



LAND WATER US

HAWKE'S BAY LAND AND WATER MANAGEMENT STRATEGY



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Land Water Use: Hawke's Bay Land and Water Management Strategy

HBRC Plan No 4287



Our Vision:

IN HAWKE'S BAY, LAND AND WATER ARE HIGHLY VALUED, USED WISELY AND SUSTAINABLY MANAGED - BY ALL, FOR ALL

THE HAWKE'S BAY LAND AND WATER MANAGEMENT STRATEGY OUTLINES THE REGION'S VISION AND STRATEGIC DIRECTIONS FOR THE FUTURE MANAGEMENT OF LAND AND WATER. IT INVOLVES AND AFFECTS THE ENTIRE COMMUNITY.

Foreword



On behalf of Hawke's Bay Regional Council and the members of the Reference Group who committed their valuable time to work with us to develop this Land and Water Management Strategy, it is my pleasure to present it to the wider Hawke's Bay community.

Hawke's Bay is fortunate to have productive soils and significant water resources. The region's people, businesses and communities rely on land and water for their prosperity and quality of life, and it is essential to maintain these resources in a healthy state for the long term.

Land and water are vital economic resources – but they are also much more than that. They support

social, cultural, ecological and recreational values. Hawke's Bay has the potential for enhancements in all of these values if the land and water is used wisely. A common community vision is needed to ensure that these precious resources are looked after and that they are used to the best advantage for the whole region.

There are a number of critical issues around land and water in Hawke's Bay that need to be addressed. Some of the challenges have been going on for a long time, such as erosion and the impacts of drought, while newer challenges being faced include degraded water quality and climate change effects on security of supply. The problems are complex and require multi-faceted solutions.

This Strategy sets out how the region will respond to these challenges and create new opportunities through good management, innovation and through better use of new technologies. It signals significant changes in the way we manage our use of land and water.

We need to improve our understanding of our land management systems; this will require us to be innovative with technologies and to undertake more

measuring and monitoring than has been possible in the past.

We need to move from an individual self interest focus to a community interest focus particularly with respect to water use, and we need to move from short term thinking to long term thinking.

I would especially like to thank the members of the Reference Group, who came together bringing a range of world views, values, and solutions to the table over the last 12 months towards the development of this strategy.

Ongoing leadership from all levels of government and from all sectors, and continued co-operation and collaboration, is critical to the success of this strategy and its implementation.

A handwritten signature in black ink, appearing to read 'Fenton Wilson'. The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Cr Fenton Wilson

Chairman Hawke's Bay Regional Council

A note from the Reference Group

As a group of individuals representing a range of sectors and interests, we have valued the experience of working together and listening to different perspectives on the development of this Land and Water Management Strategy for Hawke's Bay.

We find that our environmental values are not so different. We each want a healthy environment for our children and grandchildren and we all want our region to prosper. We acknowledge the strong values that tangata whenua hold for the mauri of the land and water and all that it supports, and have endeavoured to incorporate these values where appropriate.

We are practical people. We recognise that we need to work together and align our efforts for improving the way we care for land and water in Hawke's Bay. We need to focus our efforts where the pressure is highest or the potential is greatest.

While this Strategy sets the direction, its delivery is just as important. We have put forward possible actions that will require further development and scrutiny to find solutions which are consistent with the guiding principles and meet the evaluation criteria.

The process over the last 12 months has established new relationships and made existing ones stronger,

and we are positive that we can make this work. We look forward to a prosperous future, a clean and healthy environment and a resilient quality of life.

Reference Group

Marei Apatu, Nikola Bass, Lloyd Beech, Dan Bloomer, Alastair Bramley, Ru Collin Mark Clews / Craig Thew, Neil Cook, Murray Douglas, Johan Ehlers, John Freeman, Brett Gilmore, Mike Glazebrook, Jan Hania / Neil Grant, Peter McIntosh, Dale Moffatt, Evert Nijzink, Andy Pearce, Hugh Ritchie, Adele Whyte, Paul Franklin.

Hawke's Bay Regional Council Councillors and Staff

Fenton Wilson (HBRC Chair), Liz Remmerswaal (Councillor), Christine Scott (Councillor), Andrew Newman, Helen Codlin, Bruce Corbett, Darryl Lew, Tim Sharp. Facilitator - Donna Caddie

Executive summary



Hawke's Bay's competitive agricultural advantage lies in its temperate climate, availability of productive land and potentially abundant water supplies. The quality and quantity of our land and water resource is therefore critical.

This Strategy provides direction and a common focus for the management of land and water in Hawke's Bay for improved economic and environmental outcomes. It recognises that development potential and pressures vary across the region as do the values associated with the land, rivers, lakes and wetlands. Different responses are therefore required.

The Strategy was developed collaboratively using a multi-sector Reference Group as a sounding board. The recommended strategy that resulted from that process was largely unchanged by Hawke's Bay Regional Council when it was adopted.

The Strategy is based on four themes: Planning and Governance; Sustainable Use of Land; Sustainable Use of Water; and Information and Communication. There is also a section on Performance Monitoring.

Planning and Governance focuses on collaboration, strategic prioritisation of resources, enabling

decision-making to occur at appropriate levels, transparency of cost distribution and ensuring adequate transition processes.

Sustainable Land Use focuses on utilising good industry practice based on site specific knowledge and conditions to improve productivity and profitability while reducing the environmental footprint. Re-vegetation of erosion prone land, retention of water in the landscape and recognising the ecological services provided by indigenous vegetation and wetlands are key elements.

Sustainable Water Use recognised that forward thinking decisions that provide for long term environmental, economic, social and cultural wellbeing are important. The Sustainable Use of Water theme considers water quantity management and water quality management.

Elements of the water management framework are set out and efficient water use is paramount. It is recognised that users need to move from a position of self interest to collective interest in order to gain efficiencies and make the best use of available water. Measuring, recording and reporting water use, so that there is transparency about how much

Executive summary

is used and when, is a critical element for improved water management.

Setting of water quality limits is a requirement of the National Policy Statement for Freshwater Management (NPSFM) and the implementation of the NPSFM is reflected in the Strategy. The Strategy also seeks active exclusion of stock from water bodies where practicable. Riparian fencing and planting and other initiatives associated with managing farming systems for a reduced environmental footprint are duplicated here from the Sustainable Use of Land theme recognising the impacts of land use on water quality.

Information and Communication focuses on making information and research findings more readily available to the public, land managers and water users. It also highlights the need for improved community understanding of values and the importance of water through water action campaigns.

The final section, **Performance Monitoring and Actions**, highlights the need for annual action plans and systems for regular monitoring and reporting. Many of the proposed actions will require innovative

and practical ways by which to implement them. Maintaining a collaborative multi-sector group on an ongoing basis will ensure the ownership of the strategy is retained by all stakeholders.

Outcomes anticipated from the implementation of the Strategy include:

- Adoption of land and water management practices that meet economic and environmental goals
- Land and catchment management that minimises erosion risk, particularly in areas of vulnerable sedimentary hill country and on wind erodible soils
- Land and catchment management that minimises nutrient losses into rivers, lakes and groundwater
- A more dynamic water management framework which promotes water efficiency and decision making at the appropriate level
- A water allocation model which reduces over-allocation and aims to minimise water restrictions
- The setting of water quality standards and targets in regional planning documents which meet the agreed management objectives for the catchment and the region
- Improved understanding of the ecological services provided by indigenous vegetation and wetlands

- Improved community understanding of resource availability and issues through better distribution of knowledge and information.

Overall, environmental outcomes include:

- Re-establishment of ecological processes and ecosystems
- Greater variety and diversity of habitats that sustain our most valued species.



This Strategy:

PROVIDES DIRECTION AND A COMMON FOCUS FOR THE MANAGEMENT OF LAND AND WATER IN HAWKE'S BAY FOR IMPROVED ECONOMIC AND ENVIRONMENTAL OUTCOMES.

1.0 Strategy development

1.1 Introduction

Hawke's Bay's competitive agricultural advantage lies in its temperate climate, availability of productive land, and potentially abundant water supplies. The quality and quantity of our land and water resource is therefore critical.

