculated and evidence that this is a reasonable and efficient use of water

Two water take permits have been applied for. One is for the Take and Use of Process Water and the second is for the Take and Use of cooling water. Each is addressed below.

Process Water

Is Process water use in the Alliance Mataura plant reasonable and efficient?

Pattle Delamore Partners (PDP) has completed a comprehensive assessment of water use efficiency at the Plant. The results of that work are set out in PDP's Report *Alliance Mataura Plant – Water Use and Wastewater Management Resilience Assessment* (the PDP Report) a copy of which is provided in Appendix 8 of the AEE.[1]

PDP undertook a survey of water use and calculated that during peak processing times water use of approximately 5.24 m^3/animal processed (equivalent to 5,554 m^3/day when processing 1,062 cattle) is expected. However, when white water (used for processing wastewater) is removed, the PDP Report identified that water use at the Plant is approximately 3.33 m^3/animal processed. The PDP Report identifies that this is slightly higher than the common industry water use rate in larger meat export plants (approximately 2.7 m^3/animal per animal processed), but that the reason for this is the additional tripe processing undertaken at Mataura. Rather than process inefficiencies. When this additional processing is accounted for the Alliance Mataura process water usage compares well.

As described in Section 9.2.2 of the AEE, PDP have identified the opportunity to reduce water use by using recycled white water in the wastewater treatment plant. However, for reasons outlined in Section 9.3.1 of the AEE, this has implications for discharge quality which need to be carefully considered to avoid unforeseen adverse toxicity and eutrophication effects on aquatic organisms within the mixing zone and downstream. Further details can be found in Sections 9.2.2 and 9.3.1 of the AEE. A Water Saving Strategy is proposed, as per proposed Condition 6 set out in Appendix A of to the AEE, to address this water use.

Is the volume of water applied for reasonable and efficient?

The existing resource consent authorising the take and use of process water contemplates abstraction of 14,400 m^3/day. As set out above water use is tightly controlled at the Plant and in turn Alliance is in the position to only seek 8,000 m^3/day in this application (6,400 m^3/day less than currently consented), with the expectation that this may be further reduced within the first three

[1] See Appendix 8 of the AEE.

years of the new consent term by implementing a Resilience and Water Saving Strategy and reducing white water (see proposed conditions 6 and 7 for the wastewater discharge permit in Appendix 1 of the AEE).

The maximum daily take of processing water sought in the application (8,000 m^3/day) is more than the volume taken and used at the plant since it ceased processing sheep and lamb in 2012 as per the Plant's compliance reporting (maximum 7,602 m^3/day / 95th percentile 5,815 m^3/day), and more than the typical daily use expected by the PDP Report during high processing periods (5,554 m^3/day).

This headroom is to accommodate expected increases in the number of stock processed at the plant as it builds momentum as a specialist processor of beef, and to accommodate expected changes to the plant operation in response to hygiene and market requirements. A good example of this is the potential for the United States to introduce a hot wash of beef carcasses as mandatory to allow continued export of product to that country. While exact volumes are not known at this time for this potential project, a bobby calf wash, which would be much smaller than a cattle wash, has recently been added at Lorneville. This required an additional 520 L/minute to run, or 500 m^3 day. A cattle wash could require two to three times more water (potentially 1,500 m^3/day). Alliance needs to have the flexibility to change its operations in this way to operate competitively in the processing market. The small amount of headroom allowed for in the consent does not contemplate Alliance relaxing water efficiency practices at the plant and any new or changed processes would be installed with water efficiency in mind. This is required as part of the Alliance Utility Use Key Performance Indicators Programme, and Alliance's track record at Mataura whereby water use has consistently been less than allowed by its existing consents is proof of this. Efficiency of use will also be front of mind given the large capital spend proposed for the wastewater treatment plant upgrade, noting that the size (and in turn cost) of that upgrade is intimately tied to the volume of water the wastewater treatment plant is required to manage.

Cooling Water

The existing resource consents contemplated the take and discharge up to 21,200 m^3/day of cooling water at the site. This was slightly more than the total pump capacity of the primary condenser cooling water pumps installed in 2006 when applications for those existing consents were made (19,800 m^3/day), and the 2006 applications explicitly contemplated that the pumps would be subject to change for maintenance or upgrade purposes.[2]

As was expected, since 2006 the various pumps have been reconfigured and upgraded. There are now six unmetered pumps which are used for engine room condensing and engine room cooling. Pump numbers, makes, where they are used, capacities and operational comments are provided in Table 1 above.

[2] See page 10 and 11 of *Alliance Group Limited Mataura Plant: Application for resource consents to take water and discharge cooling water. Application and Assessment of Environmental Effects. 29 August 2006*.

The currently installed pump configuration could take up to 17,962 m^3/day for cooling water purposes (assuming any two of Pumps 6, 7 and 8 is operating, alongside Pump 11 and one of either Pump 9 or 10).

However, like the circumstances contemplated in the 2006 application, and occurred in practice, the existing pumps will likely be subject to further change for maintenance or upgrade purposes over the term of the new consent. Alliance is seeking to retain the existing maximum daily take of 21,200 m^3/day to allow this to happen without unnecessary restriction. Alliance notes that there is no environmental benefit to be gained by reducing this volume. The cooling water system works by instantaneously abstracting water out of the hydro race and returning it to the hydro race immediately upstream of the abstraction point at the same rate as it is taken. It is truly a non-consumptive take and changing the rate of take of this activity has no impact on river flows.

Memorandum

To: Alex Erceg, Southland Regional Council

From: Doyle Richardson, Alliance Group Limited

Date: 30 September 2019

Re: APP – 20191339 Further Information Request under Section 92(1) of the Resource Management Act 1991: Part 2

INTRODUCTION

Alliance Group Limited (Alliance) provided a response to the questions 1 - 4 contained in Council's letter dated 5 July 2019 requesting further information on APP – 20191339 on 9 August 2019.

In response to questions 5 and 6 Alliance provides the following further information.

RESPONSE TO QUESTIONS 5 AND 6

Question 5:

A cultural impact assessment which relates to all the proposed activities including the damming and diversion of water

Attached to this memorandum are:

a) An initial Cultural Impact Assessment (CIA) document prepare by TAMI (refer to **Attachment 1**).

b) CIA documents subsequently prepared by Aukaha. There are two documents, the first addresses the wastewater discharge (refer to **Attachment 2**); the second the various other activities for which consent has been sought (refer to **Attachment 3**).

c) Minutes of a meeting held between representatives of Aukaha, Hokonui Rūnanga and Alliance following receipt of the Aukaha wastewater CIA document (refer to **Attachment 4**). This includes discussion on how the eight recommendations in the Aukaha wastewater CIA document may be actioned.

Alliance understands the two Aukaha CIA documents capture fully the issues identified in the TAMI CIA and provide recommendations for how those issues could be addressed.

As is set out in the meeting notes referred to in (c) above, Alliance is in the process of establishing a Memorandum of Understanding (MoU) with Hokonui Rūnanga, and it is currently thought that the appropriate mechanism for actioning some of the CIA recommendations will be via the MoU rather than consent conditions.

Alliance and Hokonui Rūnanga continue to work constructively on these matters and Alliance expects that further progress will be made on how the various recommendations can be implemented in the coming months.

Question 6:

An assessment of the proposed activities against Policy 14 of the proposed Southland Water and Land Plan, with specific regard to showing how the adverse effects associated with a discharge to land are greater than a discharge to water.

Policy 14 of the proposed Southland Water and Land Plan (Proposed Plan) states:

> ***Policy 14 – Preference for discharges to land***
>
> *Prefer discharges of contaminants to land over discharges of contaminants to water, unless adverse effects associated with a discharge to land are greater than a discharge to water. Particular regard shall be given to any adverse effects on cultural values associated with a discharge to water.*

Applying Policy 14 requires a comparative assessment to be undertaken of the adverse effects associated with the proposed discharge option, and the alternative discharge to land options. It also requires genuine attention and thought to be given to any adverse effects on cultural values associated with the proposed discharge to the Mataura River.

No explicit allowance is made in Policy 14 for the financial or practical implications of either the water or land-based disposal option, however for the policy to make sense in the context of Alliance's application it needs to be read subject to an assumption that a realistic disposal to land alternative exists. Such a reading of the policy is consistent with the relevant provisions of the Southland RPS as discussed below, and it is noted that Policy 14 is subject to appeal, partly because of its apparent failure to properly give effect to the RPS.

As is set out in the Assessment of Environmental Effects document submitted in support of the discharge permit application (hereafter referred to as the '**AEE**'), the Plant's wastewater discharge is not causing any adverse environmental effects on the Mataura River which trigger the need for immediate or urgent mitigation, but:

- Until a new UV treatment system is commissioned five years into the new consent term the discharge would continue to increase levels of *E.coli* in the receiving environment downstream of the Plant, but as the Quantitative Microbial Risk Assessment (Appendix 3 to the AEE) demonstrates, the existing wastewater treatment is sufficient to reduce health risks associated with swimming below the discharge to levels below 'the NZ threshold for tolerable risk', even at maximum discharge volumes; and
- For the first 15 years of the new consent term the discharge would continue to contribute 1 - 1.7% of the total catchment total nitrogen (**TN**) load and 0.7 – 1.3% of total catchment total phosphorus (**TP**) load, after which time the plant's contribution to the catchment's TN load would be reduced by approximately 50%.

For comparative purposes, and assuming that suitable land for disposal was available (which is not the case) a discharge to land option, which includes a cut and carry operation and extensive winter storage (Option 3B in the PDP options assessment included as Appendix 7 to the AEE)[1]:

- Would likely not result in lower *E.coli* related effects than the proposed upgrade, as the time required to commission the land based disposal system is unlikely to be less than the 5 years it is proposed to commission the new UV treatment system; but
- Would likely mean disposal of the Plant's wastewater would have a lesser adverse effect on total catchment TN and TP loading than the proposed upgrade option, even after year 15 when it is currently proposed a biological treatment system be installed.

As is set out in the attached CIA, disposal of the Plant's wastewater to land would also be preferable given the significant cultural values associated with the Mataura River.

Therefore, based on the small increase in TN and TP loading that would occur as a result of the proposed discharge option compared to its disposal to land, and the expressed preference of manawhenua for a land based discharge, Policy 14 does suggest that a discharge to land, along the lines of that contemplated by Option 3B in the PDP options report, would be preferred here. But in the absence of a realistic land disposal option of that nature the preference is theoretical.

The broader circumstances which contributed to Alliance determining that the proposed disposal to water option (and not a land-based disposal (including Option 3B)) is the best practicable option for disposal of the Plant's wastewater also cannot be ignored, namely:

- Upon completion of the proposed mitigation the environmental outcome from the proposed disposal option will be such that the effects will be appropriately mitigated to within acceptable limits when issues of ecology and water quality are considered;
- Land-based disposal is expected to incur significant costs (Option 3B from the PDP options assessment is expected to have a CAPEX of $37 million, which is $23 million more than the already significant $14 million CAPEX associated with Alliance's proposed wastewater treatment plant upgrade option); and
- There are very real practical issues associated with obtaining secure long term access to sufficient land in close proximity to the Mataura Plant to install and operate a land disposal system.

[1] PDP has advised that the combination of soil types and topography in the area and the climatic conditions means that the area is hydraulically limited for wastewater irrigation during late autumn/winter/early spring months. This means that if irrigation was to be implemented as the only wastewater disposal option, PDP recommend that (a) this only be to a cut and carry system (not dairy) to avoid unnecessary leaching of nutrients; and (b) storage of wastewater occur from May to October, to avoid unnecessary of run-off from the irrigation area. PDP advise that if run-off were to occur it would promote loss of nutrients and sediments to surface water, which may result in an overall worse effect on the receiving environment than the proposed upgraded discharge to surface water.

It is also noted that, as described in the minutes of the meeting held between representatives of Aukaha, Hokonui Rūnanga and Alliance subsequent to production of the CIA, those three parties are working collaboratively on measures to mitigate the effects of a river based discharge.

The importance of the discharge option being practicable (and the wider considerations inherent in that concept) is recognised in the broader planning framework which applies here, and Policy 14 cannot be considered in isolation from that framework.

As described in the statutory assessment included in the AEE, that includes the Operative Regional Policy Statement (RPS), which includes the following policy directly on this [**emphasis added**]:

> ***Policy WQUAL.8 – Preference for discharge to land***
>
> *Prefer discharges of contaminants to land over discharges of contaminants to water, **where**:*
>
> *(a) a **discharge to land is practicable**;*
>
> *(b) the adverse effects associated with a discharge to land are less than a discharge to water.*

Policy 14 set out above does not properly give effect to this policy in the manner required, and this is one reason it is subject to appeal.

The importance a discharge being practicable is also recognised in the corresponding policy on this matter in the Operative Plan which states [**emphasis added**]:

> ***Policy 7 – Prefer discharges to land***
>
> *Prefer discharges to land over discharges to water **where this is practicable** and the effects are less adverse.*

As set out in the Statutory Assessment included in the AEE the broader planning framework which applies to the discharge in the Proposed Plan also directs that the best practicable disposal option be chosen here. Policy 16A speaks directly to this matter and states [**emphasis added**]:

> ***Policy 16A – Industrial and trade processes that may affect water quality***
>
> *Minimise the adverse environmental effects (including on the quality of water in lakes, rivers, artificial watercourses, modified watercourses, wetlands, tidal estuaries, salt marshes and groundwater) **by requiring the adoption of the best practicable option** to manage the treatment and discharge of contaminants derived from industrial and trade processes.*

For the reasons set out in the AEE a land based discharge would be inconsistent with this planning direction.

Policy 14 cannot be applied in isolation to this broader framework, and when Policy 14 is considered alongside these other provisions it does not represent a barrier to granting the consents sought.

1

ATTACHMENT 1

Cultural Impact Assessment

Te Ao Marama Inc, June 2019

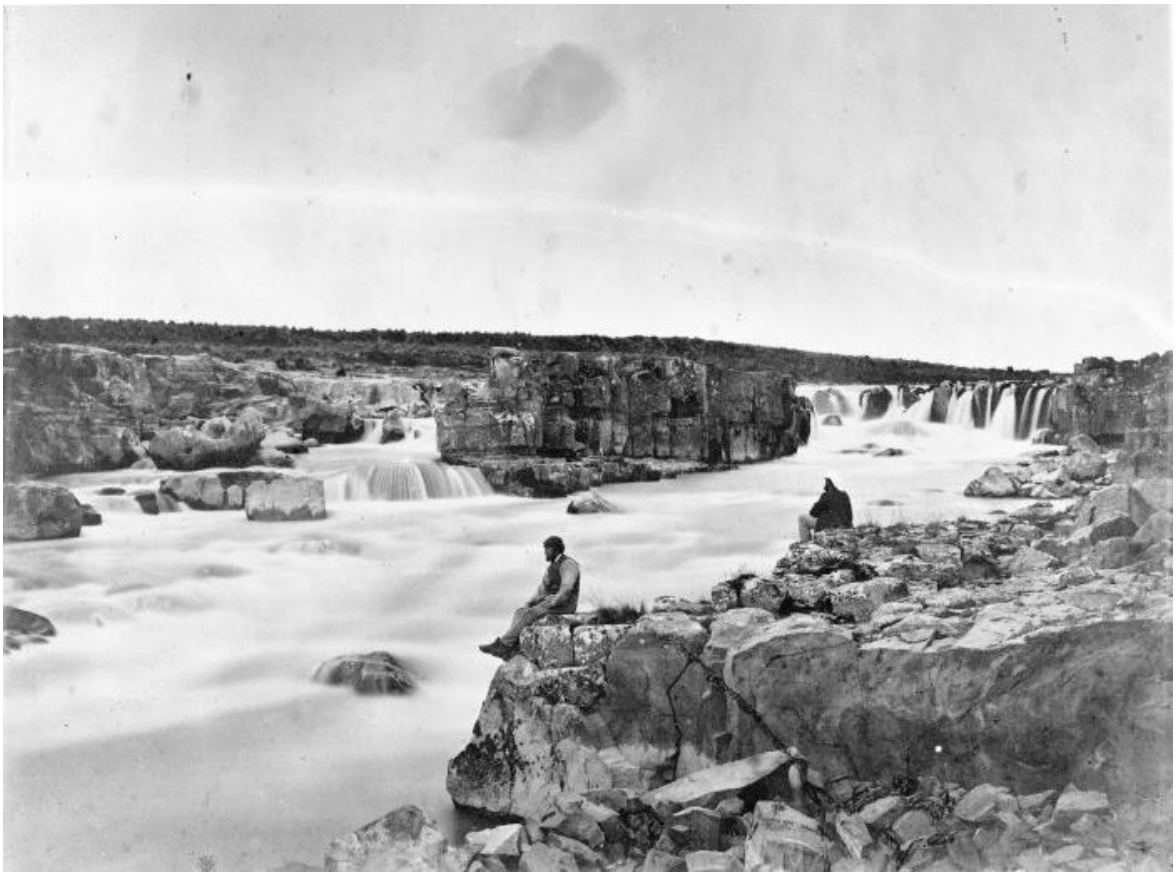
TE AO MARAMA INC.

