



**WATER  
SUSTAINABILITY  
STRATEGY  
WESTERN BAY  
SUB-REGION**

## STATUS OF THE STRATEGY

This strategy is a non-statutory document. This means that it does not contain rules and cannot require changes to other statutory documents. It provides guidance for the management of water quantity within the western Bay of Plenty sub-region. It may or may not result in changes to planning documents. Any such decision will be made at the discretion of individual agencies and will follow statutory procedures.

## SCOPE OF STRATEGY

A number of rivers within the western Bay are subject to Treaty negotiations. It is impossible for this strategy to try to anticipate the outcome of these negotiations. For this reason, Treaty settlements are not part of this strategy.

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**TURN ON YOUR TAP AND TAKE A DRINK OF FRESH WATER. Go for a swim, bite into a kiwifruit grown in Te Puke or a fish caught in the Kaituna River. Sit quietly next to the Wairoa River.** If you live in the western Bay, you are likely to be accustomed to clean and abundant water and you won't think twice about doing these things.

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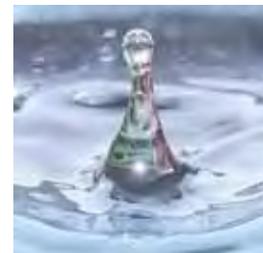
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# WESTERN BAY SUB-REGION



The Strategy uses the term “western Bay sub-region” as the shortened form of “western Bay of Plenty sub-region”. This sub-region extends from Waihi Beach to Ōtamarākau and includes Tauranga City, Katikati, Te Puke and Matakana Island.

# IN 2055...

IF THE WATER USED IN THE WESTERN BAY OF PLENTY SUB-REGION WAS CONTAINED IN 100 WATER BOTTLES



# 45

**BOTTLES**  
would be used in  
and around homes



# 22

**BOTTLES**  
to supply livestock  
and irrigate pasture



# 18

**BOTTLES**  
for growing crops



# 15

**BOTTLES**  
to supply commerce  
and industry



# PART ONE

# THE STRATEGY

**WATER IS ESSENTIAL TO LIFE.** It is a resource and a life source. Water is vital for the health of people and communities and the life-blood of the natural environment. Water is essential to support our agricultural, horticultural, commercial, industrial and recreational activities. These uses and demands are increasing. While our water resources are renewable, they are finite. To sustain our water needs, the western Bay sub-region requires access to reliable supplies of water. We all share the responsibility to ensure a secure and sustainable water supply for our communities, economy and environment.

## WHY IS A STRATEGY NEEDED FOR THE WESTERN BAY?

There are increasing demands on the water resources within the western Bay sub-region, yet these same water resources are not limitless. There are community expectations that a reliable water supply will be available for different uses – drinking water, irrigation, power generation, fishing, kayaking and others. In other regions in New Zealand, problems have arisen when water supply and demand become unbalanced.

## WHAT IS THE PURPOSE OF THIS STRATEGY?

The purpose of the Water Sustainability Strategy is to provide a way forward in managing the quantity of water resources in the western Bay sub-region.

That means working together to make good decisions about how we balance the amount of water available to meet the various demands for water. This Strategy only deals with water quantity – specifically allocation, collection, storage and use of water. Stormwater and recycled water are also acknowledged as a potential water resource.

The Strategy will provide direction and guidance to regional and district authorities about how we manage the quantity of water resources in the western Bay sub-region. The resulting outcomes and actions will help us to take a more holistic approach in the sustainable management of our groundwater, aquifers, rivers and streams.

This Strategy seeks to:

- Be proactive by anticipating potential future problems now.
- Seize unrealised opportunities for the collection, storage, conservation and use of water in the western Bay sub-region.
- Balance the various needs for water with the protection of the environment.
- Provide a mix of initiatives that are specific to the needs and potential opportunities of the western Bay sub-region.

## DELIVERING THE STRATEGY

The Strategy's Implementation Plan outlines a programme of actions to achieve the Strategy's vision and outcomes. It is anticipated that the Strategy will be used by the community as a catalyst for continuing to work towards the vision. This can occur through requests to local authority Annual Plans and Long Term Council Community Plans. The Implementation Plan is outlined in Part Six.

## Ko te wai te ora o nga mea katoa Water is the lifegiver of all things

### MONITORING AND EVALUATION

The Strategy actions and outcomes will be implemented by Bay of Plenty Regional Council, Tauranga City Council and Western Bay of Plenty District Council. The lead agency for each action is identified in the action summary table in Part Six.

Active monitoring of the effect of the Strategy actions will ensure that areas needing more attention or improvement can be identified.

Annual reporting is proposed to show what has been done in the year<sup>1</sup> and what is proposed for the following year. This allows the community and project partners to measure progress and also keep track of what actions were done. An annual report will be prepared by Bay of Plenty Regional Council.

To ensure that the actions continue to be appropriate and relevant, this Strategy will be reviewed in 2013.

### WHO IS RESPONSIBLE FOR THE WATER THAT COMES OUT OF MY TAP?

Bay of Plenty Regional Council is responsible for managing the water resource. This includes the allocation of water (rivers, streams and groundwater) through resource consent applications setting minimum flows (rivers and streams) and levels (groundwater) as well as maintaining or enhancing water quality.

Tauranga City Council and Western Bay of Plenty District Council are responsible for providing good quality and safe drinking water to communities. This includes water collection, treatment and distribution as well as assessing their communities' needs for water services.

### THIS STRATEGY RECOGNISES BUT DOES NOT ADDRESS WATER QUALITY

It is recognised that water quantity and water quality are linked. However given the intensifying demands on water, a specific strategy for water quantity is warranted. A single purpose strategy has the advantage of narrowing the focus and effecting change faster, compared with an integrated water quantity/quality strategy which would take longer to develop. It is important to note that any efforts to improve the management of water quantity, in addition to improved land use practices (under existing Council projects), will have a positive impact on water quality.



<sup>1</sup> Year: 1 July until 30 June



## PART TWO

# SETTING THE SCENE

**THE WESTERN BAY SUB-REGION COVERS A LAND AREA OF APPROXIMATELY 2,092 SQUARE KILOMETRES (KM<sup>2</sup>), EXTENDING FROM WAIHĪ BEACH TO ŌTAMARĀKAU AND INCLUDES TAURANGA CITY, KATIKATI, TE PUKE AND MATAKANA ISLAND.**

Current land use within the Tauranga City area is mostly urban residential, commercial and industrial. Outside of Tauranga City, land use is predominately rural in nature and used for agricultural and horticultural purposes. The economy of the western Bay sub-region is dependent on production from versatile soils. The main horticultural crops grown in the sub-region are kiwifruit, avocados, grapes, stone fruits and field vegetables. Access to a reliable supply for water gives businesses and industry the confidence to make long term investments in the sub-region.

“When the well is dry, we know the worth of water”  
Benjamin Franklin

## WATER DEMANDS, USES AND VALUES

The uses and values of our rivers, streams and groundwater aquifers varies from place to place. For example, the Wairoa River is used for hydroelectric power generation and kayaking. It is still used by Ngāti Kahu hapū of Ngāti Ranginui for a variety of cultural activities. Likewise the Kaituna River is valued for fishing, bird life and white water rafting. A number of Te Arawa iwi also maintain cultural relationships with the Kaituna River and value its waters for sustaining kaimoana. The Pongakawa groundwater aquifer is used heavily to irrigate kiwifruit orchards.

Water is central to Māori cultural identity, personal identity and well-being. Rivers, such as the Wairoa River and Kaituna River, carry ancestral connections and wairua (spirit) for whānau, hapū and iwi. It is a source of pride and identity to Māori – those reciting their whakapapa name the river, stream or lake to which they belong. Freshwater sustains ecosystems and mahinga kai species. Māori view the natural environment, in particular, good quality freshwater as a taonga to be cared for and maintained for future generations.