The wellbeing of everyone and everything in the region depends on how land and water is managed. Through implementing the latest knowledge and best practices, opportunities exist whereby the region's economic aspirations can be met, while at the same time environmental biodiversity is enhanced.

Land and water support about 40% of the region's economy and enable a great many of us to be employed in the region. Landowners and supporting industries have made significant investments over many decades in Hawke's Bay and it is important for the region to support these essential industries. The natural environment and primary industries also provide a platform for the region's tourism industry. As well as providing opportunities, the region's land and climate present challenges. The dry, sunny

climate creates droughts that cause considerable hardship and can take many years to recover from. Even in normal years, summers are dry and water restrictions place strain on the productive backbone of the region.

Conversely, periodic or prolonged rain causes serious flooding. The worst effects of flooding are mitigated by flood protection works but devastating events can still occur. The April 2011 floods in the southern coastal regions caused widespread destruction. The impact on livelihoods and significant loss of soils during such events threatens the future productivity of the region. The predicted impacts of climate changes add to the existing challenges.

The loss of land and soil through erosion and degradation, and the devaluation of eco-system services through intensive land uses, must be addressed.

A core value and key attraction for many in Hawke's Bay is the ability to enjoy a healthy lifestyle in a healthy environment. Most of the region's waterways are of extremely high quality but lowland rivers and streams are showing declining water quality.

Everyone in the community has a role in improving

the region's economic and environmental wellbeing. This Strategy addresses how our land and water resources should be managed with that firmly in mind.

This Strategy is driven by current water quantity and water quality pressures and outlines the immediate and medium term actions to address them. Long term aspirational outcomes for the region will evolve through other foresight activities and broader strategies such as biodiversity and integrated management strategies.

Strategy Development

1.2 Purpose of this Strategy

This Land and Water Management Strategy provides direction and a common focus for the management of land and water in Hawke's Bay for improved economic and environmental outcomes.

This Strategy identifies a vision, as well as the objectives, policies and a range of actions necessary to achieve the vision. It identifies which agency has responsibilities for implementing the actions, and it will enable agencies undertaking land and water management initiatives to co-ordinate and align with the vision and strategic direction.

The Strategy signals significant changes in the way we manage our use of land and use water. It acknowledges that both rural and urban land uses impact on the quality of the region's freshwater bodies and on the coastal environment as well. We need to improve our understanding of our land management systems and that will require us to be innovative with technologies and to undertake more measuring and monitoring than has been possible in the past. We need to move from an individual self interest focus to a community interest focus,

particularly with respect to water use, and from short term to long term thinking.

The Strategy recognises that the development potential and pressures vary across the region, as do the values associated with the land, rivers, lakes and wetlands. Different strategy responses are required in order to protect these values as much as possible – achieving socio-economic prosperity, safeguarding environmental baselines and providing for the cultural, aesthetic and recreational values attached to landscapes and water bodies.

The process of developing the Strategy has provided HBRC and stakeholders with a greater understanding of the issues, a common vision, and agreement on the direction and actions required from here. There is a continued desire to work collaboratively through regional plan processes to further develop and refine the resource management framework within which land and water will be used.

Policies and actions are prioritised to target the most pressing issues facing Hawke's Bay (pp 18-24) and provide tools for improvements in the key strategy areas.

1.3 Development process

The Land and Water Management Strategy has been developed through a collaborative process with the community.

In 2010, 115 people from throughout the region participated in the Hawke's Bay Regional Water Symposium to discuss the most important issues around water quantity. The necessity to integrate water quantity with land use and water quality was strongly identified.

Nominations collected at the Symposium helped to establish an External Reference Group to develop the vision, guiding principles and objectives for the management of the region's water resources. The External Reference Group continued to encourage Hawke's Bay Regional Council to include land use and water quality within its scope. As a result, land use and water quality have been included in this Strategy.

Hawke's Bay Regional Council would like to thank the members for their participation, contributions and robust discussion in 6 meetings over the last 12 months.

Strategy Development

1.4 Drivers for change

The need for an integrated regional strategy to address the land and water issues in Hawke's Bay is highlighted by a number of critical factors. These include:

- Impacts of global, national and local economic shifts on Hawke's Bay
- Increasing local, national and global concern for environmental and social (e.g. cultural, recreational) values and standards
- Government policy, regulations and directions in relation to land and water, including the National Policy Statement for Freshwater Management and Resource Management (Measuring and Reporting of Water Takes) Regulations
- Declining water quality in some catchments as a result of both point source and diffuse discharges
- Water demand sometimes outstripping water supply - peak demand occurring during low flow periods
- Expiring water consents and a need for clear direction in plans
- Desire for community participation and collaboration in sustainable land and water management
- Values based information and new scientific information including Mātauranga Māori and cultural monitoring tools indicating inadequate provisions for in-stream flows and ecological health
- Increased competition for agricultural land by primary producers and by urban and industrial expansion (The Heretaunga Plains Urban Development Strategy (HPUDS) largely addresses this issue.)
- Reduced productivity, accelerated soil erosion and related decreasing water quality resulting from poor land management practices
- The risk and uncertainty of changing weather patterns as a result of climate change
- Loss of wetland habitat and the ecosystems services they provide
- Recognition of the need to retain ecosystem services of land and water
- Need for proactive, long-term, strategic approaches
- Improved understanding and technologies for the measurement and investigations into the state of our region's water resources
- Notwithstanding climate change, increasing competition for the water resource for residential, industrial, agricultural and recreational purposes.

Strategy development

1.5 Essential elements of managing land and water use

Many factors define the natural environment. They include geology, soil (type, structure, fertility, water holding capacity, drainage), altitude, climate (rainfall, temperature), vegetation cover and water bodies. Agricultural farming systems make use of these elements to produce food and fibre, and often increase productivity through enhanced plant and animal genetics along with inputs of fertiliser and water.

The way agricultural activity is managed and the way water is used can modify the soil resource and impact on associated freshwater bodies. For example, pastoral farming on steep unstable hill country makes it more vulnerable to slipping in severe rain events. The loss of topsoil can lead to long term losses of productivity because it takes many decades for topsoil to re-establish on slip scars. On flatter land, intensive cropping systems can increase the risk of wind erosion, can result in degradation of soil structure, and can increase leaching of nutrients through the soil profile. Over time these nutrients then enter groundwater and surface water bodies.

The way urban activity is managed can have direct impacts. A high proportion of urban land is covered by impermeable surfaces like roads and buildings. Rainwater and contaminants from vehicles and other land based activities are collected into stormwater drainage systems which flow into rivers, streams, estuarine or coastal environments.

The amount of water available for irrigation, industrial and municipal water supplies is a finite resource (although supplies can be augmented through storage of high flows). Efficiency is therefore a key element of managing water use.

Making the available water go further could be achieved through more flexible allocation models. Where efficiency gains at an individual level are not adequate, decentralisation of water management to groups of water users may provide further efficiency and allow users to allocate the water resources to where it is needed most. If that is not enough to meet demand, alternative sources would need to be explored.

Sustaining the land and water resources so that they can continue to support future generations requires good land and water management practices – right

choices at the right time. This requires knowledge and good decision making in selecting the right farming system or urban design for the land.

Essential elements of managing land use and water use are summarised in the following charts.

