

OURS.
THE MANAWATŪ RIVER
LEADERS' ACCORD

ACTION PLAN

ACTION PLAN

In August 2010 the members of the Manawatū River Leaders' Forum signed an Accord to take action to improve the state of the Manawatū River. The Accord set out a focus, vision, and goals for the River.

Our goal is to improve the Manawatū River, the mauri (lifeforce) of the Manawatū River Catchment, such that it sustains fish species, and is suitable for contact recreation, in balance with the social, cultural and economic activities of the catchment community.

This goal represents a community opportunity to develop leadership in catchment improvement and capture the social and economic benefits of such leadership.

1. The Manawatū River becomes a source of regional pride and mana.
2. Waterways in the Manawatū Catchment are safe, accessible, swimmable, and provide good recreation and food resources.
3. The Manawatū Catchment and waterways are returned to a healthy condition.
4. Sustainable use of the land and water resources of the Manawatū Catchment continues to underpin the economic prosperity of the Region.

**Kei te ora te wai,
kei te ora te whenua,
kei te ora te tangata.**

**If the water is healthy,
the land and the people
are nourished.**

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2011

WHAT'S HAPPENING AND WHERE

The Manawatū Catchment is broken down into nine areas, we call sub-catchments. Refer to the action points detailed on the map below to see a summary of what we are planning to do.

ACTION POINTS



REDUCE THE NUTRIENT AND BACTERIA FROM POINT SOURCE DISCHARGES THROUGH:

- resolving outstanding resource consent applications
- ensuring discharges meet regional water quality standards
- meeting resource consent conditions, compliance monitoring and enforcement
- requiring resource consents for stormwater discharges



REDUCE THE RUN-OFF OF SEDIMENT, NUTRIENTS AND BACTERIA FROM INTENSIVE LAND-USE SUCH AS DAIRYING AND CROPPING THROUGH:

- meeting resource consent conditions, compliance monitoring and enforcement
- achieving the Dairying and Clean Stream Accord targets
- adoption of Nutrient Management Plans and promotion of nutrient use efficiency

MILESTONES

1990

Manawatū Catchment Water Quality Plan:

Removes dairy effluent discharge from water

Set standards on phosphate levels for point source discharge

2000

Horizons launches Sustainable Land Use Initiative to address erosion of hill-country land

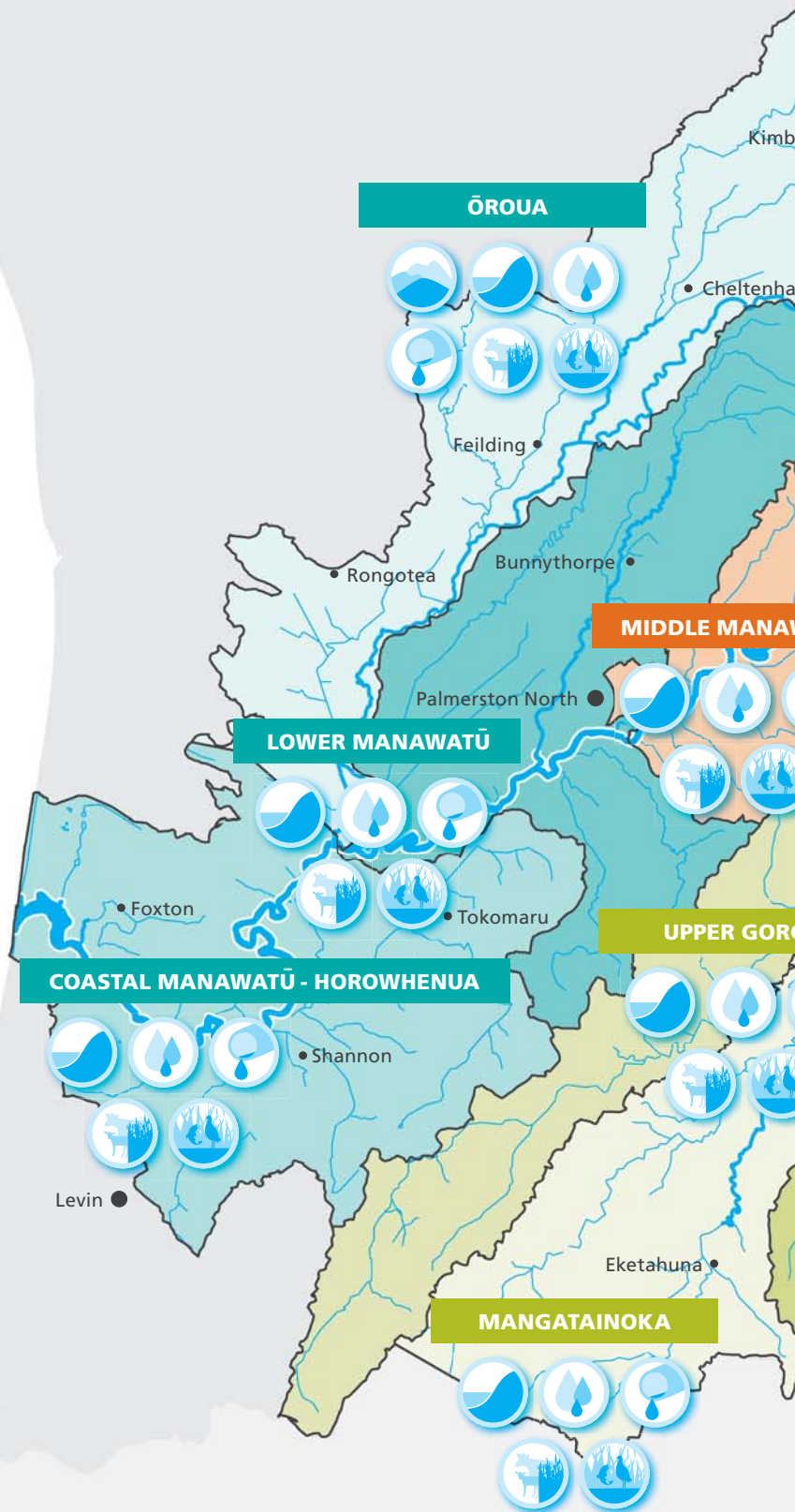
Palmerston North City Council upgrades sewage treatment plant

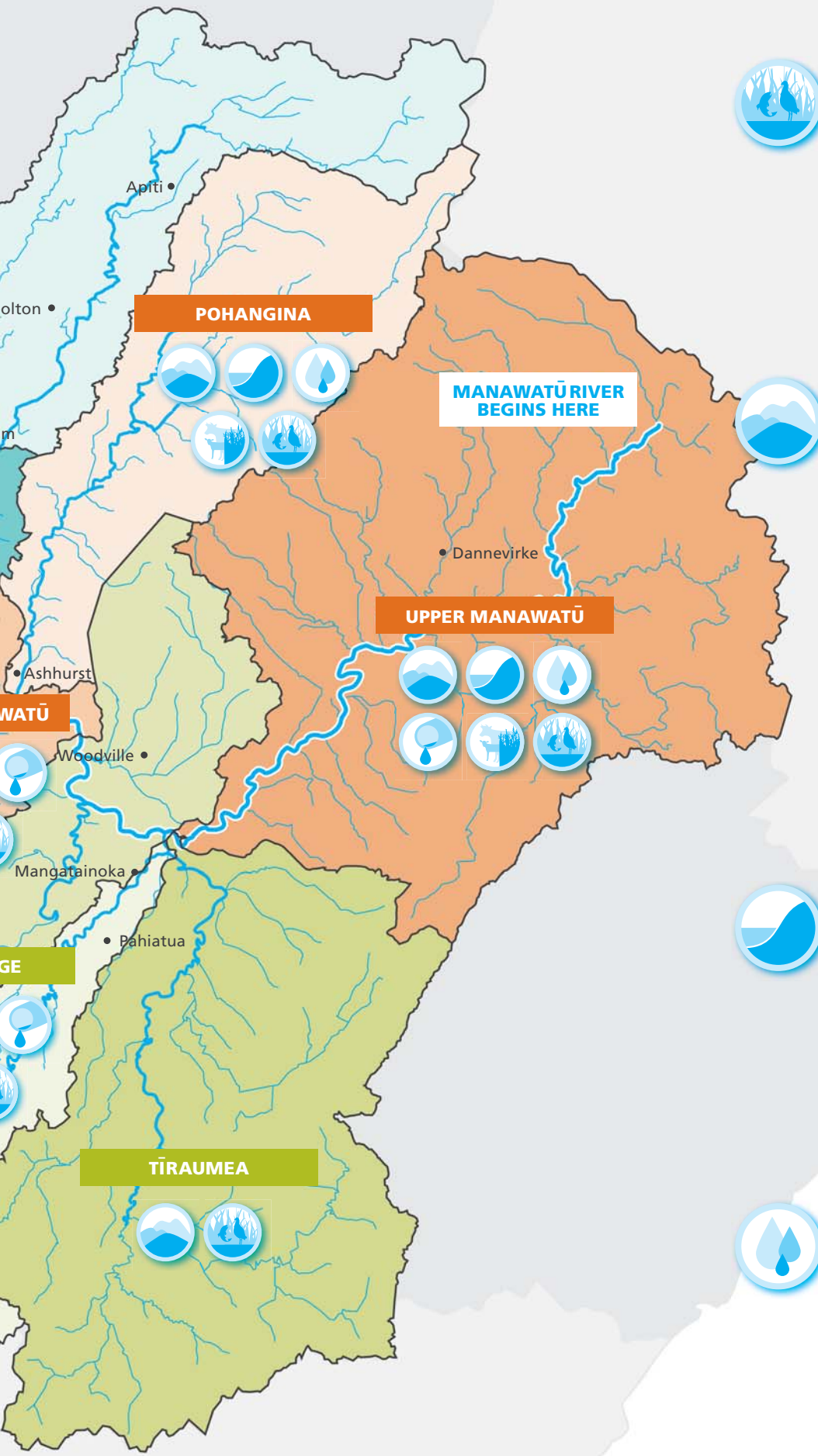
All major water takes in the Catchment meet agreed standards

2010

Manawatū River Leaders Accord Signed and action plan agreed

2012 Dairy Clean Streams Accord targets met





PROTECT AREAS OF HABITAT FOR NATIVE FISH, BIRDS AND TROUT BY:

- fencing and planting streams and bush/wetland areas, and pest control
- removing fish barriers
- meeting resource consent conditions, compliance monitoring and enforcement



REDUCE SEDIMENT RUN-OFF FROM EROSION PRONE FARMLAND, THE RURAL ROAD NETWORK, AND AREAS OF MAJOR EARTHWORKS THROUGH:

- continuation of Horizons Regional Council's Sustainable Land Use Initiative
- adoption of road maintenance and earthworks best practice management practices
- meeting resource consent conditions, compliance monitoring and enforcement
- adoption of best practice management for earthworks



REDUCE THE IMPACT OF FLOOD CONTROL AND DRAINAGE SCHEMES BY:

- ensuring all works are undertaken in accordance with Codes of Practice
- meeting resource consent conditions, compliance monitoring and enforcement
- making greater use of plants on river banks



PREVENT OVER-USE OF WATER BY:

- ensuring consented takes meet regional standards
- meeting resource consent conditions, compliance monitoring and enforcement
- ensuring metering of all major water takes

2020+

All major consent applications resolved
 Horizons Regional Council One Plan becomes operative
 All high value bush and wetlands protected

Waterways in the Catchment at safe, accessible and provide for recreation and food sources
 Sustainable land and water resources of the Catchment continue to underpin the economic prosperity of the Region
 Waterways are returned to a healthy condition
 The River becomes a source of regional pride and mana



Background

In August 2010 the members of the Manawatū River Leaders' Forum signed an Accord to take action to improve the state of the Manawatū River.

The Accord includes a focus, vision, and goals for the river. The leaders agreed to champion and give life to the Accord and made a series of commitments.

One of the commitments was to establish a collaboratively owned Action Plan ready for implementation by 1 July 2011.

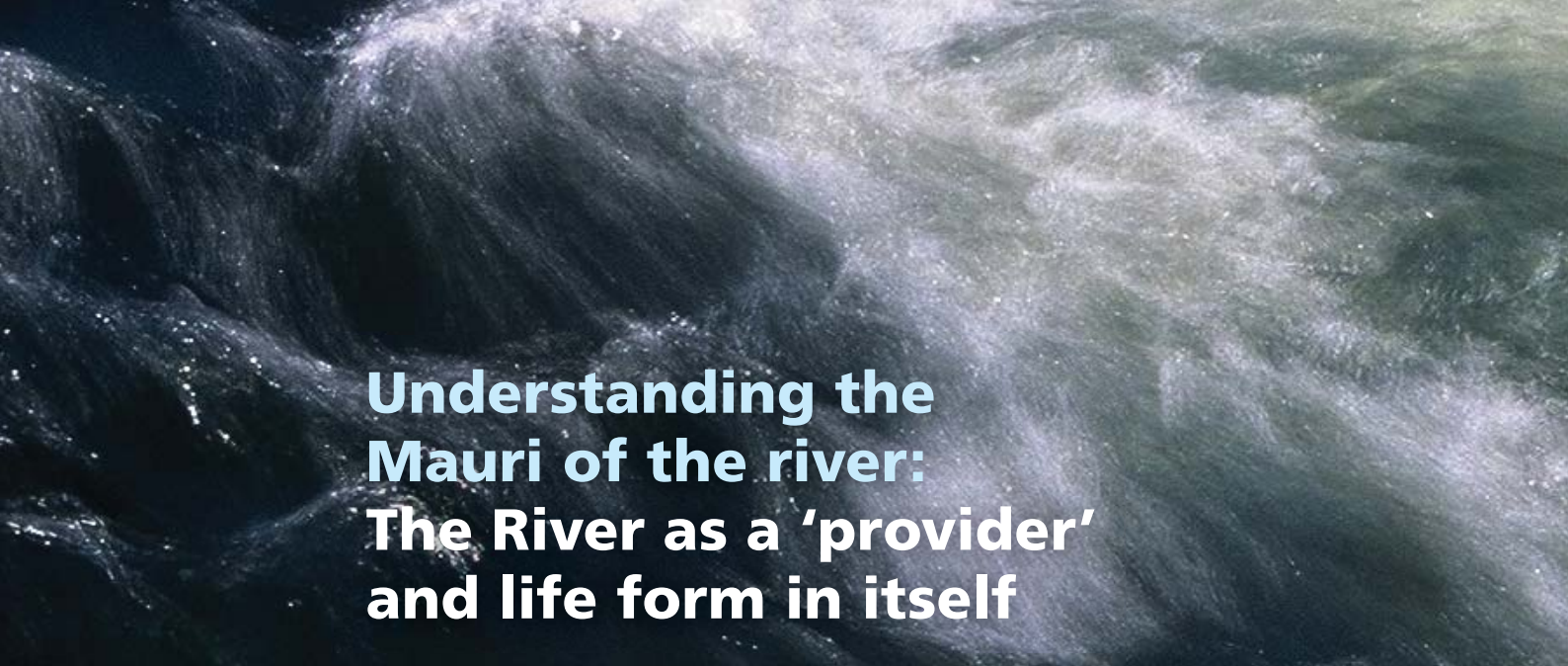
This is that plan. It was developed by a group of participants representing the different forum sectors¹, with the assistance of the Massey University-led Integrated Freshwater Solutions research project (www.ifs.org.nz).

