# Addendum

Policy Review of Mahaanui Iwi Management Plan
Synlait Milk Limited – Stage 4 Expansion

5 November 2013

# 1.0 Kupu Whakataki / Introduction

At the time of lodging the consent for Stage 4 of the Synlait plant, issues relating to cultural values within the AEE were incomplete due to ongoing liaison with Te Taumutu Rūnanga. Synlait wrote to the Te Taumutu Rūnanga on 19 September 2013 advising them of the proposal and seeking guidance as to how the rūnanga may wish to be engaged in consultation, or if a cultural impact assessment may be required (a copy of this letter is included as Appendix A). A response from the rūnanga was received on 24 October 2013 which stated that they did not consider a CIA would be needed but that instead Synlait should address the relevant policies of the Mahaanui Iwi Management Plan (IMP) within its application (a copy of this letter is included as Appendix B).

Accordingly, this is an Addendum to the application already lodged. The Addendum provides an overview of the relevant policy considerations in the Mahaanui IMP 2013.

A description of the purpose and principles of the Mahaanui IMP is outlined in Section 2.0 below. When reading this Addendum it is important to be cognisant that the purpose and principles of the IMP are not derived solely from the RMA, and/or the particular District or Regional plans that they sit alongside. While there are common environmental considerations between an IMP and the plans produced by councils under the RMA, the purpose, principles and outcomes expressed in an IMP are largely based upon a world view derived from the cultural beliefs and practices of particular iwi and hapū, such as Ngāi Tahu in this case. Accordingly, it is important to take care to avoid interchanging or imposing strict RMA or District Plan interpretations on the objectives and policies of the IMP, unless a relevant district plan policy or rule directs that this occurs.

The Mahaanui IMP is aspirational and presents cultural perspectives where consideration is not limited to the particular effects of a specific application (as with the RMA). The Mahaanui IMP presents objectives and policies which are intended to provide guidance on how future development and activities can be achieved whilst integrating elements or features that protect, restore and/or enhance values of cultural importance. The Mahaanui IMP is not therefore limited to principles of avoiding, remedying or mitigating (as enshrined in RMA practice) but takes the additional position of encouraging and advising environmental enhancements and benefits as a critical part of development.

As with any policy assessment of a District Plan or Regional Policy Statement, the review is not a "tick the box" exercise. It is a consideration "in the round" of conformity with policy intent and identifies particular considerations that may be adopted, enabling cultural benefits to be achieved in addition to other benefits that the community may derive from an activity or development proposal.

# 2.0 The Mahaanui Iwi Management Plan 2013

The Mahaanui IMP is the manawhenua planning document of the six Ngāi Tahu Papatipu Rūnanga that represent the hapū who hold manawhenua rights over lands and waters from the Hurunui River to the Hakatere (Ashburton) River and inland to Kā Tiritiri o Te Moana (the Southern Alps). This includes: Te Ngāi Tūāhuriri Rūnanga; Te Hapū o Ngāti Wheke; Te Rūnanga o Koukourārata; Ōnuku Rūnanga; Wairewa Rūnanga; and Te Taumutu Rūnanga. The plan is also endorsed by Te Rūnanga o Ngāi Tahu, as the iwi authority, and as such, is applicable to policy and planning processes under the Resource Management Act (RMA) 1991.

The plan provides a values-based statement of Ngāi Tahu objectives, issues and policies for natural resource and environmental management that is aimed at the protection and enhancement of Ngāi Tahu values, and for achieving outcomes that provide for the relationship of Ngāi Tahu with natural resources across Ngā Pākihi Whakatekateka o Waitaha (the Canterbury Plains) and Te Pātaka o Rākaihautū (Banks Peninsula). The plan enables external agencies to understand issues of significance to tāngata whenua, and how those issues can be resolved in a manner consistent with cultural values and interests.

# 3.0 Ngā Kauneke / Methods

This policy review has involved:

- Attending a site visit with Synlait at the Dunsandel plant to further understand the application and associated issues;
- Reviewing the Mahaanui Iwi Management Plan 2013 and identifying relevant policies;
- Reading and reviewing previous submissions by Te Taumutu Rūnanga in relation to the Dunsandel plant; and
- Undertaking an assessment of the application in the context of relevant Mahaanui IMP policies to understand potential alignment with Ngāi Tahu cultural values, objectives and policies.

# 4.0 Ngā Hua / Assessment Results

The Synlait Stage 4 Expansion application requires a landuse consent from the Selwyn District Council, as well as additional stormwater and air discharge consents from Environment Canterbury. The land use consent involves potential effects on landscape values, lighting, traffic and the noise environment as well as matters associated with earthworks and hazardous substances storage.

All of these issues are either specifically covered within policies within the Mahaanui IMP or are matters that whilst not specifically addressed, can be associated with the intent or direction of a policy.

The relevant sections of the Mahaanui IMP within which policies and/or policy references relevant to the Stage 4 expansion can be found include:

- Ranginui - RI:Discharge to Air, and R2:Cultural Amenity Values;
- Waimāori - WM7:Effects of Intensive Rural Land Use on Freshwater Resources, including:
    - Te Waihora - TW7:Cultural health of lowland waterways and groundwater; and
    - Rakaia - RH5:Groundwater
- Papatūānuku - P2:Intensive Rural Land Use, P4:Sub-division and Development, P6:Stormwater, P7:Waste Management, P8:Discharge to Land, P11:Earthworks, P16:Transport and P17:Energy;
- Tāne Mahuta - TM2:Indigenous Biodiversity; and
- Ngā Tūtohu Whenua - CL1:Cultural Landscapes.

Full wording of the relevant Mahaanui IMP policy statements are provided in Appendix C.

## 4.1 Ranginui

The Mahaanui IMP provides the following explanation of the cultural values and relevant policy objectives associated with Ranginui:

> *'Air is viewed as a taonga derived from Ranginui (the Sky Father). Ranginui is the sky, husband of Papatūānuku and father of her earthly progeny. Ranginui is adorned by celestial bodies such as the moon and stars, and is associated with life and light. From Ranginui's union with Papatūānuku came the offspring, who were responsible for creating the elements that constitute our world and environment today. As with other taonga, the mauri, or life supporting capacity, of air must be protected, and air must be used with respect and passed on to the next generation in a healthy state.*
>
> ***Ngā Paetae** Objectives*
>
> *(1) To protect the mauri of air from adverse effects related to the discharge of contaminants to air.*
>
> *….The discharge of contaminants to air can have adverse effects on Ngāi Tahu values such as mauri, mahinga kai, wāhi tapu, wāhi taonga and marae, and the health of … people and communities …. Air pollution can adversely affect the ability to smell the sea, hear the waves, or have undisturbed celestial*

*darkness. It can compromise the ability to enjoy and appreciate natural and cultural landscapes, including views of important landmarks such as maunga'.*

### 4.1.1 Relevant Policies: Ranginui

The Mahaanui IMP policies associated with Ranginui most relevant to the Synlait application include those outlined below and listed under issues R1: Discharge to Air and R2: Cultural Amenity Values (p70). These cover matters of air quality and lighting which are relevant to consideration of amenity values:

- *R1.1: To protect the mauri of air from adverse effects with discharge to air activities.*
- *R1.2 & R2.2: To require that the regional council recognise and provide for the relationship of Ngāi Tahu with air, and the specific cultural considerations for air quality, including the effects of discharge to air activities on sites and resources of significance to tāngata whenua and the protection of cultural amenity values.*
- *R1.4: To support the use of indigenous plantings and restoration projects as a means to offset and mitigate industrial, agricultural and residential discharges to air.*
- *R2.1: To support the use of light suppression or limitation measures to protect celestial darkness values in some areas.*

### 4.1.2 Assessment: Ranginui

Policies R1.1, R1.2, R1.4, R2.1 and R2.2 seek firstly to protect the cultural value of air as a life supporting resource from adverse effects, and to then further encourage the consideration of specific measures that will enhance amenity values as part of an integrated development. The purpose of the additional environmental benefits is to move from a philosophy of only undertaking such actions where necessary as part of an RMA effects based regime, to one of reciprocity associated with developments. In terms of the policies in this Section, developments where there are discharges and lighting effects, no matter how significant or minor, triggers a consideration for integrating an element of environmental benefit.

These benefits assist in restoring cultural values as well as encouraging a development regime which is more holistic in terms of environmental outcomes. Specifically, policy R1.4 focuses on using indigenous plantings or other types of indigenous ecological restoration as a key way to mitigate or offset the introduction of discharges in an environment, while policy 2.1 encourages actions to limit light emissions that may contribute to disturbing celestial darkness.

The air discharges and lighting impacts associated with the Synlait application have been assessed to be less than minor and unlikely to create air pollution and light emission issues (BECA Ltd, 2013 & Pederson Read, 2013). Nor do the discharges directly affect any sites of particular cultural significance. Therefore the activity conforms with policy R1.1, as it is not considered to be an adverse effect that is harming the mauri of air, and with policies R1.2 and R2.2.

Policy R1.4 then further encourages enhancements to provide for cultural considerations and amenity values. Additional enhancements that could be carried out by Synlait that would satisfy this policy includes:

- ✓ Providing indigenous planting to offset the fact that there is a discharge to air, even though the discharge from both the dryer and boiler have been assessed as no more than minor in effect.
- ✓ Ensuring that lighting design associated with the Stage 4 expansion positively contributes to achieving undisturbed celestial darkness.

The IMP does not contain directives on the scale and amount of planting appropriate to provide for cultural amenity values. Synlait could consider ways to achieve this through its future landscaping on site and/or by contributing to off-site restoration plantings as part of its on-going initiatives to contribute to the community. Synlait's Lead With Pride initiative is noted as a measure that positively contributes to environmental benefits on farms in this way. The amount of planting could be calculated using the level of coal emissions produced; the transport miles of its products; and/or energy used at the plant; on an annual basis (to its $CO^2$ equivalent and related to the carbon sequestration rates of appropriate indigenous plants). Again, while not required under the Selwyn District Plan, the Mahaanui IMP is clear in its intent to encourage such offsetting activity, which in turn goes some way to internalising actual environmental costs and to positively contribute to restoration of landscape and its amenity of value to tangata whenua.

## 4.2 Waimāori (including Te Waihora and Rakaia)

The cultural values associated with Waimāori / freshwater resources are widely known, and can be summarised by the following whakataukī / proverb contained within the Mahaanui IMP:

> *'Ko te wai - te oranga o ngā mea kātoa - Water is the life giver of all things'.*

The policy objectives contained within the Mahaanui IMP for Waimāori include:

(1) *Water management effectively provides for the taonga status of water, the Treaty partner status of Ngāi Tahu, the importance of water to cultural well-being, and the specific rights and interests of tāngata whenua in water.*
(2) *Water quality and quantity in groundwater and surface water resources in the takiwā enables customary use mō tātou, ā, mō kā uri ā muri ake nei.*
(3) *Water and land are managed as interrelated resources embracing the practice of Ki Uta Ki Tai, which recognises the connection between land, groundwater, surface water and coastal waters.*
(4) *Mauri and mahinga kai are recognised as key cultural and environmental indicators of the cultural health of waterways and the relationship of Ngāi Tahu to water.*
(5) *Land and water use in the takiwā respects catchment boundaries, and the limits of our land and freshwater resources.*
(6) *Wetlands and waipuna are recognised and protected as wāhi taonga, and there is an overall net gain of wetlands in the takiwā as wetlands are restored.*
(7) *All waterways have healthy, functioning riparian zones and are protected from inappropriate activities, including stock access.*
(8) *The practice of using water as a receiving environment for the discharge of contaminants is discontinued, and all existing direct discharges of contaminants to water are eliminated.*
(9) *Water quality is such that future generations will not have to drink treated water.*

The Mahaanui IMP provides the following introductions to the values associated with Te Waihora (Lake Ellesmere) and the Rakaia.