Essential elements of land use To successfully manage land use it is essential to know:

What land resources we have	What land use benefits we want	Where the problems are	How improvements can be made	What the constraints are	How to incentivise appropriate behaviour
<p>Heretaunga and Ruataniwha Plains</p> <p>River valleys and terraces</p> <p>Rolling hill country</p> <p>Steep hill country</p> <p>Mountain ranges</p>	<p>More profitable farming systems</p> <p>Versatile land and productive soils for future generations</p> <p>Collective action towards agreed water quality and biodiversity outcomes</p>	<p>Highly erodible hills</p> <p>Intensively cropped soils</p> <p>High fertility production systems</p> <p>Inefficient farming systems</p> <p>Unsustainable land management practices</p> <p>Loss of eco-system services</p> <p>Activities in sensitive land-water margins</p>	<p>Site specific management using tools such as:</p> <p>Precision agriculture</p> <p>Minimum tillage cropping</p> <p>Effective nutrient management planning</p> <p>Riparian fencing and planting</p> <p>Water and nutrient balance</p> <p>Soil conservation practices and afforestation / open planting within farms</p> <p>Integrated landscape management</p> <p>Work with industry to develop market and price incentives</p> <p>Science alliances which will deliver management and technical solutions</p>	<p>Self interest vs. collective interest</p> <p>Public demand for environmental protection</p> <p>Competition for land and related production system resources (water, labour, transport, processing capacity)</p> <p>Urban encroachment on agricultural land</p> <p>Landowner rights</p> <p>Lack of detailed natural resource inventory (e.g. soils, indigenous vegetation, wetlands) and management information</p> <p>Limited knowledge of site specific management opportunities, tools and techniques</p> <p>External economic influences</p>	<p>Increase knowledge</p> <p>Develop collaborative continuous improvement groups</p> <p>HBRC Regional Landcare Scheme</p> <p>Support development of good practice guidelines</p> <p>Link farm management to industry GAP (Good Agricultural Practice) programmes</p> <p>Sustainable Farming Fund</p> <p>Provide more flexible conditions/management to groups with audited self-management systems</p>

Note: The contents of this table are not listed in any order of priority.

Essential elements of water use To successfully manage water use it is essential to know:

What water resources we have	What water use benefits we want	Where the problems are	How improvements can be made	What the constraints are	How to incentivise appropriate behaviour
<p>Seven major river catchments and many smaller ones</p> <p>Two major aquifer systems and a number of smaller ones</p> <p>Five major lakes and many smaller ones</p> <p>Ten major freshwater and estuarine wetlands and numerous smaller wetland environments</p>	<p>More productive economy</p> <p>Recreational use of rivers and lakes</p> <p>Healthy freshwater ecosystems</p> <p>Restoration of mauri</p> <p>Community awareness of the value of water</p>	<p>Plenty of water overall but an issue of timing and distribution – peak demand during low flow periods.</p> <p>Some catchments are over allocated</p> <p>Potential demand not provided for</p> <p>Current minimum flows may not be sufficient to maintain appropriate habitat protection</p> <p>Do not know the actual water used</p> <p>Declining water quality in some catchments</p>	<p>Define efficiency standards and promote benchmarking</p> <p>Allow users greater control of re-allocation and use decisions (decentralisation and resource sharing)</p> <p>Timely measurement, recording and reporting of actual water use</p> <p>Increase supply reliability through augmentation</p> <p>Urban demand management and conservation strategies</p> <p>Allocation tied to good management practice</p> <p>Avoid water banking</p> <p>.</p>	<p>Centralised decision making</p> <p>Need to address multiple and often competing values and demands</p> <p>Self Interest vs. collective interest</p> <p>Affordability</p> <p>Limited knowledge of actual use</p>	<p>Remove disincentives - reduce difficulties in sharing allocated water</p> <p>Increase knowledge</p> <p>Support community driven collaborative processes</p> <p>Support development of good practice guidelines</p> <p>Link farm management to industry GAP (Good Agricultural Practice) programmes</p> <p>Support audited self-management systems</p>

Note: The contents of this table are not listed in any order of priority.

Strategy development

1.6 Values

Land and water are fundamental needs and are inextricably linked. They are valued for their social, cultural, environmental and economic values.

From the **Land** we establish our communities and define our identities. We produce food, fibre and fuel to sustain ourselves.

- Land is valued for the income that it generates and for the future opportunities it will provide
- Land provides a sense of place for people and communities
- Land is an essential and integral part of Māori identity and Mātauranga Māori
- Land supports the flora and fauna which make up the regional biodiversity
- Land ecosystems provide a range of vital services including carbon absorption and water filtering
- Landscapes provide cultural identity, aesthetic enjoyment and recreational opportunities
- Hawke's Bay's natural land features like Te Mata Peak and Cape Kidnappers have value in and of themselves – they have intrinsic value.

Water also helps define our identities. For Mana whenua, water is integral to who they are (Ko wai), where they are from (No wai), and their future (Ma wai). Water is the basis of all life and is used for drinking and washing, stock drinking, fire fighting, irrigation, industrial use, energy generation, recreation, food production and processing, transport and tourism.

- Clean drinking water is a basic human right
- Freshwater bodies are valued for their natural form, intrinsic qualities and mauri. They provide a sense of place for people and communities and are a source of inspiration
- Water supports the flora and fauna which make up the regional biodiversity
- Well-functioning waterbodies provide mahinga kai
- Water is a critical ingredient for businesses, including agriculture and processing, that underpin the Hawke's Bay economy
- Water provides opportunities for recreational activities and tourism.

All the values above are important regional values of land and water. Many of the values compete

with each other and land and water management requires an aligning of interests to find common ground for mutually beneficial outcomes. This can be within catchments or across the whole region.

Catchment values for each major area of Hawke's Bay are listed on pp 31-39 This summary list evolved from the Water Symposium and subsequent Reference Group meetings and is to highlight that catchments have different values and therefore may require a different management response.

Strategy development

1.7 Guiding principles

The development of this Strategy is based on the following guiding principles:

Accountability: Hawke's Bay Regional Council (HBRC) will be accountable for developing a Regional Land and Water Management Strategy, and any statutory regional planning changes required to give effect to it. The delivery of the Strategy will involve HBRC and partnerships with other parties including central government. To the extent practicable, decision making and matching accountability will be devolved to local/community of interest groups of land and water users.

Integrative: A holistic approach will be used which accounts for the inter connectedness of land and water, different community values, diverse world views and scientific interpretations.

Evidence-based: HBRC will seek and consider science and information on land and water resources; social science to inform policy and decision making direction; and Mātauranga Māori to inform both.

Partnering and Collective Responsibility: HBRC will

build and maintain alliances and encourage capacity building and a greater role for others to help deliver land and water management objectives.

Inclusive and participatory: Inclusive and participatory processes for the development and implementation of the strategy and plan change processes will be facilitated by HBRC.

Recognition of Mātauranga Māori: Māori knowledge and approaches to resource management will be recognised and incorporated into strategy implementation and plan change processes.

Transparent and equitable: Transparent and equitable processes for the allocation of water and setting of environmental quality limits will improve the certainty of access to water and necessary land management practices for social, cultural, economic and environmental needs.

Efficiency: Refers to the need to not waste resources and also to minimise transaction costs, while achieving effective results.

Adaptive: An adaptive management approach will be taken so policies and actions can be tailored to catchment-specific issues and responsive to new information.

Long term: A long term and forward thinking view will be taken for land and water management to promote inter generational equity.

Simple: HBRC will work towards simplifying and streamlining planning and decision-making processes to make them more efficient, effective, and easier to understand.

Information in public domain: Data and information collected by or provided to HBRC for assessment of environmental outcomes and other matters of public interest relating to land and water consents will be placed in the public domain unless there is sound reason that such release would compromise privacy matters, commercial competitiveness, or land/business values. This will be done as close to real time as practicable.

Strategy development

1.8 Evaluation criteria

Objectives and policies were developed with respect to the following evaluation criteria:

Ecological Impacts

- Consider the hydrological system as a whole to include the relationship between land and water
- Maintain and/or improve the overall quality of freshwater ecosystems for agreed management objectives.

Efficiency

- Ensure economic, technical and dynamic efficiency in the use of natural resources
- Allow for, and incentivise, improvements in resource use efficiency
- Ensure efficiency does not compromise resilience.

Social Acceptability

- Improve opportunities for amenity and recreational benefits from freshwater environments.

Cultural acceptability

- Acknowledge and respect the values, interests and aspirations of Mana whenua

- Have regard to deeds of settlement for Treaty of Waitangi claims.

Operational practicality

- Involve parties responsible for implementation in the development of policies and practices
- Ensure the benefits of policies and actions are not outweighed by the costs in the long term
- Embrace innovative solutions and technologies and empower best practice
- Encourage continuous improvement and provide for adaptive management.

Legality

- Complement national directions such as the National Policy Statement for Freshwater Management
- Not contrary to any statute.

Certainty

- Acknowledge uncertainty in natural systems and agricultural production
- Recognise that knowledge will never be complete and adaptability is an essential requirement for resilience

- To the extent possible, limit uncertainty for current and future generations
- Provide for adaptability to climate change
- Provide clear goals, realistic timeframes and practical transitional methods.