Cultural Impact Assessment

For the Alliance Group Ltd Mataura 2019 Discharge Consents.

Stevie-Rae Blair

June 2019



Acknowledgements

The compilation of the report was greatly assisted and contributed to by many Hokonui Rūnanga members including Penny Nicholas, Terry Nicholas and Taare Bradshaw.

This report has been peer reviewed by Dean Whaanga, Penny Nicholas and Taare Bradshaw.

Executive Summary

Alliance Group Ltd (Alliance) are undertaking a project seeking to replace resource consents for the ongoing operation of their Mataura Plant. As part of this project they have engaged Te Ao Marama Inc. to undertake a Cultural Values Assessment to assess the Ngāi Tahu ki Murihiku values within the Mataura River. This assessment will document the impacts of the activities on those values that are held by mana whenua. This document will improve the understanding of those activities on mana whenua values and assist consultation through the consenting process.

The cultural values report has identified the following values are of importance and need to be considered as part of this project:

- The rich cultural landscape of the Mataura Catchment, there are many wāhi tapu, wāhi ingoa, mahinga kai, Statutory acknowledgement, Māori land and a freshwater mātaitai.
- The need to consider the effects of this application as a ki uta ki tai approach. Effects can impact on cultural values upstream as well as downstream from the activity.
- Mahinga kai is highly significant in this catchment.
- The Mauri within the consenting area is significantly degraded.

The following points have been raised in the Impact Assessment and need to be considered by Alliance:

- Mahinga kai is gathered in the area upstream and downstream of the discharge area. Kanakana gathering is significant in this area.
- The expectation in the Iwi Management Plan that wastewater disposal will improve and with improved technology.
- Limited information in application about effect of discharge on kanakana. They are listed as declining and protection is important.
- The adverse effects of wastewater discharge on wāhi tapu/archaeological sites near and downstream of the area.
- Improvements may need to happen faster due to impacts on mahinga kai and cultural values.
- Wastewater discharge is continuing to water and is considered culturally offensive.
- Duration applied for is inconsistent with Te Tangi a Tauira, 2008.
- Application is inconsistent with Te Tangi a Tauira due to discharging wastewater to water.
- Hokonui Rūnanga need to be included in any development of consent conditions.
- Continue to engage with rūnanga on how concerns can be addressed.

The area where the application is taking place is already impacting on cultural values and has done historically. There are impacts from upstream activities, the site has been significantly altered by the weir and hydroelectric plants and wastewater discharges.

The current application is shown to be inconsistent with Iwi Policy and as such is considered to have a more than minor effect on cultural values. For Ngāi Tahu, the importance of maintaining equilibrium of the environment is central to the role of kaitiakitanga. Kaitiakitanga need not be in conflict with development but, in essence seeks to protect and preserve the special characteristics of the various elements of the environment.

Contents

Introduction

Alliance Group Ltd (Alliance) are undertaking a project seeking to replace resource consents for the ongoing operation of their Mataura Plant. As part of this project they have engaged Te Ao Marama Inc. to undertake a Cultural Values Assessment to assess the Ngāi Tahu ki Murihiku values within the Mataura River. This assessment will document the impacts of the activities on those values that are held by mana whenua. This document will improve the understanding of those activities on mana whenua values and assist consultation through the consenting process.

Disclaimer: Cultural information contained within this report cannot be distributed or used without the permission of Ngāi Tahu ki Murihiku. This assessment is to be used for the current discharge application only. If Alliance require any information for other purposes they need to contact either Te Ao Marama Inc. or Hokonui Rūnanga.

Alliance Mataura Reconsenting Project

Alliance is a large meat processing and exporting company operating five meat processing and export plants throughout the South Island, and two plants in the North Island.

Located in Mataura is the Meat Processing Plant (The Plant) owned and operated by Alliance. The plant is located on the true right bank of the Mataura River within the Mataura township. This plant employs approximately 500 people in the peak of the season and contributes $160 million per year to the economy and approximately $25 million per year for wages and salaries for the 2017/18 season.[1]

The Plant processes beef cattle and operates for five days per week over almost 24 hours during peak processing. All processing is carried out on-site, except for some transfer of soft offal and bones off-site for further processing or rendering. Processed carcasses and meat cuts are refrigerated and stored in on-site chillers and freezers. Water for a range of uses is abstracted from a hydro race on the bed of the Mataura River.[2]

The Mataura Plant holds nine current resource consents. The consents which are due to expire early December 2019 and require renewal are as follows:

- To discharge 14,400m³/day of treated meat works wastewater, including treated wastewater from hide and skin processing to the Mataura River.
- To take water for from the Mataura River for freezing works supply
- To discharge condenser cooling water from freezing works to the Mataura River.

A completed application needs to be lodged with Environment Southland by June 2019 to allow Alliance to continue to operate under their existing consents while the application is processed.

[1] Project description, 2019
[2] Project description, 2019

All of these consents are required by the Southland Regional Council (Environment Southland).

Figure 1. Photo of Mataura Alliance plant. Retrieved from ***https://kids.kiddle.co/Mataura***

Existing Wastewater Treatment Plant

Two waste stream are produced at this site, they are referred to as the green waste and non-green waste. Green waste is generated from stockyards, gut cutting areas and tripe processing. Non-green wastes are sourced from the slaughter floor, further processing and hides wash overflow. Both streams are passed through milli-screening screens and saveall tanks for gross solids removal.

The green waste contains a high total phosphorous load so is treated in a 2 stage DAF-in-series system consisting of an acid DAF stage and then an alkali DAF stage for phosphorous precipitation. The non-green waste does not contain a high phosphorous load so undergoes an acid DAF treatment for protein precipitation. In total there are 12 DAFs on site, 9 of which are currently operational. There are 3 non-parallel waste acid DAFs and three parallel sets of acid/alkali DAFs for green waste treatment.

Alliance undertook upgrades to this treatment plant since the last consent was issued in 2004. This was to reduce the phosphorous load in the discharge.

Current Proposal

Alliance has determined no adverse effects triggers the need for immediate or urgent mitigation. However the AEE did identify:

- Significant rises in E.Coli levels below the discharge.
- Mataura River can generally be characterized at degraded in terms of nitrogen present, periphyton reflects moderate to high enrichment, MCI and QMCI are representative of fair to poor health.
- Estuary also continues to degrade due to very high nutrient loads.

- The discharge does contribute Amm-N (reduces to B band below discharge) and TN (meets A Band above and below discharge).
- Planning framework anticipates a long-term catchment wide improvement in water quality.

The application discusses various treatment options which were put forward:

- Existing river discharge with biological treatment for cBOD5 and nitrogen removal with UV disinfection;
- Existing river discharge with filtration and UV disinfection;
- Existing river discharge with biological treatment for cBOD5 and nitrogen removal with UV disinfection of the green waste stream;
- Dual discharge with the existing river discharge combined with discharge to dairy pasture with no treatment prior to river discharge;
- Dual discharge with the existing river discharge combined with discharge to a cut and carry system with no treatment prior to river discharge.

A dual discharge option is not preferred in this case because:

- There is a limited amount of suitable irrigation land in proximity to the Plant, and the volumes involved mean a large portion of that which is available would need to be utilised; and
- This option would only be economically sensible if no further upgrades to the WWTP are completed over the term of the consent, meaning the current levels of Amm-N, TN and *E.coli* would still be discharged to the Mataura River during the winter months, and at other times of the year during wet periods. Alliance's freshwater ecology advisors have cautioned against this due to the propensity for spring, autumn and even winter blooms in phytoplankton.

The chosen wastewater treatment and disposal option:

- Incorporates a large lagoon based, biological reactor, intended to reduce BOD, ammoniacal nitrogen and total nitrogen loads. Achieving an average BOD concentration of below 20g/cubic metre and a total nitrogen concentration below 20g/ cubic metre. This would need to be located adjacent to the pelt house on Alliance land.
- DAF wastewater from the two WW stream would be pumped to the treatment site.
- The lagoon would be 8,500 cubic metres, it has been sized to maintain a sludge retention time of 20 days. It is assumed the lagoon would be HDPE lined and of earthern construction. 210 kW woof aeration would be provided by floating mechanical surface aerators.

- Waste Activated Sludge (WAS) will be wasted to a WAS storage tank, it is proposed that WAS be dewatered onsite in a decanter centrifuge, it has been assumed the system used for handling DAF float sludge currently has the capacity to dispose of the dewatered WAS. Daily dewatered WAS production is expected to be 6 m3/d (wet volume) at 15% DS.
- A single circular clarifier will follow the aeration lagoon to provide solids separation. The clarifier will have a diameter of approximately 25 m, this is based on a conservative hydraulic overflow rate of 10 m3/m2/d. The RAS ratio has been assumed to be 60% of the incoming wastewater flow, which is within the typical range used in similar treatment systems. The clarifier will be of concrete construction with a mechanical launder, inlet diffuser, scraper system and walkway.
- Clarified wastewater will pass through a sand filter that will act as protection for the UV unit downstream from limited solids carryover occurrences from the clarifier. The filter will have a working area of 18 m2, this is based on a hydraulic loading rate of 0.2 m3/m2/min. Dirty backwash water will be returned upstream of the DAF system.
- Based on the UV trial work previously performed by PDP at Alliance Mataura, and the Alliance Pukeuri UV installation, it is estimated that peaks flows can be treated by 2 No. 40 low pressure, high output UV lamp reactors (such as the Wedeco LBX 1000). The reactors would each be sized for a peak flow rate of 30 L/s and it has been assumed that with clarification and filtration upstream a design UVT of 50% is appropriate.
- Following the UV system the treated wastewater will be pumped back to the site of the main processing and wastewater treatment plant, this will require another wet-well, pump station, and 300 mm main that will follow the same route and the DAF wastewater main. The main will tie into the existing discharge pipework. No changes to the discharge infrastructure are anticipated at the stage.

The UV system would reduce the E. Coli load to the river by a 3 to 4 log reduction, with a 95th percentile.

Key advantages:

- Decrease in BOD and nitrogen load and significant decrease in bacterial load
- New plant away from residential areas

Key disadvantages and risks:

- Long pumping distances
- More sludge management requirements
- High capital cost
- Geotechnical limitations need to be investigated.

The application proposes that a staged upgrade to the plants wastewater treatment plant and a reduction in water use. Alliance is seeking 35 year consent terms for all replacement consents.

It should be noted that no human sewage is included in the wastewater discharge – the human wastewater is piped to the community reticulation system for Mataura.

The proposal consists of:

- Year 1-3 – implementing water reduction opportunities and addressing existing resilience issues such as:
    - Potential intermittent cross contamination points between the green and non-green waste stream. To address this:
        - Reroute all pipework that runs above or in the water race.
        - Reroute all pipe work that runs above the river.
        - Modify the beef sump milli-screen overflow to prevent the risk of green waste overflows in to the non-green system.
        - Modify the stockyard and tripe recycle area to prevent risk of green waste overflows into the non-green waste.
    - PDP identified scope to reduce the plant's water use, and the volume of wastewater discharged by approx. 37%. There are issues relating to discharge quality, this may mean the reduction may not be able to be realized until prior to installation of the biological treatment system below.
- Year 5: Tertiary disinfection of microbial contaminants:
    - Installation of UV plant in order to inactivate pathogens.
    - The upgrade is expected to cost $4.14 million and annually $230,000.
    - Expected to not exceed an annual median of 1,000CFU/100ml and 95th percentile of <10,000 CFU/100ml.
- Year 15: Biological treatment system:
    - Full biological system to treat the WW. Reducing BOD, Ammoniacal nitrogen ad total nitrogen.
    - Detailed design closer to the installation date. Currently a large, lagoon sized biological reactor will be installed.
    - Likely located adjacent to pelt store.
    - Estimated cost $13.98million with annual costs of $1.08 million.

Mataura River Catchment

At 190km long the Mataura River and its catchment is the second largest in the Southland region both in terms of area and flow.[3] The headwaters of the Mataura River cover the area of the Eyre Mountains to the south and west of the southern arm of Whakatipu Waimāori (Lake Wakatipu) and drains the western slopes of the Garvie Mountains which divide the Mataura and Waikaia Catchments. The Mataura River upstream of Parawa has a total catchment area of 801 square kilometres, a majority of which is occupied by alpine and/or high country tussock lands. Jane Peak at 2,022 metres marks the highest point in the Mataura Catchment and forms the north-western boundary.[4]

Its main tributary is the Waikaia River which contributes half of the flow to the river at the point of confluence. Other large tributaries of the Mataura River include the Brightwater Spring, Eyre Creek and Roberts Creek in the upper catchment, the Nokomai River, Waimea Stream and Waikaka Stream in the mid catchment, and the Mokoreta River in the lower catchment. The flow in the river is highly variable, mostly because of its alpine headwaters but also because of the considerable flow. Over 70% of the catchment has been developed for farming.[5]

The mouth of the Mataura and the Titiroa River are located in the Toetoes or Fortrose Estuary, which is a medium sized "tidal lagoon" that discharges to Toetoes Beach at Fortrose, the size of the estuary is small when comparing it to the freshwater input.[6] The water quality in the estuary is considered to be moderately degraded.

The Mataura and Waikaia River are subject to National Water Conservation Orders which protect the outstanding fisheries and angling amenities features. The Mataura River is one of New Zealand's most famous rivers for fishing and is recognized internationally by fly fisherman throughout the world. The estuary is also used for various activities such as walking, shellfish collection, bird study, scenic, fishing, duck shooting, whitebaiting and bathing.[7] The cultural uses/values are discussed in section 6.

[3] Wilson, 2008
[4] Wilson 2008
[5] Wilson, 2008
[6] Environment Southland, 2008.
[7] Environment Southland, 2008.

Figure 2. Retrieved from: ***https://www.es.govt.nz/Document%20Library/Factsheets/Flood%20warning%20factsheets/mataura_flood_warning_web.pdf***

Mana Whenua

Te Rūnanga o Ngāi Tahu is the tribal representative body of Ngāi Tahu whānui, established under the Te Rūnanga o Ngāi Tahu Act, 1996. There are 18 Rūnanga Papatipu that constitute the membership of Te Rūnanga o Ngāi Tahu. The Te Rūnanga o Ngāi Tahu Act, 1996 and the Ngāi Tahu Claims Settlement Act, 1998 give recognition of the status of Rūnanga Papatipu as the repositories of the kaitiaki and manawhenua status of Ngāi Tahu Whānui over the natural resources within their takiwā boundaries.

In Murihiku there are four Papatipu Rūnanga whose members hold manawhenua status within the region. Te Rūnanga o Ngāi Tahu (Declaration of Membership) Order 2001 describes the takiwā of these four as follows:

- Te Rūnaka o Waihopai - centres on Waihopai and extends northwards to Te Mata-au sharing an interest in the lakes and mountains to the western coast with other Murihiku Rūnanga and those located from Waihemo southwards.
- Te Rūnanga o Awarua - centres on Awarua and extends to the coasts and estuaries adjoining Waihopai sharing an interest in the lakes and mountains between Whakatipu-Waitai and Tawhititarere with other Murihiku Rūnanga and those located from Waihemo southwards.
- Te Rūnanga o Oraka Aparima - centres on Oraka and extends from Waimatuku to Tawhititarere sharing an interest in the lakes and mountains from Whakatipu-Waitai to Tawhititarere with other Murihiku Rūnanga and those located from Waihemo southwards.
- Te Rūnanga o Hokonui - centres on the Hokonui region and includes a shared interest in the lakes and mountains between Whakatipu-Waitai and Tawhitarere with other Murihiku Rūnanga and those located from Waihemo southwards.