> *'Te Waihora is a tribal taonga representing a major mahinga kai and an important source of mana. For the last 160 years, management of the lake and its catchment has reflected farming and settlement values, at the expense of Ngāi Tahu values....*
>
> *The Rakaia is one of the major braided rivers of the takiwā. Throughout its course from the mountains to the sea, the Rakaia exhibits a diversity of character, reflected in the different landscapes through which the river flows. For Ngāi Tahu, the variable character of the river is essential to its cultural value, and is reflective of its life force. The majority of the Rakaia River catchment is upstream of the Rakaia Gorge, and therefore the protection of high country values is an important kaupapa in this section. Over-allocation of groundwater resources and contamination of both surface and groundwater are also significant issues, as the plains and coastal region between the Rakaia and Hakatere rivers is dominated by intensive land use'.*

### 4.2.1 Relevant Policies: Waimāori (including Te Waihora and Rakaia)

The Mahaanui IMP policies associated with Waimāori most relevant to the Synlait application include those outlined below and listed under Issue WM7: Effects of Intensive Rural Land Use on Freshwater Resources (p83-85), as well as those within the Te Waihora and Rakaia sections:

- *WM7.2: To require a precautionary approach to land use conversion and intensification...that recognises and provides for:*
    a) *Existing and future effects of diffuse source pollution on surface and groundwater resources from land use;*
    b) *The cumulative effects of land use on the health of soil and water resources;*
- *WM7.5: To require that resource consents granted for irrigated and other forms of intensive land use are subject to the following conditions of consent:*
    a) *The development, implementation and monitoring of ... management plans that cover such matters as effluent, irrigation, soil and environmental infrastructure management, stocking rates, and associated reporting requirements and monitoring provisions; and*

b) *Provision to protect and enhance cultural and environmental values, including indigenous biodiversity (e.g. the establishment of shelter belts using native species).*

- *WM7.10: To promote ... measures that maximise water use efficiencies and reduce nutrient loss, and that enable landowners undertaking intensive ... activities to be responsible for the cultural and environmental costs of their activities.*
- *WM7.12: To recognise and support those land users and managers that are demonstrating sustainable land use and protecting and enhancing the environment and cultural values.*
- *WM7.13: To support the use of incentives to encourage landowners to practice stewardship of freshwater resources. Incentives can be a more powerful tool than regulatory measures such as fines or rules.*
- *WM7.14: To require that the effects of land use activities on water quality and quantity are assessed with due regard to the cumulative effects of all land use in the catchment and as well as of individual consents.*
- *TW7.4: To require immediate and effective steps for addressing over-allocation...with particular emphasis on:*
    a) *Controlling irrigated and intensive land use activities that affect surface water flow and groundwater recharge.*
- *RH5.1: To require effective controls to regulate discharge to land activities associated with intensive agriculture and industrial activities in the lower catchment...with particular attention to:*
    a) *The cumulative impact of agricultural land use activities in the area; and*
    b) *Diffuse pollution from industrial discharges.*
- *RH5.5: To require that the relationship between surface water and groundwater resources is recognised and provided for in the catchment. This means:*
    a) *Recognising the relationship between over-allocation and contamination of groundwater resources;*
    (b) *Ensuring that environmental flow and water allocation regimes provide sufficient water in waterways for aquifer recharge;*
    (c) *Recognising the relationship between Rakaia River flow and groundwater recharge in the lower Te Waihora catchment; and*
    (d) *Recognising the effects of groundwater abstractions on lowland stream flows.*

### 4.2.2 Assessment: Waimāori

The policies listed under Issue WM7 and within the Te Waihora and Rakaia sections are concerned with the protection of water quality and quantity and recognise the relationship of Ngāi Tahu with freshwater which can be impacted by intensive rural land use. They highlight the issues faced within the Te Waihora and Rakaia catchments, particularly associated with the degradation of Te Waihora and the impacts this has on cultural values and customary use.

The assessment of these policies is solely based on the intensification of built development and activity at the Synlait plant from the Stage 4 application (Dryer and associated buildings and facilities). Relevant activities include the use of additional water, the expansion of the DAF wastewater plant, and the need for additional stormwater and human wastewater facilities.

It is acknowledged that most of these elements do not trigger the need for new consents and therefore are not considered to have an effect under the District and Regional plans. Again, however, the Mahaanui IMP sets out policies that encourage applicants to consider actions that reciprocate the use of natural resources (regardless of effect) as well as the cumulative impacts of all activities in the catchment.

Policy WM7.2, WM 7.14, TW7.4 and RH5.1 seek to ensure consideration of future use, over-allocation and cumulative impacts around intensive rural water and land use, while Policy WM7.5 seeks to ensure the implementation of best management practices, including monitoring and reporting of performance and specifically advocates for indigenous planting as a component of best practice. Policy WM7.10 further encourages best management practice and specifically mentions water use efficiency as an outcome, while policies WM7.12 & WM7.13 provide support for activities and land users that demonstrate best practice that results in positive environment and cultural outcomes. Policy RH5.5 is

concerned with recognising the relationship between water use and surface water and groundwater quality and quantity.

Both the use and discharge of water are particularly sensitive to Ngāi Tahu due to the condition of Te Waihora. Therefore, it is prudent to consider initiatives to reduce the potential and perceived impacts of these, particularly from the perspective of cumulative impact. Enhancement of the existing or any future stormwater system and basins within the site with further planting and/or vegetated swale development would be one measure that would contribute to achieving these policies.

Other measures for improving freshwater quality and quantity outcomes that are supported by tangata whenua include water use reduction, collection and reuse technologies, efficient energy use and offsetting, efficient stormwater and wastewater system management, as well as enhancing indigenous biodiversity values. It is anticipated that Synlait already provides for some of these efficiencies and outcomes in its operations and that these are on-going benefits that companies aspire to as part of economic use. Where combined with environmental gains, these can add further value and significance for tangata whenua.

## 4.3 Papatūānuku

The Mahaanui IMP provides the following explanation of the cultural values and relevant objectives associated with Papatūānuku:

> *'Papatūānuku is profoundly important in the Ngāi Tahu worldview, as the birthplace of all things of the world, and the place to which they return. Papatūānuku is the wife of Ranginui, and their children are the ancestors of all parts of nature....An important kaupapa of Ngāi Tahu resource management perspectives and practice is the protection and maintenance of the mauri of Papatūānuku, and the enhancement of mauri where it has been degraded by the actions of humans.*
>
> *Land use and development activities in the takiwā must be managed in way that works with the land and not against it. Papatūānuku sustains the people, and the people must in turn ensure their actions do not compromise the life supporting capacity of the environment. The cultural, social and economic wellbeing of people and communities is dependent on a healthy and resilient environment*.
>
> ***Ngā Paetae** Objectives*
>
> *(1) The mauri of land and soil resources is protected mō tātou, ā, mō kā uri ā muri ake nei.*
> *(4) Rural and urban land use occurs in a manner that is consistent with land capability, the assimilative capacity of catchments and the limits and availability of water resources.*
> *(7) Subdivision and development activities implement low impact, innovative and sustainable solutions to water, stormwater, waste and energy issues.*
> *(8) Ngāi Tahu cultural heritage values, including wāhi tapu and other sites of significance, are protected from damage, modification or destruction as a result of land use.'*

### 4.3.1 Relevant Policies: Papatūānuku

The Mahaanui IMP policies associated with Papatūānuku most relevant to the Synlait application include those outlined below and listed under Issues P2: Intensive Rural Land Use (p103), P4: Sub-division and Development (p105), P6: Stormwater (p111), P7: Waste Management (P112), P8: Discharge to Land (p114), P:11 Earthworks (p115), P16: Transport (p121) and P17: Energy (p122):

*Intensive Rural Land Use*

- *P2.1: Rural land use must prioritise the protection of resources and environmental health for future generations. Economic gain must not have priority over the maintenance of the mauri of Papatūānuku, the provider of all things of nature and the world.*
- *P2.2: The adverse effects of intensive rural land use on water, soil and biodiversity resources in the takiwā must be addressed as a matter of priority.*

*Sub-division and development (guidelines)*

- *1.3: Subdivision and development can provide opportunities to recognise Ngāi Tahu culture, history and identity associated with specific places, and affirm connections between tāngata whenua and place, including but not limited to:*
    - *i) Protecting and enhancing sites of cultural value, including waterways;*
    - *ii) Using traditional Ngāi Tahu names... for developments;*
    - *iii) Use of indigenous species as street [and roadside] trees, in open space and reserves;*
    - *iv) Landscaping design that reflects cultural perspectives, ideas and materials;*
    - *v) Inclusion of interpretation materials, communicating the history and significance of places, resources and names to tāngata whenua; and*
    - *vi) Use of tāngata whenua inspired and designed artwork and structures.*
- *2.4: Appropriate and effective measures must be identified and implemented to manage stormwater run-off during the construction phase, given the high sediment loads that stormwater may carry as a result of vegetation clearance and bare land.*
- *4.1: New developments should incorporate measures to minimise pressure on existing water resources, community water supplies and infrastructure, including incentives or requirements for:*
    - *i) low water use appliances and low flush toilets;*
    - *ii) grey water recycling; and*
    - *iii) rainwater collection.*
- *5.1: Developments should implement measures to reduce the volume of waste created within the development, including but not limited incentives or requirements for:*
    - *i) Low water use appliances and low flush toilets;*
    - *ii) Grey water recycling; and*
    - *iii) Recycling and composting opportunities (e.g. supporting zero waste principles)*
- *6.1: New developments should incorporate low impact...design and sustainability options to reduce the development footprint on existing infrastructure and the environment, including sustainable housing design and low impact and self sufficient solutions for water, waste, energy such as:*
    - *i) Position of... [buildings] to maximise passive solar gain;*
    - *ii) Rainwater collection and greywater recycling;*
    - *iii) Low energy and water use appliances;*
    - *iv) Insulation and double glazing; and*
    - *v) Use of solar energy generation for hot water.*
- *7.1: Sufficient open space is essential to community and cultural well being, and the realization of indigenous biodiversity objectives, and effective stormwater management.*
- *7.2: Indigenous biodiversity objectives should be incorporated into development plans, consistent with the restoration and enhancement of indigenous biodiversity on the landscape.*
- *7.3: Indigenous biodiversity objectives to include provisions to use indigenous species for:*
    - *i) Street [and roadside] trees;*
    - *ii) open space and reserves;*
    - *iii) native ground cover species for swales;*
    - *iv) stormwater management network; and*
    - *v) ...gardens*
- *7.4: Indigenous species used in planting and landscaping should be appropriate to the local environment, and where possible from locally sourced seed supplies.*
- *7.5: Options and opportunities to incorporate cultural and/or mahinga kai themed gardens in open and reserve space can be considered in development planning (e.g. pā harakeke as a source of weaving materials; reserves planted with tree species such as mātai, kahikatea and tōtara could be established with the long term view of having mature trees available for customary use).*

*Stormwater*

- *P6.1: To require on-site solutions to stormwater management in all new urban, commercial, industrial and rural developments (zero stormwater discharge off site) based on a multi tiered approach to stormwater management:*

a) *Education - engaging greater general public awareness of stormwater and its interaction with the natural environment, encouraging them to take steps to protect their local environment and perhaps re-use stormwater where appropriate;*
b) *Reducing volume entering system - implementing measures that reduce the volume of stormwater requiring treatment (e.g. rainwater collection tanks);*
c) *Reduce contaminants and sediments entering system - maximising opportunities to reduce contaminants entering stormwater e.g. oil collection pits in carparks, education of residents, treat the water, methods to improve quality; and*
d) *Discharge to land based methods, including swales, stormwater basins, retention basins, and constructed wetponds and wetlands (environmental infrastructure), using appropriate native plant species, recognising the ability of particular species to absorb water and filter waste.*

- *P6.5 To encourage the design of stormwater management systems in urban and semi urban environments to provide for multiple uses: for example, stormwater management infrastructure as part of an open space network that provides for recreation, habitat and customary use values.*

*Waste Management*

- *P7.1 To require that local authorities recognise that there are particular cultural (tikanga) issues associate with the disposal and management of waste, in particular:*
  a) *The use of water as a receiving environment for waste (i.e. dilution to pollution); and*
  b) *Maintaining a separation between waste and food.*
- *P7.3 To require waste minimisation as a basic principle of, and approach to, waste management. This means reducing the volume of waste entering the system through measures such as:*
  a) *Education about wise water use;*
  b) *Composting and recycling programmes;*
  c) *Incentives for existing and new homes, business, developments and council services to adopt greywater recycling and install low water use appliances; and*
  d) *On site solutions to stormwater that avoid stormwater entering the wastewater system.*
- *P7.5 To require alternatives to using water as a medium for waste treatment and discharge, including but not limited to:*
  a) *Using waste to generate electricity;*
  b) *Treated effluent to forestry; and*
  c) *Treated effluent to non food crop.*

*Discharge to Land*

- *P8.1 To require that discharge to land activities in the takiwā:*
  a) *Are appropriate to the soil type and slope, and the assimilative capacity of the land on which the discharge activity occurs;*
  b) *Avoid over-saturation and therefore the contamination of soil, and/or run off and leaching;*
  c) *Are accompanied by regular testing and monitoring of one or all of the following: soil, foliage, groundwater and surface water in the area.*
- *P8.2 In the event that that accumulation of contaminants in the soil is such that the mauri of the soil resource is compromised, then the discharge activity must change or cease as a matter of priority*

*Earthworks*

- *P11.3 To use to the methods identified in Section 5.8 Policy CL3 (Wāhi tapu me wāhi taonga) where an earthworks activity is identified by tāngata whenua as having actual or potential adverse effects on known or unknown sites of significance...[including the use of an Accidental Discovery Protocol for low risk sites].*
- *P11.8 To require the planting of indigenous vegetation as an appropriate mitigation measure for adverse impacts that may be associated earthworks activity*

*Transport*

- *P16.3 To assess the potential risk of transport related proposals (at any stage) on tāngata whenua values on the basis of the following: (d) Indigenous biodiversity*

*Energy*

- *P17.4: To require ... effective policies requiring the use of renewable energy and energy saving measures in residential, commercial, industrial and other developments.*

### Assessment

Policies P2.1 and P2.2 are linked to those discussed in relation to the Waimāori section above, but explicitly include soil and biodiversity issues and are concerned with addressing adverse effects of intensive rural land use on the cultural values associated with these resources. The policies are seeking the upholding of landuse and water limits and reversing the trends reflected in historical degradation to water quantity and quality and biodiversity loss. It is acknowledged however, that the Stage 4 expansion does not require new water consents.