Economic acceptability

- Enable wise use of land and water resources
- Support long-term investment decisions
- Enable economic potential.

Strategy development



1.9 Implementing the Strategy - Roles

The following groups have a key and active role in the implementation of this Strategy. Responsibilities are outlined in the Policies and Actions section.

Hawke's Bay Regional Council

Mana whenua (including Treaty Claimant Groups)

Territorial authorities

Government agencies (Department of Conservation, Ministry of Agriculture and Forestry, Ministry for the Environment, Environmental Protection Authority)

Fish and Game

Irrigation NZ

Primary sector organisations

Water consent holders

Water user groups

Businesses

Landowners

Community



The Right Choices At The Right Time:

SUSTAINING THE LAND AND
WATER RESOURCES SO THAT
THEY CAN CONTINUE TO
SUPPORT FUTURE GENERATIONS
REQUIRES GOOD LAND
AND WATER MANAGEMENT
PRACTICES: THE RIGHT
CHOICES AT THE RIGHT TIME.

2.0 Strategy objectives and policies

2.1 Objectives

The Strategy targets four areas which are essential to improving land and water management. Each section has an over-arching objective.

1. Planning and Governance

Objective: Government agencies, land owners, Mana whenua, and stakeholders work together towards the unified goal of sustainable land and water management.

2. Sustainable Land Use

Objective: The future viability and resilience of Hawke's Bay's land and landscapes is enhanced and water quality is improved through appropriate land management and land use practices.

3. Sustainable Water Use

Objective: Long-term prosperity of the region is enhanced through sustainable and efficient water use while maintaining and/or improving the overall quality of freshwater ecosystems for agreed management objectives.

4. Information and Communication

Objective: Relevant and timely resource information is collected and communicated in a transparent manner to all interested parties.

2.2 Policies and actions

A set of policies and a list of possible actions have been developed for each area. These are shown in the following tables, along with the agency or group with relevant responsibilities.

1. Planning and Governance

	Policies	Possible Actions	Responsibility
1.1	Hawke's Bay Regional Council is the lead agency in the development of land and water strategies in Hawke's Bay	Prepare and revise the Hawke's Bay Land and Water Management Strategy on a regular basis. Implement the National Policy Statement for Freshwater Management (NPSFM) in Hawke's Bay.	HBRC
1.2	Hawke's Bay Land and Water Management Strategy guides the actions and decisions of all relevant sector stakeholders	Prepare an annual action plan. Stakeholders' initiatives are in alignment with actions which will achieve the strategy outcomes.	All
1.3	HBRC works closely with partner agencies and stakeholders on water and land management	Work with Mana whenua, such as Treaty claimant groups, iwi authorities and hapu representatives. This will include a Regional Planning Committee (comprising equal representation of Treaty claimant groups) established through Treaty negotiations, Deeds of Settlement and legislation. This committee will consider and make recommendations on natural resource management. Encourage Mana whenua and wider community input into planning processes and land and water related events / opportunities. Work with primary sector organisations and will facilitate the establishment of self-empowering catchment groups for local land and water management initiatives. Work with regional and central government agencies on a national water framework which provides practical direction and tools for the water management issues facing Hawke's Bay.	All
1.4	Decision making occurs at the appropriate level (regional/local, collective/individual) for greater efficiency, flexibility, accountability and autonomy	Work with relevant industry sectors and community groups to establish structures for decentralised decision making and water management. Support the development of locally managed water user groups, and empower water user groups where appropriate. Encourage shared consents. Where appropriate, HBRC will shift from a direct regulatory role to a verification / auditing role.	All
1.5	Land and water management is tailored and prioritised to address the key values and pressures of each catchment.	Changes to the Regional Policy Statement and Regional Plan policies and methods (including rules) will be prioritised and tailored to meet these values and pressures on a catchment basis.	HBRC
1.6	Water management cost allocation is transparent and equitable	Continue to develop and refine funding policies which fairly allocate actual and reasonable costs of regional water management to those who benefit. This includes science, information and communication systems, water user group management, costs of auditing/compliance.	HBRC
1.7	Relevant HBRC investments are aligned with the Strategy	Explore investment opportunities which achieve/contribute towards strategy outcomes.	HBRC
1.8	Adequate transition times and pathways for changes to water allocation and to reach water quality targets are worked out with communities	Regional Policy Statement and Regional Plan set out timeframes to establish a more efficient and equitable allocation framework and to achieve water quality targets and environmental standards.	All
1.9	Progress towards objectives is monitored and regularly reported	Establish a performance monitoring system for the Land and Water Management Strategy. Monitoring data will be made publicly available as close as practicable to real time.	HBRC

2. Sustainable land use

	Policies	Possible Actions	Responsibility
2.1	Farming systems are managed based on site-specific knowledge and conditions and to good practice industry standards to minimise losses of nutrients, soil, bacteria and water	Support industry participation in applied research into understanding farming systems and the associated assessment of impacts on the receiving environment. Expect water and nutrient management plans to be provided as conditions of access to water for irrigation either through resource consent applications or community storage agreements. Explore regulatory and market mechanisms for managing impacts of land use on water quality. Those could include requiring certain land management practices through irrigation 'use' consents, discharge or land use rules. Industry sectors will advocate to their members for 'whole of farm' water and nutrient management plans and industry audited GAP programmes.	Primary sector organisations • HBRC Water consent holders • Water user groups Businesses • Landowners
2.2	Re-vegetation of erosion prone hill country pasture with tree and bush species is incentivised	Investigate the establishment of a regional equivalent to the Afforestation Grant Scheme. Industry sectors will advocate for re-vegetation (including open space planting) of inappropriately managed Class VIe and VIIe land.	Primary sector organisations • HBRC Water consent holders • Water user groups Landowners • Community
2.3	Research and development investment is aligned to support long term farm potential including preparing for climate change.	Support development of good practice and site specific management including adoption of 'Precision Agriculture' tools and techniques where appropriate. Review Regional Landcare Scheme.	Primary sector organisations • HBRC Water user groups • Businesses
2.4	Riparian planting and fencing in appropriate areas is promoted	Prioritise financial assistance for riparian planting and fencing (Regional Landcare Scheme) in areas where nutrients, soil and bacteria losses are impacting on aquatic ecology and recreational activities. Any financial assistance should be subject to an agreed management plan. Industry and primary sectors will advocate for riparian planting and fencing.	HBRC • Water consent holders Water user groups • Businesses Landowners • Community QEII • Nga Whenua Rahui
2.5	Effective pest control reduces vegetation loss and increases farm productivity, profitability and biodiversity	Continue to work with farmers on pest control programmes to meet and maintain target populations in the Regional Pest Management Strategy. Recognise the benefits of pest control on afforested Crown Land and the subsequent contribution to biodiversity, soil conservation and downstream water quality.	HBRC • Primary sector organisations Landowners • DoC
2.6	Efficient management of water in the landscape.	Increase the capacity of the landscape to retain water through soil and water conservation plans. These will include collecting runoff, appropriate planting and shelter belts, and will be assisted through extension advice, pilot studies and focus farms.	Water consent holders • Water user groups Landowners • Primary sector organisations
2.7	Ecologically significant wetlands are protected	Wetlands are identified and categorised to determine ecological significance. Wetlands deemed ecologically significant are given protection consistent with the National Policy Statement for Freshwater Management (NPSFM).	HBRC • DoC • Fish and Game • Mana whenua
2.8	Indigenous vegetation and wetland areas are recognised for their contribution to farming systems, biodiversity, cultural and recreational values.	Indigenous vegetation and wetlands are assessed for their value provision and management practices are established with landowners to maintain and improve their functionality. Develop a regional biodiversity strategy in the context of land and water management.	HBRC • Landowners • DoC • Fish and Game Territorial Authorities