## FUTURE CHANGES IN WATER DEMAND

The population of the sub-region is expected to double by 2055. Approximately 80 percent of people within the western Bay sub-region rely on a municipal water supply system for their drinking water which is sourced from the Tautau Stream, Waiorohi Stream and a number of deep groundwater aquifers. The Waiari Stream is expected to provide the additional water needed to sustain the increased population.

<sup>2</sup> Aqualinc Research limited (2007). Water Use and Availability Assessment for the western Bay of Plenty. Report prepared for Bay of Plenty Regional Council).

Aqualinc Research (2007)<sup>2</sup> outlined the key effects of climate change and intensification of land use within the western Bay sub-region. They noted a warmer climate will benefit the production of sub tropical fruits such avocado and citrus. This may change the types of crops in some areas. The predicted drier spring weather will create a longer irrigation season.

The report also predicted future intensification of land use into more profitable horticultural use and greater utilisation of irrigation.

The graphs included in Appendix 2 of this Strategy show anticipated increased water demand resulting from:

- Population growth (Tauranga City, Mount Maunganui, Pāpāmoa, Ōmokoroa).
- An increase in horticultural use – irrigation and frost protection (Pongakawa, Paengaroa, Te Puke, Oropi and Whakamarama).
- An increase in pastoral irrigation (Pongakawa, Paengaroa, Te Puke).

**THE WORLDVIEW OF MĀORI IS BASED ON THE PRINCIPLES OF INTERCONNECTEDNESS WITHIN AND BETWEEN THE NATURAL ENVIRONMENT.** This view acknowledges that Māori are a part of the environment and dependent on the resources that it provides. The Māori worldview does not separate spiritual and intangible aspects from the non-spiritual practices of resource management.

Māori view freshwater in a holistic manner where whole ecological systems are managed as opposed to separate components (such as river bed, water etc). This Strategy advocates for the collective management of water on a catchment or sub-catchment basis by way of Water User Groups. This reinforces the “Ki Uta Ki Tai” / “From the Mountains to the Sea” concept of natural resource management.



# PART THREE

# WHERE ARE WE NOW?

## THE PROBLEM: INCREASING WATER DEMAND VS FINITE WATER SUPPLY

**THE USES AND DEMANDS FOR WATER IN THE WESTERN BAY ARE INTENSIFYING THROUGH POPULATION CHANGE, ECONOMIC DEVELOPMENT AND LAND USE CHANGE.** A limited and unreliable supply of water can hold back the economic potential of the western Bay. Also, any changes in land use will have an impact on the demand for water. For example, changing from dry stock farming to dairy farming means that more water is needed to washdown a dairy shed and to irrigate grass. A growing population means more water is needed for drinking water and household use. The graph on the next page shows future demand for water during the next 50 years against current demand in the western Bay sub-region.

We are fortunate to have a range of water resources – rivers, streams and groundwater aquifers. While these water resources are renewable they are also finite. We have seen in other regions where water demand and supply have become unbalanced. This imbalance has meant that there have been conflicts in water demand and an unreliable supply of water. We can see the same potential for conflict if we don't address those future problems now.

The western Bay sub-region has enough water to meet reasonable foreseeable water requirements (Aqualinc, 2007). This means that, on paper, there is enough water to meet future demand. However, water is not always at the right place at the right time to meet demand from people or to provide the right amount for the environment. Water demand varies from place to place and from time to time (irrigation in summer, frost protection in winter). Water is not always naturally available in the same places as the highest pressures of people and growth. For this reason there may be parts of the sub-region that may experience the greatest shortfalls in water availability.

As shown on page 12, these 'water short' areas are those where the demand for water exceeds what is available to be taken. This of course assumes that water use stays the same – fresh water is always used for frost protection or for irrigating lawns and gardens. In areas

such as Te Puke and Athenree both groundwater and surfacewater resources may come under significant pressure.

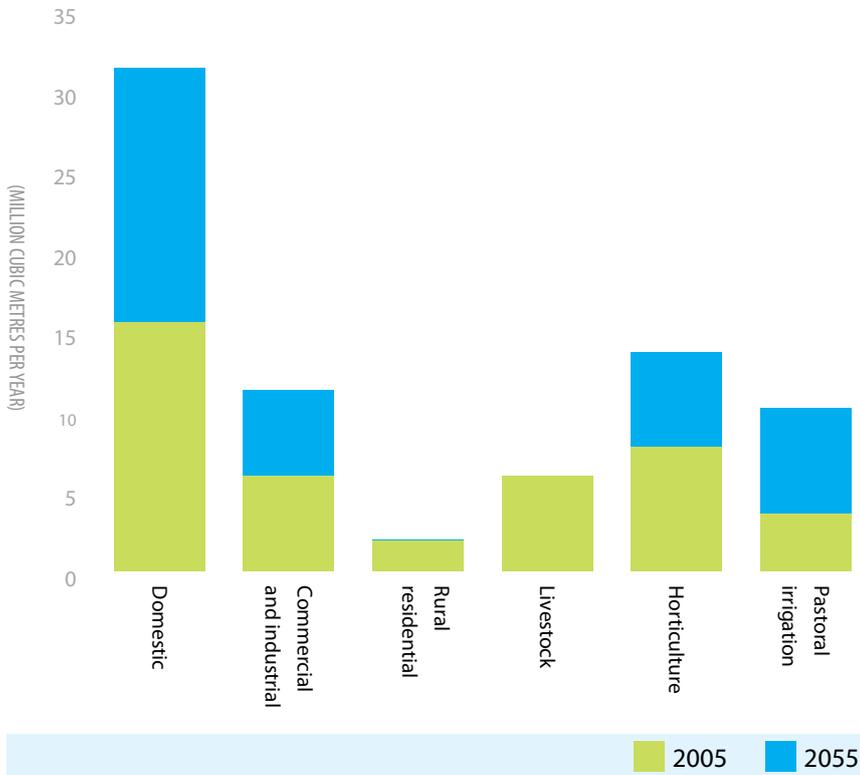
## WHAT ARE THE OPPORTUNITIES?

We need to also look at possible opportunities to improve water management such as:

- Improving the way we collect, store and use water.
- Exploring all alternative sources of water – rain water, recycled water.
- Supporting economic development by ensuring a reliable water supply. Specifically, given the importance of the kiwifruit industry to the western Bay, ensuring that water demand requirements for the growth of planted kiwifruit can be met.
- Learning from other regions that have had to deal with fully (and over) allocated catchments and conflicting demands for water. One key area of learning is collaborative water management through the operation of water user groups.
- Changing technologies in key industry sectors (agriculture/horticulture) mean that water can be used more efficiently. For example, finding alternative methods to using water for frost protection.
- Making people aware that there are parts of the sub-region where water supply is plentiful at present.

**“All the water that will ever be is, right now”**  
National Geographic, October 1993

**FUTURE DEMAND FOR WATER OVER THE NEXT 50 YEARS  
AGAINST CURRENT DEMAND IN THE WESTERN BAY SUB-REGION**



(Source: Aqualinc Research limited (2007). Report prepared for Bay of Plenty Regional Council. Reference adapted from table 6, page 43. Water Use and Availability Assessment for the Western Bay of Plenty. (Note: commercial and industrial water removed from domestic/municipal figures).