While not directly relevant to the Synlait application, the sub-division and development guidelines included in the Mahaanui IMP do offer useful direction in relation to a number of key cultural values and issues associated with Papatūānuku that could be considered to further enchance the plant expansion from a cultural perspective. These include amongst other things: recognising Ngāi Tahu culture and heritage through building and landscape design; names for buildings and features; and the use of indigenous species. The guidelines also reinforce other policies associated with stormwater, earthworks, water use, waste management and biodiversity.

Policies P6.1 and P6.5 contain a requirement for on-site stormwater management that also incorporates opportunities for educational and multiple use, a reduction of inputs, the use of land based treatment and the creation of environmental infrastructure to further absorb and filter contaminants in stormwater.

The proposed extension to the existing stormwater system at the plant satisfies the on-site requirement of policy 6.1, and includes design components to reduce contaminants entering the system. An initiative to plant trees in and around the basin is encouraged as a further measure that would improve the conformity of the proposal with the Mahaanui IMP policies, by increasing biodiversity and raising awareness of the presence and role of the stormwater treatment.

The existing stormwater basin is fenced off, largely hidden, does not include amenity plantings or facilities to encourage multiple use (including as an area of higher on-site amenity for workers) as well as the use of other planting within the ponds to filter contaminants. The current basins do however attract ducks and other forms of life, and could therefore be enhanced at a number of levels to better satisfy the Mahaanui IMP policies. Any new basins offer similar opportunities and could be designed with regard to policies P6.1 and P6.5.

The reduction of contaminants that is associated with stormwater, as included in Policy 6.1 (c) could also potentially be considered by Synlait through the use of water minimisation technologies and management systems, the increased use of vegetated swales or rain gardens and where there are planting opportunities to use native species.

Policies P7.1, P7.3 and P7.5 seek consideration of particular cultural issues regarding waste and encourage alternatives to using water as a medium for waste treatment and discharge, to minimise waste and maintain separation between sewage waste and food production.

The DAF plant largely satisfies these policies by recycling both the solid and wet products of the treatment process back into food production. The treatment of human waste via the existing system also largely satisfies the policies, utilising a contained on-site, land based system. An area of additional improvement for both systems could again be considered through the use of water minimisation technologies and management systems. In relation to the human waste system, consideration for the use of indigenous species within the soak field could also be considered.

Policies P8.1 and P8.2 seeks careful management of the soil through regular monitoring and the avoidance of leaching to groundwater. Both the DAF and human wastewater systems are well managed with a high level of monitoring and on-site management and therefore satisfy the policies.

Policy P11.3 seeks the use of an Accidental Discovery Protocols for earthworks in low risk sites. The plant contains no known wāhi tapu, wāhi taonga or NZAA sites and therefore would be considered low risk. Furthermore, an ADP is to be included in the Construction Management Plan. Appendix 3 of the Mahaanui IMP provides a standard ADP which would be appropriate to use for this.

Policy P11.8 provides further encouragement for the use of indigenous vegetation, in this case to mitigate adverse earthwork activity. This could be considered as part of landscaping associated with the existing or new stormwater basins, carparks, and building developments.

Policy P16.3 advocates for the consideration of cultural values in transport related proposals and highlights the use of indigenous planting as a key outcome. Current planting of the boundary bunds utilises indigenous planting, although these will eventually be shielded from view by the pine trees on the roadside. It is relevant to note that from a cultural perspective, indigenous planting is preferred to the planting of exotics, as it represents a re-instatement of the biodiversity values that are endemic and/or native to Ngā Pākihi Whakatekateka o Waitaha (the Canterbury Plains) and the species that Ngāi Tahu have a long standing cultural tradition with, even if very small in scale. Providing lower indigenous planting on either side of exotic trees is a further option that aligns with Policy P16.3 that would make the indigenous trees visible from both the road and factory, thus enhancing both biodiversity and cultural amenity values.

Policy P17.4 advocates for policies that require the use of renewable energy and minimisation. Looking to the future, the Mahaanui IMP encourages and supports technologies and practices that may further enhance the environmental efficiencies and outcomes on the site and therefore contribute to the overall health, and enhancement of the wider catchment, including Te Waihora.

### 4.3.2 Tāne Mahuta

The Mahaanui IMP provides the following explanation of the cultural values and relevant objectives associated with Tāne Mahuta:

> *'Tāne Mahuta is the atua of the forests and birds, and the son of Ranginui and Papatūānuku. It is Tāne that broke the tight embrace of his parents, forcing Rangi high into the heavens and leaving Papatūānuku on earth to care for their children....Ngāi Tahu has a particular interest in indigenous biodiversity, both for its inherent value on the landscape and the ecosystem services it provides, and with regard to mahinga kai. Indigenous flora and fauna has sustained tāngata whenua for hundreds of years, providing food, fibre, building materials, fuel, medicine and other necessities....The protection and enhancement of indigenous biodiversity and mahinga kai underpins many of the issues and policies in...[the] IMP.*
>
> ***Ngā Paetae** Objectives*
>
> *(1) Regional policy, planning and decision making in the takiwā reflects the particular interest of Ngāi Tahu in indigenous biodiversity protection, and the importance of mahinga kai to Ngāi Tahu culture and traditions.*
>
> *(3) The presence of indigenous biodiversity on the Canterbury landscape is enhanced, both in rural and urban environments.*
>
> *(4) The taonga value of indigenous ecosystems as natural capital and provider of essential ecosystem services is increasingly valued in the community.*
>
> *(7) Existing areas of indigenous vegetation are protected, and degraded areas are restored.*
>
> *(8) The establishment and spread of invasive pest and weed species is progressively and effectively controlled.*
>
> *(9) The protection and enhancement of indigenous biodiversity and mahinga kai occurs through a shared, coordinated effort between tāngata whenua, local authorities, conservation groups and communities.*

### 4.3.3 Relevant Policies: Tāne Mahuta

The Mahaanui IMP polices associated with Tāne Mahuta most relevant to the Synlait application include:

- *TM2.5: To require ... specific policy and rules to protect, enhance and extend existing remnant and restored areas of indigenous biodiversity in the takiwā.*
- *TM2.8: To require the integration of robust biodiversity objectives in urban, rural land use and planning, including but not limited to:*
    - *a) Indigenous species in shelter belts...;*
    - *b) Use of indigenous plantings as buffers around activities such as silage pits, effluent ponds, oxidation ponds, and industrial sites;*
    - *c) Use of indigenous species as street trees in residential developments, and in parks and reserves and other open space; and*
    - *d) Establishment of planted indigenous riparian margins along waterways.*

- *TM2.9: To advocate for the establishment of biodiversity corridors in the region, Ki Uta Ki Tai, as means of connecting areas and sites of high indigenous biodiversity value.*

### Assessment: Tāne Mahuta

Policies TM2.5, TM2.8 and TM2.9 are seeking the protection, re-instatement and/or enhancement of indigenous biodiversity as a key element of all developments. The intent of the policies are to recognise the loss of indigenous biodiversity, particularly on Ngā Pākihi Whakatekateka o Waitaha (the Canterbury Plains), to halt further decline or loss and to ensure a tangible improvement and reflection of indigenous biodiversity that are central to ongoing cultural identity and customs.

Existing landscaping and further consented landscaping includes significant indigenous planting and the proposed expansion will replicate this and therefore conform with the above policies.

Throughout this assessment, however, further opportunities to include indigenous planting have been identified that align with other Mahaanui IMP policies for specific activities. Examples include:

- ✓ Planting to offset minor air discharges;
- ✓ Planting of the existing, and any new, stormwater basins;
- ✓ Developing vegetated swales and/or rain gardens as part of any improved stormwater system or around buildings and roadways where practicable;
- ✓ Planting within the soak/drainage field of the human wastewaster system;
- ✓ Planting around buildings, carparks, other facilities (where not affecting operational requirements) and along boundaries and roads, including on both sides and/or around existing or proposed exotic plantings;

## 4.3.4 Ngā Tūtohu Whenua

The Mahaanui IMP provides the following explanation of the cultural values and relevant objectives associated with Ngā Tūtohu Whenua or Cultural Landscapes:

> *'A cultural landscape is a geographical area with particular (and often related) traditional, historical, spiritual and ecological value to Ngāi Tahu. An area may be identified as a cultural landscape due to the concentration of values in a particular location, the particular importance of the area to Ngāi Tahu cultural, history or identity, or the need to manage an area as a particular landscape unit. Cultural landscapes are integral to Ngāi Tahu culture, identity and history, and are testament to relationship of tāngata whenua with the land over time. They are intergenerational: providing future generations (our tamariki and mokopuna) the opportunity to experience and engage with the landscape as their tūpuna once did.*
>
> ***Ngā Paetae** Objectives*
>
> *(1) Cultural landscapes are recognised and provided for as a planning tool to protect wāhi tapu and wāhi taonga, the multiple values associated with these sites and places (traditional and contemporary), and the relationship of tāngata whenua to them'.*

## 4.3.5 Relevant Policies: Cultural Landscapes

The Mahaanui IMP polices associated with Cultural Landscapes most relevant to the Synlait application include:

- *CL1.8 To identify opportunities to enhance cultural landscapes, including but not limited to:*
  - *a) Restoration/enhancement of indigenous biodiversity;*
  - *b) Enhancing views and connections to landscape features;*
  - *c) Appropriate and mandated historical interpretation;*
  - *d) Setting aside appropriate areas of open space within developments; and*
  - *e) Use of traditional materials, design elements and artwork.*
- *CL1.9 To enhance Ngāi Tahu cultural landscape values in the takiwā by:*
  - *a) Protection and restoration of places of cultural value to Ngāi Tahu, including those associated with mahinga kai;*
  - *b) Restoration and enhancement of indigenous biodiversity on the landscape, rural and urban;*

c) *Providing for cultural traditions (both traditional and contemporary) associated with particular places, including mahinga kai and recreational use (e.g. waka ama); and*

d) *Incorporating Ngāi Tahu heritage values into landscape and urban design, through the use traditional place names, interpretation, artwork and public structures.*

### Assessment: Cultural Landscapes

Policies CL1.8 and CL1.9 are predominately focussed on opportunities to recognise and provide for the enhancement and tangible reflection of Ngāi Tahu cultural landscape values as a key element of developments, particularly where these are associated with wāhi tapu, wāhi taonga and other culturally significant sites and areas. This can include the establishment and incorporation of indigenous biodiversity as outlined in the previous sub-section, but can go further and consider elements of design, naming, education and interpretation.

In relation to the Synlait application, there are no specific wāhi tapu, wāhi taonga or other culturally significant sites within the boundary of the plant. Therefore, the cultural landscape policies are not totally relevant. However, the plant exists within the wider landscape of both Te Waihora and Ngā Pākihi Whakatekateka o Waitaha (the Canterbury Plains), as well as the Rakaia catchment, and as such offers an opportunity to contribute to the cultural values associated with these landscapes. At this level, the incorporation of indigenous plants as outlined in the above sub-section would be an appropriate consideration.

# 5.0 Te Whakamutunga / Summary

The Mahaanui IMP provides an extensive policy direction in relation to the key cultural issues associated with the Synlait Stage 4 expansion application. Accordingly, this Addendum has attempted to provide an overview of the relevant policies within the Mahaanui IMP to accompany the application already lodged as requested by Te Taumutu Rūnanga.

While the Mahaanui IMP is the key environmental planning document of manawhenua within the central Canterbury area, it is not derived solely from the RMA or the particular District or Regional plans that it sits alongside, and as such requires care when applying strict RMA or Council planning interpretations in relation to its policies and objectives. The Mahaanui IMP is not limited to considering particular effects of activities but provides additional policy statements that encourage the integration of environmental enhancement and cultural outcomes as a part of particular developments.