Te Ao Marama Inc. represents these four rūnanga on matters in particular those matters pertaining to the management of natural resources under the Resource Management Act, 1991 and the Local Government Act, 2002.

The takiwā of three rūnanga (Hokonui, Waihōpai and Awarua) extend across the area of the Mataura River catchment including the headwaters, main stem and coastal area. Hokonui Rūnanga will be consulted over this project as the resource consent application is within their takiwā.

Te Ao Marama Inc.

Ngāi Tahu ki Murihiku formed an entity known as Te Ao Marama Incorporated, which is made up of representatives from Te Rūnaka o Waihopai, Te Rūnanga o Awarua, Oraka Aparima Rūnaka and Te Rūnanga o Hokonui. Te Ao Marama Incorporated is authorized to represent the four Southland Rūnanga Papatipu in resource management and local government matters.

It is a business unit providing a direct link to local Rūnanga Papatipu, consent applicants, the local authorities and Te Rūnanga o Ngāi Tahu. Resource consent applicants who want to liaise with iwi can contact Te Ao Marama Incorporated, who can then arrange for consultation with the appropriate Rūnanga Papatipu.

Figure 3: Murihiku (light Grey) and location of Rūnanga Papatipu (Retrieved from: Ngāi Tahu ki Murihiku, 2008)

Report Scope and Objectives

Te Ao Marama Inc. has prepared a full cultural values report that documents Ngāi Tahu ki Murihiku cultural values associated with Mataura River Catchment from its source to the sea. In doing so it will provide background information to help Hokonui Rūnanga to better understand the impacts of Alliance Group Ltd consent application on their values.

This document provides the impact assessment of the discharge activities on Hokonui Rūnanga values.

This report provides some context and information and aids the Kaitiaki Rūnanga Papatipu (via Te Ao Marama Inc.) on these issues and may assist further discussions on Alliance's consent application. However, this report simply provides background information and cannot be considered to represent any decisions by the Kaitiaki Rūnanga Papatipu (via Te Ao Marama Inc.).

Disclaimer: Cultural information contained within this report cannot be distributed or used without the permission of Ngāi Tahu ki Murihiku. This assessment is to be used for the current discharge application only. If Alliance require any information for other purposes they need to contact either Te Ao Marama Inc. or Hokonui Rūnanga.

Legal and Policy Scope

It is helpful to understand the broad legal and policy context for Ngāi Tahu ki Murihiku natural resource management.

Various legislation, policies and agreements helps guide TAMI's policy development for resource management in Murihiku. These include responsibilities under the Local Government Act 2002, Resource Management Act 1991, Ngāi Tahu Claims Settlement Act 1998, NZ Pouhere Taonga Act 2014, and RMA national directives such as the National Policy Statement for Freshwater Management and Regional plans (including Water and Coastal) Please see Figure 6.

Te Rūnanga o Ngāi Tahu Act, 1996

Te Rūnanga o Ngāi Tahu Act 1996 (the TRONT Act) was passed in 1996, to give a legal identity to the Ngāi Tahu iwi. The TRoNT Act establishes the body corporate of Te Rūnanga o Ngāi Tahu as the tribal representative body of Ngāi Tahu Whānui, with relevant provisions including the following:

- Section 3: "this Act binds the Crown and every person (including any body politic or corporate) whose rights are affected by any provisions of this Act";
- Section 5: describes the takiwā or tribal area of Ngāi Tahu Whānui, as including all the lands, islands and coasts of the South Island/Te Waipounamu south of White Bluffs/Te Parinui o Whiti on the east coast and Kahurangi Point/Te Rae o Kahurangi on the west coast;
- Sections 7 and 13: defines the members of Ngāi Tahu Whānui and the members of the Rūnanga Papatipu of Ngāi Tahu Whānui;
- Section 15 (status of Te Ngāi o Ngāi Tahu):

1. Te Rūnanga o Ngāi Tahu shall be recognised for all purposes as the representative of Ngāi Tahu Whānui.

2. Where any enactment requires consultation with any iwi or with any iwi authority, that consultation shall, with respect to matters affecting Ngāi Tahu Whānui, be held with Te Rūnanga o Ngāi Tahu.

3. Te Rūnanga o Ngāi Tahu, in carrying out consultation under subsection (2) of this section:

> a. shall seek the views of such Rūnanga Papatipu of Ngāi Tahu Whānui and such hapū as in the opinion of Te Rūnanga o Ngāi Tahu may have views that they wish to express in relation to the matter about which Te Rūnanga o Ngāi Tahu is being consulted;
>
> b. shall have regard, among other things, to any views obtained by Te Rūnanga o Ngāi Tahu under paragraph (a) of this subsection; and
>
> c. shall not act or agree to act in a manner that prejudices or discriminates against, any Rūnanga Papatipu of Ngāi Tahu or any hapu unless Te Rūnanga o Ngāi Tahu believes on reasonable grounds that the best interests of Ngāi Tahu Whānui as a whole require Te Rūnanga o Ngāi Tahu to act in that manner.

First Schedule: Identifies the Rūnanga Papatipu of Ngāi Tahu Whānui and their respective takiwā.

Ngāi Tahu Claims Settlement Act, 1998

The Ngāi Tahu Claims Settlement Act 1998 gives effect to the provisions of the Deed of Settlement, entered into between Ngāi Tahu and the Crown in 1997. The key elements of the Ngāi Tahu settlement can be summarised as follows:

- Apology: Crown apologises unreservedly to Ngāi Tahu Whānui for the suffering and hardship caused to Ngāi Tahu;
- Aoraki/Mount Cook: gifting of Aoraki, co-management and renaming;
- Cultural Redress: restores effective Kaitiakitanga;
- Non-Tribal Redress: provides certainty and results;
- Economic Redress: income generated by tribal assets provides funds for social and cultural development.

A significant component of the Ngāi Tahu Settlement is the cultural redress elements, which seek to restore the ability of Ngāi Tahu to give practical effect to its kaitiaki responsibilities. Relevant "cultural redress" elements of the Ngāi Tahu Settlement include:

- ownership and control: pounamu/greenstone, high country stations, four specific sites (including Rarotoka/Centre Island, Whenua Hou/ Codfish Island, former Crown Titi Islands) and Wahi Taonga;
- Mana Recognition: Statutory Acknowledgements, Deeds of Recognition, Tōpuni, Dual Place Names;
- Mahinga kai: Nohoanga, Customary Fisheries Management, Taonga Species Management, Coastal Space;
- Management Input: Statutory Advisor, Dedicated Memberships, Department of Conservation Protocols, Resource Management Act Implementation, Heritage Protection Review.

Resource Management Act, 1991

The Resource Management Act 1991 (RMA) is New Zealand's primary piece of legislation for sustainably managing natural and physical resources. The RMA contains various provisions that incorporate Maori values into the management of natural resources.
Key provisions include the requirement in the RMA for all persons exercising functions and powers (including policy/plan making and resource consent processes) to:

- recognise and provide for, as a matter of National Importance:
    - the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, wāhi tapu, and other Taonga;
    - the protection of historic heritage from inappropriate subdivision, use, and development;
    - the protection of recognised customary activities;
- have particular regard to Kaitiakitanga;
- Take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).

The RMA makes specific provisions for iwi management plans. In relation to iwi management plans, regional councils and territorial authorities are required to "…take into account any relevant planning document recognised by an iwi authority and lodged with a local authority…", under the provisions of Sections 61(2A)(a), 66(2A)(a), 74(2A)(a) of the RMA. This

is relevant to local authorities preparing a Regional Policy Statement, Regional Plans and District Plans.

Te Tangi a Tauira, 2008

In 2008, Te Tangi a Tauira: Ngāi Tahu ki Murihiku Natural Resource and Environmental Iwi Management Plan was published. This Iwi Management Plan consolidates Ngāi Tahu ki Murihiku values, knowledge and perspectives on natural resource and environmental management issues. Its prime purpose is to assist Ngāi Tahu ki Murihiku in carrying out kaitiaki roles and responsibilities. It is also designed to assist local authorities and government agencies in understanding tangata whenua values and policy. It lets applicants and consultants understand issues that need to be addressed in applications to achieve whānau ora. It provides a framework for Nga Tahu ki Murihiku to effectively participate in environmental policy and planning, in order to achieve good environmental outcomes and healthy environments for iwi and the wider community.

Other Matters

The above list is not exhaustive. There are various other statutes, regulations, policies, and associated legal mechanisms of potential or actual relevance to iwi resource management within Murihiku, such as: NZ Pouhere Taonga Act, Te Rūnanga o Ngāi Tahu Freshwater Policy, Maori Commercial Aquaculture Claims Settlement Act, The Conservation Act and the Reserves Act.

Regulatory and Iwi Context for Te Ao Marama Inc.

This diagram outlines the hierarchy of agreements, acts, policies, plans and values that help inform Te Ao Marama Inc.'s policy development, views and expectations for resource management in Murihiku.

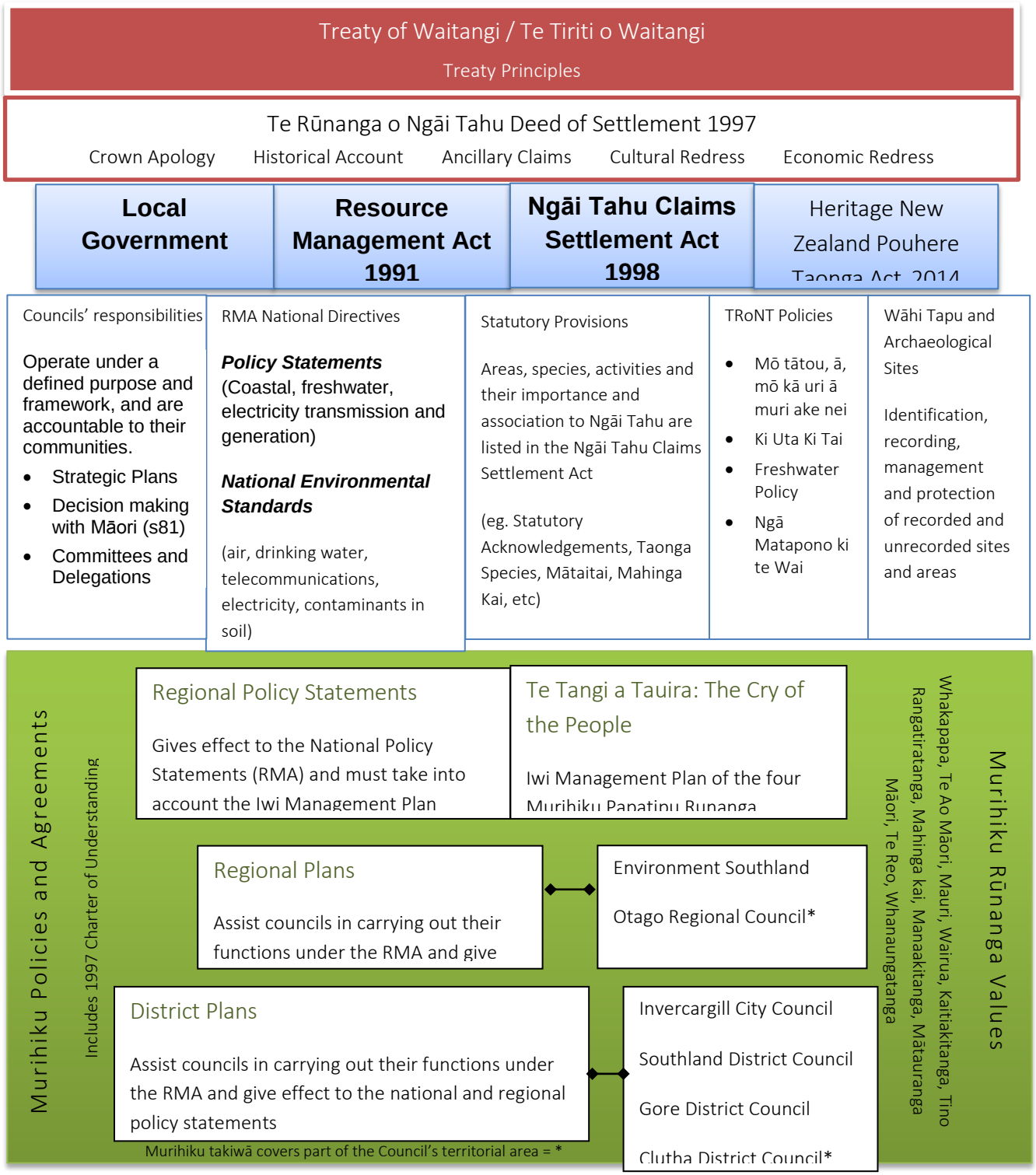


FIGURE 4: THE REGULATORY RESOURCE MANAGEMENT FRAMEWORK THAT HELPS INFORM TE AO MĀRAMA INCORPORATED POLICY DEVELOPMENT IN MURIHIKU. (SOURCE: TE AO MĀRAMA INC, A. CAIN)

Cultural values and uses of freshwater

Cultural use is often defined as the collection of plants, fish and other natural resources. This usually includes the interaction with the place where gathering takes place; however this definition is too narrow to explain the diverse elements of cultural use and values associated with Murihiku waterways.[8]

Water is central to all Māori life, it was one of the first elements in the universe. It is a taonga (treasure) left by ancestors to provide and sustain the health of the environment and the people.[9] The importance of water is due to its use in habitat, cultivation, harvesting, manufacturing and transport as well as for human consumption.[10] Water features in all aspects of Māori culture, water provides a link between the spiritual world of tupuna (ancestors) and tangata whenua. Each whānau has its own traditions associated with areas and certain waterways can be valued and/or protected for particular cultural reasoning, e.g. different taonga species. In some cases these specific resources serve as cultural symbols of a region. For example, the Mataura River is well known for being abundant in Kanakana.

Below are a number of core values that Ngāi Tahu whānui relate to the freshwater environment.

Whakapapa

Whakapapa (genealogy) is about the relationships of all life forms to each other as well as the atua (gods). Whakapapa describes bonds, relationships and connections. All things are linked through whakapapa.

Te Ao Māori

The environment is viewed as a whole – not as divided parts. A catchment constitutes soils, water, flora, fauna and the relationship between them – this requires consideration of the whole catchment.

Kaitiakitanga

Te Tangi a Tauira, 2008 describes kaitiakitanga as 'the exercise of guardianship/stewardship by the tangata whenua of an area and resources in accordance with tikanga Maori.' Kaitiakitanga underpins the concept of maintaining the balance of human interactions with the environment. Kaitiaki are the interface between the natural and spiritual realm of resource management.[11]

Mauri

The primary management principle for Ngāi Tahu is the maintenance and enhancement of the mauri or life-giving essence of an area or resource. Mauri can be tangibly represented in

[8] Kitson, 2014.
[9] Te Rūnanga o Ngāi Tahu, 2002.
[10] Cain, A & Whaanga, D, 2017.
[11] Kitson, 2015.

terms of elements of the physical health of the land, a river, or surrounding biodiversity. While there are also many intangible qualities associated with the spiritual presence of a resource, elements of physical health which Ngāi Tahu use to reflect the status of mauri and to identify the enhancements needed include:

- Aesthetic qualities, e.g. natural character;
- Indigenous flora and fauna;
- Life supporting capacity and ecosystem robustness;
- For rivers, the continuity of flow of water (of high quality) from the mountain source of a river to the sea;
- Fitness for cultural usage; and
- Productive capacity.

It is important to Māori to exercise kaitiakitanga to protect and maintain the mauri of taonga.