**2005**  
WATER DEMAND  
**40.8**  
Million cubic metres per year

**2055**  
WATER DEMAND  
**75.6**  
Million cubic metres per year



# PART FOUR

# WHERE DO WE WANT TO BE IN 10 YEARS?

## THE VISION FOR THE WESTERN BAY SUB-REGION:

### ENOUGH WATER FOR PEOPLE, PROSPERITY AND THE ENVIRONMENT

*Rivers, streams and groundwater aquifers*

- i life of humans, plants, crops and animals*
- ii life of our water resources (mauri)*
- iii livelihoods*
- iv lifelong – now, tomorrow and into the future*

**BY 2020 THERE WILL BE AN IMPROVEMENT IN THE WAY WE WORK TOGETHER TO MANAGE THE QUANTITY OF WATER IN OUR VALUABLE RIVERS, STREAMS AND GROUNDWATER AQUIFERS. This can only be achieved through shared knowledge and responsibility about our water resources to find a better balance between:**

- the amount of water available in our rivers, streams and groundwater aquifers, and
- the amount of water needed to ensure a reliable supply of water for households, horticulture, agriculture, commerce and industry, cultural and landscape values, recreation and aquatic ecosystems.

By working together we can ensure that there is enough water for people and the environment, whatever the future brings.

### PRINCIPLES

The following principles give guidance on the approach to managing the quantity of water in the western Bay sub-region. We need to:

- Recognise that there are limits to the available water supply.
- Take a holistic approach to the way we manage our water resources.
- Realise that all the various demands for water are important either from a social, cultural, environmental or economic point of view.
- Work together to enable a shared responsibility for water.
- Use water more responsibly and efficiently.

# PART FIVE HOW DO WE GET THERE?



**WATER CAN BE A CAUSE OF CONFLICT.** Equally, water can be a catalyst for co-operation. This Strategy is a pro-active way of addressing future potential problems while seizing possible opportunities.

**TO REALISE THE VISION, THIS STRATEGY COMPRISES THE FOLLOWING OUTCOMES:**

## **1** IMPROVE WATER RESOURCE KNOWLEDGE

We need to collect and share good information so that people can make good decisions. For example, share information about where in the sub-region water is plentiful and which catchments are under pressure.

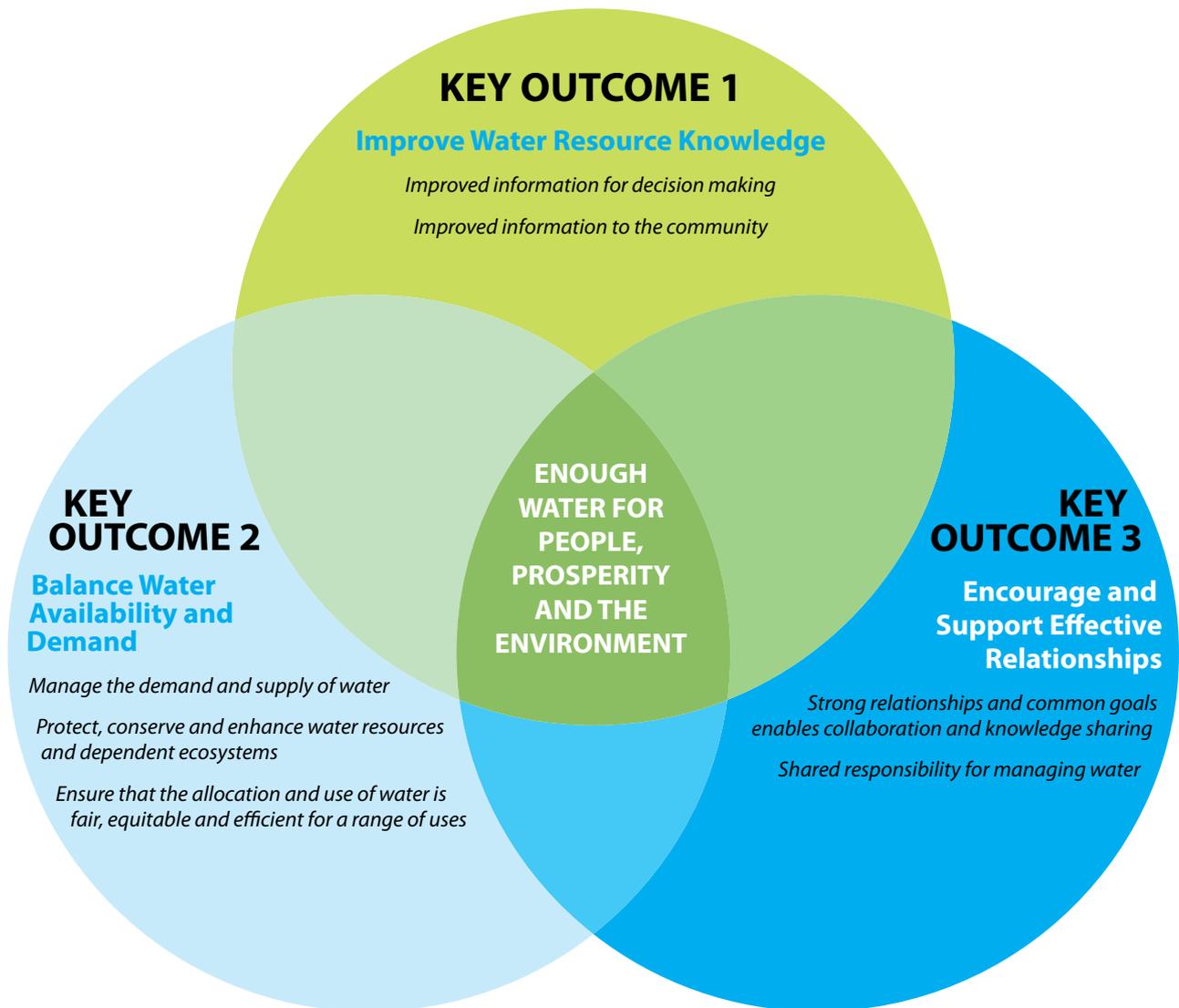
## **2** BALANCE WATER AVAILABILITY AND DEMAND

Water management can be threatened when the demand for water exceeds water supply. We need to find a balance between the amount of water available with the various demands for water. For example, using alternative sources (rainwater, recycled water or wastewater), water harvesting and storage as well as looking at the potential of community based water storage schemes.

## **3** ENCOURAGE AND SUPPORT EFFECTIVE RELATIONSHIPS

Water management can be enhanced by good relationships between statutory agencies, major water users and local communities. We need to work together more to enable shared knowledge and responsibility for water. For example, establish a specific western Bay 'Water Forum' and encourage the establishment of Water User Groups (community based water management).

**“Water sustains all”**  
Thales of Miletus, 600 B.C.



# KEY OUTCOME 1

## IMPROVE WATER RESOURCE KNOWLEDGE

**HAVING COMPREHENSIVE AND ROBUST INFORMATION AND KNOWLEDGE ABOUT OUR WATER RESOURCES IS ONE OF THE CRITICAL ELEMENTS IN OUR ABILITY TO MANAGE WATER EFFECTIVELY.** In addition, the sharing of this information is essential so that people can make good decisions.

### WHAT ARE THE OPPORTUNITIES OF IMPROVED WATER RESOURCE KNOWLEDGE?

- Better water allocation decisions can be made.
- Improved community awareness about water resources.
- Development in water rich areas.
- Informed business decisions.

### WHAT ARE THE RISKS?

- Time taken to gather robust information.
- Information not going to the right people.
- Decisions being made in the absence of robust information.

### WHAT INFORMATION GAPS NEED TO BE FILLED?

Information such as:

- Which areas of the sub-region that are water rich or under abstractive pressure.
- Further detail about how much water is available for allocation.
- Water harvesting – at what river flow should a high flow take start and stop?
- How much water is taken without a consent, for instance as a right under the Resource Management Act.