3. Sustainable water use

	Policies	Possible Actions	Responsibility
General			
3.1	Forward-thinking water management decisions are made in the interests of long-term environmental, economic, social and cultural benefits	Use futures scenario thinking to understand plausible futures resulting from different water management decisions.	All
Water Allocation Framework			
3.2	Water allocation is treated holistically to take into account the inter connectedness of water bodies	Treat surface water and groundwater as a single system where appropriate, such that a single allocation limit or minimum flow/level limit may apply to both surface water and groundwater.	HBRC
3.3	Allocation will provide for a known security of supply and level of protection for aquatic habitat tailored to the values of the catchment	Set catchment-specific allocation limits and environmental flows to meet a known security of supply and level of protection for aquatic habitat.	HBRC
3.4	High flows are able to be harvested and stored	Set high-flow allocation limits and minimum flow limits to enable collection or harvesting of higher flows for storage while maintaining the hydraulic and ecological functions of freshwater bodies and maintaining or enhancing downstream water quality.	HBRC
3.5	Determine an allocation model which most fairly distributes the allocatable volume.	Consider apportioning part of the allowable allocation to different water uses.	HBRC
3.6	Water is not over-allocated	Where there are no current allocation limits, set allocation limits through regional plan changes for agreed management objectives and which meet legislative requirements. Review existing allocation limits and reset allocation limits through regional plan changes for agreed management objectives and which meet legislative requirements. Phase out any over-allocation within five years of the relevant policy provision becoming operative.	HBRC
3.7	Water allocated for irrigation can be used flexibly between properties and managed at a local level for increased efficiency and accountability.	Promote shared consents and give a shared consent with audited self management to a single legal-entity which: <ul style="list-style-type: none"> • Establishes an effective irrigation management plan • Measures, records and reports individual and cumulative takes in a way that provides real time monitoring (e.g. with telemetry) • Ensures all land owners within command area have equal opportunity to access water • Monitors compliance by members. HBRC would shift from a direct regulatory role to a verification / auditing role, while retaining the enforcement role for the shared consent only. Explore market mechanisms and other innovative approaches to water sharing.	HBRC Water Users
3.8	Large scale community storage infrastructure which can provide increased water security in water scarce catchments is recognised as a key element of long term sustainable solutions.	Undertake feasibility studies for augmentation and supply through storage and, subject to the outcome of these studies, consider how such infrastructure may be funded, built and operated for the benefit of all.	HBRC Central Government
3.9	Priority is given to the needs of people and animals during low flow and drought conditions.	Urban water supplies will not be subject to minimum flows bans but the volume taken may be restricted in accordance with conservation strategies to minimize the impacts on the freshwater ecosystems. Water shortage directions under the RMA may be used where necessary to require further restrictions on urban and permitted domestic water supplies when surface water flows are below the minimum flows for extended periods of time.	HBRC Territorial Authorities

3. Sustainable water use (continued)

	Policies	Possible Actions	Responsibility
Water Use			
3.10	Irrigation systems (management and infrastructure) enable effective and efficient use of water.	Support locally-managed Water User Groups. Irrigation industry will improve irrigator knowledge and capability of irrigation management and infrastructure through best practice training and encouraging regular system calibration and auditing, and efficient application scheduling. Farmers, Water User Groups and industry will work together for efficiency gains.	HBRC Primary sector organisations Water consent holders Water user groups Irrigation NZ
3.11	Water conservation and demand management strategies are developed by municipal and industrial water users.	Municipal water suppliers and industrial water users will publish their demand management and conservation strategies online. Strategies will include extra conservation procedures for low flow restriction periods and educational initiatives for the community. Rainwater collection and recycling for domestic supply is enabled by District Plans and engineering codes of practice.	Territorial Authorities Industrial users
3.12	Water is measured to increase knowledge about water use and to increase public transparency about how much water is used and when it is used.	In the following catchments, all consented surface water and groundwater takes will be required to be metered and reported real time to Council's information systems to enable transparency of use (e.g. through telemetry): <ul style="list-style-type: none"> • Tukituki • Karamu/Clive • Ngaruroro • Tutaekuri • Ahuriri • Esk. In all other catchments where actual water demand reaches or exceeds 70% of the allocation limit, all consented takes will be required to be metered and reported in real-time (e.g. through telemetry) to Council's information systems to enable transparency of use.	HBRC Primary sector organisations Private sector
3.13	Efficient water use is encouraged.	Priority is given to users who can demonstrate site specific water and land management decisions and practices such as industry audited GAP programmes. Examples of where priority may be exercised include during times of low flow, access to more secure water allocation, consent duration.	HBRC
Potential Water Demand			
3.14	Potential demand and supply impacts as a result of climate change and potential land use change are understood.	Complete Regional Water Demand and Availability Study. New residential developments are required to demonstrate ability to provide adequate water supply without adversely affecting existing lawful users.	HBRC Territorial Authorities
Water Quality			
3.15	Water quality limits are set for each water body in Hawke's Bay	Prepare and adopt a plan for implementing National Policy Statement for Freshwater Management (NPSFM) water quality limits for freshwater bodies in Hawke's Bay. The following catchments have priority for the setting surface water and groundwater quality limits through regional plan changes: <ul style="list-style-type: none"> • Tukituki River catchment including Ruataniwha groundwater • Ngaruroro River, Karamu Stream and Tutaekuri River catchments • Heretaunga Plains groundwater • Upper Mohaka catchments Where existing water quality is below the water quality limit specified, the limit becomes a target to be met.	HBRC

3. Sustainable water use (continued)

	Policies	Possible Actions	Responsibility
Water Quality			
3.16	Target areas where there are high risks to water quality. Improve water quality where it is poor.	Identify high risk areas and establish action plans to mitigate water quality degradation in these areas and to improve water quality where it is poor.	HBRC
3.17	Heretaunga Plains aquifer water quality is maintained.	Manage land uses and discharges to ensure the water quality of the Heretaunga Plains aquifer maintains a potable standard without treatment.	HBRC Territorial Authorities
3.18	Exclusion of stock from water bodies is actively sought	Investigate options within its flood control scheme to prevent stock entering the river. This may include reviewing the need for stock grazing as a means of maintaining floodway capacity. Industry establishes implementation plan for stock exclusion from water bodies. This will include measures such as riparian fencing and planting; providing shade and water away from water bodies. Where reticulated stock water provision is not possible or practical, and natural surface water is the sole source of water for grazing animals, provision for access to water may be acceptable.	Primary sector organisations Private sector HBRC
3.19	Riparian planting and fencing in appropriate areas is promoted.	Prioritise financial assistance for riparian planting and fencing (Regional Landcare Scheme) in areas where sediment, nutrients and faecal bacteria losses from farms are impacting on aquatic ecology and recreational activities. Target HBRC works and services in flood control scheme areas where enhancement of existing wetlands and riparian planting will be effective. Industry and primary sectors will advocate for riparian planting and fencing.	HBRC Primary sector organisations Private sector
3.20	Farming systems are managed based on site specific knowledge / conditions and to good practice industry standards to minimise losses of nutrients, soil, bacteria and water	Expect water and nutrient management plans to be prepared and supplied as conditions of access to water for irrigation either through resource consent applications or community storage agreements. Explore regulatory and market mechanisms for managing impacts of land use on water quality. This could include requiring certain land management practices through irrigation 'use' consents, discharge or land use rules. Industry sectors will advocate to their members for water and nutrient management plans.	Primary sector organisations Private sector HBRC
3.21	Research and develop solutions to mitigate existing water quality problems	Work towards all municipal sewage currently being discharged to freshwater, to be discharged to land based systems where practicable. Where there are seasonal or environmental constraints, aim for land-based discharges for as much of the year as possible. Regional and local efforts to find solutions to degraded water quality are supported. Examples include: <ul style="list-style-type: none"> • Tukipo Stream – Floating wetlands for nutrient stripping • Huatokitoki catchment – Monitoring stock movement patterns around water bodies. 	All
3.22	Develop an integrated catchment approach to stormwater management	Work towards urban stormwater being managed using comprehensive, catchment-based stormwater management plans.	HBRC Territorial authorities
3.23	Develop an integrated catchment approach to land and water management	Prepare integrated catchment plans on a prioritised basis to assist sustainable water and land management.	HBRC Landowners Territorial authorities