Ki Uta Ki Tai

Ngāi Tahu whānui use ki uta ki tai (from the mountains to the sea) as an overall approach to resource management, it is also a concept that manages the environment holistically. To apply ki uta ki tai correctly it requires coordinated and holistic management of the elements of a catchment including air, water, land and coast.

It is important to note that within this paradigm that if one place is affected then it impacts on all parts of a catchment, just like if one part of a body is hurt then it impacts on the whole of your body.[12]

Wai

The physical value of good water and land to Ngāi Tahu can be seen within the patterns of settlement and occupation throughout. [13] Water is fundamental to the health and wellbeing of who we are as Māori. The health, wellbeing and Mauri of the water are directly linked to the health and wellbeing of the people.

The characteristics of the water body (smell, shape, bed, flow, etc.) have a direct impact on its health and surrounding lands, what is harvested from it and when. Preferential sites for mahinga kai tend to be hāpua (estuaries, lagoons), repo (wetlands), outlets and the riparian zones of rivers, streams and lakes.[14]

Mahinga Kai

The Ngāi Tahu Claims Settlement Act 1998 defined mahinga kai as 'the customary gathering of food and natural materials, and the places where those resources are gathered.' Mahinga kai is more broadly explained in Te Tangi a Tauira (2008) as being about:

[12] Kitson, 2017.
[13] Te Marino Lenihan, 2013
[14] Cain, A & Whaanga D, 2017.

Places, ways of doings things, and resources that sustain the people. It includes the work that is done (and the fuel that is used) in the gathering of all natural resources (plants, animals, water, sea life, pounamu) to sustain well-being. This includes the ability to clothe, feed and provide shelter.[15]

Mahinga kai is central to the Ngāi Tahu way of life and cultural wellbeing. It represents the ninth component of the 'Nine Tall Trees' that comprised the Ngāi Tahu Claim; an intrinsic part of the tribe's identity, or the "DNA of Ngāi Tahu".[16]

Manaakitanga

The support, caring and hospitality shown to guests – the ability to manaaki visitors by supplying kai sourced locally mean that the activities of fishing, eeling and gathering foods creates and maintains whānau and hapū ties and reinforces identity. Conversely the inability to manaaki guests and sustain whānaungatanga can lead to cultural loss.

Whānaungatanga

Is the value that incorporates relationships, the interrelationship with their ancestors, their whānau, hapū and iwi as well as the natural resources within their tribal boundaries. This genealogical relationship is one of the foundations upon which the Māori culture is based.

Te Reo

Language. Te Reo contains knowledge and is another expression of culture and identity. Stories, waiata and Te Reo pertain to particular uses, and these uses sustain the culture. When a valued species disappears from a local ecosystem or whānau cannot gather from a certain place, the associated Te Reo drops away.

Mātauranga Māori

Māori knowledge. Interacting with waterways serves the functions of passing on traditional knowledge from one generation to the next. It is developed and transmitted through the active participation of the use of natural resources. If this active participation is stopped for any reason the associated knowledge will likely disappear as well.

[15] Te Tangi a Tauira, 2008.
[16] Kitson, J. 2017.

Impact Assessment

Alliance currently takes water and discharges wastewater to the Mataura River, and has asked for tangata whenua impacts on such takes and discharges for the reconsenting process. This section compiles information from relevant Ngāi tahu whānui, reports and documents.

Alliance have identified the need to upgrade their wastewater plant over time. They have also identified water reduction opportunities and resilience of their current system. These upgrades and changes are discussed earlier in this report.

Rūnanga acknowledge the contribution that Alliance make to the community and the vital component it plays to the local and regional economy. In particular we acknowledge the employment opportunities in Mataura.

There are key points that Alliance need to consider from a cultural point of view:

- Impacts on water quality over time.
- Discharge of wastewater to water.
- Duration of consent and timing of planned upgrades.

Te Tangi a Tauira (2008) speaks specifically about various issues for water takes and discharges within the Southland Plains and the effect they have on cultural values. A full list of policies can be found in Appendix 3-8. These policies are pragmatic in their approach and acknowledge the need to assess each application on a case by case basis. The policies also identify that practice will be improved if the technology exists.

Issue One – Impacts on water quality over time.

Water quality in the Mataura river is considered degraded both upstream and downstream of the discharge, but some contaminants are higher below the Alliance discharge. As shown in sections above the Mataura River and catchment is highly valued for its mahinga kai resources.

Whānau have identified impacts on mahinga kai as "activities include high pathogen load in the waterways and/or toxic algae (which makes it unsafe for harvesters), bank stability and excess sediment (which can impact the ability to use a preferred harvest method safely, e.g. netting or spearing), and excessive pest plants and algae (e.g., fouls nets, makes rocks slippery, decreases visibility)."[17]

Alliance plans to upgrade their system and have all in place by year 15, this means that some of the water quality issues will remain in place for that time. As acknowledged by Alliance there is a need through the policy and planning framework to improve water quality. As such "the long-term, cumulative and contemporary impacts of poor water quality on ecosystem health and in turn on mahinga kai mean that the current state of our waterways does not meet the expectations of our generation of Ngāi Tahu whānui."[18]

There are policies in Te Tangi a Tauira, 2008 relating to water quality which can be found in Appendix 6.

<u>Key points that Alliance may need to consider:</u>

- Mahinga kai is gathered in the area upstream and downstream of the discharge area. Kanakana gathering is significant in this area.
- The expectation in the Iwi Management Plan that wastewater disposal will improve and with improved technology.
- Limited information in application about effect of discharge on kanakana. They are listed as declining and protection is important.

[17] Kitson, 2017
[18] Kitson, 2017

Issue Two – discharge of wastewater to water

Our bottom line is to avoid discharge of wastewater (e.g. sewage and stormwater) to water, as such activities have adverse effects on cultural values such as mauri, wairua, mahinga kai and wāhi tapu. Our preference is for wastewater to be treated to remove contaminants, and then discharged to land via wetlands and riparian areas, to allow Papatūānuku to provide a natural filter for waste. Where this is not practical or feasible, and discharge to water is proposed, then adverse effects must be mitigated through treatment to a very high standard and robust monitoring programs. Ngāi Tahu ki Murihiku will always look for the most culturally, environmentally, socially and economically appropriate option for a particular site.

(Ngāi Tahu ki Murihiku, 2008)

The disposal of waste and the treatment and disposal of human effluent and wastewater to water is of major concern to Ngāi Tahu.[19] The application has no human sewage included, but the wastewater discharge still has contaminants of concern within it and therefore has issues that need to be addressed.

Ngāi Tahu whānui have a strong preference for wastewater to be treated by a land-based solution to filter and cleanse contaminants, a discharge even when treated is still considered to be culturally unacceptable.

Alliance has within their application completed an options assessment including a land discharge but this option has significant limitations including land availability and climatic conditions. They have opted to improve the discharge over time and continue to discharge wastewater to water.

Te Tangi a Tauira has policies regarding wastewater disposal and these can be found in Appendix 3 and 5.

<u>Key points Alliance need to consider:</u>

- The adverse effects of wastewater discharge on wāhi tapu/archaeological sites near and downstream of the area.
- Improvements may need to happen quicker due to impacts on mahinga kai and cultural values.
- Wastewater discharge is continuing to water and is considered culturally offensive.
- Alternative option to be explored could be to look at combining all wastewater discharges into the Mataura reticulated system.

[19] Ngāi Tahu Freshwater Policy, 2002.

Issue Three – Duration of consent and planned upgrades

Alliance has applied for a 35 year term for the water takes and discharge permits. They have put together a staged upgrade approach over a 15 year period.

Te Tangi a Tauira (2008) has strong policies around duration of consent and we believe that 25 years should be the maximum duration of consent, anything over this is essentially making decisions for the next generation. We also need to ensure that consent duration recognises and provides for changes in technology, thus allowing us to continually improve the way we do things.

25 years is considered to be the longest that should be consented for duration. If there is an application that we consider to have more than minor effects on cultural values, it would be considered the duration should be lesser than this.

We acknowledge that Alliance are committing themselves to a significant investment through the planned upgrades and need to have security for the future of their operation. However there is a need to improve water quality and the application is already inconsistent with Iwi Policy due to discharging wastewater to water as stated above.

Key points for Alliance to consider:

- Duration applied for is inconsistent with Te Tangi a Tauira, 2008.
- Application is inconsistent with Te Tangi a Tauira due to discharging wastewater to water.

Conclusion

Alliance Mataura are in the process of applying for new resource consent applications to take water from the Mataura and to discharge wastewater to water. The area where the application is taking place is already impacting on cultural values and has done historically. There are impacts from upstream activities, the site has been significantly altered by the weir and hydroelectric plants and wastewater discharges.

The cultural values report has identified the following values are of importance and need to be considered as part of this project:

- The rich cultural landscape of the Mataura Catchment, there are many wāhi tapu, wāhi ingoa, mahinga kai, Statutory acknowledgement, Māori land and a freshwater mātaitai.
- The need to consider the effects of this application as a ki uta ki tai approach. Effects can impact on cultural values upstream as well as downstream from the activity.
- Mahinga kai is highly significant in this catchment.
- The Mauri within the consenting area is significantly degraded.

The following points need to be considered by Alliance:

- Mahinga kai is gathered in the area upstream and downstream of the discharge area. Kanakana gathering is significant in this area.
- The expectation in the Iwi Management Plan that wastewater disposal will improve and with improved technology.
- Limited information in application about effect of discharge on kanakana. They are listed as declining and protection is important.
- The adverse effects of wastewater discharge on wāhi tapu/archaeological sites near and downstream of the area.
- Improvements may need to happen faster due to impacts on mahinga kai and cultural values.
- Wastewater discharge is continuing to water and is considered culturally offensive.
- Duration applied for is inconsistent with Te Tangi a Tauira, 2008.
- Application is inconsistent with Te Tangi a Tauira due to discharging wastewater to water.
- Hokonui Rūnanga need to be included in any development of consent conditions.
- Continue to engage with rūnanga on how concerns can be addressed.

The current application is shown to be inconsistent with Iwi Policy and as such is considered to have a more than minor effect on cultural values. For Ngāi Tahu, the importance of maintaining equilibrium of the environment is central to the role of kaitiakitanga. Kaitiakitanga need not be in conflict with development but, in essence seeks to protect and preserve the special characteristics of the various elements of the environment. Recognizing

the holistic nature of the natural world of which people are but one part, and protecting the spiritual and physical wellbeing of one's own.[20]

[20] Whaanga, 2011

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Appendices

Appendix 1: Project Plan – Alliance Mataura.

Appendix 2: Recorded Archaeological Sites.

Appendix 3: Iwi management plan policies: Wastewater Disposal

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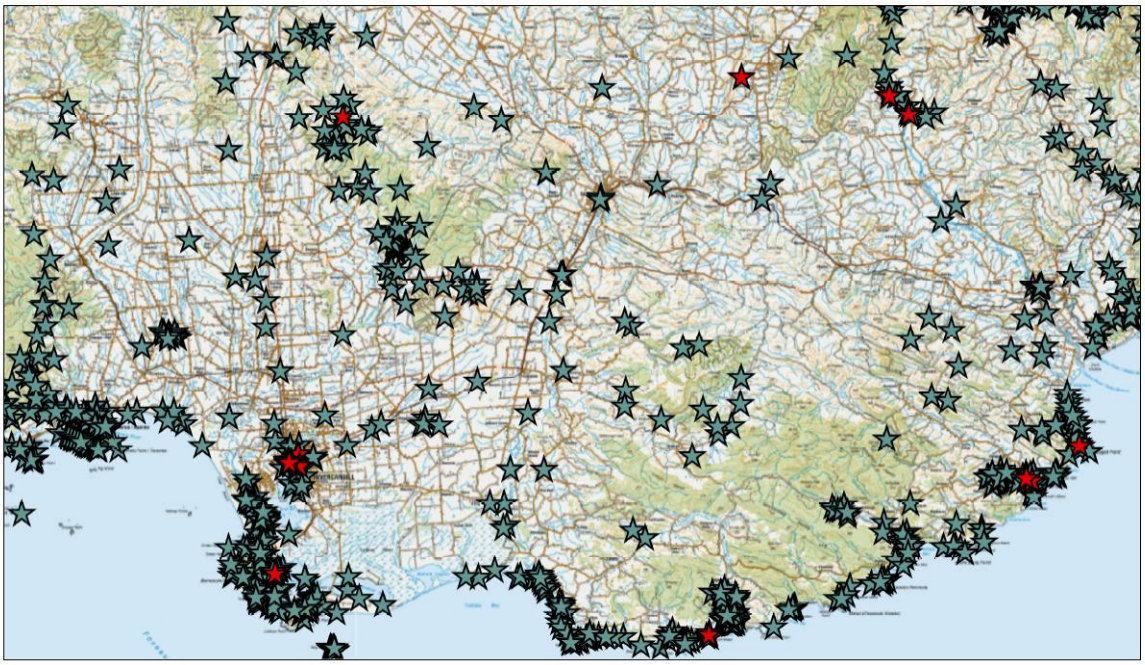
Appendix 1: Project Plan – Alliance Mataura.

Appendix 2: Recorded Archaeological Sites.

Mataura Catchment



Appendix 3: Iwi management plan policies: Wastewater Disposal

3.5.2 Wastewater Disposal

Wastewater disposal is a resource management issue arising from community sewage schemes, new subdivision and residential development proposals, and industrial operations such as freezing works and fish processing plants.

For Ngäi Tahu ki Murihiku, discharge to land is considered a better option than discharge to water, as discharging to land allows Papatüänuku to filter and cleanse contaminants from the discharge in a natural way, before the discharge enters the hydraulic system.

Ngä Take - Issues

- Physical and spiritual contamination of water as a result of wastewater disposal to water.
- Discharge to land activities that contaminate or over saturate soils.
- Need to ensure that economics alone do not determine whether disposal is to land or water.
- Sewage and stormwater disposal provisions for new subdivision applications.
- Stormwater run-off from roads or industrial sites, and potential for contaminants to enter water or contaminate soils.
- Poorly designed or operated effluent and sludge disposal schemes, and potential for contaminants to enter water.
- Impacts of wastewater disposal on culturally significant sites and places.
- Long term consent durations that prevent the consideration and adoption of improvements in technology over time.

> "…it is extremely important to us that sewage is not discharged on the bones of our ancestors."

Ngä Kaupapa - Policy

1. Promote the inclusion of Ngäi Tahu ki Murihiku issues and policies in statutory plan provisions and best practice guidelines for managing wastewater disposal.
2. Ensure that Ngäi Tahu ki Murihiku are provided with the opportunity to participate through pre hearing meetings or other processes in the development of appropriate consent conditions for discharge consents, including monitoring conditions.
3. Require that sufficient and appropriate information is provided with applications to

allow tangata whenua to assess cultural effects (e.g. nature of the discharge, treatment provisions, assessment of alternatives, actual and potential effects).

4. Promote education and awareness of Ngäi Tahu ki Murihiku values associated with water, and how those values can be adversely affected by activities involving the discharge of contaminants to water.
5. Assess proposed wastewater discharge activities in terms of:
   a. type/nature of the discharge;
   b. location and sensitivity of the receiving environment;
   c. cultural associations with location of operations;
   d. actual and potential effects on cultural values;
   e. available best practice technology;
   f. mitigation that can occur (e.g. using plants to filter waste, discharging at specific times to minimise impact, treatment options)
   g. community acceptability;
   h. cost.
6. Avoid the use of water as a receiving environment for the direct, or point source, discharge of contaminants. Even if the discharge is treated and therefore considered "clean", it may still be culturally unacceptable. Generally, all discharge must first be to land.
7. Assess waste disposal proposals on a case by case basis, with a focus on local circumstances and finding local solutions.
8. Wastewater disposal options that propose the direct discharge of treated or untreated effluent to water need to be assessed by the kaitiaki rünanga on a case by case, individual waterway, basis. The appropriateness of any proposal will depend on the nature of the proposal, and what waterway is involved. Individual waterways possess their individual mauri and values, and kaitiaki rünanga are in the best position to assess the potential impacts of a proposal on such values.
9. Encourage creative, innovative and sustainable approaches to wastewater disposal that make use of the best technology available, and that adopt principles of waste reduction and cleaner production (e.g. recycling grey water for use on gardens, collecting stormwater for a pond that can then be used for recreation in a new subdivision).
10. Require that the highest environmental standards are applied to consent applications involving the discharge of contaminants to land or water (e.g. standards of treatment of sewage).
11. Require soil risk assessments (type and percolation of the soils) prior to consent for discharge to land, to assess the suitability and capability of the receiving environment. Wastewater loading rates (mm/day) must reflect effluent quality and soil properties.
12. Encourage the establishment of wetland areas, where practical, to improve discharge to land activities, through allowing Papatüänuku the opportunity to filter and clean any impurities.
13. Require the use of buffer zones, bunds and other mechanisms to prevent

wastewater from entering waterways.