### STRATEGIC ACTIONS:

- **Improved information for decision making.** Make water allocation decisions (Bay of Plenty Regional Council, water users) based on good information. This requires knowledge gaps to be filled, such as how much water is available for allocation.
- **Improved information to the community.** Raise awareness and inform the community about our sub-region's water resources.

## KEY OUTCOME 2

# BALANCE WATER AVAILABILITY AND DEMAND

**OUR RELIANCE ON WATER NEEDS TO BE UNDERSTOOD SO THAT CHANGES CAN BE MADE TO THE WAY WATER IS USED.** In other words: 'Manage what we have'. This means finding a balance between the amount of available water with the various demands for water.

The solution comes through a mix of:

- Improving our ability to capture and store water to ensure a reliable supply of water. This reduces our vulnerability to droughts.
- Improving land use practices through water conservation and efficient use. This includes looking at alternative water supplies for non-potable use such as rainwater and recycled water.
- Getting the most production possible from the water already allocated.

It is important for all sectors (domestic, agricultural and horticultural) to understand how their behaviour affects water quantity and the health of aquatic ecosystems.

### WHAT ARE THE OPPORTUNITIES?

- increased reliability of supply
- reduced conflict
- sustainable economic development
- protection of mauri and aquatic ecosystems
- more responsible and efficient use of water
- reduced water reliance.

### WHAT ARE THE RISKS?

- Cost and practicality of alternative water supply options.
- Inequitable water allocation.
- Water is not used efficiently and is wasted or not available to others.
- Unreliable water supply.
- Conflict and/or adversarial outcomes – appeals, inequity.

### WHY WATER EFFICIENCY IS IMPORTANT?

- 1 Investing in measures such as water recycling will help provide a supply of water that is less rainfall and climate dependent and the use of more efficient systems or appliances would make more efficient use of an existing supply.
- 2 If we use less water now, then less water is treated and delivered. This benefits ratepayers who pay for the treatment and delivery of water. All of these processes use energy. Less water used means less energy is used. Therefore water must be managed appropriately to ensure it is affordable for everyone.

### STRATEGIC ACTIONS:

- **Manage the demand and supply of water.** This takes the pressure off and protects our water resources.
- **Protect, conserve and enhance water resources and dependent ecosystems.**
- **Ensure that the allocation and use of water is fair, effective and efficient for a range of uses.**

## KEY OUTCOME 3

# ENCOURAGE AND SUPPORT EFFECTIVE RELATIONSHIPS

**WATER MANAGEMENT CAN BE ENHANCED BY STRONG RELATIONSHIPS BETWEEN STATUTORY AGENCIES, TANGATA WHENUA, MAJOR WATER USERS AND THE LOCAL COMMUNITY.** This is because water management is a shared responsibility, where all parties work together with a shared goal in mind. This way, actions can be prioritised, knowledge can be shared and collaborative action will result in good outcomes. Strong relationships are an essential vehicle through which this strategy can be delivered.

One key action for this Strategy is the shared responsibility of water – at a catchment level – through Water User Groups. These groups acknowledge the power of people within a catchment. This is because they are immediately affected by an unreliable water supply and can work together more directly and effectively to find solutions. The role and function of a Water User Group may vary from catchment to catchment. Further information about Water User Groups is provided in Appendix 6.

### WHAT ARE THE OPPORTUNITIES?

- Shared knowledge, better collaboration and reduced conflict.
- People are empowered, informed and fully engaged in catchment stewardship.
- Kaitiakitanga is facilitated.

### WHAT ARE THE RISKS?

- Actions not occurring or running behind schedule due to lack of buy-in or agreement.
- Free-riding behaviour (partial engagement by a particular sector).

### SHARE THE RESPONSIBILITY FOR MANAGING WATER

Stewardship of our water resources means taking care of them. While the Regional Council has a mandate to allocate water and protect our environment, local government is only one part of the equation in managing water resources. Water is a shared resource that is affected by each and every one of us.

### STRATEGIC ACTIONS:

- **Strong relationships and common goals enable collaboration and knowledge sharing.** The management of our sub-region's water is a shared journey that requires connected and cohesive communities. Knowledge sharing involves many parties – councils, sector groups, tangata whenua, local water users. Each has something to offer.
- **Shared responsibility for managing water.** Water is a shared resource that is affected by each and everyone of us. Everyone has the responsibility to care for water resources and to consider the impact of their actions on downstream uses and ecosystems.

# PART SIX STRATEGY IMPLEMENTATION PLAN

## THE STRATEGY IMPLEMENTATION PLAN IS DIVIDED INTO TWO PARTS:

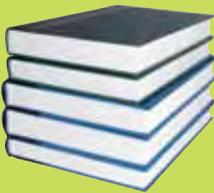
### 1 Actions for Implementation (now and over the next three years)

These actions relate to existing or programmed projects that already have local authority funding (in Annual Plans and Long Term Council Community Plans).

### 2 Other actions identified for implementation over the longer term

These are possible actions that would achieve the vision of the Strategy but do not have allocated funding. These longer-term actions may be subject to change so consideration will be given by Strategy partners and the wider community to include these actions in ongoing work programmes.

The information below summarises the location of detailed actions



**KEY 1**  
OUTCOME

**IMPROVE WATER RESOURCE KNOWLEDGE**

**Strategic Actions**

Improved information for decision making **PAGE 20**

Improved information to the community **PAGE 20**



**KEY 2**  
OUTCOME

**BALANCE WATER AVAILABILITY AND DEMAND**

**Strategic Actions**

Manage the demand and supply of water **PAGE 21**

Protect, conserve and enhance water resources and dependent ecosystems **PAGE 22**

Ensure that the allocation and use of water is fair, equitable and efficient for a range of uses **PAGE 23**



**KEY 3**  
OUTCOME

**ENCOURAGE AND SUPPORT EFFECTIVE RELATIONSHIPS**

**Strategic Actions**

Strong relationships and common goals enable collaboration and knowledge sharing **PAGE 24**

Shared responsibility for managing water **PAGE 24**

# OUTCOME 1

## IMPROVE WATER RESOURCE KNOWLEDGE



### Actions for implementation (now and over the next three years)

#### STRATEGIC ACTION: IMPROVED INFORMATION FOR DECISION MAKING

##### Detailed Tasks:

- a Continue research to refine information about the western Bay's groundwater resources.
- b Install additional groundwater monitoring equipment within the western Bay.
- c Install one additional telemetered site per year to get up to date information on river and stream flows.
- d Establish a water allocation system/database.
- e Estimate the volume of permitted takes by catchment (through a modelling study).

Lead Agency: Bay of Plenty Regional Council

##### Why these actions are important:

- *To improve groundwater and surface water resource knowledge to help with decision making (consents, individuals).*
- *To assist with catchment based water management.*
- *To help keep track of allocated water and know instantly how much water is left for allocation.*
- *To account for permitted takes in water allocation calculations.*

#### STRATEGIC ACTION: IMPROVED INFORMATION TO THE COMMUNITY

##### Detailed Tasks:

- f Prepare a Communication Plan to outline how information can be shared regularly about our water resources:
  - (i) Allocation limits, location of pressure catchments and water rich areas (through catchment maps).
  - (ii) Updates about the Strategy and its implementation.
  - (iii) Guidance about water harvesting and storage.
  - (iv) Information requirements and process for resource consent applications.

- (v) Methods of ensuring the efficient use of water.
- (vi) Guidance about establishing Water User Groups.
- g Organise targeted Water Management presentations or workshops.
- h Collate and disseminate information, where available, about the water footprint per land use.