This assessment therefore provides both an analysis of how the Synlait expansion generally conforms with relevant Mahaanui IMP policies for the purposes of the consent process, as well as indentifying additional considerations that may be adopted to achieve further outcomes that align with the Mahaanui IMP and the values of tangata whenua.

Overall the Synlait Stage 4 application conforms with the relevant Mahaanui IMP policies, particularly in relation to discharge to air, intensive rural land use, freshwater, stormwater, waste management and earthworks. There are however a range of additional considerations that would help the activity to align with the intent of IMP policies, particularly in relation to indigenous biodiversity and cultural landscape values.

# Appendices

Appendix A – Synlait letter to Te Taumutu Rūnanga dated 19 September 2013

Appendix B – Te Taumutu Rūnanga letter to Synlait dated 24 October 2013

Appendix C – Collated Mahaanui IMP Policy Statements relevant to the Synlait Stage 4 Expansion Application

# Appendix A – Synlait letter to Te Taumutu Rūnanga dated 19 September 2013

19 September 2013

Rose Nutira
Te Taumutu Runanga
Prefab 3, 50 Corsair Drive
PO Box 3214
**CHRISTCHURCH 8140**

Tena koe Rose

**RE: PROPOSAL FROM SYNLAIT MILK LIMITED**

Thank you for your letter of 29 August 2013, and the update on a plan that is currently in development for strategic relationships. Synlait Milk Ltd looks forward to being part of future discussions.

Further to this matter, Synlait Milk wishes to advise that it is currently working on a specific proposal that it would like to discuss with Te Taumutu Runanga.

This proposal involves an expansion of the existing Synlait Milk factory to establish additional drier capacity with associated plant (we note that there are two existing driers on the site). This proposal will enable an increase in the production of milk powders and infant formula and requires resource consents from both the Selwyn District Council and Environment Canterbury.

We would like to seek guidance from Te Taumutu Runanga as to how it may wish Synlait Milk to engage on this proposal. Synlait Milk is most happy to meet or attend a hui or provide further written information as appropriate.

We also understand that in the past Te Taumutu Runanga has approved Cultural Impact Assessments prepared by Ms Dyanna Jolly on its behalf. We wish to indicate that if required, Synlait Milk would be willing to commission Ms Jolly at its cost for such purposes.

We look forward to your advice confirming next steps and how the Runanga wish to be engaged in respect of this proposal for a new drier.

Yours sincerely

Neil Betteridge
**GM Manufacturing**

Synlait Milk Ltd
1028 Hesleton Road
RD13, Rakaia 7783
New Zealand
P +64 3 373 3000
www.synlait.com

# Appendix B – Te Taumutu Rūnanga letter to Synlait dated 24 October 2013

Prefab 3, 50 Corsair Drive
P O Box 3214, Christchurch
Ph 03 371 2660
taumutu@ngaitahu.iwi.nz

**Te Taumutu Rūnanga**

Ngāti Moki Marae
Pohau Road
RD3 Taumutu
Phone 03-324 2454
Fax 03-324 2970
Email taumutu@xtra.co.nz

RECEIVED
23 OCT 2013
BY:

21 October 2013

Synlait Milk Ltd

1028 Heslerton Road

RD 13

**RAKAIA 7783**

Tēnā koe Neil,

Thank you for your letter 19 September 2013 regarding the establishing of an additional drier, which was tabled at our Kaitiakitanga Portfolio Committee hui held during the October Runanga meeting.

The Rūnanga do not consider that a CIA is needed, rather the Portfolio have suggested that Synlait could address the relevant policies with the Mahaanui Iwi Management Plan 2013 in its application/assessment. If you do not currently have a copy of the Mahaanui Iwi Management Plan 2013, please contact Mahaanui Kurataiao Ltd, on ph 377-4374.

Nāhaku noa, na

Rose Nutira

**Kaiwhakarite**

# Appendix C – Collated Mahaanui IMP Policy Statements relevant to the Synlait Stage 4 Expansion Application

## Part 5/Section 5.2 Ranginui/Issue R1: Discharge to air (p70)

**Issue R1:** The discharge of contaminants to air can have adverse effects on Ngāi Tahu values such as mauri, mahinga kai, wāhi tapu, wāhi taonga and marae, and the health of our people and communities.

### Ngā Kaupapa / Policy

- *R1.1 To protect the mauri of air from adverse effects associated with discharge to air activities.*
- *R1.2 To require that the regional council recognise and provide for the relationship of Ngāi Tahu with air, and the specific cultural considerations for air quality, including the effects of discharge to air activities on sites and resources of significance to tāngata whenua and the protection of cultural amenity values (see Issue R2 below).*
- *R1.3 To ensure that regional policy enables tāngata whenua to identify particular sites and places of cultural significance as sensitive environments, to protect such sites from the cultural and environmental effects of the discharge activity.*
- *R1.4 To support the use of indigenous plantings and restoration projects as a means to offset and mitigate industrial, agricultural and residential discharges to air.*

### He Kupu Whakamāhukihuki / Explanation

The discharge of contaminants to air can have adverse effects on sites or resources of significance to tāngata whenua, or the values associated with them. The deposition of air pollutants onto mahinga kai, wāhi tapu or marae will require specific consideration in regional policies on air. Air pollution can adversely affect the ability to smell the sea, hear the waves, or have undisturbed celestial darkness. It can compromise the ability to enjoy and appreciate natural and cultural landscapes, including views of important landmarks such as maunga. Discharge activities associated with topdressing, herbicide application, crematoriums or the spray irrigation of effluent can also have specific cultural effects and may be inappropriate in particular locations, such as near marae or a wāhi tapu site. Discharges can also affect the health and well-being of our people and communities.

## Part 5/Section 5.2 Ranginui/Issue R2: Cultural amenity values (p70)

**Issue R2:** Protection of cultural amenity values such as celestial darkness.

### Ngā Kaupapa / Policy

- *R2.1 To support the use of light suppression or limitation measures to protect celestial darkness values in some areas.*
- *R2.2 To require that the regional council recognise and provide for the relationship of Ngāi Tahu with air, and the specific cultural considerations regarding air quality, including the protection of cultural amenity values.*
- *R2.3 To require that local authorities recognise that some discharge to air activities may have particular adverse effects on Ngāi Tahu cultural values, including marae and wāhi tapu.*

### He Kupu Whakamāhukihuki / Explanation

Amenity values are those natural or physical qualities and characteristics of an area that contribute to people's appreciation of its pleasantness, aesthetic coherence and cultural and recreational attributes RMA s.2). The ability to smell the sea, have a clear view of important maunga or maintain a safe and healthy cultural space around marae are cultural amenity values associated with clean air. Celestial darkness is a cultural amenity value associated with air. Increased lights from development activity such as subdivisions can affect celestial darkness. Celestial darkness is important during the tuna season at sites such as Te Roto o Wairewa. Lights shine into the tuna drains and affect the ability of tāngata whenua to catch tuna. Light pollution can also affect the use of stars to signal the start of the tuna heke.

Protecting cultural amenity values also requires controlling the discharge of contaminants to air (Issue R1). for example, locating a crematorium near a site of historic, traditional or spiritual significance would be culturally inappropriate.

## Part 5/Section 5.3 Waimāori/Issue WM7: Effects of intensive rural land use on freshwater resources (p83)

**Issue WM7:** Intensive rural land use is having unacceptable effects on water quality, water quantity, and the relationship of Ngāi Tahu with freshwater.

### Ngā Kaupapa / Policy

#### *Matching land use with land capability and water availability*

- *WM7.1 To require that rural land and water planning, management and use recognises and provides for:*
  - *a. Catchment boundaries and water availability;*
  - *b. Water quality and quantity thresholds and limits;*
  - *c. Land capability, including soil type and topography;*
  - *d. The protection of eco-cultural systems and resources; and*
  - *e. The capacity of a catchment to assimilate land use effects.*
- *WM7.2 To require a precautionary approach to the land use conversion and intensification in the takiwā that recognises and provides for:*
  - *a. Existing and future effects of diffuse source pollution on surface and groundwater resources from land use;*
  - *b. The cumulative effects of land use on the health of soil and water resources; and*
  - *c. The cultural and environmental costs of land conversion and intensification, in addition to economic return per hectare.*
- *WM7.3 To work with local authorities to develop land use and water quality assessment tools to evaluate the suitability of particular areas for certain activities (e.g. dairy), including but not limited to:*
  - *a. The use of zoning as a method to enable land use that matches local conditions (e.g. soil, climate, water availability, assimilative capacity), as opposed to best economic return per hectare (i.e. when you add enough water and nutrients) and that protect waterways from particular land use activities that are likely to threaten water quality.*

#### *Resource consents for irrigated and other forms of intensive land use*

- *WM7.4 All new land conversions for irrigated and other forms of intensive land use (e.g. dairy and cropping) should require resource consent, and be assessed on the following matters:*
  - *a. Appropriateness of the activity to the environment based on:*
    - *i. Soil type and topography*
    - *ii. Proximity to surface water (waterways, wetlands, waipuna, lakes and drains);*
    - *iii. Depth to groundwater, and nature of the aquifer (confined or unconfined); and*
    - *iv. Water quantity required and limits of available water supply.*
  - *b. Actual and potential effects on the environment and associated Ngāi Tahu values, including the relationship of Ngāi Tahu to land, water and sites; and*
  - *c. Cumulative effects of existing irrigated and other forms of intensive land use in the catchment.*
- *WM7.5 To require that resource consents granted for irrigated and other forms of intensive land use are subject to the following conditions of consent:*
  - *a. The development, implementation and monitoring of farm management plans that cover such matters as effluent, irrigation, soil and environmental infrastructure management, stocking rates, and associated reporting requirements and monitoring provisions; and*
  - *b. Provision to protect and enhance cultural and environmental values, including indigenous biodiversity (e.g. the establishment of shelter belts using native species).*
- *WM7.6 To require that land use and water abstraction consents associated with intensive rural land use are assessed and evaluated together as joint consents.*

### *Catchment nutrient management*

- *WM7.7 The development of catchment nutrient budgets as a tool to manage the cumulative effects of land use on water quality and create rules and incentives to improve on land and water management.*
- *WM7.8 To oppose the trading of nutrient limits. Limits must be attached to land and location.*
- *WM7.9 To support the concept of creating 'headroom', through improved nutrient management, to enable land use change or intensification, but only when:*
  a. *Water quality load limits reflect the need to improve water quality and general cultural health of the catchment, particularly lower catchments, and not just maintain the existing state;*
  b. *Improving water quality and the cultural health of rivers is given priority over enabling development; and*
  c. *Headroom is not created using nutrient trading.*

### *Internalisation of environmental costs*

- *WM7.10 To promote on-farm measures that maximise water use efficiencies and reduce nutrient loss, and that enable landowners undertaking intensive rural farming activities to be responsible for the cultural and environmental costs of their activities, including but not limited to:*
  a. *The treatment of effluent before disposal;*
  b. *On-farm nutrient management;*
  c. *Appropriate stocking rates, that avoid soil loss and nutrient leaching;*
  d. *Soil and foliage testing to optimise and minimise fertiliser use;*
  e. *Best practice irrigation management;*
  f. *The protection, construction or restoration of environmental infrastructure such as wetlands and riparian margins; and*
  g. *Fencing off surface waterways.*
- *WM7.11 To require effective and enforceable penalties for non-compliance, including revoking resource consents and enforced environmental remediation.*

### *Incentives*

- *WM7.12 To recognise and support those land users and managers that are demonstrating sustainable land use and protecting and enhancing the environment and cultural values.*
- *WM7.13 To support the use of incentives to encourage landowners to practice stewardship of freshwater resources. Incentives can be a more powerful tool than regulatory measures such as fines or rules.*

### *Cumulative effects*

- *WM7.14 To require that the effects of land use activities on water quality and quantity are assessed with due regard to the cumulative effects of all land use in the catchment and as well as of individual consents.*

### He Kupu Whakamāhukihuki / Explanation

The effects of intensive rural land use on water quality and quantity is one of the most significant issues for tāngata whenua. Increased pastoral and agricultural production across Ngā Pākihi Whakatekateka o Waitaha has come with a high environmental and cultural cost (see Table 2). Many waterways are not safe to swim in or catch fish from, and many community groundwater supplies are at risk of nitrate and *E.coli* contamination. While tāngata whenua recognise the need for agriculture production, development must be sustainable for the very long term and not driven purely by economics and short-term gains. The right to take and use water must be premised on the responsibility to protect water as a taonga resource.