¹ Iwi/hapū, environmental, pastoral & production, district & city councils, and Horizons Regional Council



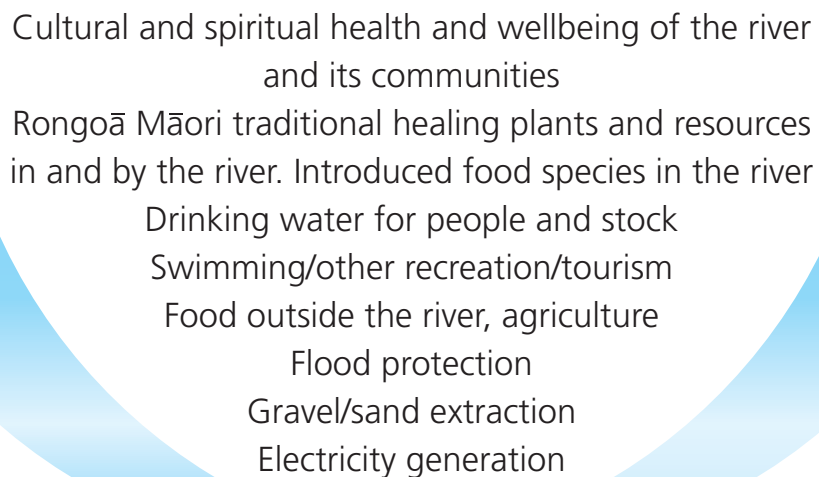
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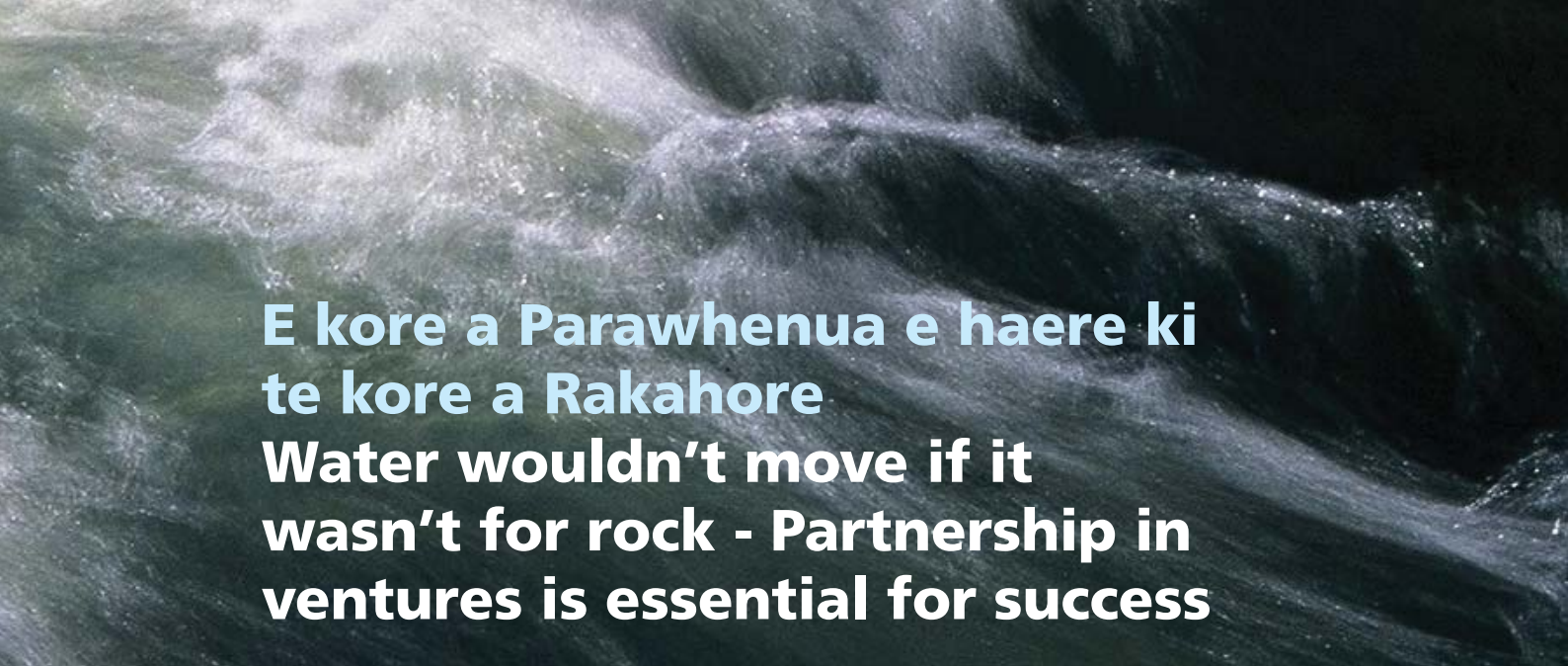
Understanding the Mauri of the river: The River as a 'provider' and life form in itself

As we allow the river's mauri to flourish, the river's ability to provide will increase.



- Cultural and spiritual health and wellbeing of the river and its communities
- Rongoā Māori traditional healing plants and resources in and by the river. Introduced food species in the river
- Drinking water for people and stock
- Swimming/other recreation/tourism
- Food outside the river, agriculture
- Flood protection
- Gravel/sand extraction
- Electricity generation

As the river's mauri shrinks, its ability to provide will shrink too.



E kore a Parawhenua e haere ki te kore a Rakahore Water wouldn't move if it wasn't for rock - Partnership in ventures is essential for success

COLLABORATION

The Leaders' Forum's commitment to collaboratively find solutions for the Manawatū Catchment is like a journey of discovery, at times a rocky road. All parties are committed to collaborate and gain a better understanding of how to integrate and balance cultural, social, environmental and economic values.

Mauri as the life force for all beings and things was brought closer to the group by iwi representatives comparing the waters in the catchment to blood flowing in the human body. Only if the life force is strong and healthy, can the river, like a healthy body, fulfil its role as a provider.

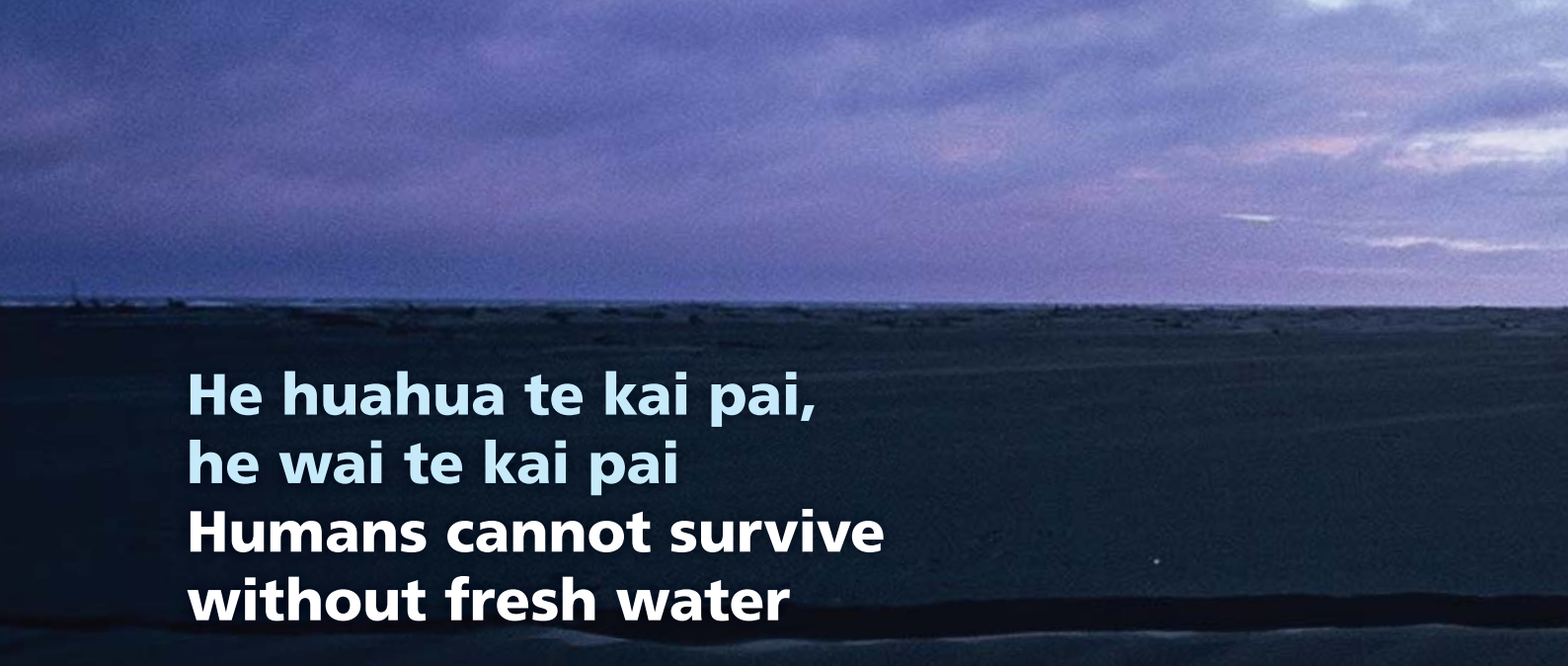
The various stakeholders around the table have taken their first steps in developing mutual respect and understanding for each other and their respective worldviews. As the journey continues, so will the learning and enhancement of this understanding. An important reminder for all of us is to strike the right balance between giving to, and taking from the river so that the river's mauri or life force can be strong and healthy again.

STAKEHOLDER GROUPS IN THE PROCESS COMPRISED:

- Iwi/hapū,
- Environmental Interests,
- Farming and Industry,
- Local Government, and
- Regional Council.

Three Iwi - Rangitāne O Manawatū, Raukawa ki te Tonga (with Ngāti Kauwhata) and Muaūpoko were involved from the very beginning, with Te Kāuru (Manawatū River Eastern Hapū Collective) joining the process later. All four Iwi/hapū signed the Leaders' Accord individually. The group has worked together and developed actions jointly and individually as appropriate.

Whereas it was acknowledged that the Treaty settlement process runs in parallel and might predicate some action in the future, action planning for the Leaders' Forum was treated as a separate process. Any statements made in regards to cultural values and historical connections to specific areas have been made by individual Iwi/hapū as they saw appropriate and have been included in the document as presented.



He huahua te kai pai, he wai te kai pai Humans cannot survive without fresh water

THE CHALLENGES

The current state of the Manawatū River is far from its natural condition. Over the decades the River and its catchment have been extensively modified as a result of land clearance and development, discharges, and flood and drainage control works. Unfortunately, an unintended consequence of this development has been a general degradation of the River's water quality and native flora and fauna. Some of these changes have been incremental (e.g. slow decline of whitebait fishery); whereas others have been almost instantaneous (e.g. channel straightening). The causes of the problems impacting the Manawatū River are set out below. Necessarily this information is general in nature, providing a simple overview of the situation effecting the entire catchment. In the sub-catchment summaries that follow, more specific information relating to the problems within each sub-catchment is provided.

WATER QUALITY

Sediment

Sediment is a natural component of any waterway system. Sediment is the natural by-product of mountain and hill erosion, and the shifting of waterways and the consequent erosion of stream banks. However, the Manawatū River suffers from an abnormally high level of fine sediment (sand, silt and mud) input. Excess sediment causes a range of social, environmental and economic problems, as it:

- discolours the water making it unattractive for swimming and other water-based activities,
- clogs up river bed gravels reducing the space available for insect habitat and fish spawning,
- reduces visibility for fish that use sight to catch food,
- prevents the establishment of in-stream vegetation,
- clogs up water supply intakes,
- makes water unpalatable to stock,
- requires significant treatment before it can be used for human consumption, and
- reduces the flood-carrying capacity of lowland flood control schemes.

The major sources of this excess fine sediment are:

- accelerated erosion on some hill country farmland,
- stream bed and bank erosion due to floods and stock access, and
- rural road network failures where roads pass through unstable country.



Nutrients – Nitrate, Phosphate

Like sediment, nutrients are also naturally occurring parts of any river system. However, the Manawatū River suffers from unnaturally high levels of nitrate and phosphate which promotes excessive plant and periphyton (slime) growth, causing some/all of the following problems:

- excludes sensitive fish and insects,
- turns waterways inhospitable for fish and invertebrates when oxygen levels drop due to the respiration and breakdown of vegetation/slime,
- makes waterways unattractive and difficult for swimming and other recreational activities, and
- clogs water supply intakes, culverts and drains.

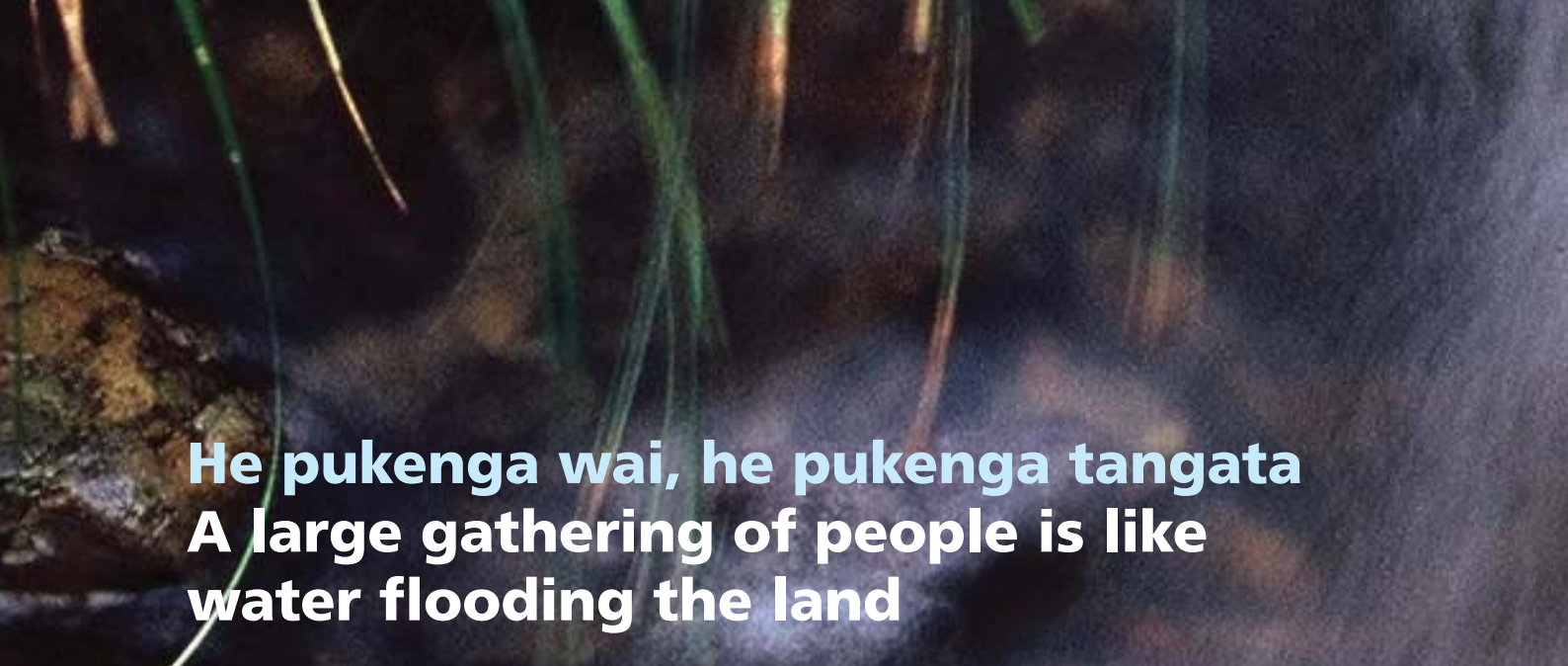
The main sources of this high nutrient load are:

- discharges from sewage treatment plants, town storm water, and industry,
- stock dung, urine, fertiliser run-off and leaching from farmland, and
- direct access of farm animals to waterways.