Lead Agency: Bay of Plenty Regional Council

##### Why these actions are important:

- *To improve community awareness and understanding about the Strategy and the sub-region's water resources.*

#### Other actions identified for implementation over the longer term

#### STRATEGIC ACTION: IMPROVED INFORMATION FOR DECISION MAKING

##### Possible Tasks:

- i Prepare an information gathering strategy outlining:
  - (i) What water resource information is needed and why.
  - (ii) How the information is gathered and when it is needed.
  - (iii) Who pays for the collection of the information.
- j Provide training and education to decision makers (consent and plan hearing panels) about water management, in particular about water resource knowledge and policy.

Lead Agency: Bay of Plenty Regional Council

##### Why these actions are important:

- *To ensure we are taking a co-ordinated approach and collecting the right information.*
- *To ensure timely and responsive management decisions.*
- *To ensure that good decisions are made.*

# OUTCOME 2

## BALANCE WATER AVAILABILITY AND DEMAND

### Actions for implementation (now and over the next three years)

#### STRATEGIC ACTION: MANAGE THE DEMAND AND SUPPLY OF WATER

##### Detailed Tasks:

- a Urban Demand Management Tasks:
  - (i) Continue demand management initiatives (metering, education, advice, leak detection).
  - (ii) Regularly review water tariff options.

**Lead Agencies:** Tauranga City Council and Western Bay of Plenty District Council

##### Why these actions are important:

- *To reduce demand by increasing awareness about water use and conservation.*

#### STRATEGIC ACTION: PROTECT, CONSERVE AND ENHANCE WATER RESOURCES AND DEPENDENT ECOSYSTEMS

##### Detailed Tasks:

- b Set minimum flows and allocation limits in rivers and streams.
- c Set allocation limits in groundwater aquifers.
- d Review the volume of surface water and groundwater takes permitted by Rules 38 and 41 of the Regional Water and Land Plan.

**Lead Agency:** Bay of Plenty Regional Council

##### Why these actions are important:

- *To protect instream minimum flow requirements of rivers and streams which in turn helps to protect and conserve cultural values, outstanding natural features and landscapes.*

#### STRATEGIC ACTION: ENSURE THAT THE ALLOCATION AND USE OF WATER IS FAIR, EQUITABLE AND EFFICIENT FOR A RANGE OF USES

##### Detailed Tasks:

- e Efficient Water Allocation Tasks:
  - (i) Develop an interim operational policy for consents staff to assist with processing consents in fully allocated catchments.
- f Efficient Water Use Tasks:
  - (i) Develop Water Use Guidelines in conjunction with Horticultural and Agricultural Industry Sectors. These guidelines would outline best practice management regarding irrigation systems and define efficient water use.
  - (ii) Encourage water sharing and short term water permit transfers as a means of allocating water between competing users more efficiently.

**Lead Agency:** Bay of Plenty Regional Council

##### Why these actions are important:

- *To ensure the maximum use of allocated water.*
- *To look at innovative ways to use water more efficiently.*
- *To enable a shared responsibility for water use within a catchment.*



## Other actions identified for implementation over the longer term

### STRATEGIC ACTION: MANAGE THE DEMAND AND SUPPLY OF WATER

#### Possible Tasks:

- g** Urban Water Management Tasks:
- (i)** Encourage alternative water supply options for non-potable use (for lawn watering or toilet flushing).
  - (ii)** Investigate the feasibility of requiring new subdivisions to install alternative water supplies or localised water storage solutions (tanks, underhouse storage bladders) or utilise low impact urban design.
  - (iii)** Investigate the feasibility of using economic instruments to encourage people towards efficient water use and personal storage solutions.
  - (iv)** Investigate the barriers to, and opportunities for, reduced water demand within domestic, commercial and industrial sectors.

**Lead Agencies: Tauranga City Council and Western Bay of Plenty District Council**

- h** Rural Water Management Tasks:
- (i)** Encourage or require alternative water supply options for non-potable use (for pasture or kiwifruit irrigation).
  - (ii)** Provide guidance on water harvesting (taking and storing water at high flows) in terms of small scale out-of-river and on-farm water storage systems.
  - (iii)** Investigate the feasibility of community based water storage and/or irrigation schemes (like the Canterbury Opuha dam) via the Community Irrigation Fund.
  - (iv)** Encourage the abstraction of water from deeper aquifers by individual users or community based schemes (or Water User Groups).

- (v)** Investigate barriers to, and opportunities for, reduced water demand within the rural sector (for domestic, such as composting toilets), horticultural and agricultural uses). This could include adopting land use practices (mulching) which improve the efficiency of water use.
- (vi)** Investigate methods adopted via dry climate technology utilised in arid climates such as Australia.
- (vii)** Investigate the availability of water to ensure the productive use of versatile soils and measures to protect the productive use of versatile soils.

**Lead Agencies: Bay of Plenty Regional Council and Western Bay of Plenty District Council**

#### Why these actions are important:

- *To supplement supply.*
- *To increase awareness about water resource availability, use and conservation.*
- *To reduce demand by increasing awareness about water use and conservation.*
- *To look at innovative ways of making the most of limited volumes of water – making do with less water now.*
- *To ensure that future non-productive water takes do not compromise productive use of versatile soils.*

### STRATEGIC ACTION: PROTECT, CONSERVE AND ENHANCE WATER RESOURCES AND DEPENDENT ECOSYSTEMS

#### Possible Tasks:

- i** Establish provisions in the Regional Water and Land Plan where triggers are set when minimum flows are approaching. This requires 'real time' river flow data so that we know when water restrictions (or warnings) need to be put in place.

**Lead Agency: Bay of Plenty Regional Council**

#### Why these actions are important:

- *To protect instream minimum flow requirements of rivers and streams which in turn helps to protect and conserve natural character, cultural values, outstanding natural features and landscapes.*

**STRATEGIC ACTION:  
ENSURE THAT THE ALLOCATION AND  
USE OF WATER IS FAIR, EQUITABLE AND  
EFFICIENT FOR A RANGE OF USES**

**Possible Tasks:**

- j** Efficient Water Allocation Tasks:
- (i)** Investigate the feasibility of preparing Catchment-specific Water Allocation Plans.
  - (ii)** Assess alternative options to the existing First In First Served approach to water allocation.
- k** Efficient Water Use Tasks:
- (i)** Encourage the changing of irrigation systems from higher or medium application to more efficient low pressure, low application systems.
  - (ii)** Establish a website to share water use information and identify consent holders who are willing to share water.

Water Sharing – Look at the 'Hydrotrader'<sup>3</sup> approach of advertising who has water available to share/transfer and who is looking for water – organised by catchment.

**Lead Agency: Bay of Plenty Regional Council**

**Why these actions are important:**

- *To assist with decision making (consents) associated with efficient and fair water allocation.*
- *To ensure the maximum use of allocated water.*
- *To ensure that water is only allocated to where it will be used.*
- *To look at innovative ways to use water more efficiently.*
- *To enable a shared responsibility for water use within a catchment.*



**Ways of using technology to share information**

Water Use Information – Adopt the WaterMatters<sup>4</sup> approach of sharing water use information. This may facilitate water sharing or reduction in use. Requires live flow information.

<sup>3</sup> <http://www.hydrotrader.co.nz>

<sup>4</sup> <http://www.horizons.govt.nz/by-catchment/>

# OUTCOME 3

## ENCOURAGE AND SUPPORT EFFECTIVE RELATIONSHIPS



### Actions for implementation (now and over the next three years)

Nil

### Other actions identified for implementation over the longer term

#### **STRATEGIC ACTION: STRONG RELATIONSHIPS AND COMMON GOALS ENABLE COLLABORATION AND KNOWLEDGE SHARING**

##### Possible Tasks:

- a Establish a Western Bay Water Forum.
- b Establish the position of a Water Co-ordinator. The role could include:
  - Implementing Strategy Actions.
  - Facilitating the establishment of Water User Groups.
  - Overseeing the Water Forum.
  - Facilitating the investigations into community water storage schemes.