14. Promote the use of high uptake vegetation (e.g. commercial/production forest plantations) for wastewater disposal, and to ensure that Ngäi Tahu ki Murihiku are involved in decisions relating to such disposal.
15. Any discharge activity must include a robust monitoring programme that includes regular monitoring of the discharge and the potential effects on the receiving environment. Monitoring can confirm system performance, and identify and remedy any system failures.
16. Require that large scale wastewater disposal operations (e.g. town sewage schemes, industry) develop environmental management plans, including contingency plans to cope with any faults, breakdowns, natural disasters, or extreme weather events (e.g. cash bonds for liability).
17. Duration of consent for wastewater disposal must recognise and provide for the future growth and development of the industry or community, and the ability of the existing operations to accommodate such growth or development.
18. Recommend a duration not exceeding 25 years, for discharge consents relating to wastewater disposal, with an assumption that upon expiry (if not before), the quality of the system will be improved as technological improvements become available. In some instances, a lesser term may be appropriate, with a condition requiring the system is upgraded within a specified time period.
19. Require conditions of consent that allow for a 5-year review of wastewater disposal activities. During review, consent holders should be required to consider technological improvements. If improvements are available, but not adopted, the consent holder should provide reasons why.
20. Encourage developers and consent applicants to provide site visits for tangata whenua representatives to observe proposed wastewater treatment systems. Site visits enable ngä rünanga representatives to see what is proposed “on the ground”.

Note: Part 2 of this Plan explains the cultural values and principles that guide the policies on wastewater disposal.

Appendix 4: Iwi Management Policies: Rivers

3.5.11 Rivers

Several major river catchments are located on the Southland Plains, including the Aparima, Öreti, Matäura, and Waiau. These rivers flow from *ki uta ki tai*, from mountain to sea, and are connected to numerous tributaries, wetlands and waipuna, as well as the groundwater that nourishes the catchment from below. They are part of Ngäi Tahu ki Murihiku history and identity. While the last 165 years have resulted in significant changes to these rivers, their importance has not diminished.

Many of the waterways of the Southland plains have specific cultural associations. They are known for an abundance of mahinga kai, used for a specific purpose, or associated with a specific ceremony or ritual. Waterways may be considered wähi tapu (i.e. associated with urupä or with an activity or occurrence considered tapu), or wähi taonga (general site of cultural significance). The Öreti, Waiau, Aparima, Matäura, Pomahaka and Mata-au / Clutha are Statutory Acknowledgement areas under the NTCSA 1998 (Schedules 50, 69, 15, 42, 52 and 40), providing for the special association of Ngäi Tahu with the rivers.

The tüpuna had considerable knowledge of whakapapa, traditional trails and tauranga waka, places for gathering kai and other taonga, ways in which to use the resources of Southland rivers, the relationship of people with the river and their dependence on it, and tikanga for the proper and sustainable utilisation of resources. All of these values remain important to Ngäi Tahu ki Murihiku today.

Ngäi Tahu ki Murihiku associations with the main river catchments of Murihiku are described in Table 2, alongside significant resource management issues for each catchment.

> A priority for Ngäi Tahu ki Murihiku is on-going advocacy, through resource consent and other processes, for the protection and enhancement of Murihiku waterways.

Ngä Take - Issues

- Stock grazing adjacent to and in the beds of waterways.
- Discharge to land activities (e.g. farm effluent) and potential for run off into waterways.
- Ensuring that water is valued as a taonga for all of New Zealand.

- Effects on the mauri of Murihiku Rivers due to land use and discharge activities, and water abstractions.
- Poor water quality in some Murihiku Rivers: our children are not able to swim in some rivers.
- Impacts of tourism (e.g. commercial jet boating) and recreational fishing activities on river health, particularly in terms of the risk of didymo spread.
- Impacts of hydro development on river health and natural character.
- Tangata whenua involvement in the management of freshwater resources in Murihiku.

> "Our people rely on rivers such as the Matäura River for mahinga kai. There is too much water being applied for and allocated from aquifers and if this is allowed to continue the

- Ngäi Tahu development rights pertaining to water resources.
- Pressure on waterways from increasing dairy farming in Murihiku, and thus increased demands for water, and increased risk of run off and leaching.
- Biosecurity risks.

Ngä Kaupapa - Policy

1. Promote catchment management planning *(ki uta ki tai)*, as a means to recognise and provide for the relationship between land and water.
2. Promote river management that adopts the priorities established in the Te Rünanga o Ngäi Tahu Freshwater Policy 1997. The priorities are:

   Priority 1: Sustain the mauri of the waterbodies within the catchment.

   Priority 2: Meet the basic health and safety needs of humans (drinking water).

   Priority 3: Protect cultural values and uses.

   Priority 4: Protect other instream values (indigenous flora and fauna).

   Priority 5: Meet the health and safety needs of humans (sanitation).

   Priority 6: Provide water for stock.

   Priority 7: Provide for economic activities including abstractive uses.

   Priority 8: Provide for other uses.
3. Continue to work with the Regional Councils to ensure that cultural values and perspectives associated with freshwater management are reflected in statutory water plans, best practice guidelines and strategies, and in resource consent

processes for activities involving water.

4. Management of our rivers must take into account that each waterway has its own mauri, guarded by separate spiritual guardians, its own mana, and its own set of associated values and uses.
5. Adopt a precautionary approach for any activity involving a waterway where there is an absence of detailed knowledge of that waterway (ecology, flow regimes, species, etc).
6. Require that rivers recognised as Statutory Acknowledgements be recognised for their special associations to Ngäi Tahu beyond the expiry date of 20 years. This means that places identified as Statutory Acknowledgements should continue to be:
   - Identified in relevant district and regional plans and policy statements as notice of their cultural importance to Ngäi Tahu (noting on plans).
   - Considered a trigger for a notice of application to Ngäi Tahu with respect to resource consents relating to, or impacting on, such areas (notice of applications).
   - Given regard to by Councils, the Environment Court and Historic Places Trust when decisions are made about who has the right to comment and be listened to, or to appear in court (Standing).
   - Accepted as evidence of the relationship of Ngäi Tahu with a particular area in any proceedings under the RMA or Historic Places Act.
7. The cultural importance of particular rivers (e.g. Statutory Acknowledgements, rivers associated with whakapapa and identity) must be reflected in the weighting of Ngäi Tahu responses and submissions on consents associated with these rivers.
8. The establishment of river flow regimes (e.g. minimum flows) must reflect the principles of *ki uta ki tai*, and thus river flow requirements from source to sea, including the wetlands, tributaries and waipuna that are associated with that river flow.
9. The establishment of environmental flow regimes must recognise and provide for a diversity of values, including the protection of tangata whenua values,
10. Ensure that all native fish species have uninhibited passage from the river to the sea at all times, through ensuring continuity of flow *ki uta ki tai*.
11. Promote, where appropriate, the use of Freshwater Mätaitai[21], Water Conservation Orders (WCO), rähui, and similar tools to protect the rivers of Murihiku, where those rivers are under threat from competing water uses, and/or when there are outstanding cultural, amenity or intrinsic values that require protection.
12. Promote the use of State of the Takiwä environmental monitoring for Murihiku river catchments (see case study below page 151).
13. Promote the use of the Cultural Health Index (CHI)[22] as a tool to facilitate

[21] The Matäura River is the first Freshwater Mätaitai in New Zealand, established in September 2005

[22] The Cultural Health Index Assessment is a tool developed to help Rünanga quantitatively assess the health of waterways, and participate in the management of water resources. See Tipa, G. and Teirney, L. 2003.

monitoring of stream health, and to provide long term data that can be used to assess river health over time.

14. Use riparian enhancement, buffer zones, fencing, and related streamside management tools as conditions of consent to ensure that human use of rivers and their water does not compromise river health.
15. Avoid the use of rivers as a receiving environment for the discharge of contaminants (e.g. industrial, residential, recreational or agricultural sources).
16. Prioritise the restoration of those waterbodies of high cultural value, both in terms of ecological restoration and in terms of restoring cultural landscapes.
17. Ensure that activities in upper catchments have no adverse effect on mahinga kai, water quality and water quantity in lower catchments.
18. Promote environmental education programmes that raise awareness about appropriate land management practices adjacent to our rivers, including riparian management. This includes education about avoiding adverse effects of livestock on riparian areas and waterways.
19. Oppose any activity that may result in the spread of any exotic alga from contaminated rivers to uncontaminated rivers, for example Didymosphenia geminata (didymo).

Cross reference:

Provisions 3.3.11 Hydro Development, Section 3.3 *Te Atawhenua* – Fiordland.

Provisions 3.5.10 General Water Policy; 3.5.12 Discharge to Water; 3.5.13 Water Quality; 3.5.14 Water Quantity; 3.5.15 Activities in the Beds and Margins of Rivers; 3.5.17 Ngä Pononga a Täne a Tangaroa – Biodiversity; 3.5.18 Repo – Wetlands; 3.5.19 Riparian Areas; 3.5.20 Freshwater Fisheries, Section 3.5 *Te Rä a Takitimu*, Southland Plains

Information Sources:

Statutory Acknowledgement for Öreti, Schedule 50, NTCSA 1998. Statutory Acknowledgement for the Waiau River, Schedule 69, NTCSA 1998. Statutory Acknowledgement for the Aparima River, Schedule 15, NTCSA 1998, Statutory Acknowledgement for the Matäura River, Schedule 42, NTCSA 1998. Statutory Acknowledgement for the Pomahaka River, Schedule 52, NTCSA 1998. Statutory Acknowledgement for the Mata-au / Clutha River, Schedule 40, NTCSA 1998.

Appendix 5: Iwi management plan policies: Discharge to Water

3.5.12 Discharge to Water

Discharges to water may be point source discharge (e.g. actual discharges to water), or non-point source discharge (e.g. from land to water). Activities that may involve the discharge to water include sewage or industrial waste disposal. Such discharges may result in increased nutrient and contaminant loads, and thus degraded water quality. Indirect discharges such as contaminated stormwater run-off, agricultural run-off, and sedimentation also have the potential to adversely affect water quality.

Ngä Take - Issues

- General impacts on water quality from discharge activities.
- Using dilution of pollution as a form of mitigation – this may not be culturally acceptable.
- The disposal of treated or untreated sewage to water.
- Local solutions for discharge issues.
- Agricultural runoff and nitrogen loading in waterways.
- Discharge of stormwater from roads into open drains.
- Impacts on the mauri of the receiving environment as a result of discharge activities.
- Impacts on mahinga kai and biodiversity as a result of discharge activities.
- Impacts on cultural use of waterways as a result of discharge activities.
- Appropriate discharge to land activities, to prevent soil and groundwater

Traditionally, to Europeans, water has been seen as a versatile transport medium and, because of its ability to break down and assimilate waste, it has been intimately linked to waste disposal. Such use directly conflicted with Mäori beliefs, and illustrates the cultural differences in relation to natural resources. Whilst Mäori saw themselves as part of nature, Europeans saw themselves as ascendant to nature. Although such views persist, developing environmental awareness has shifted the balance towards recognition of the natural environment's intrinsic value. This shift is consistent with Mäori beliefs in regards to resource management, with the protection of mauri being a

contamination.

Ngä Kaupapa - Policy

1. Avoid the use of water as a receiving environment for the direct, or point source, discharge of contaminants. Even if the discharge is treated and therefore considered "clean", it may still be culturally unacceptable. Generally, all discharge must first be to land. This general policy is a baseline or starting point. From this point, the Rünanga can assess applications on a case by case basis.
2. Assess discharge to water proposals on a case by case basis, with a focus on local circumstances and finding local solutions.
3. Consider any proposed discharge activity in terms of the nature of the discharge, and the sensitivity of the receiving environment.
4. When existing rights to discharge to water come up for renewal, they must be considered in terms of alternative discharge options.
5. When assessing the alternatives to discharge to water, a range of values, including environmental, cultural and social, must be considered in addition to economic values.
6. Encourage the establishment of wetland areas, where practical, as an alternative to the direct discharge to water. Discharge to a wetland area allows Papatüänuku the opportunity to filter and clean any impurities.
7. Any discharge activity must include a robust monitoring programme that includes regular monitoring of the discharge and the potential effects on the receiving environment.
8. Require robust monitoring of discharge permits, to detect non-compliance with consent conditions. Non-compliance must result in appropriate enforcement action to discourage further non-compliance.
9. Promote the use of the Cultural Health Index (CHI)[23] as a tool to facilitate monitoring of stream health, and to provide long term data that can be used to assess river health over time.
10. Ngäi Tahu ki Murihiku consider activities involving the discharge of contaminants to water a community issue. For this reason, ngä rünanga may, where seen as appropriate, recommend that a consent application be notified.

Cross reference:

Provisions 3.5.1 Farm Effluent Management; 3.5.2 Wastewater Disposal; 3.5.10 General Water Policy; 3.5.13 Water Quality, Section 3.5 ***Te Rä a Takitimu*** – Southland Plains

[23] The Cultural Health Index Assessment is a tool developed to help Rünanga quantitatively assess the health of waterways, and participate in the management of water resources. See Tipa, G. and Teirney, L. 2003.

Appendix 6: Iwi Management Policies: Water Quality

3.5.13 Water Quality

Water is held in the highest esteem because the welfare of the life that it contains determines the welfare of the people reliant on those resources. Ensuring that water that is meant for drinking is of drinking water quality, and that water where mahinga kai is harvested is safe to eat from, and the water where our kids swim is safe for them to swim in, is our kaitiaki responsibly as Ngäi Tahu ki Murihiku.

Water quality policies in this iwi management plan focus on improving water quality across the Rohë, and striving for the highest possible standards, whilst still being effective and practical.

Ngä Take - Issues

- Adverse effects of point source discharges on water quality, surface and ground.
- Adverse effects of non-point source discharges on water quality, surface and ground.
- Lack of influence over water quality and the setting of water quality standards, and impact on ability to exercise kaitiaki responsibilities.
- Run-off of agricultural chemicals, and the entry of nitrates and phosphates in water bodies through accelerated soil erosion are seriously affecting water quality in waterways on the Southland Plains.
- Impacts on water quality in lower catchment areas as a result of hill country developments.
- Poor water quality in some Murihiku Rivers: our children are not able to swim in some rivers.
- Adverse effects on catchment water quality as a result of degraded, or absent, riparian areas, and drained wetlands.
- Adverse effects of abstraction, damming and diversion on water quality of Southland rivers.
- Insufficient recognition of the relationship between water quantity and water quality in consent applications.
- Cumulative effects over time of land use and discharge activities on water quality, and difficultly of addressing such effects within RMA framework.