Pathogens (illness-causing viruses, protozoa, bacteria)

Pathogen levels in the Manawatū Catchment in pre-human times would have been low, with the only input being from waterfowl. With the arrival of humans and their farm animals, pathogen levels in our waterways have risen significantly. Pathogens enter waterways as a direct input from human (e.g. sewage treatment plant discharges, leaking septic tanks) and animal (i.e. run-off from farmland and direct access of stock into waterways), effluent. At high levels, pathogens in waterways can cause the following problems:

- make waterways unsafe for swimming,
- make gathered food (e.g. whitebait, tuna and shellfish) unsafe for consumption,
- make water unsafe for stock water and other animals (e.g. dogs), and
- significantly increase the cost of treating water for human consumption.



He pukenga wai, he pukenga tangata A large gathering of people is like water flooding the land

PHYSICAL CHANGES TO THE CATCHMENT AND ITS WATERWAYS

The Manawatū Catchment and its waterways have been significantly modified from their natural state. Approximately 80% of the original forest cover and 97% of the original wetland cover has been cleared to make way for our towns and farmland. Many of the waterways in the catchment have been similarly altered for the purposes of flood and erosion control, gravel extraction, and placement of structures such as bridges, dams, and water supply intakes.

These changes have dramatically altered the look of the Manawatū Catchment, how it functions, and the diversity and abundance of native fish and birds. However, despite all of these changes the Manawatū Catchment still has:

- native fish and bird populations,
- sufficient numbers of native fish and birds to support whitebait, waterfowl, and cultural harvesting of species such as tuna,
- a nationally important trout fishery, and
- a number of wetlands including a wetland of international importance - Manawatū Estuary became a RAMSAR³ site in 2005.

However, the remaining bush and wetland habitat areas are under threat from the impacts of stock, clearance, and plant/animal pests. Remaining fish and bird populations are at risk from habitat destruction, barriers to migration, declining water quality, and over-harvest.

WATER QUANTITY

Rivers naturally experience a range of flows during the year. In the Manawatū Catchment waterways typically experience higher flows in winter, and lower flows in summer, with floods happening any time of the year, but more so in winter.

River flows, and the associated issues of flooding (and bank erosion) and over-abstraction of water during times of low flow, are managed as follows:

- Flood management - the Manawatū Catchment contains the largest and most comprehensive flood and erosion control schemes in the country. The various schemes within the catchment include extensive stop bank systems, flood diversion structures, and hard and soft bank protection works. As such, the level of protection offered to people and property in the catchment is much greater than elsewhere in the country.
- Water abstraction - this Region has one of the most comprehensive water allocation frameworks in the country. All major waterways in the Region, including the Manawatū Catchment, have a comprehensive set of minimum flows, allocation limits and water use efficiency measures. As such, only one waterway in the Manawatū Catchment (Raparapawai Stream) is considered over-allocated and this situation is being addressed. The main uses of water in the catchment, in descending order, are hydroelectric power generation, irrigation takes, town and industry water supplies, and stock water.

³ The Convention on Wetlands (Ramsar, Iran, 1971) -- called the "Ramsar Convention" -- is an intergovernmental treaty that embodies the commitments of its member countries to maintain the ecological character of their Wetlands of International Importance and to plan for the "wise use", or sustainable use, of all of the wetlands in their territories.

KEY ACTIONS AND ACTIVITIES

To achieve the goals of the Accord, and make progress towards addressing the problems present in the Manawatū Catchment, will require considerable effort over a number of years. We believe delivery of the following key actions across the catchment will result in significant progress towards rehabilitation of the Manawatū River.

As these key actions do not apply equally across the Manawatū Catchment, the next chapter details the specific issues within different parts of the catchment, and which key actions apply where. Appendix A provides details of the tasks including timeframes and who will lead.

We will measure the effectiveness of these actions by maintaining and enhancing existing monitoring programmes.

THE KEY ACTIONS ARE:



Reduce sediment run-off from erosion prone farmland, the rural road network, and areas of major earthworks through:

- implementation of the Sustainable Land Use Initiative (SLUI),
- meeting resource consent conditions, compliance monitoring and enforcement, and
- use of earthworks and road maintenance best management practices.



Reduce the nutrient and bacteria load from point source discharges through:

- resolution of outstanding resource consent applications,
- ensuring consented discharges meet regional plan water quality standards,
- meeting resource consent conditions, compliance monitoring and enforcement, and
- requiring and obtaining resource consents for storm water discharges.



Reduce the run-off of sediment, nutrients and pathogens from intensive land-uses such as dairying, horticulture and cropping through:

- meeting resource consent conditions, compliance monitoring and enforcement,
- meeting the Clean Stream Accord targets and successive schemes introduced by the dairy sector⁴, and
- adoption of Nutrient Management Plans and promotion of nutrient use efficiency.



Protect areas of habitat for native fish, birds and trout, and enable movement between these areas:

- fencing and planting streams and bush/wetland areas, and controlling pests,
- removing fish barriers (unless there are likely to be negative effects on native fish populations)⁵,
- meeting resource consent conditions, compliance monitoring and enforcement.



Reduce the impact of flood control and drainage schemes on the physical character and natural processes of the Manawatū Catchment by:

- ensuring all works are undertaken in accordance with relevant Codes of Practice,
- meeting resource consent conditions, compliance monitoring and enforcement, and
- making greater use of plants (particularly natives) in riparian zones.



Prevent over-allocation and use of the water resource by

- ensuring consented takes meet regional plan water allocation and efficiency of use standards,
- meeting resource consent conditions, compliance monitoring and enforcement, and
- metering and tele-metering of all major takes.

⁴ The Dairying and Clean Streams Accord finishes in 2012

⁵ In some cases fish barriers can help maintain native fish populations

Ko au te awa ko te awa ko au

I am the river and the river is me

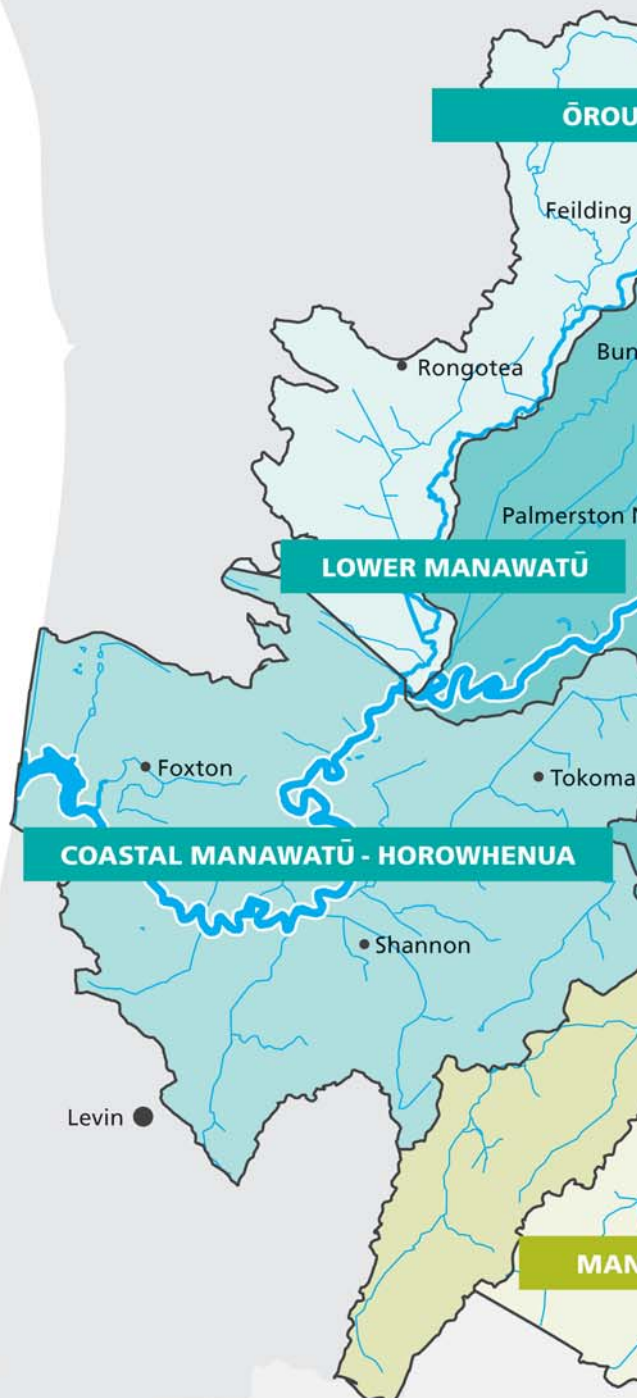
SUB-CATCHMENTS OF THE MANAWATŪ RIVER

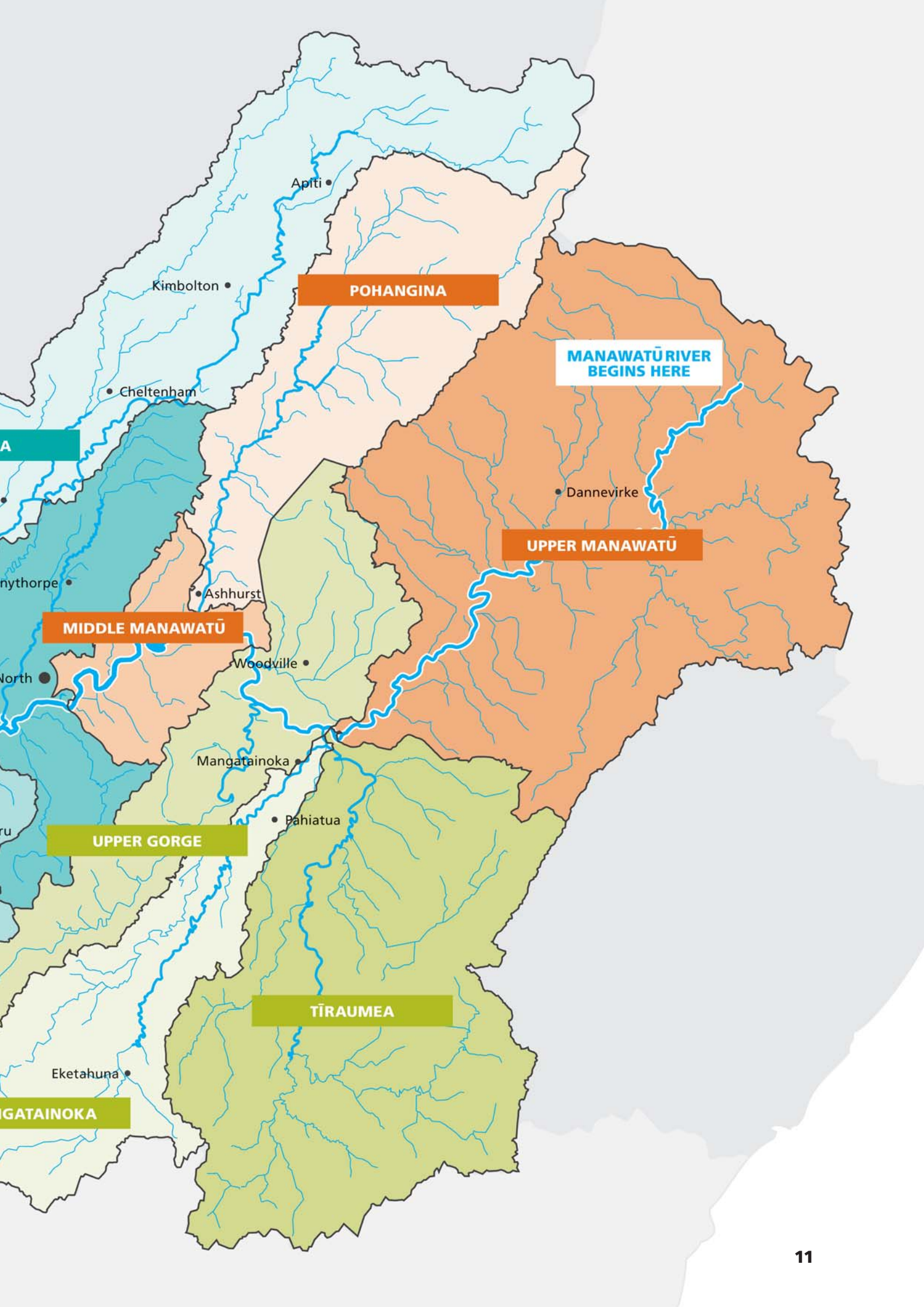
The Manawatū River varies considerably throughout its length - depending on the geography of the area it flows through and the land use that surrounds it. To help understand the River (its nature and the issues it faces and their causes) and for the purposes of planning actions for its improvement, the Manawatū Catchment has been divided into the following nine sub-catchments:

- Upper Manawatū,
- Tiraumea,
- Mangatainoka,
- Upper Gorge,
- Pohangina,
- Middle Manawatū,
- Lower Manawatū,
- Ōroua, and
- Coastal Manawatū-Horowhenua.

In terms of mitigating adverse water quality and habitat issues it is proposed that a "Catchment Care Group" eventually be established in each sub-catchment unit. The group should be made up of key stakeholders from within the Accord partners and others who have an interest in those respective sub-catchment units. This Catchment Care Group would be mandated by its respective community and would help prepare and assist with the implementation of a Management Plan for the sub-catchment. Pilot groups will be established in the Tararua and Ōroua catchments in 2011-12 (see Appendix A, Collaboration).