Intensive pastoral grazing is the land use with the greatest impact on water quality, in terms of land area and the volume of water affected, and waterways in and adjacent to dairy farms are among the most polluted in the country (Issue WM6). Controlling the effects of land use on water quality is critical to recognising and providing for the ancestral relationship of Ngāi Tahu with water. Tāngata whenua support greater regulation of land use that adversely affect waterways. Appropriate controls are required to avoid unlimited land intensification and conversions, particularly with proposed irrigation schemes providing new supplies of water. One method to address this issue is to

require resource consents for all new and existing high impact intensive and irrigated rural land use activities, and to ensure that effects on cultural values and the environment are a key component of assessing the sustainability and appropriateness of these activities.

Tāngata whenua want to see changes in the way water is valued and how land is used and managed, rather than simply mitigating the effects of farming. This approach requires an assessment of how we are using land and water as a prerequisite to looking for ways to securing more water and increase production.

## Part 5/Section 5.4 Papatūānuku / Issue P2: Intensive rural land use (p103)

**Issue P2:** Intensive rural land use is having unacceptable effects on water quality and quantity, biodiversity and soil health, and associated Ngāi Tahu cultural values.

### Ngā Kaupapa / Policy

- *P2.1 Rural land use must prioritise the protection of resources and environmental health for future generations. Economic gain must not have priority over the maintenance of the mauri of Papatūānuku, the provider of all things of nature and the world.*
- *P2.2 The adverse effects of intensive rural land use on water, soil and biodiversity resources in the takiwā must be addressed as a matter of priority.*

### He Kupu Whakamāhukihuki / Explanation

The effects of intensive rural land use on water quality, water quantity, indigenous biodiversity and soil health is the key challenge in the takiwā. The lack of regard for local land and water limits has resulted in unacceptable adverse effects on land and water resources. Increased agricultural production on the central plains and in some parts of Te Pātaka o Rākaihautū has come with a high environmental cost; a cost borne largely by tāngata whenua and the wider community.

Soil resources are becoming exhausted or depleted in some areas, many waterways are no longer safe to swim or catch fish in, and community groundwater supplies are at risk of nitrate and E.coli contamination.

General policy on the effects of intensive rural land use on freshwater resources is found in Section 5.3 under Issue WM7. Local issues affecting particular catchments are addressed in Part 6.

## Part 5/Section 5.4 Papatūānuku / Issue P4: Subdivision and development (p105)

**Issue P4:** Subdivision and development can have significant effects on tāngata whenua values, including sense of place, cultural identity, indigenous biodiversity, mahinga kai, and wāhi tapu and wāhi taonga, but can also present opportunities to enhance those values.

### Ngā Kaupapa / Policy

#### *Processes*

- *P4.1 To work with local authorities to ensure a consistent approach to the identification and consideration of Ngāi Tahu interests in subdivision and development activities, including:*
  - *a. Encouraging developers to engage with Papatipu Rūnanga in the early stages of development planning to identify potential cultural issues; including the preparation of Cultural Impact Assessment reports;*
  - *b. Ensuring engagement with Papatipu Rūnanga at the Plan Change stage, where plan changes are required to enable subdivision;*
  - *c. Requiring that resource consent applications assess actual and potential effects on tāngata whenua values and associations;*
  - *d. Ensuring that effects on tāngata whenua values are avoided, remedied or mitigated using culturally appropriate methods;*
  - *e. Ensuring that subdivision consents are applied for and evaluated alongside associated land use and discharge consents; and*
  - *f. Requiring that 'add ons' to existing subdivisions are assessed against the policies in this section.*

- *P4.2 To support the use of the following methods to facilitate engagement with Papatipu Rūnanga where a subdivision, land use or development activity may have actual or potential adverse effects on cultural values and interests:*
  - *a. Site visit and consultative hui;*
  - *b. Cultural Impact Assessment (CIA) reports; and*
  - *c. Tāngata Whenua Advisory Groups.*

### *Basic principles and design guidelines*

- *P4.3 To base tāngata whenua assessments and advice for subdivision and residential land development proposals on a series of principles and guidelines associated with key issues of importance concerning such activities, as per Ngāi Tahu subdivision and development guidelines.*

### *Ngāi Tahu Property and residential land developments*

- *P4.4 To encourage and support Ngāi Tahu Property Ltd, as the tribal property development company, to set the highest possible standard of best practice for residential land developments in the takiwā, consistent with Ngāi Tahu values.*
- *P4.5 To require that Ngāi Tahu Property Ltd engage with Papatipu Rūnanga when planning and developing commercial ventures such as residential property developments, to achieve Policy P4.4.*

### He Kupu Whakamāhukihuki / Explanation

Subdivision and development is an important issue in the takiwā, in both urban and rural settings. Specific issues associated with subdivision and development activities are addressed as a set of Ngāi Tahu Subdivision and Land Development Guidelines (Policy P4.3). The guidelines provide a framework for Papatipu Rūnanga to positively and proactively influence and shape subdivision and development activities, while also enabling council and developers to identify issues of importance and desired outcomes for protecting tāngata whenua interests on the landscape.

While subdivision and residential land development activities can have adverse effects on cultural values, they can also provide cultural benefits, including opportunities to reaffirm connections between tāngata whenua and place. For example, the use of Ngāi Tahu names for developments or roading can re-establish a Ngāi Tahu presence on highly modified urban and rural landscapes. Working to ensure developments have 'light footprints' with regard to building design, water, waste and energy also provides cultural benefit and is consistent with achieving the values-based outcomes set out in this IMP.

A cultural landscape approach is used by Papatipu Rūnanga to identify and protect tāngata whenua values and interests from the effects of subdivision, land use change and development. While many specific sites (e.g. pā sites) are protected as recognised historic heritage, the wider contexts, settings or landscapes in which they occur are not. A cultural landscape approach enables a holistic identification and assessment of sites of significance, and other values of importance such as waterways, wetlands and waipuna (see Section 5.8, Issue CL1).

While all proposals for subdivision and development are assessed against the guidelines set out in Policy P4.3, Papatipu Rūnanga identify specific expectations and opportunities associated with residential land developments undertaken by Ngāi Tahu Property the tribal property development company. As other tribal and Rūnanga-based businesses, Papatipu Rūnanga want to see Ngāi Tahu lead the way and set the standard for best practice in all that they do (see Section 4.1, Issue K5).

Many of the catchment sections in Part 6 of this Plan include specific policies to guide subdivision and development in particular areas, to ensure that such activities occur in a manner consistent with protecting local cultural and community values.

## Ngāi Tahu subdivision and development guidelines (p107-109)

**Note:** These guidelines are to be read in conjunction with Policies P4.1, P4.2 and P4.3

### *Cultural landscapes*

- *1.1 A cultural landscape approach is the most appropriate means to identify, assess and manage the potential effects of subdivision and development on cultural values and significant sites [refer Section 5.8 Issue CL1].*
- *1.2 Subdivision and development that may impact on sites of significance is subject Ngāi Tahu policy on Wāhi tapu me wāhi taonga and Silent Files (Section 5.8, Issues CL3 and CL4).*

- *1.3 Subdivision and development can provide opportunities to recognise Ngāi Tahu culture, history and identity associated with specific places, and affirm connections between tāngata whenua and place, including but not limited to:*
    - *i. Protecting and enhancing sites of cultural value, including waterways;*
    - *ii. Using traditional Ngāi Tahu names for street and neighborhood names, or name for developments;*
    - *iii. Use of indigenous species as street trees, in open space and reserves;*
    - *iv. Landscaping design that reflects cultural perspectives, ideas and materials;*
    - *v. Inclusion of interpretation materials, communicating the history and significance of places, resources and names to tāngata whenua; and*
    - *vi. Use of tāngata whenua inspired and designed artwork and structures.*

### *Stormwater*

- *2.1 All new developments must have on-site solutions to stormwater management (i.e. zero stormwater discharge off site), based on a multi-tiered approach to stormwater management that utilises the natural ability of Papatūānuku to filter and cleanse stormwater and avoids the discharge of contaminated stormwater to water [refer to Section 5.4, Policy P6.1].*
- *2.2 Stormwater swales, wetlands and retention basins are appropriate land based stormwater management options. These must be planted with native species (not left as grass) that are appropriate to the specific use, recognising the ability of particular species to absorb water and filter waste.*
- *2.3 Stormwater management systems can be designed to provide for multiple uses. For example, stormwater management infrastructure as part of an open space network can provide amenity values, recreation, habitat for species that were once present on the site, and customary use.*
- *2.4 Appropriate and effective measures must be identified and implemented to manage stormwater run off during the construction phase, given the high sediment loads that stormwater may carry as a result of vegetation clearance and bare land.*
- *2.5 Councils should require the upgrade and integration of existing stormwater discharges as part of stormwater management on land rezoned for development.*
- *2.6 Developers should strive to enhance existing water quality standards in the catchment downstream of developments, through improved stormwater management.*

### *Earthworks*

- *3.1 Earthworks associated with subdivision and development are subject to the general policy on Earthworks (Section 5.4 Issue P11) and Wāhi tapu me wāhi taonga (Section 5.8, Issue CL3), including the specific methods used in high and low risk scenarios for accidental finds and damage to sites of significance.*
- *3.2 The area of land cleared and left bare at any time during development should be kept to a minimum to reduce erosion, minimise stormwater run off and protect waterways from sedimentation.*
- *3.3 Earthworks should not modify or damage beds and margins of waterways, except where such activity is for the purpose of naturalisation or enhancement.*
- *3.4 Excess soil from sites should be used as much as possible on site, as opposed to moving it off site. Excess soil can be used to create relief in reserves or buffer zones.*

### *Water supply and use*

- *4.1 New developments should incorporate measures to minimise pressure on existing water resources, community water supplies and infrastructure, including incentives or requirements for:*
    - *i. low water use appliances and low flush toilets;*
    - *ii. grey water recycling; and*
    - *iii. rainwater collection.*

- *4.2 Where residential land development is proposed for an area with existing community water supply or infrastructure, the existing supply or infrastructure must be proven to be able to accommodate the increased population prior to the granting of subdivision consent.*
- *4.3 Developments must recognise, and work to, existing limits on water supply. For example, where water supply is an issue, all new dwellings should be required to install rainwater collection systems.*

### *Waste treatment and disposal*

- *5.1 Developments should implement measures to reduce the volume of waste created within the development, including but not limited incentives or requirements for:*
    - *i. Low water use appliances and low flush toilets;*
    - *ii. Grey water recycling; and*
    - *iii. Recycling and composting opportunities (e.g. supporting zero waste principles).*
- *5.2 Where a development is proposed for an area with existing wastewater infrastructure, the infrastructure must be proven to be able to accommodate the increased population prior to the granting of the subdivision consent.*
- *5.3 New rural residential or lifestyle block developments should connect to a reticulated sewage network if available.*
- *5.4 Where new wastewater infrastructure is required for a development:*
    - *i. The preference is for community reticulated systems with local treatment and land based discharge rather than individual septic tanks; and*
    - *ii. Where individual septic tanks are used, the preference is a wastewater treatment system rather than septic tanks.*

### *Design guidelines*

- *6.1 New developments should incorporate low impact urban design and sustainability options to reduce the development footprint on existing infrastructure and the environment, including sustainable housing design and low impact and self sufficient solutions for water, waste, energy such as:*
    - *i. Position of houses to maximise passive solar gain;*
    - *ii. Rainwater collection and greywater recycling;*
    - *iii. Low energy and water use appliances;*
    - *iv. Insulation and double glazing; and*
    - *v. Use of solar energy generation for hot water.*
- *6.2 Developers should provide incentives for homeowners to adopt sustainability and self sufficient solutions as per 6.1 above.*
- *6.3 Urban and landscape design should encourage and support a sense of community within developments, including the position of houses, appropriately designed fencing, sufficient open spaces, and provisions for community gardens.*
- *6.4 Show homes within residential land developments can be used to showcase solar hot water, greywater recycling and other sustainability options, and raise the profile of low impact urban design options.*

### *Landscaping and open space*

- *7.1 Sufficient open space is essential to community and cultural well being, and the realization of indigenous biodiversity objectives, and effective stormwater management.*
- *7.2 Indigenous biodiversity objectives should be incorporated into development plans, consistent with the restoration and enhancement of indigenous biodiversity on the landscape.*
- *7.3 Indigenous biodiversity objectives to include provisions to use indigenous species for:*
    - *i. street trees;*
    - *ii. open space and reserves;*
    - *iii. native ground cover species for swales;*

iv. *stormwater management network; and*

v. *home gardens.*

- *7.4 Indigenous species used in planting and landscaping should be appropriate to the local environment, and where possible from locally sourced seed supplies.*
- *7.5 Options and opportunities to incorporate cultural and/or mahinga kai themed gardens in open and reserve space can be considered in development planning (e.g. pā harakeke as a source of weaving materials; reserves planted with tree species such as mātai, kahikatea and tōtara could be established with the long term view of having mature trees available for customary use).*
- *7.6 Developers should offer incentives for homeowners to use native species in gardens, including the provision of lists of recommended plants to avoid, discounts at local nursery, and landscaping ideas using native species.*

## Part 5/Section 5.4 Papatūānuku / Issue P6: Stormwater (p111-112)

Issue P6: The discharge of stormwater in urban, commercial, industrial and rural environments and can have effects on water quality.