"One of the reasons that I am inhibited to exercise my kaitiaki responsibilities is that I do not have enough influence over

Ngä Kaupapa - Policy

1. The role of Ngäi Tahu ki Murihiku as tangata whenua and kaitiaki of water must be recognised and provided for in all water quality management.
2. Strive for the highest possible standard of water quality that is characteristic of a particular place/waterway, recognising principles of achievability. This means that we strive for drinking water quality in water we once drank from, contact recreation in water we once used for bathing or swimming, water quality capable of sustaining healthy mahinga kai in waters we use for providing kai.
3. Require cumulative effects assessments for any activity that may have adverse effects of water quality.
4. Avoid compromising water quality as a result of water abstractions.
5. Avoid the use of water as a receiving environment for the direct, or point source, discharge of contaminants. Generally, all discharge must first be to land.
6. Avoid impacts on water as a result of inappropriate discharge to land activities.
7. When assessing the effects of an activity on water quality, where the water source is in a degraded state, the effects should be measured against the condition that the water source should be, and not the existing condition of the water source (see text box on this page).
8. Promote the restoration of wetlands and riparian areas as part of maintaining and improving water quality, due to the natural pollution abatement functions of such ecosystems.
9. Require the use of buffer zones, riparian areas, bunds and other mechanisms to prevent stormwater and other wastewater from entering waterways.
10. Water quality definitions, categories, and standards must be determined, measured, and assessed with cultural values and indicators alongside scientific information. Such indicators and values centre on the ability of the waterway to support life, and the fitness of water for cultural uses.
11. Require robust monitoring of discharge permits, to detect non-compliance with consent conditions. Non-compliance must result in appropriate enforcement action to discourage further non-compliance.

Cross-reference:

Provisions 3.5.1 Farm Effluent Management; 3.5.2 Wastewater Disposal; 3.5.10 General Water Policy 3.5.12 Water Abstractions;

> In terms of water quantity, Ngäi Tahu ki Murihiku consider that in most areas, drainage is more of an issue than abstractions. At one time, the Southland Plains were characterised by an abundance of *repo* (wetlands). Such areas were rich in biodiversity, and an important natural and cultural resource to Ngäi Tahu. The drainage of such areas

3.5.10 General Water Policy, Section 3.5 ***Te Rä a Takitimu*** – Southland Plains

Appendix 7: Iwi Management Policies: Water Quantity

3.5.14 Water Quantity - Abstractions

"Sustainable water use is about using what we need, not what we have."

Irrigation is a large consumptive use of water resources on the Southland Plains, and most water take resource consent applications that tangata whenua are consulted on are to provide water for farming operations (e.g. irrigation). Abstractions for such operations are largely groundwater sourced.

Water is also abstracted and returned for hydropower generation, from rivers such as the Matäura, Matau-au/Clutha and Waiau.

While over allocation of water is generally not an issue in Southland, Ngäi Tahu ki Murihiku believe that a precautionary approach is needed regarding the cumulative impact of takes, and the sustainability of water supply. Uncontrolled abstractions from both surface and groundwater sources can have adverse effects on water quality and quantity, and on the mauri of the water source. In areas such as Riversdale, kaitiaki rünanga have already identified a risk to the groundwater resources as a result of the cumulative effects of groundwater takes in the area.

Ngä Take - Issues

- Unregulated water abstractions.
- Impacts on river health from damming and diversions of rivers.
- Impacts on the relationship between tangata whenua and waterways as a result of damming, diversions and abstractions from rivers (e.g. effects on mahinga kai; whakapapa).
- Increasing demands on water resources as a result of land conversion to dairy.
- Extent of existing knowledge about water resources, particularly aquifers.
- Insufficient recognition of the relationship between water quantity and water quality in consent applications.
- Water users using what they are allocated, rather than what they need.
- Deterioration of water quality in rivers such as the Öreti as a result of a reduction in water quantity.
- Cumulative effects of water abstractions on surface and groundwater quantity and quality, and difficultly of addressing such effects within the Resource Management Act framework.

Ngä Kaupapa - Policy

1. Adopt the precautionary principle when making decisions on water abstraction resource consent applications, with respect to the nature and extent of knowledge

and understanding of the resource.

2. Support and encourage catchment management plans, based on the principle of *ki uta ki tai*, to manage the cumulative impacts of water abstractions in a given area.
3. Require that scientifically sound, understandable, and culturally relevant information is provided with resource consent applications for water abstractions, to allow Ngäi Tahu ki Murihiku to fully and effectively assess cultural effects.
4. In the Southland Plains region, the preference of Ngäi Tahu ki Murihiku is for water takes from bores, as opposed to surface water abstractions.
5. Recommend, as a condition of consent, that any application for irrigation puts in on-farm rainwater holding facilities, to help with dairy washdown and irrigation.

Rain is our most reliable water resource on the Southland Plains.

6. Encourage water users to be proactive and use water wisely. To encourage best practice and efficient use of water, particularly in terms of:
   - sustainable irrigation design, delivery and management;
   - making best use of available water before water levels get too low;
   - reducing the amount of water lost through evaporation by avoiding irrigating on hot windy days.
7. Consideration of consent applications for water abstractions should have particular regard to questions of:
   a. how well do we understand the nature and extent of the water resource;
   b. how well can we monitor the amount of water abstracted;
   c. whether land capability (e.g. soil type, vulnerability of underlying groundwater resources) matches the land use enabled by irrigation;
   d. what might happen in the future (e.g. rainfall and recharge of aquifers, climate change).
8. Applications for water abstractions may be required to undergo isotope/chemistry analysis determining where the water came from, and its age. This information will assist in the assessment of potential adverse effects on the water resource.
9. Applications for water abstractions may be required to justify the quantities of water requested. Information may need to be provided to Te Ao Märama Inc. regarding the proposed water use per hectare, estimated water losses, stocking rates, and the level of efficiency for the scheme. This will enable iwi to put the quantity of water sought in context, and ensure that a test of reasonableness can be applied to consents.
10. Require catchment based cumulative effects assessments for activities involving the abstraction of water.
11. Avoid excessive drawdown of aquifer levels as a result of groundwater abstractions, and to ensure that abstractions do not compromise the recovery of groundwater levels between irrigation seasons.
12. The establishment of environmental flow regimes must recognise and provide for a diversity of values, including the protection of tangata whenua values.

13. Ensure that environmental flow allocation and water management regimes for rivers recognise and provide for the relationship between water quality and quantity.
14. Avoid compromising fisheries and biodiversity values associated with spring fed creeks and rivers for the purposes of water abstractions.
15. Avoid compromising river health as a result of water abstractions for hydro power generation.
16. Encourage the installation of appropriate measuring devices (e.g. water meters) on all existing and future water abstractions, to accurately measure, report, and monitor volumes of water being abstracted, and enable better management of water resources.
17. Advocate for durations not exceeding 25 years on resource consents related to water abstractions.
18. Require, where necessary, a consent condition providing for a review of the volumes able to be abstracted from the bores on the basis of the observed seasonable recovery of groundwater levels. Also include a provision for review of both the annual recovery between individual irrigation seasons and the cumulative effects on longer-term water level recovery.
19. Require that Ngäi Tahu are provided with the opportunity to participate through pre hearing meetings or other processes in the development of appropriate consent conditions including monitoring conditions to address our concerns.
20. Avoid adverse effects on the base flow of any waterway, and thus on the mauri of that waterway and on mahinga kai or taonga species.
21. Oppose any further abstractions/diversions of water from the Waiau River for hydroelectric generation, as current levels of abstractions are having adverse effects on cultural values associated with the river.
22. Ngäi Tahu's right to development, as per the Treaty of Waitangi, must be recognised and provided for with respect to water allocation from freshwater resources.

Cross-reference:

Provision 3.3.11 Hydro Development, Section 3.3 *Te Atawhenua* - Fiordland;

Provisions 3.5.10 General Water Policy; 3.5.11 Rivers; 3.5.13 Water Quality, Section 3.5 *Te Rä a Takitimu* – Southland Plains

Appendix 8: Iwi Management Policies: Mahinga kai

3.5.16 Mahinga kai

Mahinga kai was, and is, central to the Ngäi Tahu ki Murihiku way of life. The collection and processing of mahinga kai is an important social and economic activity. Tangata whenua aspirations and expectations for mahinga kai are a common kaupapa throughout this plan.

Mahinga kai is about mahi ngä kai – it is about places, ways of doings things, and resources that sustain the people. The loss of mahinga kai is attributed to habitat degradation, resource depletion, legislative barriers that impede access, changes in land tenure that affect ability to access resources and the introduction of predators that have severely reduced the traditional foods of Ngäi Tahu.

Ngä Take - Issues

- Habitat degradation and destruction.
- Legislative barriers to accessing resources.
- Resource depletion.
- Impact of predators on mahinga kai species.
- The role of tangata whenua in managing key mahinga kai species.
- Intergenerational knowledge transfer of mahinga kai practices.
- Impacts of human activities on mahinga kai places and species.

Ngä Kaupapa - Policy

1. Work with local authorities and other statutory agencies to ensure that cultural values and perspectives associated with those species and places valued as mahinga kai are reflected in statutory water plans, best practice guidelines and strategies, and in concession and resource consent processes.
2. Work towards the restoration of key mahinga kai areas and species, and the tikanga associated with managing those places and species.
3. Support the concept of Mahinga kai Cultural Parks[24], as a means of protecting and using specific cultural landscapes within the takiwä that have important mahinga kai associations.
4. Consider the actual and potential effects of proposed activities on mahinga kai places, species and activities when assessing applications for resource consent.
5. Use the enhancement of mahinga kai places, species and activities to offset or mitigate the adverse effects of development and human activity on the land, water

[24] The Cultural Health Index Assessment is a tool developed to help Rünanga quantitatively assess the health of waterways, and participate in the management of water resources. See Tipa, G. and Teirney, L. 2003.

and biodiversity of Murihiku.

6. Support mechanisms that enable tangata whenua to access mahinga kai species and resources, such as esplanade provisions and marginal strips adjacent to waterways.

Cross-reference:

Provisions 3.3.14 Nohoanga, Section 3.3 *Te Atawhenua* – Fiordland;

Provision 3.5.17 Ngä Pononga a Täne a Tangaroa, Section 3.5 *Te Rä a Takitimu* – Southland Plains

2

ATTACHMENT 2

Alliance – Mataura Plant - Cultural Impact Assessment

Aukaha, 1 August 2019

Alliance – Mataura Plant – Cultural Impact Assessment

1 August 2019

1.0 Purpose

1.1 The purpose of this memorandum is to provide review and further comment to add to the June 2019 cultural impact assessment (CIA) undertaken by Te Ao Marama Incorporated, including further guidance for decision-making on the Alliance Group Limited resource consent applications relating to operation of the plant at Mataura.

2.0 CIA Content Review

2.1 The Executive Summary provides important guidance regarding the cultural values present in vicinity of the site and within the Mataura river catchment as a whole, relevant to understanding the impacts of existing and proposed activities.

2.2 Focus of the CIA is on the taking of water from the Mataura River and discharges to the river, in relation to applications for replacement of expiring resource consents (p8).

2.3 Discussion of the applicant's proposal is lengthy and detailed, preceding the section on Report Scope and Objectives and subsequent material that assists understanding of the environmental and cultural context for the proposed activities. For manawhenua, the whakapapa of a place and the people of that place (p22) provides understanding of how to manage what happens there over time, through an intergenerational lens. This is easier to contemplate and understand when thinking first about the environmental and cultural context, both historically and currently, ahead of examining the particulars of what is proposed. For decision-making purposes, this needs to be the starting place, to begin to understand the impact of activities that have occurred to date and then approach what can be done to improve on those impacts, with reference to cultural associations with the river through time.

2.4 Use of acronyms and technical language from the applicant's assessment of environmental effects (AEE) impedes understanding for the lay reader and requires reference back to the source material, however there is clear acknowledgement from the applicant of degradation occurring in the river and estuary downstream of the discharge activities and the need to improve water quality (p9).

2.5 The CIA records the applicant's discussion of alternatives, including discharge to land which is a manawhenua preference recorded in Te Tangi a Tauira (refer to p35-36). Conclusion of the applicant is that improved treatment of discharges is more likely to occur with plant upgrades over the proposed term of consent, rather than adding discharge to land which may have restricted use in wet periods (p10).

2.6 The CIA repeats the AEE assertion that there will be improvements in *E. coli*, BOD (biological oxygen demand) and nitrogen load in the river as a result of proposed plant upgrades, but due to high capital costs these will need to be staged upgrades, combined with reduced water use (p11-12).

Aukaha
Level 1, 258 Stuart Street, P O Box 446, Dunedin 9054, New Zealand
Phone - 03 477 0071
info@aukaha.co.nz www.aukaha.co.nz

2.7 While the Year 5 tertiary disinfection upgrade, described as part of the staged upgrade proposal, includes reference to an expected annual median concentration of coliforms (1,000 CFU/100 ml) there is not discussion of what this level means for instream habitat and species or the cultural values associated with them (p12).

2.8 The impact assessment section draws out the points included in the Executive Summary, highlighting the need for further work by the applicant to address these issues, but steps back from making particular recommendations that could assist decision-making. Primarily, the applicant is encouraged to work with Papatipu Rūnanga on resolution of the issues.

3.0 CIA Supplementary Information

3.1 Following is supplementary detail that builds on the base information provided in the CIA, to expand on Ngāi Tahu interests and values relevant to the location and impact of activities.

Cultural Context

3.2 As noted in the CIA (p29), Ngāi Tahu history of the site at Te Au-Nui-Pihapiha-Kanakana/Mataura Falls tells of Ngāti Māmoe rangatira Parapara Te Whenua[1] establishing association between the falls and kanakana harvest. Not only is it a recorded archaeological site, but also a site of consistent mahinga kai practice from the time of Parapara Te Whenua to the present day. Intergenerational knowledge transfer is a fundamental requirement for cultural health, and is linked to being able to go back to the same site year after year, monitoring populations and the health of the place, and undertaking harvest activities together with whānau.

3.3 Within the same section of the CIA, the significance of Tuturau as a permanent settlement on the eastern bank of the Mataura River, roughly six kilometres below Te Au-Nui-Pihapiha-Kanakana, is highlighted, noting that this settlement was strategically placed. Its permanence related to the reliability of resources of the river and its surrounds, enabling populations of Ngāi Tahu whānui to be sustained long term. Having a reliable kāinga in this location was an essential link within ara tawhito, the regular trails important for trading, maintaining relationships and travelling to gather mahinga kai seasonally from inland and coastal areas.

3.4 It is important to also understand the relevance of Tuturau as the site where Te Pūoho was killed and the kāinga defended, as noted in the CIA. Te Pūoho devastated inland settlements in the 1830s, travelling through the Central Otago and Mata-au/Clutha River trails, forever changing the patterns of occupation in those areas. At Tuturau, Te Pūoho's raids were brought to an end and the permanently settled nature of this kāinga was preserved.

3.5 Page 30 of the CIA shows a map of the Mataura River Mātaitai Reserve, which has Te Au-Nui-Pihapiha-Kanakana at its core, and ends north of Tuturau. This was the first freshwater mātaitai established in New Zealand, 2006, through the leadership of kaumātua Rewi Anglem, which is an indication of how greatly this area is valued within Hokonui Rūnanga and tribally. Regulation making powers established in the wake of the Treaty Fisheries Settlement (Fisheries Act 1996) have enabled this reserve to be established for the primary purpose of supporting customary fisheries management.

3.6 As noted in the CIA (p26), the entire Mataura River is recorded in the Ngāi Tahu Claims Settlement Act 1998 (NTCSA) as a Statutory Acknowledgement Area (Schedule 42), establishing the cultural, spiritual, historic, and traditional associations of Ngāi Tahu with this river, from the mountains to the sea, ki uta ki tai. Only a handful of rivers were able to be acknowledged in this way through the Treaty Settlement process. Te Au-Nui-Pihapiha-Kanakana/Mataura Falls is specifically referenced in the description of the Mataura River Statutory Acknowledgement Area (see **Attachment One**).

3.7 Understanding that of all the rivers in the Ngāi Tahu takiwā, the Mataura River is one of those that was chosen for special recognition, and that within it the first freshwater mātaitai in the country was founded, provides important context for decision-making within the framework of the Resource Management Act (RMA). Cultural well-being must be considered in relation to the sustainable management purpose of the RMA. Ngāi Tahu relationship with the waters of the Mataura River and Te Au-Nui-Pihapiha-Kanakana must be recognised and provided for in decision on this application. Principles of the Treaty of Waitangi associated with active

[1] Reference to this tūpuna is taken from the NTCSA record and differs from the CIA in spelling

protection of Ngāi Tahu interests, including mahinga kai, and redress, relevant here to the origins and purpose of the freshwater mātaitai, must be taken into account. Regard must also be had to the kaitiakitanga responsibilities of Ngāi Tahu whānui, in relationship with the river, which are actively expressed through customary fisheries management, mahinga kai practices and restoration activities.