It is noted that certain comments made by Iwi in the following sub-catchment summaries could be interpreted as assertion of mana whenua over catchment areas of the river. Whilst this may be the case, having those comments in the action plan is not necessarily recognition by other Iwi of those mana whenua assertions.





UPPER MANAWATŪ SUB-CATCHMENT

The Upper Manawatū sub-catchment:

- is approximately 131,000ha in area,
- land use is 69% sheep and beef, 17% dairy, 13% forest (native and exotic),
- has many popular swimming spots,
- has eight sites recognised as significant aquatic habitat for rare/threatened native fish,
- is an important trout fishery and spawning area,
- contains 6 high priority bush and 3 high priority wetland sites,
- includes the South East Ruahine scheme⁶, the Eastern Manawatū scheme, and a large part of the Upper Manawatū-Lower Mangahao scheme, and
- Te Kāuru (Manawatū River Eastern Hapū Collective) Ngāti Ruatōtara, Ngāti Rangitōtohu, Ngāti Te Opekai, Ngāti Mārau, Ngai Tahu, Ngāti Parakiore, Ngāti Pakapaka are the hapū in this sub-catchment.

The water quality of the Upper Manawatū sub-catchment is characterised by high sediment loads, high nutrient (nitrate and phosphate) levels, pathogen levels in smaller tributary streams are regularly above safe swimming guidelines, and cyanobacteria is regularly detected at swimming spots. Non-point source run-off (from the land) contributes more than 98% of the total nitrate and 80% of the total phosphate load. Under low flow conditions, point source discharges contribute approximately 10% of the nitrate and 66% of the phosphate.

THE WATER QUALITY STATE IS EXPLAINED BY:

- this sub-catchment contains approximately 10,000 ha of unprotected⁷ erosion prone land (26% of unprotected erosion prone land in the entire Manawatū Catchment) and contributes 29% of the total suspended sediment load to the Manawatū Catchment,
- there are 24 consented discharges to water in the sub-catchment, four of which are considered significant. These are: Dannevirke sewage, the Scanpower site sewage, Norsewood sewage, and Ormondville sewage,

- the major discharges in this area are fully consented at present i.e. none of these are currently undergoing consent renewal. The compliance rate of the discharges monitored is 79%,
- there are 150 consented dairy shed effluent discharges to land consents. Over the last 10 years all dairy shed effluent discharges have been diverted from water to land. The compliance rate of these consents so far this season is 82%, and
- the exact level of progress towards the Dairying and Clean Stream Accord targets (around stock exclusion from waterways, stock crossing, and nutrient management) by dairy farmers in this sub-catchment is unknown, but there is extensive riparian fencing and planting, and stock crossings (bridges and culverts). Farmer surveys in the Manawatū-Whanganui region indicate the majority of Dairying and Clean Stream Accord targets are achieved.

IN ADDITION:

- 15 man-made barriers are having a moderate to high impact on native fish migration within the sub-catchment,
- public access to the Manawatū River is good, but to its many tributaries is very limited,
- only 17% of high priority bush remnants and all high priority wetlands are protected⁸,
- the length of river suitable for trout spawning is declining, and
- the water quantity resource of the Upper Manawatū sub-catchment is fully allocated, with the Raparapawai Stream being over-allocated. All major takes are metered and automatically monitored.



⁶ 'Scheme' refers to flood protection and drainage works.

⁷ In this context "unprotected" means erosion-prone land that has no form of woody cover e.g scrub, forest, spaced poplar trees.

⁸ Wetland protection refers to fencing (permanent or temporary during winter), covenants, etc.

TĪRAUMEA SUB-CATCHMENT

The Tīraumea sub-catchment:

- is 94,000ha in area,
- land use is 79% sheep and beef, 17% forest (native and exotic), 3% dairy,
- has few popular swimming spots,
- has one site of rare/threatened native fish,
- the Mākurī River, a significant tributary of the Tīraumea River, is an important trout fishery and spawning area,
- contains seven high priority bush and two high priority wetland sites,
- includes the Tawataia-Mangaone and Ihuraua schemes, and
- Te Kāuru (Manawatū River Eastern Hapū Collective) Ngāti Pakapaka, Ngāti Mutuahi, Ngāti Hāmua, Ngāi Te Kauparangi, Ngāti Te Koro are the hapū of this sub-catchment.

The water quality of the Tīraumea sub-catchment is characterised by very high suspended sediment loads, and high phosphate and nitrate levels in the main river. Pathogen levels are typically safe for swimming. Sediment and nutrient levels are the result of non-point source run-off.

THE WATER QUALITY STATE IS EXPLAINED BY:

- this sub-catchment contains approximately 14,000 ha of unprotected erosion prone land (36% of the unprotected erosion prone land in the entire Manawatū Catchment) and contributes 34% of the total suspended sediment load to the entire Manawatū Catchment,
- there are no consented discharges to water in the sub-catchment,
- there are 12 consented dairy shed effluent discharges to land consents. The compliance rate of these consents this season is 100%, and



- the exact level of progress towards the Dairying and Clean Stream Accord targets (around stock exclusion from waterways, stock crossing, and nutrient management) by dairy farmers in the sub-catchment is unknown, but there is some riparian fencing and stock crossings (bridges and culverts). Farmer surveys in the Manawatū-Whanganui region indicate the majority of Dairying and Clean Stream Accord targets are achieved.

IN ADDITION:

- 1 man-made barrier is having a moderate to high impact on native fish migration,
- public access to the Tīraumea River is limited, but to the Mākurī River is good. Excessive willow growth along the main stem of the Tīraumea River is a major barrier to access and also impedes flood flows and contributes to sediment issues,
- only 43% of high priority bush remnants and 50% of high priority wetlands are protected, and
- the water quantity resource of the Tīraumea sub-catchment is 89% allocated. All major takes are metered and automatically monitored.

MANGATAINOKA SUB-CATCHMENT

The Mangatainoka sub-catchment:

- is 43,000ha in area,
- land use is 47% sheep and beef, 30% dairy, 22% forest (native and exotic),
- has a number of popular swimming spots,
- has ten sites of rare/threatened native fish,
- is a regionally important trout fishery and spawning area,
- contains 1 high priority bush and 2 high priority wetland sites,
- includes the Mangatainoka scheme, and
- Te Kāuru (Manawatū River Eastern Hapū Collective) Ngāti Mutuahi, Ngāti Hāmua, Ngāi Te Kapuarangi, Ngāti Te Koro are the hapū of this sub-catchment.

The water quality of the Mangatainoka sub-catchment is characterised by low suspended sediment loads, but high phosphate and nitrate levels. Pathogen levels are generally safe for swimming, except in the Mākākahi at the Hāmua site. Non-point source run-off contributes 98% of the nitrate and approximately 80% of the phosphate load. Point source discharges contribute the greatest loading during low flow conditions, when run-off from land is significantly reduced.

THE WATER QUALITY STATE IS EXPLAINED BY:

- this sub-catchment contains approximately 700ha of unprotected erosion prone land (about 2% of the unprotected erosion prone land in the entire Manawatū Catchment) and is contributing 6% of the total suspended sediment load to the Manawatū Catchment,
- there are 22 consented discharges to water in the sub-catchment. The largest four are: Pāhiatua sewage, Eketahuna sewage, Fonterra milk powder plant, and the Tui Brewery. Applications for the re consenting of these four discharges are currently being considered through the consenting process. The compliance rate of the discharges monitored is 100%,

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- there are 94 consented dairy shed effluent discharges to land consents. Over the last 10 years all but one dairy shed effluent discharge has been diverted from water to land. The compliance rate of these consents so far this season is 84%, and
 - the exact level of progress towards the Dairying and Clean Stream Accord targets (around stock exclusion from waterways, stock crossing, and nutrient management) by dairy farmers in this sub-catchment is unknown, but there is extensive riparian fencing and planting, and stock crossings (bridges and culverts). Farmer surveys in the Manawatū-Whanganui region indicate the majority of Dairying and Clean Stream Accord targets are achieved.

IN ADDITION:

- 9 man-made barriers are having a moderate to high impact on native fish migration,
- public access to the Mangatainoka River is good, although access to the Mākākahi River (a major tributary) is more limited,
- no high priority bush remnants and only 50% of high priority wetlands are protected,
- the quality of the Mangatainoka River trout fishery has declined markedly in the last 20 years, and
- the water quantity resource of the Mangatainoka sub-catchment is fully allocated. All major takes are metered and automatically monitored.

UPPER GORGE SUB-CATCHMENT

The Upper Gorge sub-catchment:

- is approximately 53,000ha in area,
- land use is 41% forest (native and exotic), 37% sheep and beef, 21% dairy,
- has a number of popular swimming spots,
- is fed by significant sections of headwaters and streams that are recognised as having spiritual significance to Rangitāne O Manawatū tupuna and Rangitāne o Tamaki Nui a Rua and Rangitāne o Wairarapa hapū as well as customary fisheries,
- has seven sites or rare/threatened native fish,
- is an important trout fishery and spawning area,
- includes the Manawatū Gorge, and contains 3 high priority bush and 2 high priority wetland sites,
- includes parts of the south Eastern Ruahine scheme and upper Manawatū-Lower Mangahao scheme and the Mangahao power scheme, and
- Te Kāuru (Manawatū River Eastern Hapū Collective) Ngāti Mutuahi, Ngāti Hāmua, Ngāi Te Kapuarangi Ngāti Te Koro are the hapū of this sub-catchment.

The water quality of the Upper Gorge sub-catchment is characterised by low suspended sediment loads, but high phosphate and nitrate levels. Pathogen levels are generally safe for swimming, except downstream of the Woodville sewage discharge. Non-point source run-off is a major contributor of nutrients and pathogens at all flows. The Woodville sewage discharge contributes the greatest loading during low flow conditions, when run-off from land is significantly reduced.

THE WATER QUALITY STATE IS EXPLAINED BY:

- the sub-catchment contains approximately 1200ha of unprotected erosion prone land (3% of the unprotected erosion prone in the entire Manawatū Catchment) and is contributing 5% of the total suspended sediment load to the Manawatū Catchment,



- there are 14 consented discharges to water in the sub-catchment, only one of which is considered significant - Woodville sewage. An application for the re consenting of the discharge from Woodville sewage has been lodged with Horizons Regional Council. The compliance rate of the discharges monitored is 100%,
- there are 74 consented dairy shed effluent discharge consents. Over the last 10 years all but one dairy shed effluent discharge has been diverted from water to land. The compliance rate of these consents this season is 83%, and
- the exact level of progress towards the Dairying and Clean Stream Accord targets (around stock exclusion from waterways, stock crossing, and nutrient management) by dairy farmers in this sub-catchment is unknown, but there is extensive riparian fencing and stock crossings (bridges and culverts). Farmer surveys in the Manawatū-Whanganui region indicate the majority of Dairying and Clean Stream Accord targets are achieved.

IN ADDITION:

- 13 man-made barriers are having a moderate to high impact on native fish migration,
- public access to the Manawatū and Mangahao rivers is good,
- only 33% of high priority bush remnants and 50% of high priority wetlands are protected, and
- the water quantity resource of the Upper Gorge sub-catchment is 77% allocated, with large volumes stored and removed from the sub-catchment as part of the Mangahao power scheme. All major takes for irrigation, town water supply and industrial use are metered and automatically monitored.

POHANGINA SUB-CATCHMENT

The Pohangina sub-catchment:

- is approximately 55,000ha in area,
- land use is 51% sheep and beef, 46% forest (native and exotic), 2% dairy,
- has a number of popular swimming spots,
- contains significant wāhi tapu and customary fisheries throughout its length. It is of major significance to Rangitāne O Manawatū,
- has six sites of rare/threatened native fish,
- is an important trout fishery and spawning area,
- contains 21 high priority bush and 1 high priority wetland sites, including the Tōtara Reserve, and
- includes part of the Pohangina-Ōroua scheme.

The water quality of the Pohangina sub-catchment is characterised by high suspended sediment loads, and moderate-high phosphate and nitrate levels. Pathogen levels are generally safe for swimming. Sediment and nutrient levels are the result of non-point source run-off.

THE WATER QUALITY STATE IS EXPLAINED BY:

- this sub-catchment contains approximately 19,000ha of unprotected erosion prone land (16% of the unprotected erosion prone land in the entire Manawatū Catchment) and is contributing 11% of the total suspended sediment load to the Manawatū Catchment,
- there are 2 consented discharges to water in the sub-catchment, neither of which is considered significant,
- there are 7 consented dairy shed effluent discharge consents, all of which are discharges to land. Inspections so far this season show 100% compliance in this sub-catchment, and



- the exact level of progress towards the Dairying and Clean Stream Accord targets (around stock exclusion from waterways, stock crossing, and nutrient management) by dairy farmers in this sub-catchment is unknown, but there is extensive riparian fencing and stock crossings (bridges and culverts). Farmer surveys in the Manawatū-Whanganui region indicate the majority of Dairying and Clean Stream Accord targets are achieved.

IN ADDITION:

- 4 man-made barriers are having a moderate to high impact on native fish migration,
- public access to the Pohangina River is good,
- only 5% of high priority bush remnants and no high priority wetlands are protected, and
- the water quantity resource of the Pohangina sub-catchment is 32% allocated. All major takes are metered and automatically monitored.

MIDDLE MANAWATŪ SUB-CATCHMENT

The Middle Manawatū sub-catchment:

- is approximately 17,000ha in area,
- land use is 58% sheep and beef, 18% forest (native and exotic), 5% urban, and 14% dairy,
- has a number of popular swimming spots,
- has a significant number of Rangitāne O Manawatū wāhi tapu and customary fisheries sites, and contains many of Rangitāne O Manawatū historic aqua-cultural fisheries sites and mahinga kai sites, including Parahaki Island at the entrance to the Manawatū Gorge by the township of Ashhurst which also contains Rangitāne O Tamaki Nui A Rua wāhi tapu and sites of significance,
- has two sites of rare/threatened native fish,
- is an important trout fishery,
- contains 2 high priority bush and 1 high priority wetland sites, and
- includes parts of the Lower Manawatū scheme and Ashhurst drainage scheme.

The water quality of the Middle Manawatū sub-catchment is characterised by high suspended sediment loads, and high phosphate and nitrate levels. However, these issues are mostly inherited from those sub-catchments located further upstream. Generally, water quality improves through this reach. Pathogen levels are generally safe for swimming. Point source discharges contribute the greatest loading during low flow conditions, when run-off from land is significantly reduced.