### Ngā Kaupapa / Policy

- *P6.1 To require on-site solutions to stormwater management in all new urban, commercial, industrial and rural developments (zero stormwater discharge off site) based on a multi tiered approach to stormwater management:*
  - i. *Education - engaging greater general public awareness of stormwater and its interaction with the natural environment, encouraging them to take steps to protect their local environment and perhaps re-use stormwater where appropriate;*
  - ii. *Reducing volume entering system - implementing measures that reduce the volume of stormwater requiring treatment (e.g. rainwater collection tanks);*
  - iii. *Reduce contaminants and sediments entering system - maximising opportunities to reduce contaminants entering stormwater e.g. oil collection pits in carparks, education of residents, treat the water, methods to improve quality; and*
  - iv. *Discharge to land based methods, including swales, stormwater basins, retention basins, and constructed wetponds and wetlands (environmental infrastructure), using appropriate native plant species, recognising the ability of particular species to absorb water and filter waste.*
- *P6.2 To oppose the use of existing natural waterways and wetlands, and drains, for the treatment and discharge of stormwater in both urban and rural environments.*
- *P6.3 Stormwater should not enter the wastewater reticulation system in existing urban environments.*
- *P6.4 To require that the incremental and cumulative effects of stormwater discharge are recognised and provided for in local authority planning and assessments.*
- *P6.5 To encourage the design of stormwater management systems in urban and semi urban environments to provide for multiple uses: for example, stormwater management infrastructure as part of an open space network that provides for recreation, habitat and customary use values.*
- *P6.5 To support integrated catchment management plans (ICMP) as a tool to manage stormwater and the effects of land use change and development on the environment and tāngata whenua values, when these plans are consistent with Policies P6.1 to P6.4.*
- *P6.6 To oppose the use of global consents for stormwater discharges.*

### He Kupu Whakamāhukihuki / Explanation

Stormwater run off from urban, industrial and rural environments can have significant effects on water quality and waterway health. Improving stormwater management requires on site, land-based solutions to stormwater disposal, alongside initiatives to reduce the presence of sediments and contaminants in stormwater, and reducing the volume of stormwater requiring treatment. Low impact development and low impact urban design are fundamental features of sustainable stormwater management. Aligning stormwater treatment and disposal with best practice methods will have an overall benefit to water quality.

## Part 5/Section 5.4 Papatūānuku / Issue P7: Waste management (p112-113)

**Issue P7:** There are specific cultural issues associated with the disposal and management of waste.

### Ngā Kaupapa / Policy

- *P7.1 To require that local authorities recognise that there are particular cultural (tikanga) issues associate with the disposal and management of waste, in particular:*
    a. *The use of water as a receiving environment for waste (i.e. dilution to pollution); and*
    b. *Maintaining a separation between waste and food.*
- *P7.2 To actively work with local government to ensure that waste management practices protect cultural values such as mahinga kai and wāhi tapu and are consistent with Ngāi Tahu tikanga.*
- *P7.3 To require waste minimisation as a basic principle of, and approach to, waste management. This means reducing the volume of waste entering the system through measures such as:*
    a. *Education about wise water use;*
    b. *Composting and recycling programmes;*
    c. *Incentives for existing and new homes, business, developments and council services to adopt greywater recycling and install low water use appliances; and*
    d. *On site solutions to stormwater that avoid stormwater entering the wastewater system.*
- *P7.4 To continue to oppose the use of waterways and the ocean as a receiving environment for waste.*
- *P7.5 To require alternatives to using water as a medium for waste treatment and discharge, including but not limited to:*
    a. *Using waste to generate electricity;*
    b. *Treated effluent to forestry; and*
    c. *Treated effluent to non food crop.*
- *P7.6 To require higher treatment levels for wastewater: 'we should not have to rely on mixing and dilution of wastewater to mitigate effects'.*
- *P7.7 To work towards achieving zero waste at our marae, through the reduction of waste produced, and the use of composting and recycling programs.*
- *P7.8 To oppose the use of global consents for activities associated with management and discharge of wastewater.*

### He Kupu Whakamāhukihuki / Explanation

Waste management and disposal is an issue in the region whereby tāngata whenua often have distinctive cultural perspectives that differ from those of the wider community. The most obvious example is the use of water to treat (dilute) and discharge waste. The practice of discharging sewage into waterways and the marine environment is highly offensive for tāngata whenua, as these areas are, or are connected to, mahinga kai or food gathering areas. While the discharge of treated sewage or other wastewater may be within acceptable biological or physical standards, it is not acceptable from a cultural perspective. Water that contains waste is seen as degraded, even if the waste is treated. If water contains waste then it cannot be used to harvest mahinga kai. These basic policies are underpinned by a sound environmental and ecological understanding of the need to protect water and food supplies.

The separation between kai (food) and human waste streams is also an issue with regard to the management of 'bio-solids' (a by-product of the sewage treatment process). While tāngata whenua may support the disposal of biosolids onto forestry plantations, the use of biosolids on food crops would be culturally unacceptable. Tāngata whenua have continuously and strongly advocated for discharge to land as a waste management tool in the region, utilising the natural ability of Papatūānuku to filter and cleanse wastewater. For example, the use of constructed wetlands to treat stormwater or sewage capitalizes on the natural ability of wetlands as the 'kidneys' of the land.

Waste minimisation as an approach to waste management is consistent with protecting cultural values and achieving outcomes set out in this IMP. Reducing the volume of solid waste and wastewater produced in the takiwā will reduce pressure on existing infrastructure, and on the environment and cultural values.

## Part 5/Section 5.4 Papatūānuku / Issue P8: Discharge to land (p114)

**Issue P8:** Discharge to land can utilise the natural abilities of Papatūānuku to cleanse and filter contaminants, but must still be managed to avoid adverse effects on soil and water resources.

### Ngā Kaupapa / Policy

- *P8.1 To require that discharge to land activities in the takiwā:*
    a. *Are appropriate to the soil type and slope, and the assimilative capacity of the land on which the discharge activity occurs;*
    b. *Avoid over-saturation and therefore the contamination of soil, and/or run off and leaching; and*
    c. *Are accompanied by regular testing and monitoring of one or all of the following: soil, foliage, groundwater and surface water in the area.*
- *P8.2 In the event that that accumulation of contaminants in the soil is such that the mauri of the soil resource is compromised, then the discharge activity must change or cease as a matter of priority.*

### He Kupu Whakamāhukihuki / Explanation

Discharges to land can include treated sewage (e.g. biosolids and wastewater), stormwater, domestic wastewater, industrial wastewater, or farm effluent. Tāngata whenua have always supported discharge to land as an alternative to discharge to water, given the natural ability of Papatūānuku to cleanse and filter contaminants from waste. However support for discharge to land is provisional on appropriate management of the activity. Over-saturation and overburdening of soils with wastewater, effluent or other discharge compromises the mauri of the land (Issue P9 Soil Conservation) and can result in run off or seepage into groundwater and waterways in the area.

## Part 5/Section 5.4 Papatūānuku / Issue P11: Earthworks (p115-116)

**Issue P11**: Earthworks associated with land use and development need to be managed to avoid damaging or destroying sites of significance, and to avoid or minimise erosion and sedimentation.

### Ngā Kaupapa / Policy

- *P11.1 To assess proposals for earthworks with particular regard to:*
    a. *Potential effects on wāhi tapu and wāhi taonga, known and unknown;*
    b. *Potential effects on waterways, wetlands and waipuna;*
    c. *Potential effects on indigenous biodiversity;*
    d. *Potential effects on natural landforms and features, including ridge lines;*
    e. *Proposed erosion and sediment control measures; and*
    f. *Rehabilitation and remediation plans following earthworks.*

### *Risk of damage of modification to sites of significance*

- *P11.2 To require that tāngata whenua are able to identify particular areas whereby earthworks activities are classified a restricted discretionary activity, with Ngāi Tahu values as a matter of discretion.*
- *P11.3 To use to the methods identified in Section 5.8 Policy CL4.6 (Wāhi tapu me wāhi taonga) where an earthworks activity is identified by tāngata whenua as having actual or potential adverse effects on known or unknown sites of significance.*
- *P11.4 To advocate that councils and consent applicants recognise the statutory role of the Historic Places Trust and their legal obligations under the Historic Places Act 1993 where there is any potential to damage, modify or destroy an archaeological site.*
- *P11.5 To require that the Historic Places Trust (HPT) and local authorities recognise and provide for the ability of tāngata whenua to identify wāhi taonga and wāhi tapu that must be protected from development, and thereby ensure that an Authority to damage, destroy or modify a site is not granted.*
- *P11.6 To avoid damage or modification to wāhi tapu or other sites of significance as opposed to remedy or mitigate.*

*Indigenous vegetation*

- *P11.7 To require that indigenous vegetation that is removed or damaged as a result of earthworks activity is replaced.*
- *P11.8 To require the planting of indigenous vegetation as an appropriate mitigation measure for adverse impacts that may be associated earthworks activity.*

*Erosion and sediment control*

- *P11.9 To require stringent and enforceable controls on land use and earthworks activities as part of the resource consent process, to protect waterways and waterbodies from sedimentation, including but not limited to:*
    a. *The use of buffer zones;*
    b. *Minimising the extent of land cleared and left bare at any given time; and*
    c. *Capture of run-off, and sediment control*

He Kupu Whakamāhukihuki / Explanation

The term 'earthworks' is used to describe activities that involve soil disturbance, land modification and excavation and can occur at a range of scales from individual house sites (e.g. installation of septic tanks and landscaping) to large residential subdivisions or regional infrastructure. Of particular importance is earthworks in the beds and margins of waterways (see Section 5.3, Issue WM12).

Any activity that involves ground disturbance has the potential to uncover cultural material or wāhi tapu. Activities such as subdivision and land use change can increase the sensitivity of a site with regard to effects on sites of significance. Ngāi Tahu use a number of mechanisms to manage the risk to wāhi tapu and wāhi taonga as a result of earthworks. The appropriate protection mechanism reflects whether the site or area is considered low or high risk for the potential for accidental finds or damage, destruction of modification of known or unknown cultural and historic heritage sites (see Section 5.8, Issue CL3 Wāhi tapu me wāhi taonga).

Erosion and sediment control is also a key issue of concern with regard to earthworks. Activities such as residential land development can leave large areas of land cleared with bare soil exposed, increasing the risk of erosion and the discharge of sediment into waterways, harbours or the sea.

## Part 5/Section 5.4 Papatūānuku / Issue P16: Transport (p121)

Issue P16: The protection of sites of significance and indigenous biodiversity, and the potential for erosion and sedimentation, are issues of importance to tāngata whenua with regard to land transport infrastructure.

Ngā Kaupapa / Policy

*Consultation*

- *P16.1 To require that engagement with Papatipu Rūnanga occurs at the early planning stages (i.e. designation stage) of major transport proposals, This may or may not include:*
    a. *Cultural impact assessment (CIA) reports; and*
    b. *Archaeological assessments.*
- *P16.2 Where a transport proposal may affect Māori land:*
    a. *Papatipu Rūnanga to be notified; and*
    b. *Consultation must occur with the owners of that land.*

*Assessments of effects*

- *P16.3 To assess the potential risk of transport related proposals (at any stage) on tāngata whenua values on the basis of the following:*
    a. *Purpose of the proposal - how consistent is the purpose of the proposal with the objectives set out in this IMP (e.g. stormwater, indigenous biodiversity)?*
    b. *Sites of significance - proximity to sites of cultural significance, including marae, wāhi tapu, silent files and archaeological sites;*
    c. *Protection of waterways - what measures are proposed to avoid the modification of waterways, the discharge of contaminants and sediment to water?*

d. *Indigenous biodiversity - what are the potential effects on existing indigenous biodiversity and what are the opportunities to enhance indigenous biodiversity values?*

### *Protection of tāngata whenua values*

- *P16.4 To require that the development and construction of transport infrastructure avoid the following sites and areas of cultural significance:*
  a. *Sites identified by tāngata whenua as wāhi tapu;*
  b. *Some sites identified by tāngata whenua as wāhi taonga; and*
  c. *Māori land, unless agreed to by owners.*
- *P16.5 To support the development of tribal Heritage Risk Model or Heritage Alert Layers to protect wāhi tapu, wāhi taonga and archaeological sites located within the State Highway Network in Canterbury.*
- *P16.6 To continue to recognise the Accidental Discovery Protocol (2003) for the Transit New Zealand Canterbury region, agreed to by Te Rūnanga o Ngāi Tahu, the Historic Places Trust, and Transit New Zealand.*
- *P16.7 To support improved transport network infrastructure and services to support the development aspirations of Ngāi Tahu communities, such as those at Tuahiwi and Rāpaki.*
- *P16.8 To support sustainable transport measures in urban design and development, including public transport, pedestrian walkways, and cycle ways.*

### He Kupu Whakamāhukihuki / Explanation

Land transport infrastructure includes the state highways and other roads, rail network, cyclist and pedestrian provisions and public transport. The construction of new roads and other transport infrastructure involves earthworks and therefore the potential risk to wāhi tapu and wāhi taonga must be considered (Issue P11 Earthworks). Sediment and contaminant discharges associated with earthworks and stormwater are also important issues, as these discharges can affect water quality in local waterways. Land transport infrastructure can also provide opportunities for the enhancement of cultural values, through initiatives such as roadside plantings using indigenous species.