3.8 The image included in **Attachment Two** shows the site of Te Au-Nui-Pihapiha-Kanakana as it is now, with the Alliance plant on the true right bank of the river and a built environment on both sides of the river that indicates the history of industrialisation in this location. On the cover of the CIA is a photograph of the falls area before development.

Cultural Impact

3.9 Discharging industrial waste to rivers is a legacy of colonial practices that were brought to the Ngāi Tahu takiwā and enabled over time by permissive legislative regimes. As resource management practice has changed over the last quarter century, with the establishment of the RMA in 1991 and subsequent reforms, there has been improved recognition of indigenous rights, interests and values, and how these have been impacted by past activities. The current applications of Alliance Group Limited provide an opportunity to address legacy issues associated with culturally offensive activities in a location of high cultural significance.

Kanakana

3.10 Kanakana (lamprey) are an iconic mahinga kai species associated with customary harvest within the freshwater mātaitai. In recent years whānau observed lesions on kanakana in the area. The cause(s) of what has become known as lamprey reddening syndrome (LRS) are not known with any certainty. Early research points towards a few "best guesses", including potential impact of high *E. coli* levels in the Mataura River[2]. This indicates some potential for improvements in the discharge from the meat plant to have beneficial effects in relation to LRS. Whānau are interested in ensuring that kanakana monitoring is undertaken, and that research into the state of kanakana within the freshwater mātaitai is supported by Alliance.

3.11 Whānau have also observed a change in population levels, as illustrated by this quote from Hokonui Rūnanga member Riki Parata:

> *"When we were younger, we would harvest kanakana by the sack loads with other whānau. I know that this is not the case now, and from historical records when the falls were in their natural state whānau as far as Ōtautahi would come down to harvest, so there must have been a considerable amount."*[3]

A monitoring and research programme focused on kanakana would assist in understanding what is happening with populations in the Mataura River, and the impacts of habitat change over time, including any positive changes from improved habitat within the freshwater mātaitai and downstream environments.

3.12 Original changes in habitat resulting from the dynamite blasting and narrowing of the river, for both the meat plant and the old paper mill on the opposite bank, has reduced the passage for migratory native fish species. Kanakana and other native species known to be present in the area, such as tuna, giant kōkopu and kōaro, can navigate drops in substrate, but at Te Au-Nui-Pihapiha-Kanakana there is now limited available space for species like kanakana to "climb" the falls. Manawhenua have pointed out that the concrete slab to the true left bank of the river aids kanakana to climb, but also exposes them to seagulls and predation.

3.13 There is also a lack of riparian cover providing safe habitat for species. Tuna, kanakana, kēwai, īnanga and other taonga species all rely on cover from predatory species throughout their lifecycle. Suitable instream habitat is usually provided by undercut banks stabilised by riparian planting, root systems and structures formed from

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[2] Refer to the paper 'Lamprey (*Geotria australis*; Agnatha) reddening syndrome in Southland rivers, New Zealand 2011–2013: laboratory findings and epidemiology, including the incidental detection of an atypical *Aeromonas salmonicida*'. Brosnahan, C. L., Pande, A., Keeling, S. E., van Andel, M., & Jones, J. B. (2019). *New Zealand Journal of Marine and Freshwater Research*, *53*(3), 416-436.

[3] Pers.comm., July 2019.

riparian debris, which are all substantially decreased within the freshwater mātaitai and through the river system. Native riparian species once present in the area were also sources of rongoā (medicinal plants), rāranga (weaving), kai (edible plants) and materials that contributed to artworks and textiles. This illustrates the close relationship between manawhenua and the natural environment, which is conceptualised in the term Te Mana o te Wai, linking the health of the river to the health of the environment and the health of the people[4]. Manawhenua have a strong focus on riparian restoration activities as a means of positively impacting the mauri (overall health and well-being) of the river system. Achieving positive change often requires partnerships with landowners and other networks. There is opportunity for Alliance to support activity in the area of the freshwater mātaitai for the benefit of kanakana and other mahinga kai species.

3.14 A trap and transfer programme was established during the process of re-consenting the Alliance hydro scheme, which has been permitted until 2026. This programme is focused on tuna, but other species may be caught within the traps. Manawhenua wish to see the current programme expanded to ensure kanakana have safe and efficient passage up and down the falls. An elver trap and transfer programme at Manapōuri, run with support from Meridian Energy, is achieving good results. Traditional harvest methods for capturing elvers at Te Au-Nui-Pihapiha-Kanakana could be re-purposed to enable fish passage for this species., which whānau are interested in exploring further with support from both Alliance and the owner of the old paper mill.

Mahinga Kai

3.15 Other mahinga kai species are known to be present in the river system, relevant to the freshwater mātaitai. Kākahi (freshwater mussels) are found in the tributaries of Mataura. Originally the Waikaka Stream (the confluence of which is approximately 12 kilometres upstream of Te Au-Nui-Pihapiha-Kanakana) was named Waikākahi, showing the importance of the stream as a mahinga kai source. Galaxiid species and bully species present in the freshwater mātaitai are known to be host fish for glochidia (kākahi larvae), which is how kākahi populations are distributed through the river system. Interdependence of these species indicates the importance of protecting and maintaining their preferred habitats, for the benefit of overall ecosystem function.

3.16 Kēwai (freshwater crayfish) are present in the tributaries, small streams and farm channels or drains that feed into the Mataura River. Kēwai are known to be susceptible to herbicides, pesticides, and dissolved oxygen levels, indicating the potential for agricultural and industrial processes to have impacted populations within the freshwater mātaitai and downstream environment over the years. Improvements in discharge management have the potential to contribute to improvement in kēwai habitat.

3.17 A 2008 Te Rūnanga o Ngāi Tahu State of the Takiwā report has the following to say in relation to the location of activities:

> *"The settlement of the wider Mataura area, and in particular the agricultural development of the catchment has had a visible impact on the river, particularly the Mataura Falls area. The townships of Gore, Mataura and Edendale have significant agricultural based industrial sites including meat works, diary factories and timber mills, all discharging wastes into the river. The Mataura Falls is perhaps the most dramatic example of this, being surrounded on each side by industrial factories. Inputs from these factories, as well as sewage and stormwater discharges from the surrounding townships have had an historical impact on the catchment, its water quality, the abundance of mahinga kai species, as well as the ability of tāngata whenua to gather these species."*[5]

3.18 This report was the result of cultural health monitoring and baseline assessments undertaken in the Mataura and Waikawa catchments, which included data gathering at Te Au-Nui-Pihapiha-Kanakana and Tuturau. Both sites rated poorly through a combination of cultural health monitoring methods (mātauranga) and stream health monitoring methods (standard NIWA methodology), with only Gore and Edendale sites rating lower within these catchments. None of the Mataura River sites as a whole received a good rating, although some were rated at a moderate level of health. Within the poor or very poor mid-reach sites between Gore and Edendale, including Te Au-Nui-Pihapiha-Kanakana and Tuturau, the report notes that negative features recorded by whānau included a lack of native vegetation, particularly on the riparian margin, extreme

[4] Refer to the National Policy for Freshwater Management

[5] *State of the Takiwā – He puau awa: Cultural Health Assessment of the Mataura and Waikawa catchments* (2008), Craig Pauling

modification and pressure on the margin and often noticeable direct and indirect pollution or discharges. Assessment included measurement of water flow/velocity, pH, temperature, conductivity, clarity, streambed composition, riparian vegetation, invertebrates, periphyton, *E. coli* levels and electric fishing. Te Au-Nui-Pihapiha-Kanakana and Tuturau had the worst *E. coli* levels of all sites measured, at levels capable of affecting human health during recreational contact, such as harvesting activity.

3.19 Specific recommendations from that 2008 report included the following:

- Identification and recording of all discharge inputs in the catchment and investigation into the effects of these inputs on water quality, including native fish, birds, insects and plants, and the ways to improve such discharges.
- Continued support of the Mataura Mātaitai and research into the kanakana runs/harvests at Te Au Nui (Mataura) and Māngai Piri (Waikawa).
- Continued regular monitoring, including cultural assessments, to understand the success, or otherwise, of future management and development of the catchment.

3.20 Reports produced by Environment Southland over the last decade record toxic algal blooms occurring downstream of Te Au-Nui-Pihapiha-Kanakana and eutrophic conditions developing in the estuarine environment at the mouth of the Mataura River, indicating the deteriorating state of the river system[6]. Measures by Alliance to improve management of discharges at the Mataura plant is expected to have a positive impact on the health of the freshwater mātaitai, as well as making a significant contribution to reduction in cumulative effects downstream of the site. Further monitoring and research of the nature undertaken in 2008 would enable understanding of the impact of that contribution over time as improvements are implemented.

3.21 In relation to harvesting of mahinga kai at Te Au-Nui-Pihapiha-Kanakana, access has been limited to the true left bank of the river, at a single location where a concrete slab is exposed. Alternative access would need to be permitted by the landowners. Harvest times are best at night for kanakana and tuna, whilst also being determined by maramataka (knowledge of moon phase influences) and river flows. This means that harvesting is sporadic, and given the conditions at the point of access, harvesting at night is unsafe for kaumatua. Some traditional harvest methods can no longer be undertaken due to access and issues associated with development at the site. Historically weirs would have been built and kanakana "gaffed" (lifted out by a hook on a stick) from their holes in the natural formations of the falls, which have been destroyed. However, there may be opportunities for Alliance to assist with improving access options, whilst undertaking other habitat improvement measures related to management of discharges.

Cultural Landscape

3.22 The concept of cultural landscape is referenced in the CIA (p25) as it relates to the meat plant site. At present there is little evidence to show the significance of the site to Ngāi Tahu. The falls themselves cannot be seen easily between the industrial development on both sides of the river, unless standing on the bridge (roughly half a kilometer downstream) or traversing difficult terrain down beside the old paper mill. The absence of vegetation, reduction in flow, presence of pollutants and tightly packed built environment around the falls has contributed to a decimation of cultural identity associated with Te Au-Nui-Pihapiha-Kanakana. Whānau are interested in exploring with Alliance the potential for improving markers of cultural identity associated with this highly modified site, which remains of enduring cultural significance.

4.0 Summary and Recommendations

4.1 Application by Alliance Group Limited to renew consents to take water and discharge contaminants to water at the Mataura plant site provides an important opportunity to address longstanding cultural impacts that have occurred as a result of development and plant activities in this location.

4.2 Hokonui Rūnanga wish to see actions that support river health and mahinga kai populations, particularly kanakana, as well as restore cultural identity and cultural practice associated with Te Au-Nui-Pihapiha-Kanakana.

[6] Refer to Environment Southland website – www.es.govt.nz

4.3 Manawhenua objectives for management of the freshwater mātaitai and surrounds include:

- exercise of tino rangatiratanga through shared governance and leadership;
- cessation of discharges within the mātaitai, as a key step in ceasing discharges to the Mataura River as a whole, in order to restore the degraded mauri of the river;
- restoration of riparian margins that support mahinga kai and cultural practices;
- trap and transfer of kanakana at Te Au-Nui-Pihapiha-Kanakana to enable fish passage upstream and downstream, including elver transfers;
- regular cultural health and stream health monitoring at Te Au-Nui-Pihapiha-Kanakana and Tuturau;
- improved access to Te Au-Nui-Pihapiha-Kanakana;
- visibility and understanding of Te Au-Nui-Pihapiha-Kanakana as a cultural landscape, incorporating markers of cultural identity.

4.4 Matters raised in this memo may be addressed through a combination of conditions on any resource consent granted and a Memorandum of Understanding (MOU) with Alliance.

4.5 Recommendations for addressing the issues identified include:

Recommendation 1

Alliance to support establishment of governance arrangements that enable Hokonui Rūnanga to exercise tino rangatiratanga and build a collaborative approach to managing the freshwater mātaitai for intergenerational outcomes.

Recommendation 2

Ensure the consent duration and/or consent conditions support exploration of alternatives that will enable discharges to the river from the meat plant to cease in time, working with Hokonui Rūnanga to determine the most appropriate path to achieve this outcome.

Recommendation 3

Alliance to support riparian restoration activity within the freshwater mātaitai and to the extent possible within the area of the meat plant.

Recommendation 4

Extend the existing trap, transfer and monitoring programme to manage passage of kanakana upstream and downstream of Te Au-Nui-Pihapiha-Kanakana.

Recommendation 5

Alliance to undertake regular monitoring at Te Au-Nui-Pihapiha-Kanakana and Tuturau that builds on cultural health and stream health monitoring undertaken by Ngāi Tahu, working in conjunction with Hokonui Rūnanga to design and implement this programme.

Recommendation 6

Alliance to support research into the health of kanakana populations in the Mataura River, in conjunction with Hokonui Rūnanga and research partners.

Recommendation 7

Alliance to explore options for improving access to Te Au-Nui-Pihapiha-Kanakana on the true right bank of the river.

Recommendation 8

Alliance to work with Hokonui Rūnanga to identify options for improving markers of cultural identity associated with Te Au-Nui-Pihapiha-Kanakana.

Attachment One: Mataura River Statutory Acknowledgement Area

Ngāi Tahu Claims Settlement Act 1998, Schedule 42 – Statutory Acknowledgement for Mataura River

Statutory area

The statutory area to which this statutory acknowledgement applies is the river known as Mataura, the location of which is shown on Allocation Plan MD 125 (SO 12264).

Preamble

Under section 206, the Crown acknowledges Te Rūnanga o Ngāi Tahu's statement of Ngāi Tahu's cultural, spiritual, historic, and traditional association to the Mataura River, as set out below.

Ngāi Tahu association with the Mataura River

The area of the Mataura River above the Mataura Falls was traditionally used by the descendants of the Ngāti Mamoe chief, Parapara Te Whenua. The descendants of Parapara Te Whenua incorporate the lines of Ngāti Kurī from which the Mamaru family of Moeraki descend. Another famous tupuna associated with the river was Kiritekateka, the daughter of Parapara Te Whenua. Kiritekateka was captured by Ngāi Tahu at Te Anau and her descendants make up the lines of many of the Ngāi Tahu families at Ōtākou.

For Ngāi Tahu, histories such as these reinforce tribal identity and solidarity, and continuity between generations, and document the events which shaped the environment of Te Wai Pounamu and Ngāi Tahu as an iwi.

The Mataura was an important mahinga kai, noted for its indigenous fishery. The Mataura Falls were particularly associated with the taking of kanakana (lamprey). The tūpuna had considerable knowledge of whakapapa, traditional trails and tauranga waka, places for gathering kai and other taonga, ways in which to use the resources of Mataura, the relationship of people with the river and their dependence on it, and tikanga for the proper and sustainable utilisation of resources. All of these values remain important to Ngāi Tahu today.

The mauri of the Mataura represents the essence that binds the physical and spiritual elements of all things together, generating and upholding all life. All elements of the natural environment possess a life force, and all forms of life are related. Mauri is a critical element of the spiritual relationship of Ngāi Tahu Whānui with the river.