THE WATER QUALITY STATE IS EXPLAINED BY:

- this sub-catchment contains approximately 170ha of unprotected erosion prone land and is contributing a very low amount of the total suspended sediment load to the Manawatū Catchment,
- there are 11 consented discharges to water in the sub-catchment, two of which are considered significant. These are: Ashhurst sewage and Aokautere sewage. Aokautere sewage is working towards connecting to the



Palmerston North Waste Water Treatment Plant in the next 12 months, and Ashhurst sewage requires a new consent in 2013. The compliance rate of the discharges monitored is 100%,

- there are 7 consented dairy shed effluent discharge consents, all of which are discharges to land. The compliance rate for these consents so far this season is 94%, and
- the exact level of progress towards the Dairying and Clean Stream Accord targets (around stock exclusion from waterways, stock crossing, and nutrient management) by dairy farmers in this sub-catchment is unknown, but there is extensive riparian fencing and planting, and stock crossings (bridges and culverts). Farmer surveys in the Manawatū-Whanganui region indicate the majority of Dairying and Clean Stream Accord targets are achieved.

IN ADDITION:

- 2 man-made barriers are having a moderate to high impact on native fish migration,
- public access to the Manawatū River is limited except in the built-up Palmerston North area,
- all high priority bush remnants and wetlands in this sub-catchment are protected, and
- the water quantity resource of the Middle Manawatū sub-catchment is 79% allocated. All major takes are metered and automatically monitored.

LOWER MANAWATŪ SUB-CATCHMENT

The Lower Manawatū sub-catchment:

- is approximately 50,000ha in area,
- land use is 54% sheep and beef, 25% dairy, 11% forest (native and exotic), and 6% urban,
- has a number of popular swimming spots,
- contains historic Rangitāne O Manawatū wāhi tapu and customary fishery areas throughout, along with mahinga kai, and kāinga sites. There are also shared hapū /iwi arrangements with Ngāti Whakatere, Ngāti Ngārongo, Ngāti Takihiku, Ngāti Hinemata, Ngāti Kauwhata and Ngā hapū O Hīmatangi in the lower reaches of the mid-Manawatū river catchment. This includes a number of Ngāti Raukawa fishing grounds, and fish habitats,
- has three sites of rare/threatened native fish, including Kāhuterawa Stream which is a regional native fish hot-spot,
- is an important trout fishery and spawning area,
- contains 9 high priority bush and 1 high priority wetland sites, and
- includes parts of the Lower Manawatū scheme and the Manawatū Drainage scheme.

The water quality of the Lower Manawatū sub-catchment is characterised by high suspended sediment loads (inherited from further upstream in the catchment), and high phosphate and nitrate levels. The high nutrient levels are a combination of inputs from the upper part of the Manawatū Catchment, as well as non-point and point source inputs from within this sub-catchment. Palmerston North sewage is the largest discharge in the Manawatū Catchment. Pathogen levels are generally safe for swimming.

THE WATER QUALITY STATE IS EXPLAINED BY:

- this sub-catchment contains approximately 100ha of unprotected erosion prone land and is contributing a very low amount of the total suspended sediment load to the Manawatū Catchment,
- there are 55 consented discharges to water in the sub-catchment, three of which are



considered significant. These are: Palmerston North sewage, Longburn sewage, and Fonterra (Longburn). Manawatū District Council is currently assessing the viability of connecting Longburn sewage into the Palmerston North Waste Water Treatment Plant. New Zealand Pharmaceuticals have recently started piping their discharge to Palmerston North Waste Water Treatment Plant. The compliance rate of the discharges monitored is 89%,

- there are 87 consented dairy shed effluent discharge consents, all of which are discharges to land. These consents will be assessed for compliance before the end of the season, and
- the exact level of progress towards the Dairying and Clean Stream Accord targets (around stock exclusion from waterways, stock crossing, and nutrient management) by dairy farmers in this sub-catchment is unknown, but there is extensive riparian fencing and planting, and stock crossings (bridges and culverts). Farmer surveys in the Manawatū-Whanganui region indicate the majority of Dairying and Clean Stream Accord targets are achieved.

IN ADDITION:

- 6 man-made barriers are having a moderate to high impact on native fish migration,
- public access to the Manawatū River and several of its tributaries is good due a network of walkways,
- only 11% of high priority bush remnants and none of the high priority wetlands are protected, and
- the water quantity resource of the Lower Manawatū sub-catchment is 79% allocated. This includes the significant water supply take from Turitea. All major takes are metered and automatically monitored.

ŌROUA SUB-CATCHMENT

The Ōroua sub-catchment:

- is approximately 90,000ha in area,
- land use is 63% sheep and beef, 19% dairy, 11% forest (native and exotic),
- has a number of popular swimming spots,
- Since the 1820s strong Iwi connections of Tainui Waka through Ngāti Toarangatira, Ngāti Raukawa and Ngāti Kauwhata have influenced life of the Ōroua River from the headwaters to the confluence with the Manawatū River at Puketōtara, near Rangiotū. Ngāti Kauwhata has maintained important Māori concept of “ahi kā and kaitiakitanga o te Awa Ōroua”. There are shared arrangements with other neighbouring Iwi including Ngāti Hauiti and Ngāti Apa,
- contains historic Rangitāne O Manawatū wāhi tapu and customary fishery areas throughout, along with mahinga kai, and kāinga sites,
- has three sites of rare/threatened native fish,
- has a blue duck (whio) population in its headwaters,
- is an important trout fishery and contains important spawning habitats around Feilding and above Kimbolton,
- contains 47 high priority bush and 2 high priority wetland sites, including Kitchener Park, and
- includes parts of the Pohangina-Ōroua, Lower Manawatū and Manawatū Drainage schemes, the Lower KIWITEA Scheme, and the Te Kawau drainage scheme.

The water quality of the Ōroua catchment is characterised by medium-high suspended sediment loads, low-moderate nutrient levels upstream of Feilding, and high nutrient levels downstream of Feilding. Pathogen levels are generally safe for swimming upstream of Feilding, but are consistently unsafe for swimming downstream of Feilding. The Feilding sewage discharge is a major contributor to the poor water quality downstream of Feilding, however the overall situation is due to the cumulative effects of the other point source discharges and non-point source run-off.

THE WATER QUALITY STATE IS EXPLAINED BY:

- this sub-catchment contains approximately 5700ha of unprotected erosion prone land (15% of the unprotected erosion prone land in the entire Manawatū Catchment) and is contributing 10% of the total suspended sediment load to the Manawatū Catchment,



- there are 21 consented discharges to water in the sub-catchment, six of which are considered significant. These are: Cheltenham sewage, Kimbolton sewage, Feilding sewage, Rongotea sewage, Awahuri sewage, and the AFFCO Manawatū meat plant. Applications for consents for Feilding sewage and the discharge from the AFFCO Manawatū meat plant are currently being considered through the consenting process. Kimbolton sewage was granted a new consent in 2008. The compliance rate of the discharges monitored is 81%,
- some consent holders continue to operate a number of years after their consent has expired, while negotiating consent renewal. They are legally able to do this,
- there are 110 consented dairy shed effluent discharge consents, all of which are discharges to land. The compliance rate for this season is 78%, and
- the exact level of progress towards the Dairying and Clean Stream Accord targets (around stock exclusion from waterways, stock crossing, and nutrient management) by dairy farmers in this sub-catchment is unknown, but there is extensive riparian fencing and planting, and stock crossings (bridges and culverts). Farmer surveys in the Manawatū-Whanganui region indicate the majority of Dairying and Clean Stream Accord targets are achieved.

IN ADDITION:

- there are no known man-made barriers to native fish migration,
- public access to the Ōroua River is limited for much of its length except in its headwaters, through Feilding, and at road crossings,
- only 4% of high priority bush remnants and none of the high priority wetlands are protected, and
- the water quantity resource of the Lower Manawatū sub-catchment is 97% allocated. All major takes are metered and automatically monitored.

COASTAL MANAWATŪ- HOROWHENUA SUB-CATCHMENT

The Coastal Manawatū-Horowhenua sub-catchment:

- is 57,000ha in area,
- land use is 37% sheep and beef, 36% dairy, 21% forest (native and exotic), 1% urban,
- has a number of popular swimming spots, including the Mangahao Whitewater Park,
- contains historic Rangitāne O Manawatū customary fishery areas throughout, along with mahinga kai, and kāinga sites and wāhi tapu,
- Since the 1820's, and prior to the signing of Te Tiriti O Waitangi, Ngāti Toarangatira and Ngāti Raukawa Iwi have maintained a strong traditional, environmental and cultural responsibility for the lower reaches of the Manawatū River, out into the ocean and southwards (known as te au ki te tonga) towards Ōhau, Ōtaki, Te Horo and Waikanae. Areas of interests, by virtue of land ownership to various hapū and Iwi O Ngāti Raukawa, include specific ROM customary fisheries including
 - Koputara Lake,
 - Kaikōkopu Lake,
 - Pukepuke Lagoon,
 - Ōmarupapako Reserve,
 - Rangitīkei River/Tangimoana Estuary,
 - Moutoa Wetland,
 - Foxton River loop / Motukarapa reserve, and
 - Manawatū estuary and feeder creeks and streams,
- has ten sites of rare/threatened native fish, including Koputaroa Stream which is a regional native fish hot-spot, and supports a locally important whitebait and tuna fishery,

- is an important trout fishery and spawning area,
- contains 35 high priority bush and 14 high priority wetland sites, including Manawatu- Estuary (a wetland of International Importance), and
- includes parts of the Lower Manawatū scheme, and the Makerua, Moutoa, Kōputarua, Foxton East, and Whirokino Drainage schemes.

The water quality of the Lower Manawatū sub-catchment is characterised by high suspended sediment loads, and high phosphate and nitrate levels. The sediment load is contributed from higher in the catchment, and the high nutrient levels are a combination of inputs from the upper part of the Manawatū Catchment, as well as non-point and point source inputs from within this sub-catchment. Water quality is also heavily influenced by tides. Pathogen levels in the main stem of the river during low flows are generally safe for swimming.



THE WATER QUALITY STATE IS EXPLAINED BY:

- this sub-catchment contains less than 900ha of unprotected erosion prone land and is contributing a very low amount of the total suspended sediment load to the Manawatū Catchment,
- there are 29 consented discharges to water in the sub-catchment, four of which are considered significant. These are: Tokomaru sewage, Shannon sewage, Foxton sewage, and the Silver Fern Farms Shannon Fellmongery. Applications for consent for Shannon sewage is currently being considered through the consent process. The discharges from Silver Fern Farms Fellmongery and Foxton sewage were re-consented in 2008. The compliance rate of the discharges monitored is 96%,
- there are 111 consented dairy shed effluent discharge consents, all of which are discharges to land. Compliance assessments for these consents will be completed by the end of the season, and
- the exact level of progress towards the Dairying and Clean Stream Accord targets (around stock exclusion from waterways, stock crossing, and nutrient management) by dairy farmers in this sub-catchment is unknown, but there is extensive riparian fencing and planting, and stock crossings (bridges and culverts). Farmer surveys in the Manawatū-Whanganui region indicate the majority of Dairying and Clean Stream Accord targets are achieved.

IN ADDITION:

- 9 man-made barriers are having a moderate to high impact on native fish migration. According to local Iwi O Ngāti Raukawa, there are a number of structures with a moderate to high potential to restrict fish passage upstream,
- the whitebait and tuna harvest have declined markedly in the last 20 years,
- public access to the Manawatū River and its tributaries is limited,
- only 12% of high priority bush remnants and 43% of high priority wetlands are protected, and
- the water quantity resource of the Coastal Manawatū sub-catchment is 65% allocated. All major takes are metered and automatically monitored.

ALLOCATION OF KEY ACTIONS TO SUB-CATCHMENTS

The nine sub-catchments described above are all quite different in terms of their water quality and catchment health, and the factors influencing them. Accordingly, it makes sense to vary how

and where the key actions are applied across Manawatū Catchment. The table below sets out what key actions should be applied in which sub-catchment.

KEY ACTIONS TO DEAL WITH CHALLENGES						
SUB-CATCHMENT	Sediment run-off	Point source discharges	Non-point source run-off	Loss of habitat for native fish and birds, and trout	Increasing demand for water	Physical modification of the river system
Upper Manawatū	✓	✓	✓	✓	✓	✓
Tīraumea	✓			✓		
Mangatainoka		✓	✓	✓	✓	✓
Upper Gorge		✓	✓	✓	✓	✓
Pohangina	✓		✓	✓	✓	✓
Middle Manawatū		✓	✓	✓	✓	✓
Lower Manawatū		✓	✓	✓	✓	✓
Ōroua	✓	✓	✓	✓	✓	✓
Coastal Manawatū-Horowhenua		✓	✓	✓	✓	✓

OTHER ACTIONS SPECIFIC TO THE GOALS (THAT ARE NOT ALREADY COVERED)

COMMUNICATION

One of the commitments in the Accord is to keep the community informed of the goals and progress towards them.

This will be done by:

- presenting this Action Plan and seeking community feedback including hui-a-iwi, hui-a-hapū of affected iwi and tribes,
- taking into account community views and expectations when planning and implementing actions,
- reporting on progress with the Action Plan, and
- reporting on the condition of the river.

Participants in the action planning process were surprised about the amount of work that is already underway. This work will, in itself, lead to improvements, or at least prevent things getting worse in that area. Cumulatively the expenditure on existing actions adds up to many millions of dollars and it is spread across local authorities, industry and farm businesses. This commitment is an important part of the “big picture” of what’s happening with the Manawatū River.

ACCESSIBILITY

In order to build pride in the river and increase its mana the community needs to understand and connect with it. Being able to easily find understandable and up-to-date information about the river will help with this, as well as regular public communication from those that are involved in managing the river and its systems. This will include information on accessibility for recreation such as walking, swimming and fishing. There is also potential to increase accessibility through new access points and walkways etc. Negotiations will need to be undertaken with landowners where access across private land is being sought.

SAFETY

To be safe for food gathering, swimming, fishing or boating, the river needs to be clear of physical hazards, and the water quality should be suitable for each purpose. The key actions to deal with water quality will also improve safety. There are some additional actions to deal with physical hazards.

He rākau ka hinga i te mano wai

Value life while you have it

INDICATORS OF SUCCESS AND MONITORING


The Accord Goals describe a number of desired outcomes. Some of these are relatively easy to measure. Others are more complex and achieving them may not be directly attributable to one or other condition in the river or action taken.

Improving the overall health of the river will advance all the goals so it is important to measure the physical condition of the river: things like the amount of sediment, bacteria and nutrients etc. These are science-based measures.

In some cases it may take some time to see improvements because of the cumulative effects of inputs into the river that have happened over many years, or because actions will take time to implement. An example is the reduction of sediment and the on-going SLUI programme. In other cases it is expected that monitoring will pick up improvements very quickly, for example where a wastewater discharge has been removed or cleaned.

It is also important to measure progress on actions - even if beneficial changes take time to materialise. The table below shows the range of measurements that will be used to assess how well the goals are being met.