A good working relationship between Ngāi Tahu and the NZ Transport Agency is fundamental to protecting sites of significance, as are appropriate tools and processes for engagement with tāngata whenua and assessments of effects on values of importance.

## Part 5/Section 5.4 Papatūānuku / Issue P17: Energy (p122)

**Issue P17:** Ngāi Tahu have a particular interest in energy generation, distribution and use.

### Ngā Kaupapa / Policy

- *P17.1 Ngāi Tahu must have a strategic and influential role in decisions about energy extraction and generation in the region, as a Treaty partner with specific rights and interests in resources used for energy generation, particularly water.*
- *P17.2 To continue to engage with the energy sector and build constructive and enduring relationships.*
- *P17.3 To require that the energy sector engage with Ngāi Tahu at the concept development stage, rather than at the resource consent stage and to support the use of Cultural Impact Assessment (CIA) reports to assess potential and actual effects of proposals on Ngāi Tahu values.*
- *P17.4 To require that local authorities develop and implement effective policies requiring the use of renewable energy and energy saving measures in residential, commercial, industrial and other developments.*
- *P17.5 To support in principle the use of wind and solar energy generation in the region (see Section 5.7, Issue TAW1).*

### He Kupu Whakamāhukihuki / Explanation

Ngāi Tahu have an interest in the extraction, generation, distribution and use of energy in the takiwā. An issue of particular significance is the use of water to generate energy, given the potential for damming, diversion and storage to have effects on the relationship of tāngata whenua to ancestral rivers, and fundamental questions about competition for water resources and commercial use.

Ngāi Tahu are also interested in finding ways to reduce energy consumption. The debate on energy is often centered on extraction and production rather than the need to reduce consumption, particularly non-renewable fossil fuels. Alternative sources of energy generation such as wind (Section 5.7, Issue TAW1) and solar are highlighted in various sections of this plan as a means to reduce our energy footprint.

Meaningful and enduring relationships with the energy industry based on a mutual understanding of each other's values and interests associated with water and other resources is fundamental to addressing current and future energy issues in the takiwā.

## Part 5/Section 5.5 Tāne Mahuta/ Issue TM2: Indigenous biodiversity (p130)

**Issue TM2:** The widespread loss of indigenous biodiversity has significant effects on:

a. *The relationship of Ngāi Tahu and their culture and traditions with ancestral lands, water and sites;*
b. *Mahinga kai values (see Issue TM1); and*
c. *The health of land, water and communities.*

### Ngā Kaupapa / Policy

#### *Ngāi Tahu interests in biodiversity*

- *TM2.1 To require that local authorities and central government actively recognise and provide for the relationship of Ngāi Tahu with indigenous biodiversity and ecosystems, and interests in biodiversity protection, management and restoration, including but not limited to:*
    a. *Importance of indigenous biodiversity to tāngata whenua, particularly with regard to mahinga kai, taonga species, customary use and valuable ecosystem services;*
    b. *Recognition that special features of indigenous biodiversity (specific areas or species) have significant cultural heritage value for Ngāi Tahu;*
    c. *Connection between the protection and restoration of indigenous biodiversity and cultural well-being;*
    d. *Role of mātauranga Ngāi Tahu in biodiversity management; and*
    e. *Role of Ngāi Tahu led projects to restoring indigenous biodiversity (e.g. Mahinga Kai Enhancement Fund; Kaupapa Kēreru).*
- *TM2.2 To recognise Te Tiriti o Waitangi as the basis for the relationship between central and local government and tāngata whenua with regard to managing indigenous biodiversity, as per the duty of active protection of Māori interests and the principle of partnership.*
- *TM2.3 To continue to work in partnership with the Department of Conservation, local authorities and the community to protect, enhance and restore indigenous biodiversity.*

#### *Significance*

- *TM2.4 To require that criteria for assessing the significance of ecosystems and areas of indigenous biodiversity recognise and provide for ecosystems, species and areas that are significant for cultural reasons.*

#### *Protection of remnant and restored areas*

- *TM2.5 To require that city, district and regional plans include specific policy and rules to protect, enhance and extend existing remnant and restored areas of indigenous biodiversity in the takiwā.*
- *TM2.6 To showcase existing remnant and restored areas as examples of how future management can improve the cultural health of the takiwā.*
- *TM2.7 To continue to support those groups and landowners that that are working to maintain, restore and enhance the indigenous biodiversity, and to advocate for projects of interest and importance to Ngāi Tahu.*

#### *Integrating indigenous biodiversity into the landscape*

- *TM2.8 To require the integration of robust biodiversity objectives in urban, rural land use and planning, including but not limited to:*
    a. *Indigenous species in shelter belts on farms;*

b. *Use of indigenous plantings as buffers around activities such as silage pits, effluent ponds, oxidation ponds, and industrial sites;*
c. *Use of indigenous species as street trees in residential developments, and in parks and reserves and other open space; and*
d. *Establishment of planted indigenous riparian margins along waterways.*

### *Biodiversity corridors*

- *TM2.9 To advocate for the establishment of biodiversity corridors in the region, Ki Uta Ki Tai, as means of connecting areas and sites of high indigenous biodiversity value.*

### *Ecosystem services*

- *TM2.10 To require that indigenous biodiversity is recognised and provided for as the natural capital of Papatūānuku, providing essential and invaluable ecosystem services.*
- *TM2.11 To work with the wider community to increase community understandings of indigenous biodiversity and the ecosystem services it provides.*

### He Kupu Whakamāhukihuki / Explanation

Indigenous biodiversity, and the landscapes and ecosystems that support it, is a fundamental part of the culture, identity and heritage of Ngāi Tahu, particularly with regard to mahinga kai and the connection between people and place through resource use (see Issue TM1).

Ngā Pākihi Whakatekateka o Waitaha and Te Pātaka o Rākaihautū have experienced significant land use change and resultant habitat and biodiversity loss over the last century and a half (see Box - Native forest cover change - Te Pātaka o Rākaihautū), and this has had a marked effect on Ngāi Tahu mahinga kai values. The degradation and loss of indigenous species and diversity is one of the major factors affecting the poor cultural health of many sites and waterways. For example, a cultural health assessment for Ihutai and its catchment found that 70% of all sites surveyed had less than 15% of the total vegetation cover in native vegetation, and no site had greater than 40% nativevegetation dominance (see Part 6, Section 6.5 Ihutai).

Restoring indigenous biodiversity values is one of the most important challenges for the future management in the takiwā. A healthy economy relies on a healthy environment. Indigenous biodiversity, along with air, water and soil, are taonga; they are the region's natural capital, providing a suite of essential ecosystem services (see Box – Ecosystem services). Although these services are often taken for granted, they have immense value to cultural, social and economic well being. A major concern for tāngata whenua is that urban and township planning continues to promote, and often prioritise, the planting of exotic species in residential land developments, along waterways and in reserves and open space.

The Treaty of Waitangi provides the basis for the relationship between central and local government and iwi/hapū in managing indigenous biodiversity, as per the duty of active protection of Māori interests and the principle of partnership. The Christchurch City Council Biodiversity Strategy 2008-2035 (for Ōtautahi and Te Pātaka o Rākaihautū) reflects these obligations, through the provision a vision, goals and objectives for the protection and enhancement of indigenous biodiversity in the region that explicitly recognise the relationship of Ngāi Tahu to biodiversity and the need for a partnership approach to achieve biodiversity outcomes.

## Part 5/Section 5.5 Tāne Mahuta/ Issue TM3: Restoration of indigenous biodiversity (p133)

**Issue TM3:** Tāngata whenua have a particular interest in the restoration of indigenous biodiversity.

### Ngā Kaupapa / Policy

- *TM3.1 To approach the restoration of indigenous biodiversity in the takiwā based on the following principles:*
    a. *Restoration of indigenous biodiversity is about restoring original and natural landscapes, and therefore the mauri of the land; and*
    b. *Restoration of indigenous biodiversity is about restoring the relationship of Ngāi Tahu to important places and resources; including planning for customary use.*
- *TM3.2 To advocate for an approach to restoration based on 'working with the land rather than against it', including but not limited to:*
    a. *Establishment of long term, intergenerational vision and objectives (50 and 100 years ahead); and*

b. *Use of natural succession and staged re-planting rather than spraying and burning (e.g. natural succession of indigenous species into areas of gorse and broom; staged underplanting of natives into wetland and lagoon areas full of willow).*

- *TM3.3 To promote the value of Ngāi Tahu knowledge, tools and tikanga in restoration planning and projects, in particular:*
    a. *The establishment of long term, achievable restoration goals (tāngata whenua are not going anywhere!);*
    b. *Provision of information on the flora and fauna present in pre-European times, based on oral tradition and historical maps; and*
    c. *Use of tools such as State of the Takiwā to provide assessments of current and desired states of cultural health of an area and cultural assessments of restoration requirements and risks.*
- *TM3.4 To incorporate, where appropriate, mahinga kai objectives into restoration project planning and objectives.*
- *TM3.5 To require that seeds and plants for restoration projects are appropriate to the area, and as much as possible locally sourced.*
- *TM3.6 To support local and regional restoration groups and efforts, including but not limited to:*
    a. *Living Streams (community based stream enhancement, Environment Canterbury); and*
    b. *Te Ara Kākāriki Greenway Canterbury (development of an indigenous wildlife corridor across the Ngā Pākihi Whakatekateka o Waitaha).*

### He Kupu Whakamāhukihuki / Explanation

The restoration of indigenous biodiversity is critical to achieving Ngāi Tahu objectives to increase the abundance, access to and use of mahinga kai. The importance of indigenous biodiversity to mahinga kai is reflected in tāngata whenua perspectives on restoration: that restoration is about restoring the mauri of land and places, and about restoring the relationship of Ngāi Tahu to these places.

Ngāi Tahu have a unique and tested set of tools, practices and knowledge that can provide a valuable basis for restoration projects. Oral tradition and tribal and historical records provide a reliable and accurate source of information to construct a picture of the pre-European settlement landscape and the species that existed in this landscape (e.g. 1880 Taiaroa Maps held by Ngāi Tahu).

Tools such as State of the Takiwā provide contemporary assessments of current and desired states of cultural health of an area and can assist with developing restoration goals and objectives.