*Possible funding via the Annual Plan and Community Irrigation Fund (MAF) for the project management of a water strategy.*

**Lead Agency: Bay of Plenty Regional Council**

##### Why these actions are important:

- *To ensure strategy actions are implemented.*
- *To allow continued collaboration between councils, major water users and other key stakeholders.*
- *To collaborate with major water users and facilitate the establishment of Water User Groups.*
- *To facilitate the investigation into community water storage schemes.*

#### **STRATEGIC ACTION: SHARED RESPONSIBILITY FOR MANAGING WATER**

##### Possible Tasks:

- c Facilitate the establishment of at least two Water User Groups within the western Bay. These would be in catchments with the greatest abstractive pressure and/or community buy in.

**Lead Agency: Bay of Plenty Regional Council**

##### Why these actions are important:

- *To support a culture of shared responsibility for water.*
- *To encourage collective self management.*

# APPENDIX 1

## PREDICTED CHANGES IN WATER DEMAND BY SECTOR

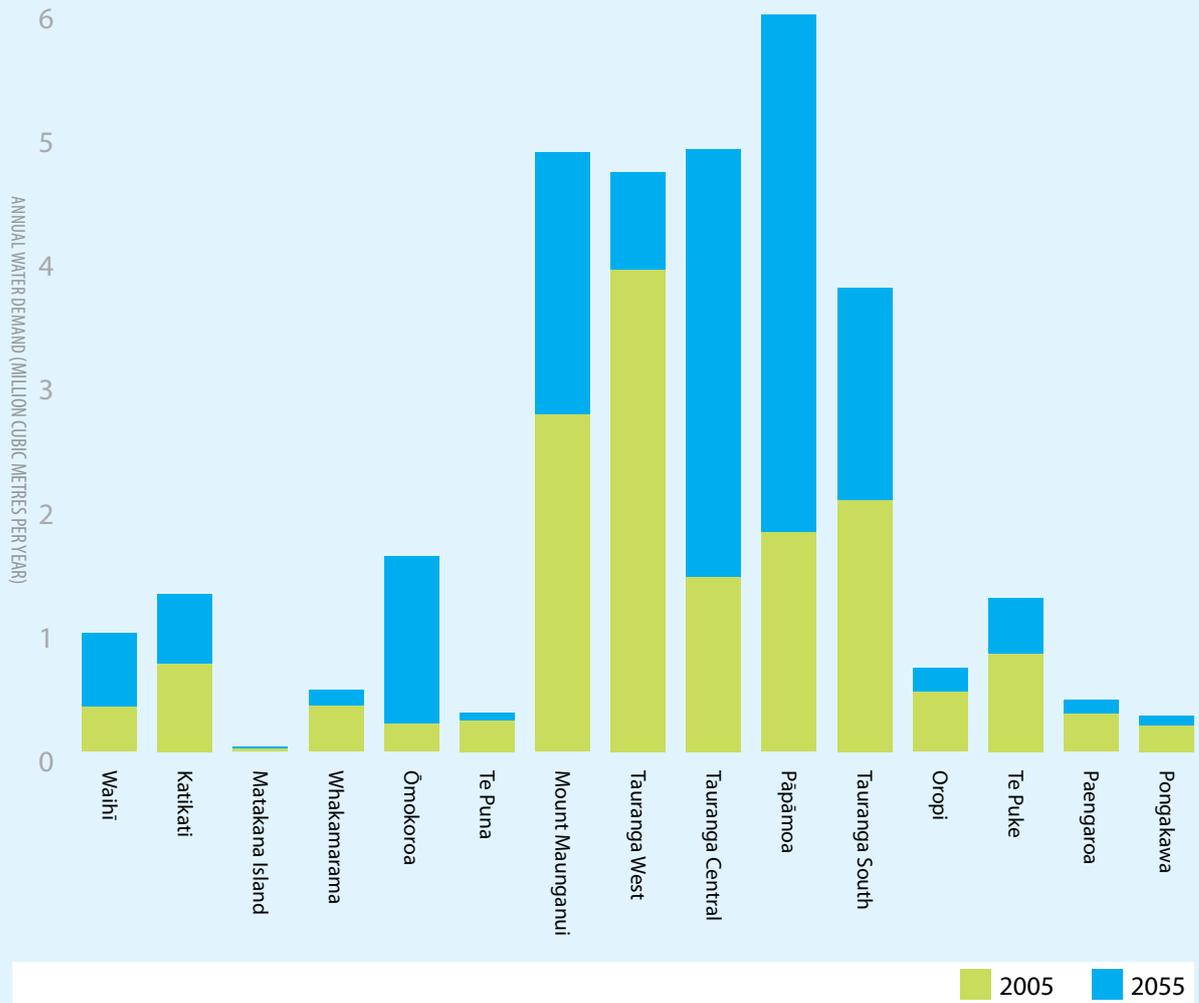
| WATER USE  | ANNUAL WATER DEMAND<br>(MILLION CUBIC METRES PER YEAR) |             | COMMENT   |
|--|--|-------------|---|
|  | 2005   | 2055        |   |
| <b>Domestic / Municipal</b>                              | 15.5   | 31.7        | <ul style="list-style-type: none"> <li>Includes reticulated and non-reticulated supply.</li> <li>Mainly related to population growth in Tauranga, Pāpāmoa, Ōmokoroa and Mount Maunganui.</li> </ul>   |
| <b>Livestock</b>   | 5.91   | 5.83        | <ul style="list-style-type: none"> <li>Net demand unlikely to change significantly, however the location of water demand will move.</li> <li>Water demand expected to decrease in Waihi, Katikati, Pāpāmoa, Oropi and Tauranga South due to changes in land use.</li> <li>Water demand expected to increase in Pongakawa, Paengaroa, Te Puke and Whakamarama.</li> </ul>  |
| <b>Horticulture</b><br>(irrigation and frost protection) | 7.7  | 13.6        | <ul style="list-style-type: none"> <li>Irrigation demand expected to double to increase yield and income per hectare.</li> <li>More water being required during spring and summer for irrigation purposes.</li> <li>Frost protection (~ 15% of total) is not expected to increase significantly due to climate change.</li> <li>Water demand expected to increase in Pongakawa, Paengaroa, Te Puke, Whakamarama, Waihi, Te Puna, Oropi and Katikati.</li> </ul> |
| <b>Pastoral Irrigation</b><br>(Dairying)                 | 3.6  | 10.7        | <ul style="list-style-type: none"> <li>Irrigation demand expected to increase to improve financial sustainability of pastoral farming.</li> <li>Water demand expected to increase in Pongakawa, Paengaroa and Te Puke.</li> </ul>   |
| <b>Commercial and industrial</b>                         | 5.9  | 11.3        | <ul style="list-style-type: none"> <li>Demand from Tauranga City Council reticulated supply expected to increase by 203%.</li> <li>Water demand expected to increase in Tauranga, Te Puke, Whakamarama, Te Puna, Katikati and Waihi.</li> <li>Affco is the major user outside Tauranga City.</li> <li>In 2005, 1.45 Mm<sup>3</sup>/yr is from Tauranga City reticulated supply. In 2055, this increases to 4.39 Mm<sup>3</sup>/yr.</li> </ul>                   |
| <b>Recreational</b>                                      | 0.28   | 0.5         | <ul style="list-style-type: none"> <li>Includes swimming pools, irrigation of bowling greens/ playing fields/golf courses. Excludes those using Tauranga City reticulated supply.</li> <li>Assumed increase in sports facilities (and associated water demand) as a result of population growth.</li> </ul>   |
| <b>Rural residential</b>                                 | 1.88   | 1.97        | <ul style="list-style-type: none"> <li>Estimated 5% increase in new rural residential by 2055.</li> <li>Limited by district plan rules and financial sustainability of rural land uses.</li> </ul>  |
| <b>Total</b>   | <b>40.8</b>  | <b>75.6</b> |   |

(Source: Aqualinc Research limited (2007). Water Use and Availability Assessment for the Western Bay of Plenty. Report prepared for Bay of Plenty Regional Council).