Outcomes and indicators: measurement tools to assess accord goals

MAURI	
<p>TRADITIONAL FOOD SOURCES</p> <p>SWIMMABLE, ACCESSIBLE & SAFE</p> <p>ECONOMIC PROSPERITY</p> <p>TROUT</p> 	Cultural/Social/Outcomes
<p>CULTURAL INDICATORS Cultural Health Indicator.</p> <p>BIOLOGICAL INDICATORS Macroinvertebrate Community Index, fish populations, GPP, bacteria.</p> <p>PHYSIO-CHEMICAL MEASUREMENTS Dissolved Oxygen (metabolism), physical habitat - sediment, flows, nutrients, toxins, temperature, turbidity.</p>	Mātauranga/Science
<p>ACTION MEASUREMENTS Point source reductions, fencing, riparian planting, land use changes, etc.</p>	Leaders' Forum Actions

He manga wai koia kia kore e whitikia? Nothing ventured, nothing gained

APPENDIX A: TASKS TO SUPPORT THE KEY ACTIONS AND ACCORD GOALS

Meeting the goals of the Accord will require actions that are different in scale, timeframe, scope (dealing with one issue or many), involvement and cost.

A number of key actions have been identified as priorities. Where on the river these should happen is outlined in the table on page 22. More detail about these actions and who will lead them is described below. Supporting tasks are also included.

We have identified many more tasks that will help to meet the Accord Goals. Where possible the tasks are specific, time-bound and have a leader that is one or more of the Accord signatories.

In some cases whole sectors have been identified as having a role to play and it is less easy for one organisation to take responsibility. These tasks are more aspirational but are included to send a signal of the need for responsibility and action.

COLLABORATION

TASKS	WHO
<p>Explore opportunities for improved collaboration for river management. Examples where this could occur are:</p> <ul style="list-style-type: none"> • providing a framework for river management schemes incorporating, for example, channelling/ water flows, limited modification of the river and consolidation of extraction sites, • catchment care groups (see next task below), • representation of iwi/hapū (see Involvement of iwi/hapū below), • joint projects, and • shared research and monitoring. 	<p>Horizons Regional Council, iwi/hapū, Fish and Game, and other forum members. Leadership will vary depending on the project</p>
<p>Establish a "Catchment Care Group" for each sub-catchment made up of key stakeholders from within the Accord partners and other parties that have an interest in those respective sub-catchment units. This Catchment Care Group (CCG) would be mandated by its respective community and would help prepare and assist with the implementation of a Catchment Management Plan.</p>	<p>Federated Farmers (lead a pilot project in rural area in Tararua district), Te Kāuru</p> <p>Iwi/hapū (lead a pilot project in Ōroua. Iwi with interests in this catchment include; Rangitāne o Manawatū and Ngāti Kauwhata)</p> <p>Vision Manawatū (explore options where facilitation might help)</p>
<p>Discuss development of an Upper Gorge Management Plan.</p>	<p>Te Kāuru, Horizons Regional Council</p> <p>This catchment sub-unit contains a portion of Rangitāne o Manawatū rohe in its western boundary. Iwi/hapū will need to be identified for inclusion in the development of this action. Te Kāuru (Manawatū River Eastern Hapū Collective), Ngāti Mutuahi, Ngāti Hāmua, Ngāi Te Kapuarangi Ngāti Te Koro are the hapū of this sub-catchment.</p>

COLLABORATION (CONTINUED)

TASKS	WHO
Discuss development of a Pohangina Catchment Management Plan in line with its cultural significance.	Rangitāne O Manawatū, Horizons Regional Council, iwi/hapū
Investigate the establishment of community working groups for all town Sewage Treatment Plants and point source discharges by 2012.	City and district councils
Information sharing on best farm practices (nutrient management, stock exclusion, riparian planting).	Forum members

INVOLVEMENT OF IWI/HAPŪ

TASKS	WHO
Explore opportunities for better representation by Iwi/hapū around the Manawatū River. Through this process specific iwi/hapū can and will be identified for specific reaches as determined by iwi/hapū and supported by Iwi Leadership Group members.	Horizons Regional Council, iwi/hapū, Office of Treaty Settlements, Department of Conservation
Discuss iwi/hapū resourcing of on-going involvement in improving water quality in the Manawatū Catchment.	Iwi/hapū, Horizons Regional Council
Commence discussion within 12 months with the aim of completing discussion within 2 years and producing a Cultural Area Management Plan. This could involve: <ul style="list-style-type: none"> • identifying area of cultural significance by 2012, • identifying threats/decline issues in respect to significant cultural areas by 2012, • developing a ranking system for culturally significant sites and implementing a restoration programme where practicable by 2014. (This is linked to implementation of significant site protection action below.), • collaboration with other agencies/groups undertaking restoration projects started by 2011 and ongoing, • developing mechanisms to increase access to the river for recreation and waka ama by 2015, • implementation of iwi protocols e.g. Rāhui by 2015, • implementation of new initiatives celebrating culture - e.g. the running of the eel by 2015, • keeping abreast with global best practice for waste water management and treatment, and • facilitation of iwi/hapū participation in research and promotion. 	Iwi/hapū, Horizons Regional Council, other councils
Discuss how to: <ul style="list-style-type: none"> • facilitate iwi/hapū participation in discussions around water allocation and ongoing consents management, • develop processes for inclusion of iwi/hapū engagement and Cultural Impacts Assessments in resource consents. Identification and implementation of wāhi tapu site protections actions by 2013. 	Iwi/hapū, Horizons Regional Council
Discuss further ways to implement an absolute protection mechanism for wāhi tapu sites by 2011.	Iwi/hapū, Horizons Regional Council

INVOLVEMENT OF IWI/HAPŪ (CONTINUED)

TASKS	WHO
Foster TLA collaboration on discharge management and minimisation by 2012/13.	Iwi/hapū, Horizons Regional Council, other councils
Implement iwi/hapū-TLA discharge collaborative framework.	
Provide advice and financial assistance.	Horizons Regional Council
Upper Manawatū, Tīraumea, Mangatainoka and Upper Gorge: identify hapū and communication directory by 2012.	Iwi/hapū

SEDIMENT RUN-OFF

TASKS - note that many of the tasks in the sediment section will also help to address non-point source problems such as nutrient run-off	WHO
Provide advice, Whole Farm Plans and financial assistance to farmers as part of the Sustainable Land Use Initiative (SLUI). The priority sub-catchments are: <ul style="list-style-type: none"> • Upper Manawatū, • Tīraumea, • Pohangina, and • Ōroua 	Horizons Regional Council, Te Kāuru, Rangitāne O Manawatū, Ngā Kaitiaki O Ngā ti Kauwhata
Reduce sediment run-off from erosion prone land by using SLUI and other methods.	Hill country farmers
Promote the benefits and encourage uptake of SLUI to farmers.	Federated Farmers, Horizons Regional Council, other councils, all members of the Leaders' Forum
Manage the willow growth along the main stem of the Tīraumea River.	Horizons Regional Council, landowners
Reduce sediment inputs from stream bank erosion through management of flood and erosion control schemes.	Horizons Regional Council
Ensure all major earthworks activities (industrial and residential subdivisions, wind farm developments, etc) operate within resource consent conditions and to industry best practice guidelines.	Horizons Regional Council, Palmerston North City Council
Maintain/reduce sediment run-off from Crown land through plant and animal pest control.	Department of Conservation
Use good farm management practices.	Landowners
Maintain woody cover on erosion prone land (with policies and programmes).	Horizons Regional Council
Reduce sediment inputs from the rural road network as a result of storm events: <ul style="list-style-type: none"> • improve stability of rural road network (dependent upon available funds), and • continue to prevent slip debris being tipped into waterways. 	Tararua District Council and Manawatū District Council

POINT SOURCE DISCHARGES

TASKS	WHO
<p>Ensure all new resource consents for discharges to water are practical, enforceable, and meet current Regional Plan water quality requirements.</p>	<p>Horizons Regional Council</p>
<p>All 10 consent applications for the larger discharges to the Manawatū River are resolved within 12 months of the Accord Action Plan becoming operative:</p> <ul style="list-style-type: none"> • Eketahuna, Pāhiatua, Woodville wastewater, • DB Breweries Mangatainoka site, • Fonterra Pāhiatua site, • Aokautere wastewater, • Feilding, Longburn wastewater, • AFFCO Feilding site, and • Shannon wastewater. 	<p>Horizons Regional Council, Tararua District Council, iwi/hapū, DB Breweries, Fonterra, Te Kāuru, Palmerston North City Council, Manawatū District Council, Ngā Kaitiaki O Ngāti Kauwhata, AFFCO, Ngā Kaitiaki O Ngā ti Kauwhata, Rangitāne O Manawatū, Horowhenua District Council</p>
<p>Require all major discharges (>300m³/day) to be metered and tele-metered.</p>	<p>Horizons Regional Council</p>
<p>Recent and ongoing PNCC actions that assist in improving the quality of the Manawatū river - Improvements to Wastewater Treatment and Disposal:</p> <ul style="list-style-type: none"> • April 2011 - Connection of Aokautere Village to the City's wastewater network and decommissioning of oxidation ponds discharging to the river, • June 2011 - Connection of Longburn township ponds to the City's treatment plant, • July 2011 - Introduction of DRP charging for trade waste (commercial) users, • 2011/12 - Investigation of options for improving the impact of the Ashhurst wastewater discharge in line with consent ending in 2013, • 2011/12 - Actions implemented from Ashhurst wastewater investigation, • 2016 - Review of the Best Practicable Option (BPO) for treating and disposing of the City's wastewater with reporting to the Council and the public. (Half way through the consent period), • 2017-18 - Actions arising from the review of BPO, and • 2023- 28 - Consideration of the city's next developments in wastewater discharge and treatment in line with the prevailing water quality plan and land plan standards. 	<p>Palmerston North City Council</p>
<p>Specific point discharges:</p> <ul style="list-style-type: none"> • evaluating options for low flow/summer based ground disposal or irrigation of treated discharge for Dannevirke Wastewater Treatment system. The likely site is land owned by Council at the aerodrome (2010-11 year investigation, construction dependent on new Annual Plan), also the upgrade of the treatment process at Dannevirke to improve the quality of the discharge effluent, 	<p>Tararua District Council</p>

POINT SOURCE DISCHARGES (CONTINUED)

TASKS	WHO
<ul style="list-style-type: none"> • removing one discharge point by combining the two treatment systems at Eketahuna into one (2010-11 Funded), This project is well underway and the Imhoff tank discharge will be removed by end of January 2011 meaning all Eketahuna waste stream will be processed through the ponds. They have the capacity to accommodate this, • renewal of discharge consents for Pāhiatua, Woodville and Eketahuna, that all involve upgrades to previous treatment (2010-11 Funded) Woodville Consent well underway with Consent renewal lodged with Horizons and work is continuing with the others, • separation of stormwater infiltration from SH drainage into Woodville’s Wastewater network, as part of Woodville Main Street upgrade (2011-12 Funded), • conversion of Norsewood treated wastewater discharge from stream based to ground based discharge (2010-11 Funded). This project is underway along with a small pond upgrade, • working with Fonterra on Condensate Discharge Consent renewal - whether best practicable option is combining both treatment systems into one Discharge via Pāhiatua Wastewater Treatment, and • assessing all Urban Stormwater point discharges to allow an understanding of how many, where and what opportunities exist to combine and reduce number. We will be considering improvements to this outfall within the next LTP process. <p>Asset Management and operations:</p> <ul style="list-style-type: none"> • recruiting a 3 person operations and maintenance team in house for day-day operation and enhancement of wastewater and water treatment plants. Whilst the bulk of these roles is daily operation of each treatment plant, they will also ensure operational reporting under the relevant consents is up to date, implement on the ground the Draft water demand management strategy for the relevant schemes, and carry out proactive maintenance such as scheme wide hydrant flushing (Air scouring, Pigging) as a programmed process once the Water networks are understood. (2010-11 Funded). 	<p>Tararua District Council</p>
<p>Council has 2 wastewater treatment plants that currently discharge effluent to the Manawatū River. In recent months there has been a good level of technical and procedure discussion between staff at Horizons Regional Council and Horowhenua District Council.</p> <p><u>Shannon</u></p> <p>This plant serves a community of approximately 1,500 persons. The plant has recently been upgraded with a new screening facility and floating wetlands. This has improved the quality of the effluent for the discharge of suspended solids. There are no capacity constraints for the plant.</p> <p>The actions specific to the consent for the Shannon wastewater treatment plant are:</p> <ul style="list-style-type: none"> • staff are to finalise the resource consent application for submission in mid April 2011, • the general format for the application will be for a short term consent to allow for development of a long term consent, and • the term of this consent is likely to be dependent on the findings of the modeling and how much land is required. 	<p>Horowhenua District Council</p>

POINT SOURCE DISCHARGES (CONTINUED)

TASKS	WHO
<p>Consideration will be given to the availability of land for the purposes of land based treatment:</p> <ul style="list-style-type: none"> • consideration also needs to be given to the requirements of dairy companies, land based discharge on or adjacent to productive dairy units, and • financial models to determine levels of affordability will be produced. <p><u>Foxton</u></p> <p>This plant serves a community of approximately 2,700 persons. A consent hearing with regard to this plant was held a couple of years ago with the requirement on HDC to ascertain the availability of land with a view to ensuing land based treatment within a three year period. There are no capacity constraints for the plant.</p> <p>Discussions have continued in earnest between staff of HDC and Horizons.</p> <p>We continue to confront the same issues as we do for Shannon with regard to availability of land and aspects of affordability.</p>	<p>Horowhenua District Council</p>
<p>Manawatū District Council is working with Palmerston North City Council to connect the Longburn wastewater to PNCC Wastewater Treatment Plant for treatment and disposal. The intention is to cease the point source discharge at the Longburn site once this connection is in place.</p> <p>MDC is applying for resource consent for the Feilding WWTP with the view of:</p> <ul style="list-style-type: none"> • upgrading the Feilding Wastewater Treatment Plant to ensure reduction in ammonia and nitrogen levels, • irrigating effluent during low river flows in the Ōroua River, thus reducing discharge into waterways, and • obtaining additional land for effluent discharge/irrigation in the long-term. 	<p>Manawatū District Council</p>
<p>Set targets towards 100% compliance with resource consent conditions 100% of the time</p>	<p>City and district councils, industry</p>
<p>Undertake resource consent compliance monitoring (quarterly for major discharges) and take enforcement action where breaches are detected</p>	<p>Horizons Regional Council</p>
<p>Ensure all major urban areas obtain have or obtain resource consent for their storm water discharge:</p> <ul style="list-style-type: none"> • Dannevirke, Pāhiatua, Woodville, • Ashhurst, Palmerston North, • Feilding, Longburn, and • Tokomaru, Shannon, Foxton and Foxton Beach. 	<p>Horizons Regional Council, Tararua District Council, Palmerston North City Council, Manawatū District Council, Horowhenua District Council,</p>
<p>Upper Manawatū - investigate improvement for all sewage treatment on this part of the river with a particular focus on Dannevirke's Sewage Treatment Plan.</p>	<p>Horizons Regional Council, Te Kāuru, Tararua District Council</p>
<p>Upper Gorge - investigate action required to improve high bacteria levels downstream of Woodville Sewage Treatment Plant.</p>	<p>Horizons Regional Council, Tararua District Council</p>
<p>Middle Manawatū - Investigate options to reduce influence of Ashhurst Sewage Treatment Plant on DRP levels at low flows.</p>	<p>Horizons Regional Council, Palmerston North City Council</p>