4. Information and Communication

	Policies	Possible Actions	Responsibility
4.1	Scientific and monitoring information gathered by HBRC is available online to water users and the wider community.	Establish and continue to develop web-based communications for all HBRC scientific investigations.	HBRC
4.2	Improved community understanding of the values and importance of water using a range of water-related council activities, events and communications.	Develop a Hawke's Bay regional water action campaign to encourage community action on water conservation and healthy waterways. Initiatives could include: <ul style="list-style-type: none"> • Education to encourage natural solutions such as water efficient planting • Use of non potable water where appropriate (e.g. fountains) • Subsidies for improved building systems and appliances • Recycling of stormwater. 	All
4.3	Facilitate open processes for community and stakeholder collaboration and informed participation on policy development and implementation of this Strategy.	HBRC will work together with community, water user and industry groups to take a collaborative approach to the implementation of the actions in this Strategy and the development of policy in Regional Plans.	HBRC
4.4	Fit for purpose monitoring, analysis and State of the Environment reporting, including cultural and plan effectiveness monitoring	Prepare monitoring strategies and programmes. Explore opportunities with Mana whenua for capacity building and joint monitoring programmes. Use monitoring results to inform timely review of land and water management including iterative feedback loops.	HBRC Mana whenua
4.5	Land managers have access to applied research undertaken by industry sectors and crown research organisations	Collate relevant research and disseminate information through field day focus farm initiatives, web based tools, social media.	Farmer institutions Private sector HBRC
4.6	Relevant land and water consent data and information is publicly available	Place data and information in the public domain, as close as practicable to real time - except where it can be shown that economic competitiveness, land or business values or privacy matters would be compromised by such disclosure.	HBRC



Performance Monitoring and Actions:

MANY DIFFERENT INDICATORS
WILL PAINT THE PICTURE OF
PROGRESS.

3.0 Performance monitoring and actions

3.1 Performance Monitoring

Implementation of the Strategy will be monitored and reported to stakeholders and the wider public on a regular basis. The following outcomes are anticipated from the implementation of the Strategy:

- Adoption of land and water management practices that meet economic and environmental goals
- Farm and catchment management that minimises erosion risk, particularly in areas of vulnerable sedimentary hill country and on wind erodible soils
- Farm and catchment management that minimises nutrient losses into rivers, lakes and groundwater.
- A more dynamic water management framework which promotes water efficiency and decision making at the appropriate level
- A water allocation model which reduces over-allocation and aims to minimise water restrictions
- The setting of water quality standards and targets in regional planning documents which meet the agreed management objectives for the catchment and the region
- Improved understanding of the ecological services

provided by indigenous vegetation and wetlands

- Improved community understanding of resource availability and issues through better distribution of knowledge and information.

Overall, environmental outcomes include:

- Re-establishment of ecological processes and ecosystems
- Greater variety and diversity of habitats that sustain our most valued species.

Key Indicators

Many actions are required to implement this Strategy to achieve the objectives and anticipated outcomes and to achieve the vision. Many different indicators will paint the picture as to whether progress is being made. Monitoring a range of indicators and reporting on them in the context of this strategy is an essential element of implementing and reviewing the Strategy.

Timeframes for achieving the objectives have not been set in stone in this Strategy. This is an area where it is recognised that further community participation would help decide whether progress is being made fast enough.

The process for setting timeframes for a lot of

the milestones related to HBRC responsibilities is through the Long Term Plan and Annual Plan processes as well as within Regional Planning documents. However, strategy management milestones are included.

Milestone	Date
Land and Water Management Strategy published	November 2011
First Review of Strategy undertaken	November 2014
Implementation Plan for NPSFM adopted	November 2012
Annual Action Plan for Strategy published	August each year
Annual Monitoring Reports for Action Plan and Strategy published	November each year

Performance Monitoring Indicators

Objective	Indicator	Source of Information
Planning and Governance	<ul style="list-style-type: none"> Strategy action plans and monitoring reports Meetings and recommendations from the Regional Planning Committee Level of water management decision-making Funding policy Status and progress of regional plans to incorporate water quantity and quality limits 	<ul style="list-style-type: none"> HBRC reports Implementation Plan for National Policy Statement for Freshwater Management (NPSFM) Regional Policy Statement Regional Plans
Sustainable Land Use	<ul style="list-style-type: none"> Land use change – includes area (ha) of new forest plantings and area (ha) new irrigated farming systems Areas of indigenous bush and wetlands under formal protection Uptake of site specific land management practices (right decision for the land) – includes use of wetland services, riparian management and fencing, use of precision agriculture tools, water and nutrient management plans, changes to existing cropping and farming systems Area of land under pest control programmes Number of Integrated catchment management initiatives underway 	<ul style="list-style-type: none"> HBRC reports QEII reports LandWISE reports DoC reports and surveys
Sustainable Water Use	<ul style="list-style-type: none"> Level of allocation (including over allocation) Periods of water restriction Water use vs. water allocated by consent Number / proportion of takes metered and or telemetered Decentralisation (number and success of shared consents, water user groups) Regional GDP trends for primary sector and associated manufacturing and processing HBRC Investment Company alignment Recreational bathing standards Aquatic health (MCI) Wetland state Native fish populations Fishery health Bird populations Other parameters (will get more specific as regional plans establish catchment specific water quality limits) 	<ul style="list-style-type: none"> State of the Environment Reports Compliance reports Consents database Water Information website Economic reports Recreational Bathing Monitoring Programme report State of the Environment Monitoring Reports Catchment specific monitoring reports Cultural Health, State of the Takiwa reports (iwi and hapu) DoC reports and surveys Fish and Game reports
Information and Communication	<ul style="list-style-type: none"> Reporting on science and other information Data and information availability to the public 	<ul style="list-style-type: none"> HBRC reports HBRC website

Performance monitoring and actions

Group	Membership	Terms of Reference
Land and Water Strategy Implementation Team	HBRC staff, plus key agency staff as required	<p>Develop annual action plans which identify all the initiatives that contribute to the implementation of the strategy, in liaison with key agencies</p> <p>Prepare annual monitoring reports for the action plans and key indicators</p> <p>Present draft action plans and monitoring reports to the External Reference Group.</p> <p>Present final reports to HBRC</p>
External Reference Group	HBRC WDC NCC HDC CHBDC Mana whenua DoC MAF Fish and Game Forest and Bird Primary Sectors Groups Environmental Groups	<p>Individual members to review and provide feedback draft annual monitoring reports and action plans</p> <p>Discuss any matter related to the Land and Water Management Strategy and its implementation</p> <p>Where appropriate, the group may make recommendations to relevant funding agencies with respect to their programmes or initiatives.</p>

Successful implementation of the Strategy is directly related to the quality of the working relationships between the key parties. A continued collaborative approach, building on the understanding, agreement and commitments contained in this Strategy document is proposed.

3.2 Current priority actions

Hawke's Bay Regional Council currently manages a number of programmes that address aspects of this strategy. These are outlined on the following pages, along with related work being undertaken by other agencies. Catchment maps are on pp 33 to 39.

In Hawke's Bay, the issues and pressures around land and water vary from catchment to catchment. Accordingly, the actions needed to ensure sustainable land management, security of water supply and to maintain or improve water quality also vary.

Actions are prioritised to:

- (i) areas where sustainable land management, security of water supply and water quality issues and pressures are most significant and
- (ii) areas where there is potential for sustainable economic development.