# APPENDIX 2

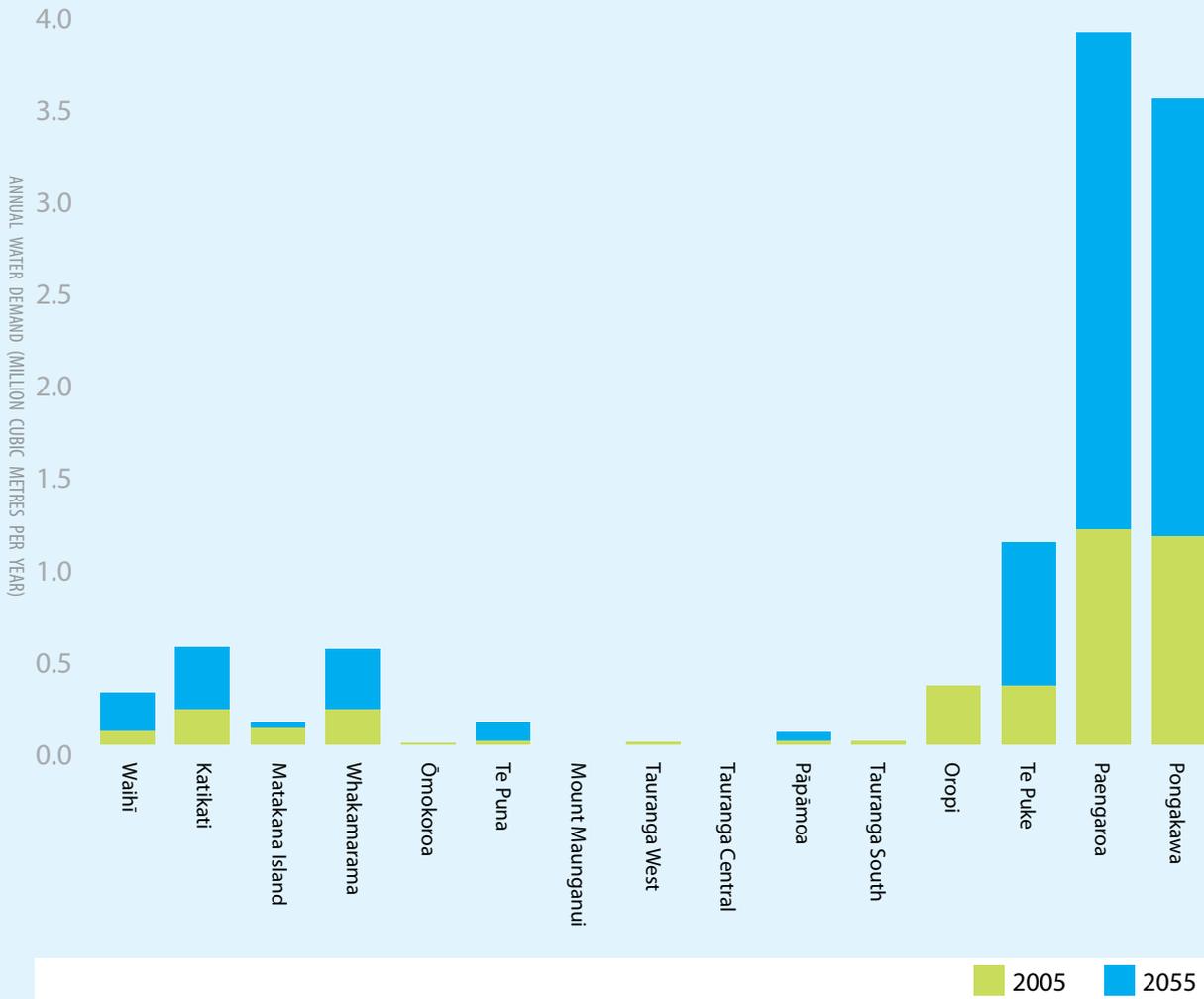
## PREDICTED CHANGES IN WATER DEMAND FOR DOMESTIC, PASTURE AND HORTICULTURE USE

### DOMESTIC WATER DEMAND



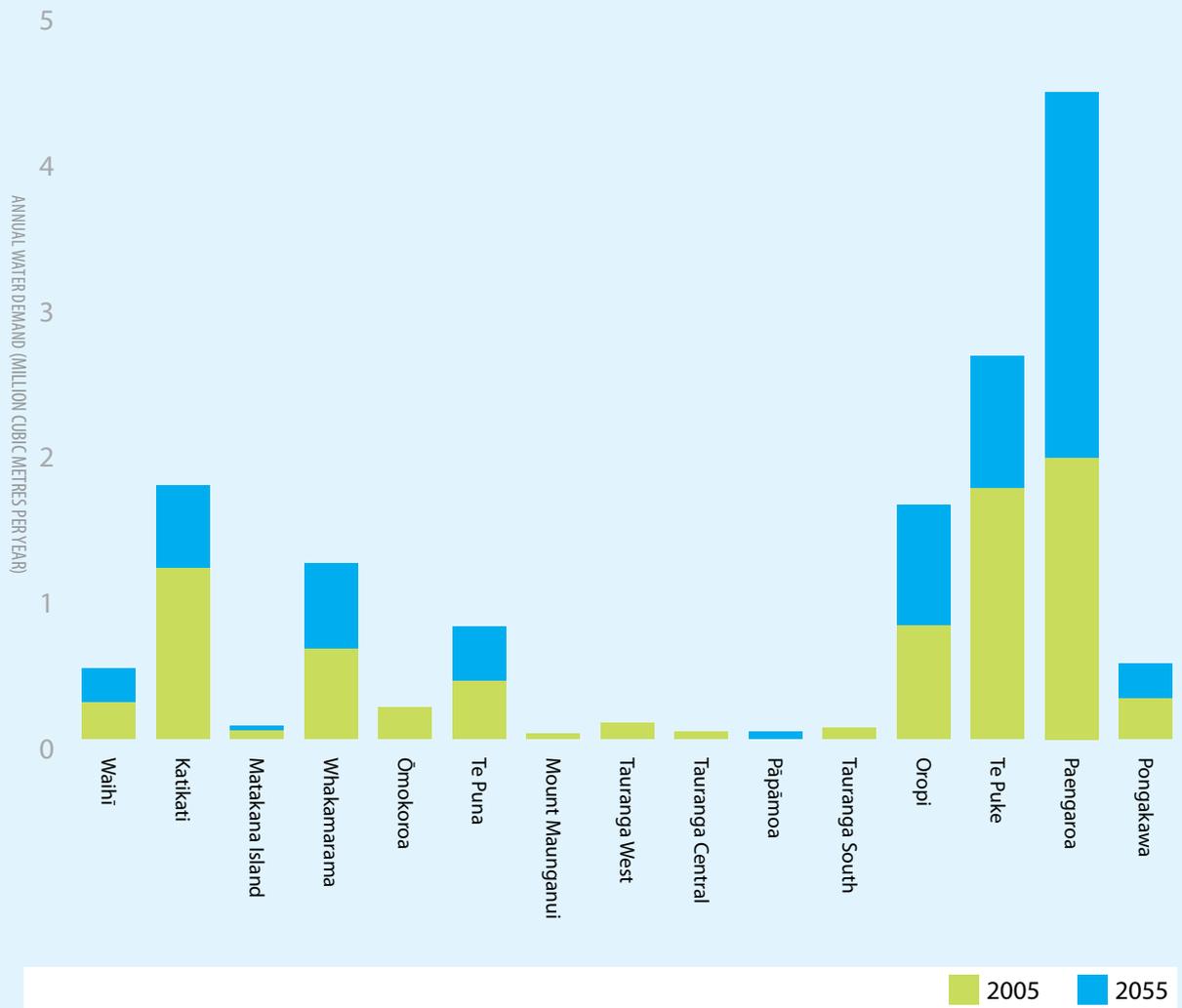
(Source: Aqualinc Research limited (2007). Water Use and Availability Assessment for the Western Bay of Plenty. Report prepared for Bay of Plenty Regional Council. Adapted from Appendix D, page 83. Note: Appendix D includes municipally supplied commercial/ industrial, but this is not included in this chart).