POINT SOURCE DISCHARGES (CONTINUED)

TASKS	WHO
<p>Address the occurrence of toxic levels of ammonia downstream of the Feilding Sewage Treatment Plant.</p> <p>Manawatū District Council is applying for resource consent for the Feilding Wastewater Treatment Plant with the view of:</p> <ul style="list-style-type: none"> • upgrading the Feilding WWTP to ensure reduction in ammonia and nitrogen levels, • irrigating effluent during low river flows in the Ōroua River, thus reducing discharge into waterways, and • obtaining additional land for effluent discharge/irrigation in the long-term. 	<p>Horizons Regional Council, Manawatū District Council, Ngā Kaitiaki O Ngāti Kauwhata</p>
<p>Complete the renewal of land discharge consent for irrigation of factory wastewater including:</p> <ul style="list-style-type: none"> • reduce predicted leaching of nitrogen to ground water by 48% at Longburn from 2012, • reduce protein losses in or wastewater discharge to the Manawatū River by 30% from 2012, • installation of additional treatment to remove phosphorus from discharges by 2014, and • utilization of nitrogen inhibitors to further reduce nitrate leaching from the irrigation farms. <p>Cost to Fonterra \$2m plus \$80k per annum.</p>	<p>Fonterra Longburn</p>
<p>Complete the renewal of the condensate discharge consent.</p> <p>Propose to irrigate condensate during summer months.</p> <p>Discharge of condensate to the Mangatainoka during winter only.</p> <p>Reduce temperature of condensate from 50 to 35 degrees.</p> <p>Cost to Fonterra \$500k.</p>	<p>Fonterra Pāhiatua</p>
<p>Continue to:</p> <ul style="list-style-type: none"> • Ensure complete compliance with resource consents, • Actively review chemical use on site, • Continue to look at initiatives to reduce losses of fats and proteins to wastewater, and • Manage wastewater irrigation operations to ensure maximum treatment in the soil profile and reduce leaching. 	<p>Fonterra</p>
<p>Silver Fern Farms Shannon will:</p> <ul style="list-style-type: none"> • continue to comply with conditions of the recently improved consent to discharge treated wastewater to water (Consent No. 103931, year 2008), • continue to provide focus on the continuous improvement process as locked in the consent to discharge treated wastewater to water (Consent No. 103931, year 2008) by building on recent improvements to wastewater systems, and • bring forward the next scheduled independent assessment on Best Practicable Option as defined by condition 20A in the consent to discharge treated wastewater to water (Consent No. 103931, year 2008). 	<p>Silver Fern Farms</p>

POINT SOURCE DISCHARGES (CONTINUED)

TASKS	WHO
<p>Complete the renewal of discharge consents for Tui Brewery within applicable time periods. Comply with resource consent conditions.</p> <p>Continue to:</p> <ul style="list-style-type: none"> • work towards using phosphate free cleaning agents as technology evolves, • actively reduce water consumption which reduces waste volumes, • actively reduce effluent loading by removing surplus by-products, and • improve management of the wastewater treatment plant to achieve further organic breakdown, nutrient absorption and aeration efficiencies. 	DB Breweries
<p>Establish asset managers' forum to drive best practice. Could establish an ongoing continuous improvement project.</p> <p>Commitment to on-going exploration and use of appropriate knowledge, science and technology to improve wastewater treatment and improve water quality outcomes.</p>	Industry, Horizons Regional Council, other councils

NON-POINT SOURCE RUN-OFF

TASKS	WHO
<p>Continue discharging dairy shed effluent to land and retaining valuable nutrients to land previously lost to water.</p> <p>Work towards 100% compliance with resource consent conditions 100% of the time.</p>	Dairy farmers
<p>Initiate a pilot Landcare Trust catchment care project within the Tararua District. An initial meeting of landowners has been proposed for the 12 April 2011 to socialize the idea. A letter advising of the initial meeting was sent on the 30th March 2011. Follow up actions will depend on outcomes of the initial meeting.</p>	Federated Farmers, NZ Landcare Trust, Te Kāuru
<p>Ensure all resource consents for discharges of dairy shed effluent are practical, enforceable, and meet regulatory performance standards.</p> <p>Undertake resource consent compliance monitoring (every dairy farm, every year) and take enforcement action where breaches are detected.</p>	Horizons Regional Council
<p>Provide advice to dairy farmers on:</p> <ul style="list-style-type: none"> • how to comply with their resource consent conditions, • how to exclude stock, and • nutrient management. 	Horizons Regional Council
<p>Every Farm Every Year programme will provide one-on-one support and advice for farmers that are identified as being at risk of non-compliance including advice on the capacity of the storage that may be required to reduce the risk of non-compliance.</p>	Fonterra, DairyNZ
<p>Appoint a new Fonterra Sustainable Dairying Advisor and a new Dairy NZ Effluent Specialist in the Horizons region.</p>	Fonterra, DairyNZ
<p>Continue Dairy Link's programme of work including field days, communications and one-on-one support and advice.</p>	Dairy Link
<p>Promote the need to comply with resource consent conditions to dairy farmers.</p>	Federated Farmers

NON-POINT SOURCE RUN-OFF (CONTINUED)

TASKS	WHO
Promote the benefits and encourage uptake of stock exclusion from waterways - particularly when accompanied by riparian planting.	Federated Farmers, Fonterra
Provide funding assistance/incentives to dairy farmers to exclude stock from waterways.	Horizons Regional Council
Promote the need to meet Dairying and Clean Stream Accord targets ⁹ and monitor the extent of progress towards them.	Fonterra (with assistance in promotion from Federated Farmers)
Aim to reduce nutrient losses to streams and ground water to acceptable levels.	Landowners and land users
Collect the existing nutrient management data from all farms in the Manawatū Catchment (approx 600 farms) to develop a clear picture of where nutrient loss and nutrient use efficiency sits currently within the entire catchment. This will be achieved through using existing data from FMRA ¹⁰ , using modelled data, or obtaining the information directly from the farmers. Commencing August 2011.	Fonterra and Dairy NZ
Run a pilot programme in the Mangatainoka Catchment (approximately 60 farms) to validate the process of auditing the inputs of Overseer nutrient budgets. Information will be gathered from existing nutrient budgets and compared against audited nutrient budgets. Commencing August 2011.	Fonterra and Dairy NZ
DairyLink Focus Farms: Run a project on 2 or 3 farms within the Manawatū Catchment to demonstrate the implementation of best management practice across the farm system. The purpose of this project is to develop farmer understanding of best practice, create case studies that explore the cost-benefit of different mitigation technologies, and to engage farmers with practical examples of nutrient management in action. Commencing August 2011.	Dairy Link
Agree acceptable nutrient loss levels. Agree a nutrient management plan (NMP) template.	Fonterra, DairyNZ, Federated Farmers, Horizons Regional Council
Promote the benefits and uptake of NMPs.	Fonterra, DairyNZ, Federated Farmers, other agencies (e.g: Horticulture NZ, Foundation for Arable Research)
Continue other parts of the industry Effluent Management Programme. These include: <ul style="list-style-type: none"> • implementation of a Code of Practice and Standards for effluent system design and installation across the effluent supply industry, • the development of an accreditation programme which will enable farmers to select service providers based on their ability to comply with the Code and Standards, • a similar code is under development for the design and installation of storage facilities, and • develop a joint ownership model for the Horizons Storage Calculator on the proviso that this model underpins policy development going forward. 	Fonterra, Dairy NZ
Investigate causes of high levels of bacteria in the Mākāhahi.	Horizons Regional Council

⁹ Dairying and Clean Streams Accord obligations: Cattle excluded from waterways, bridges or culverts where stock cross regularly, effluent treated or discharged appropriately, nutrients managed effectively to minimise losses to ground or surface water, and regionally significant or important wetlands fenced and their water regimes protected.

¹⁰ Fertiliser Manufacturers Research Association (or Fert Research)

WATER ALLOCATION

TASKS	WHO
Ensure resource consents to take water are practical, enforceable, are within allocation limits, and meet regulatory efficiency standards.	Horizons Regional Council
Require all major takes (>750m ³ /day) to be metered and tele-metered.	Horizons Regional Council
Undertake resource consent compliance monitoring and take enforcement action where breaches are detected.	Horizons Regional Council
Provide advice to farmers on how to comply with their resource consent conditions.	DairyNZ, Horizons
Promote use of the Smart Water on Dairy Farms kit.	
Recognise the Ōroua is under pressure from allocation. Investigate the opportunities for water harvesting etc. with the target of improving the fisheries of the Ōroua. Explore common catchment consent process through a Catchment Care Group.	Horizons Regional Council, Iwi/hapū, Ōroua Catchment Care Group
Establish an advisory service to provide advice on efficiency of dairy shed effluent and irrigation systems.	Horizons Regional Council (in collaboration with other agencies e.g. Fonterra/DairyLink/Irrigation NZ)
<p>Specific Takes:</p> <ul style="list-style-type: none"> • Construction of >130,000m³ impounded supply for Dannevirke water supply, that forms part of renewed water consent (2010-11 Funded, Construction underway). This will allow the opportunity to take water in normal flows and buffer both the very turbid high flow and the short term low flow periods by using the capacity stored within the new impounded supply, • Completion of the pipe connection to the new Pāhiatua Bore to minimise use of current stream intake from Mangatainoka River (2010-11 Funded). This project is underway and will be the main supply resource for Pāhiatua and therefore reduce both the demand and dependence on the river gallery take which will help to maintain river flows, and • Bringing Eketahuna Raw Water pipeline users back to original easement water use. 	Tararua District Council
<p>Completing draft Water Demand Management Strategies, that also pick up the move to include water harvesting, and more metering where practical for new properties, these will also have a public education component (leaflets, stalls at shows, school packs) all could be part of the process. (2010-11 Funded),</p> <p>Under Asset Management to develop simple models of each network to allow demand, leakage, fire-flow, drinking water standards assessment and renewals programs to be developed with a better understanding.</p>	Tararua District Council

FLOOD AND DRAINAGE CONTROL SCHEMES

TASKS	WHO
Works undertaken as part of flood and erosion control schemes and drainage schemes will be done in accordance with regulatory standards and/or the minor river works and drain maintenance Codes of Practice.	Horizons Regional Council, iwi/hapū
In river management consider the values (such as recreational, cultural, wāhi taonga, ecological) of the river as well as flood protection.	Horizons Regional Council, iwi/hapū
Continue resource consent compliance monitoring, and take enforcement action where breaches are detected.	Horizons Regional Council
Expect 100% compliance with resource consent conditions and Code of Practice standards 100% of the time.	Horizons Regional Council
Enhance the use of suitable plants in riparian areas where they contribute to the achievement of the Accord goals.	Horizons Regional Council, landowners
Make greater use of native species in plantings where possible, rather than just willows.	Horizons Regional Council

DEGRADED NATIVE BIRD AND FISH, AND TROUT HABITAT

TASKS	WHO
Establish a fresh water fishery group to advocate and advise on cultural and recreational fisheries and habitat in 2011.	Iwi/hapū, Department of Conservation, Fish and Game, (Horizons Regional Council - information only)
Where a Catchment Care Group (CCG) is established it is recommended they consider the following actions: <ul style="list-style-type: none"> • identify an environmental indicator of river health in 2011, • develop a programme to restore the health of aquatic life in the river in 2011-2012, • identify lowland habitat and develop an aquatic restoration plans at key sites (in place by 2020), • implement habitat restoration programme at native fish spawning sites, • identify habitat on Department of Conservation held land and develop management plans, • improve habitat and remove fish barriers by 2012, and • maintain and create wetlands in targeted headwaters of the catchment and in river/stream environ floodways (in place by 2020). 	Catchment Care Group (where established)
Identify suitable mahinga kai restoration native fishery sites and implement restoration programmes under Rangitāne O Manawatū tikanga and other iwi/hapū tikanga by 2014.	CCG Rangitāne O Manawatū, Te Kāuru, iwi/hapū
Ensure all resource consents issued for activities that have potential to impact on native fish and bird, and trout habitat are practical, enforceable, and meet regulatory performance standards.	Horizons Regional Council
Continue resource consent compliance monitoring, and take enforcement action where breaches are detected.	Horizons Regional Council
Protect and improve important in stream values including important native fish habitat (adult and spawning habitat).	Landowners

DEGRADED NATIVE BIRD AND FISH, AND TROUT HABITAT (CONTINUED)

TASKS	WHO
<p>Identify native fish migration barriers and prioritise remediation unless likely to have negative effects on native fish populations.</p> <p>(Upper Gorge) Makerua, Tokomaru and Mangaore Streams by 2014.</p> <p>(Pohangina) by 2014.</p>	<p>Horizons Regional Council, Department of Conservation, Catchment Care Groups (where established). Te Kāuru and Ngāti Whakare of Shannon, Rangitāne O Manawatū</p>
<p>Provide advice and financial assistance to barrier owners to remove/overcome native fish migration barriers.</p>	<p>Horizons Regional Council, Department of Conservation</p>
<p>Identify and prioritise for protection important native fish habitat.</p>	<p>Horizons Regional Council, Department of Conservation, Fish and Game</p>
<p>Promote the benefits and need to protect native fish.</p>	<p>Horizons Regional Council, Department of Conservation, Fish and Game, Federated Farmers</p>
<p>Provide advice and assistance to landowners to protect areas of high priority native fish habitat.</p>	<p>Horizons Regional Council, Department of Conservation</p>
<p>Identify Public Conservation Land adjoining the Manawatu River and its tributaries that is currently used for grazing, and examine the current fencing and riparian protection requirements in the relevant leases.</p> <p>Monitor and enforce whitebaiting regulations.</p>	<p>Department of Conservation</p>
<p>Identify and prioritise high value bush remnants and wetlands.</p>	<p>Horizons Regional Council, Department of Conservation</p>
<p>Promote the benefits and need to protect bush remnants and wetlands.</p>	<p>Federated Farmers, Horizons Regional Council, Department of Conservation, Fish and Game</p>
<p>Provide advice and assistance to landowners to protect and manage high value bush remnants and wetlands.</p>	<p>Horizons Regional Council, Department of Conservation, and other agencies e.g. QEII Trust, He Tini Awa Trust</p>
<p>Provide advice and assistance to landowners wanting to create new wetland habitat.</p>	<p>Fish and Game, Gamebird Habitat Trust</p>
<p>Identify and prioritise important trout spawning habitat.</p>	<p>Fish and Game, Horizons Regional Council</p>
<p>Provide advice and assistance to landowners to protect areas of high priority trout spawning habitat.</p>	<p>Fish and Game, Horizons Regional Council</p>
<p>Continue project to protect blue duck (whio) in upper Ōroua sub-catchment.</p>	<p>Department of Conservation in association with Manawatū Deerstalkers Association (and volunteers)</p>