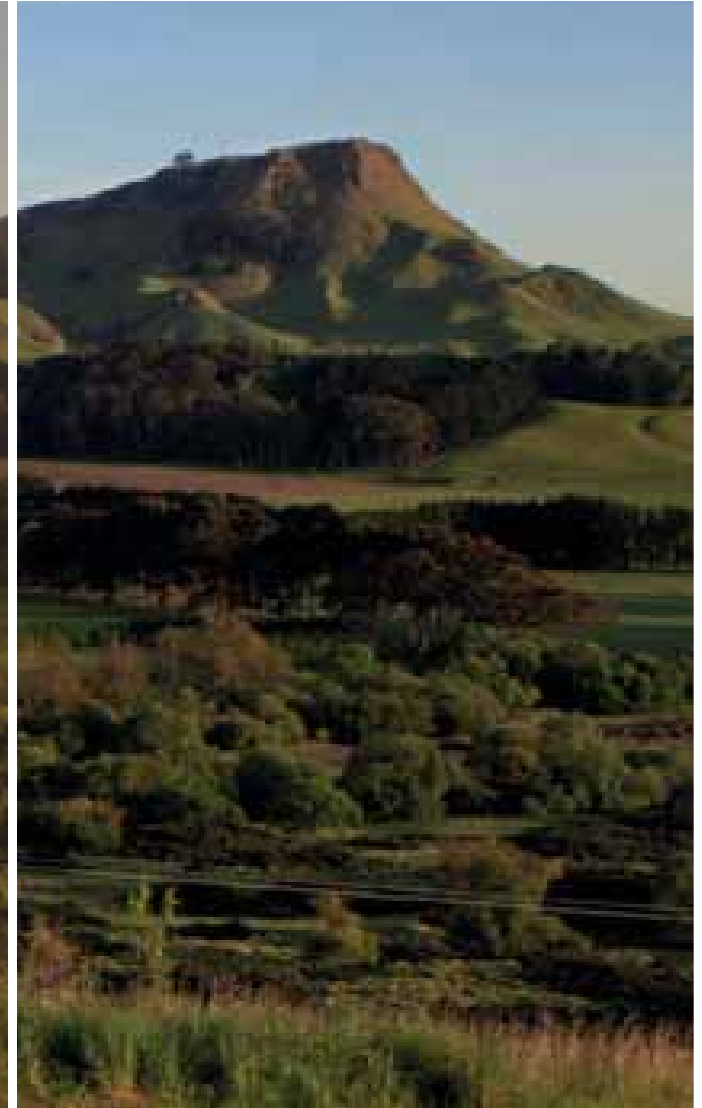
Current priority actions

Catchment	Issue	Actions / Responsibility	Key Dates
Tukituki	<p>Aesthetic water quality</p> <p>Aquatic habitat health</p> <p>Over allocation</p> <p>Potential irrigation demand</p> <p>Potential land use intensification</p> <p>Impacted trout fishery</p> <p>Impact angling / recreational activity</p>	<p>Groundwater/surface water investigations (HBRC)</p> <p>Review minimum flow and allocation limits (HBRC)</p> <p>Establish objectives and water quality limits (HBRC)</p> <p>Remove discharges of sewage from Waipawa and Waipukurau oxidation ponds for as much of the year as possible (CHBDC / HBRC)</p> <p>Ruataniwha feasibility study (HBRC)</p> <p>Targeted wetland enhancement within flood control and drainage schemes (HBRC)</p> <p>Riparian planting and fencing in headwater and Plains catchments (landowners)</p> <p>Regional Water Demand and Availability Strategy (all catchments) (HBRC)</p> <p>Precision Agriculture for Irrigated Farming Systems (Massey / HBRC)</p>	<p>Consent application lodged for land-based sewage treatment and disposal for Waipawa and Waipukurau by end of October 2011</p> <p>Construction of irrigation infrastructure underway by January 2012 (use of irrigation system subject to consent decision)</p> <p>Decision on feasibility of storage June 2012</p> <p>Notification of Plan change for Tukituki River Catchment July 2012</p>
Clive River and Karamu Stream	<p>Poor aquatic health</p> <p>Degraded mauri of the river</p> <p>Contaminant discharges from industrial areas and sewage overflows</p> <p>Over allocation</p>	<p>Te Karamu Enhancement Plan (HBRC / community)</p> <p>Stormwater management / consent compliance (HDC)</p> <p>Ngaruroro pre-feasibility (HBRC)</p> <p>Compliance monitoring (HBRC)</p> <p>Trade waste monitoring (HDC)</p> <p>Wastewater infrastructure monitoring (HDC)</p> <p>Heretaunga Plains Groundwater Modelling Review (HBRC)</p> <p>Develop integrated allocation framework for Karamu / Heretaunga Plains groundwater / Ngaruroro system (HBRC / Stakeholders / Community)</p> <p>State of the Takiwa research (Te Taiwhenua o Heretaunga)</p>	<p>Heretaunga Plains Groundwater Model completed by December 2012</p> <p>Integrated allocation and water quality framework notified in plan change by July 2014</p>
Ngaruroro River and Heretaunga Plains	<p>Ngaruroro River fully allocation</p> <p>Groundwater takes being linked to minimum flows – reduced security of supply</p> <p>Irrigators knowledge of actual water use is poor</p> <p>Individualism</p>	<p>Ngaruroro Storage Pre-feasibility Study (HBRC)</p> <p>Twyford – development of shared consent (Twyford User Group / HBRC)</p> <p>Work with horticultural industry sector to meter and telemeter Heretaunga Plains groundwater user so that real time water use / demand information is available on which to base future decisions</p> <p>Review of minimum flow and allocation limits (HBRC)</p> <p>Heretaunga Plains Groundwater model (HBRC)</p> <p>Consultation with appropriate mana whenua and use of Ma tauranga Maori including tools such as CHI</p> <p>Develop an integrated allocation framework for Karamu/Heretaunga Plains Groundwater / Ngaruroro River (HBRC / Stakeholders)</p> <p>Urban Demand and Water Conservation Strategy (HDC)</p> <p>Industry Demand Management Strategy (Industries)</p> <p>Establish management objectives and set water quality limits (HBRC / Stakeholders)</p>	<p>Heretaunga Plains water use is metered and telemetered by July 2013.</p> <p>Heretaunga Plains Groundwater Model completed by December 2012</p> <p>Integrated allocation and water quality framework notified in plan change by July 2014</p>

Current priority actions (continued)

Catchment	Issue	Actions / Responsibility	Key Dates
Upper reaches of the Mohaka River	Degraded water quality in Taharua and Upper Mohaka from intensive land uses	Develop Taharua Strategy through community stakeholder group (TSG / HBRC / Mana whenua) Embed water quality targets and timeframes in Regional Plan (HBRC) Set policy and rule framework to manage land use towards achieving targets (HBRC) Develop Action Plan (TSG / HBRC / Community)	Notification of Plan Change - 2012
Northern and Southern hill country Southern coast	Erosion Loss of land potential Water quality impacts	Hill Country Erosion Project (HBRC) Investigate AGS equivalent with a view to establishing such a scheme to incentivize afforestation (mixed species) of erosion prone land within farms (HBRC, landowners, other partners) Huatokitoki Catchment Study (Community/HBRC/Massey/others)	Consultation of Regional AGS through Long Term Plan 2012-22
Mahia	Poorly performing on-site wastewater systems, particularly during peak holiday periods	Land based community wastewater scheme – Infrastructure and management (WDC), Land ownership and forestry management (HBRC)	Resource consent gained Construction scheduled for January 2012

Catchment Values:



4.0 Summary of catchment values

At the Water Symposium held in November 2010, participants identified a wide range of values for each of the major catchment areas in Hawke's Bay.

These have been distilled down to a list of high-level values which HBRC consider to be the key drivers for each catchment.

These key drivers are shown on the following maps in order from north to south.