## Part 5/Section 5.8 Ngā Tūtohu Whenua / Issue CL1: Recognising cultural landscapes (p164-165)

**Issue CL1:** Ngā Tūtohu Whenua -

a. *There is a need for culturally appropriate tools to identify and express the relationship of tāngata whenua with particular places, and the values that define that relationship;*
b. *Land use and development can have both positive and adverse effects on cultural landscapes;*
c. *An RMA focus on outstanding landscapes and outstanding natural features can mean that cultural landscapes are not recognised in planning and policy; and*
d. *Enhancement and restoration of cultural landscapes is important to Ngāi Tahu culture, identity and well being.*

### Ngā Kaupapa / Policy

#### *Recognising cultural landscapes*

- *CL1.1 To require that local and central government recognise and provide for the ability of tāngata whenua to identify particular landscapes as significant cultural landscapes, reflecting:*
    a. *Concentration, distribution and nature of wāhitapu and wāhi taonga;*
    b. *Setting within which sites occur and significance of that setting;*
    c. *Significance with regard to association and relationship to place; and*
    d. *Degree of risk/threat.*

- *CL1.2 To require that local and central government give effect to cultural landscapes in policy, planning and decision making processes as a tool to:*
    a. *Enable holistic assessment of effects on cultural values;*
    b. *Recognise the relationship of Ngāi Tahu to particular areas and sites; and*
    c. *Provide a wider context for cultural heritage management and the protection of individual sites.*
- *CL1.3 To work with local authorities to increase awareness and knowledge of the use of cultural landscapes as a tāngata whenua planning tool.*
- *CL1.4 To require that oral tradition and history is considered equally alongside documented evidence when determining the cultural landscape values associated with a particular area or site.*
- *CL1.5 To require that NTCSA 1998 provisions are recognised and provided for as cultural landscape indicators, including Statutory Acknowledgments, Nohoanga, Tōpuni and Dual Place Names provisions.*
- *CL1.6 To require that known Māori archaeological sites and silent files are recognised and provided for as cultural landscape indicators.*

### *Protecting and restoring cultural landscapes*

- *CL1.7 To use the following methods to protect and restore cultural landscapes of particular importance:*
    a. *Purchasing particular areas (tribal or Papatipu Rūnanga ownership);*
    b. *Designation as Māori reserve;*
    c. *Registration with Historic Places Trust as wāhi tapu or wāhi tapu area;*
    d. *Co-management arrangements or transfer of ownership;*
    e. *Development of restoration plans to restore the mauri of particular places;*
    f. *Covenants (e.g. heritage, open space, protective, etc);*
    g. *Heritage orders;*
    h. *Zoning in district plans to protect places from development;*
    i. *Designation as Mahinga Kai Cultural Park; and*
    j. *Designation as Historic Reserve or local purpose reserve, under the Reserves Act 1977.*
- *CL1.8 To identify opportunities to enhance cultural landscapes, including but not limited to:*
    a. *Restoration/enhancement of indigenous biodiversity;*
    b. *Enhancing views and connections to landscape features;*
    c. *Appropriate and mandated historical interpretation;*
    d. *Setting aside appropriate areas of open space within developments; and*
    e. *Use of traditional materials, design elements and artwork.*
- *CL1.9 To enhance Ngāi Tahu cultural landscape values in the takiwā by:*
    a. *Protection and restoration of places of cultural value to Ngāi Tahu, including those associated with mahinga kai;*
    b. *Restoration and enhancement of indigenous biodiversity on the landscape, rural and urban;*
    c. *Providing for cultural traditions (both traditional and contemporary) associated with particular places, including mahinga kai and recreational use (e.g. waka ama); and*
    d. *Incorporating Ngāi Tahu heritage values into landscape and urban design, through the use traditional place names, interpretation, artwork and public structures.*

### He Kupu Whakamāhukihuki / Explanation

The whole of the Canterbury region has cultural landscape value: Ngāi Tahu travelled through, engaged with and named the land, and tāngata whenua history is part of the landscape. However, within this landscape of Ngāi Tahu land use and occupancy particular areas are identified as cultural landscapes.

A cultural landscape is a geographical area with particular (and often related) traditional, historical, spiritual and ecological value to Ngāi Tahu. An area may be identified as a cultural landscape due to the concentration of values in

a particular location, the particular importance of the area to Ngāi Tahu cultural, history or identity, or the need to manage an area as a particular landscape unit. Cultural landscapes are integral to Ngāi Tahu culture, identity and history, and are testament to relationship of tāngata whenua with the land over time. They are intergenerational: providing future generations (our tamariki and mokopuna) the opportunity to experience and engage with the landscape as their tūpuna once did.

Cultural landscapes provide a culturally appropriate and useful framework for assessing and protecting the physical features of a site or area (e.g. sites of significance) and the relationship of tāngata whenua and their culture and traditions to the site or area (RMA s.6(e)). The values associated with particular cultural landscapes are indicators of what tāngata whenua value most about the land.

Planning for cultural landscapes is useful when making decisions about resources and appropriate use of an identified area, providing an assessment of potential effects on a site, place or resource and the relationship of that site, space or resource within a larger landscape of values and meaning. A cultural landscape approach shifts the focus from individual sites (e.g. New Zealand Archaeological Association or NZAA site) to the wider setting or context of a site - the relationship and linkages of the site to the area and other landscape features.

"Archaeological sites exist not only as entities in their own right, but as part of a much larger Ngāi Tahu identity. Some areas must be considered in light of the contribution they make to the greater picture, not merely on the basis of their individual and isolated attributes. Ngāi Tahu concern with archaeological sites extends beyond that of ancestral connection alone. They are also valuable sources of information on the activities of their Tupuna which those in the present world know little about."2

The focus on Policies CL1 to CL8 is to promote the recognition of cultural landscapes as a tāngata whenua land use planning and heritage management tool in regional and district planning and decision making processes, including landscape assessment and assessments of effects on the environment associated with resource consent applications, outline development plans, structure plans and area master plans. As a planning tool, cultural landscapes enable recognition of the particular cultural associations to an area and the way that activities may impact on those associations, including tāngata whenua aspiration and outcomes for that landscape.

Part 6 of this IMP identifies specific cultural landscapes in the various catchments of the takiwā, and local issues associated with those landscapes. An important kaupapa is that while land use and development has the potential to adversely affect cultural landscape values, these activities may also provide opportunities also enhance cultural landscapes. For example, the rebuild of Christchurch provides a significant opportunity to restore features of the traditional Ngāi Tahu cultural landscape and reflect the contemporary relationship of Ngāi Tahu to the city (see Section 6.5 Ihutai).

## Part 6/ Section 6.11 Te Waihora / Issue TW7: Cultural health of lowland waterways and groundwater (p333-334)

Issue TW7: The cultural health of lowland waterways and groundwater is degraded as a result of:

*a. Diffuse and point source pollution sourced from intensive rural land use;*
*b. Sewage and stormwater disposal associated with urban and subdivision activities;*
*c. Inappropriate drain and waterway management;*
*d. Low flows due to excessive surface and groundwater abstractions;*
*e. Drainage of wetlands and degradation of riparian areas; and*
*f. Over-allocation and increasing demand for more water.*

### Ngā Kaupapa / Policy

#### *Water quality*

- *TW7.1 To require that the restoration of water quality in lowland streams is addressed as a matter of priority in the takiwā, to enable Ngāi Tahu and the wider community to fish, swim and engage with our waterways as we once did.*
- *TW7.2 To require that water quality issues in the catchment area addressed as per general policy on Water quality (Section 5.3 Issue WM6) and on the Effects of rural land use (Section 5.3 Issue WM7), with particular attention to:*
    - *a. The specific nature of the catchment i.e. lake as a sink at the bottom of the catchment, absorbing the pollutants that flow into it from tributaries, drains and farm run-off; and*
    - *b. The need for polluters to be held responsible for their effects on water quality and lake health.*

- *TW7.3 To advocate that existing irrigated and other forms of intensive land use in the Te Waihora catchment require resource consent to continue operating, when the activity:*
    a. *Has a history of non-compliance;*
    b. *Is located below 1.8 m above sea level when adjacent to Te Waihora; and/or*
    c. *Is adjacent to a surface waterway.*

### *Water quantity*

- *TW7.4 To require immediate and effective steps for addressing over-allocation, as per general policies on Water quantity (Section 5.3 Issue WM8), with particular emphasis on:*
    a. *Controlling irrigated and intensive land use activities that affect surface water flow and groundwater recharge.*
- *TW7.5 To require that environmental flow and water allocation regimes for the waterways in the Te Waihora catchment deliver the cultural outcomes set out in general policy on Water quantity (Section 5.3 Issue WM8), with particular emphasis on:*
    a. *Improving flow and water quality in lowland streams and the tributaries of Te Waihora; and*
    b. *Protecting water quality in aquifers and aquifer recharge.*
- *TW7.6 To oppose the abstraction of water from the following wāhi taonga waterways:*
    a. *Waikekewai.*

### *Water enhancement schemes*

- *TW7.7 To oppose any water enhancement scheme that will result in further adverse effects of Te Waihora. The cultural bottom line is that the only acceptable effects on Te Waihora are positive effects.*

### He Kupu Whakamāhukihuki / Explanation

Uncontrolled intensive land use is degrading water quality in lowland waterways and groundwater resources in the Te Waihora catchment, as evidenced by the inability to use many waterways for mahinga kai or swimming, and the occurrence of nitrate contamination in community groundwater supplies.

Increasingly, phosphorus, nitrate, and faecal coliform concentrations in both ground and surface water exceed aquatic health and recreation use standards (see Case Study - ***Lynton Dairies Ltd vs. Canterbury Regional Council***). Some communities continue to use waterways as a receiving environment for stormwater and overflows of wastewater. ***"It is unacceptable that we cannot swim or fish in the Waikirikiri in the summer months, and that those who are directly contributing to the degradation of the awa are not being held responsible. Rather, they continue to make money while the community and the river bear the cost".*** Te Taumutu Rūnanga IMP hui, 2010.

The demand for water for intensive land use has severely reduced flows in lowland spring fed waterways such as the Waiwhio, which now goes dry in the summer months. The Rakaia-Selwyn and Selwyn-Waimakariri groundwater zones are red zones, meaning that the total amount of groundwater currently allocated exceeds the allocation limit. Existing and continuing pressure on water resources is directly contributing to the degraded cultural health of waterways. The cultural health of the lake is directly related to the waterways flowing into it, and every tributary has a role in maintaining a healthy lake environment. At the 'bottom of the catchment' Te Waihora is a reflection of how land and water is managed in the catchment.

A significant kaupapa for Papatipu Rūnanga is the need to rethink the way water is valued and used in the catchment. An assessment of the kinds of land use that water is supporting in the catchment is a necessary prerequisite to looking for ways to secure more water.

## Part 6/ Section 6.12 Rakaia ki Hakatere / Issue RH 5: Groundwater (p349)

**Issue RH5:** Nitrate contamination and over-allocation of groundwater resources.

### Ngā Kaupapa / Policy

### *Groundwater quality*

- *RH5.1 To require effective controls to regulate discharge to land activities associated with intensive agriculture and industrial activities in the lower catchment, as per general policy on*

*Water quality (Section 5.3, Issue WM6) and the Effects of land use on water resources (Section 5.3 Issue WM7), with particular attention to:*

a. *The cumulative impact of agricultural land use activities in the area; and*
b. *Diffuse pollution from industrial discharges (e.g. effluent disposal from meatworks).*

### *Over-allocation*

- *RH5.2 To work with local authorities and zone committees to improve our understanding of the groundwater resource in the Rakaia and Hakatere catchments, as a matter of priority.*
- *RH5.3 To require immediate and effective measures and timeframes to address over-allocation, as per general policy on Water quantity (Section 5.3, Issue WM8), with particular attention to:*
    a. *Avoiding further land use conversion (for water intensive land use) until over-allocation addressed.*
- *RH5.4 To require a rural land and water management approach that 'matches land use with water availability, limits and boundaries', consistent with general policy on Water quantity (Section 5.3 Issue WM8) and Papatūānuku (Section 5.4 Issue P1).*
- *RH5.5 To require that the relationship between surface water and groundwater resources is recognised and provided for in the catchment. This means:*
    a. *Recognising the relationship between overallocation and contamination of groundwater resources;*
    b. *Ensuring that environmental flow and water allocation regimes provide sufficient water in waterways for aquifer recharge;*
    c. *Recognising the relationship between Rakaia River flow and groundwater recharge in the lower Te Waihora catchment; and*
    d. *Recognising the effects of groundwater abstractions on lowland stream flows.*

### He Kupu Whakamāhukihuki / Explanation

Groundwater under the lowland plains of the Rakaia and Hakatere catchments is at risk due to nitrate contamination and over-allocation.

"Of the 155 wells sampled in the three investigations (excluding consent monitoring data), groundwater samples from 39 wells (25%) had nitrate nitrogen concentrations above the MAV, and samples from 124 wells (80%) had nitrate nitrogen concentrations above half the MAV. These proportions are very high in comparison to the entire Canterbury region."4

Addressing non point source pollution is critical to resolving water quality issues in the Rakaia and Hakatere catchments, as with the takiwā as a whole. Inappropriate and unsustainable land use compromises the ability of Papatūānuku to absorb and filter nutrients and waste. Further, tāngata whenua firmly believe that the contamination of groundwater resources is directly related to the over-allocation of water. Over-allocation of groundwater 'creates a space' for contamination to occur.

The demand for water for intensive land use, coupled with inadequate management frameworks have resulted in the over-allocation of groundwater in the takiwā, and the designation of red zones. Tāngata whenua maintain that this is reflective of a blatant disregard for the environment and future generations.

The answer to over-allocation is not to look at ways to find more water. While the sustainable storage of water has the potential to ease the pressure on groundwater resources, these measures do little to address the source of the problem. Tāngata whenua are still looking for answers to the hard questions: How did the catchment become over-allocated? How sustainable and efficient is the land use that our water resources are supporting?