EDUCATION AND COMMUNITY AWARENESS

TASKS	WHO
Consult the community about the Accord and Action Plan during 2011.	Horizons Regional Council
Update the community on progress with the Action Plan - ongoing.	Leaders' Forum, Horizons Regional Council
Establish an education programme. (Note this could include a program targeted at behavioural changes on river use and encouraging protective management practices. A possible goal of this programme could be a 50% increase of riverside natural habitat by 2020-2021. Consider approaching Te Manawa regarding aspects of the exhibition on the Manawatū River and whether it can incorporate social and cultural values and be linked to the Accord goals.	Horizons Regional Council
Nominate the Leaders' Forum, Accord and Action Plan for a Green Ribbon Award.	Leaders' Forum
Establish a Manawatū River website.	Horizons Regional Council
Make resource consent compliance results and rate information available to the public.	Horizons Regional Council
Continue public education programme on native fish with a focus on the Manawatū River.	Department of Conservation, iwi/hapū, Fish and Game
Distribute information on the river, Accord and Action Plan through own networks.	Department of Conservation, iwi/hapū, Fish and Game, Forest & Bird etc
Run Federated Farmers Farm Days to show the sustainable environmental improvement work happening on farms.	Federated Farmers
Organise annual recreational/fishing days promoting Manawatū Catchment and advertise to wider public to encourage participation.	Fish and Game

ACCESSIBILITY

TASKS	WHO
Promote the river access points that already exist (e.g. re-brand Fish and Game access signs and access maps, ensure maps are widely distributed and publicly available) and continue to improve access to outdoor recreation areas.	Horizons Regional Council, city and district councils, Fish and Game, Vision Manawatū, Department of Conservation
Identify where the community would like additional river access points, and work to make these a reality.	City and district councils, Horizons Regional Council, landowners
Apply to NZ Walking Access Commission Enhanced Access Fund for enhanced or new riverside walkways.	Leaders' Forum, Fish and Game, Councils

SAFETY

TASKS	WHO
Ensure that identified community swimming and boating spots are kept safe through the identification and removal of man-made hazards.	Horizons Regional Council
Issue warnings when water quality is unsafe for swimming.	Horizons Regional Council
Analyse cyanobacteria samples from the catchment to assess toxicity to humans and animals.	Horizons Regional Council
Undertake research to understand the conditions under which cyanobacteria blooms occur.	Horizons Regional Council

INDICATORS AND MONITORING

TASKS	WHO
Continue to monitor water quality (physio-chemical and biological).	Horizons Regional Council
Increase monitoring in the catchment to include the Kiwitea, Mākino, Mangaone and lower Ōroua.	Fish and Game, Ngā Kaitiaki O Ngāti Kauwhata, Rangitāne O Manawatū, Iwi/hapū
Develop a Cultural Health Index (CHI) for the Manawatū Catchment.	Iwi/hapū with assistance of Horizons Regional Council
Establishment of CHI sites and associated database by 2013.	Iwi/hapū
Implement groundwater monitoring programmes to manage abstractions at wāhi tapu sites with populations of rare native fish e.g. Ōmarupāpako (Round Bush) reserve.	Catchment Care Group (where established), Rangitāne O Manawatū, Nga Kaitiaki O Ngati Kauwhata, Ngā Hapu O Himatangi
Utilise tools and resources such as the SHMAK (Stream Health Monitoring and Assessment Kit) for community monitoring.	Catchment Care Groups (where established)
Continue to build the MM (Mediated Modelling) and BBN (Bayesian Belief Model) models. For more info: www.ifs.org.nz	Integrated Freshwater Solutions research project
Refine the MM and BBN models informed by: <ul style="list-style-type: none"> • monitoring results, • more workshops on Accord goals, and • on-going Forum activity. Proposed workshops 2011: 22 June, 21 Sept, 02 Nov.	Integrated Freshwater Solutions research project
Continue to investigate trends in trout population and angler harvest over time (trout catch rate).	Fish and Game
Enhanced monitoring of fish habitat.	Horizons Regional Council, Department of Conservation, Fish and Game, Catchment Care Groups (where established)
Investigate causes of poor water quality in the Mangatera.	Horizons Regional Council, Te Kāuru

INDICATORS AND MONITORING (CONTINUED)

TASKS	WHO
Add further monitoring site(s) in reference locations (i.e upstream sites) and a site in the lower Ōroua.	Horizons Regional Council
Provide spatial information on farm location and stocking rates. The dairy industry is looking at monitoring individually and collectively with every farm monitored against a nutrient management plan so this information will become available.	DairyNZ
Comply with RAMSAR requirements for monitoring the Estuary.	Responsible agencies: Horizons Regional Council, Horowhenua District Council and Department of Conservation, with help from other agencies and groups e.g iwi/hapū, Ornithological Society
Develop suitable economic measures for the 4th Accord Goal: "Sustainable use of the land and water resources of the Manawatū Catchment continues to underpin the economic prosperity of the Region."	Federated Farmers, Vision Manawatū, Fish and Game, iwi/hapū
Make on-going use of the multi-disciplinary Science Advisory Group to improve knowledge base and resolve interpretation differences about data/information.	Leaders' Forum and Science Advisory Group

FUNDING

TASKS	WHO
Explore existing and potential new funding sources with central government when an opportunity arises.	Leaders' Forum
Seek alignment with national research programmes as a way to enhance funding.	Leaders' Forum, Horizons Regional Council, others

APPENDIX B: IDENTIFIED SOLUTIONS

During workshops the following ideas and possible solutions were identified as worth recording and considering further:

1. Point Source Discharges - Combine 5 smaller wastewater treatment plants in one modern plant,
2. All discharges to land or ultra filtration for discharges continuing to water,
3. Don't create waste in the first place (compost toilet, recycling of grey water...),
4. Link up with fertiliser industry for better nutrient management,
5. Behavioural changes - domestic householders;
 - a. Carwash practices,
 - b. Paint and other substances not to go down the drain, and
 - c. No dumping of solid waste into waterways (bottles, plastic bags, etc.).
6. Water Demand Management;
 - a. On farm water storage,
 - b. Water conservation - agriculture,
 - c. Water conservation - households,
 - d. Pricing mechanisms, and
 - e. Water metering.
7. Urban Planning;
 - a. Storm water - hydraulic neutrality (same storm water run-off pre and post building), and
 - b. Open up drains (less rubbish, potential passages for fish).
8. Give river some of its original bed back, so that it can fulfil its original role as a provider of habitat, etc.,
9. Possible links with Land and Water Forum - filter out which recommendations would be applicable to the Manawatū,
10. Cultural mapping for iwi/hapū,
11. Private/public partnerships with iwi/hapu e.g. for wastewater treatment,
12. Establish best long term species mix to reduce accelerated land erosion,
13. Education programmes - the story of the river, along the river; education programmes for children,
14. More open days in wastewater plants, etc. for general public,
15. Knowledge sharing - e.g. Landcare Research, Fonterra, Horizons and Dairylink around a "SLUI" type programme for Nutrient Management,
16. Better education of political vote - start with more collaboration amongst council officers,
17. Tap into alternative funding - e.g. community, philanthropy, carbon credits, bio-diversity credits, and
18. Improve recreational facilities along the river to attract more people to the river and build pride in the river.

SIGNATORIES

E kore a Parawhenua e haere ki te kore a Rakahore

Water wouldn't move if it wasn't for rock - Partnership in ventures is essential for success




MALCOLM BAILEY
DIRECTOR
FONTERRA



LANCE BICKFORD
CEO
DESTINATION MANAWATU



TE WAARI CARKEEK
CHAIRPERSON
TE RUNANGA O RAUKAWA INC



KEITH COOPER
CHIEF EXECUTIVE
SILVER FERN FARMS



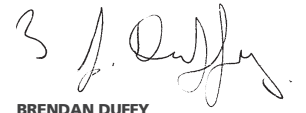
DAMIEN COUTTS
AUTHORISED SIGNATORY
DEPARTMENT OF CONSERVATION



MICHAEL CRIBB
KUIA KAUMATA COMMITTEE MEMBER
NGA KAITIAKI O NGATI KAUWHATA INC



FREDERIK DE JAGER
CHAIRPERSON
WATER & ENVIRONMENTAL CARE
ASSOCIATION INC



BRENDAN DUFFY
MAYOR
HOROWHENUA DISTRICT COUNCIL



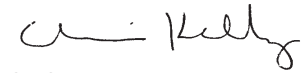
DENNIS EMERY
PROJECT MANAGER
TAIAO RAUKAWA
ENVIRONMENTAL TRUST



BERT JUDD
FOUNDING MEMBER
WATER & ENVIRONMENTAL CARE
ASSOCIATION INC



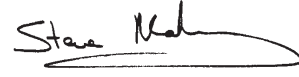
MIKE JOY
ECOLOGIST
MASSEY UNIVERSITY



CHRIS KELLY
CEO
LANDCORP FARMING LTD



JOAN LECKIE
ADVOCACY MANAGER - HOROWHENUA
ROYAL FOREST AND BIRD PROTECTION
SOCIETY OF NEW ZEALAND INC



STEVE MAHAREY
VICE-CHANCELLOR
MASSEY UNIVERSITY



MAROKOPA WIREMU MATAKATEA
SUPERVISOR
MUAUPOKO TRIBAL AUTHORITY



IAN MCKELVIE
MAYOR
MANAWATU DISTRICT COUNCIL



HONE MORRIS
REPRESENTATIVE
TE KAURU



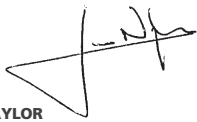
PETER MORRIS
QUALITY DIRECTOR
NZ PHARMACEUTICALS LTD



GARRICK MURFITT
CHAIRPERSON
HORIZONS REGIONAL COUNCIL



RICHARD MURFITT
PRESIDENT
FEDERATED FARMERS TARARUA



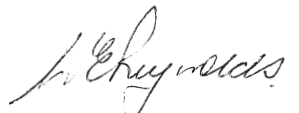
JONO NAYLOR
MAYOR
PALMERSTON NORTH CITY COUNCIL




CHRISTINA PATON
REPRESENTATIVE
MANAWATU ESTUARY TRUST



MANAHI PAEWAI
REPRESENTATIVE
TE KAURU



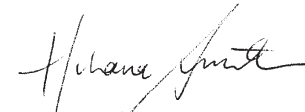
MAUREEN REYNOLDS
MAYOR
TARARUA DISTRICT COUNCIL



MARY SANSON
KUIA KAUMATA COMMITTEE MEMBER
NGA KAITIAKI O NGATI KAUWHATA INC



PETER SEBBORN
ADVOCACY MANAGER - MANAWATU
ROYAL FOREST AND BIRD PROTECTION
SOCIETY OF NEW ZEALAND INC



DR HUHANA SMITH
CHAIRPERSON
TAIAO RAUKAWA ENVIRONMENTAL TRUST



MAURICE TAKARANGI
MATUA MOANA TE RANGI
TE MAURI O RANGITAANE O MANAWATU.



WIREMU K TE AWE AWE
CHAIRPERSON
TE RANGIMARIE MARAE
TE KAUNIHERA KAUMATUA O
RANGITANE KI MANAWATU
RAUKAWA DISTRICT MAORI COUNCIL



PHIL TEAL
REGIONAL MANAGER
FISH & GAME NEW ZEALAND
WELLINGTON REGION



MOETATUA TUROA
KAUMATUA
NGA HAPU O HIMATANGI



KEREHI WI WARENA
SUPERVISOR
MUAUPOKO TRIBAL AUTHORITY

WITNESSED BY:



RICHARD THOMPSON
INDEPENDENT CHAIR
MANAWATU RIVER LEADERS' FORUM

ACTION PLAN KEY

Turn over leaf to reveal our action plan key for the maps found inside this document.



FOR MORE INFORMATION
24hr Freephone
0508 800 800



REDUCE THE NUTRIENT AND BACTERIA FROM POINT SOURCE DISCHARGES THROUGH:

- resolving outstanding resource consent applications
- ensuring discharges meet regional water quality standards
- meeting resource consent conditions, compliance monitoring and enforcement
- requiring resource consents for stormwater discharges



REDUCE THE RUN-OFF OF SEDIMENT, NUTRIENTS AND BACTERIA FROM INTENSIVE LAND-USE SUCH AS DAIRYING AND CROPPING THROUGH:

- meeting resource consent conditions, compliance monitoring and enforcement
- achieving the Dairying and Clean Stream Accord targets
- adoption of Nutrient Management Plans and promotion of nutrient use efficiency



PROTECT AREAS OF HABITAT FOR NATIVE FISH, BIRDS AND TROUT BY:

- fencing and planting streams and bush/wetland areas, and pest control
- removing fish barriers
- meeting resource consent conditions, compliance monitoring and enforcement



REDUCE SEDIMENT RUN-OFF FROM EROSION PRONE LAND, THE RURAL ROADS, AND AREAS OF MAJOR EARTHWORKS THROUGH:

- continuation of Horizons Regional Council's Sustainable Land Use Initiative
- adoption of road maintenance and earthworks best practice management practices
- meeting resource consent conditions, compliance monitoring and enforcement
- adoption of best practice management for earthworks



REDUCE THE IMPACT OF FLOOD CONTROL AND DRAINAGE SCHEMES BY:

- ensuring all works are undertaken in accordance with Codes of Practice
- meeting resource consent conditions, compliance monitoring and enforcement
- making greater use of plants on river banks



PREVENT OVER-USE OF WATER BY:

- ensuring consented takes meet regional standards
- meeting resource consent conditions, compliance monitoring and enforcement
- ensuring metering of all major water takes

THE MANAWATŪ RIVER FLOWS THROUGH ALL OF US. IT SHAPES OUR REGION AND REFLECTS OUR PEOPLE. IT IS PRECIOUS BECAUSE IT IS OURS. NOW IS THE TIME TO STAND UP AND TAKE OWNERSHIP. WE NEED TO IMPROVE AND PROTECT THE MAURI (LIFEFORCE) AND ECOLOGICAL HEALTH OF THE MANAWATŪ RIVER CATCHMENT FOR GENERATIONS TO COME.