Mohaka



KEY DRIVERS

- Cultural values
- Natural Character
- Life Supporting Capacity Of Rivers, Lakes And Wetlands
- Existing Economic Development (Includes Tourism)
- Native And Trout Fishery
- Recreation



Esk - Tutira



KEY DRIVERS

- Cultural values
- Life supporting capacity of rivers, lakes and wetlands
- Existing economic development (includes tourism)
- Recreation and education

Heretaunga

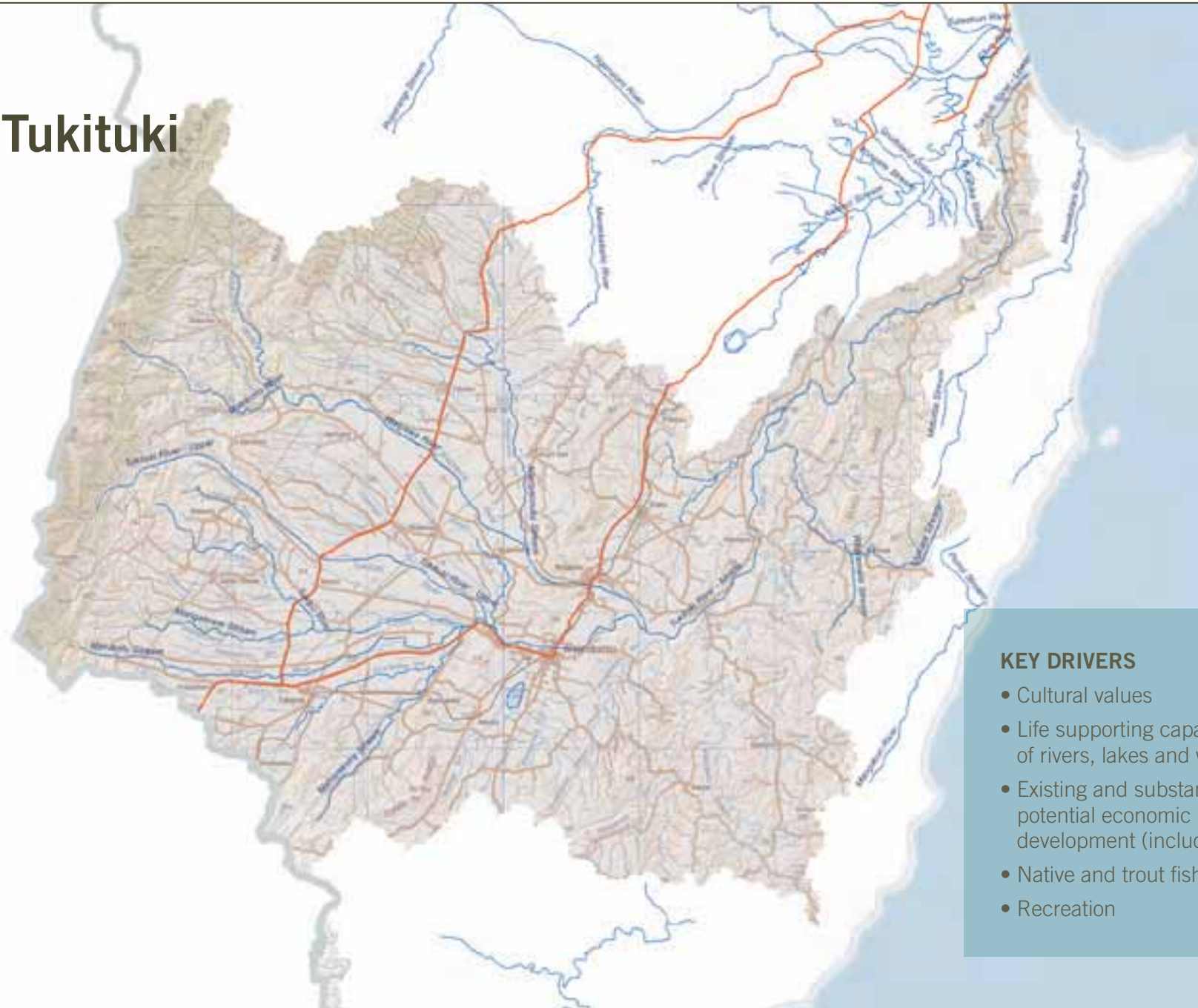


KEY DRIVERS

- Cultural values
- Life supporting capacity of rivers, lakes and wetlands
- Municipal water supplies
- Substantial existing and some potential economic development (includes tourism)
- Native and trout fishery
- Recreation



Tukituki



KEY DRIVERS

- Cultural values
- Life supporting capacity of rivers, lakes and wetlands
- Existing and substantial potential economic development (includes tourism)
- Native and trout fishery
- Recreation

Southern Coast



KEY DRIVERS

- Cultural values
- Life supporting capacity of rivers, lakes and wetlands
- Coastal water and habitat quality
- Existing economic development

Porangahau



KEY DRIVERS

- Cultural values
- Life supporting capacity of rivers, lakes and wetlands
- Existing economic development



Glossary

Aquifer	An underground deposit of water-bearing sand, gravel or rock capable of yielding supplies of water.	Kaitiakitanga	Guardianship or custodianship, e.g. in the protection or maintenance of resources such as land and water.
Catchment	The total area draining into a river, reservoir or other body of water.	Mana whenua	Tangata whenua whom have the authority to preside over decision making which affects Māori
Diffuse discharges	Pollutants sourced from widespread or dispersed sources (e.g. from pasture runoff of animal wastes, fertiliser and sediments as well as runoff of pollutants from paved surfaces in urban areas).	Mātauranga Māori	Māori knowledge originating from Māori practices, observations, science, ancestors, including the Māori world view and perspectives, creativity and cultural practices.
Ecosystem	A system formed by all plants, animals, and micro-organisms in a particular area interacting with the non-living physical environment as a functional unit.	Mauri	The inner life-force or essence, for example, of a river
Ecosystem Services	The benefits people obtain from ecosystem processes. These include water and air purification, flood control, erosion control, generation of fertile soils, detoxification of wastes, resistance to climate and other environmental changes, pollination, and aesthetic and cultural benefits that derive from nature.	Minimum flow	Limits the amount of abstraction during low river flows. A minimum flow determines when consent holders have to reduce, and ultimately stop, abstracting.
Environmental flows	The flows and water levels required in a water body to provide for a given set of values which are established through a regional plan or other statutory process.	National Policy Statement for Freshwater Management	Instrument available under the Resource Management Act (NPS) 1991 to provide guidance and direction to local government on the national priorities and importance of sustainable freshwater management.
Freshwater management objectives	The agreed upon objectives for managing freshwater catchments. Catchments will have different management objectives depending on the values associated with them. For example, if the value is primarily contact recreation, the management objective will be to ensure the bacterial quality and clarity of the water body is suitable for contact recreation.	Resilience	The ability to withstand and recover quickly from difficult or challenging conditions or circumstances.
Good agricultural practice (GAP)	Industry-led programmes which promote practice changes to improve industry performance.	Riparian zones, strips, margins	The strip of land that runs alongside a waterbody such as a river, stream or lake.
		Riparian management	The planting of vegetation along riparian margins to provide shade for waterbodies, thereby reducing algal growth and maintaining cool water temperatures, which are generally more favourable for aquatic fauna. Riparian vegetation also reduces bank erosion and intercepts sediment and other contaminants before they enter a waterbody.
		Sediment and sedimentation	Unconsolidated mineral and organic particulate material in the waterbody.

Soil conservation	The protection of soil from erosion and other types of deterioration, so as to maintain soil fertility and productivity and prevent property and ecosystem damage. The principal approach to soil conservation is to maintain a protective vegetative cover and employ land use management strategies that minimise soil disturbance.
Stormwater	Rainwater which has landed either on the ground, a roof or other impervious area and has run off into drains, waterways, etc.
Strategic direction/planning	The long-term or overall aims and interests as well the means of achieving them.
Sustainability	Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.
Water allocation limits	The amount of water available to be extracted from a water source for use (e.g. for public supply, irrigation etc). The total allocation is limited to protect in-stream values and provide security of supply to water users.
Water banking	Holding resource consents for water without demonstrated reasonable need.
Water governance	The processes and framework which enables decision-makers and stakeholders to manage water sustainably. It includes the plans, rules and regulations, the agencies responsible for decision making and the information, policies and procedures used to make decisions.

Water use efficiency	<p>Technical efficiency – the amount of water beneficially used in relation to that taken.</p> <p>Economic efficiency – water use which results in the optimum outcome for the environment and community</p> <p>Dynamic efficiency – adaptability of water allocation to achieve ongoing improvements in efficiency.</p>
Wetland	Permanently or intermittently wet land, shallow water and land-water margins. Wetlands may be fresh, brackish or saline and are characterised in their natural state by plants and or animals that are adapted to living in wet conditions. Wetland functions include nutrient filtering, sediment trapping, preventing flooding, carbon sequestration, habitats, recreation, education, cultural value.

Resources

- Regional Resource Management Plan
- Draft Regional Stormwater Strategy
- Heretaunga Plains Urban Development Strategy
- Land and Water Forum 2010:
Report of the Land and Water Forum: A Fresh Start for Fresh Water
- Ministry for the Environment: National Policy Statement for Freshwater Management
- State of the Environment Reports
- Te Karamu Enhancement Programme



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