Attachment Two: Te Au-Nui-Pihapiha-Kanakana/Mataura Falls

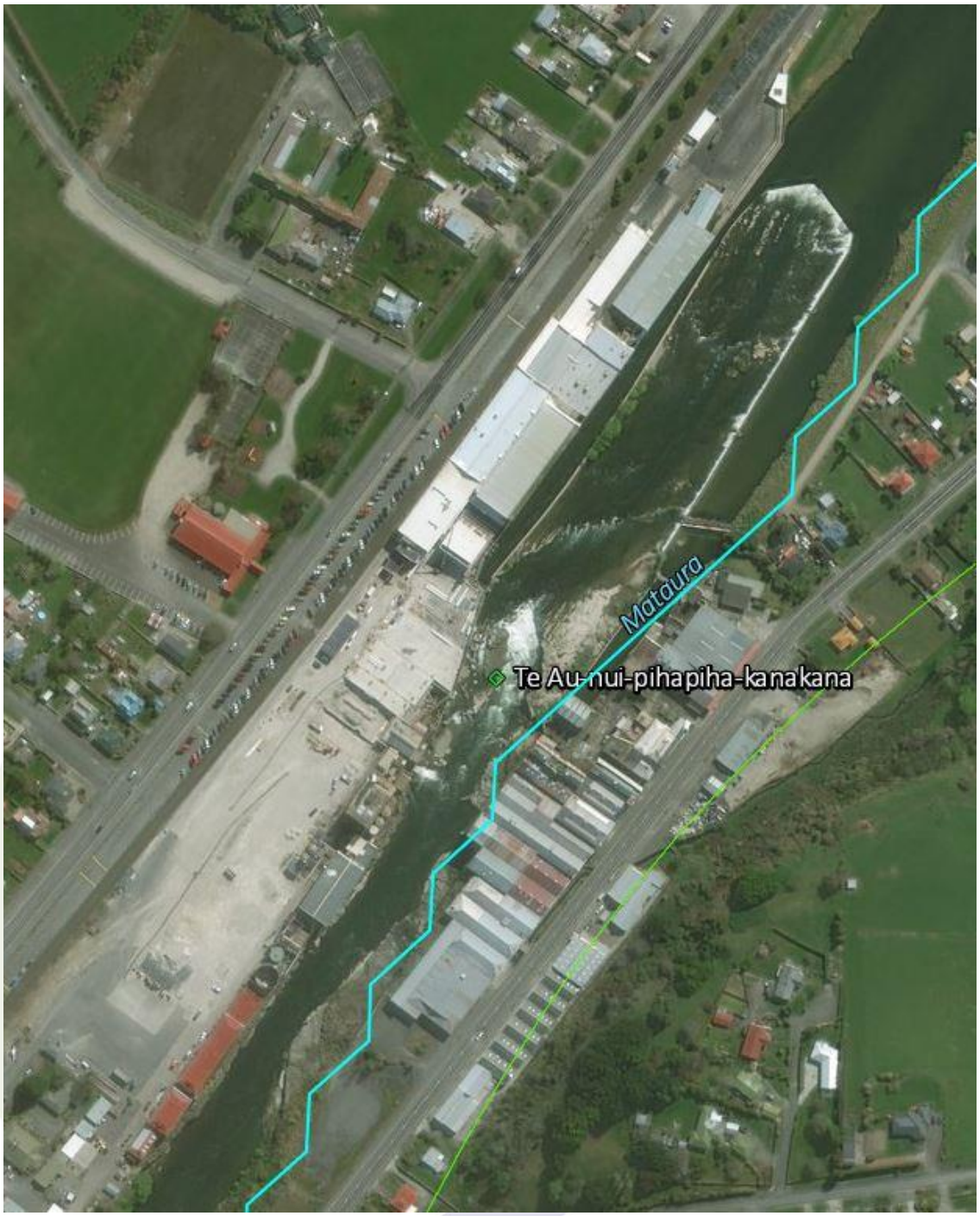

Image sourced from *Kā Huru Manu, the Ngāi Tahu Cultural Atlas*, with the green line indicating the ara tawhito (ancient trail) recorded in tribal histories of this area

3

ATTACHMENT 3

Alliance – Mataura Plant - Cultural Impact Assessment

Instream Structures and Water Permits

Aukaha, 19 September 2019

Alliance – Mataura Plant – Cultural Impact Assessment

Instream Structures and Water Permits

19 September 2019

1.0 Purpose

1.1 The purpose of this memorandum is to provide further comment on Alliance Group Limited (Alliance) resource consent applications associated with operation of the plant at Mataura, particularly applications to use existing instream structures (the weir and hydro race), to dam and divert water, and to take water.

1.2 This information is to be read in conjunction with the June 2019 cultural impact assessment (CIA) undertaken by Te Ao Marama Incorporated, and the 1 August memorandum from Aukaha.

2.0 Water Permits

2.1 The applicant proposes to take water for cooling within the Mataura plant, as well as for processing and wash-down purposes. These abstractions are currently assessed as non-consumptive, leaving the river for a short reach, and operating within the requirements of the Mataura River Water Conservation Order (WCO).

2.2 Hokonui Rūnanga support reductions in abstraction where this can be achieved through technological improvement and efficiency gains within plant operations.

2.3 Discharge associated with the use of water for processing and washdown is addressed in the CIA and August memorandum. Hokonui Rūnanga wish to see discharge of contaminated water to the river within the freshwater mātaitai cease. Without return to the river, water taken for these purposes is expected to become a consumptive abstraction.

2.4 Provided that abstraction continues to meet the requirements of the WCO and any operative flow and allocation regime for the Mataura River, this is expected to also meet manawhenua expectations to avoid adverse effects on the flow of the river. We refer you to the iwi management plan *Te Tangi a Tauira*, Section 3.5.14, and associated policies[1]. In short, the proposed rate and volume of abstraction is not opposed.

2.5 Fish screening has not been specifically addressed in the CIA or August memorandum, although this has been discussed with Alliance. Water intakes and fish screens should be appropriately designed, installed and maintained to prevent harm to taonga and mahinga kai species known to be present in the river.

2.6 With regards to consent duration, Hokonui Rūnanga have expressed a preference for short term consent (five years) for the discharge of contaminants to the river in recent communication with Alliance. The CIA, page 37, addresses consent duration preferences of manawhenua, indicating the maximum acceptable term. It is apparent that the applicant is seeking to align consent duration across the suite of proposed activities.

[1] Policy 7, Policy 10, Policy 13 and Policy 20 in particular.

Aukaha
Level 1, 258 Stuart Street, P O Box 446, Dunedin 9054, New Zealand
Phone - 03 477 0071
info@aukaha.co.nz www.aukaha.co.nz

Further consideration needs to be given to the relationship between the discharge term and term of water abstraction permits, which may differ.

3.0 Instream Structures/Damming and Diversion

3.1 The cultural significance of Te Au-Nui-Pihapiha-Kanakana, the freshwater mātaitai and the Mataura River have been outlined in the CIA and August memorandum, including the history of instream modification around the falls.

3.2 Application to use the existing instream structures and to dam and divert water represents an opportunity for Hokonui Rūnanga to address the impact of these structures on Ngāi Tahu rights, interests and values. While the structures are assessed by the applicant as part of the existing environment, such an assessment precludes the potential for restorative actions that better provide for Hokonui Rūnanga objectives within the freshwater mātaitai.

3.3 While the structures have been in place for around a century, they may no longer be fit for purpose. A lot has changed since the weir was built, including the closure of the old paper mill on the opposite side of the river.

3.4 Hokonui Rūnanga wish to explore how the weir may be modified to restore natural function within the river, whilst still providing for operation of the hydro race. For example, a diversion groyne, partial structure or alternative intake structure may be sufficient to meet the needs of the Alliance plant and enable removal of redundant structural elements.

4.0 Summary and Recommendations

4.1 Activities associated with water abstraction, and dam and diversion structures should be aligned with manawhenua objectives for management of the freshwater mātaitai and surrounds. Potential exists to provide for restoration of natural function within the river and improve fish passage.

4.2 Recommendations for addressing the identified issues include:

Recommendation 1

Alliance to continue to reduce abstraction rates through technological improvements and improved efficiency in plant operations, whilst complying with the flow management regime for the Mataura River.

Recommendation 2

Alliance to ensure that water intakes and fish screens are designed, installed and maintained to prevent harm to taonga and mahinga kai species..

Recommendation 3

Alliance to work with Hokonui Rūnanga to identify options for restoring natural function within the river at the weir site, including exploration of potential for a groyne, partial structure to dam and divert water, or alternative intake structure.

Recommendation 34

Alliance to utilise the period until expiry of consents associated with the weir and hydro race (on 7 November 2026) and/or a short term consent period to address the third recommendation.

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ATTACHMENT 4

Minutes of Meeting: Cultural Impact Assessment Report

22 August 2019

ALLIANCE
FARMERS' PRODUCE
SINCE 1948

MEETING: CULTURAL IMPACT ASSESSMENT REPORT

Date: 22 August 2019

Time: 3:00pm

Venue: Alliance Mataura

ATTENDEES

Maria Bartlett (Aukaha Iwi Environmental Advisor), Terry Nicholas (Hokonui Rūnanga Manager) Penny Nicholas (Hokonui Rūnanga Representative) Riki Parata (Hokonui Rūnanga Environmental Manager) Doyle Richardson (Alliance Group Environmental Manager), Danny Hailes (Alliance Company Secretary), Melonie Nagel (Alliance Mataura Plant Manager) and Jessica McKee (Alliance Mataura Environmental Manager)

INTRODUCTION

Everyone was welcomed and thanked for making themselves available to attend the meeting. As there were new people in the room, a round of introduction was undertaken.

Aukaha was thanked for the Cultural Impact Assessment (CIA) which provided a number of recommendations to work through during the meeting.

There was discussion and acknowledgement on the high cultural significance of the site to Iwi and the desire to no longer have a discharge to the river. Alliance believe exiting the river is not an option available to them at the moment but is willing to reconsider this during the life of the consent.

Hokonui Rūnanga expressed a desire to see the plant to continue to operate in the area for the benefit of the community.

Both parties expressed a willingness to work together to address the recommendations identified in the CIA.

RECOMMENDATIONS

Recommendation 1

Alliance to support establishment of governance arrangements that enable Hokonui Rūnanga to exercise tino rangatiratanga and build a collaborative approach to managing the freshwater mātaitai for intergenerational outcomes.

Discussion

A draft Memorandum of Understanding (MOU) has been developed by Alliance and provided to Hokonui Rūnanga for comment. The MOU will set out governance and relationship arrangements between the two parties.

Both parties expressed a desire to make this an enduring relationship that extends outside of consent processes. A number of the recommendations in the CIA potentially provide for this.

Operational linkages would sit beneath the MOU and will comprise a series of projects to be undertaken between the two parties. This would include the Trap and Transfer Programme requirements (under a different consent) and a number of the recommendations below.

Hokonui Rūnanga advised that they provide further comment on the MOU.

Recommendation 2

Ensure the consent duration and/or consent conditions support exploration of alternatives that will enable discharges to the river from the meat plant to cease in time, working with Hokonui Rūnanga to determine the most appropriate path to achieve this outcome.

Discussion

The current consenting process is considered a junction point for plant investment in wastewater improvements and Hokonui Rūnanga would like an alternative to a discharge to the river to be considered within the next five years.

Alliance described how the proposed improvements were determined using an approach consistent with assessing what is the Best Practicable Option (BPO) under the Resource Management Act. This involved a considerable amount of assessment work and at this stage a discharge to land is not considered the BPO. Alliance emphasised the significance of the commitment already made to the business and because of this, its ability to do more is limited.

Hokonui Rūnanga expressed a desire to undertake a joint initiative during the first five years of the planned activities to investigate whether a solution to discontinue a discharge to the river could be developed. Including assessing any change in circumstances (including alternative funding arrangements) which make the financial and operational implications of an alternative that keeps discharge out of the river compare favourably to those inherent in completing the wastewater treatment plant upgrades currently proposed. These investigations would be undertaken and completed in time so that the currently proposed option can be developed on time should a suitable alternative not be identified.

In discussions it was noted that milestone/trigger conditions within the proposed staged approach, where there are natural junctures, could be explored.

It was agreed these investigations would not be tied to a formal Council 'review' process under s128 of the RMA, but rather reliance would be placed on a different approach.

The scope of the investigations would be developed under the MOU.

Alliance advised that it would develop draft conditions that could be included in the consent for review by Hokonui Rūnanga, relevant to a milestone/trigger condition approach.

Recommendation 3

Alliance to support riparian restoration activity within the freshwater mātaitai and to the extent possible within the area of the meat plant.

Discussion

Alliance advised that a similar project is currently being undertaken at Lorneville where a habitat enhancement plan has been developed and is being implemented in consultation with Iwi.

Alliance advised that it is agreeable to developing a riparian restoration plan for the freshwater mataitai where it will provide some benefit, noting that some riparian enhancement activities that have occurred in the past had resulted in planted trees being washed away in the next flood.

Hokonui Rūnanga acknowledged and agreed that it should only be done where possible as per the above recommendation.

Riparian restoration activities would form a project under the MOU, the details of which would need to be developed in time.

Recommendation 4

Extend the existing trap, transfer and monitoring programme to manage passage of kanakana upstream and downstream of Te Au-Nui-Pihapiha-Kanakana.

Discussion

Alliance advised that they are open to considering both of these activities; being a trap and transfer programme for kanakana passage moving upstream and a monitoring programme for downstream migrating lamprey. However, Alliance advised that they were conscious of the practicalities of undertaking these activities, particularly monitoring downstream migrating lamprey which are small.

Alliance advised that the currently proposed activities are unlikely to impact downstream migrating kanakana as it is proposed to replace the current 5-6 mm screens on intake pumps with 2-3 mm screens.

Alliance advised that while the currently proposed activities are unlikely to impact on downstream migrating kanakana, the operation of the hydro scheme, a separately consented activity, has the potential to impact on downstream migrating kanakana. However investigations undertaken identified that the hydro scheme is unlikely to have a significant impact on these due to only a portion of the river flow going through the turbine and research and calculations indicating survivability for those that do go through the turbine is high, due to their relatively small size.

Alliance advised that they would provide Hokonui Rūnanga with investigative work done on downstream migrating kanakana for them to consider.

The ability to Trap and Transfer kanakana needs to be investigated first, as it is not an activity currently undertaken elsewhere and input is needed from a suitably qualified freshwater ecologist (or similar) on the practicalities of undertaking that activity.

Recommendation 5

Alliance to undertake regular monitoring at Te Au-Nui-Pihapiha-Kanakana and Tuturau that builds on cultural health and stream health monitoring undertaken by Ngāi Tahu, working in conjunction with Hokonui Rūnanga to design and implement this programme.

Discussion

Alliance agreed to undertake cultural and stream health monitoring as part of consent conditions. There are a number of monitoring conditions already included in the consent and these can be supplemented by cultural health indicators.

Hokonui Rūnanga advised that they have particular indicators that they are interested in, and they would provide these to Alliance to include in the consent conditions.

Recommendation 6
Alliance to support research into the health of kanakana populations in the Mataura River, in conjunction with Hokonui Rūnanga and research partners.

Discussion
Alliance advised that they were agreeable to providing support for researching the health of kanakana populations in the Mataura River.

Recommendation 7
Alliance to explore options for improving access to Te Au-Nui-Pihapiha-Kanakana on the true right bank of the river.

Discussion
It was discussed that at face value this might be difficult to do given the cliffs, rocks and fast flowing water. Alliance advised that its focus on health and safety has improved significantly over the past few years and they do not want to see anyone hurt while accessing the area.

However it was agreed that this should be assessed objectively involving both Alliance and Hokonui Rūnanga.

It was agreed that there are three potentially separate components to investigate with a particular focus on health and safety. These being, safe access across Alliance property, then once in the river bed for recreational activities, eg practising mahinga kai, and for accessing the river bed to undertake work for Alliance. Hokonui Rūnanga advised that safety devices like anchor points and other alternatives to be considered.

Recommendation 8
Alliance to work with Hokonui Rūnanga to identify options for improving markers of cultural identity associated with Te Au-Nui-Pihapiha-Kanakana.

Discussion
Alliance advised that they were agreeable to this and asked if Hokonui Rūnanga and anything particular in mind. Hokonui Rūnanga advised that they would like to see the appearance of the buildings adjacent the river improved with a mural. While there were some health and safety concerns with accessing those building walls, Alliance has investigated accessing these areas, believed it was possible and was supportive of the idea and to explore other options.

NEXT STEPS

- Alliance to circulate notes from the meeting for comment by attendees by 27 August 2019

- Hokonui Rūnanga to provide feedback on notes from the meeting by 3 September 2019

- Alliance to provide Environment Southland with a copy of the Cultural Impact Assessment and meeting notes by 6 September 2019

- Alliance to provide investigative work on downstream migrating kanakana to Hokonui Rūnanga

- Hokonui Rūnanga to provide comment on the MOU

- Hokonui Rūnanga to provide cultural heath indicators that they would like included in consent conditions

- Alliance to provide draft conditions, as per Recommendation 2, for Hokonui Rūnanga to provide comment on