## PASTURE IRRIGATION WATER DEMAND



(Source: Aqualinc Research limited (2007). Water Use and Availability Assessment for the Western Bay of Plenty. Report prepared for Bay of Plenty Regional Council. Adapted from Appendix M, page 97).

## HORTICULTURE WATER DEMAND



(Source: Aqualinc Research limited (2007). Water Use and Availability Assessment for the Western Bay of Plenty. Report prepared for Bay of Plenty Regional Council. Adapted from Appendix M, page 97).

# APPENDIX 3

## INFORMATION ABOUT WATER USER GROUPS

|   |  |
|---|--|
| <p><b>Why do Water User Groups form?</b></p>                  | <p>The drivers differ from catchment to catchment and include:</p> <ul style="list-style-type: none"> <li>• Scarce water resource (fully allocated or over allocated catchment) – the advantage of over allocation is that it prompts water sharing, maximising the use of an available resource.</li> <li>• Reliable water supply – enough water at the right time.</li> <li>• Shared infrastructure costs for storage (capital, repairs, expansion, maintenance).</li> <li>• Other shared costs (telemetered water measuring and reporting, compliance monitoring).</li> <li>• 2021 deadline for expiration of mining privileges (Otago Region only).</li> <li>• Supporting community aspirations and environmental enhancement (where possible).</li> </ul>   |
| <p><b>How do they form?</b></p>                               | <p>These groups require people who have <b>shared goals</b> and are <b>willing to work together</b>. There is no one perfect model for a Water User Group. This is because the structure of the groups ranges from catchment to catchment and includes:</p> <ul style="list-style-type: none"> <li>• Single group (incorporated society or scheme comprising a handful of farmers). This is the type already in existence in the Bay of Plenty – for instance seven farmers, one bore, day allocated for water take.</li> <li>• Board comprising multiple schemes.</li> <li>• Joint Venture / Multiple groups – trusts, power company, station/land owner, iwi.</li> <li>• Shareholders (some mixes uses) – Ida Valley Scheme: tradeable 'shares' based on levels in the upper catchment reservoir at the start of the season.</li> </ul> <p>In all instances, the group holds one water permit and decide who uses the water and when. From a council point of view, there is the added advantage of having one point of contact.</p>   |
| <p><b>Lessons learned – what works, what doesn't work</b></p> | <p><b>Water is about people, communities and livelihoods. The successful groups:</b></p> <ul style="list-style-type: none"> <li>• Collaborate/involve other stakeholder groups <b>early</b>. Litigation is expensive. The key thing is to get people to <b>fight for you</b> instead of against you.</li> <li>• Look for environmental improvement and opportunities for new development.</li> <li>• Add value where possible – store additional water to supplement creek flows, replenish aquifers, generate power or provide water to houses.</li> <li>• Are open, transparent and have nothing to hide. They share their plans with the community.</li> <li>• Work via trust and strong leadership.</li> <li>• Get support from regional council staff (time and advice).</li> <li>• Have common goals instead of one set vision.</li> <li>• Value the importance of information sharing (especially from regional councils) and real time monitoring (especially low flow alerts).</li> <li>• Aren't always single-focused. Some take an Integrated Catchment Management approach where water quality matters need to be considered.</li> </ul> <p><b>Key challenges:</b></p> <ul style="list-style-type: none"> <li>• Getting people signed up and to a point where aspirations are shared – goal, irrigation area, stage timing. This takes time.</li> <li>• Working out who to involve and when.</li> <li>• Ensuring there is sufficient support for those running the Water User Groups.</li> <li>• Time taken to get resource consent applications through – streamlined process needed.</li> <li>• Technical capability of consents staff (dam design), resulting in costly outsourcing to peer review engineering plans.</li> <li>• Initial infrastructure cost and staging of development.</li> </ul> |

|  |  |
|--|--|
|  | <p>Small Water User Groups are already in existence in the Bay of Plenty. We need to encourage the establishment of more groups starting with the 'pressure catchments'. These are the catchments under greatest abstraction pressure. People are more likely to work together if the water resource is scarce.</p> <p><b>Key steps:</b></p> <ul style="list-style-type: none"> <li>• <b>Communication:</b> People need to be aware that they are in a pressure catchment. Water resource knowledge will help to secure buy in and realise the importance of working together. For example, if there is plentiful water in a deeper aquifer, a group of landowners may choose to share the costs of drilling and using a deep bore instead of relying on streams and rivers.</li> <li>• <b>Guidance:</b> From Council about how water collection and storage should be occurring in the Region. In particular, method of water collection, at what flows, how are these monitored?</li> <li>• <b>Streamlined consent processes:</b> To ensure that these groups are not discouraged by the 'paperwork side' of Council. If people need consent to construct water storage dams, we need to have the capability in-house to peer review designs.</li> <li>• <b>Consistency:</b> We need to be consistent (piggy-back) with Catchment Management Plans, existing volunteer groups and other Landcare Trust initiatives (Kaimai Project).</li> </ul> <p>Members from the Kakanui Allocation Committee (Otago), Ruataniwha Irrigators Group (Hawkes Bay) and Waimea Water Augmentation Committee may be able to share their experience with establishing and running a Water User Group.</p> |
|--|--|

## CASE STUDIES – LESSONS LEARNED

|                                       |  |
|---------------------------------------|--|
| <b>North Otago Irrigation Company</b> | <ul style="list-style-type: none"> <li>• Additional water in reservoir to supplement flows in Creek – positive environmental and cultural impacts.</li> <li>• Early collaboration with Stakeholders – Department of Conservation , Fish &amp; Game and iwi.</li> <li>• Win-win situation.</li> </ul>   |
| <b>Kakanui Allocation Committee</b>   | <ul style="list-style-type: none"> <li>• Structure: Simple, small and locally based, greater ownership.</li> <li>• Supported by technology for decision making – Telemetered water measuring devices. All information readily available on shared website.</li> <li>• Keeps community informed via annual meetings (council scientists provide water resource information).</li> <li>• Works via trust plus strong leadership.</li> <li>• Peer pressure leads to self regulation.</li> </ul> |

**The input of the following organisations to the  
Strategy is gratefully acknowledged:**

Bay of Plenty Regional Council

Department of Conservation

Eastern Regional Fish and Game Council

Federated Farmers of New Zealand

Horticulture New Zealand

NZ Avocado Growers Association

NZ Kiwifruit Growers Association Inc

Royal Forest and Bird Protection Society

SmartGrowth Combined Tangata Whenua Forum

Tapuika Iwi Authority

Tauranga City Council

Te Puke Fruit Growers Association

TrustPower

Waitaha Resource Management Unit

Western Bay of Plenty District Council

Zespri International Ltd



**Western Bay of Plenty  
District Council**



**Tauranga City**



**Bay of Plenty  
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